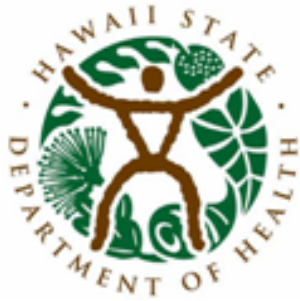




HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 40: SEPTEMBER 29, 2019–OCTOBER 5, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 40

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.2%	Lower than the previous week. Comparable to Hawaii's historical baseline, higher than the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 0 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	12.7%	Higher than the previous week. This number means that many, if not all, of the 87.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	12.7%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.6%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	2	

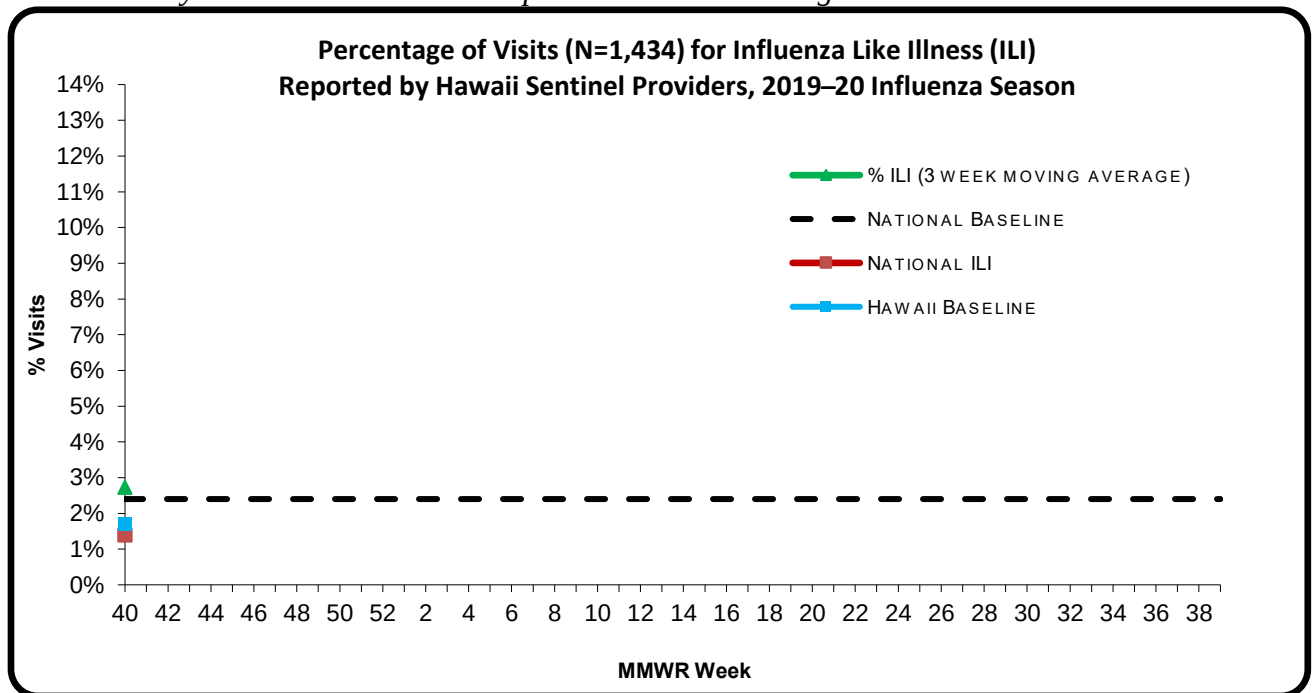
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 40** of the current influenza season:

- **2.2%** (season to date: **2.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.4%)⁴ (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.4%) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Sporadic Activity*⁵.
- *ILI Cluster Activity: No new clusters were reported to HDOH during week 40.*



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

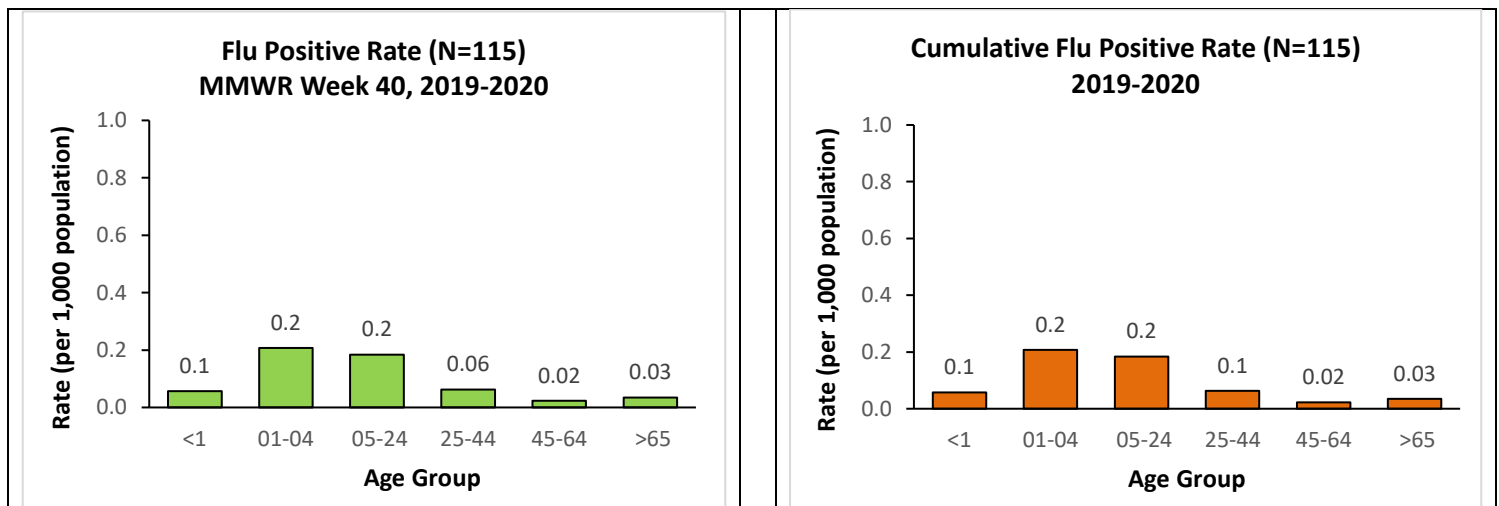
A. INFLUENZA:

- The following reflects laboratory findings for week 40 of the 2019–20 influenza season:
 - A total of **909** specimens have been tested statewide for influenza viruses (positive: 115 [12.7%]). (Season to date: 909 tested [12.7% positive])
 - 663 (72.9%) were screened only by rapid antigen tests with no confirmatory testing.
 - 246 (27.1%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 794 (87.3%) were negative.

Influenza type	Current week 40 (%)	Season to date (%)
Influenza A (H1) ⁷	0 (0.0)	0 (0.0)
Influenza A (H3)	1 (0.9)	1 (0.9)
Influenza A no subtyping	14 (12.2)	14 (12.2)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	6 (5.2)	6 (5.2)
Influenza B no genotyping	94 (81.7)	94 (81.7)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



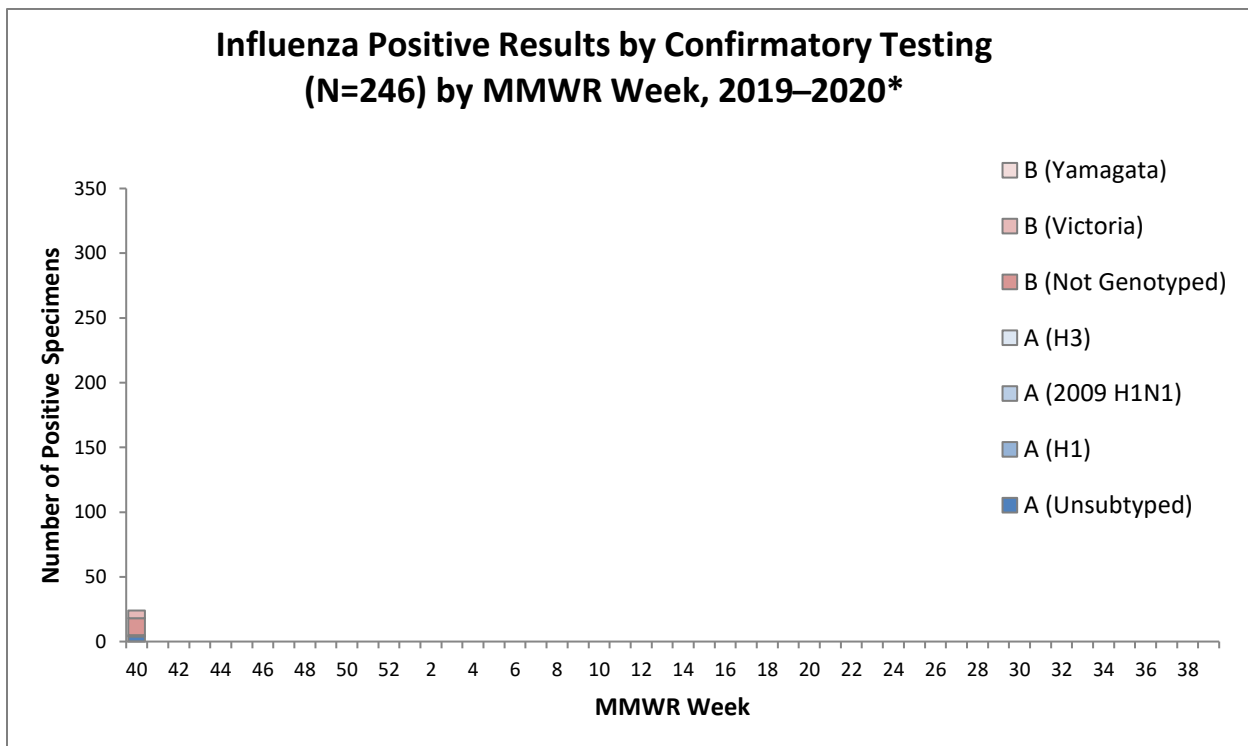
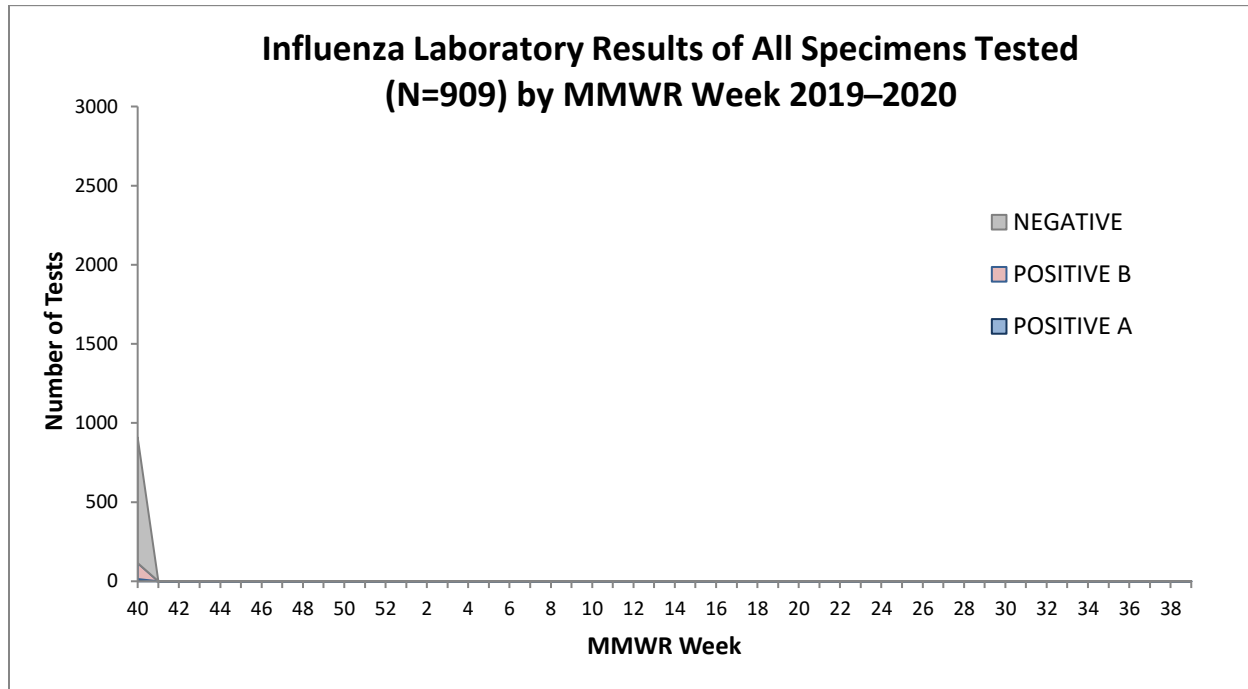
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

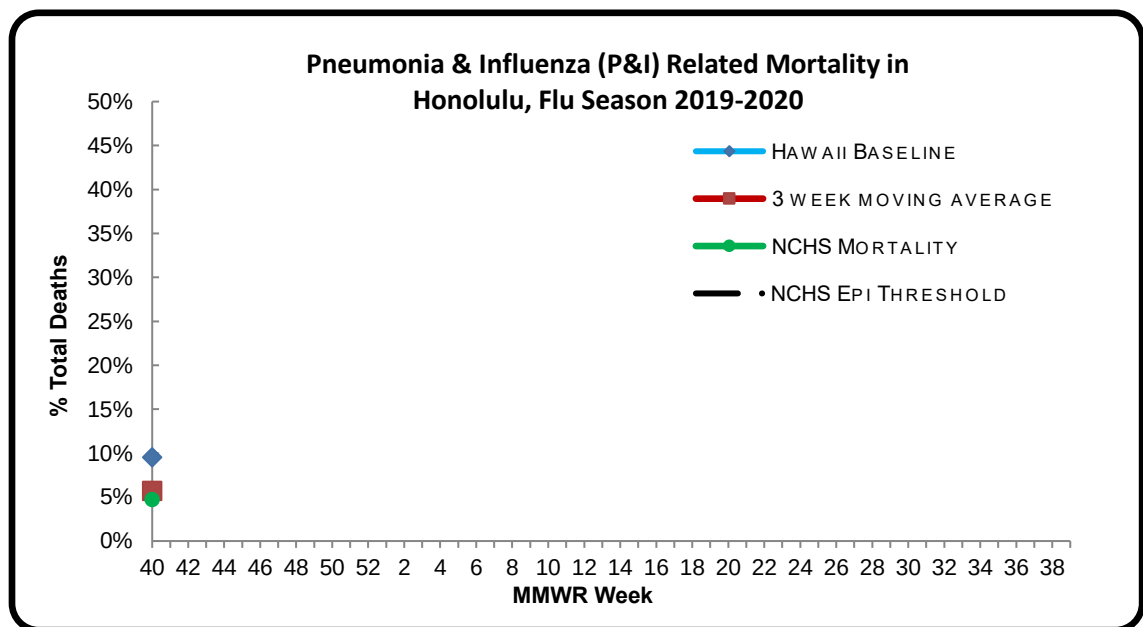
[illegible]

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 40** of the current influenza season:

- *5.6% of all deaths that occurred in Hawaii during week 40 were related to pneumonia or influenza. For the current season (season to date: 5.6%), there have been 233 deaths from any cause, 13 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (4.7%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (5.7%) (i.e., inside the 95% confidence interval) for week 40.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 40. Both occurred during the 2018-2019 influenza season, weeks 9 and 36 (weeks ending March 2, 2019 and September 7, 2019, respectively), and both were associated with influenza A (H3) virus infection. (2018-2019 season total: 138).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

¹¹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 40.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2018–2019 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

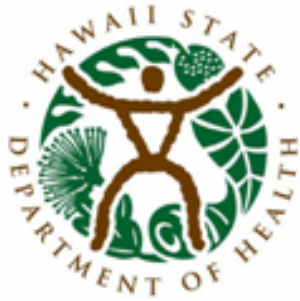
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 41: OCTOBER 6, 2019–OCTOBER 12, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 41

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.4%	Higher than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	1	There has been 1 cluster this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	12.5%	Lower than the previous week. This number means that many, if not all, of the 87.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	12.6%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.6%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

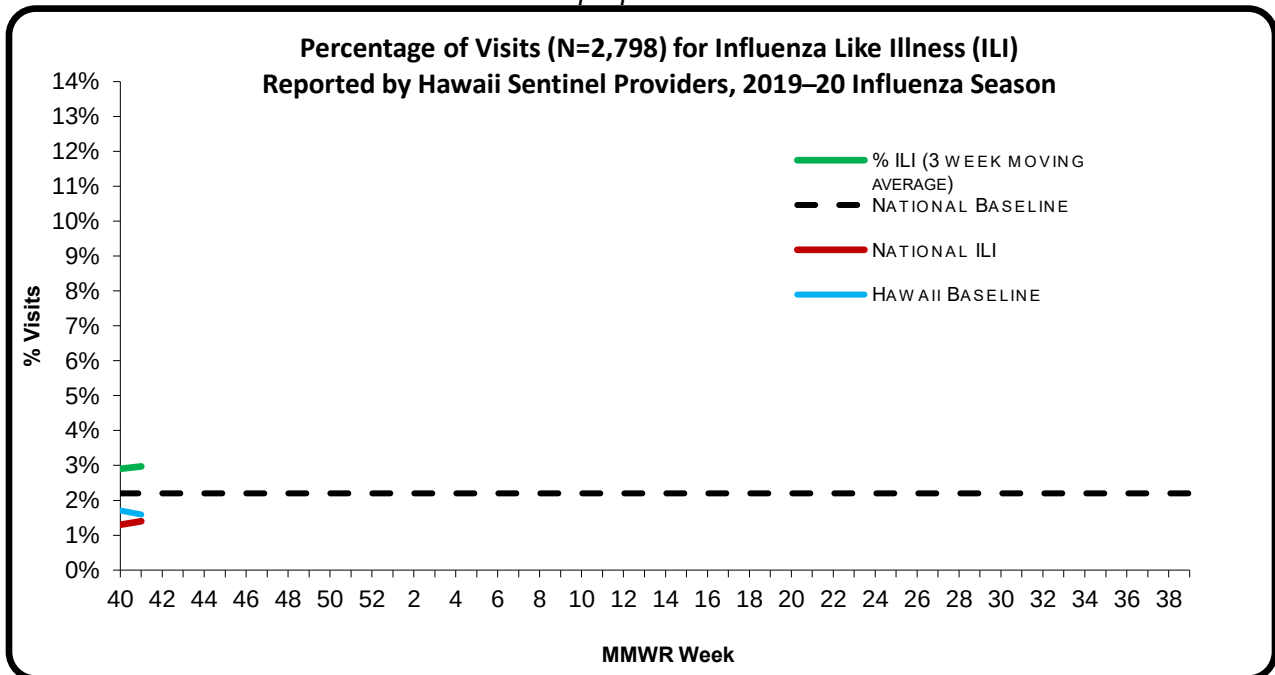
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 41** of the current influenza season:

- **2.4%** (season to date: **2.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.4%)⁴ (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.5%) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 41. This cluster occurred at a correctional center on Kauai and included cases of influenza B.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

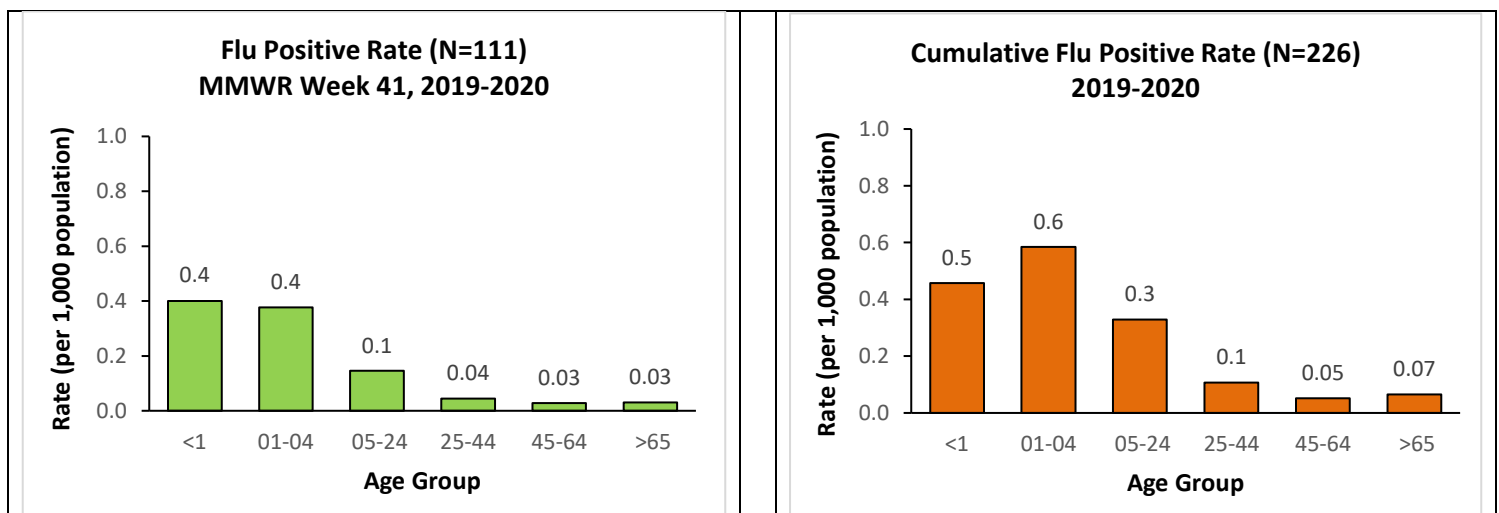
A. INFLUENZA:

- The following reflects laboratory findings for week 41 of the 2019–20 influenza season:
 - A total of **887** specimens have been tested statewide for influenza viruses (positive: 111 [12.5%]). (Season to date: 1,797 tested [12.6% positive])
 - 676 (76.2%) were screened only by rapid antigen tests with no confirmatory testing.
 - 211 (23.8%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 776 (87.5%) were negative.

Influenza type	Current week 41 (%)	Season to date (%)
Influenza A (H1) ⁷	2 (1.8)	5 (2.2)
Influenza A (H3)	0 (0.0)	2 (0.9)
Influenza A no subtyping	24 (21.6)	34 (15.0)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	1 (0.9)	9 (4.0)
Influenza B no genotyping	84 (75.7)	176 (77.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



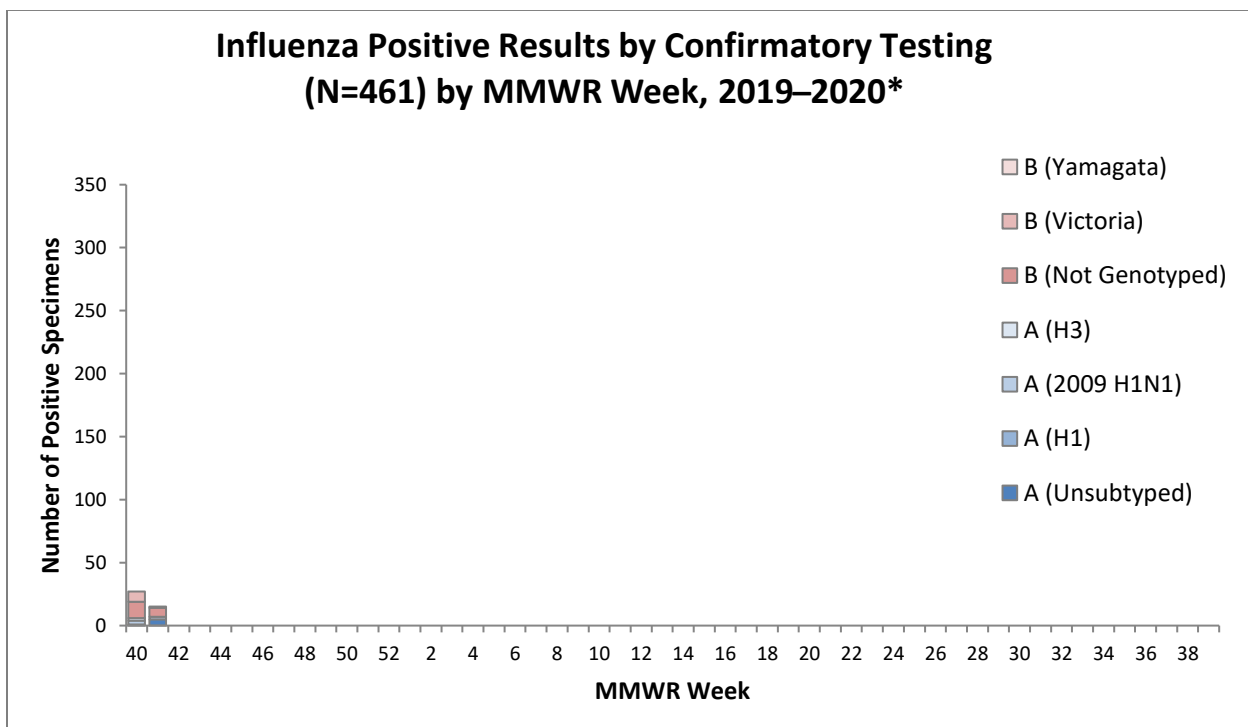
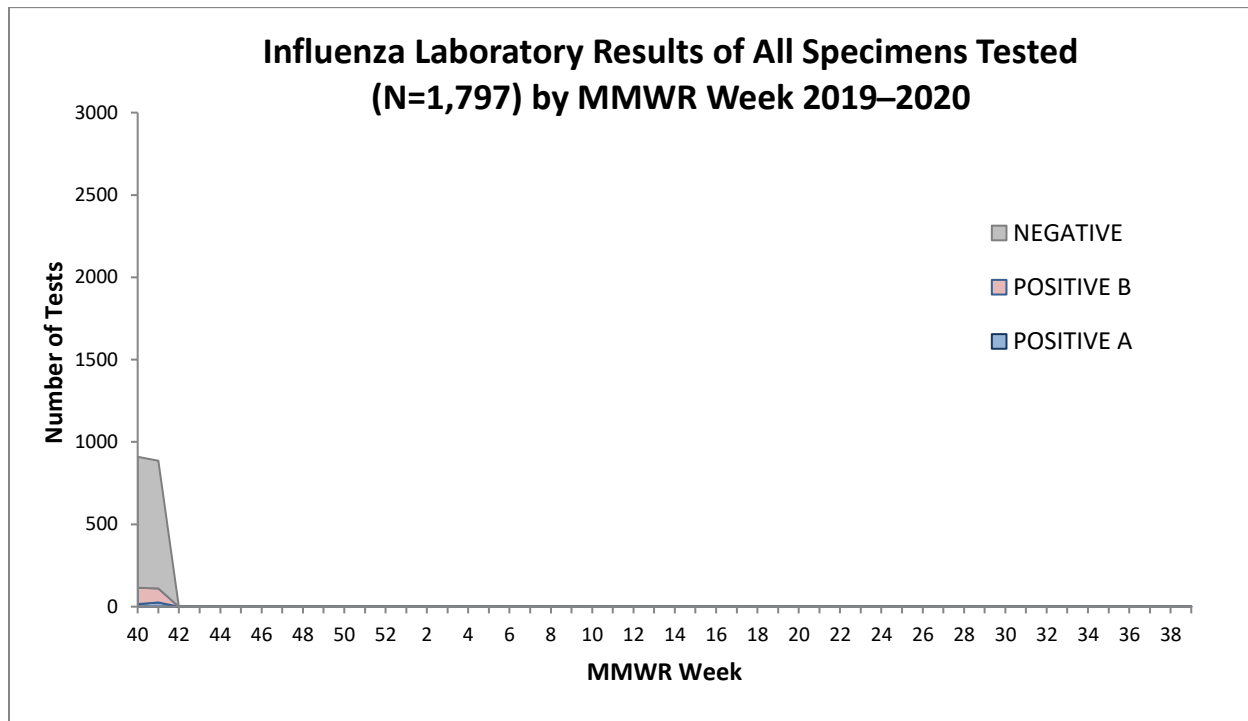
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

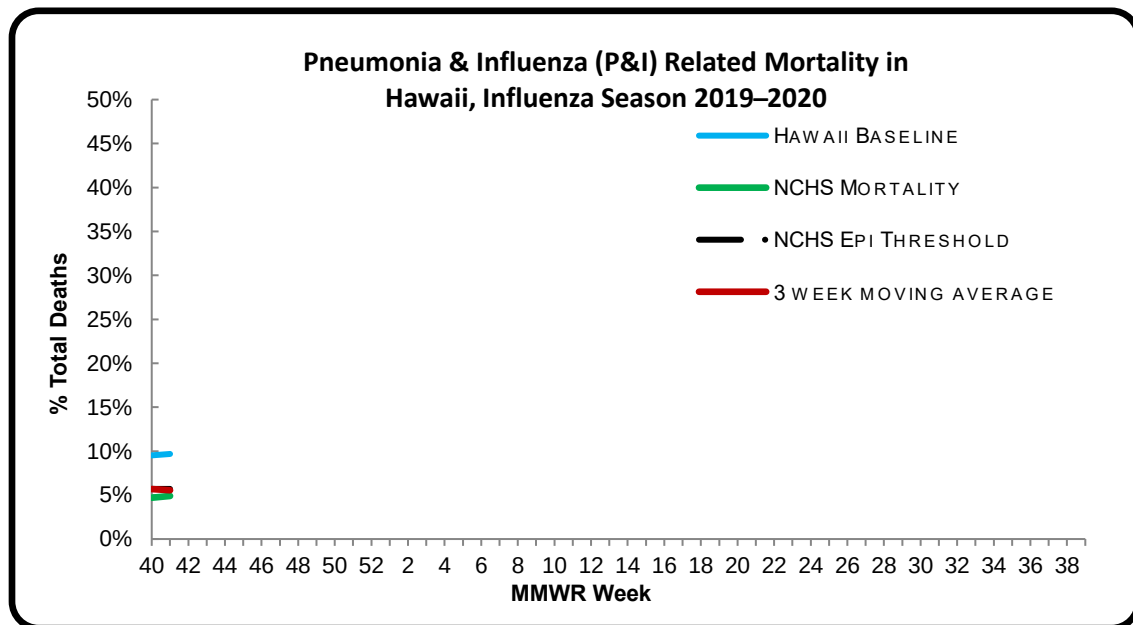
[illegible]

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 41** of the current influenza season:

- **6.6%** of all deaths that occurred in Hawaii during week 41 were related to pneumonia or influenza. For the current season (season to date: **6.0%**), there have been 430 deaths from any cause, 26 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (**4.9%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.7%**) (i.e., inside the 95% confidence interval) for week 41.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 41. No influenza-associated pediatric deaths occurring during the 2019–2020 season have been reported.

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

¹¹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 41.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2018–2019 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

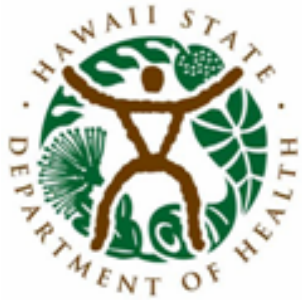
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 42: OCTOBER 13, 2019–OCTOBER 19, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 42

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.1%	Higher than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	0	There has been 1 cluster this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	16.7%	Higher than the previous week. This number means that many, if not all, of the 83.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.6%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	4.8%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	2	

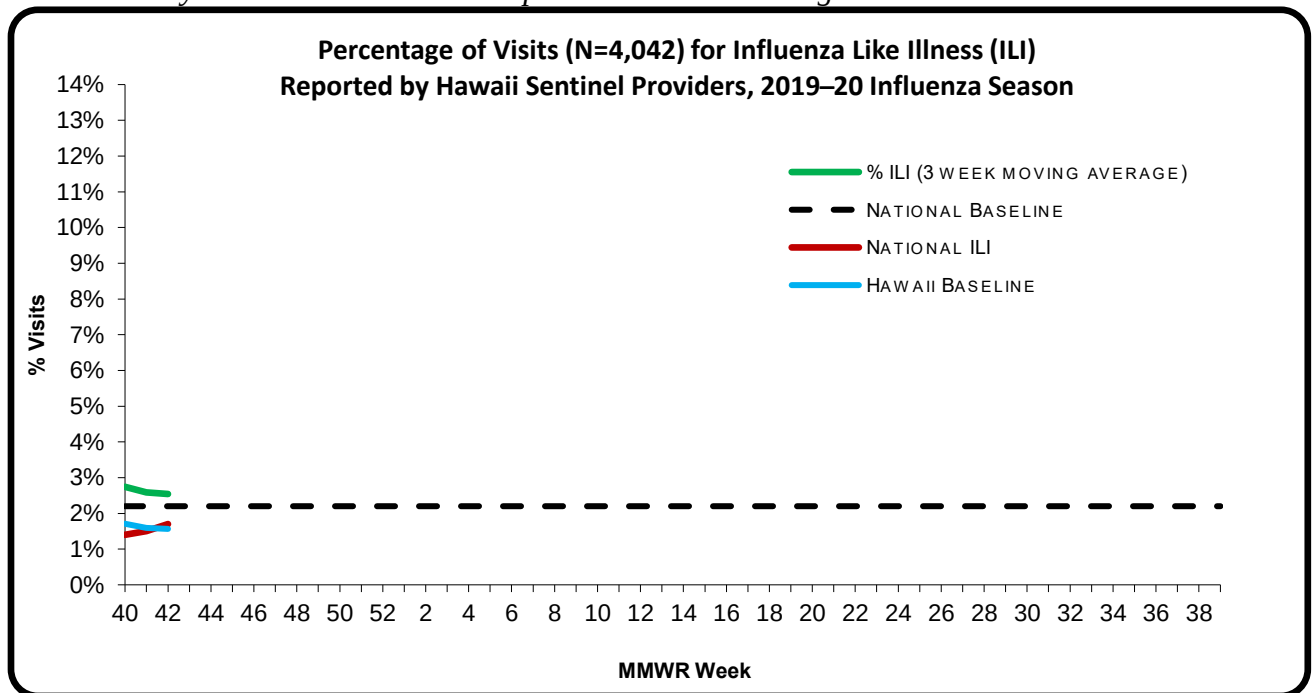
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 42** of the current influenza season:

- **3.1%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.4%)⁴ (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.7%) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Sporadic Activity*⁵.
- *ILI Cluster Activity: No new clusters were reported to HDOH during week 42.*



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

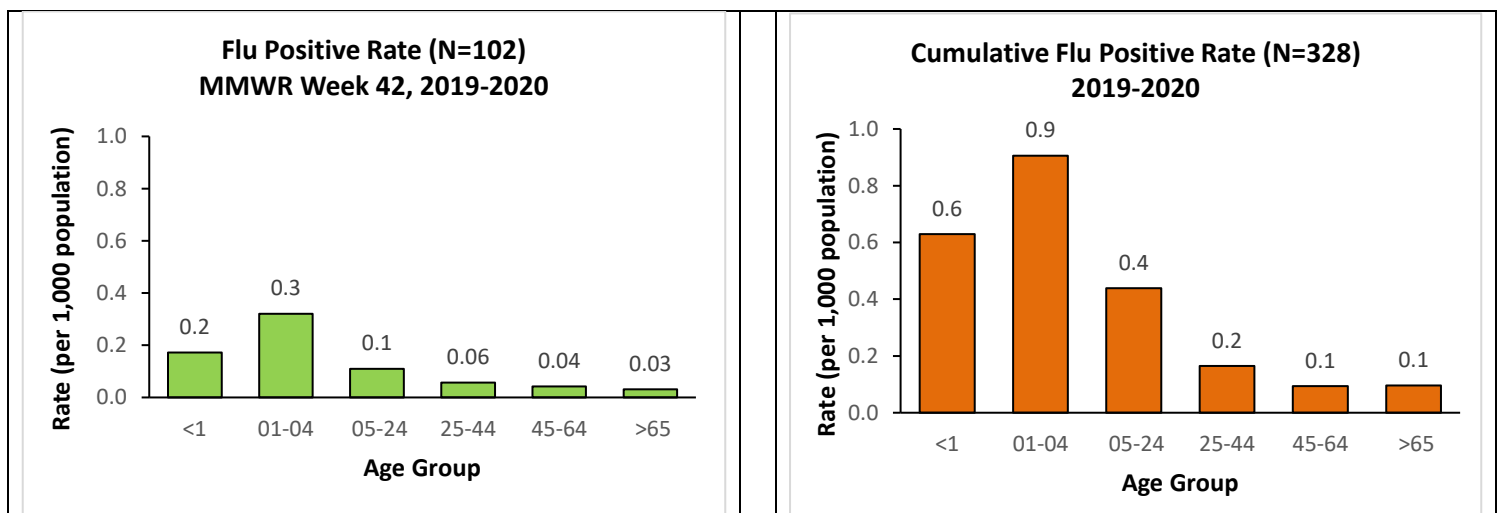
A. INFLUENZA:

- The following reflects laboratory findings for week 42 of the 2019–20 influenza season:
 - A total of **611** specimens have been tested statewide for influenza viruses (positive: 102 [**16.7%**]). (Season to date: 2,408 tested [**13.6%** positive])
 - 360 (58.9%) were screened only by rapid antigen tests with no confirmatory testing.
 - 251 (41.1%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 509 (83.3%) were negative.

Influenza type	Current week 42 (%)	Season to date (%)
Influenza A (H1) ⁷	5 (4.9)	10 (3.0)
Influenza A (H3)	1 (1.0)	4 (1.2)
Influenza A no subtyping	29 (28.4)	62 (18.9)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	12 (11.8)	27 (8.2)
Influenza B no genotyping	55 (53.9)	225 (68.6)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



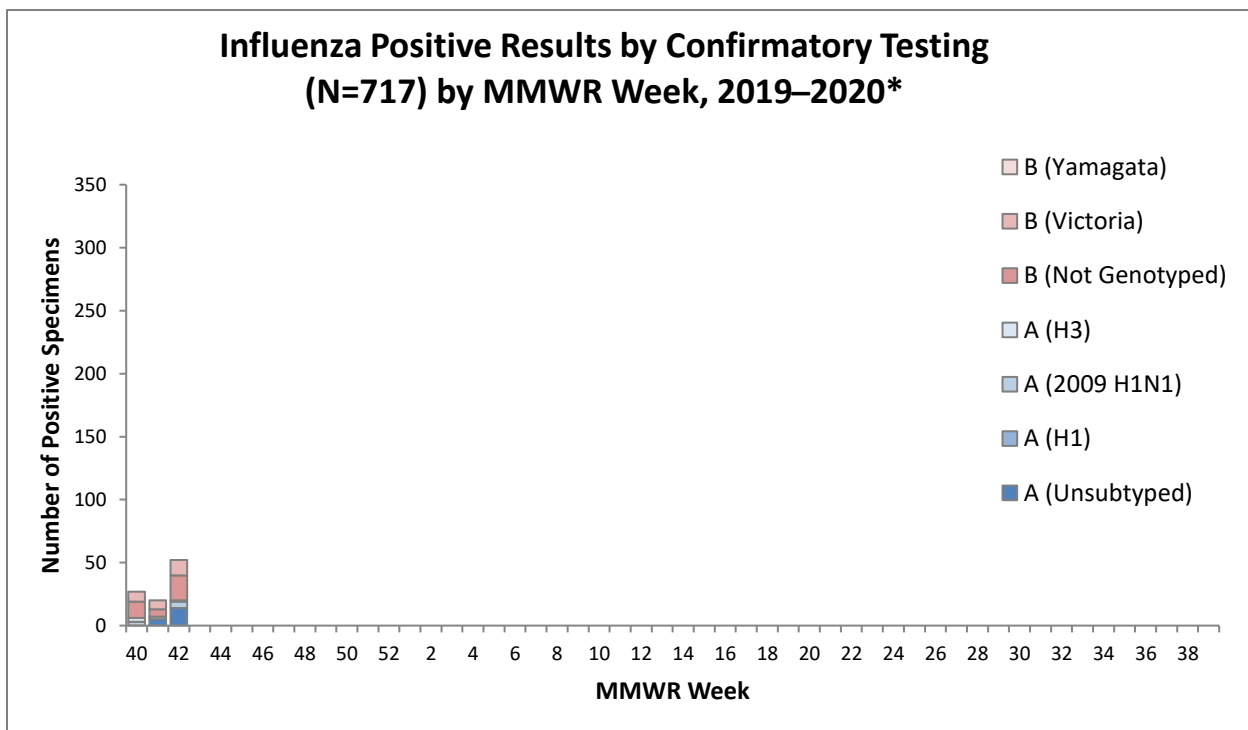
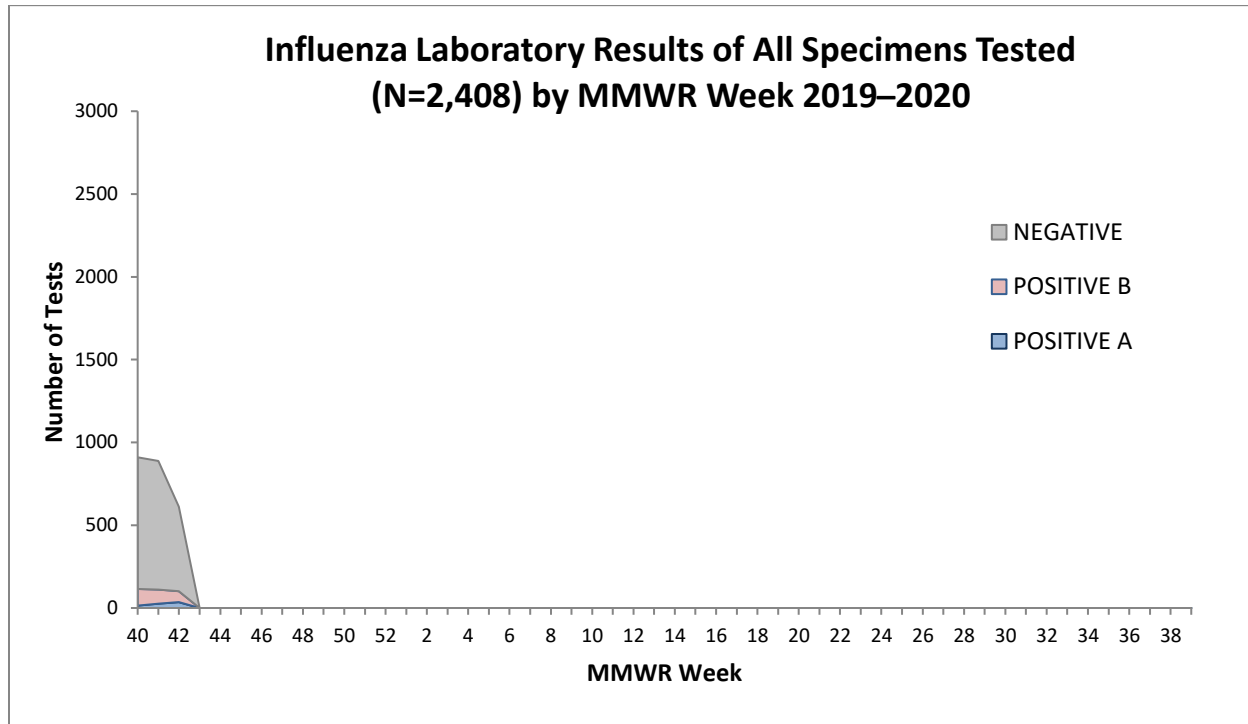
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

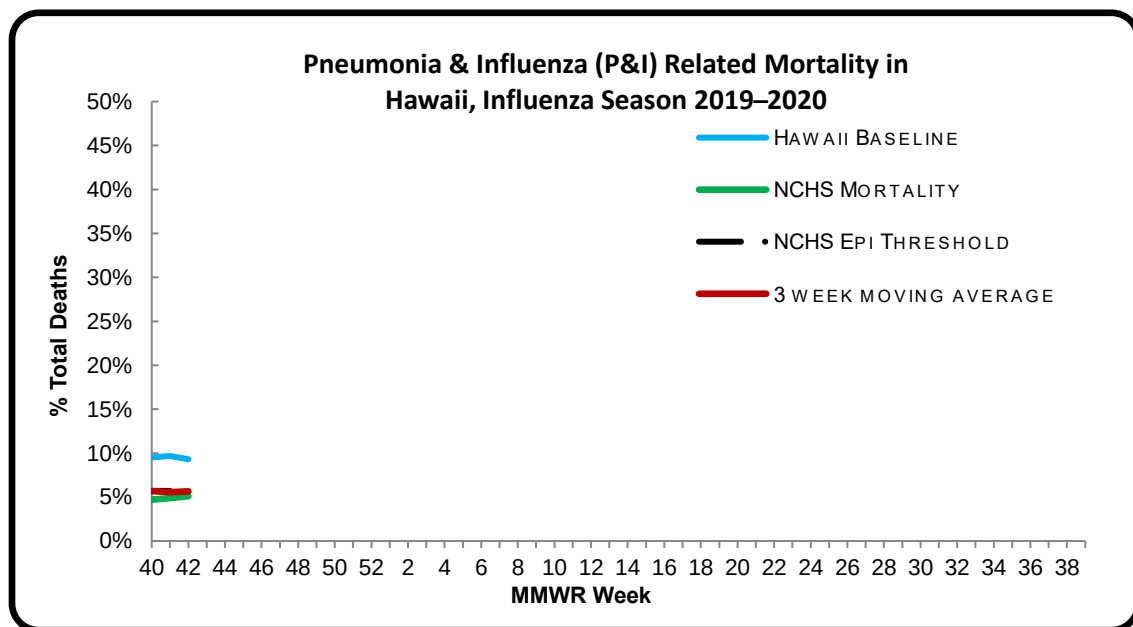
MMWR Week (2019-2020)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
Adenovirus	X		X																																																		
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus																																																					
Respiratory Syncytial Virus	X	X	X																																																		
Rhinovirus/Enterovirus	X	X	X																																																		
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X																																																		
Influenza A (H3)	X		X																																																		
Influenza A (Other seasonal H1)																																																					
Influenza A (unsubtyped)	X	X	X																																																		
Influenza B	X	X	X																																																		

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 42** of the current influenza season:

- **4.8%** of all deaths that occurred in Hawaii during week 42 were related to pneumonia or influenza. For the current season (season to date: **5.6%**), there have been 679 deaths from any cause, 38 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (5.1%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (5.8%) (i.e., inside the 95% confidence interval) for week 42.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 42. One death was associated with an influenza A virus for which no subtyping was performed and one death was associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

¹¹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

an influenza B/Victoria virus. Both deaths occurred during week 41 (week ending October 12, 2019). Season total: 2).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 42.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2018–2019 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

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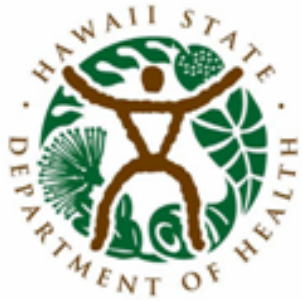
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APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
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7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
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17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
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34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 43: OCTOBER 20, 2019–OCTOBER 26, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 43

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.2%	Lower than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 2 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	15.1%	Lower than the previous week. This number means that many, if not all, of the 84.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.9%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.1%	Lower than Hawaii's historical baseline. NCHS data not available this week.
Number of influenza-associated pediatric deaths reported nationwide	4	

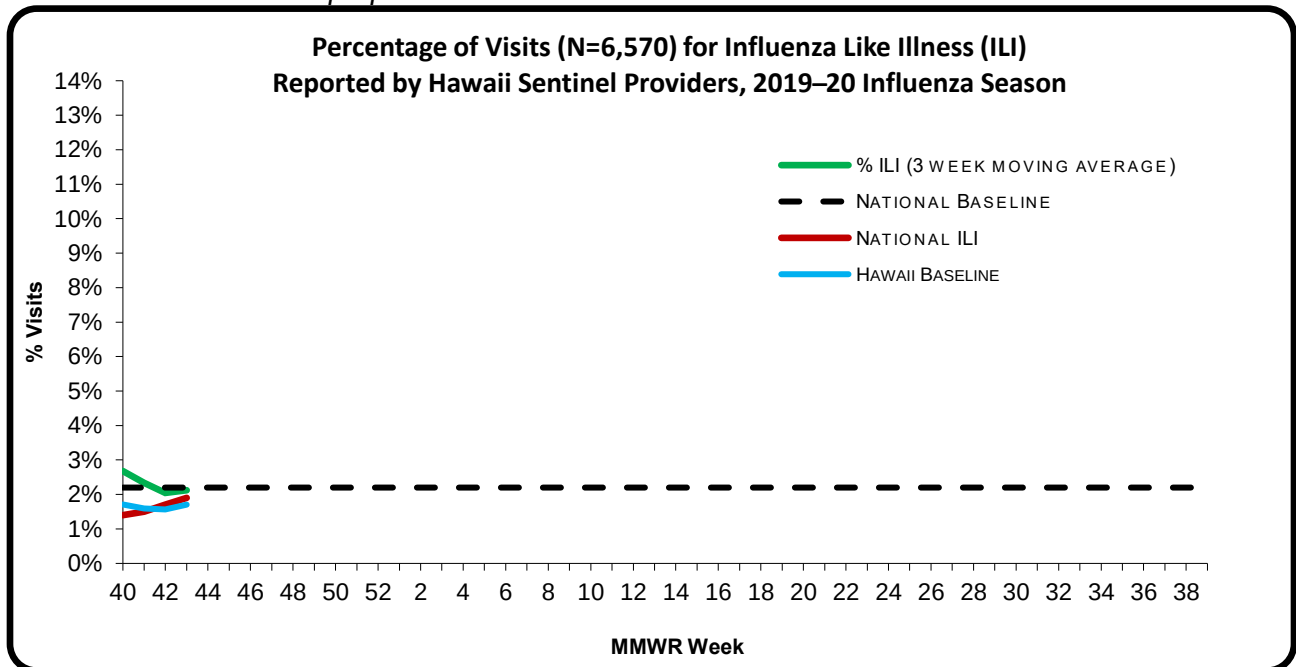
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 43** of the current influenza season:

- **2.2%** (season to date: **2.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.4%)⁴ (i.e., inside the 95% confidence interval) and comparable to the national ILI rate (1.9%) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 43. This cluster occurred at a school on Oahu and included cases of influenza B.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

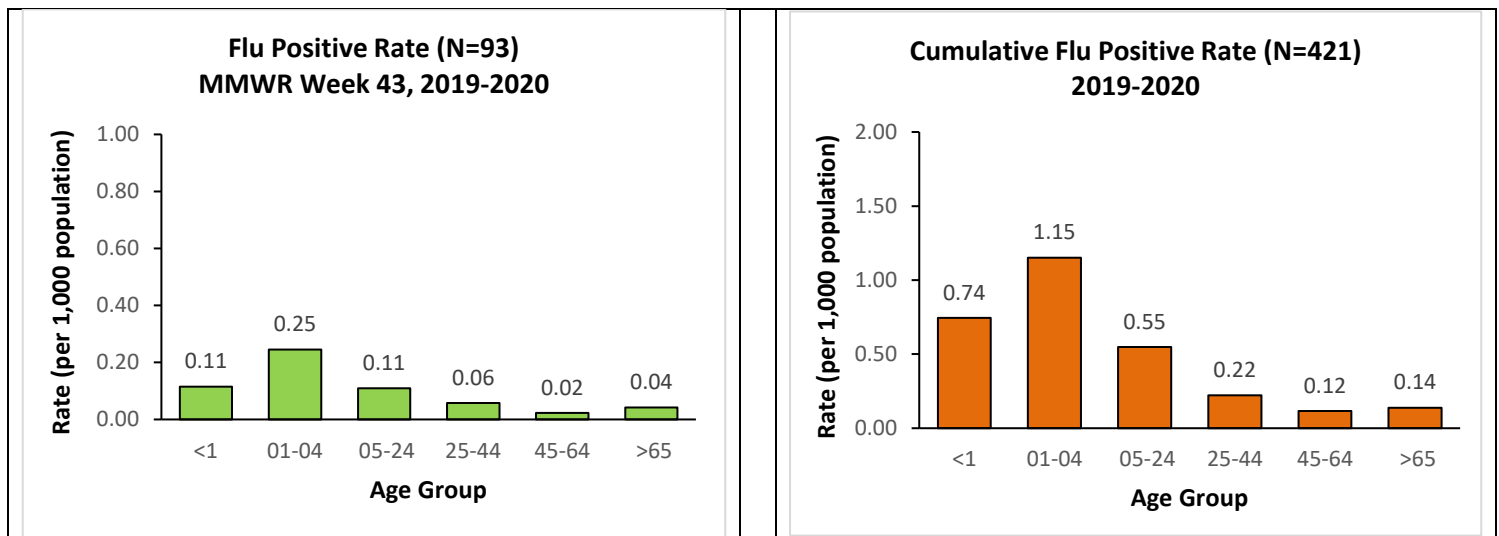
A. INFLUENZA:

- The following reflects laboratory findings for week 43 of the 2019–20 influenza season:
 - A total of **615** specimens have been tested statewide for influenza viruses (positive: 93 [**15.1%**]). (Season to date: 3,022 tested [**13.9%** positive])
 - 330 (53.7%) were screened only by rapid antigen tests with no confirmatory testing.
 - 285 (46.3%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 522 (84.9%) were negative.

Influenza type	Current week 43 (%)	Season to date (%)
Influenza A (H1) ⁷	6 (6.4)	18 (4.3)
Influenza A (H3)	0 (0.0)	5 (1.2)
Influenza A no subtyping	37 (39.8)	96 (22.8)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	27 (6.4)
Influenza B no genotyping	50 (53.8)	275 (65.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



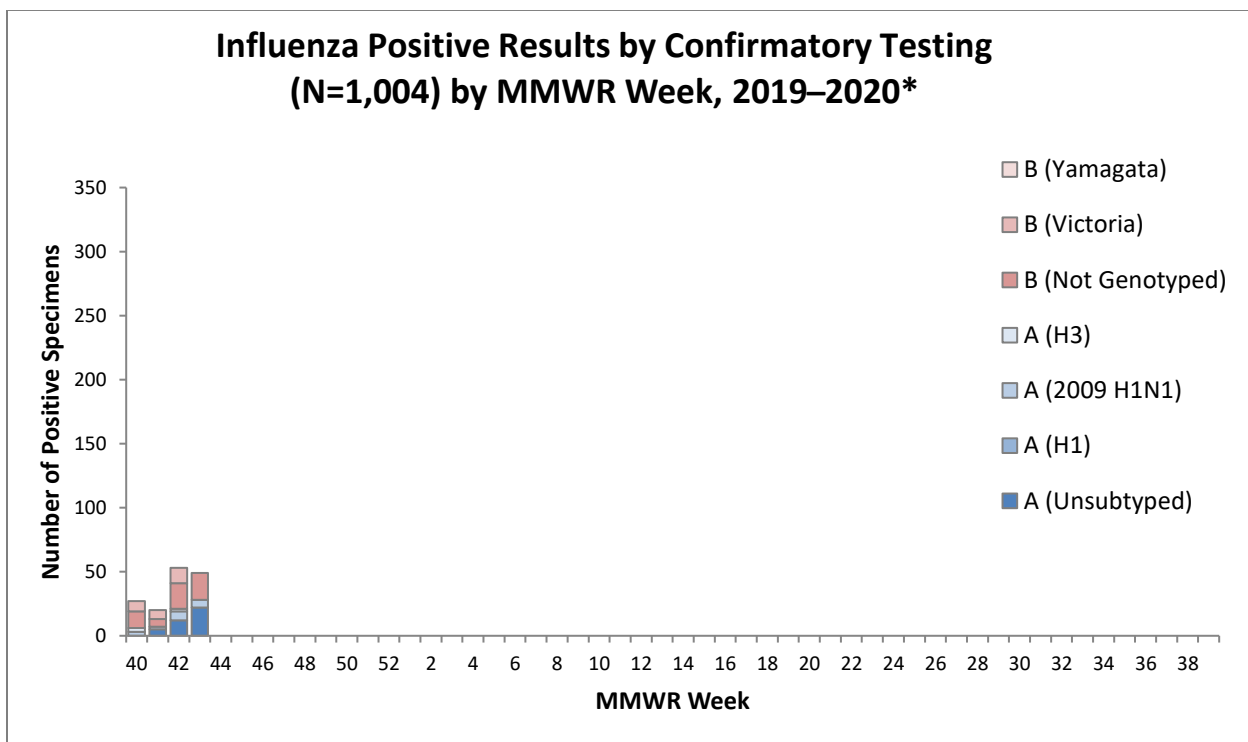
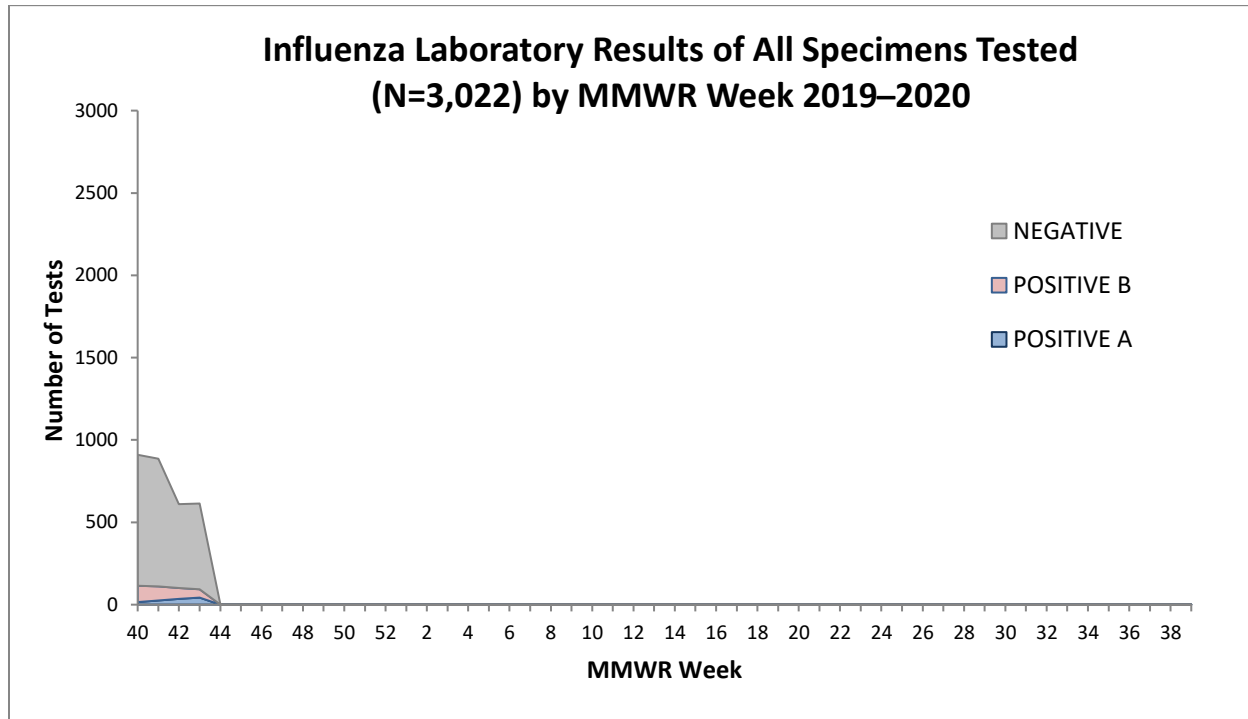
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

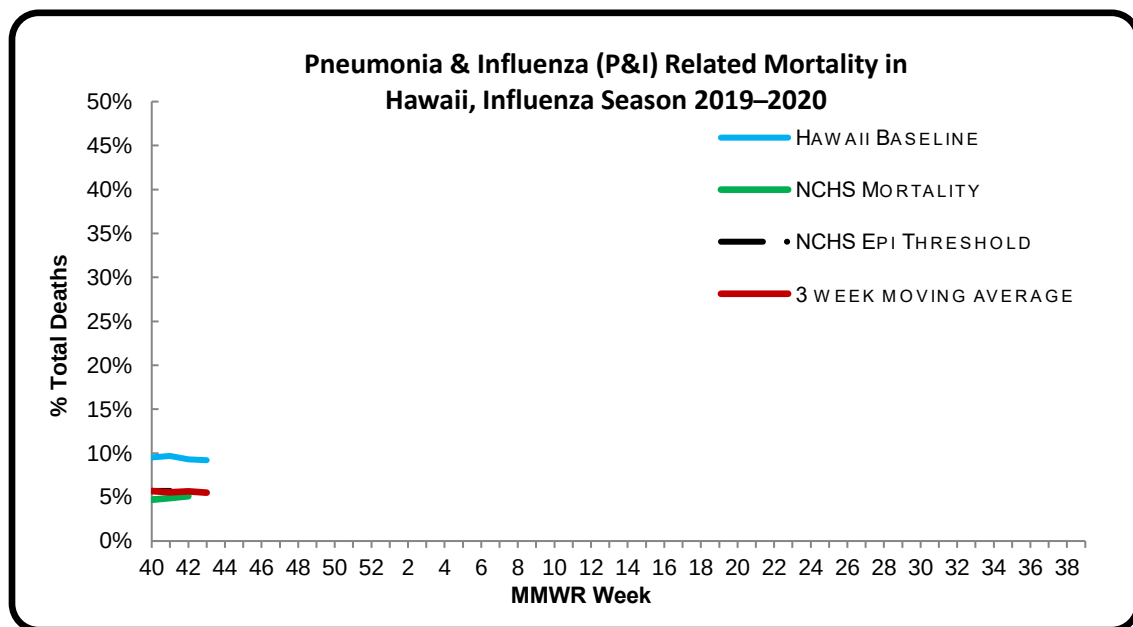
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III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 43** of the current influenza season:

- *5.1% of all deaths that occurred in Hawaii during week 43 were related to pneumonia or influenza. For the current season (season to date: 5.5%), there have been 895 deaths from any cause, 49 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).*
- *Due to technical issues, the National Center for Health Statistics (NCHS) mortality surveillance data for week 43 will not be published this week. Reporting of this data will resume once the technical issues have been resolved.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁰:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, four influenza-associated pediatric deaths were reported to CDC during week 43. Two deaths occurred during week 11 (week ending March 16, 2019). One of these deaths was associated with an influenza A(H3) virus and the other was associated with an influenza A(H1N1)pdm09 virus. Two deaths occurred during week 13 (week ending March 30, 2019). One of these deaths was associated with an influenza A virus for which no subtyping was performed and the other was associated with an influenza A(H1N1)pdm09 virus. All four

⁹ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

¹⁰ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

deaths occurred during the 2018-2019 season, bringing the total number of deaths during that season to 142. (2019-2020 season total: 2).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

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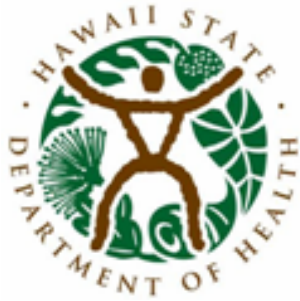
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4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
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20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
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HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 44: OCTOBER 27, 2019–NOVEMBER 2, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 44

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.9%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 3 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	11.8%	Lower than the previous week. This number means that many, if not all, of the 88.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.7%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	3.5%	Lower than Hawaii's historical baseline, lower than the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

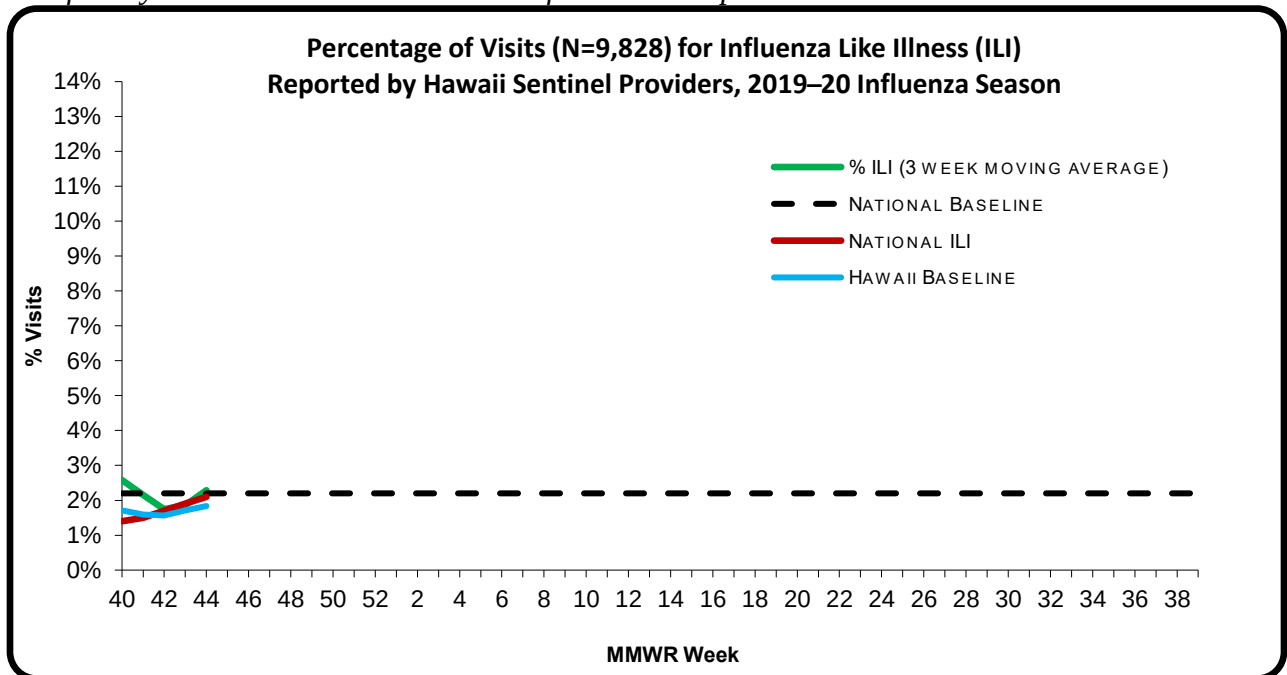
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 44** of the current influenza season:

- **2.9%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (**2.4%**)⁴ (i.e., inside the 95% confidence interval) and comparable to the national ILI rate (**2.1%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Sporadic Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 44. This cluster occurred at a long-term care facility on Maui and included cases of human metapneumovirus.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

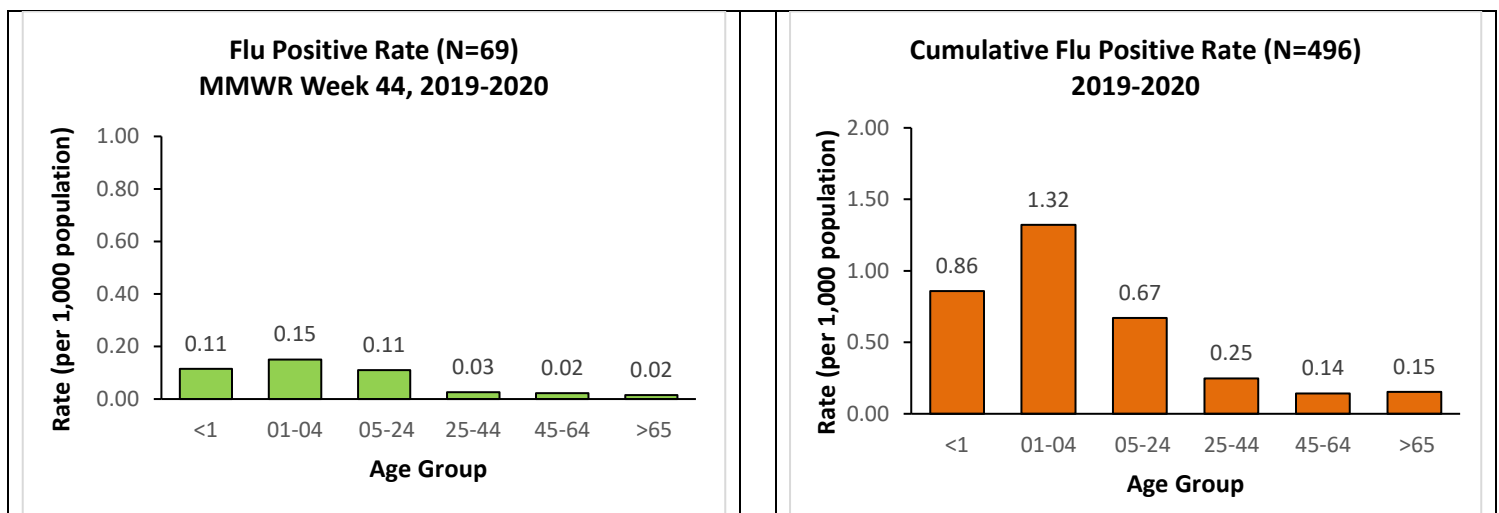
A. INFLUENZA:

- The following reflects laboratory findings for week 44 of the 2019–20 influenza season:
 - A total of **584** specimens have been tested statewide for influenza viruses (positive: 69 [**11.8%**]). (Season to date: 3,622 tested [**13.7%** positive])
 - 330 (56.5%) were screened only by rapid antigen tests with no confirmatory testing.
 - 254 (43.5%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 515 (88.2%) were negative.

Influenza type	Current week 44 (%)	Season to date (%)
Influenza A (H1) ⁷	1 (1.4)	20 (4.0)
Influenza A (H3)	0 (0.0)	5 (1.0)
Influenza A no subtyping	23 (33.3)	119 (24.0)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	1 (1.4)	40 (8.1)
Influenza B no genotyping	44 (63.8)	312 (62.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



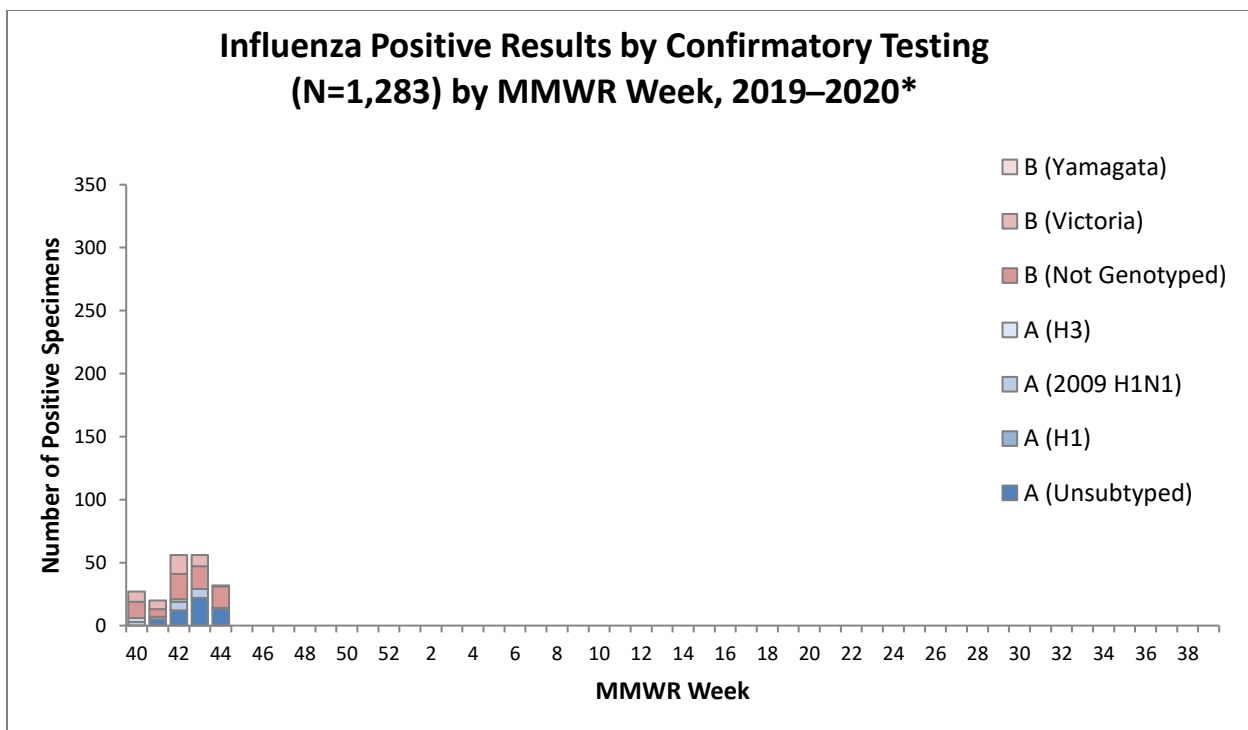
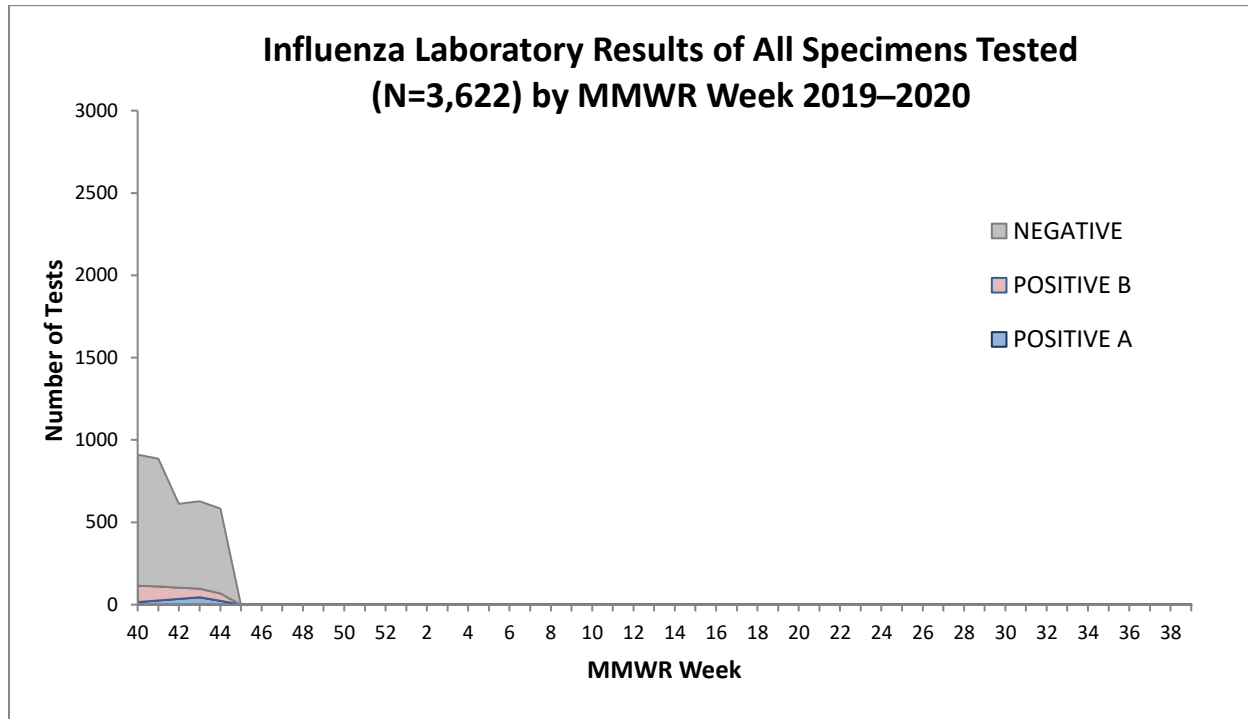
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

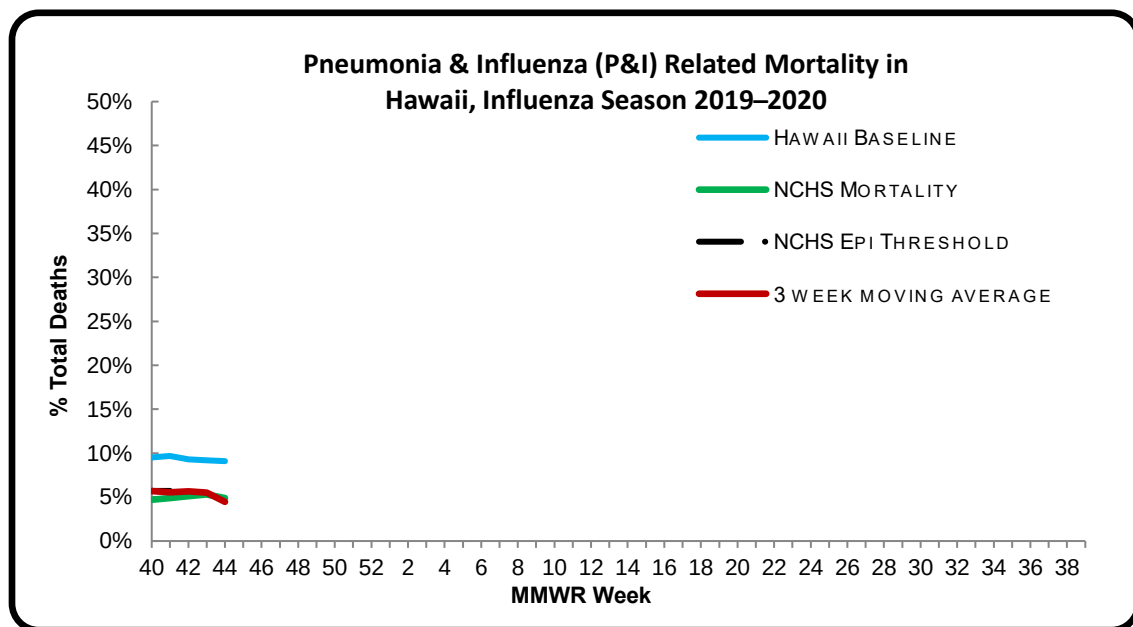
[illegible]

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 44** of the current influenza season:

- *3.5% of all deaths that occurred in Hawaii during week 44 were related to pneumonia or influenza. For the current season (season to date: 5.1%), there have been 1,097 deaths from any cause, 56 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (4.9%) (i.e., inside the 95% confidence interval) and lower than the national epidemic threshold (6.0%) (i.e., outside the 95% confidence interval) for week 44.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, no new influenza-associated pediatric deaths were reported to CDC during week 44. (2019–2020 season total: 2).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 44.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2018–2019 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

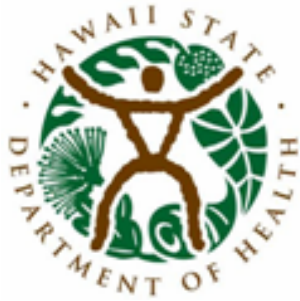
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
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HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 45: NOVEMBER 3, 2019–NOVEMBER 9, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 45

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.8%	Lower than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	2	There have been 5 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	14.5%	Higher than the previous week. This number means that many, if not all, of the 85.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.8%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	2	

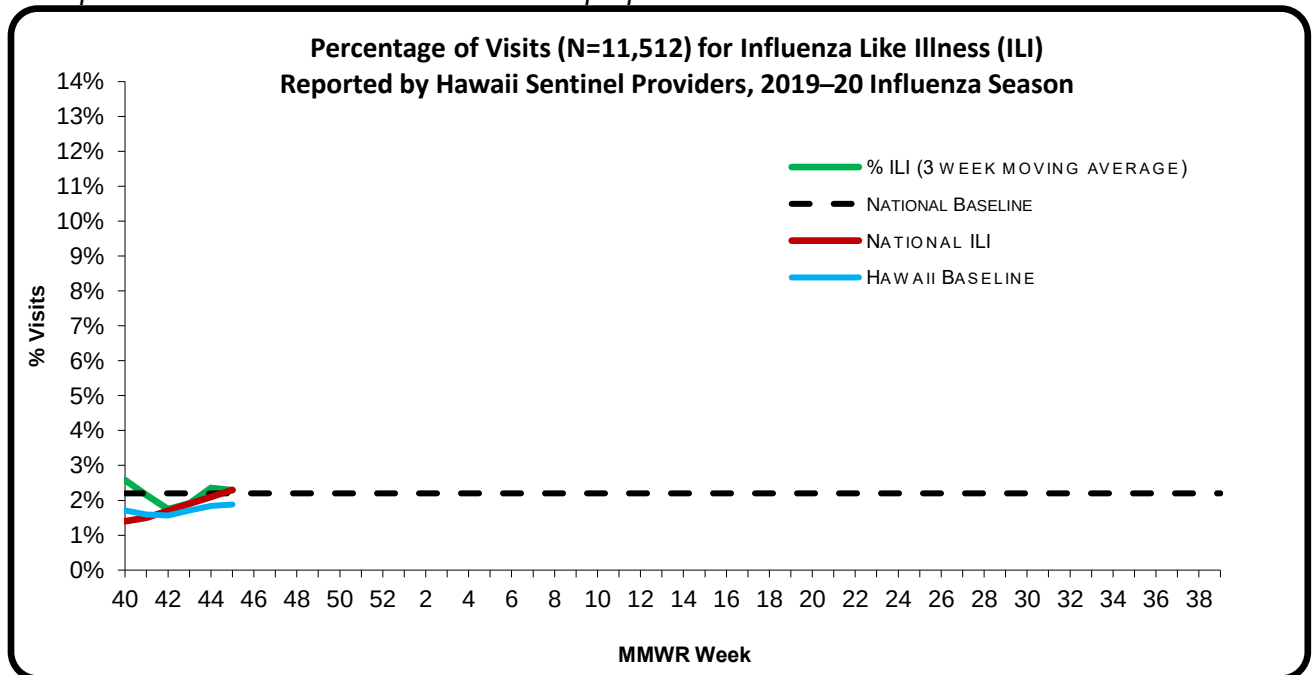
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 45** of the current influenza season:

- **1.8%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (**2.4%**)⁴ (i.e., inside the 95% confidence interval) and comparable to the national ILI rate (**2.3%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* Two new clusters were reported to HDOH during week 45. These clusters occurred at long-term care facilities on Oahu and included cases of influenza A.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

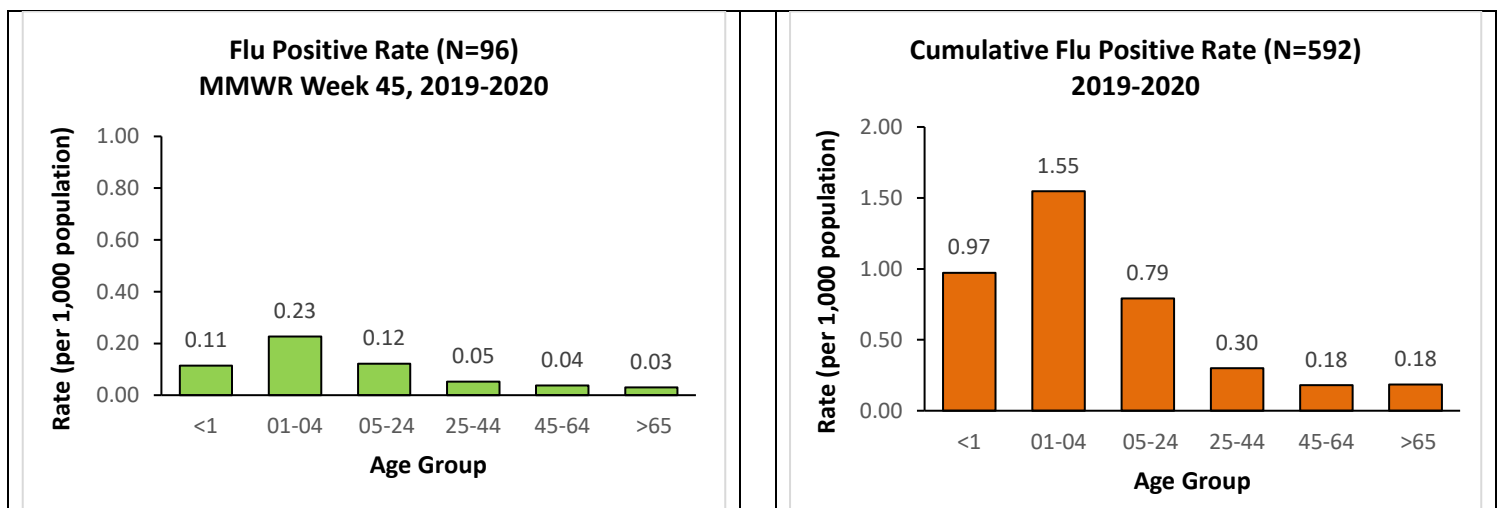
A. INFLUENZA:

- The following reflects laboratory findings for week 45 of the 2019–20 influenza season:
 - A total of **663** specimens have been tested statewide for influenza viruses (positive: 96 [**14.5%**]). (Season to date: 4,290 tested [**13.8%** positive])
 - 346 (52.2%) were screened only by rapid antigen tests with no confirmatory testing.
 - 317 (47.8%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 567 (85.5%) were negative.

Influenza type	Current week 45 (%)	Season to date (%)
Influenza A (H1) ⁷	10 (10.4)	33 (5.6)
Influenza A (H3)	0 (0.0)	6 (1.0)
Influenza A no subtyping	44 (45.8)	159 (26.9)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	2 (2.1)	50 (8.4)
Influenza B no genotyping	40 (41.7)	344 (58.1)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



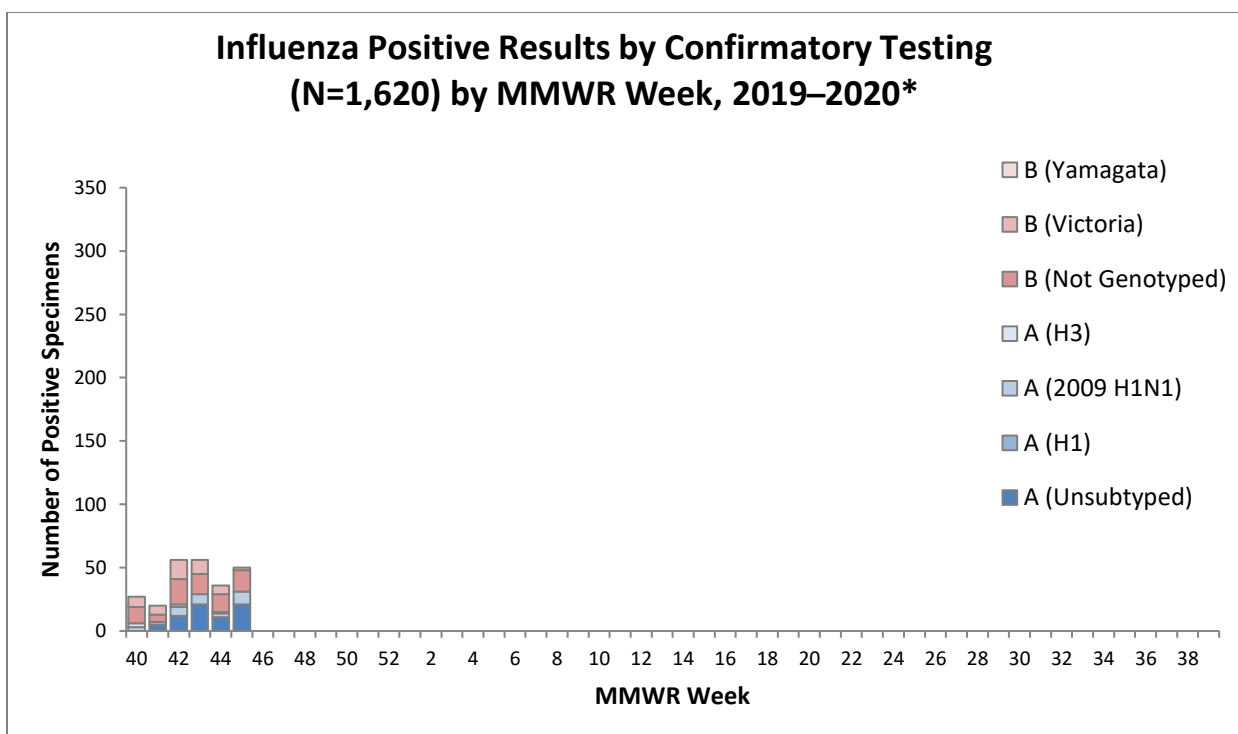
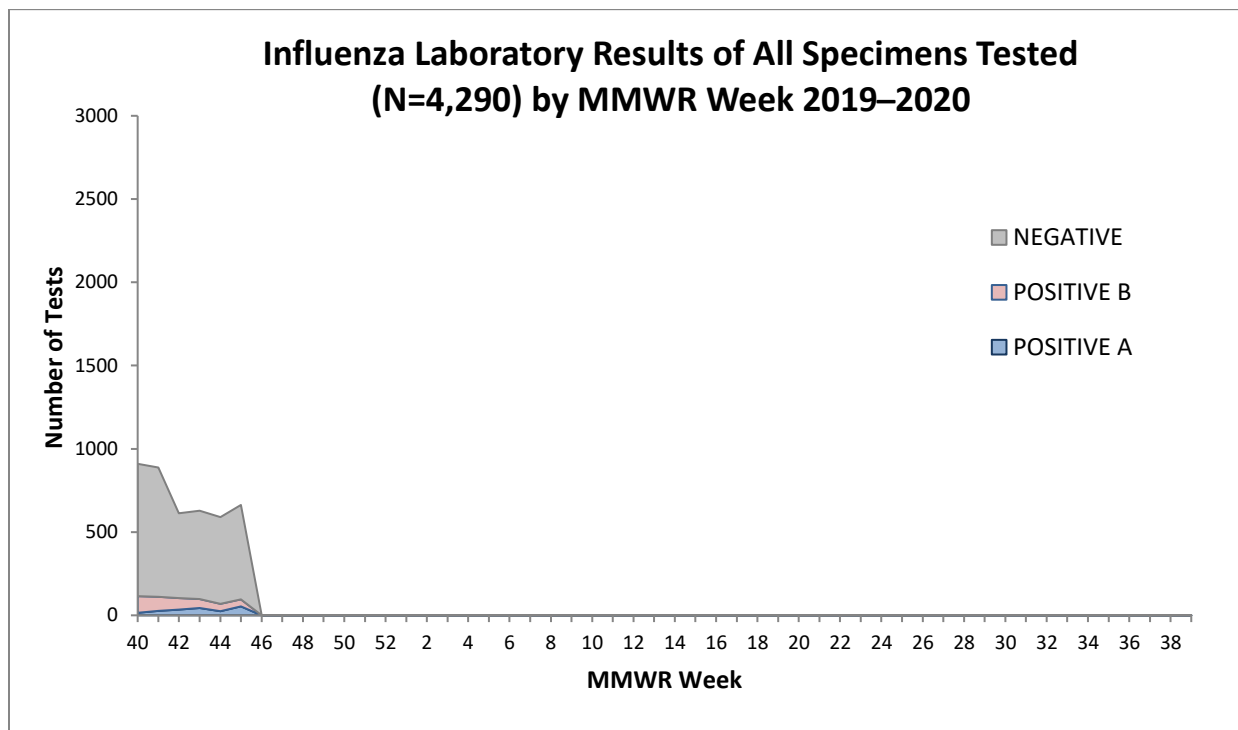
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

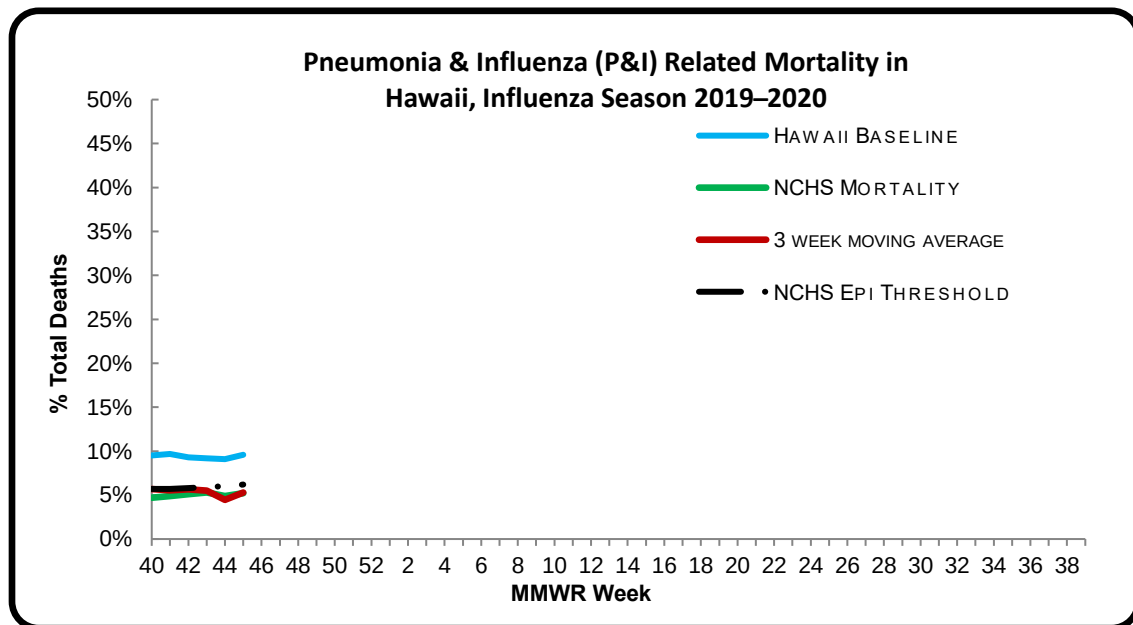
MMWR Week (2019-2020)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
Adenovirus	X		X		X																																																
Coronavirus																																																					
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Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus						X																																															
Respiratory Syncytial Virus	X	X	X	X	X	X																																															
Rhinovirus/Enterovirus	X	X	X	X	X	X																																															
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X	X	X	X																																															
Influenza A (H3)	X		X																																																		
Influenza A (Other seasonal H1)																																																					
Influenza A (unsubtyped)	X	X	X	X	X	X																																															
Influenza B	X	X	X	X	X	X																																															

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 45** of the current influenza season:

- *7.4% of all deaths that occurred in Hawaii during week 45 were related to pneumonia or influenza. For the current season (season to date: 5.5%), there have been 1,301 deaths from any cause, 71 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (5.2%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.2%) (i.e., inside the 95% confidence interval) for week 45.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, two new influenza-associated pediatric deaths were reported to CDC during week 45. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 7 (week ending February 16, 2019) in the 2018-2019 season. This brings the total of deaths during that season to

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

143. One death was associated with an influenza B/Victoria virus and occurred during week 44 (week ending November 2, 2019). (2019-2020 season total: 3).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 45.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2018–2019 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

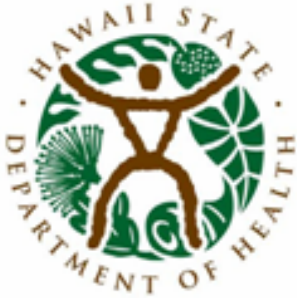
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 46: NOVEMBER 10, 2019–NOVEMBER 16, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 46

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.8%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	4	There have been 9 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	16.8%	Higher than the previous week. This number means that many, if not all, of the 83.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	14.3%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.9%	Comparable to Hawaii's historical baseline. National P&I mortality data is not available for week 46.
Number of influenza-associated pediatric deaths reported nationwide	1	

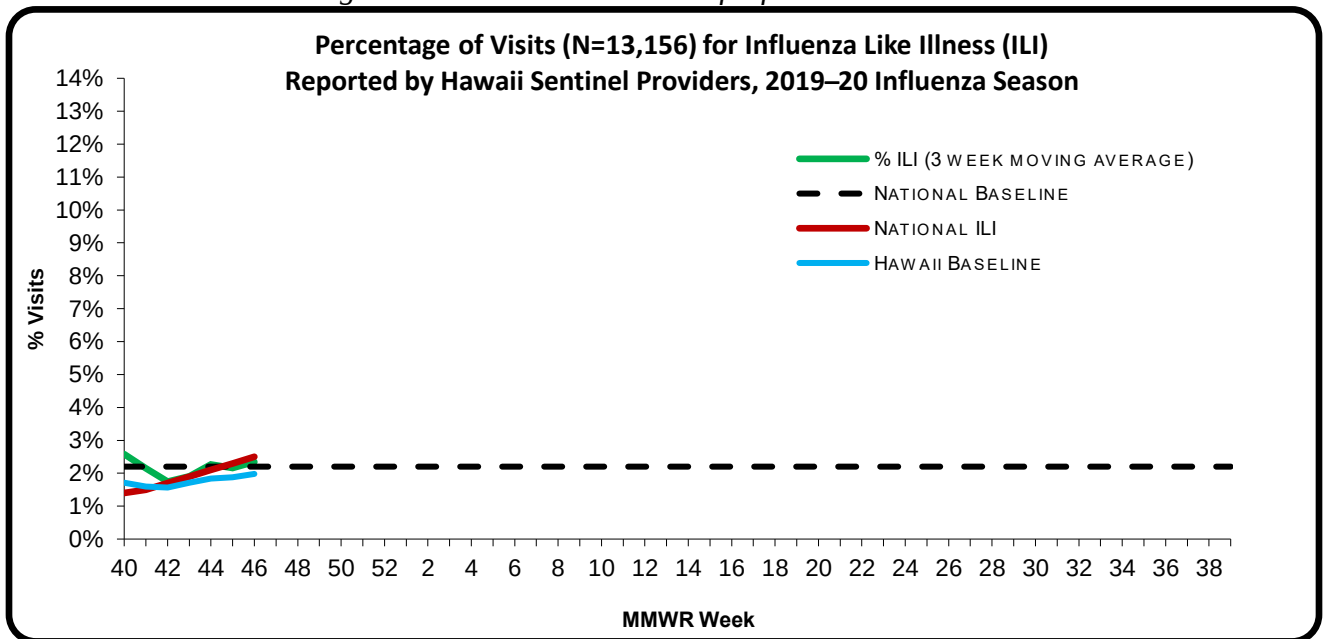
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 46** of the current influenza season:

- **2.8%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (**2.4%**)⁴ (i.e., inside the 95% confidence interval) and comparable to the national ILI rate (**2.5%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Regional Activity*⁵.
- *ILI Cluster Activity:* Four new clusters were reported to HDOH during week 46. Three clusters occurred at long-term care facilities on Oahu and included cases of influenza A, RSV, and metapneumovirus. One cluster occurred at a school on the Big Island and included cases of influenza B.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

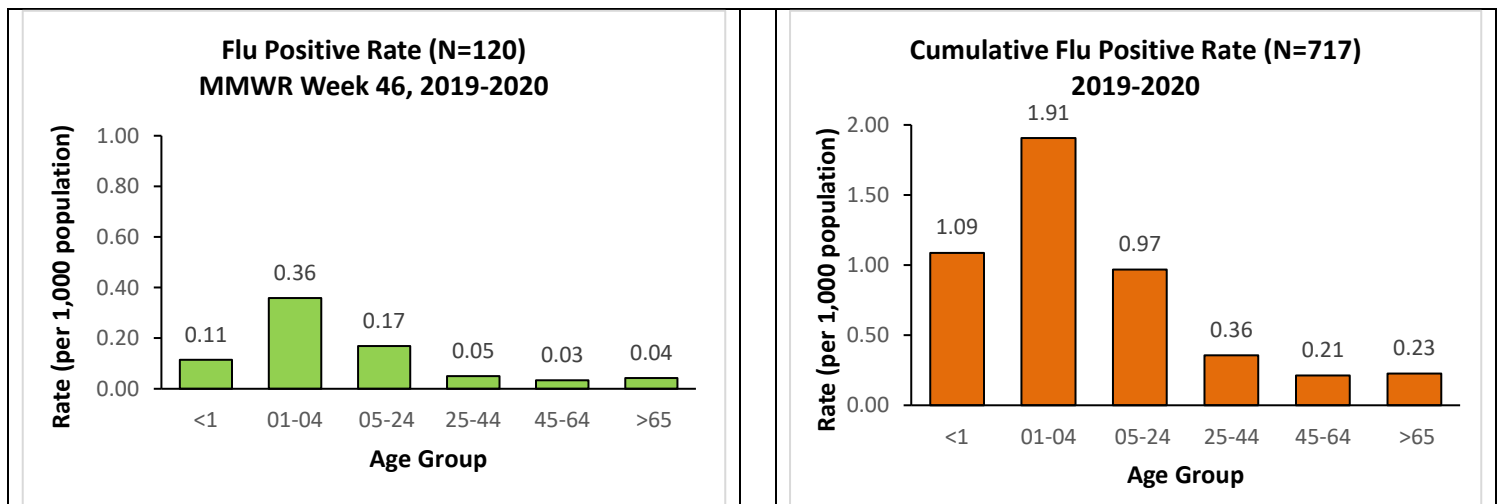
A. INFLUENZA:

- The following reflects laboratory findings for week 46 of the 2019–20 influenza season:
 - A total of **716** specimens have been tested statewide for influenza viruses (positive: 120 [**16.8%**]). (Season to date: 5,014 tested [**14.3%** positive])
 - 391 (54.6%) were screened only by rapid antigen tests with no confirmatory testing.
 - 325 (45.4%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 596 (83.2%) were negative.

Influenza type	Current week 46 (%)	Season to date (%)
Influenza A (H1) ⁷	8 (6.7)	41 (5.7)
Influenza A (H3)	0 (0.0)	6 (0.8)
Influenza A no subtyping	63 (52.5)	223 (31.1)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	5 (4.2)	65 (9.1)
Influenza B no genotyping	44 (36.7)	382 (53.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



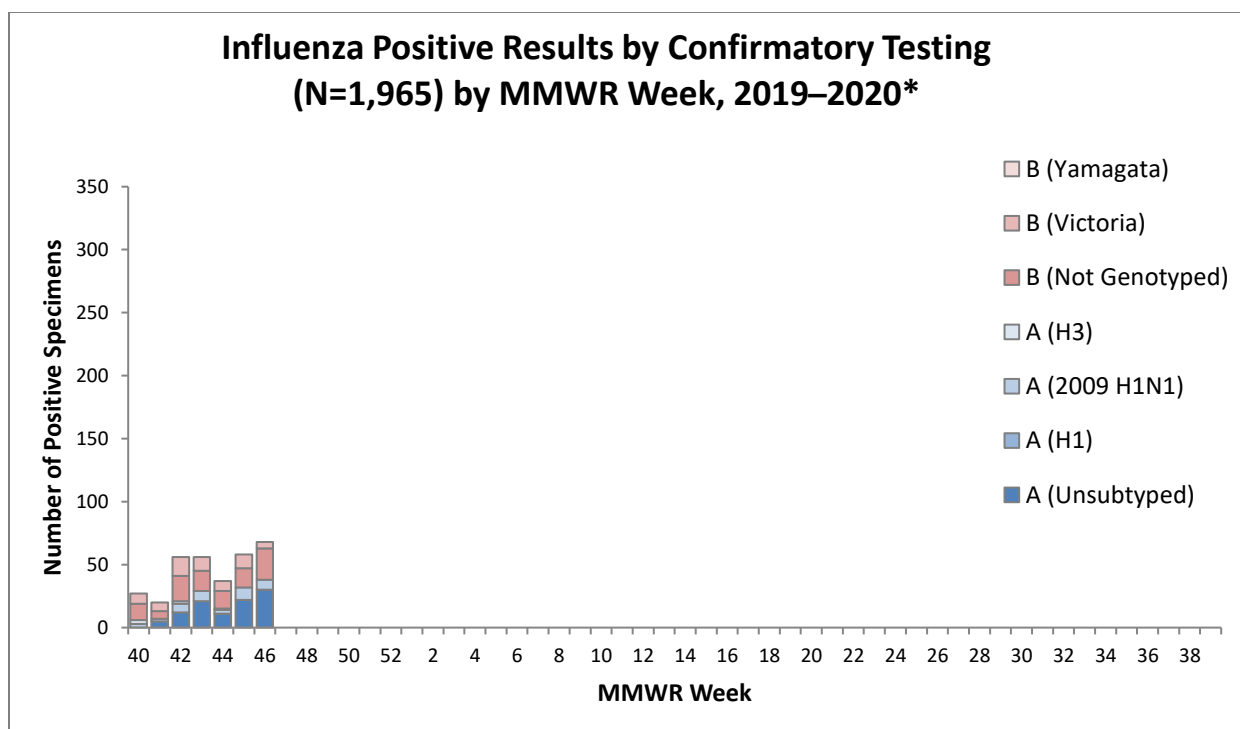
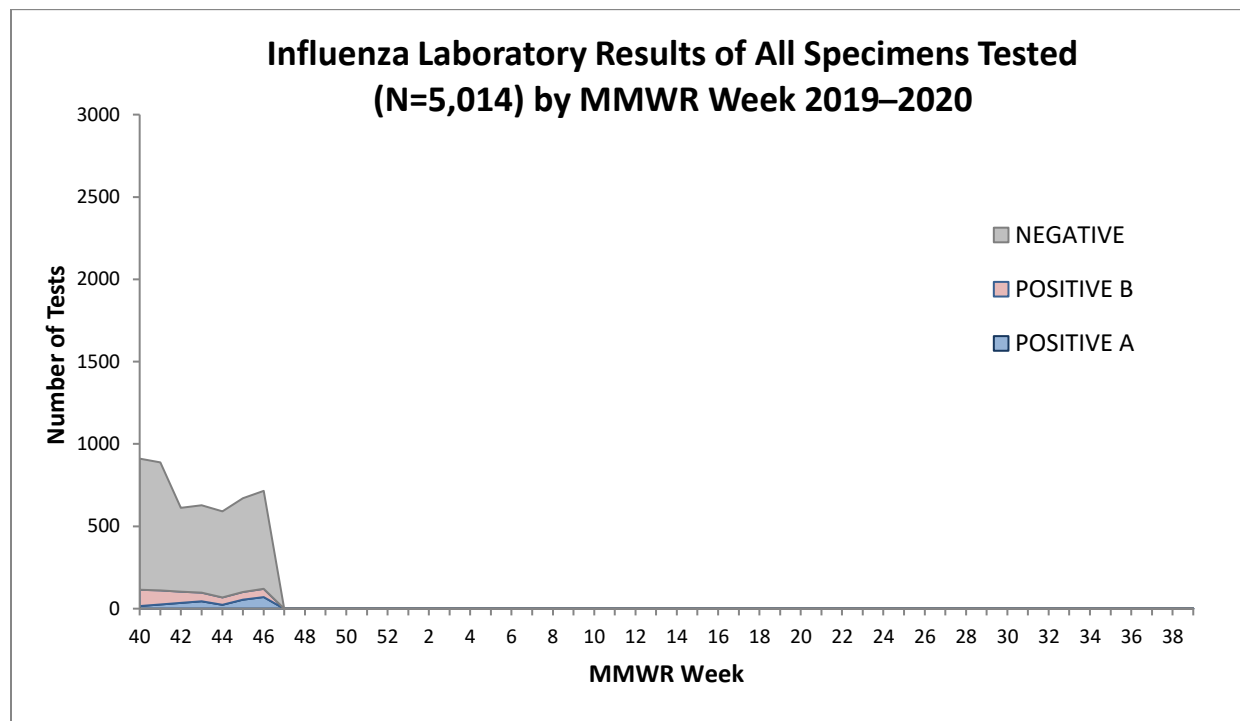
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

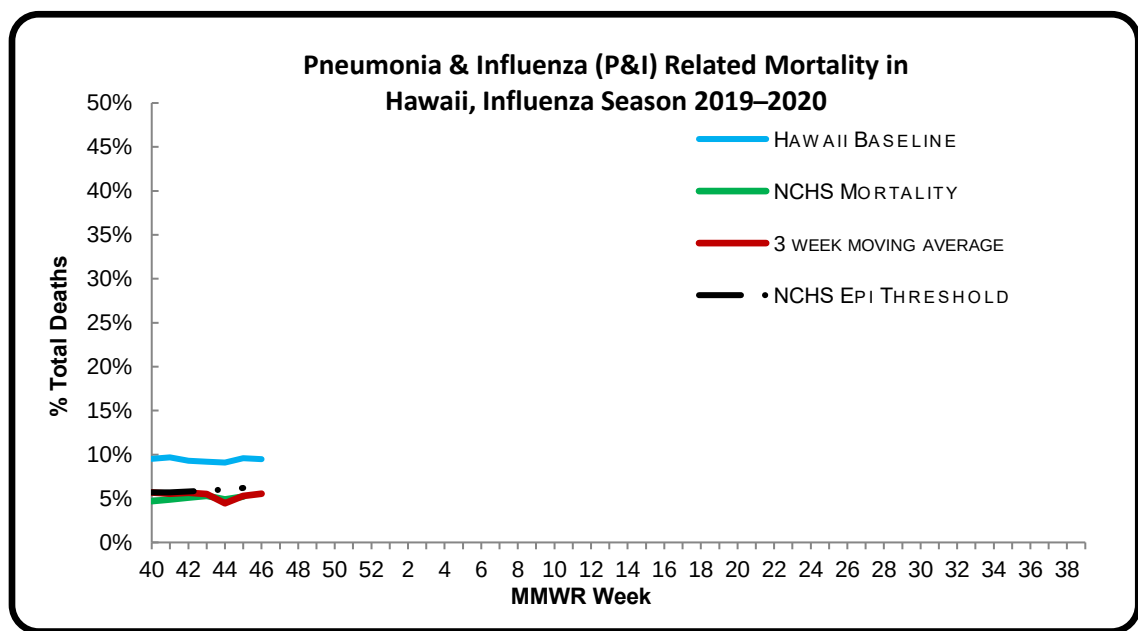
MMWR Week (2019-2020)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
Adenovirus	X		X		X		X																																														
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus						X	X																																														
Respiratory Syncytial Virus	X	X	X	X	X	X	X																																														
Rhinovirus/Enterovirus	X	X	X	X	X	X	X																																														
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X	X	X	X	X																																														
Influenza A (H3)	X		X																																																		
Influenza A (Other seasonal H1)																																																					
Influenza A (unsubtyped)	X	X	X	X	X	X	X																																														
Influenza B	X	X	X	X	X	X	X																																														

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 46** of the current influenza season:

- *5.9% of all deaths that occurred in Hawaii during week 46 were related to pneumonia or influenza. For the current season (season to date: 5.5%), there have been 1,506 deaths from any cause, 83 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).*
- *CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ data for week 46 is unavailable.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, one new influenza-associated pediatric death was reported to CDC during week 46. The death was associated with an influenza A (H1N1)pdm09 virus and occurred during week 45 (week ending November 9, 2019). (2019-2020 season total: 4).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 46.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2018–2019 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

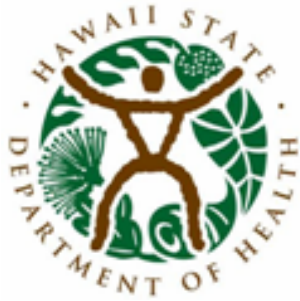
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 47: NOVEMBER 17, 2019–NOVEMBER 23, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 47

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.6%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 9 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	16.8%	Comparable to the previous week. This number means that many, if not all, of the 83.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	14.6%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	4.6%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

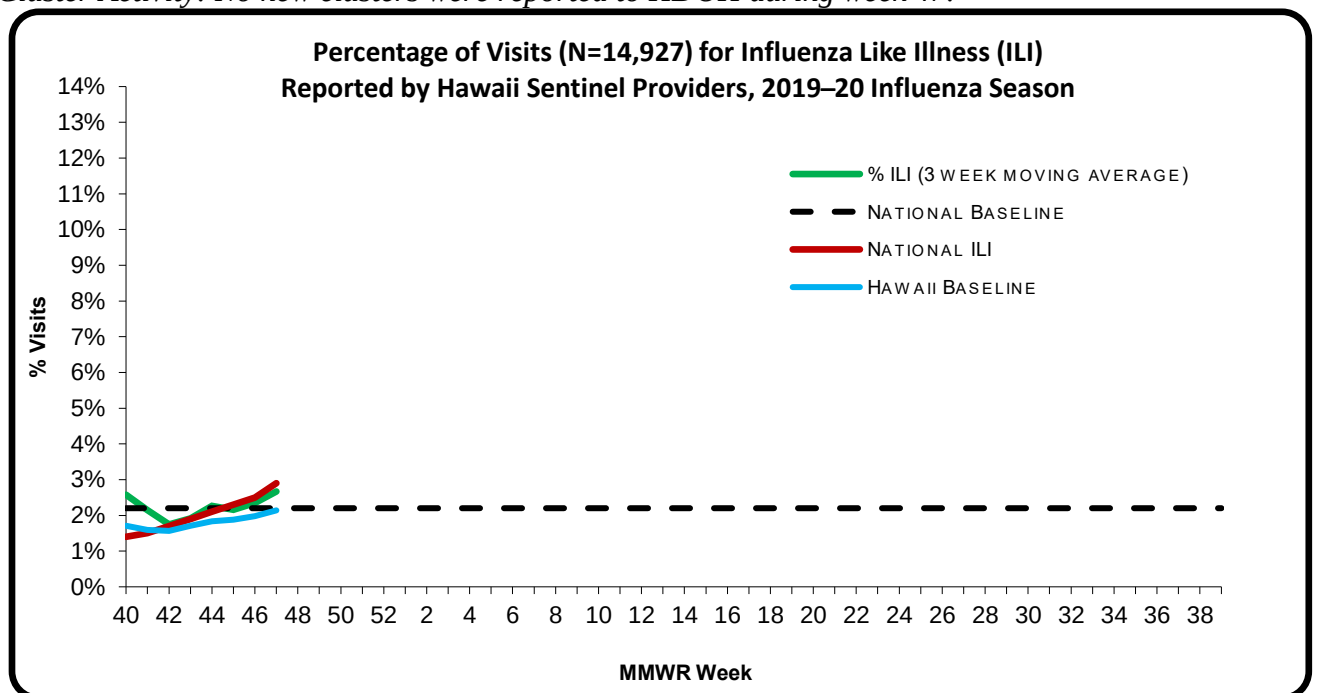
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 47** of the current influenza season:

- **3.6%** (season to date: **2.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**2.9%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Sporadic Activity*⁵.
- *ILI Cluster Activity: No new clusters were reported to HDOH during week 47.*



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

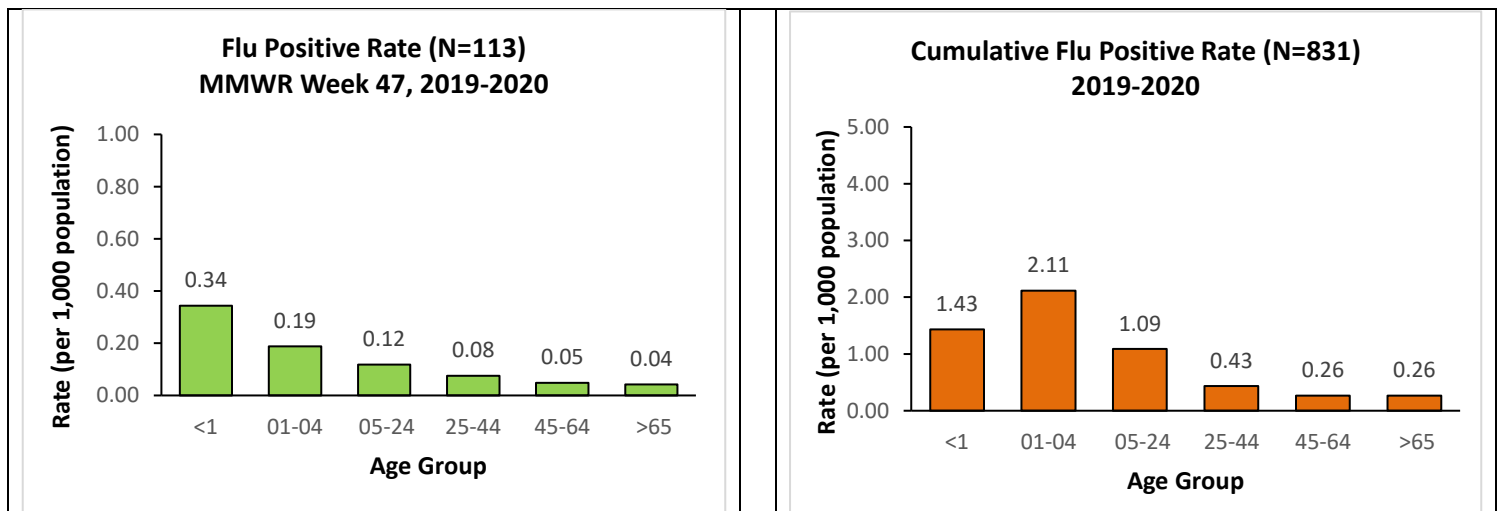
A. INFLUENZA:

- The following reflects laboratory findings for week 47 of the 2019–20 influenza season:
 - A total of **673** specimens have been tested statewide for influenza viruses (positive: 113 [**16.8%**]). (Season to date: 5,689 tested [**14.6%** positive])
 - 356 (52.9%) were screened only by rapid antigen tests with no confirmatory testing.
 - 317 (47.1%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 560 (83.2%) were negative.

Influenza type	Current week 47 (%)	Season to date (%)
Influenza A (H1) ⁷	5 (4.4)	52 (6.3)
Influenza A (H3)	3 (2.7)	10 (1.2)
Influenza A no subtyping	65 (57.5)	282 (33.9)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	65 (7.8)
Influenza B no genotyping	40 (35.4)	422 (50.8)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2018–19 influenza season.⁸



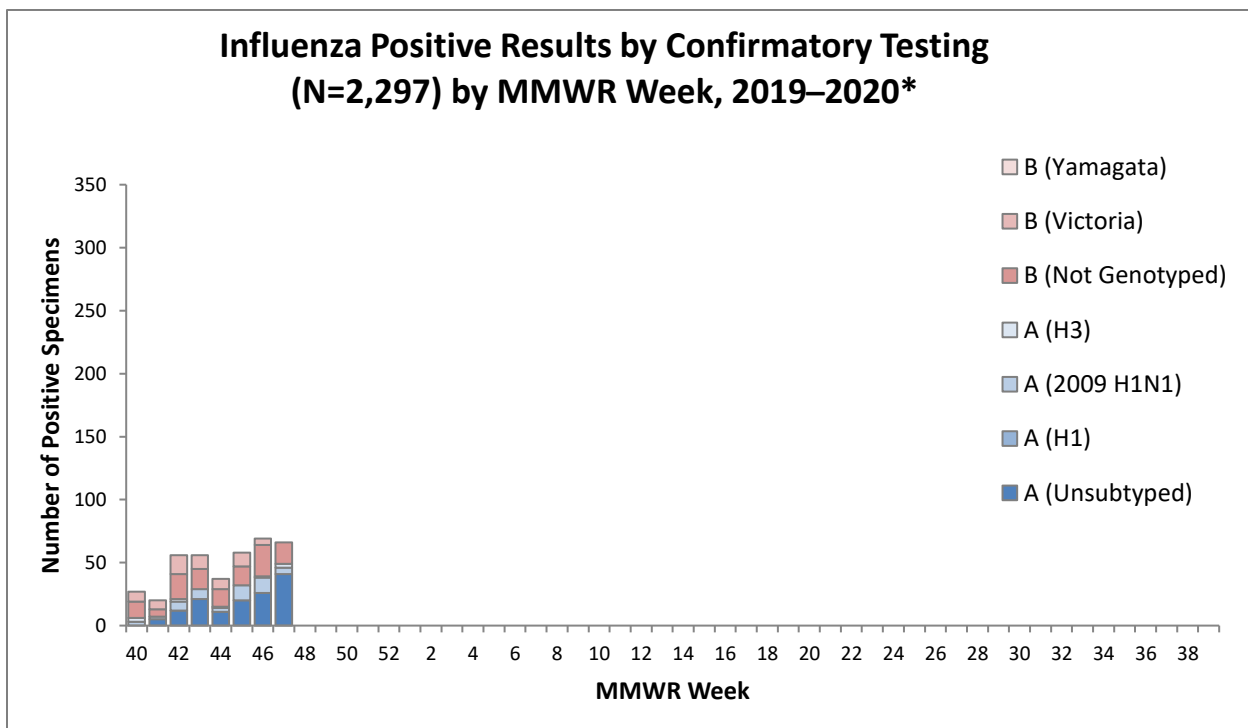
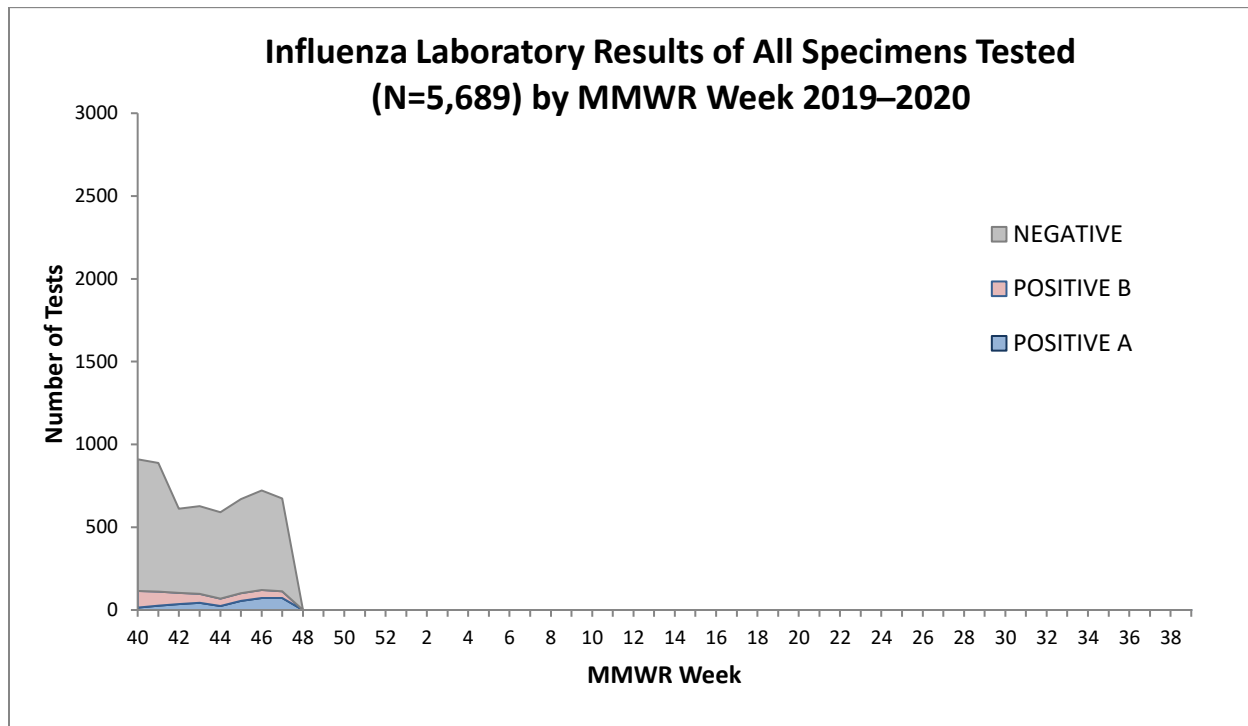
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

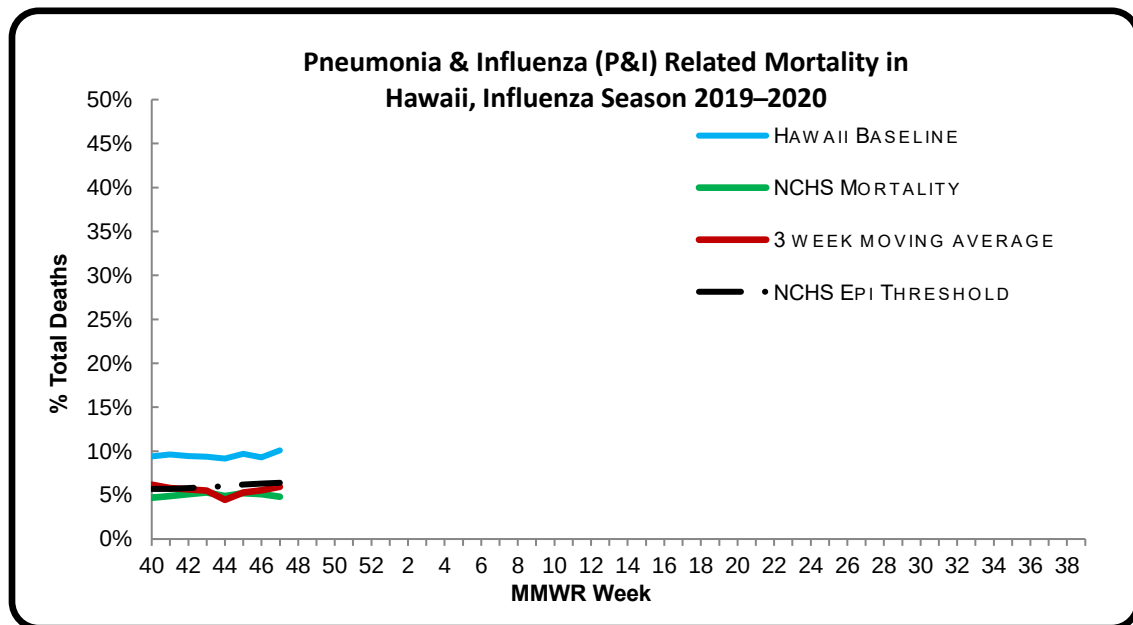
MMWR Week (2019-2020)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
Adenovirus	X		X		X		X	X																																													
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus						X	X	X																																													
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X																																													
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X																																													
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X	X	X	X	X	X																																													
Influenza A (H3)	X		X					X																																													
Influenza A (Other seasonal H1)																																																					
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X																																													
Influenza B	X	X	X	X	X	X	X	X																																													

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 47** of the current influenza season:

- **4.6%** of all deaths that occurred in Hawaii during week 47 were related to pneumonia or influenza. For the current season (season to date: **5.4%**), there have been 1,702 deaths from any cause, 92 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (**4.8%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**6.4%**) (i.e., inside the 95% confidence interval) for week 47.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, one new influenza-associated pediatric death was reported to CDC during week 47. The death was associated with an influenza B virus for which the lineage was not determined and occurred during week 47 (week ending November 23, 2019). (2019–2020 season total: 5).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 47.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2018–2019 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

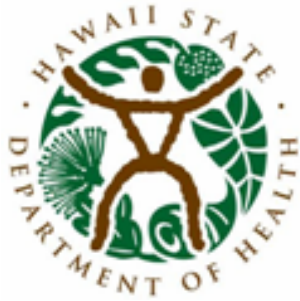
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 48: NOVEMBER 24, 2019–NOVEMBER 30, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 48

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	6.2%	Higher than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 10 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	20.7%	Higher than the previous week. This number means that many, if not all, of the 79.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	15.3%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	3.9%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

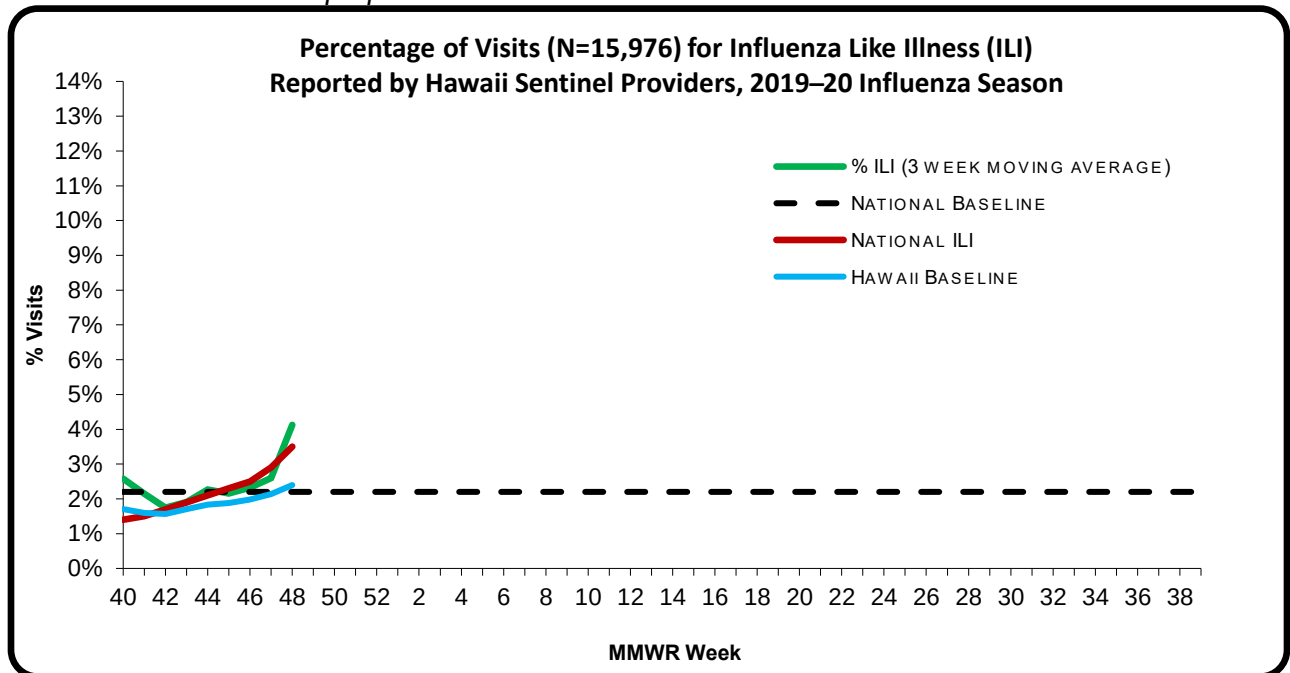
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 48** of the current influenza season:

- **6.2%** (season to date: **2.4%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**3.5%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity: One new cluster was reported to HDOH during week 48. This cluster occurred at a hospital on Oahu and included cases of influenza A.*



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

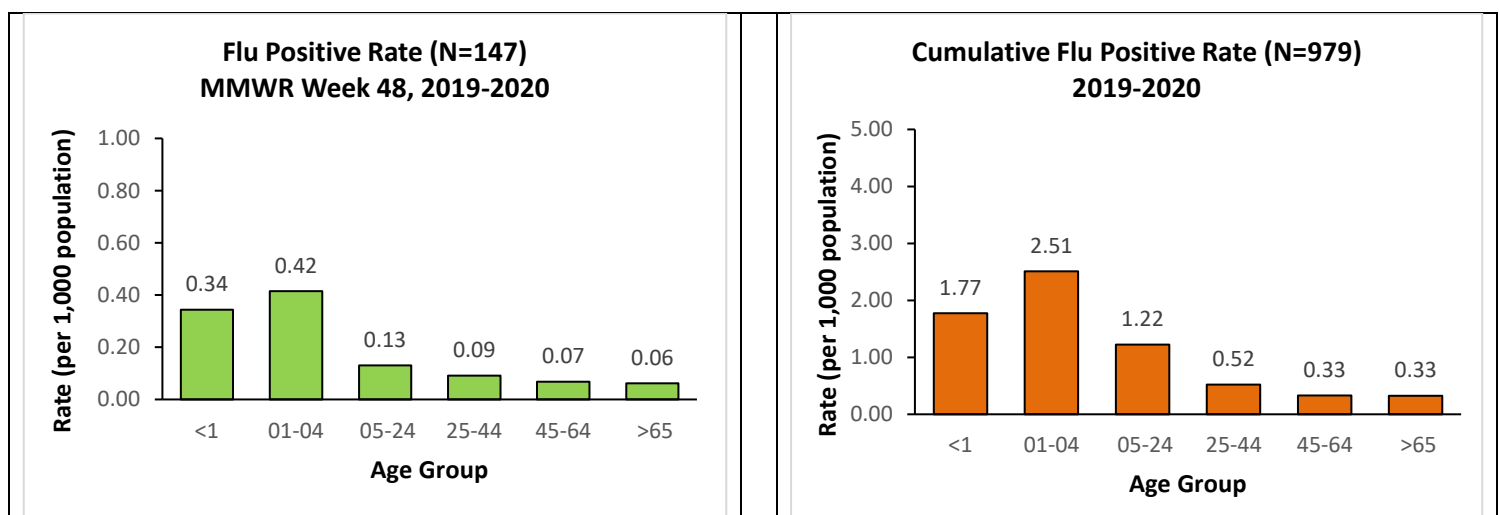
A. INFLUENZA:

- The following reflects laboratory findings for week 48 of the 2019–20 influenza season:
 - A total of **709** specimens have been tested statewide for influenza viruses (positive: 147 [20.7%]). (Season to date: 6,403 tested [15.3% positive])
 - 346 (48.8%) were screened only by rapid antigen tests with no confirmatory testing.
 - 363 (51.2%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 562 (79.3%) were negative.

Influenza type	Current week 48 (%)	Season to date (%)
Influenza A (H1) ⁷	0 (0.0)	52 (5.3)
Influenza A (H3)	0 (0.0)	10 (1.0)
Influenza A no subtyping	104 (70.7)	386 (39.4)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	79 (8.1)
Influenza B no genotyping	43 (29.3)	452 (46.2)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



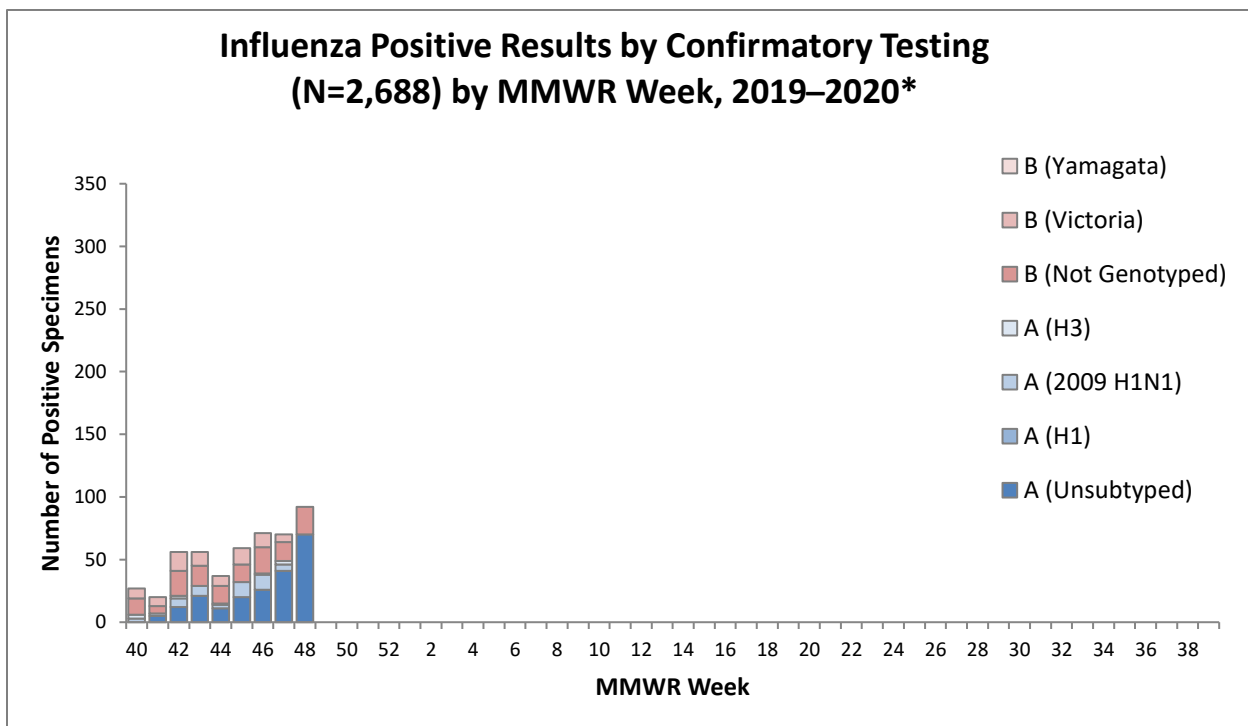
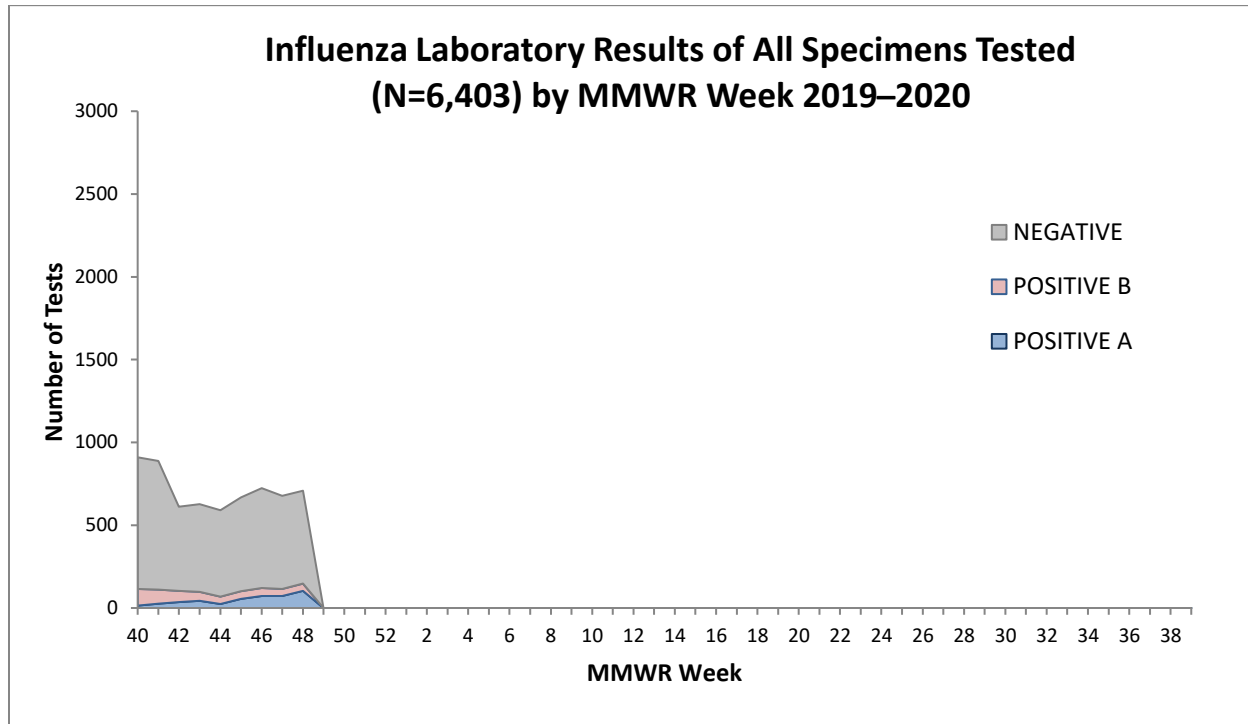
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

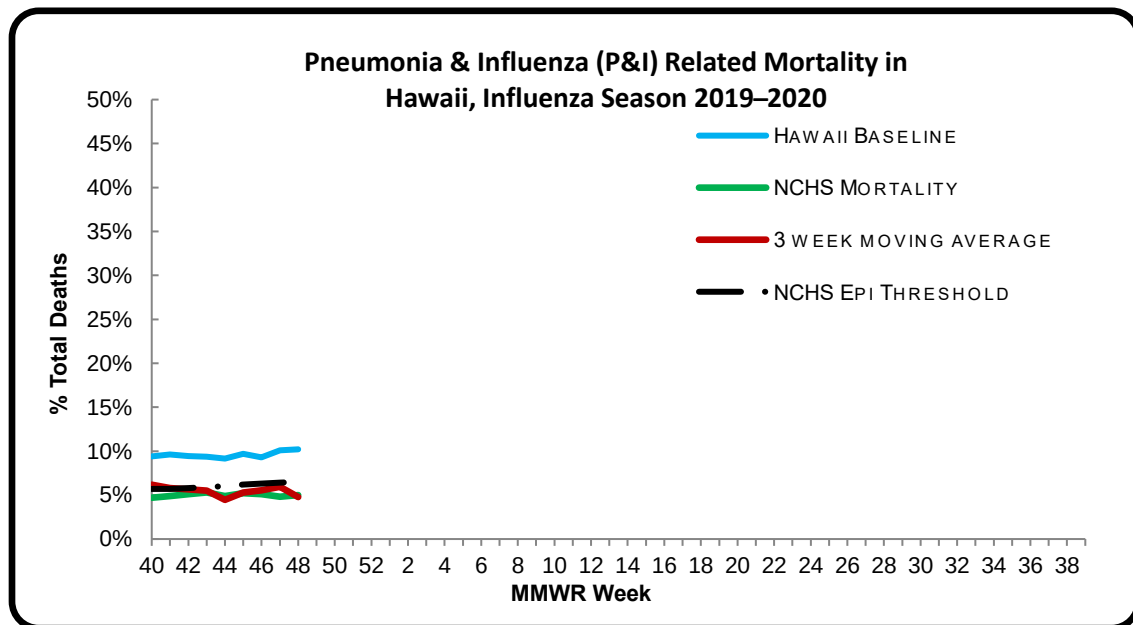
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III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 48** of the current influenza season:

- *3.9% of all deaths that occurred in Hawaii during week 48 were related to pneumonia or influenza. For the current season (season to date: 5.3%), there have been 1,884 deaths from any cause, 99 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (5.0%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.5%) (i.e., inside the 95% confidence interval) for week 48.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, one new influenza-associated pediatric death was reported to CDC during week 48. The death was associated with an influenza B virus for which the lineage was not determined and occurred during week 48 (week ending November 30, 2019). (2019-2020 season total: 6).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 48.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **September 27, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

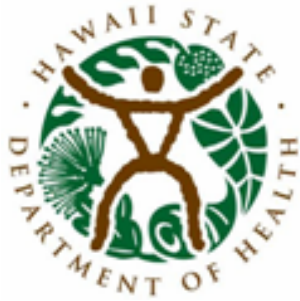
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HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 49: DECEMBER 1, 2019–DECEMBER 7, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 49

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.7%	Lower than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 11 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	26.1%	Higher than the previous week. This number means that many, if not all, of the 73.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	17.2%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.7%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	4	

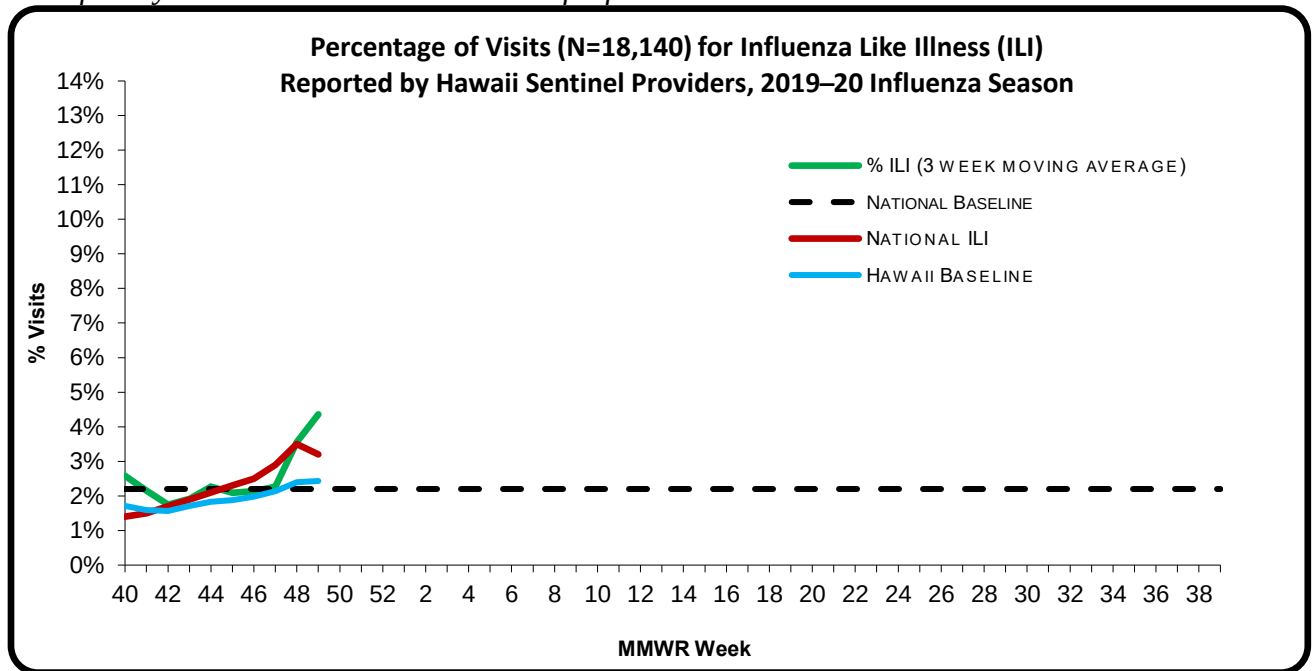
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 49** of the current influenza season:

- **4.7%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**3.2%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 49. This cluster occurred at a long-term care facility on Oahu and included cases of influenza A.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

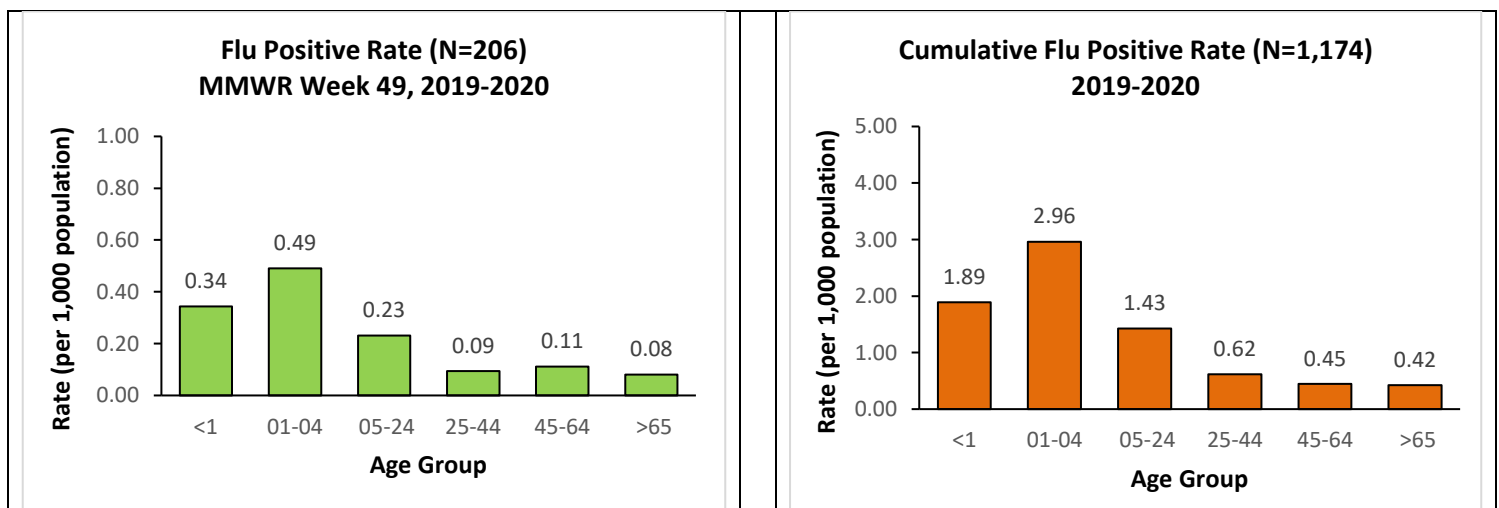
A. INFLUENZA:

- The following reflects laboratory findings for week 49 of the 2019–20 influenza season:
 - A total of **788** specimens have been tested statewide for influenza viruses (positive: 206 [26.1%]). (Season to date: 6,830 tested [17.2% positive])
 - 355 (45.1%) were screened only by rapid antigen tests with no confirmatory testing.
 - 433 (54.9%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 582 (73.9%) were negative.

Influenza type	Current week 49 (%)	Season to date (%)
Influenza A (H1) ⁷	34 (16.5)	121 (10.3)
Influenza A (H3)	1 (0.5)	13 (1.1)
Influenza A no subtyping	131 (63.6)	482 (41.1)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	6 (2.9)	91 (7.8)
Influenza B no genotyping	34 (16.5)	467 (39.8)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



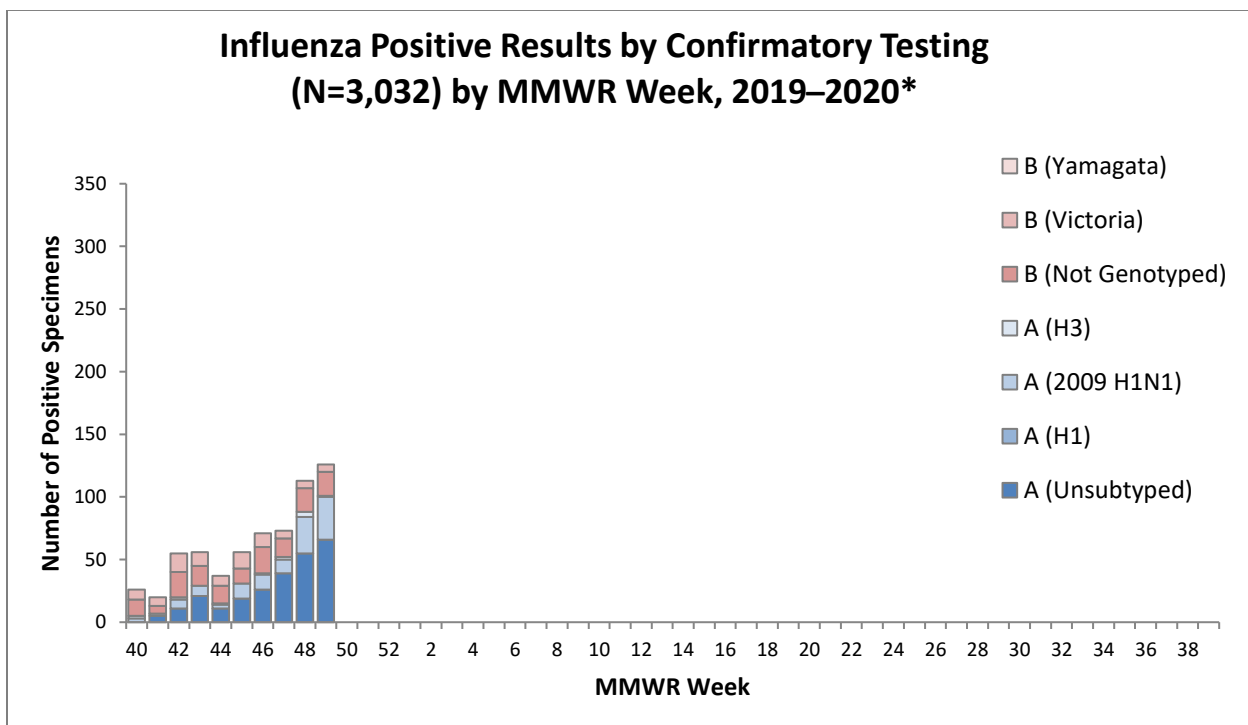
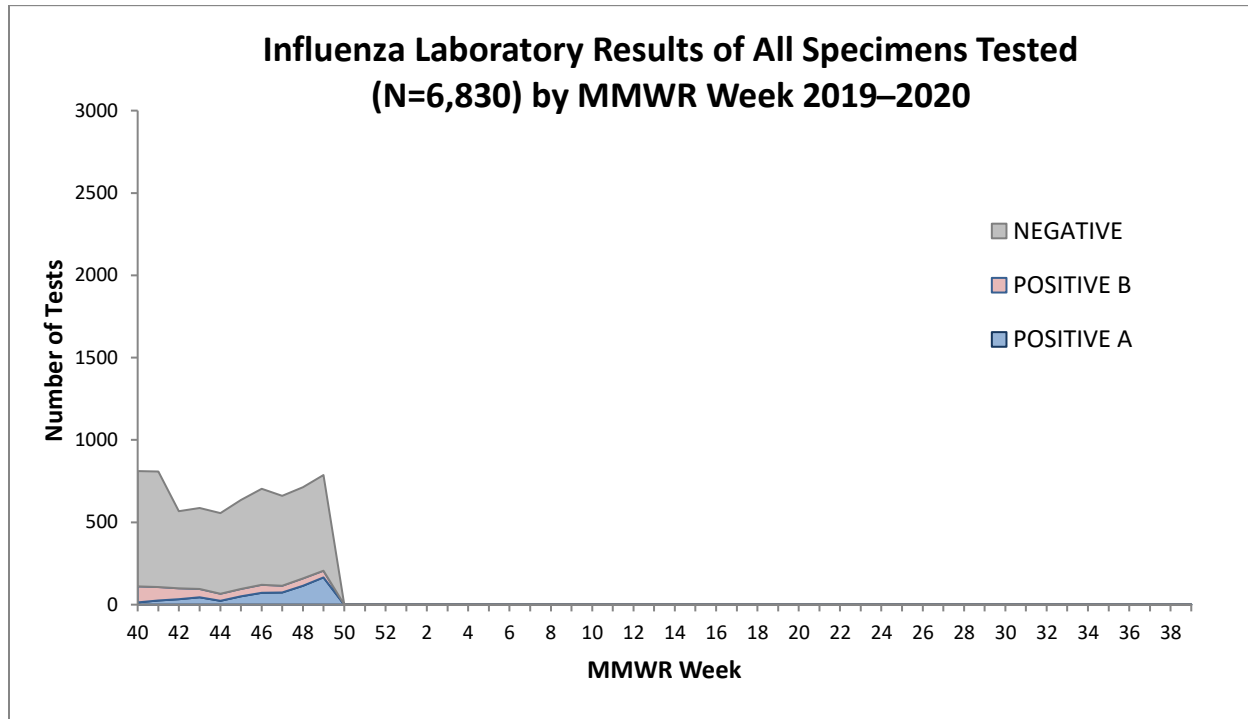
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

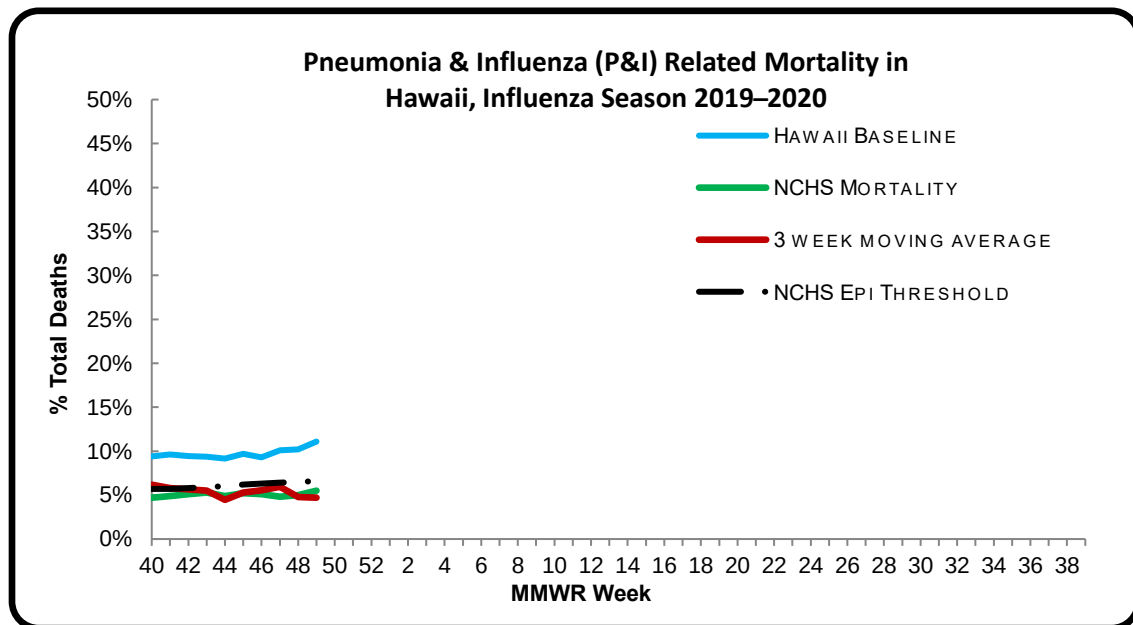
MMWR Week (2019-2020)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
Adenovirus	X		X		X		X	X	X	X																																											
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus						X	X	X	X	X																																											
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X																																											
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X																																											
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X																																											
Influenza A (H3)	X		X		X		X	X	X	X																																											
Influenza A (Other seasonal H1)																																																					
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X																																											
Influenza B	X	X	X	X	X	X	X	X	X	X																																											

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 49** of the current influenza season:

- *5.7% of all deaths that occurred in Hawaii during week 49 were related to pneumonia or influenza. For the current season (season to date: 5.3%), there have been 2,130 deaths from any cause, 113 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (5.5%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.6%) (i.e., inside the 95% confidence interval) for week 49.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, four new influenza-associated pediatric deaths were reported to CDC during week 49. One death occurred during week 47 (week ending November 23, 2019) and was associated with an influenza A virus for which no subtyping was performed. Three deaths occurred during week 48 (week ending November 30, 2019)

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

including one associated with an influenza B/Victoria virus, one associated with an influenza B virus with no lineage determined, and one associated with an influenza A(H1N1)pdm09 virus. (2019-2020 season total: 10).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 49.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **November 25, 2019**. Since the last update, three new laboratory-confirmed human cases of influenza A(H9N2) virus infection were reported. One was detected in a 4-year-old girl from China who had mild illness but was hospitalized and had exposure to backyard poultry. A second case was reported in a 5-year-old from China who had mild illness and recovered and had exposure to a poultry slaughterhouse. The third case was reported in a 17-month-old boy from India who has recovered and had no history of direct exposure to poultry reported. No further cases among contacts of the three cases were reported.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

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3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
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37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
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42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
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50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 50: DECEMBER 8, 2019–DECEMBER 14, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 50

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.5%	Lower than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 11 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	29.5%	Higher than the previous week. This number means that many, if not all, of the 70.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	18.5%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	9	

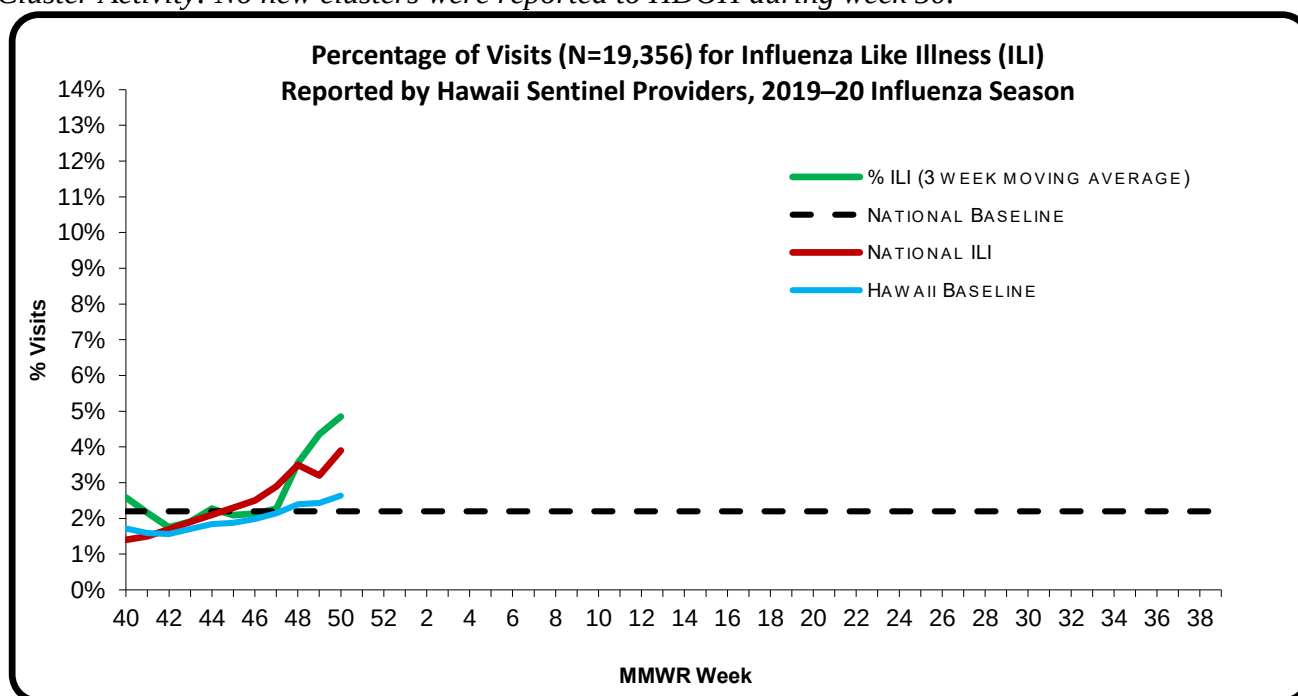
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 50** of the current influenza season:

- **4.5%** (season to date: **2.6%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**3.9%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Sporadic Activity*⁵.
- *ILI Cluster Activity: No new clusters were reported to HDOH during week 50.*



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

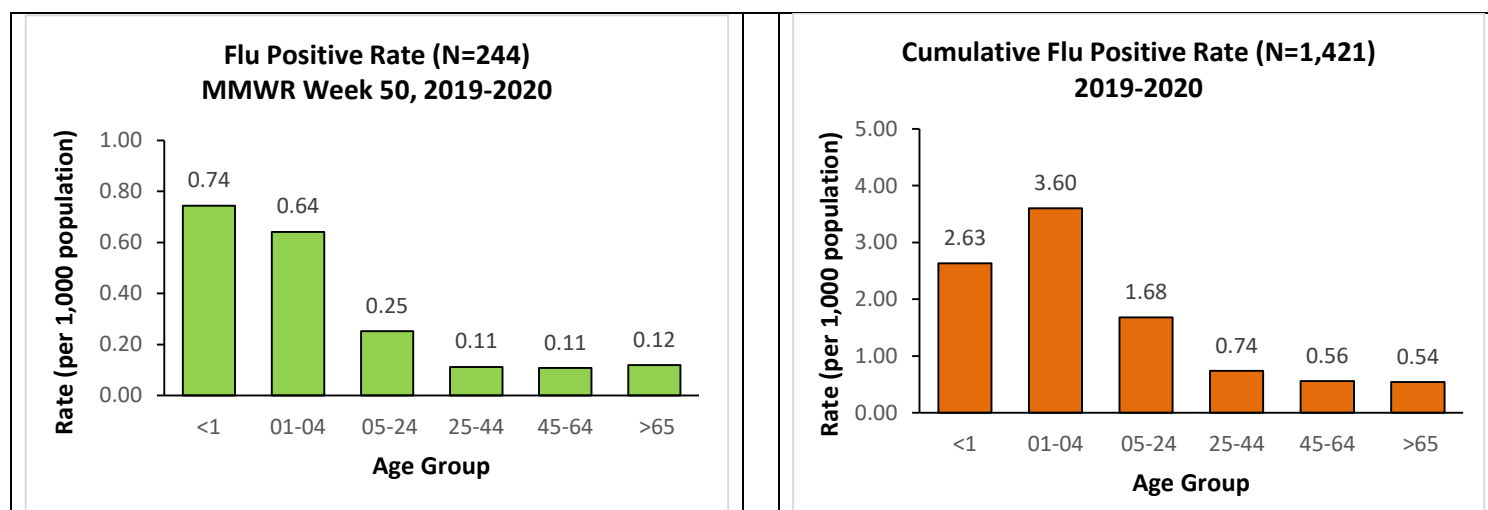
A. INFLUENZA:

- The following reflects laboratory findings for week 50 of the 2019–20 influenza season:
 - A total of **826** specimens have been tested statewide for influenza viruses (positive: 244 [29.5%]). (Season to date: 7,663 tested [18.5% positive])
 - 393 (47.6%) were screened only by rapid antigen tests with no confirmatory testing.
 - 433 (52.4%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 582 (70.5%) were negative.

Influenza type	Current week 50 (%)	Season to date (%)
Influenza A (H1) ⁷	26 (10.7)	147 (10.3)
Influenza A (H3)	2 (0.8)	15 (1.1)
Influenza A no subtyping	182 (74.6)	666 (46.9)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	91 (6.4)
Influenza B no genotyping	34 (13.9)	502 (35.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



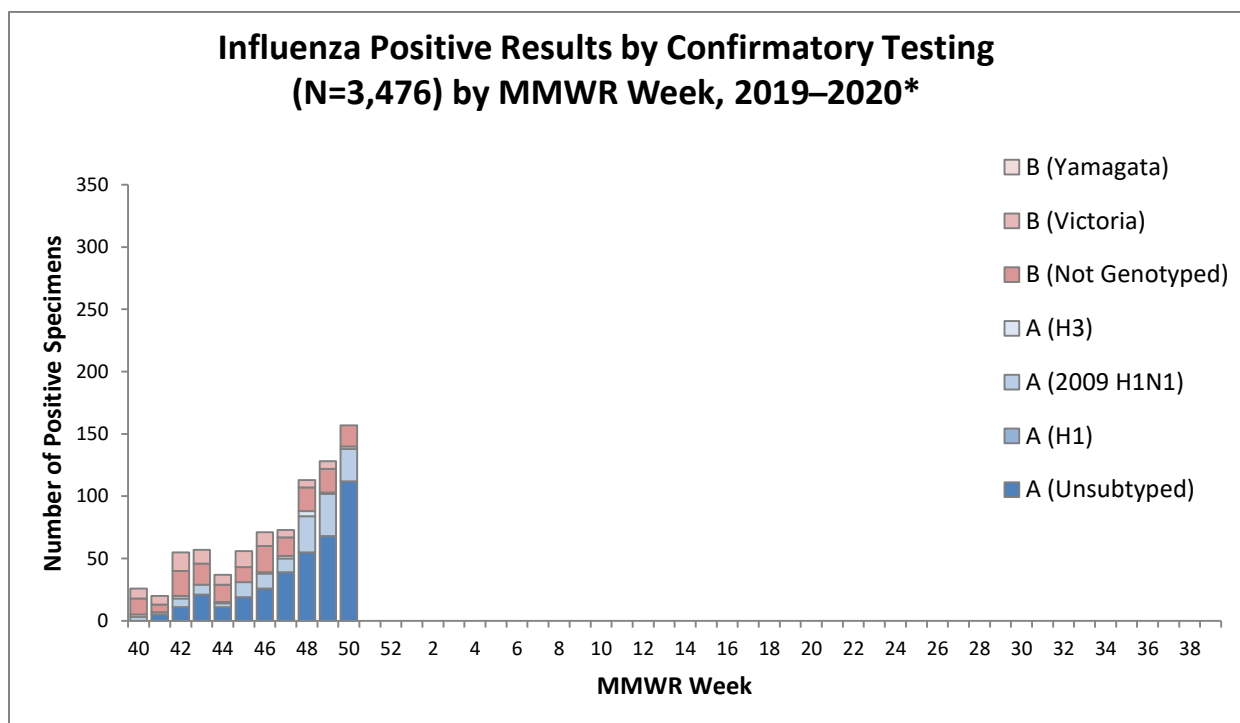
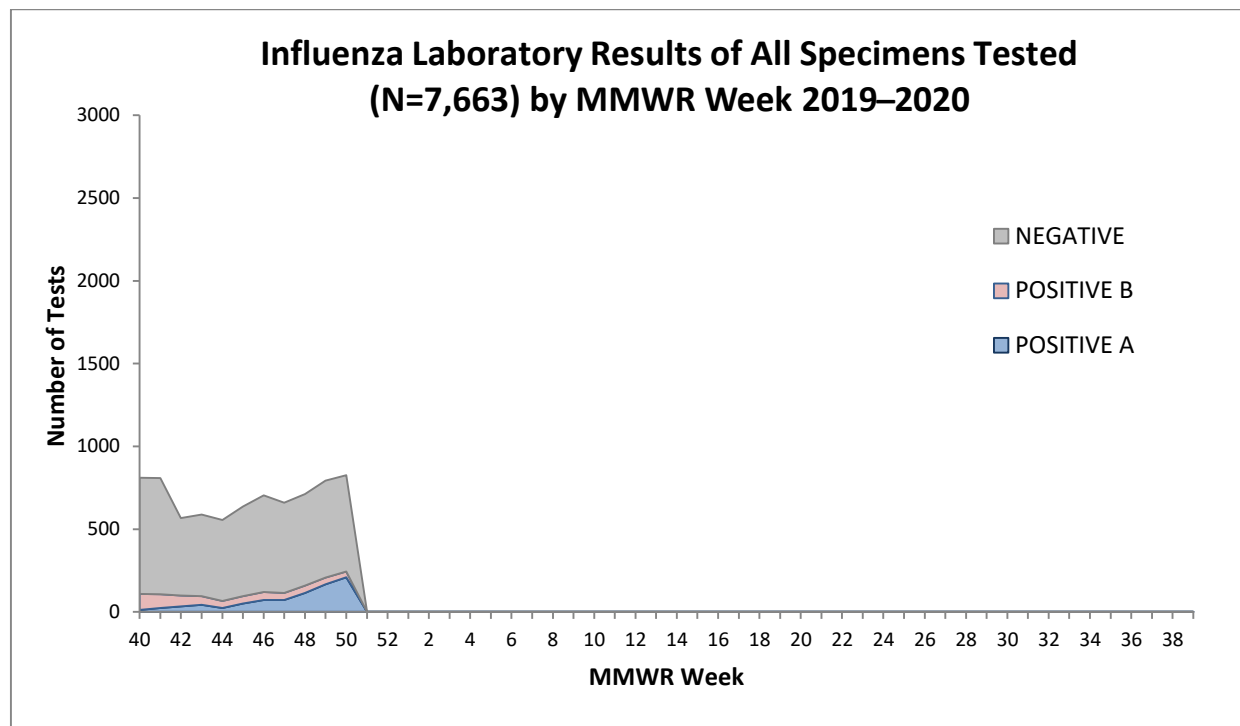
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

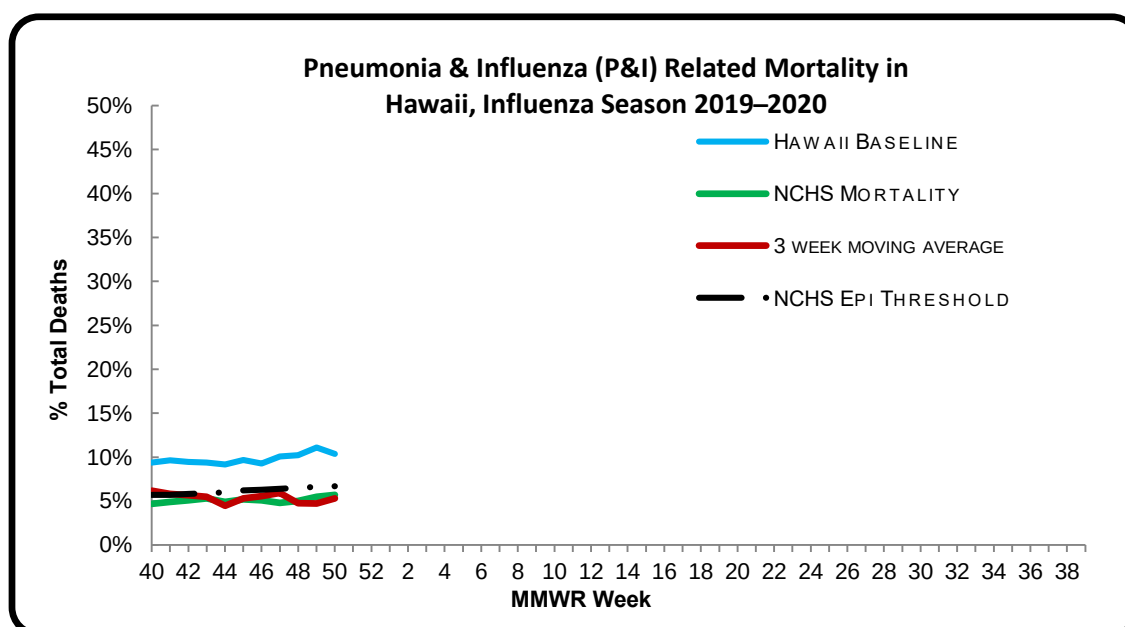
[illegible]

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 50** of the current influenza season:

- **6.4%** of all deaths that occurred in Hawaii during week 50 were related to pneumonia or influenza. For the current season (season to date: **5.4%**), there have been 2,364 deaths from any cause, 128 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (5.7%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.7%) (i.e., inside the 95% confidence interval) for week 50.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, nine new influenza-associated pediatric deaths occurring between week 44 (week ending November 2, 2019) and week 50 (week ending December 14, 2019) were reported to CDC during week 50. Two deaths

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

were associated with an influenza A(H1N1)pdm09 virus infection and seven were associated with influenza B viruses, including two which were B/Victoria viruses. (2019-2020 season total: 19).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 50.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **November 25, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
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7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
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22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
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45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 51: DECEMBER 15, 2019–DECEMBER 21, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 51

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.4%	Lower than the previous week. Comparable to Hawaii's historical baseline, lower than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 12 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	33.4%	Higher than the previous week. This number means that many, if not all, of the 66.6% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.4%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.9%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	3	

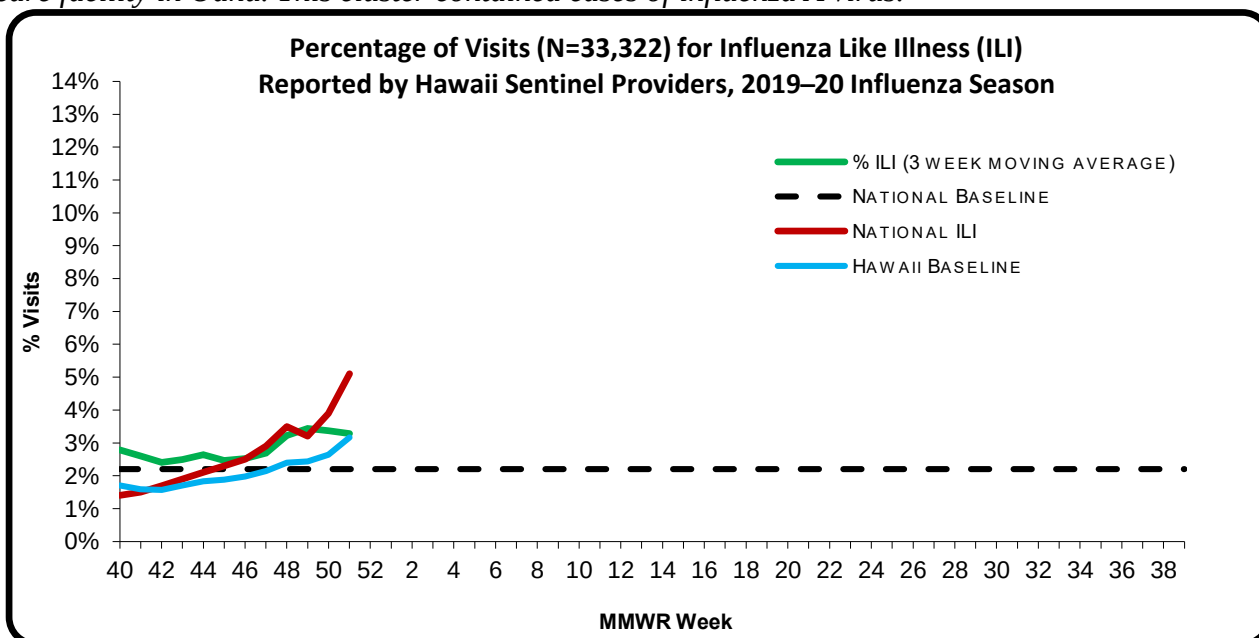
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 51** of the current influenza season:

- **3.4%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**5.1%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 51. This cluster occurred at a long-term care facility in Oahu. This cluster contained cases of influenza A virus.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

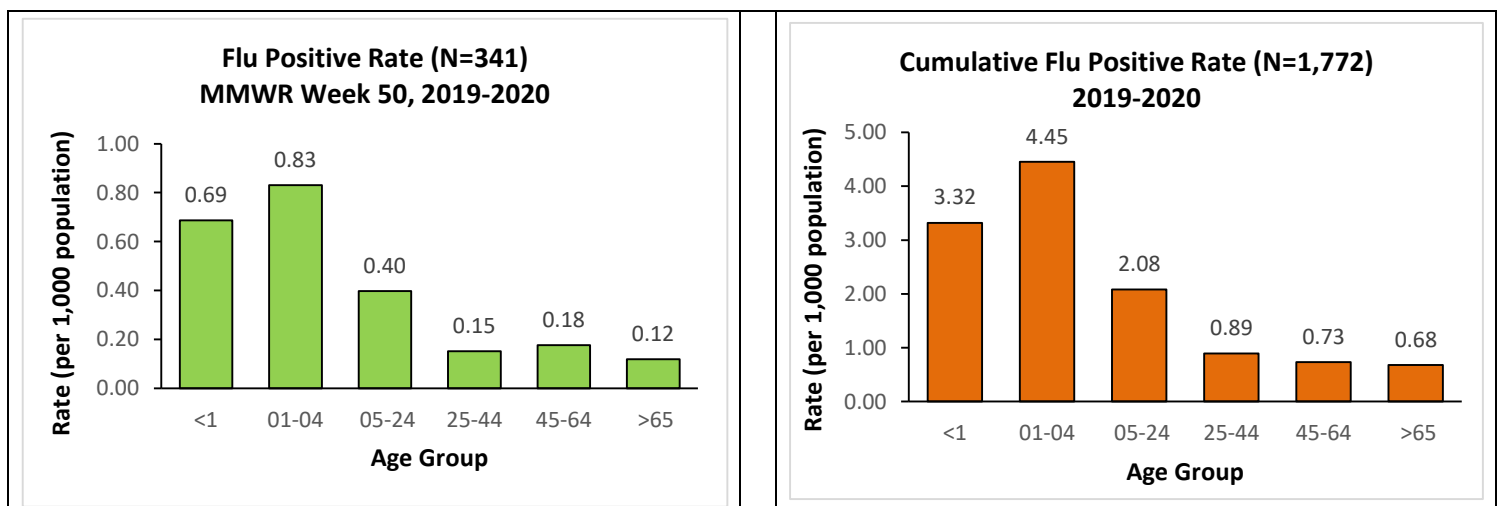
A. INFLUENZA:

- The following reflects laboratory findings for week 51 of the 2019–20 influenza season:
 - A total of **1022** specimens have been tested statewide for influenza viruses (positive: 341 [33.4%]). (Season to date: 8,702 tested [20.4% positive])
 - 501 (49.0%) were screened only by rapid antigen tests with no confirmatory testing.
 - 521 (51.0%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 681 (66.6%) were negative.

Influenza type	Current week 51 (%)	Season to date (%)
Influenza A (H1) ⁷	9 (2.6)	183 (10.3)
Influenza A (H3)	0 (0.0)	15 (0.8)
Influenza A no subtyping	282 (82.7)	930 (52.5)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	1 (0.3)	100 (5.6)
Influenza B no genotyping	49 (14.4)	544 (30.7)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



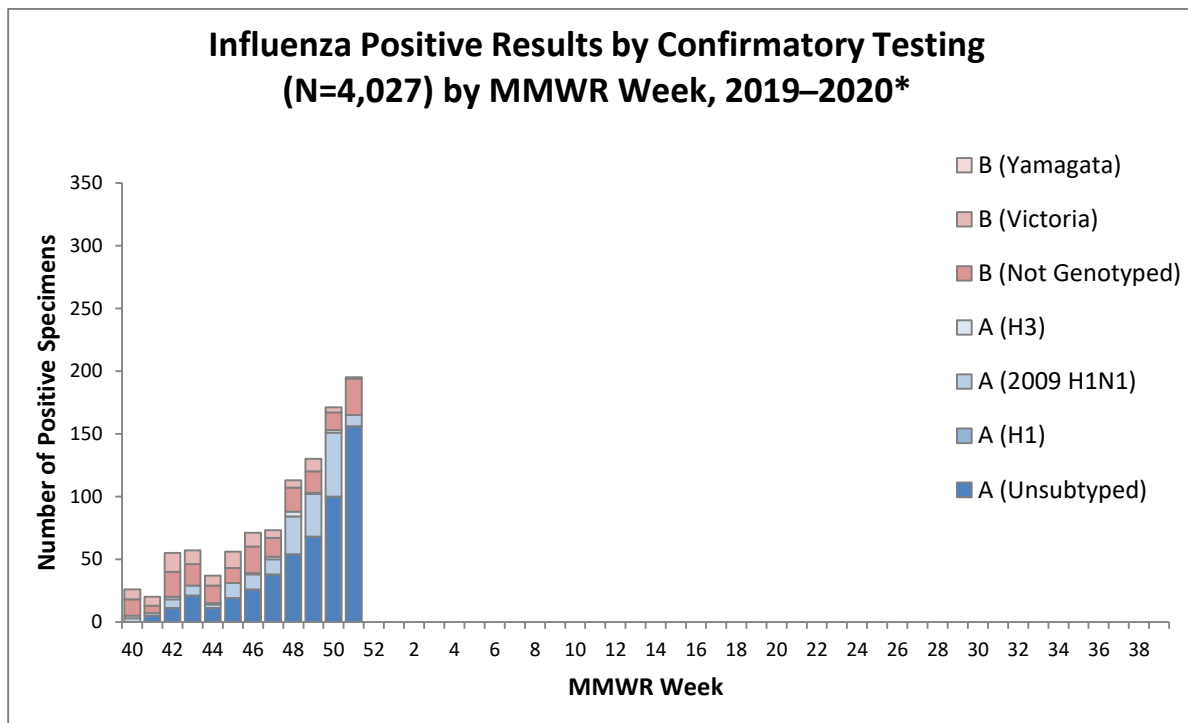
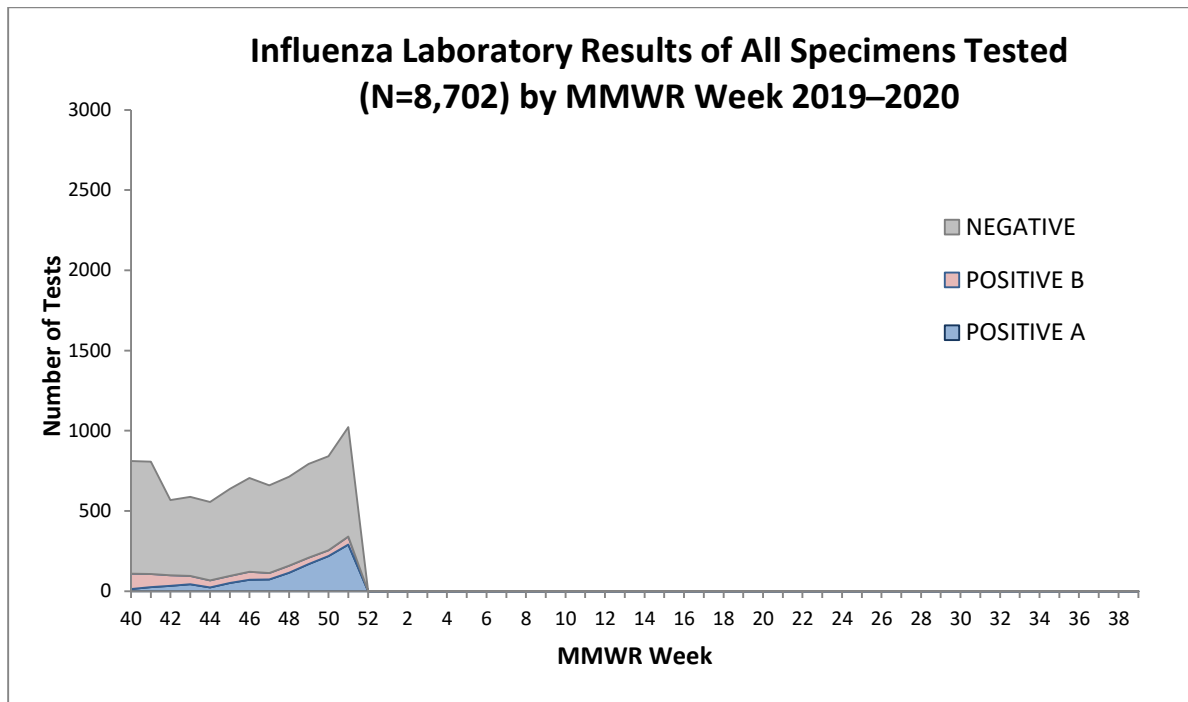
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

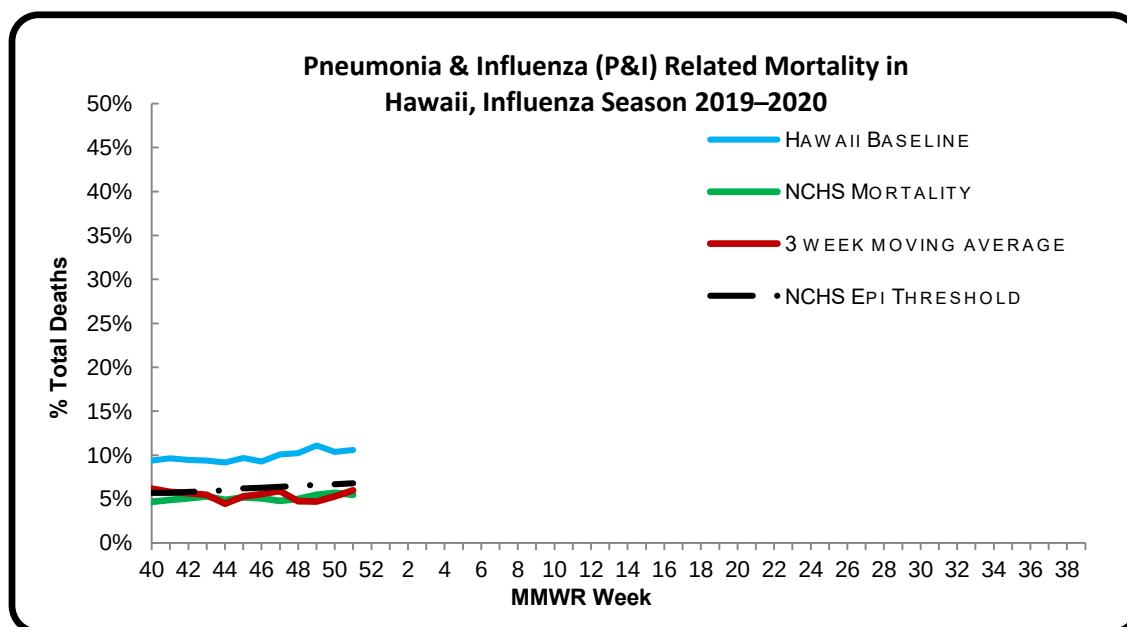
[illegible]

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 51** of the current influenza season:

- *5.9% of all deaths that occurred in Hawaii during week 51 were related to pneumonia or influenza. For the current season (season to date: 5.5%), there have been 2,585 deaths from any cause, 141 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (5.5%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.8%) (i.e., inside the 95% confidence interval) for week 51.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, three influenza-associated pediatric deaths occurring in weeks 49 (the week ending December 7, 2019) and 51 (the week ending December 21, 2019) were reported to CDC during week 51. All three were associated with influenza B viruses. (2019-2020 season total: 22).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 51.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **November 25, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

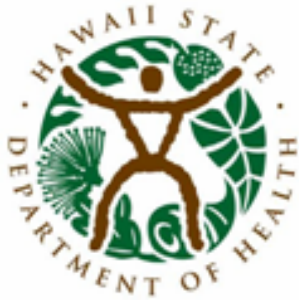
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 52: DECEMBER 22, 2019–DECEMBER 28, 2019

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 52

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.1%	Higher than the previous week. Comparable to Hawaii's historical baseline, lower than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 13 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	35.9%	Higher than the previous week. This number means that many, if not all, of the 64.1% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.1%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.0%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	5	

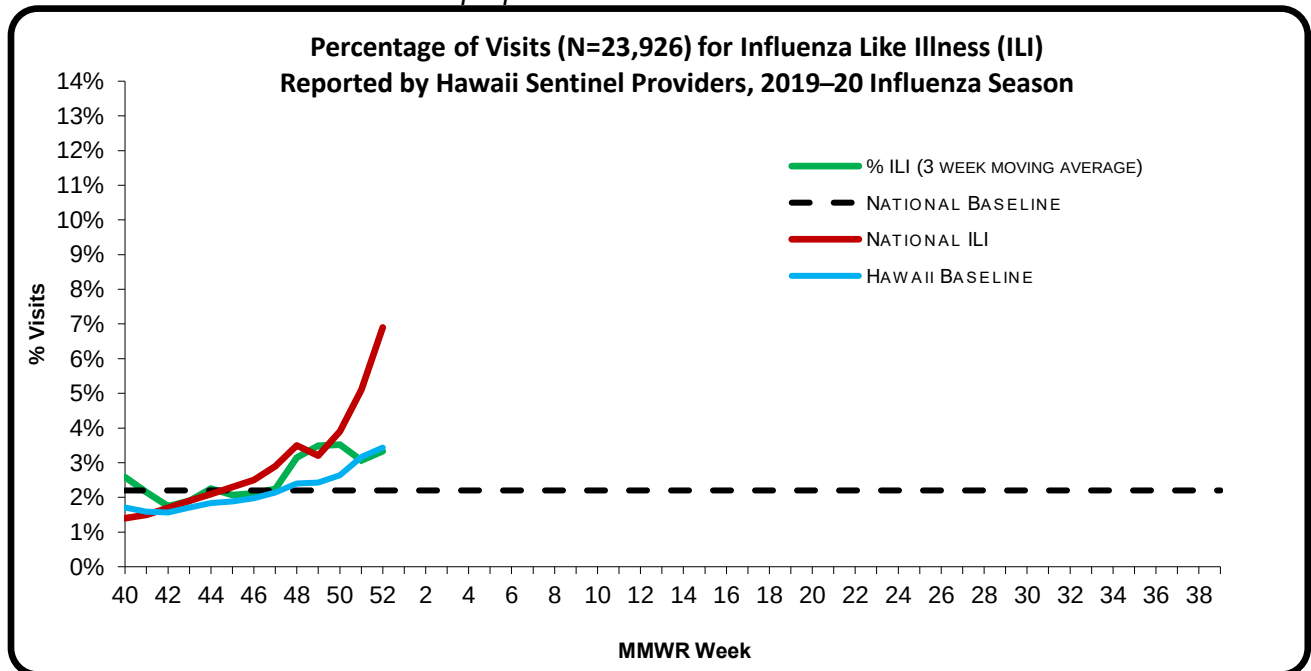
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 52** of the current influenza season:

- **4.1%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**6.9%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 52. This cluster occurred at a school on Oahu. This cluster contained cases of influenza A virus.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

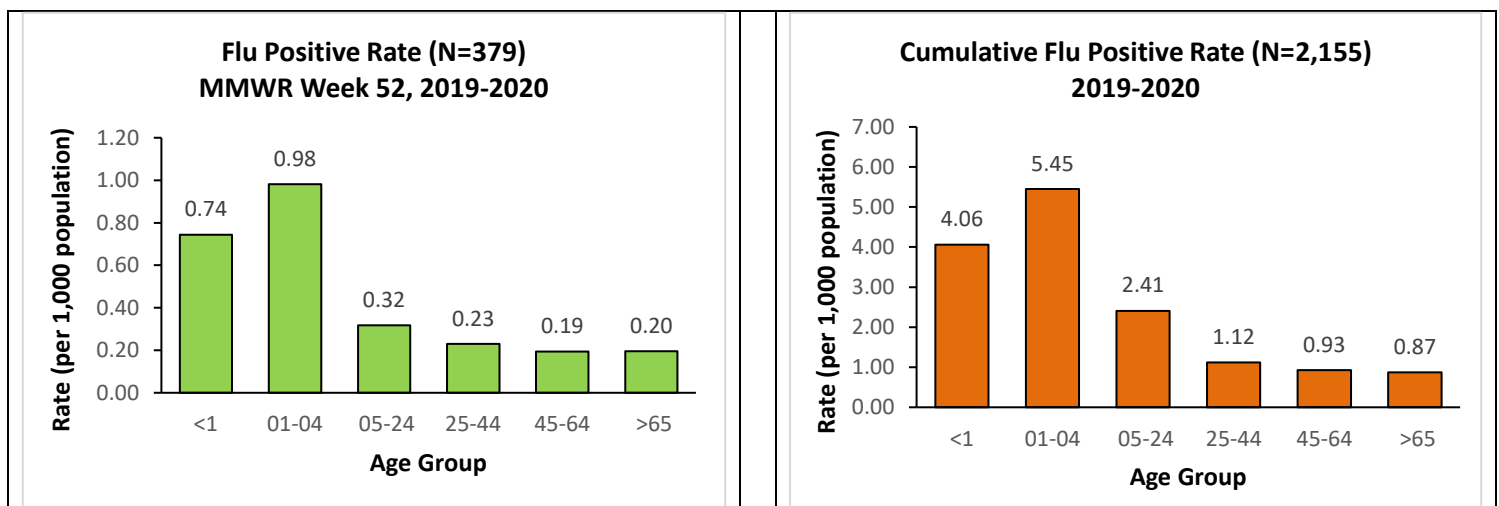
A. INFLUENZA:

- The following reflects laboratory findings for week 52 of the 2019–20 influenza season:
 - A total of **1,056** specimens have been tested statewide for influenza viruses (positive: 379 [35.9%]). (Season to date: 9,766 tested [22.1% positive])
 - 567 (53.7%) were screened only by rapid antigen tests with no confirmatory testing.
 - 489 (46.3%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 677 (64.1%) were negative.

Influenza type	Current week 52 (%)	Season to date (%)
Influenza A (H1) ⁷	0 (0.0)	195 (9.1)
Influenza A (H3)	0 (0.0)	17 (0.8)
Influenza A no subtyping	313 (82.6)	1,233 (57.2)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	100 (4.6)
Influenza B no genotyping	66 (17.4)	610 (28.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



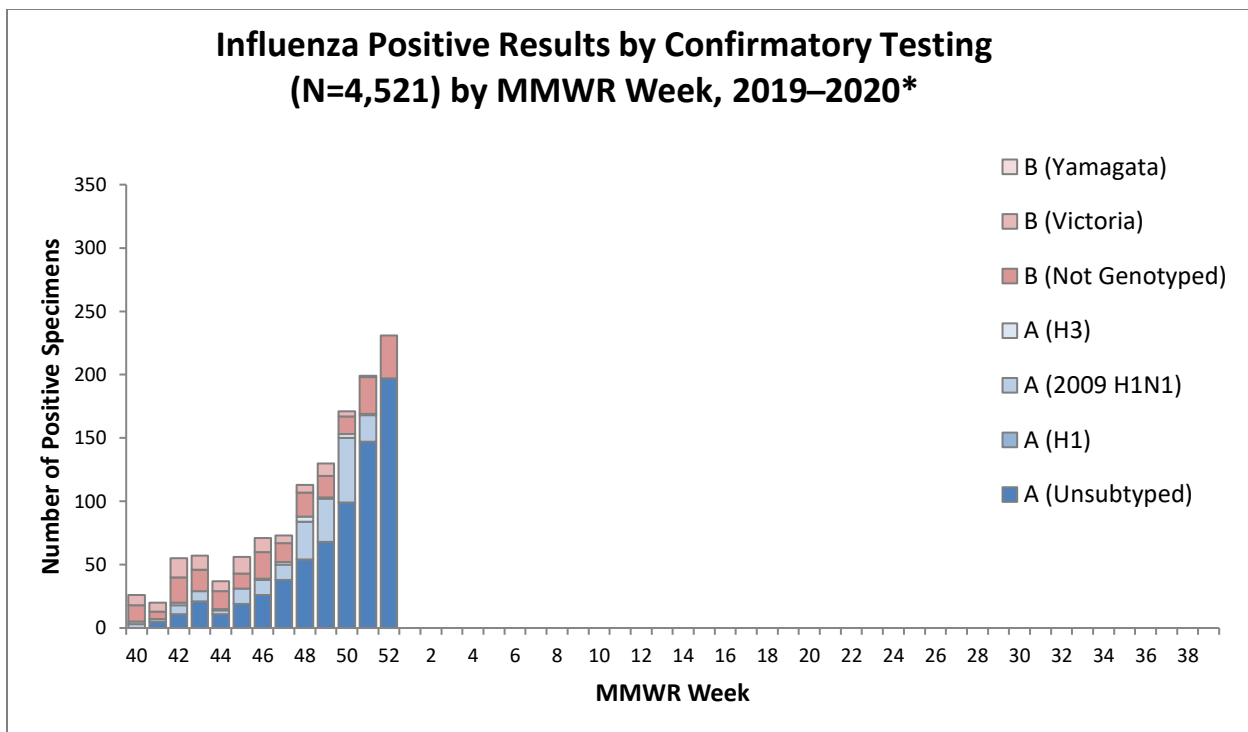
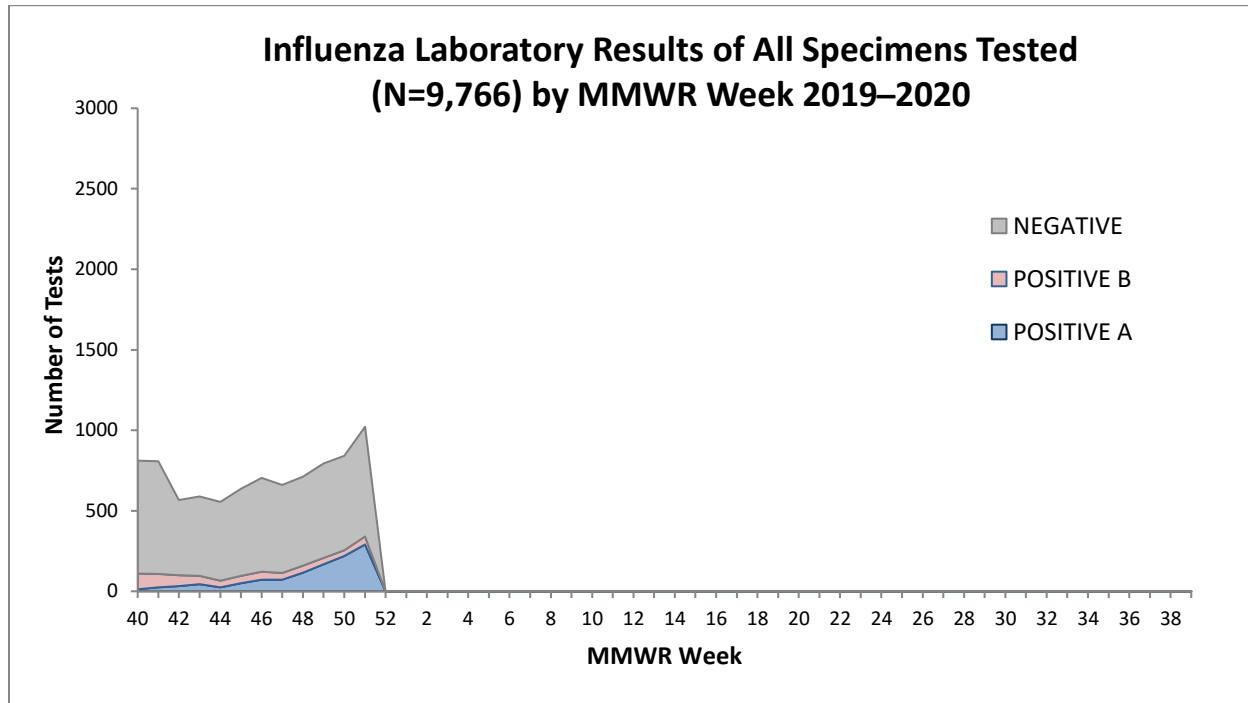
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

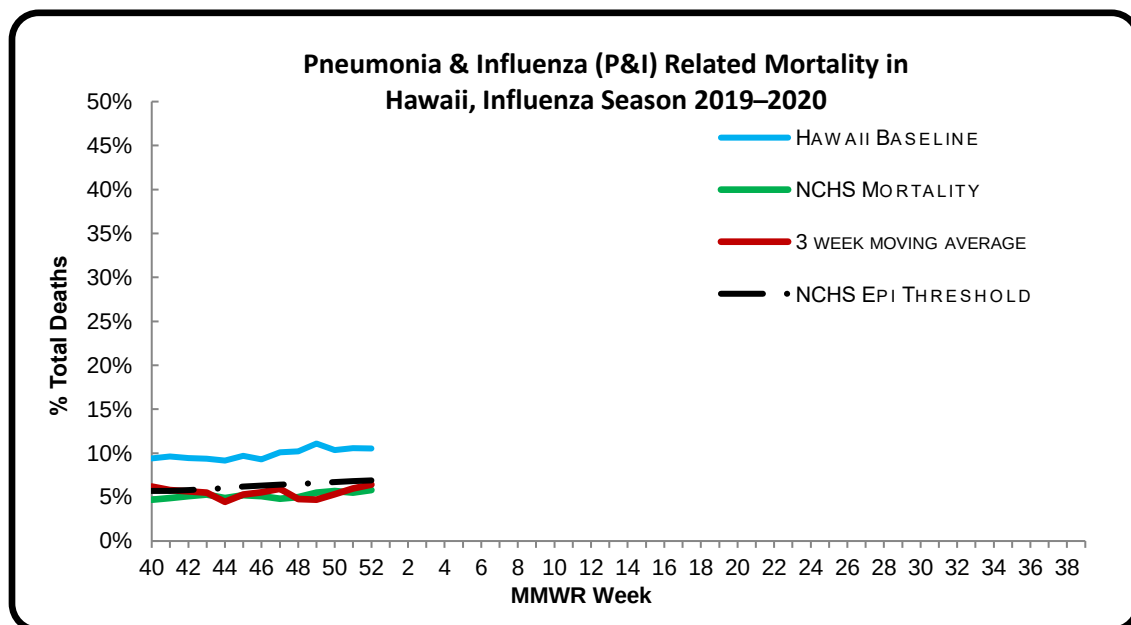
MMWR Week (2019-2020)																																																															
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39											
Adenovirus	X		X		X		X	X	X	X																																																					
Coronavirus																																																															
Coxsackie Virus																																																															
Cytomegalovirus																																																															
Echovirus																																																															
Enterovirus																																																															
Herpes Simplex Virus, Type 1																																																															
Metapneumovirus													X																																																		
Parainfluenza Virus						X	X	X	X	X	X	X	X																																																		
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																	
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																	
Varicella Zoster Virus																																																															
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza A (H3)	X		X		X		X	X	X	X	X																																																				
Influenza A (Other seasonal H1)																																																															
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																	
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																	

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 52** of the current influenza season:

- *7.0% of all deaths that occurred in Hawaii during week 52 were related to pneumonia or influenza. For the current season (season to date: 5.6%), there have been 2,786 deaths from any cause, 155 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (5.8%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.9%) (i.e., inside the 95% confidence interval) for week 52.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, five influenza associated pediatric deaths occurring in weeks 50 (week ending December 14, 2019) and 51 (week ending December 21, 2019) were reported to CDC during week 52. Three were associated with an influenza A virus and two were associated with influenza B viruses. (2019-2020 season total: 27).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 52.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **November 25, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

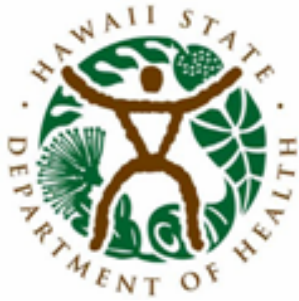
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 1: DECEMBER 29, 2019–JANUARY 4, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 1

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.4%	Lower than the previous week. Comparable to Hawaii's historical baseline, lower than the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 14 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	38.0%	Higher than the previous week. This number means that many, if not all, of the 62.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	23.9%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.6%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	5	

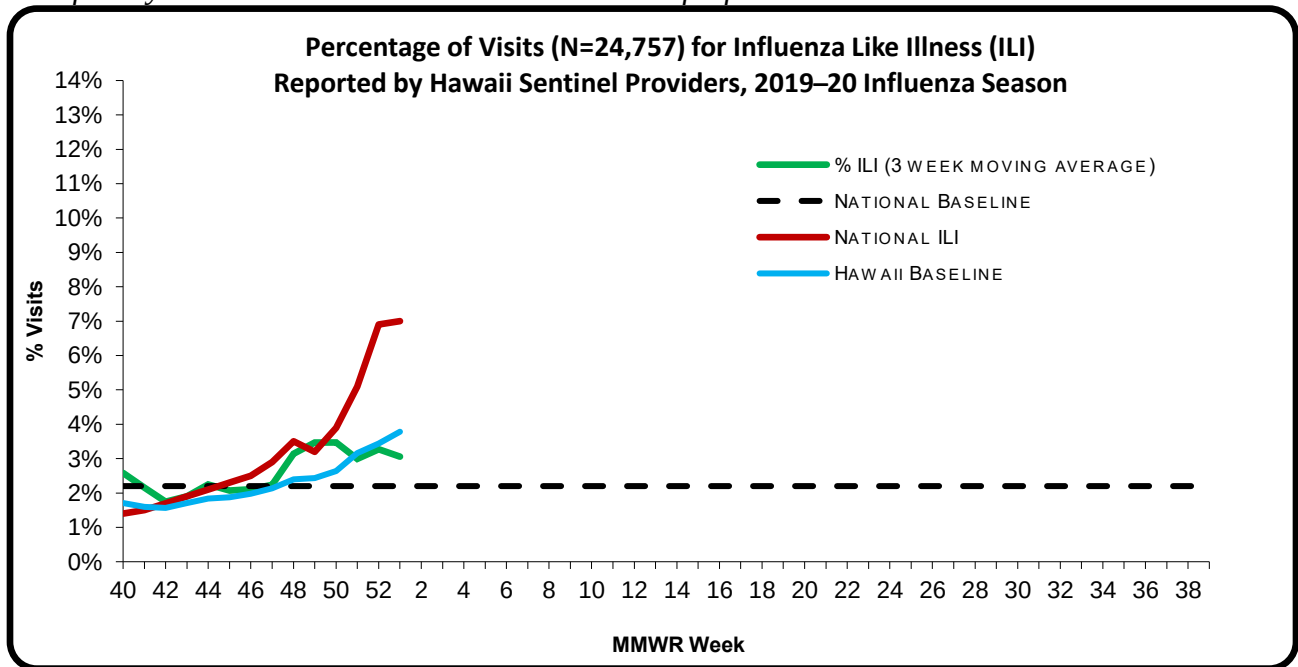
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 1** of the current influenza season:

- **2.4%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (**2.4%**)⁴ (i.e., inside the 95% confidence interval) and lower than the national ILI rate (**7.0%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 1. This cluster occurred at a long-term care facility on Oahu. This cluster contained cases of influenza A virus.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

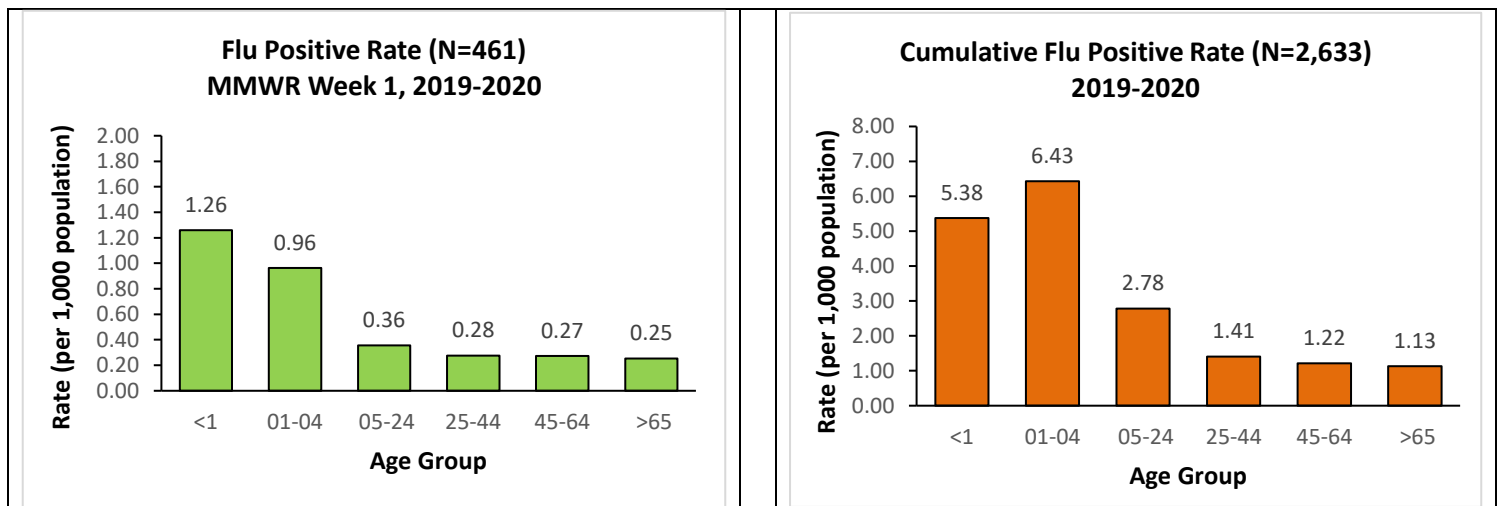
A. INFLUENZA:

- The following reflects laboratory findings for week 1 of the 2019–20 influenza season:
 - A total of **1,212** specimens have been tested statewide for influenza viruses (positive: 461 [38.0%]). (Season to date: 11,012 tested [23.9% positive])
 - 633 (52.2%) were screened only by rapid antigen tests with no confirmatory testing.
 - 579 (47.8%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 751 (62.0%) were negative.

Influenza type	Current week 1 (%)	Season to date (%)
Influenza A (H1) ⁷	18 (3.9)	285 (10.8)
Influenza A (H3)	0 (0.0)	17 (0.6)
Influenza A no subtyping	359 (77.9)	1,534 (58.3)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	109 (4.1)
Influenza B no genotyping	84 (18.2)	687 (26.1)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



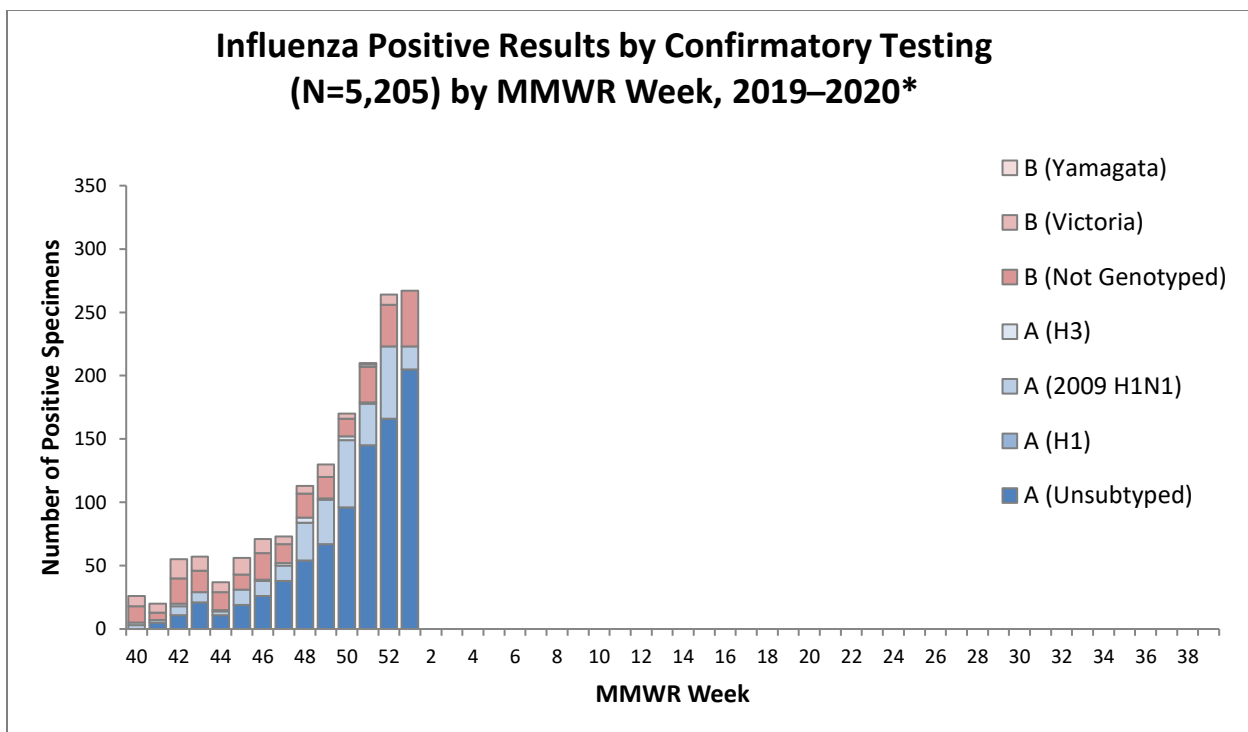
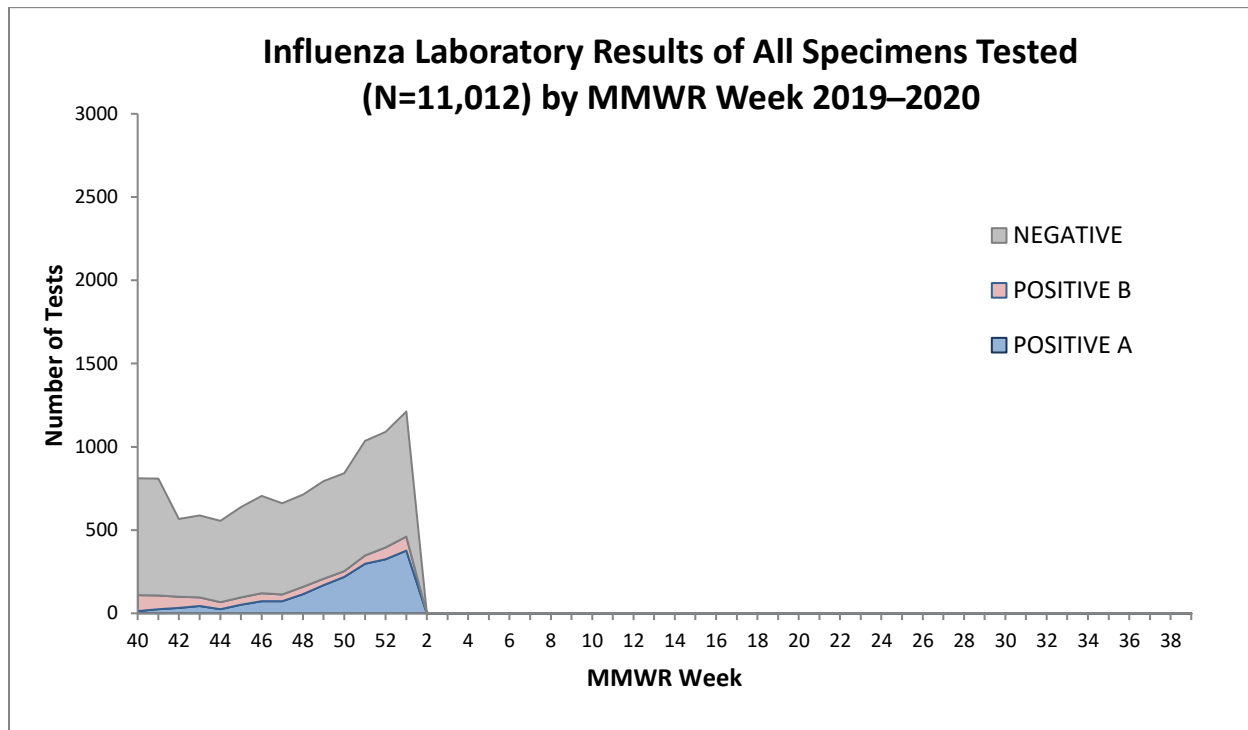
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

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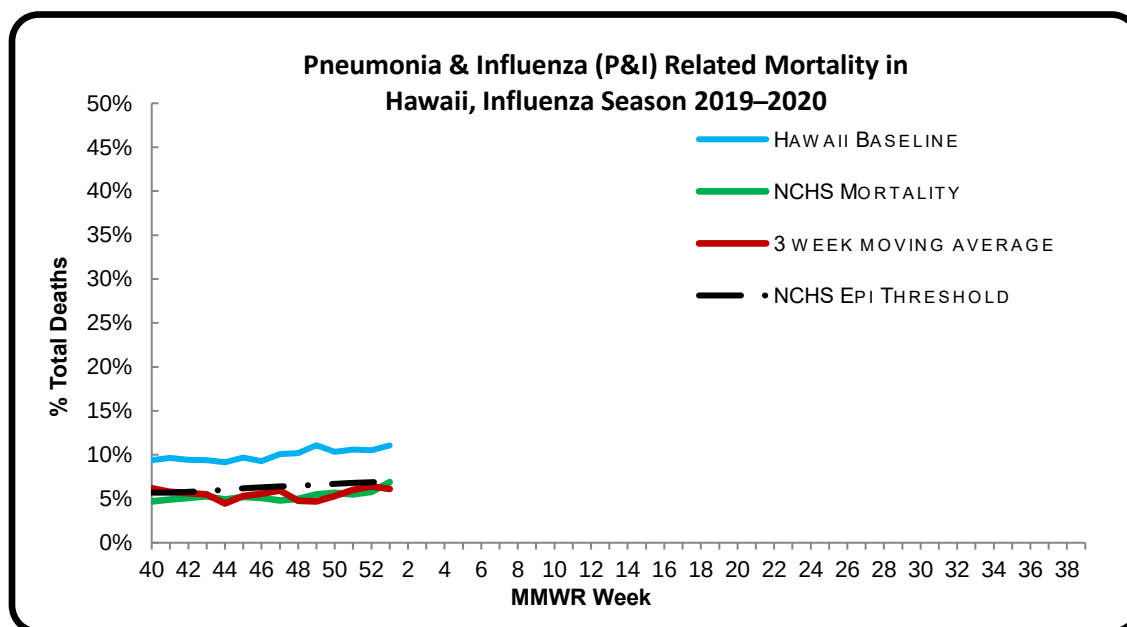
III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 1** of the current influenza season:

5.6% of all deaths that occurred in Hawaii during week 1 were related to pneumonia or influenza. For the current season (season to date: 5.6%), there have been 3,020 deaths from any cause, 168 of which were due to P&I.

- The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (6.9%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.0%) (i.e., inside the 95% confidence interval) for week 1.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, five influenza associated pediatric deaths occurring in weeks 52 (week ending December 28, 2019) and 1 (week ending January 4, 2020) were reported to CDC during week 1. Three were associated with influenza

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

B viruses that did not have a lineage determined, and two were associated with influenza A(H1N1)pdm2009 viruses. (2019-2020 season total: 32).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 1.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **November 25, 2019**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

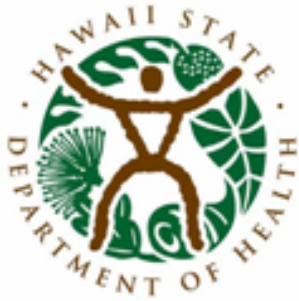
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APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
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5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
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17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
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33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 2: JANUARY 5, 2020–JANUARY 11, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 2

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.7%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 15 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	36.1%	Lower than the previous week. This number means that many, if not all, of the 63.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	25.4%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.2%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	7	

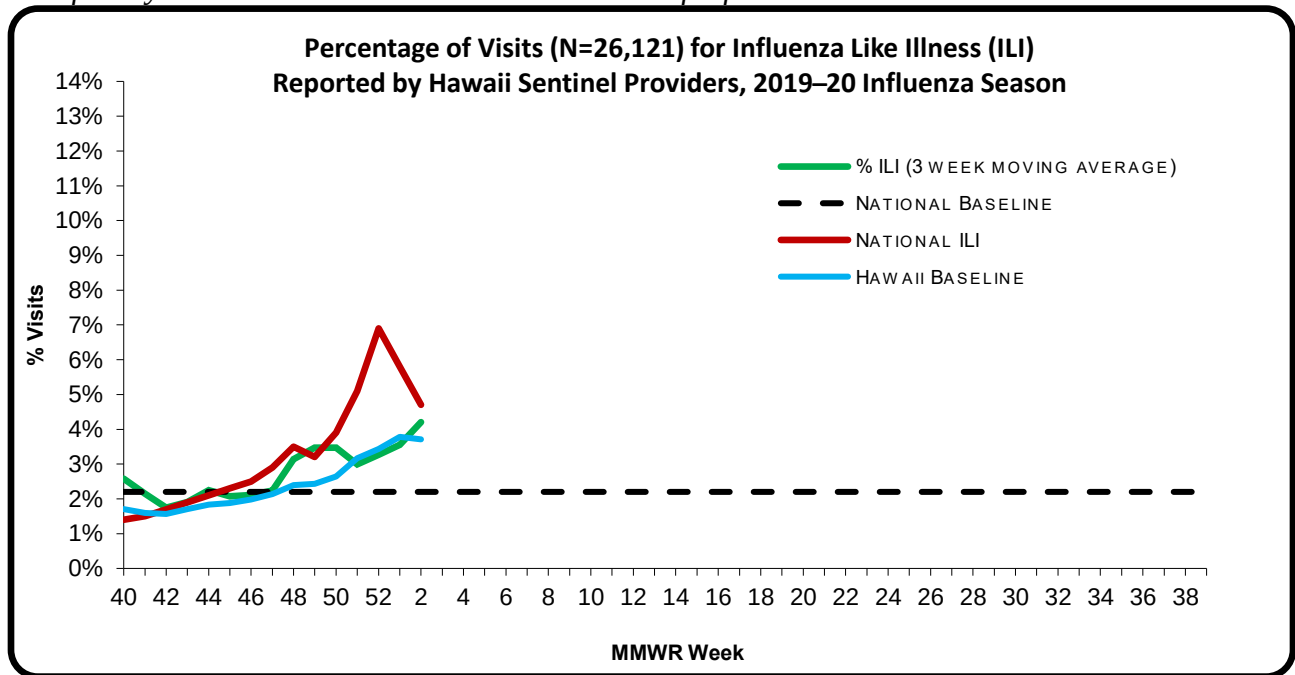
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 2** of the current influenza season:

- **4.7%** (season to date: **2.6%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**4.7%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 2. This cluster occurred at a long-term care facility on Oahu. This cluster contained cases of influenza A virus.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

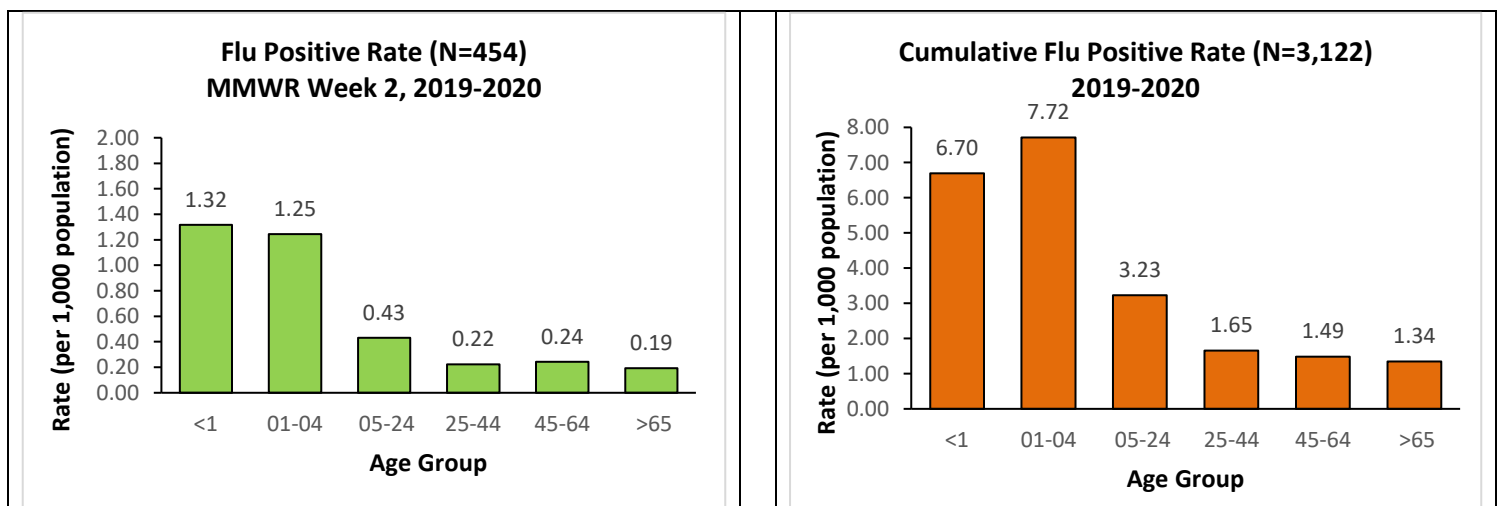
A. INFLUENZA:

- The following reflects laboratory findings for week 2 of the 2019–20 influenza season:
 - A total of **1,257** specimens have been tested statewide for influenza viruses (positive: 454 [36.1%]). (Season to date: 12,311 tested [25.4% positive])
 - 573 (45.6%) were screened only by rapid antigen tests with no confirmatory testing.
 - 684 (54.4%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 803 (63.9%) were negative.

Influenza type	Current week 2 (%)	Season to date (%)
Influenza A (H1) ⁷	31 (6.8)	411 (13.2)
Influenza A (H3)	3 (0.7)	24 (0.8)
Influenza A no subtyping	310 (68.3)	1,770 (56.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	15 (3.3)	153 (4.9)
Influenza B no genotyping	95 (20.9)	763 (24.4)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



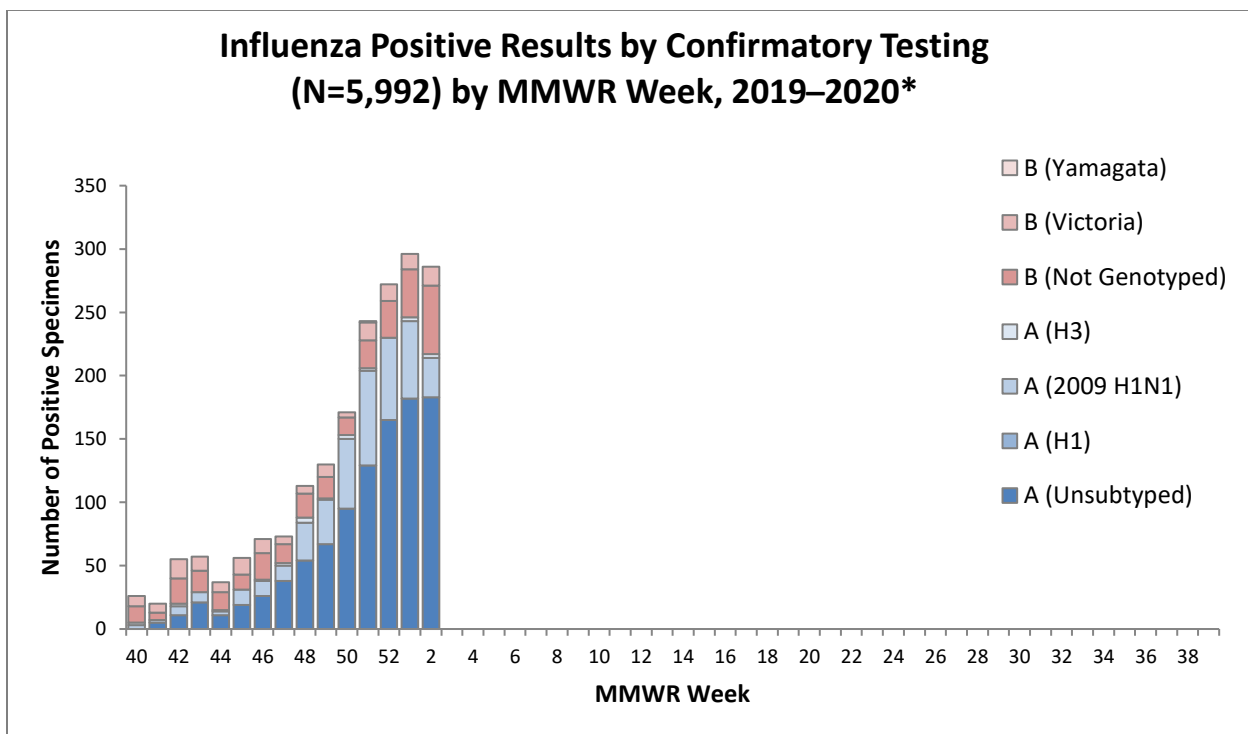
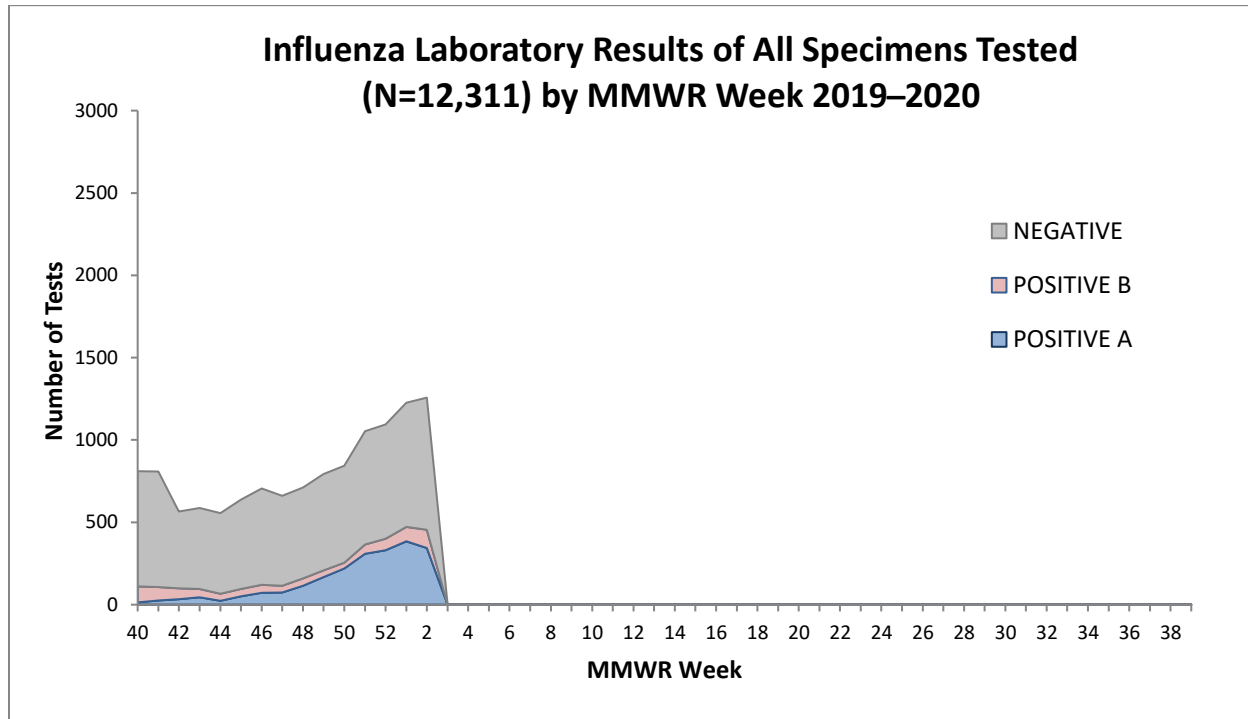
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

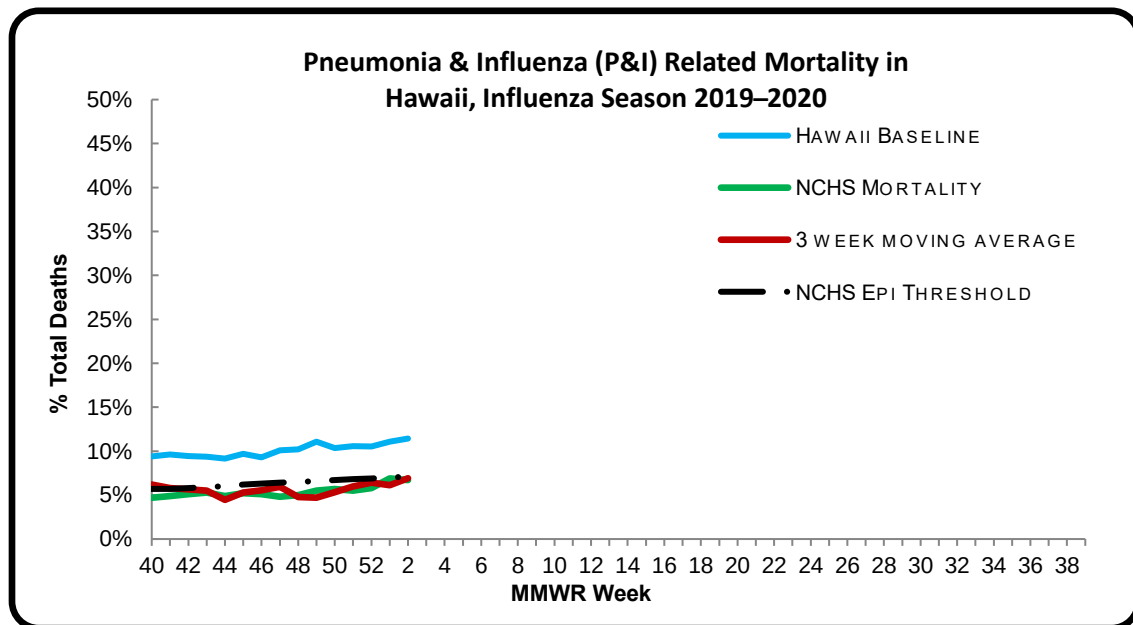
[illegible]

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 2** of the current influenza season:

- **8.2%** of all deaths that occurred in Hawaii during week 2 were related to pneumonia or influenza. For the current season (season to date: **5.8%**), there have been 3,312 deaths from any cause, 192 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (6.7%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.1%) (i.e., inside the 95% confidence interval) for week 2.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, seven influenza associated pediatric deaths occurring in weeks 52 (week ending December 28, 2019), 1 (week ending January 4, 2020), and 2 (week ending January 11, 2020) were reported to CDC during

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

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week 2. All seven were associated with influenza B viruses that did not have a lineage determined. (2019-2020 season total: 39).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

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- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 2.*

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These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2020**. Since the previous update, no new human infections with avian influenza were reported.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

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3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
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14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
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17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
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19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
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43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
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45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
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51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 3: JANUARY 12, 2020–JANUARY 18, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 3

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	7.0%	Higher than the previous week. Comparable to Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	3	There have been 18 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	40.2%	Higher than the previous week. This number means that many, if not all, of the 59.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	26.8%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	15	

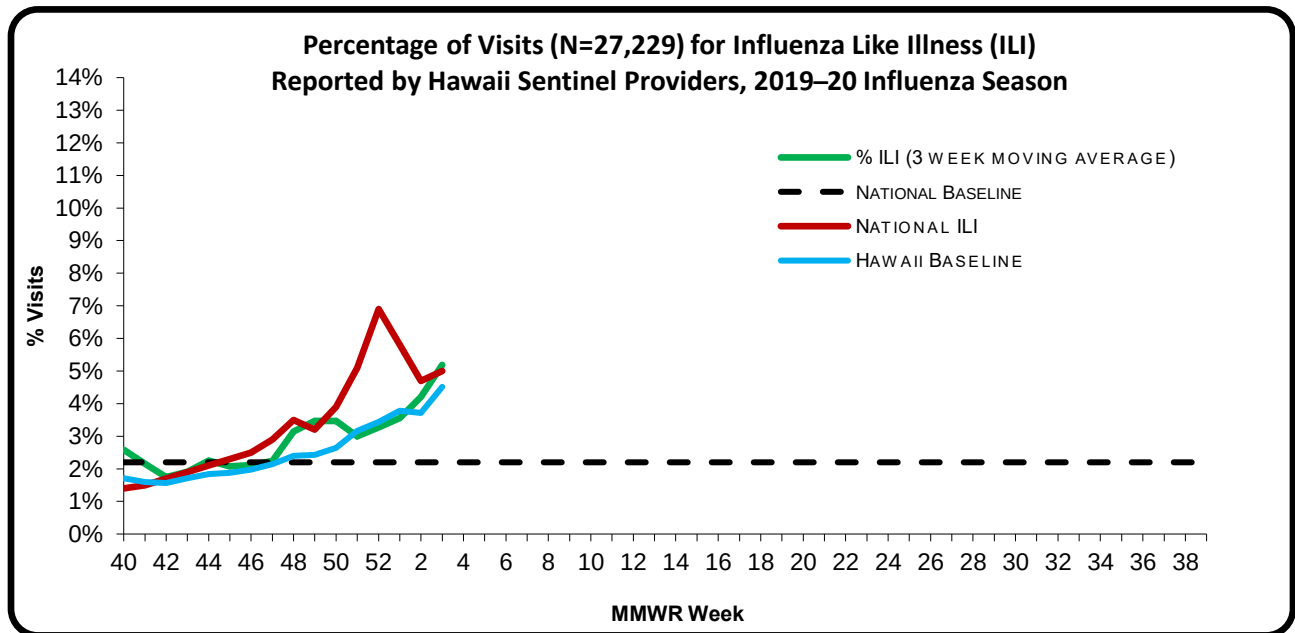
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 3** of the current influenza season:

- **7.0%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**5.0%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* Three new clusters were reported to HDOH during week 3. These clusters occurred at a long-term care facility and two schools on Oahu. These clusters contained cases of influenza A, influenza B, and RSV.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

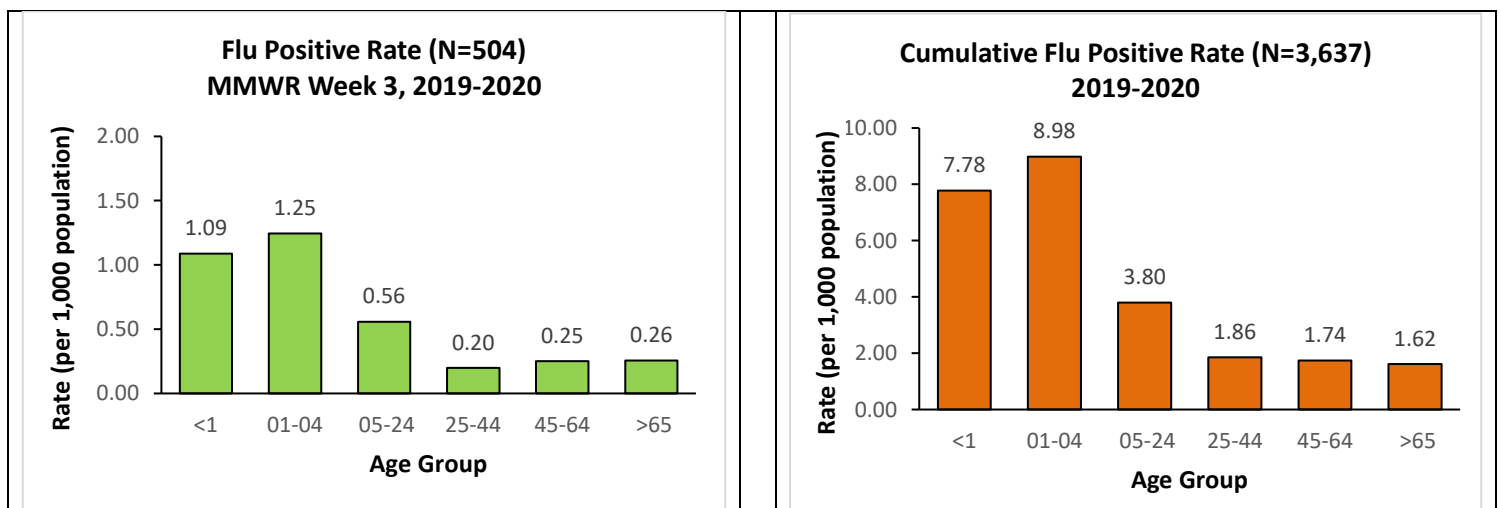
A. INFLUENZA:

- The following reflects laboratory findings for week 3 of the 2019–20 influenza season:
 - A total of **1,254** specimens have been tested statewide for influenza viruses (positive: 504 [40.2%]). (Season to date: 13,583 tested [26.8% positive])
 - 590 (47.0%) were screened only by rapid antigen tests with no confirmatory testing.
 - 664 (53.0%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 750 (59.8%) were negative.

Influenza type	Current week 3 (%)	Season to date (%)
Influenza A (H1) ⁷	48 (9.5)	506 (13.9)
Influenza A (H3)	2 (0.4)	31 (0.9)
Influenza A no subtyping	325 (64.5)	2,053 (56.4)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	153 (4.2)
Influenza B no genotyping	129 (25.6)	893 (24.6)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



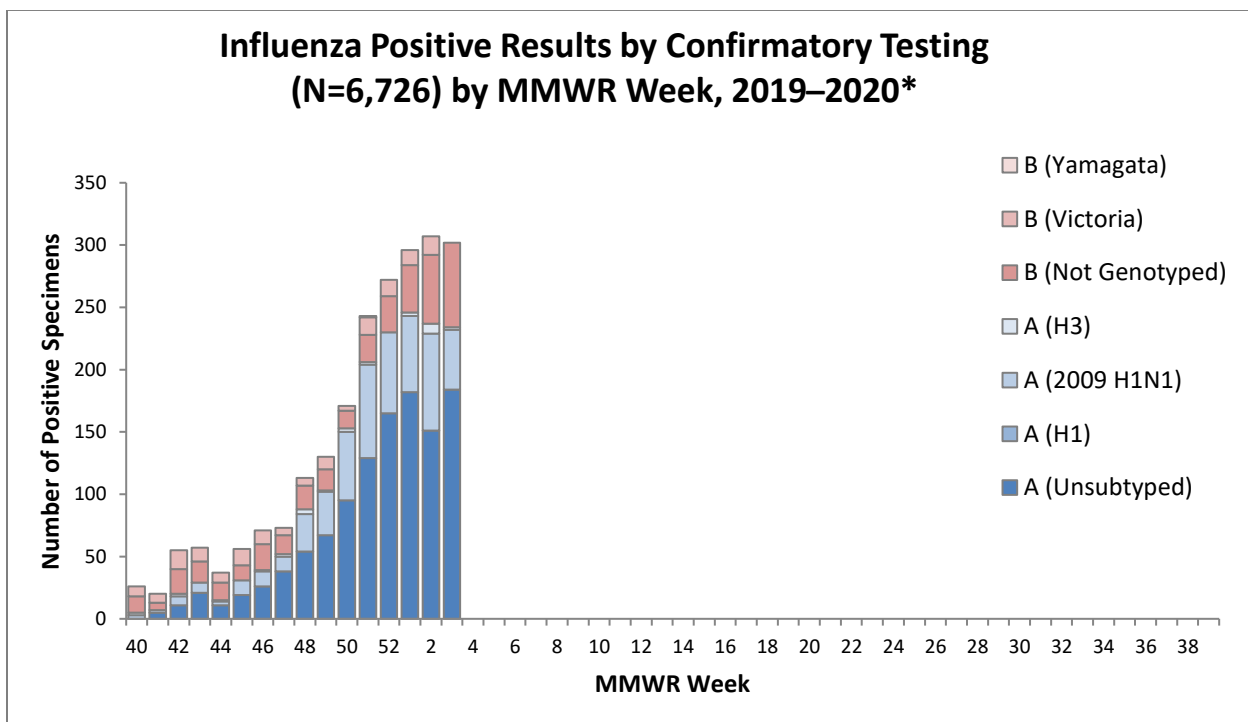
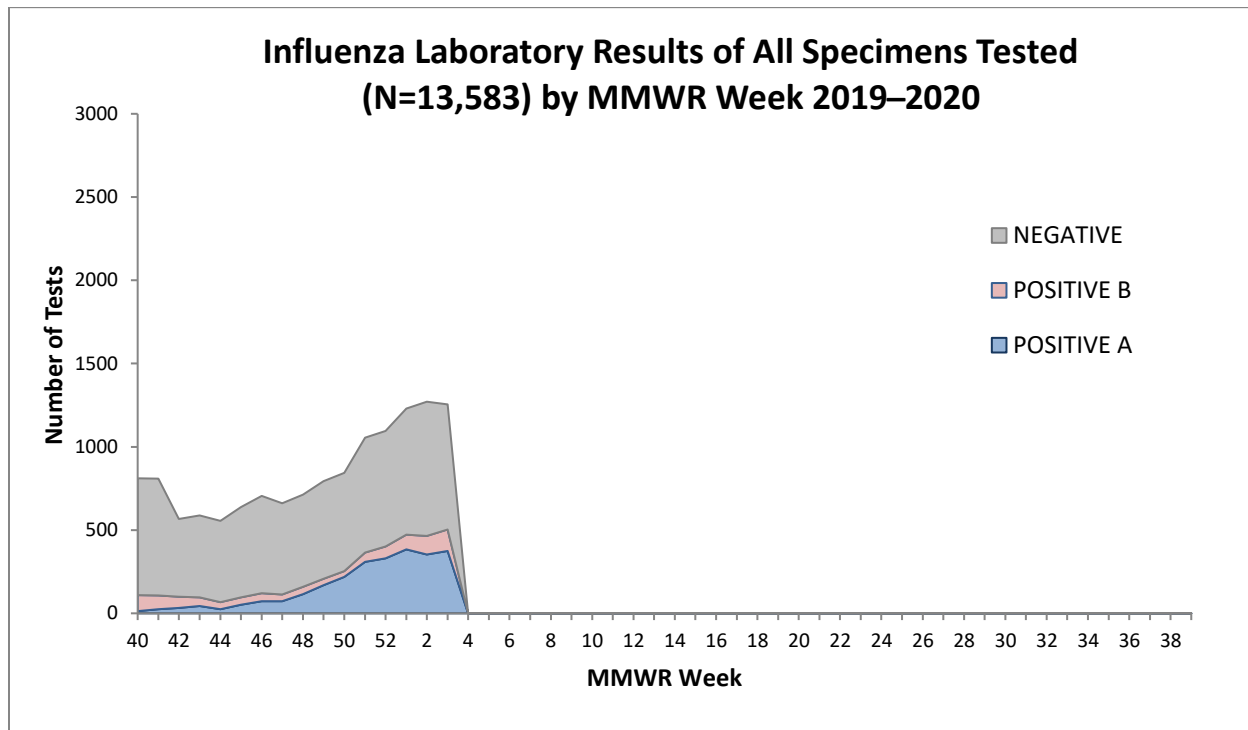
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

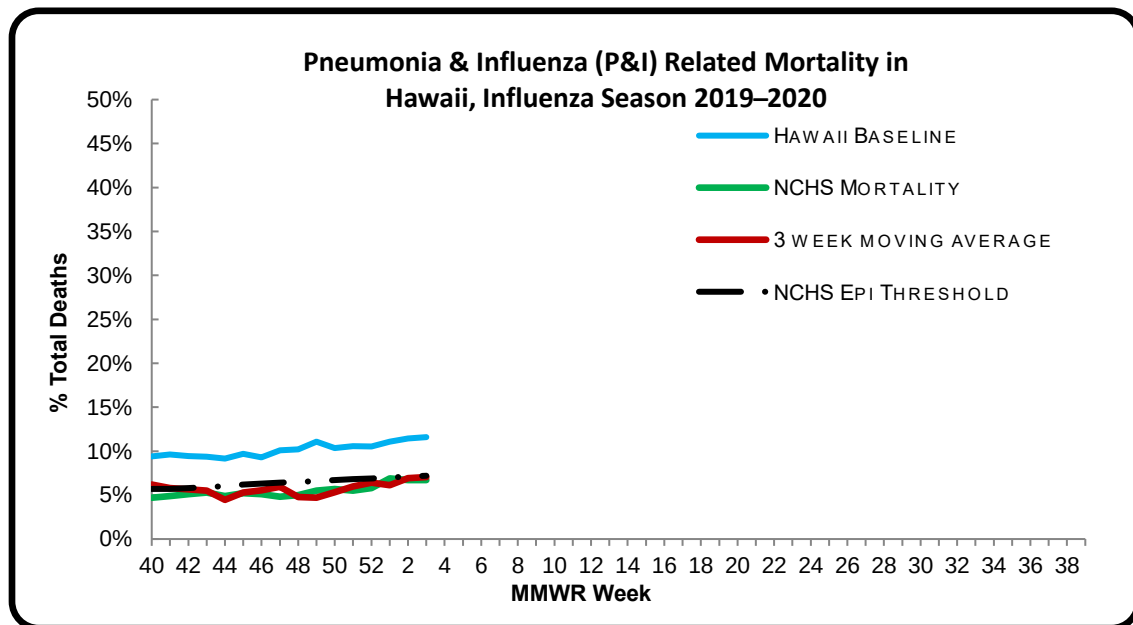
[illegible]

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 3** of the current influenza season:

- **7.4%** of all deaths that occurred in Hawaii during week 3 were related to pneumonia or influenza. For the current season (season to date: **5.9%**), there have been 3,597 deaths from any cause, 213 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (**6.7%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**7.2%**) (i.e., inside the 95% confidence interval) for week 3.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2019–2020 season.
- Nationally, 15 influenza associated pediatric deaths occurring between weeks 51 (week ending December 21, 2019) and 3 (week ending January 18, 2020) were reported to CDC during week 3. Nine were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza B viruses; two had a lineage determined and were both B/Victoria viruses. Six were associated with influenza A viruses, and four were subtyped as A(H1N1)pdm09 viruses. (2019-2020 season total: 54).

One influenza-associated pediatric death occurring during the 2017-2018 season in week 3 (week ending January 20, 2018) was reported to CDC during week 3, bringing the total during that season to 188. This was associated with influenza B virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 3.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

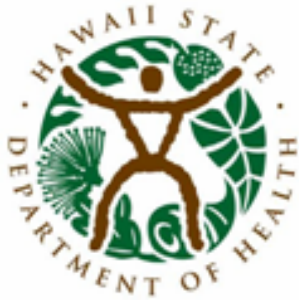
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
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20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
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43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
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45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
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49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 4: JANUARY 19, 2020–JANUARY 25, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 4

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	7.0%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	5	There have been 23 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	40.2%	Comparable to the previous week. This number means that many, if not all, of the 59.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	28.0%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.0%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	14	1 influenza-associated pediatric death was reported from Hawaii

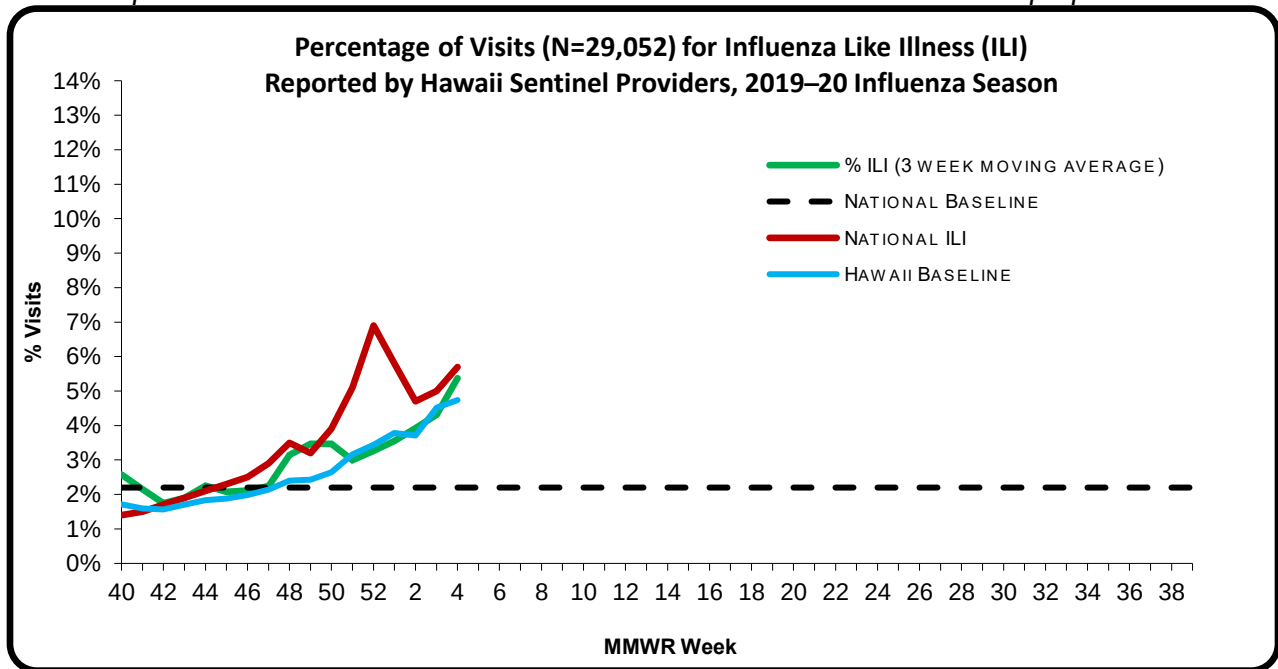
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 4** of the current influenza season:

- **7.0%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**5.7%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* Five new clusters were reported to HDOH during week 4. These clusters occurred at two long-term care facilities and three schools on Oahu. These clusters contained cases of influenza B and RSV.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

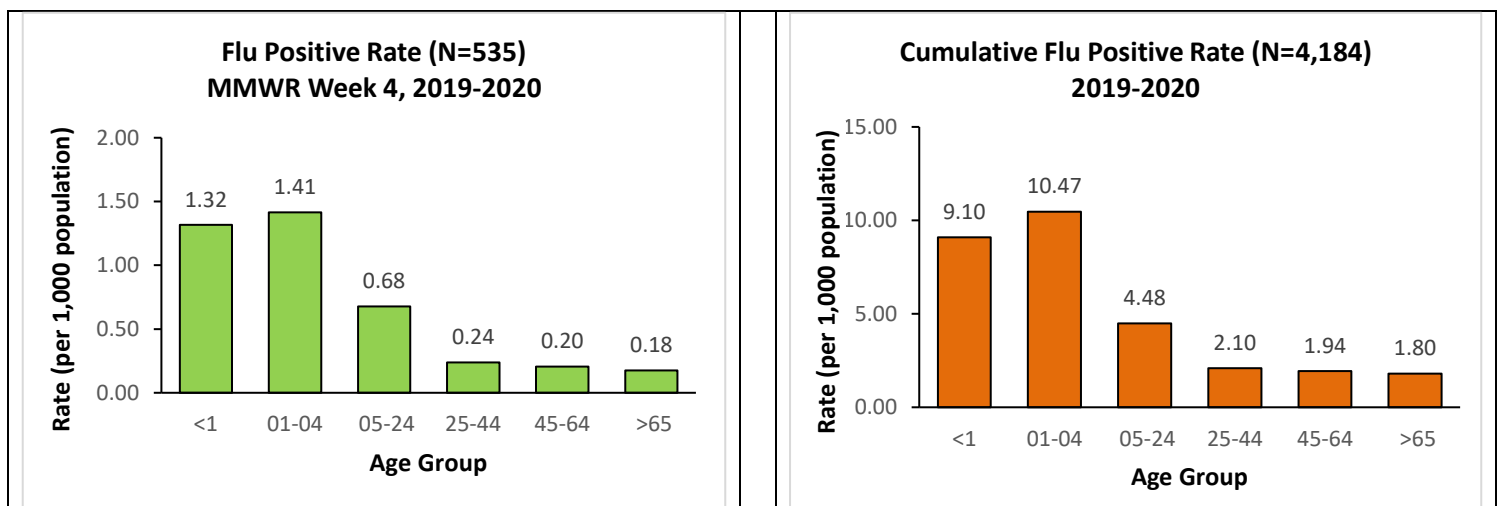
A. INFLUENZA:

- The following reflects laboratory findings for week 4 of the 2019–20 influenza season:
 - A total of **1,332** specimens have been tested statewide for influenza viruses (positive: 535 [40.2%]). (Season to date: 14,930 tested [28.0% positive])
 - 679 (51.0%) were screened only by rapid antigen tests with no confirmatory testing.
 - 653 (49.0%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 797 (59.8%) were negative.

Influenza type	Current week 4 (%)	Season to date (%)
Influenza A (H1) ⁷	39 (7.3)	572 (13.7)
Influenza A (H3)	2 (0.4)	36 (0.9)
Influenza A no subtyping	330 (61.7)	2,361 (56.4)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	3 (0.6)	185 (4.4)
Influenza B no genotyping	161 (30.1)	1,029 (24.6)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



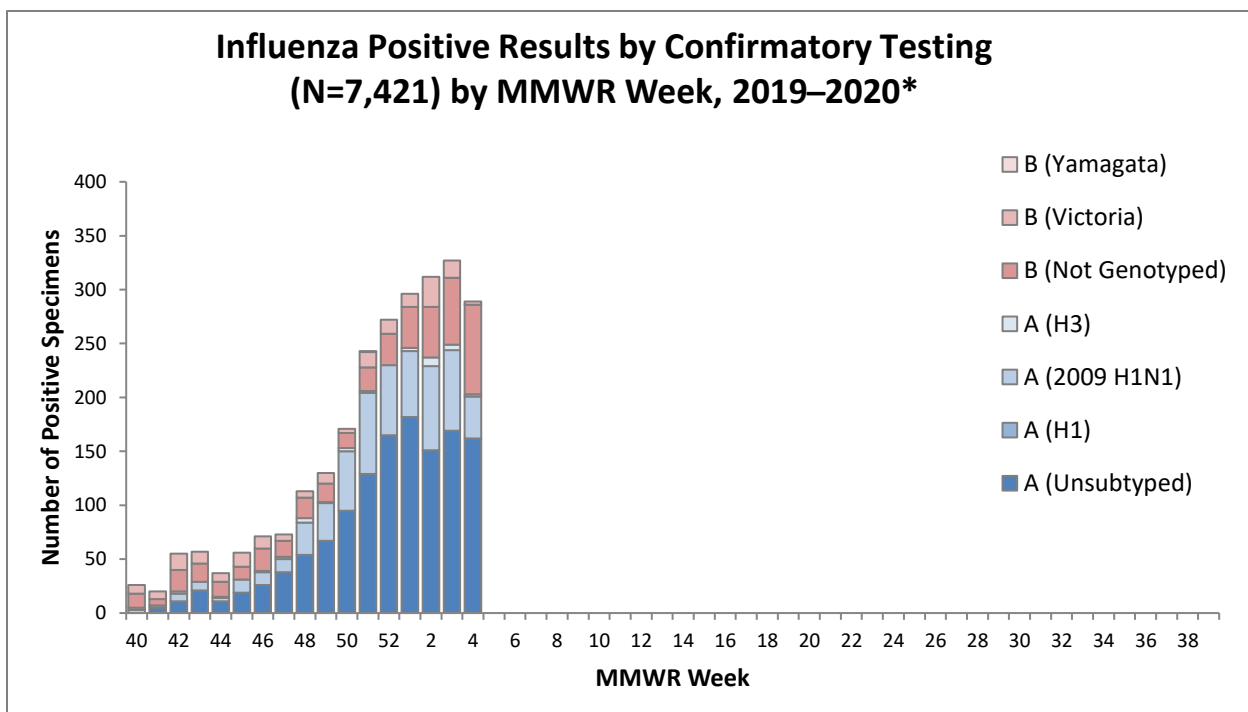
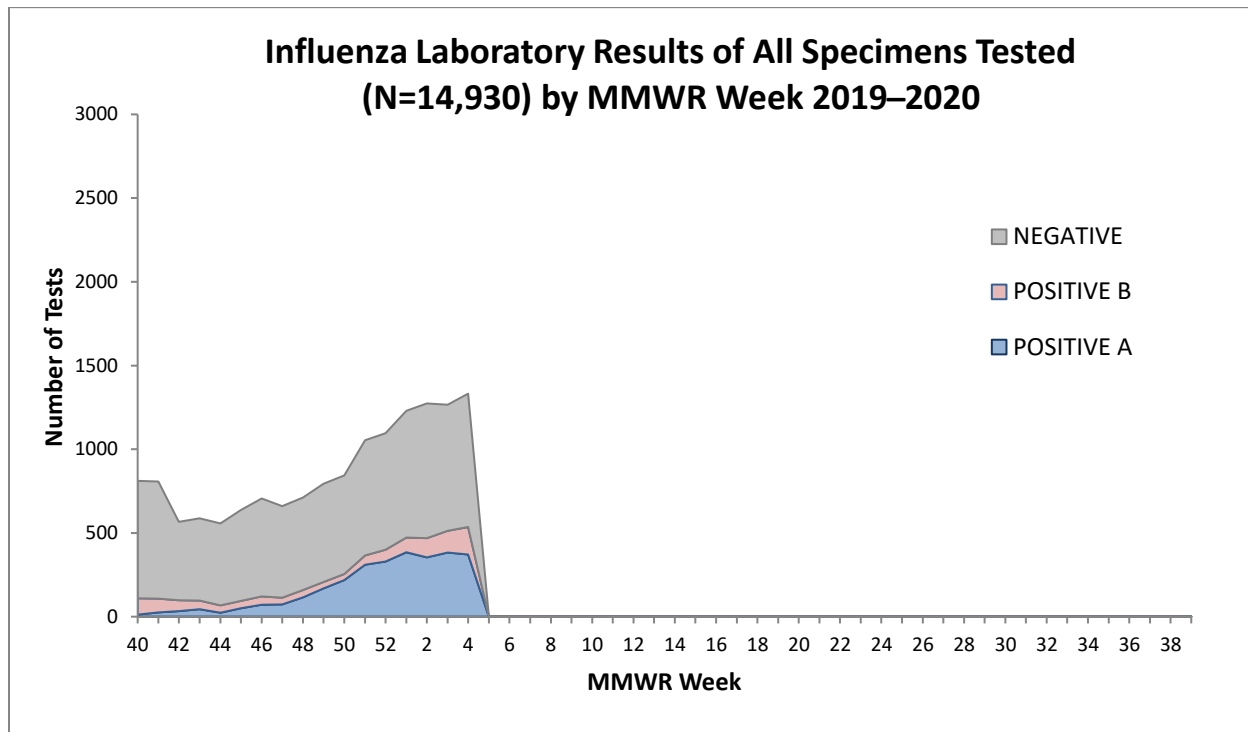
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

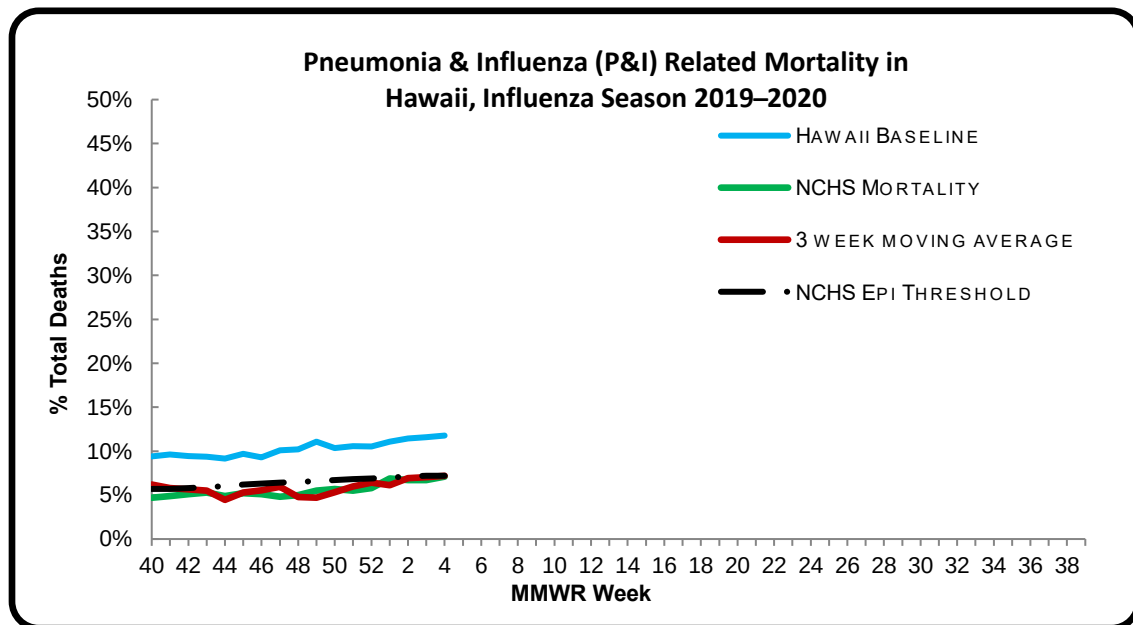
MMWR Week (2019-2020)																																																																			
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39															
Adenovirus	X		X		X		X	X	X	X							X																																																		
Coronavirus															X		X																																																		
Coxsackie Virus																																																																			
Cytomegalovirus																																																																			
Echovirus																																																																			
Enterovirus																																																																			
Herpes Simplex Virus, Type 1																																																																			
Metapneumovirus													X																																																						
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X																																																		
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Varicella Zoster Virus																																																																			
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza A (H3)	X		X		X		X	X	X	X	X	X			X	X																																																			
Influenza A (Other seasonal H1)																																																																			
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 4** of the current influenza season:

- **6.0%** of all deaths that occurred in Hawaii during week 4 were related to pneumonia or influenza. For the current season (season to date: **5.9%**), there have been 3,831 deaths from any cause, 227 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (7.1%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.2%) (i.e., inside the 95% confidence interval) for week 4.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- One influenza-associated pediatric death was reported in Hawaii during week 4. This death was associated with an influenza A(H1N1)pdm09 virus. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

- Nationally, 14 influenza associated pediatric deaths occurring between weeks 45 (week ending November 9, 2019) and 4 (week ending January 25, 2020) were reported to CDC during week 4. Eight were associated with influenza B viruses; one had a lineage determined and was a B/Victoria virus. Six were associated with influenza A viruses, and three were subtyped as A(H1N1)pdm09 viruses. (2019-2020 season total: 68).

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 4.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

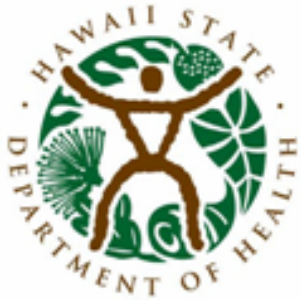
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 5: JANUARY 26, 2020–FEBRUARY 1, 2020

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REPORT SNAPSHOT FOR WEEK 5

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	8.3%	Higher than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	3	There have been 26 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	41.1%	Comparable to the previous week. This number means that many, if not all, of the 58.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	29.4%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.2%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	10	

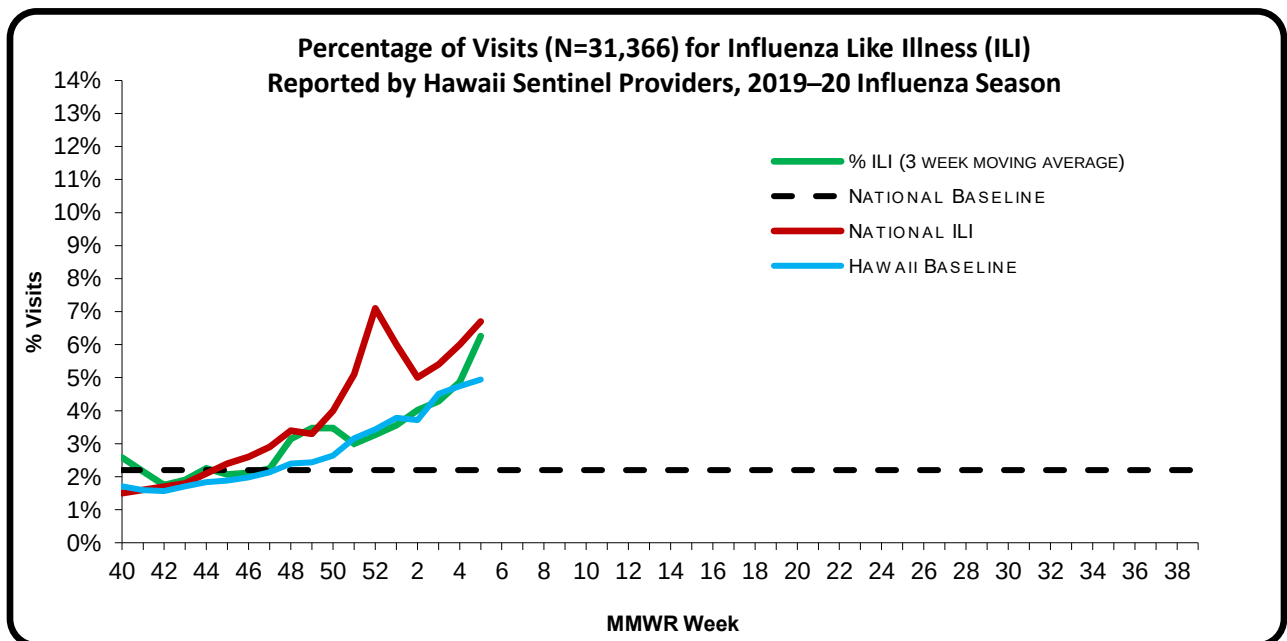
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For **week 5** of the current influenza season:

- **8.3%** (season to date: **3.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**6.7%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Regional Activity*⁵.
- *ILI Cluster Activity:* Three new clusters were reported to HDOH during week 5. These clusters occurred at a long-term care facility and school on Oahu and a school on Kauai. These clusters included cases of influenza A.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

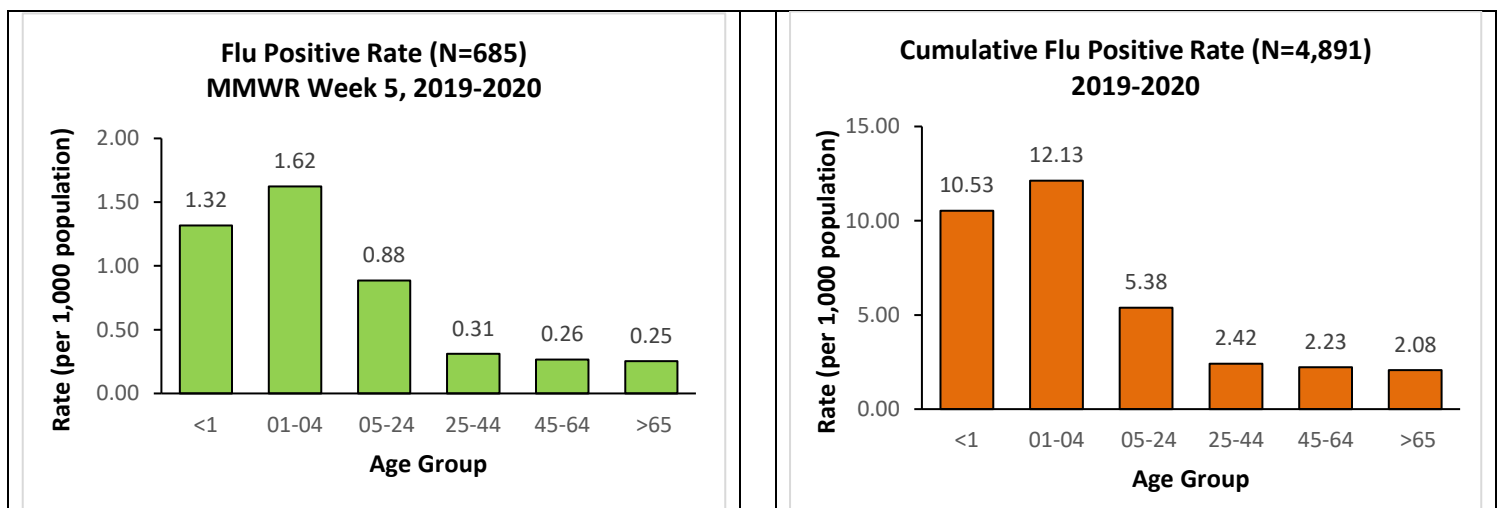
A. INFLUENZA:

- The following reflects laboratory findings for week 5 of the 2019–20 influenza season:
 - A total of **1,667** specimens have been tested statewide for influenza viruses (positive: 685 [**41.1%**]). (Season to date: 16,627 tested [**29.4%** positive])
 - 770 (46.2%) were screened only by rapid antigen tests with no confirmatory testing.
 - 897 (53.8%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 982 (58.9%) were negative.

Influenza type	Current week 5 (%)	Season to date (%)
Influenza A (H1) ⁷	74 (10.8)	697 (14.2)
Influenza A (H3)	6 (0.9)	47 (1.0)
Influenza A no subtyping	438 (63.9)	2,756 (56.4)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	2 (0.3)	219 (4.5)
Influenza B no genotyping	165 (24.1)	1,171 (23.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



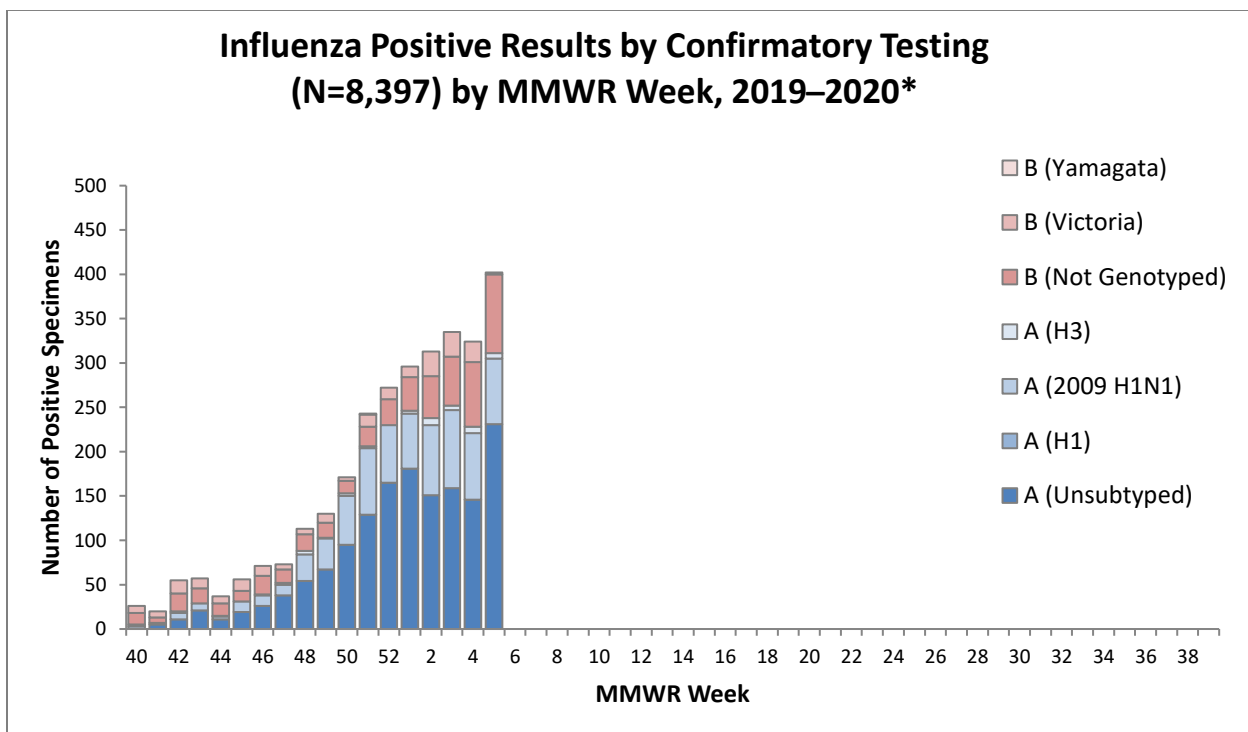
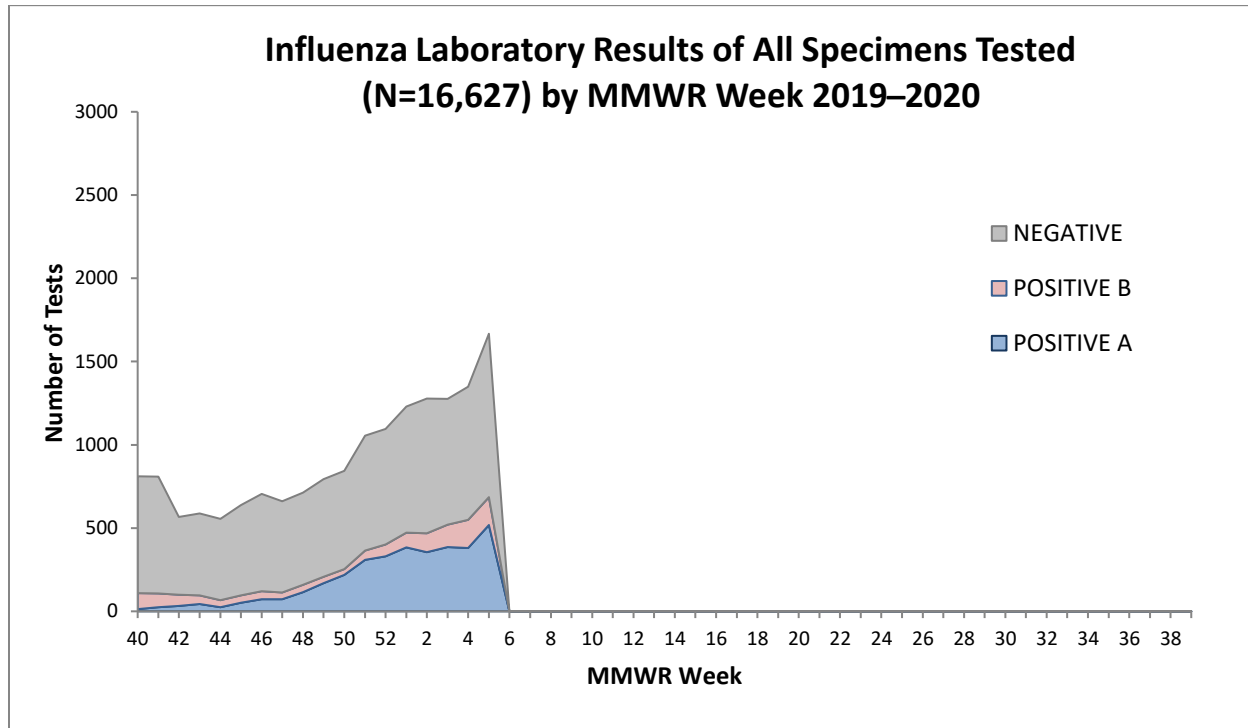
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

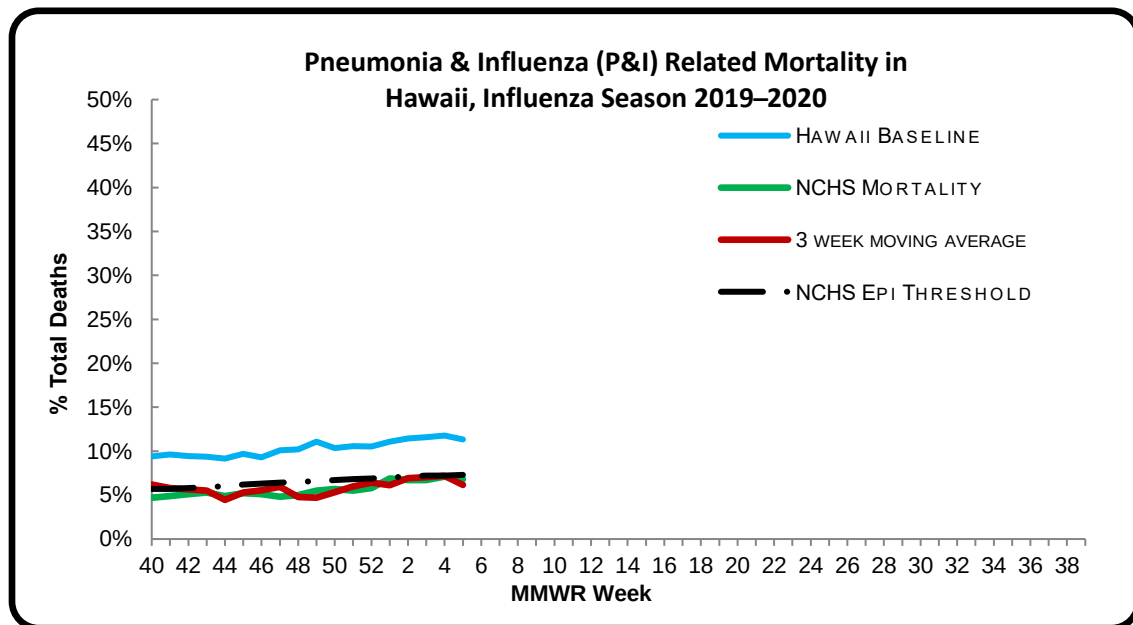
MMWR Week (2019-2020)																																																						
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39		
Adenovirus	X		X		X		X	X	X	X							X	X																																				
Coronavirus															X		X	X																																				
Coxsackie Virus																																																						
Cytomegalovirus																																																						
Echovirus																																																						
Enterovirus																																																						
Herpes Simplex Virus, Type 1																																																						
Metapneumovirus													X																																									
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X	X																																				
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																				
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																				
Varicella Zoster Virus																																																						
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																				
Influenza A (H3)	X		X		X		X	X	X	X	X	X			X	X		X																																				
Influenza A (Other seasonal H1)																																																						
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																				
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																				

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 5** of the current influenza season:

- *5.2% of all deaths that occurred in Hawaii during week 5 were related to pneumonia or influenza. For the current season (season to date: 5.9%), there have been 3,831 deaths from any cause, 227 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (6.8%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.3%) (i.e., inside the 95% confidence interval) for week 5.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 5. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, 10 influenza associated pediatric deaths occurring between weeks 1 (week ending January 4, 2020) and 4 (week ending January 25, 2020) were reported to CDC during week 5. Seven were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza B viruses; none had a lineage determined. Three were associated with influenza A viruses, and one was subtyped as an A(H1N1)pdm09 virus. (2019-2020 season total: 78).

One influenza-associated pediatric death occurring during the 2018-2019 season in week 30 (week ending July 27, 2019) was reported to CDC during week 5, bringing the total during that season to 144. This was associated with an influenza A virus.

Of the 78 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 52 deaths were associated with influenza B viruses, and nine had a lineage determined; all were B/Victoria viruses
- 26 deaths were associated with influenza A viruses, and 16 were subtyped: all were A(H1N1)pdm09 viruses.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 5.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information

regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

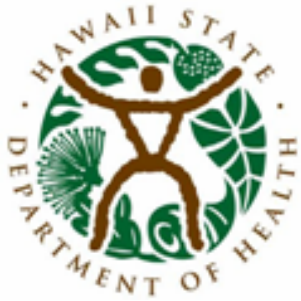
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 6: FEBRUARY 2, 2020–FEBRUARY 8, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 6

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	9.8%	Higher than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	2	There have been 28 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	40.4%	Lower than the previous week. This number means that many, if not all, of the 59.6% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	30.5%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.6%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	14	

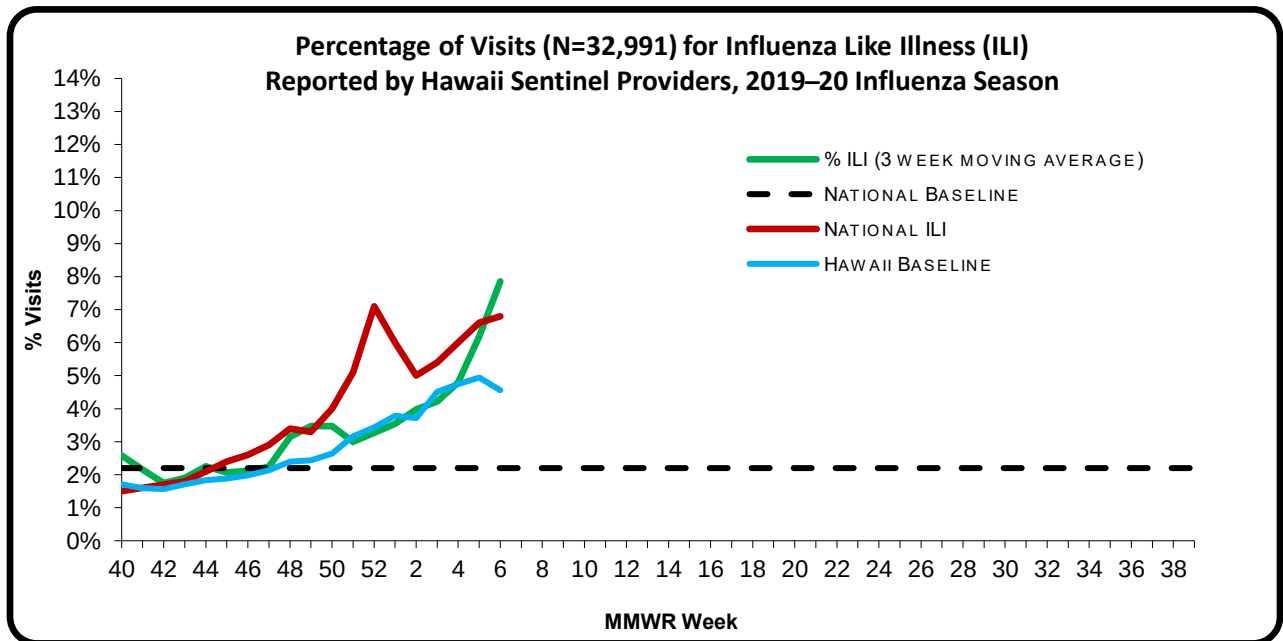
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 6** of the current influenza season:

- **9.8%** (season to date: **3.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**6.8%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Regional Activity*⁵.
- *ILI Cluster Activity:* Two new clusters were reported to HDOH during week 6. One cluster occurred at a long-term care facility on Hawaii Island. One cluster occurred at a school on Oahu. These clusters included cases of influenza A.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

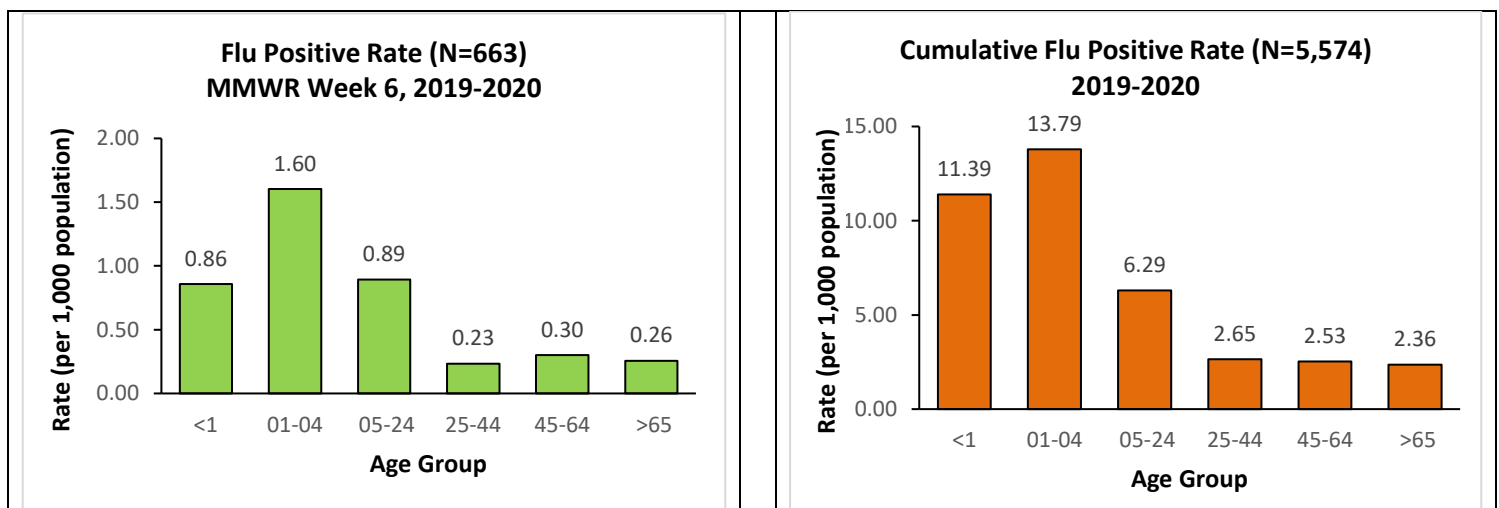
A. INFLUENZA:

- The following reflects laboratory findings for week 6 of the 2019–20 influenza season:
 - A total of **1,643** specimens have been tested statewide for influenza viruses (positive: 663 [40.4%]). (Season to date: 18,293 tested [30.5% positive])
 - 831 (50.6%) were screened only by rapid antigen tests with no confirmatory testing.
 - 812 (49.4%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 980 (59.6%) were negative.

Influenza type	Current week 6 (%)	Season to date (%)
Influenza A (H1) ⁷	11 (1.7)	745 (13.4)
Influenza A (H3)	1 (0.2)	48 (0.9)
Influenza A no subtyping	479 (72.2)	3,210 (57.6)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	257 (4.6)
Influenza B no genotyping	172 (25.9)	1,313 (23.6)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



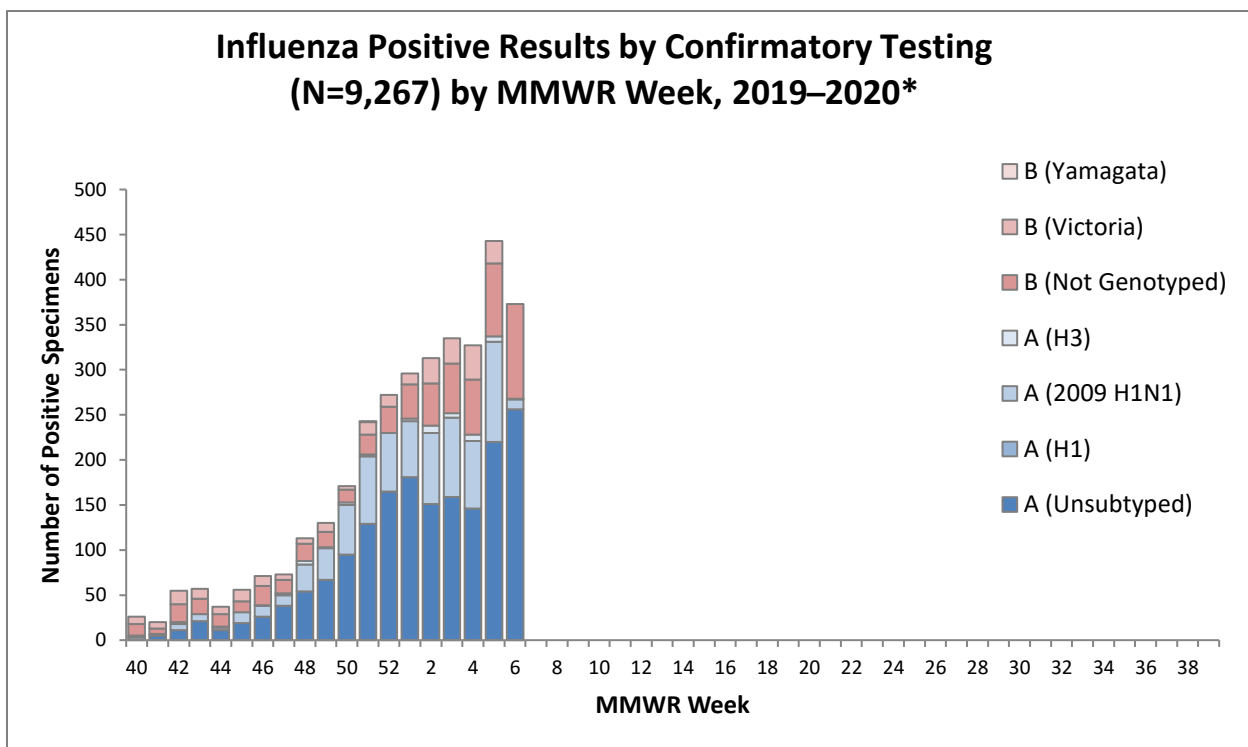
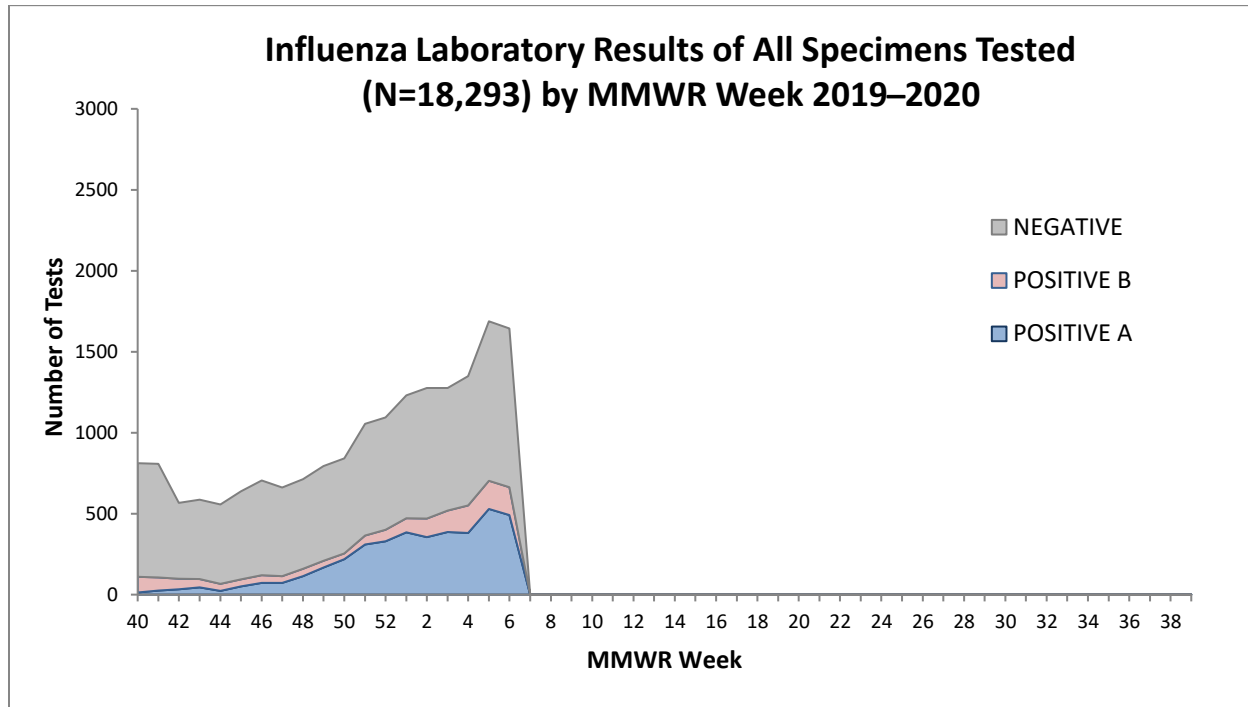
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

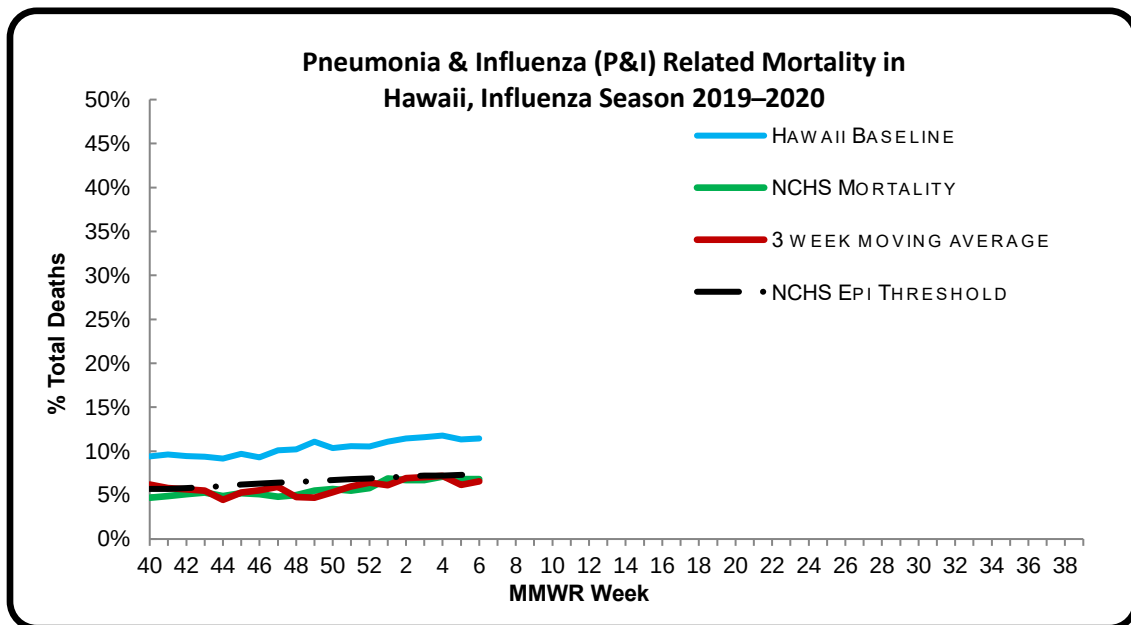
MMWR Week (2019-2020)																																																												
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39								
Adenovirus	X		X		X		X	X	X	X							X	X																																										
Coronavirus															X		X	X																																										
Coxsackie Virus																																																												
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Enterovirus																																																												
Herpes Simplex Virus, Type 1																																																												
Metapneumovirus													X																																															
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X	X	X																																									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																									
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																									
Varicella Zoster Virus																																																												
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																									
Influenza A (H3)	X		X		X		X	X	X	X	X	X			X	X		X	X																																									
Influenza A (Other seasonal H1)																																																												
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																									
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																									

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 6** of the current influenza season:

- **8.6%** of all deaths that occurred in Hawaii during week 6 were related to pneumonia or influenza. For the current season (season to date: **6.0%**), there have been 4,309 deaths from any cause, 260 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (**6.8%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**7.3%**) (i.e., inside the 95% confidence interval) for week 6.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 6. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, 14 influenza associated pediatric deaths occurring between weeks 52 (week ending December 28, 2019) and 6 (week ending February 8, 2020) were reported to CDC during week 6. Ten were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza B viruses; one had a lineage determined as a B/Victoria virus. Four were associated with influenza A viruses; one was an A(H1N1)pdm09 virus and one was an A(H3) virus. (2019-2020 season total: 92).

Of the 92 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 62 deaths were associated with influenza B viruses, and 10 had a lineage determined; all were B/Victoria viruses
- 30 deaths were associated with influenza A viruses, and 18 were subtyped; 17 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 6.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 7: FEBRUARY 9, 2020–FEBRUARY 15, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 7

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	7.3%	Lower than the previous week. Higher than Hawaii's historical baseline, comparable to the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	2	There have been 30 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	38.0%	Lower than the previous week. This number means that many, if not all, of the 62.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	31.2%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.5%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	13	

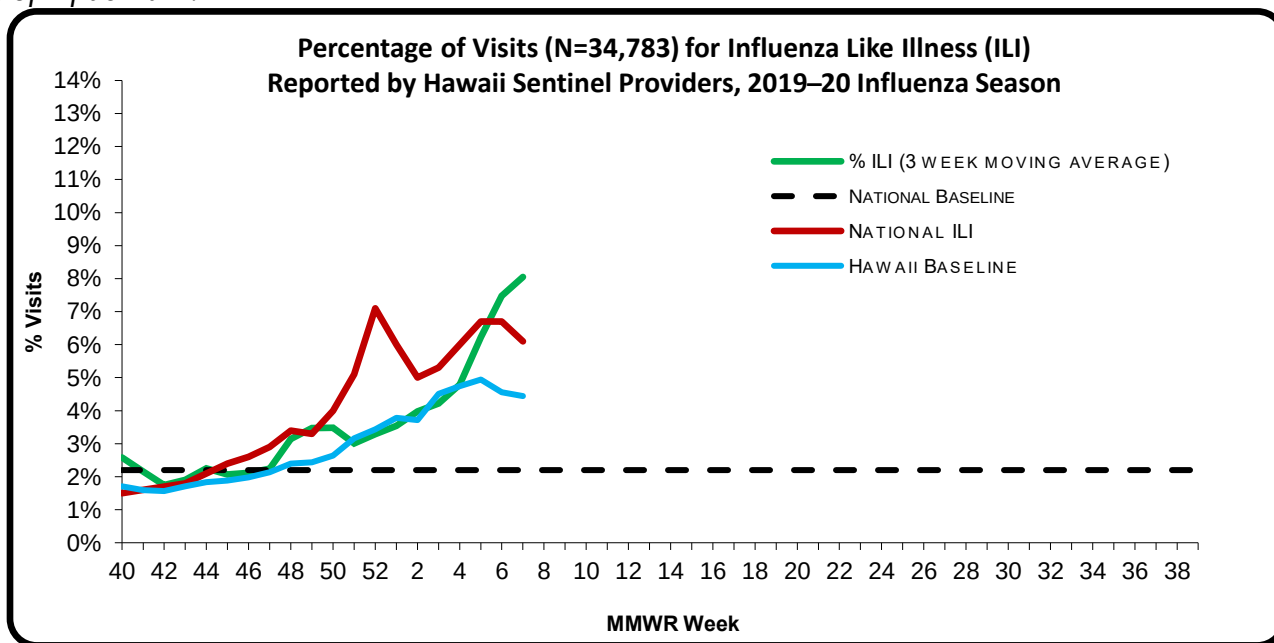
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 7** of the current influenza season:

- **7.3%** (season to date: **3.7%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**6.1%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Regional Activity*⁵.
- *ILI Cluster Activity:* Two new clusters were reported to HDOH during week 7. One cluster occurred at a long-term care facility on Oahu. One cluster occurred at a correctional facility on Oahu. These clusters included cases of influenza A.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

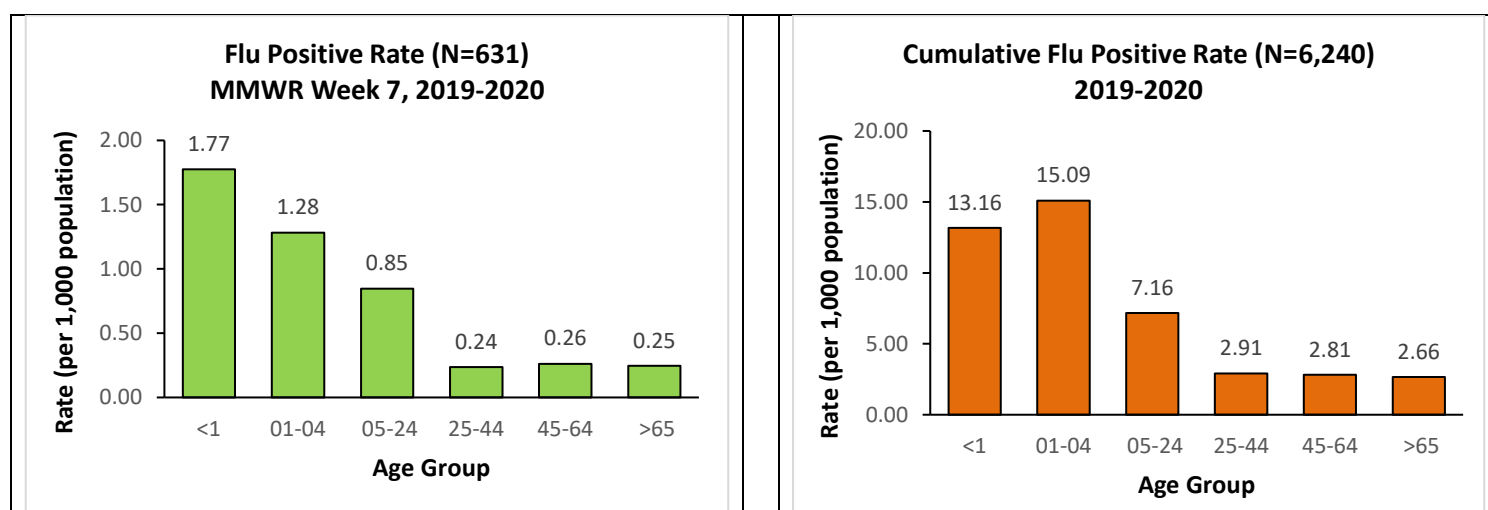
A. INFLUENZA:

- The following reflects laboratory findings for week 7 of the 2019–20 influenza season:
 - A total of **1,659** specimens have been tested statewide for influenza viruses (positive: 631 [**38.0%**]). (Season to date: 20,007 tested [**31.2%** positive])
 - 802 (48.3%) were screened only by rapid antigen tests with no confirmatory testing.
 - 857 (51.7%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 1,028 (62.0%) were negative.

Influenza type	Current week 7 (%)	Season to date (%)
Influenza A (H1) ⁷	14 (2.2)	867 (13.9)
Influenza A (H3)	1 (0.2)	57 (0.9)
Influenza A no subtyping	464 (73.5)	3,587 (57.5)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	3 (0.5)	293 (4.7)
Influenza B no genotyping	149 (23.6)	1,435 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



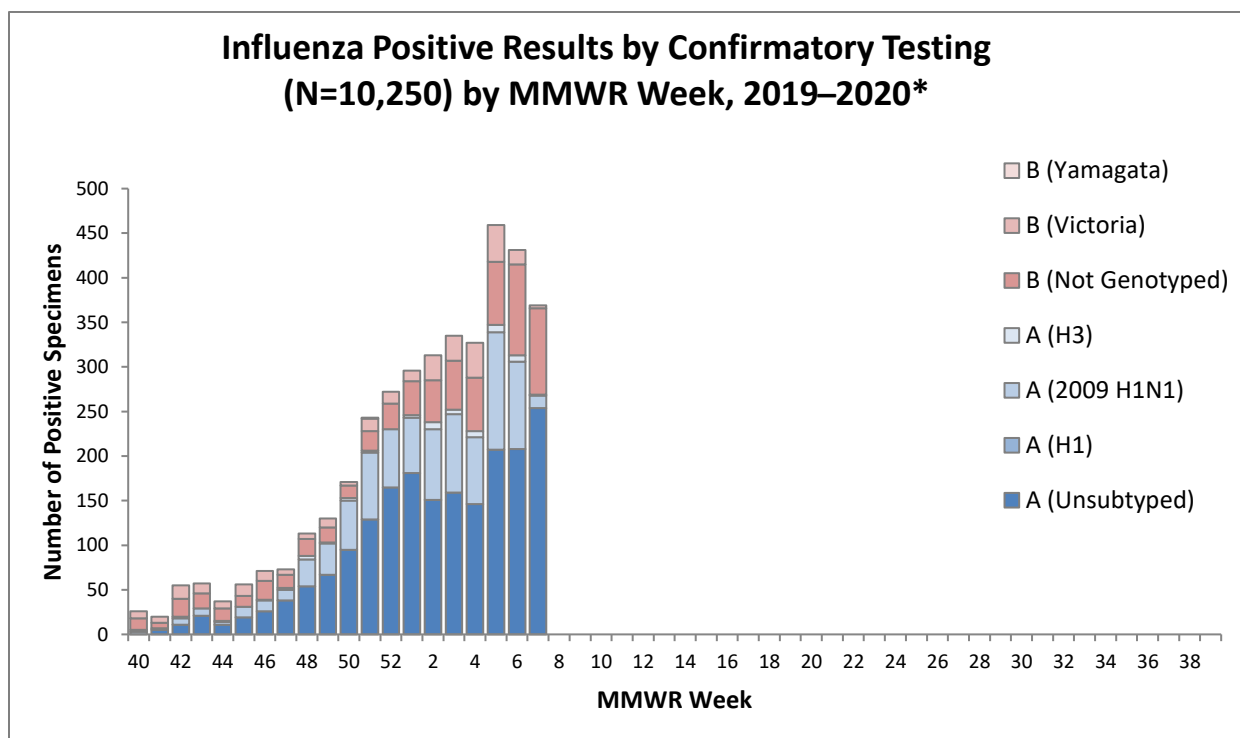
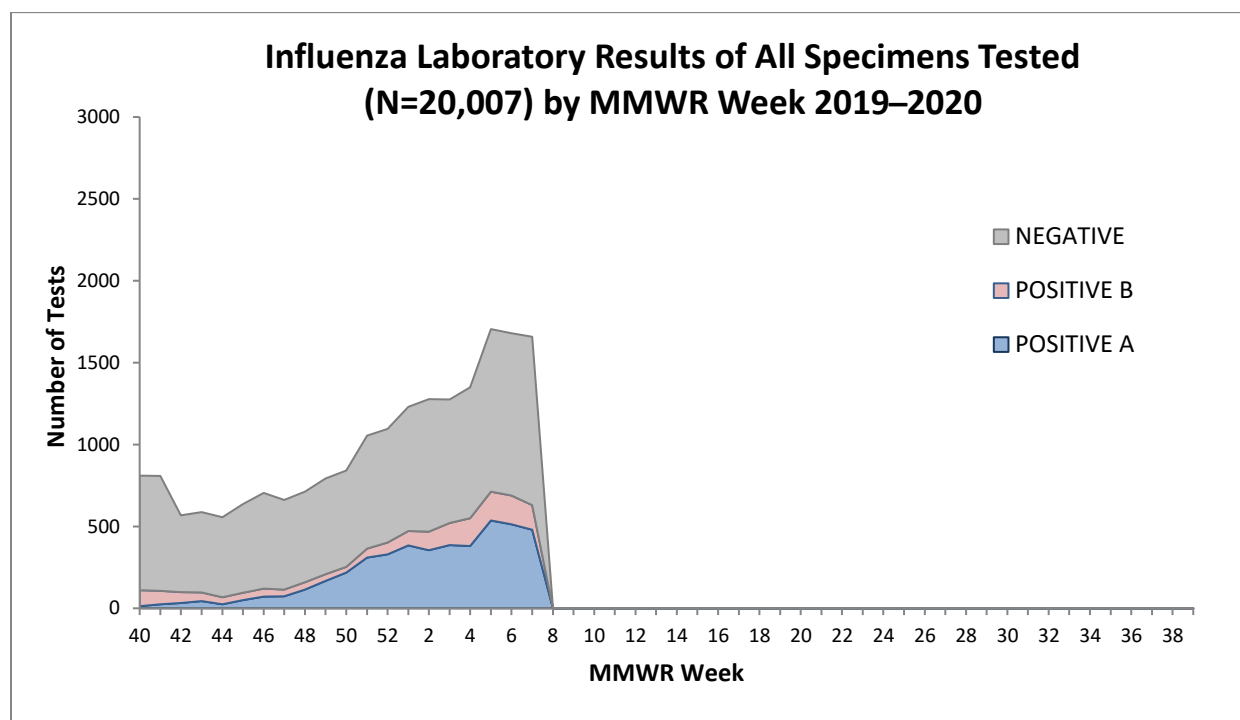
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

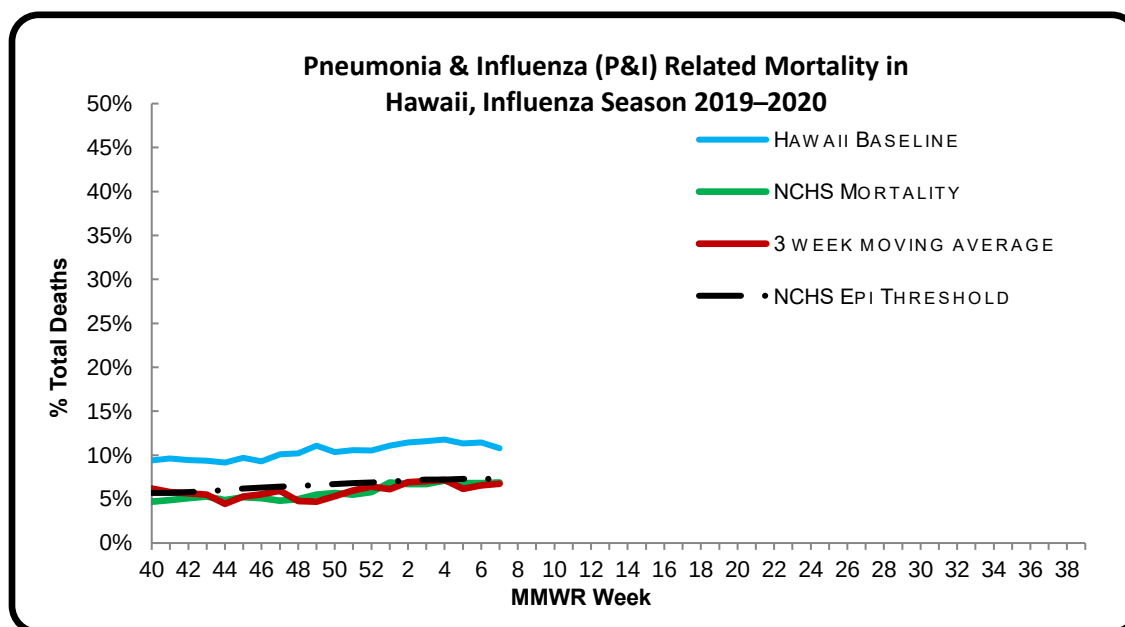
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III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 7** of the current influenza season:

- **6.5%** of all deaths that occurred in Hawaii during week 7 were related to pneumonia or influenza. For the current season (season to date: **6.1%**), there have been 4,556 deaths from any cause, 276 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii⁹ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (**6.9%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**7.3%**) (i.e., inside the 95% confidence interval) for week 7.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 7. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, 13 influenza associated pediatric deaths occurring between weeks 2 (week ending January 11, 2020) and 7 (week ending February 15, 2020) were reported to CDC during week 7. Ten were associated with influenza

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

B viruses; two had a lineage determined as a B/Victoria virus. Three were associated with influenza A viruses; two were subtyped as A(H1N1)pdm09 viruses. (2019-2020 season total: 105).

Of the 105 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 72 deaths were associated with influenza B viruses, and 12 had a lineage determined; all were B/Victoria viruses
- 33 deaths were associated with influenza A viruses, and 20 were subtyped; 19 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 7.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 8: FEBRUARY 16, 2020–FEBRUARY 22, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 8

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	7.7%	Lower than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 31 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	35.3%	Lower than the previous week. This number means that many, if not all, of the 64.7% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	31.5%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.9%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	20	

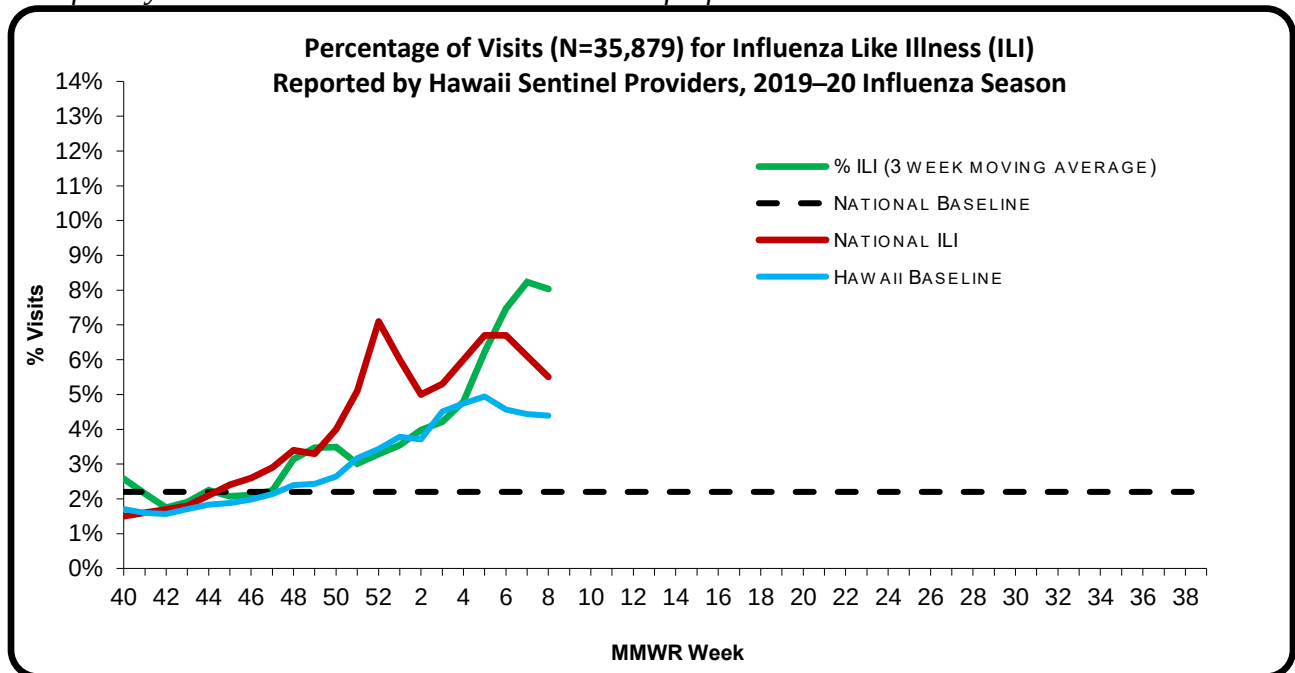
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 8** of the current influenza season:

- **7.7%** (season to date: **3.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**5.5%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Regional Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 8. This cluster occurred at a long-term care facility on Hawaii island and included cases of influenza A.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

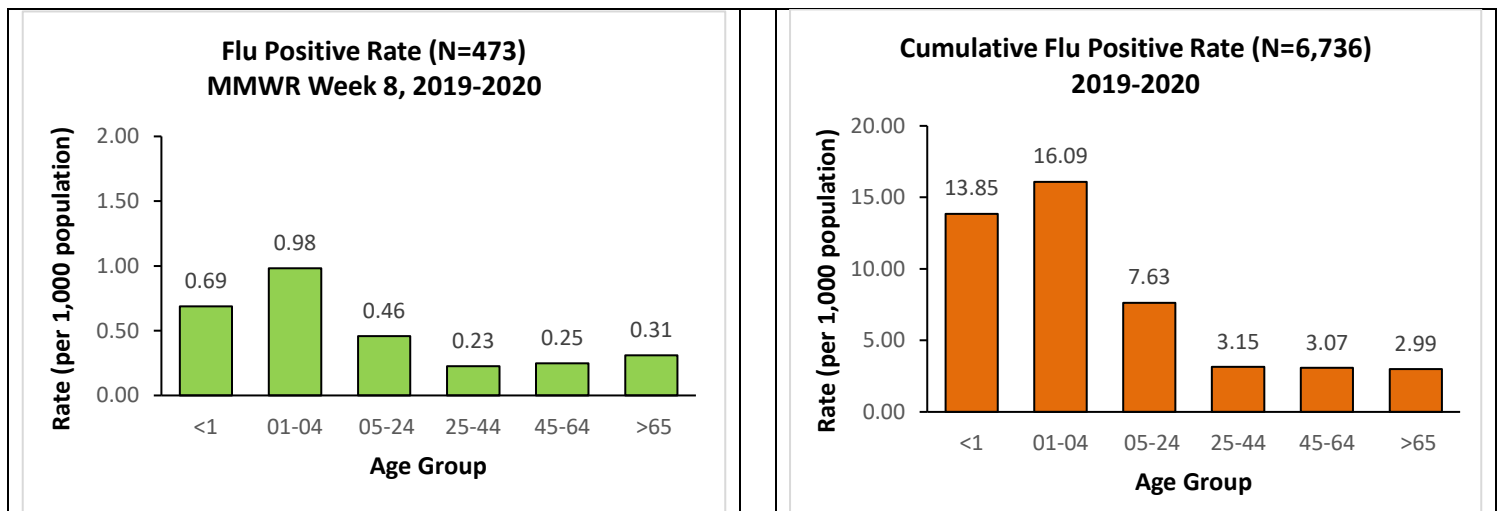
A. INFLUENZA:

- The following reflects laboratory findings for week 8 of the 2019–20 influenza season:
 - A total of **1,340** specimens have been tested statewide for influenza viruses (positive: 473 [35.3%]). (Season to date: 21,387 tested [31.5% positive])
 - 644 (48.1%) were screened only by rapid antigen tests with no confirmatory testing.
 - 696 (51.9%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 867 (64.7%) were negative.

Influenza type	Current week 7 (%)	Season to date (%)
Influenza A (H1) ⁷	42 (8.9)	999 (14.8)
Influenza A (H3)	1 (0.2)	58 (0.9)
Influenza A no subtyping	325 (68.7)	3,837 (57.0)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	10 (2.1)	346 (5.1)
Influenza B no genotyping	95 (20.1)	1,495 (22.2)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



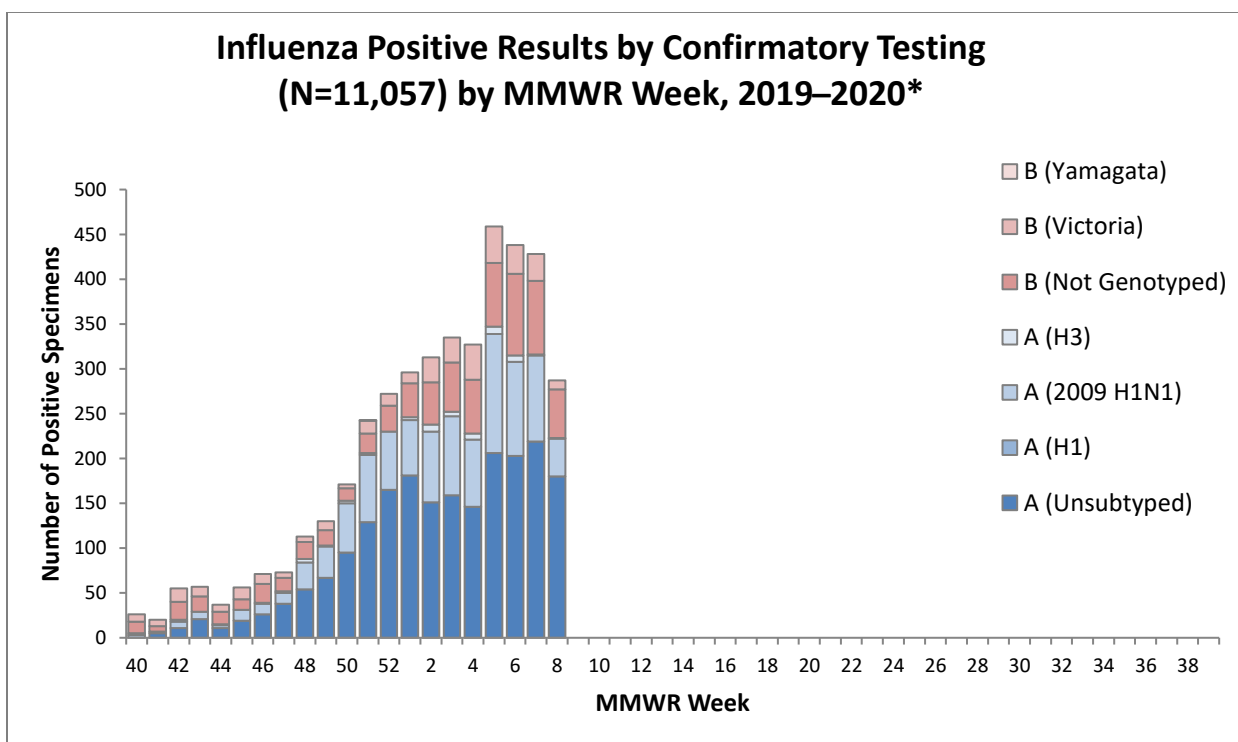
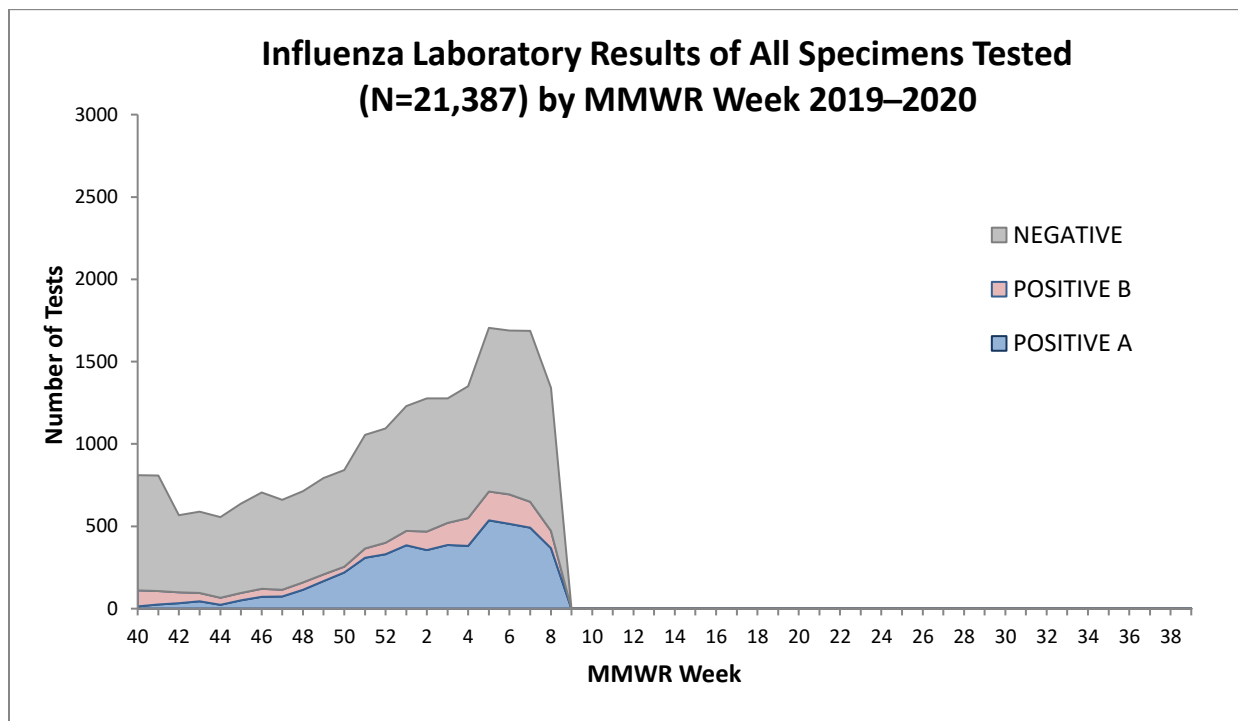
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

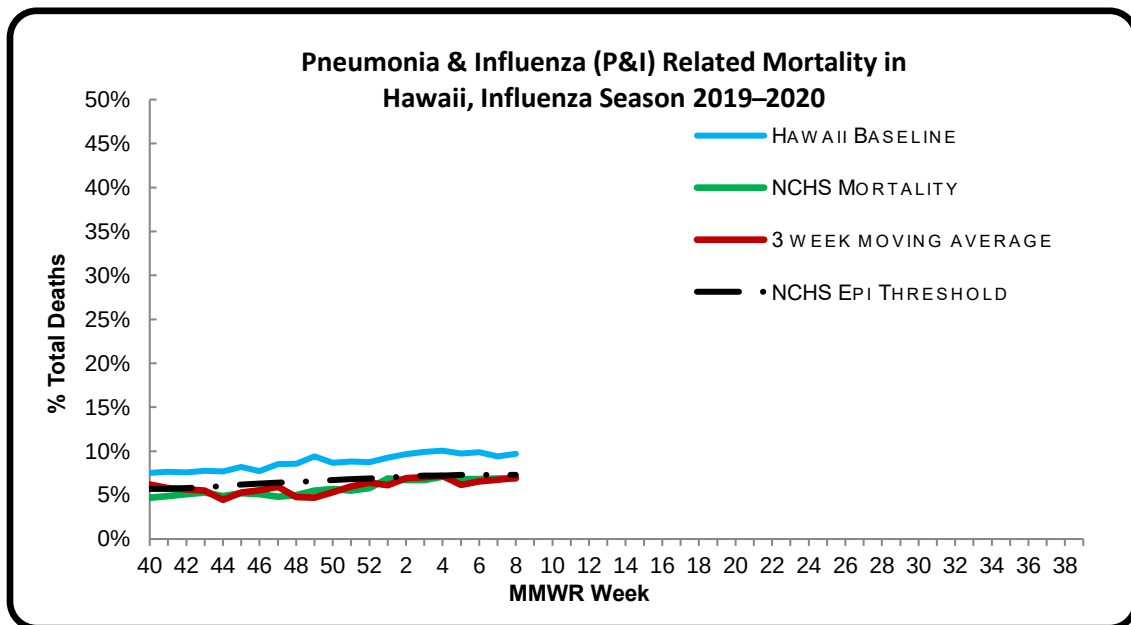
* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 8** of the current influenza season:

- *5.9% of all deaths that occurred in Hawaii during week 8 were related to pneumonia or influenza. For the current season (season to date: 6.1%), there have been 4,794 deaths from any cause, 290 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (6.9%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.3%) (i.e., inside the 95% confidence interval) for week 8.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 8. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, 20 influenza associated pediatric deaths occurring between weeks 52 (week ending December 28, 2019) and 8 (week ending February 22, 2020) were reported to CDC during week 8. Fifteen were associated

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

with influenza B viruses; four had a lineage determined as B/Victoria viruses. Five were associated with influenza A viruses; three were subtyped as A(H1N1)pdm09 viruses. (2019-2020 season total: 125).

Of the 105 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 87 deaths were associated with influenza B viruses, and 18 had a lineage determined; all were B/Victoria viruses
- 38 deaths were associated with influenza A viruses, and 23 were subtyped; 22 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

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- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *No human infections with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 8.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

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APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
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HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 9: FEBRUARY 23, 2020–FEBRUARY 29, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 9

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	6.6%	Lower than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	4	There have been 35 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	32.1%	Lower than the previous week. This number means that many, if not all, of the 67.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	31.6%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.3%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	11	

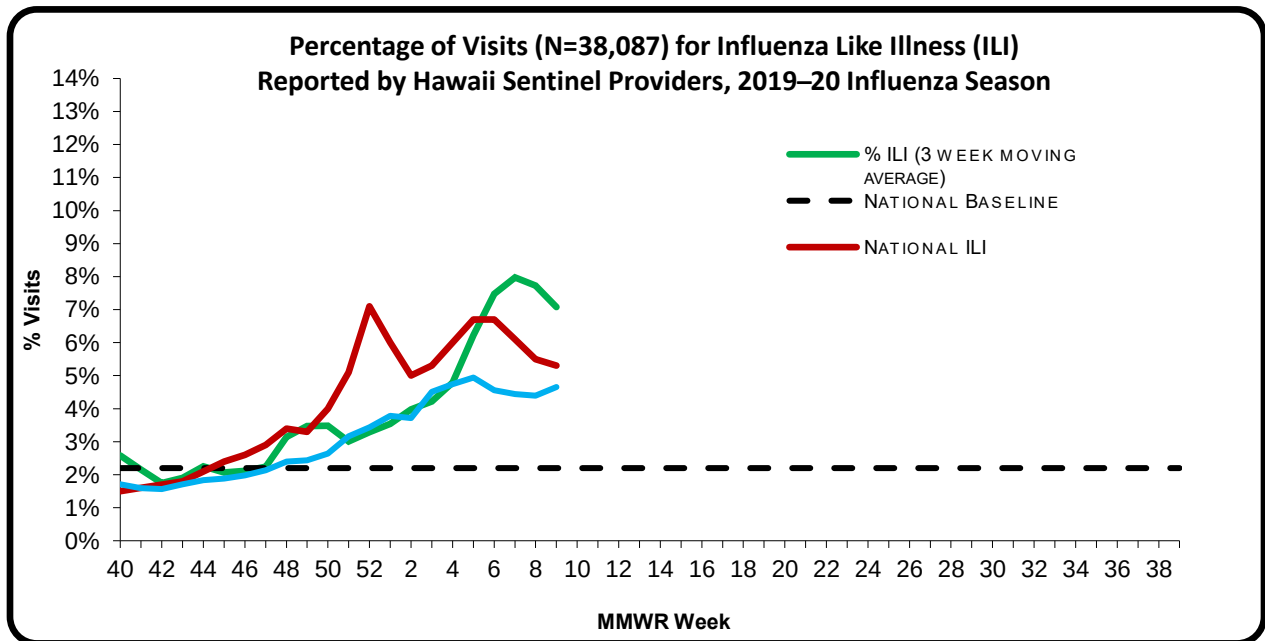
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 9** of the current influenza season:

- **6.6%** (season to date: **4.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**5.3%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* Four new clusters were reported to HDOH during week 9. Three of these clusters occurred at schools on Oahu. One cluster occurred at a long-term care facility on Oahu. These clusters included cases of influenza A and B.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

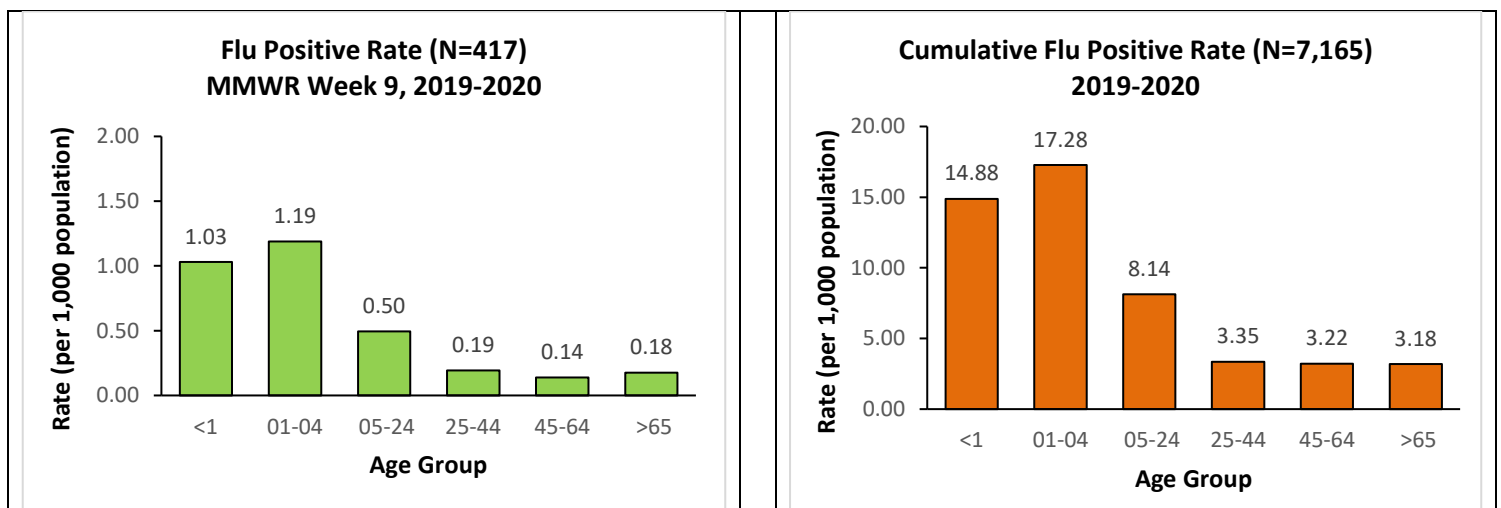
A. INFLUENZA:

- The following reflects laboratory findings for week 9 of the 2019–20 influenza season:
 - A total of **1,298** specimens have been tested statewide for influenza viruses (positive: 417 [32.1%]). (Season to date: 22,701 tested [31.6% positive])
 - 577 (44.5%) were screened only by rapid antigen tests with no confirmatory testing.
 - 721 (55.5%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 881 (67.9%) were negative.

Influenza type	Current week 9 (%)	Season to date (%)
Influenza A (H1) ⁷	10 (2.4)	1,049 (14.6)
Influenza A (H3)	1 (0.2)	61 (0.9)
Influenza A no subtyping	283 (67.9)	4,090 (57.1)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	346 (4.8)
Influenza B no genotyping	123 (29.5)	1,618 (22.6)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



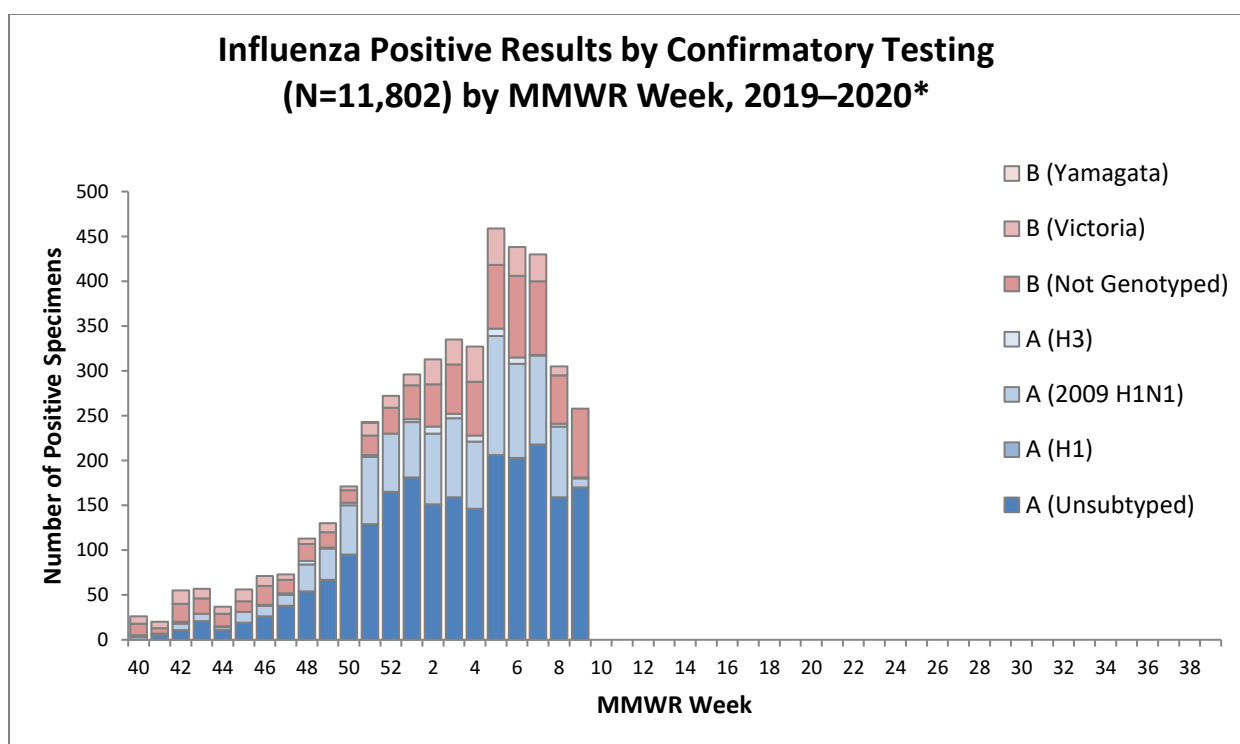
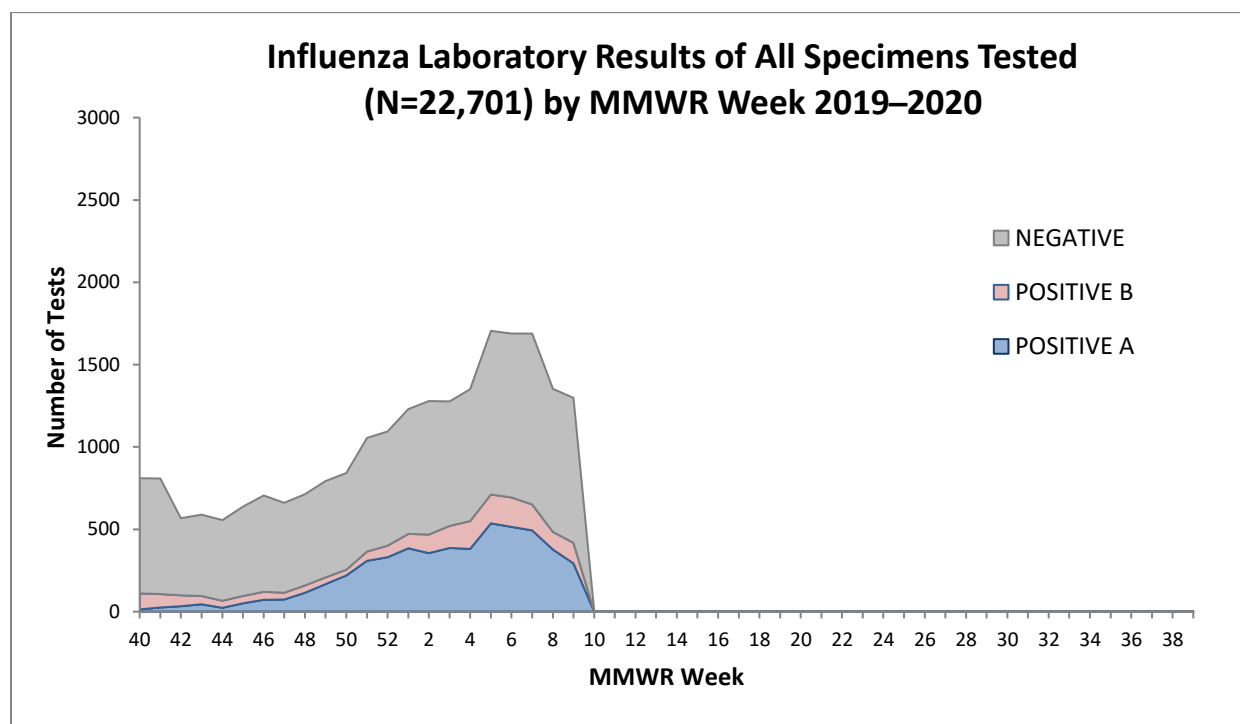
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

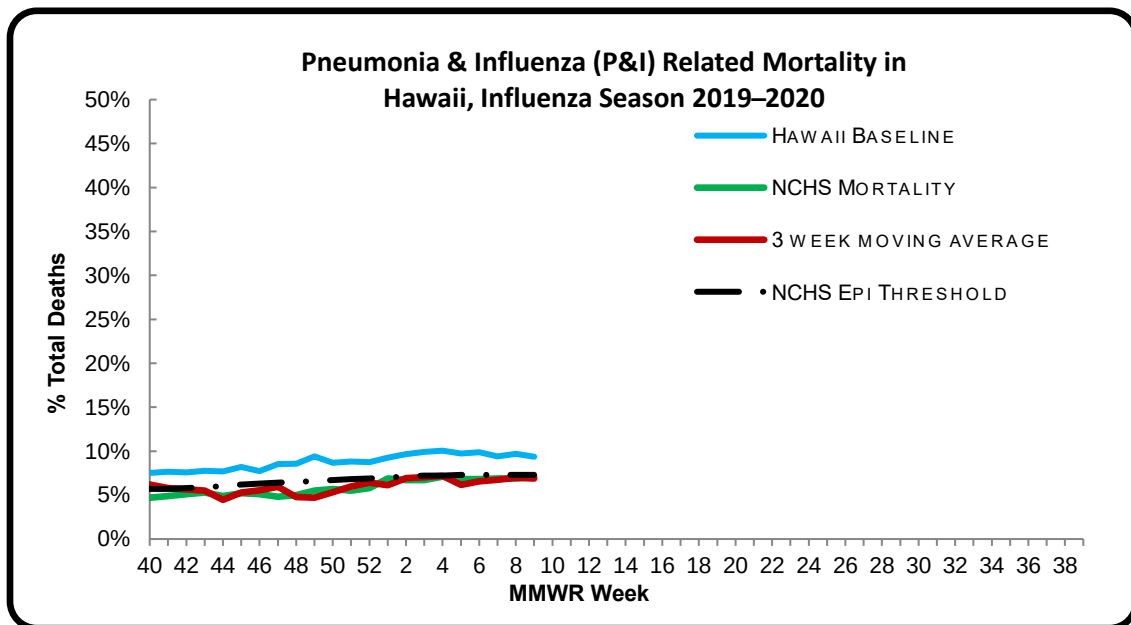
* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 9** of the current influenza season:

- **8.3%** of all deaths that occurred in Hawaii during week 9 were related to pneumonia or influenza. For the current season (season to date: **6.2%**), there have been 5,071 deaths from any cause, 313 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (**7.1%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**7.3%**) (i.e., inside the 95% confidence interval) for week 9.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 9. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, 11 influenza associated pediatric deaths occurring between weeks 51 (week ending December 21, 2019) and 9 (week ending February 29, 2020) were reported to CDC during week 9. Six were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza B viruses; none had lineage determined. Five were associated with influenza A viruses; one was subtyped as an A(H1N1)pdm09 virus. (2019-2020 season total: 136).

Of the 136 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 93 deaths were associated with influenza B viruses, and 18 had a lineage determined; all were B/Victoria viruses
- 43 deaths were associated with influenza A viruses, and 24 were subtyped; 23 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v, H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - One new laboratory-confirmed human case of influenza A(H1N1)v virus infection was detected in China in a 38-year-old man from Hebei who had illness onset on November 14, 2019. The patient had mild illness and has recovered. Information on contacts and likely source of exposure was not available.

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)),

which were last updated on **February 28, 2020**. Since the previous update, two new human infections with avian influenza A(H9N2) viruses were reported. One case was reported to WHO from China, Hong Kong SAR in a 7-year-old boy, with an onset of illness on February 4, 2020. The patient was hospitalized and was in stable condition at the time of reporting. The patient had visited relatives in Guangdong Province, China. Backyard poultry were kept at the relatives' residence but no direct exposure to live poultry was reported. No further cases among contacts of the case were detected. The second case of infection was detected in a child in the Ziguinchor region of Senegal. The patient presented to an outpatient clinic for influenza-like illness, was not hospitalized, and recovered. The likely source of exposure was backyard poultry.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

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38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 10: MARCH 1, 2020–MARCH 7, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.**

The data in this report reflects the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 10

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	6.7%	Higher than the previous week. Higher than Hawaii's historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 36 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	28.2%	Lower than the previous week. This number means that many, if not all, of the 71.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	31.5%	

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.2%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	8	

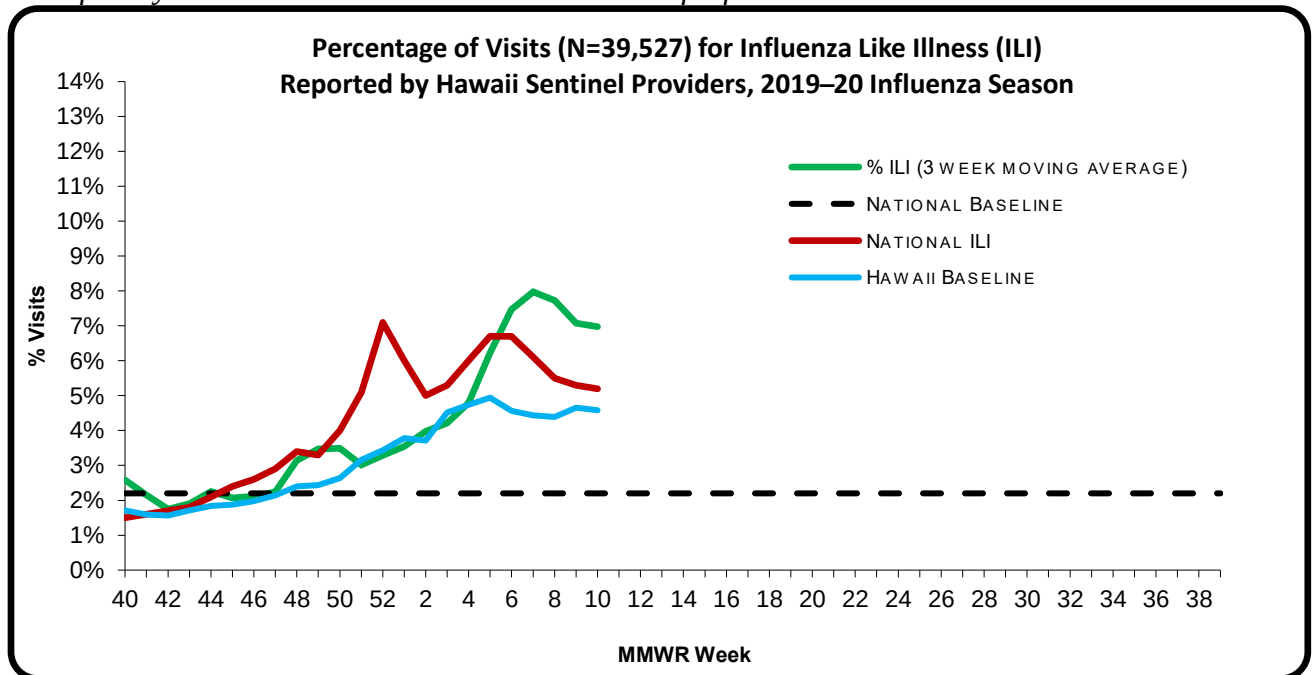
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 10** of the current influenza season:

- **6.7%** (season to date: **4.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{2,3} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁴ (i.e., outside the 95% confidence interval) and higher than the national ILI rate (**5.2%**) (i.e., outside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁵.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 10. This cluster occurred at a long-term care facility on Oahu. This cluster included cases of influenza B.



² The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

³ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁴ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁵ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁶ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

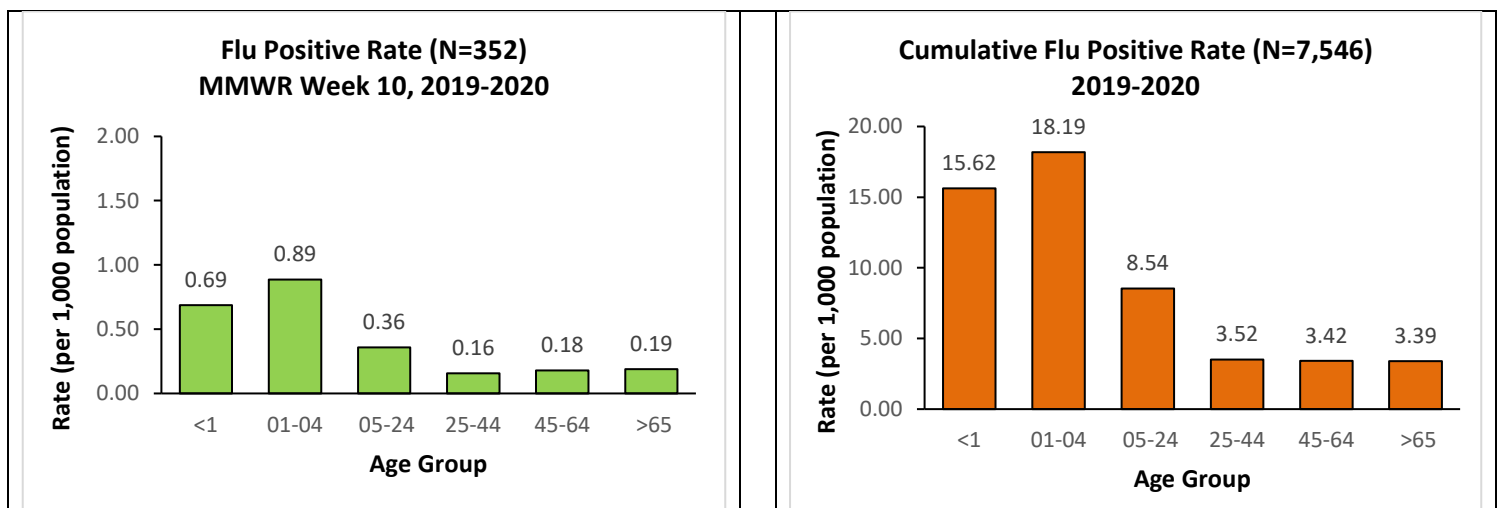
A. INFLUENZA:

- The following reflects laboratory findings for week 10 of the 2019–20 influenza season:
 - A total of **1,250** specimens have been tested statewide for influenza viruses (positive: 352 [28.2%]). (Season to date: 23,998 tested [31.5% positive])
 - 590 (47.2%) were screened only by rapid antigen tests with no confirmatory testing.
 - 660 (52.8%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 898 (71.8%) were negative.

Influenza type	Current week 10 (%)	Season to date (%)
Influenza A (H1) ⁷	19 (5.4)	1,128 (15.0)
Influenza A (H3)	0 (0.0)	63 (0.8)
Influenza A no subtyping	230 (65.3)	4,275 (56.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	1 (0.3)	379 (5.0)
Influenza B no genotyping	102 (29.0)	1,700 (22.5)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁸



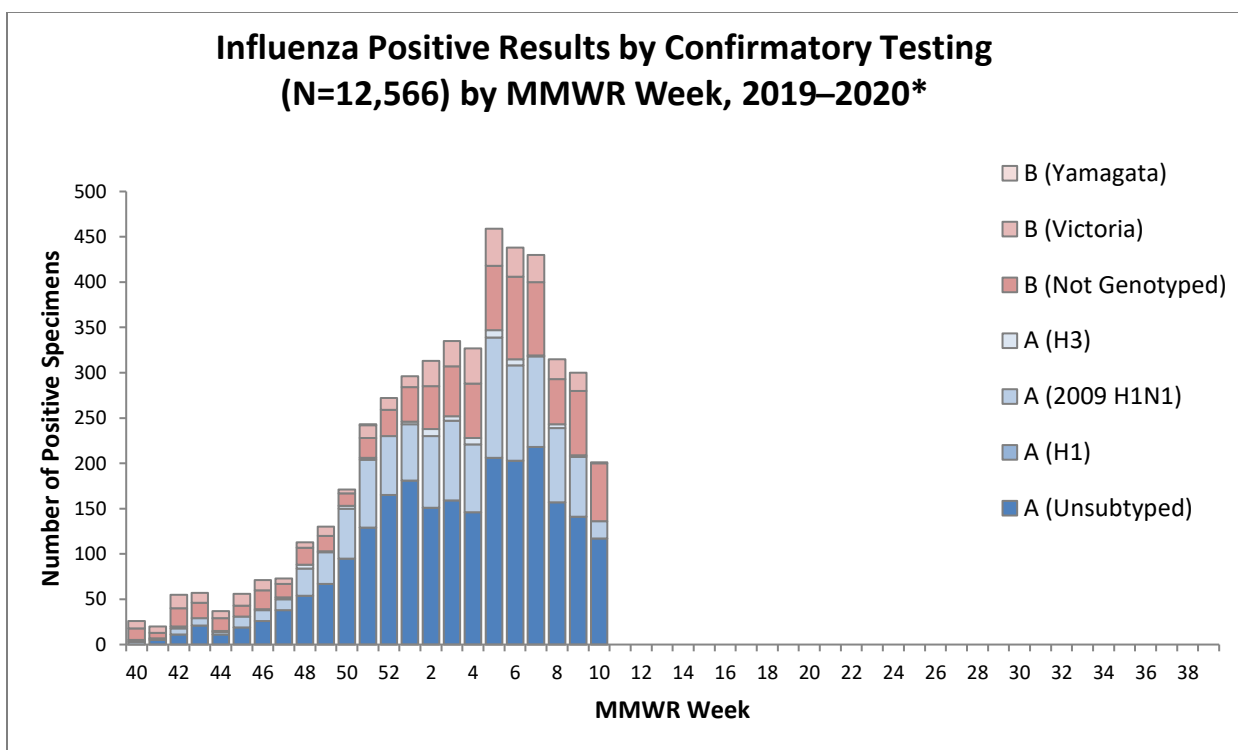
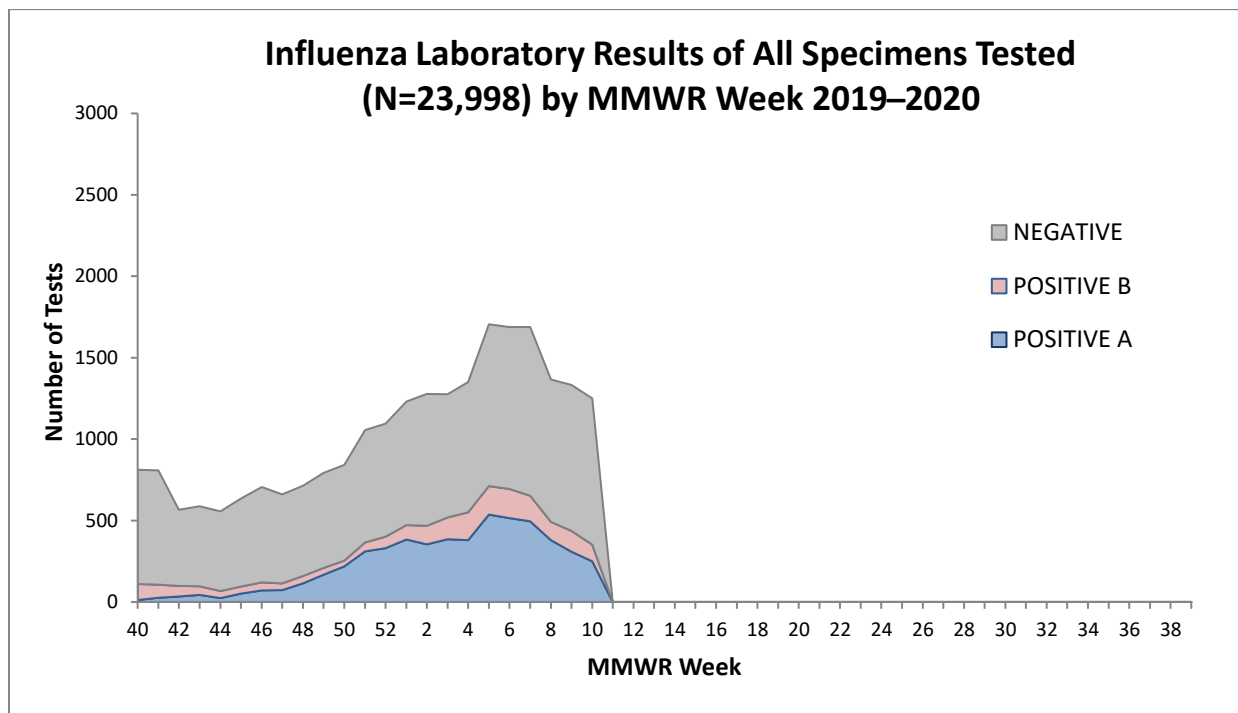
⁶ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁷ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁸ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																									
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																					
Adenovirus	X		X		X		X	X	X	X							X	X		X	X																																																				
Coronavirus															X		X	X		X	X		X																																																		
Coxsackie Virus																																																																									
Cytomegalovirus																																																																									
Echovirus																																																																									
Enterovirus																																																																									
Herpes Simplex Virus, Type 1																																																																									
Metapneumovirus													X							X	X	X	X																																																		
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X																																																		
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																	
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																	
Varicella Zoster Virus																																																																									
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza A (H3)	X		X		X		X	X	X	X	X				X	X		X	X	X	X	X																																																			
Influenza A (Other seasonal H1)																																																																									
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		

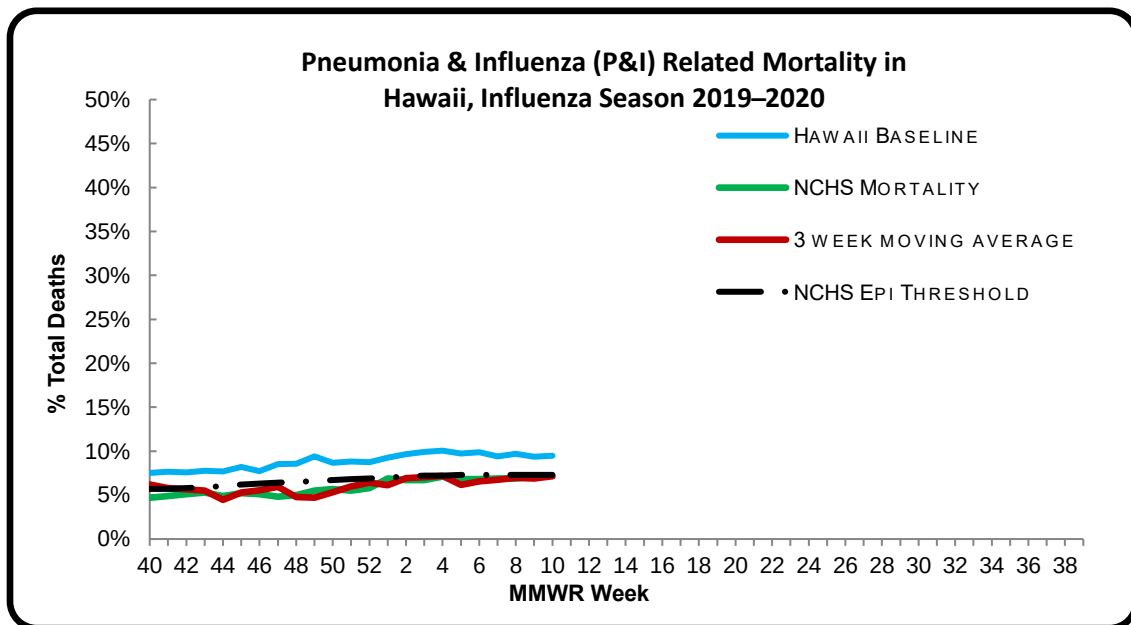
* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 10** of the current influenza season:

- *7.2% of all deaths that occurred in Hawaii during week 10 were related to pneumonia or influenza. For the current season (season to date: 6.2%), there have been 5,334 deaths from any cause, 332 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁹ (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁰ (7.1%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.3%) (i.e., inside the 95% confidence interval) for week 10.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹¹:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 10. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, eight influenza associated pediatric deaths occurring between weeks 6 (week ending February 8, 2020) and 10 (week ending March 7, 2020) were reported to CDC during week 10. Three were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza B viruses; one had a lineage determined as a B/Victoria virus. Five were associated with influenza A viruses; three were subtyped as A(H1N1)pdm09 viruses. (2019-2020 season total: 144).

Of the 144 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 96 deaths were associated with influenza B viruses, and 20 had a lineage determined; all were B/Victoria viruses
- 48 deaths were associated with influenza A viruses, and 27 were subtyped; 26 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 10.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 11: MARCH 8, 2020–MARCH 14, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 11

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	5.4%	Lower than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 37 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	14.8%	Lower than the previous week. This number means that many, if not all, of the 85.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	26.2%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19	0%	Sentinel surveillance specimens selected among influenza negative specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	5	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

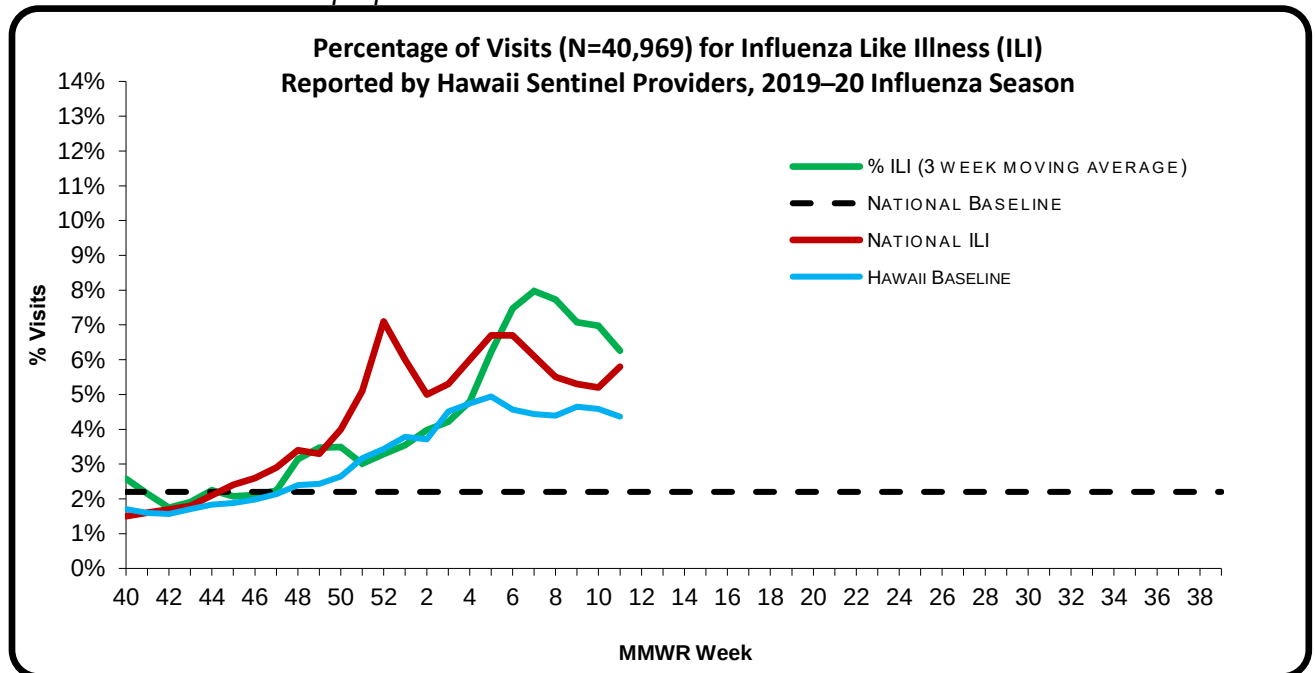
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath).

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 11** of the current influenza season:

- **5.4%** (season to date: **4.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**5.8%**) (i.e., inside the 95% confidence interval).
- *Geographic Spread: Local Activity*⁶.
- *ILI Cluster Activity:* One new cluster was reported to HDOH during week 11. This cluster occurred at a school on Oahu and included cases of influenza B.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported on one island, Regional: clusters reported on more than one island, Widespread: clusters reported on all islands. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁷ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

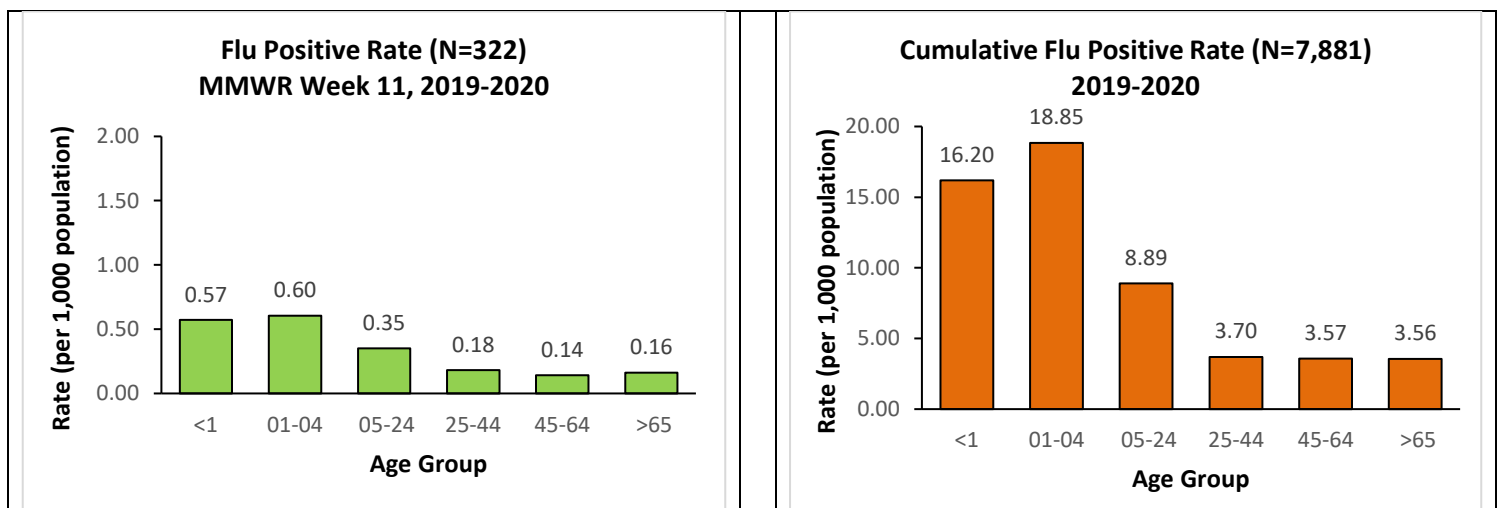
A. INFLUENZA:

- The following reflects laboratory findings for week 11 of the 2019–20 influenza season:
 - A total of **2,172** specimens have been tested statewide for influenza viruses (positive: 322 [**14.8%**]). (Season to date: 30,079 tested [**26.2%** positive])
 - 571 (26.3%) were screened only by rapid antigen tests with no confirmatory testing.
 - 1,601 (73.7%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 1,850 (85.2%) were negative.

Influenza type	Current week 11 (%)	Season to date (%)
Influenza A (H1) ⁸	14 (4.4)	1,185 (15.0)
Influenza A (H3)	0 (0.0)	64 (0.8)
Influenza A no subtyping	209 (64.9)	4,450 (56.5)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	393 (5.0)
Influenza B no genotyping	99 (30.7)	1,788 (22.7)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.⁹



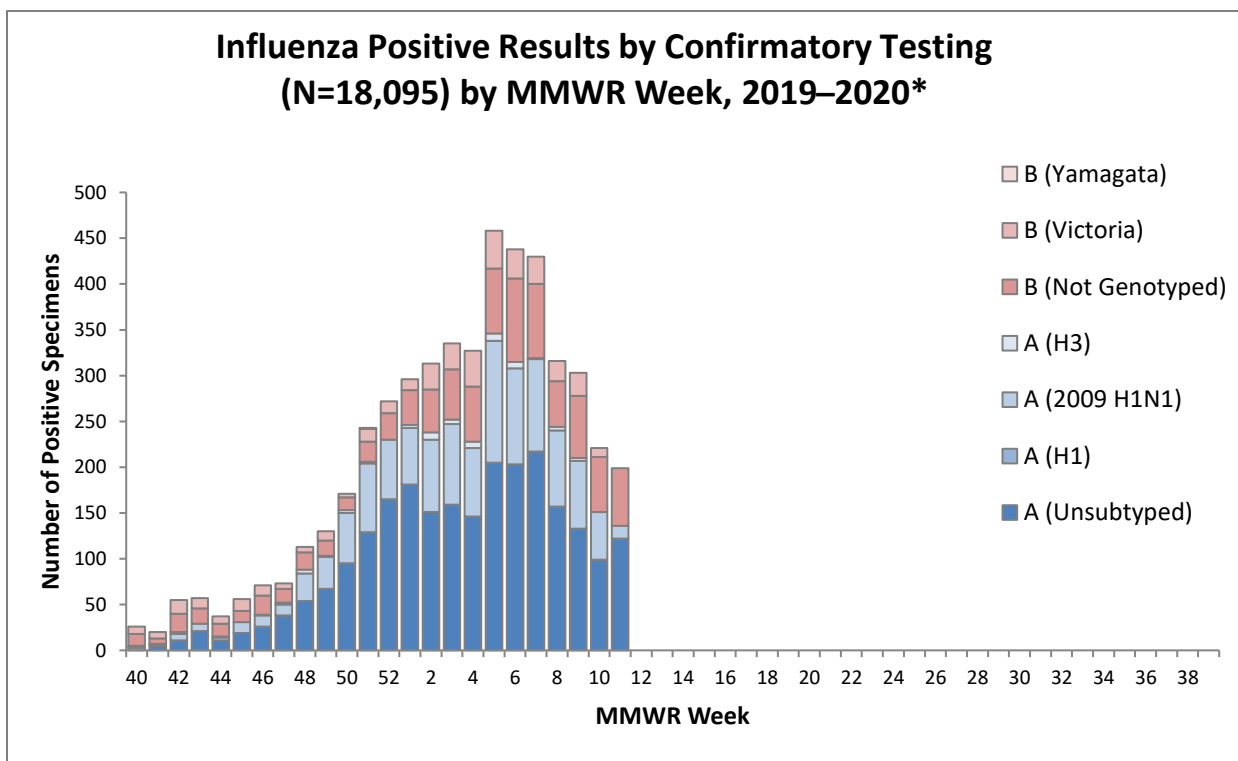
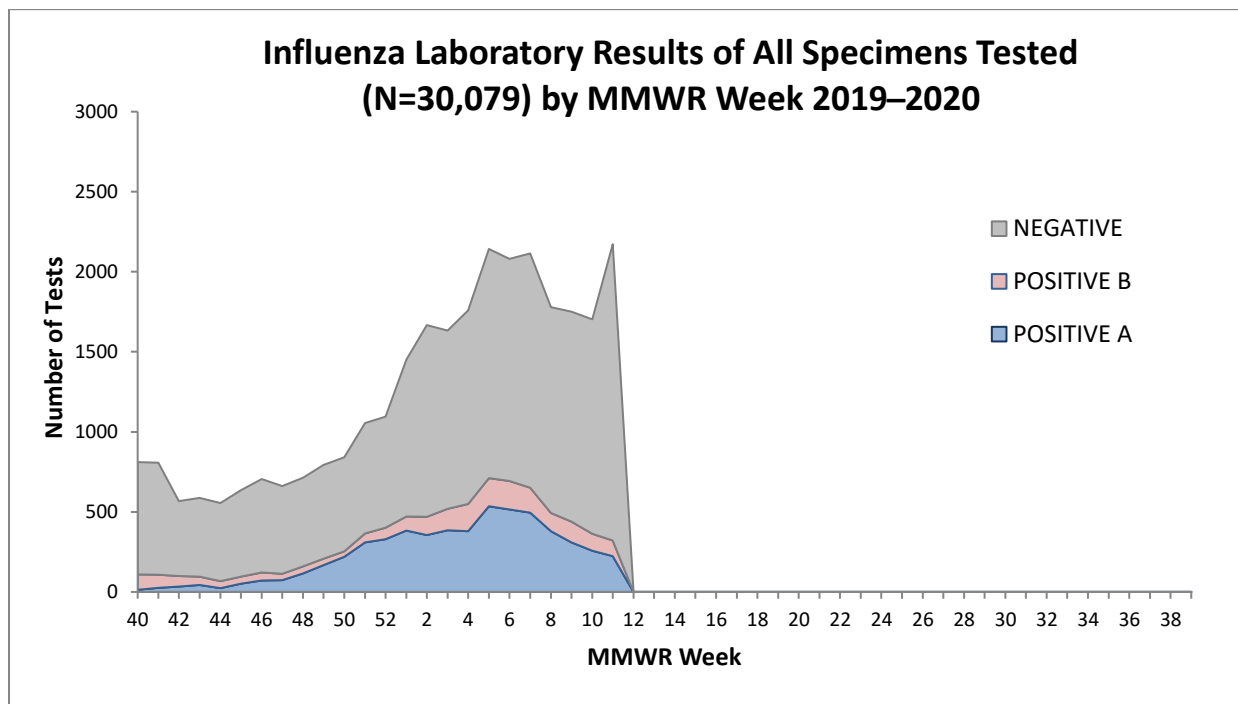
⁷ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁸ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

⁹ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																										
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																						
Adenovirus	X		X		X		X	X	X	X							X	X		X	X		X																																																			
Coronavirus															X		X	X		X	X		X	X																																																		
Coxsackie Virus																																																																										
Cytomegalovirus																																																																										
Echovirus																																																																										
Enterovirus																																																																										
Herpes Simplex Virus, Type 1																																																																										
Metapneumovirus													X							X	X	X	X	X																																																		
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X																																																		
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Varicella Zoster Virus																																																																										
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza A (H3)	X		X		X		X	X	X	X	X				X	X		X	X	X	X	X																																																				
Influenza A (Other seasonal H1)																																																																										
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients with a negative influenza test performed at Hawaii's major private laboratories (i.e., CLH and DLS) will be selected for COVID-19 testing. Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath). Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population.

1. COVID-19:

- The following reflects laboratory findings for week 11 of the 2019–20 influenza season:
 - A total of **257** specimens have been tested statewide for COVID-19 (positive: 0 [0%]).
(Season to date: 257 tested [0% positive])
 - 6 specimens were excluded when it was determined on further investigation persons actually did have travel history outside of the state of Hawaii.

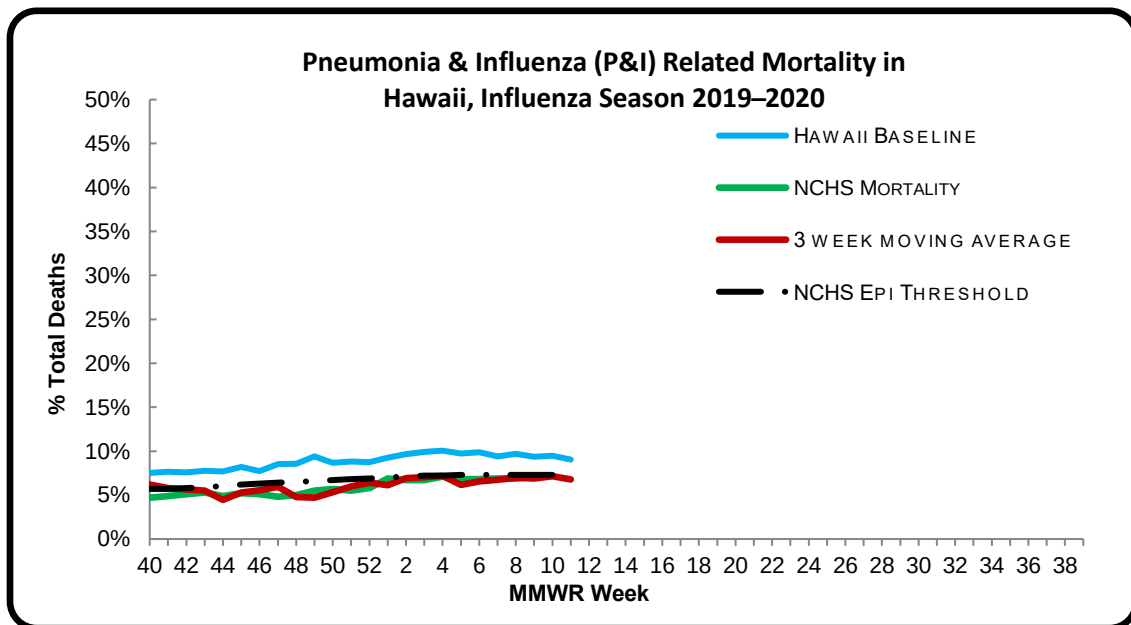
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	50	0	0-17	83	0
Honolulu	167	0	18-64	130	0
Kauai	8	0	65+	44	0
Maui	28	0			
Missing	4	0			

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 11** of the current influenza season:

- **7.4%** of all deaths that occurred in Hawaii during week 11 were related to pneumonia or influenza. For the current season (season to date: **6.2%**), there have been 5,585 deaths from any cause, 344 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii¹⁰ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹¹ (7.4%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.3%) (i.e., inside the 95% confidence interval) for week 11.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹²:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 10. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, five influenza associated pediatric deaths occurring between weeks 8 (week ending February 22, 2020) and 11 (week ending March 14, 2020) were reported to CDC during week 11. All five were associated

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

with influenza A viruses, three of which were subtyped as A(H1N1)pdm09 viruses. (2019-2020 season total: 149).

Of the 149 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 96 deaths were associated with influenza B viruses, and 20 had a lineage determined; all were B/Victoria viruses
- 53 deaths were associated with influenza A viruses, and 30 were subtyped; 29 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 10.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

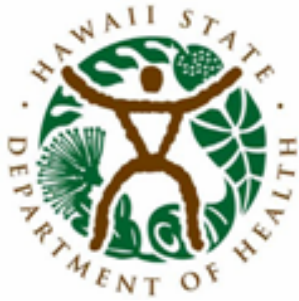
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 12: MARCH 15, 2020–MARCH 21, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 12

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	6.7%	Higher than the previous week. Higher than Hawaii's historical baseline, comparable to the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	2	There have been 39 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	8.2%	Lower than the previous week. This number means that many, if not all, of the 92.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	24.6%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19	0.9%	Sentinel surveillance specimens selected among influenza negative specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.9%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	6	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

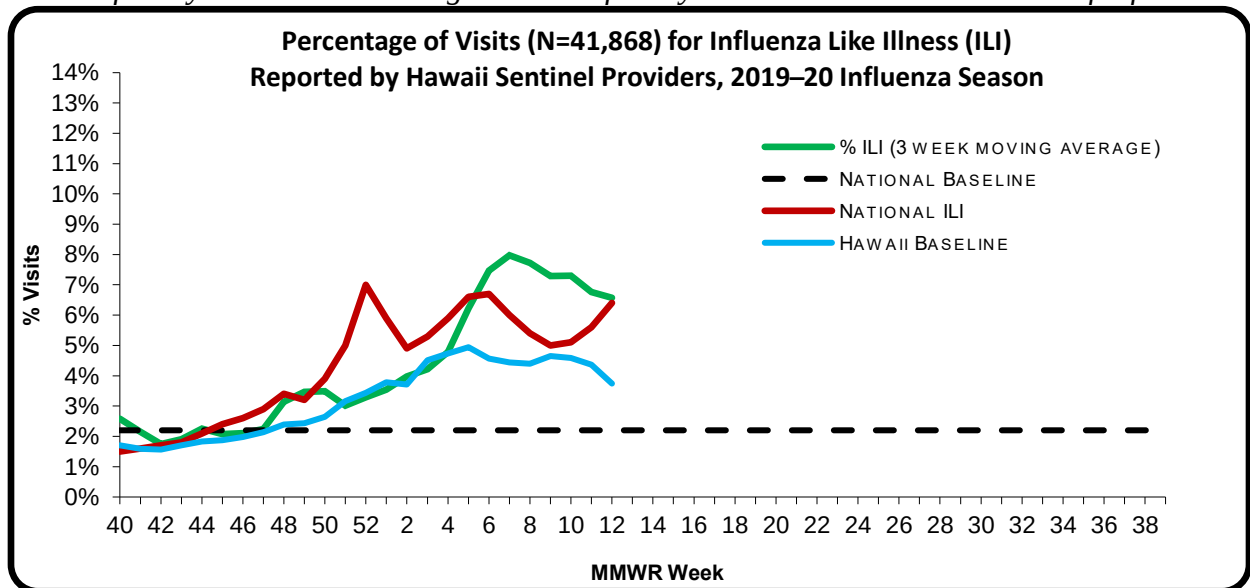
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath).

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 12** of the current influenza season:

- **6.7%** (season to date: **4.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**6.4%**) (i.e., inside the 95% confidence interval).
- ILI activity level: *Moderate*⁶
- Geographic Spread: *Local Activity*⁷.
- ILI Cluster Activity: Two new clusters were reported to HDOH during week 12. These clusters occurred at a long-term care facility on Maui and a long-term care facility on Oahu and included cases of influenza A.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

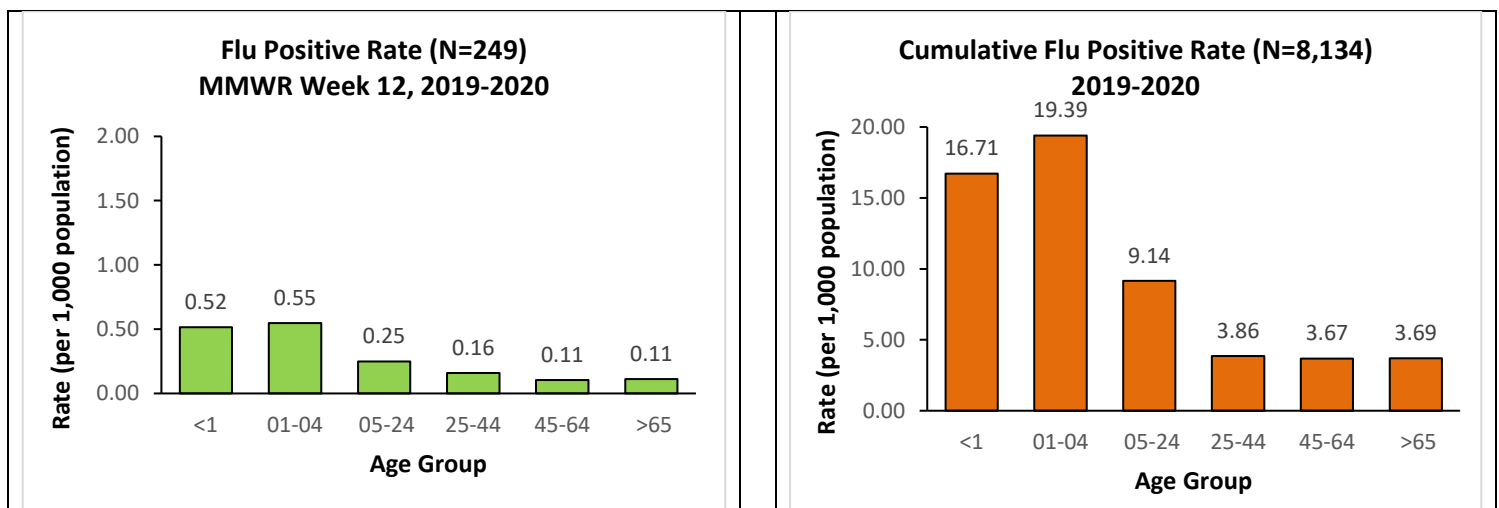
A. INFLUENZA:

- The following reflects laboratory findings for week 12 of the 2019–20 influenza season:
 - A total of **3,049** specimens have been tested statewide for influenza viruses (positive: 249 [8.2%]). (Season to date: 33,137 tested [24.6% positive])
 - 651 (21.4%) were screened only by rapid antigen tests with no confirmatory testing.
 - 2,398 (78.6%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 2,800 (92.8%) were negative.

Influenza type	Current week 12 (%)	Season to date (%)
Influenza A (H1) ⁹	6 (2.4)	1,202 (14.8)
Influenza A (H3)	2 (0.8)	66 (0.8)
Influenza A no subtyping	174 (69.9)	4,616 (56.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	398 (4.9)
Influenza B no genotyping	67 (26.9)	1,851 (22.8)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



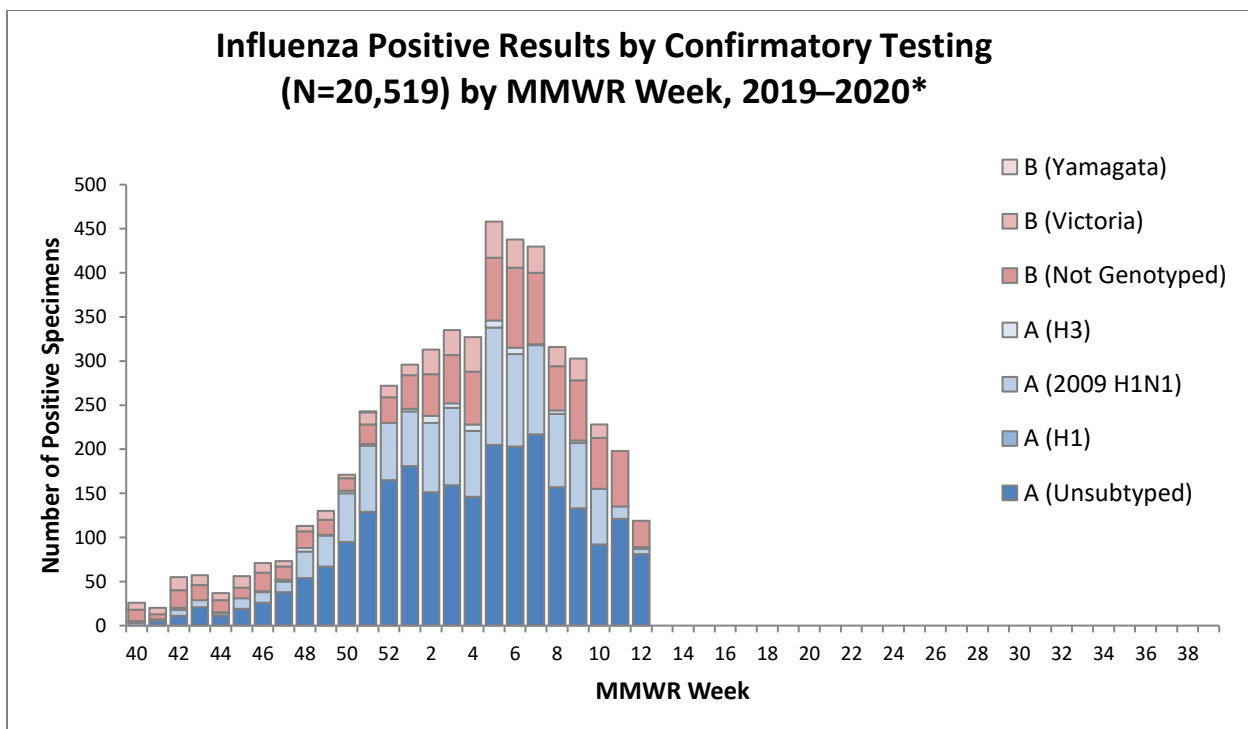
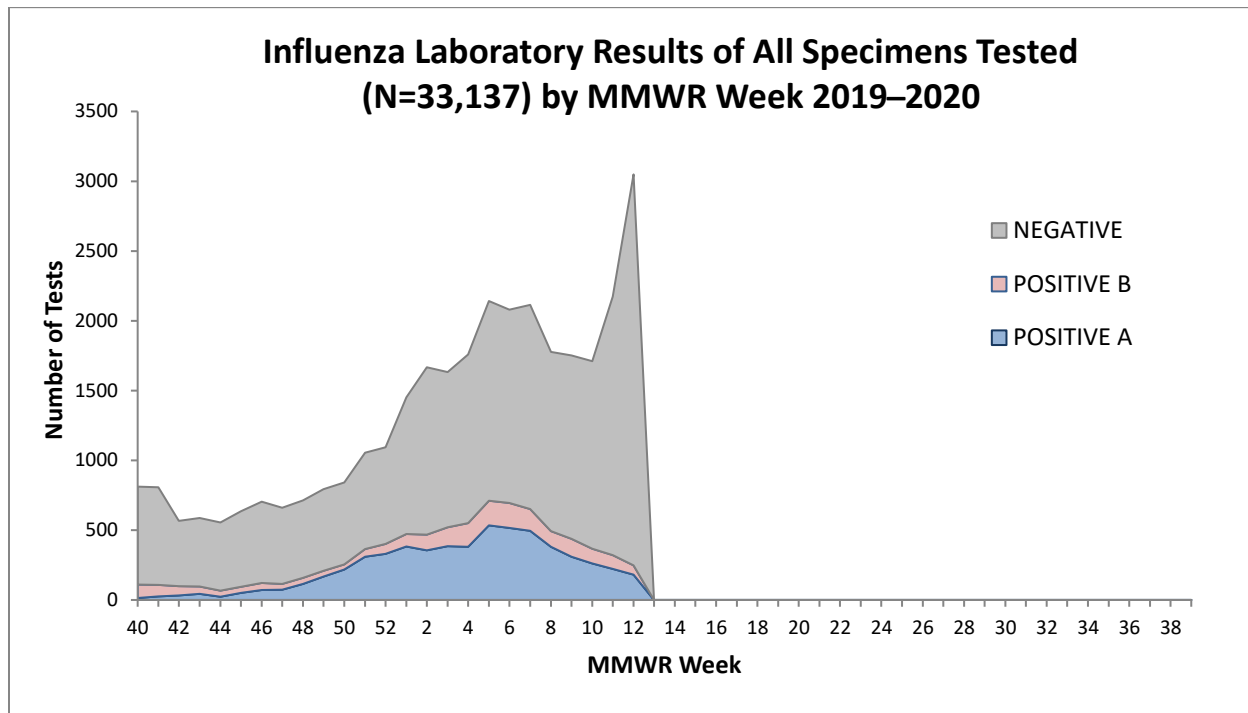
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients with a negative influenza test performed at Hawaii's major private laboratories (i.e., CLH and DLS) will be selected for COVID-19 testing. Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath). Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

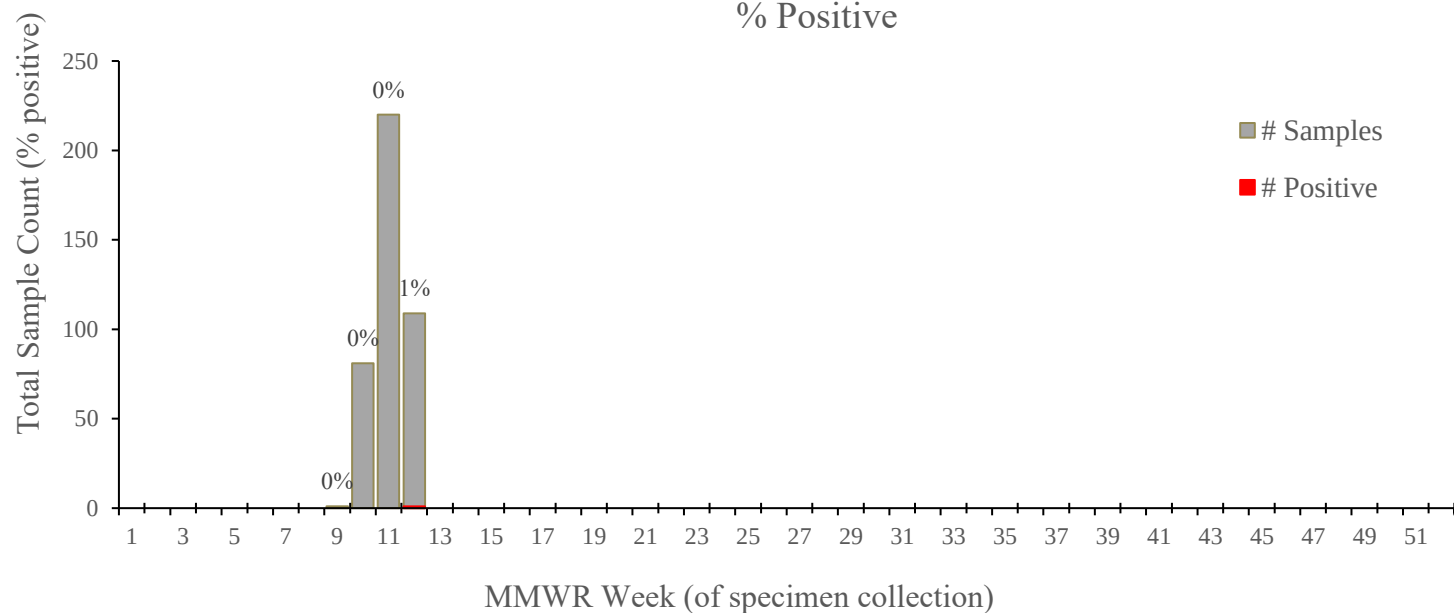
The following reflects laboratory findings for week 12 of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Local¹¹*
- *A total of 109 surveillance specimens have been tested statewide for COVID-19 (positive: 1 [0.9%]). (Season to date: 410 tested [0.2% positive])*
 - *One positive specimen occurring during week 12 was excluded when further investigation determined it to be travel-associated and therefore did not meet surveillance criteria.*
 - *Positive specimens occurring in weeks 13 and 14 have been identified and are being investigated to confirm whether truly community-associated or travel-associated.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	77	0	0-17	110	0
Honolulu	218	0.5	18-64	219	0.5
Kauai	13	0	65+	81	0
Maui	37	0			
Missing	65	0			

¹¹ No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

COVID-19 Surveillance Samples Tested (N=410), % Positive

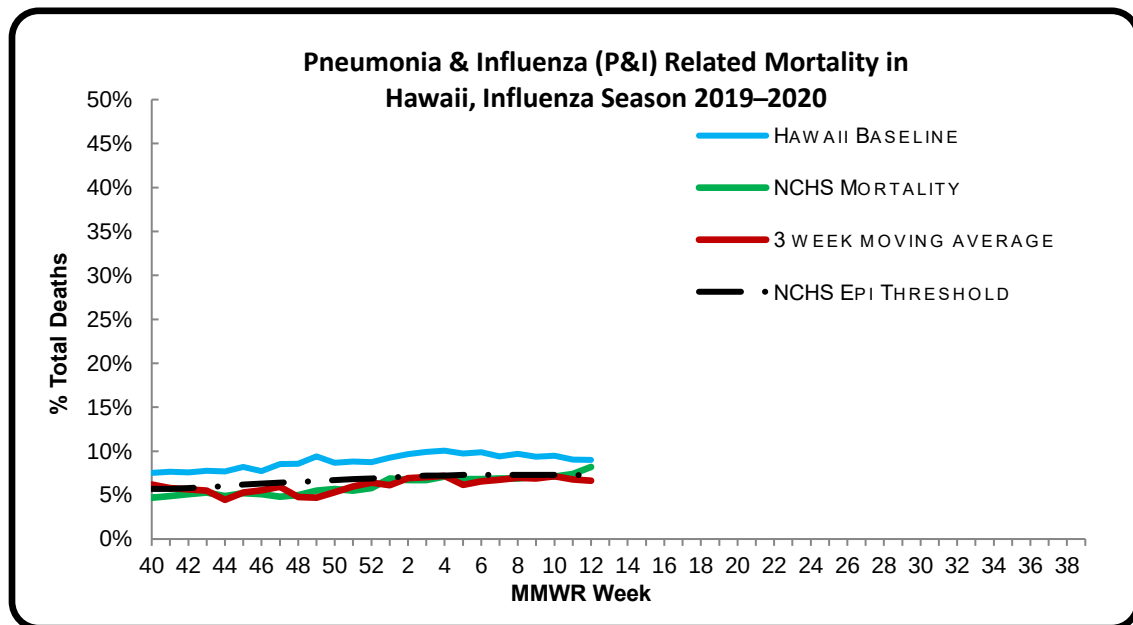


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 12** of the current influenza season:

- *7.9% of all deaths that occurred in Hawaii during week 12 were related to pneumonia or influenza. For the current season (season to date: 6.2%), there have been 5,801 deaths from any cause, 361 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii¹² (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹³ (8.2%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (7.2%) (i.e., inside the 95% confidence interval) for week 12.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁴:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 12. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, six influenza associated pediatric deaths occurring between weeks 6 (week ending February 8, 2020) and 11 (week ending March 14, 2020) were reported to CDC during week 12. Three were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza A viruses, one of which was subtyped as an A(H1N1)pdm09 virus. Three were associated with influenza B viruses, all of which were B/Victoria viruses. (2019-2020 season total: 155).

Of the 155 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 99 deaths were associated with influenza B viruses, and 24 had a lineage determined; all were B/Victoria viruses
- 56 deaths were associated with influenza A viruses, and 31 were subtyped; 30 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 10.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

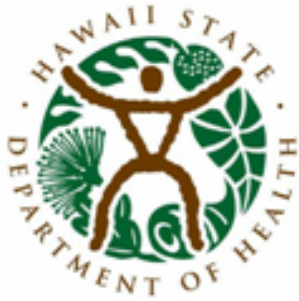
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 13: MARCH 22, 2020–MARCH 28, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 13

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.9%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	4	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	4.2%	Lower than the previous week. This number means that many, if not all, of the 95.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	23.4%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 14)	6.9%	Sentinel surveillance specimens selected among influenza negative specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.9%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	7	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

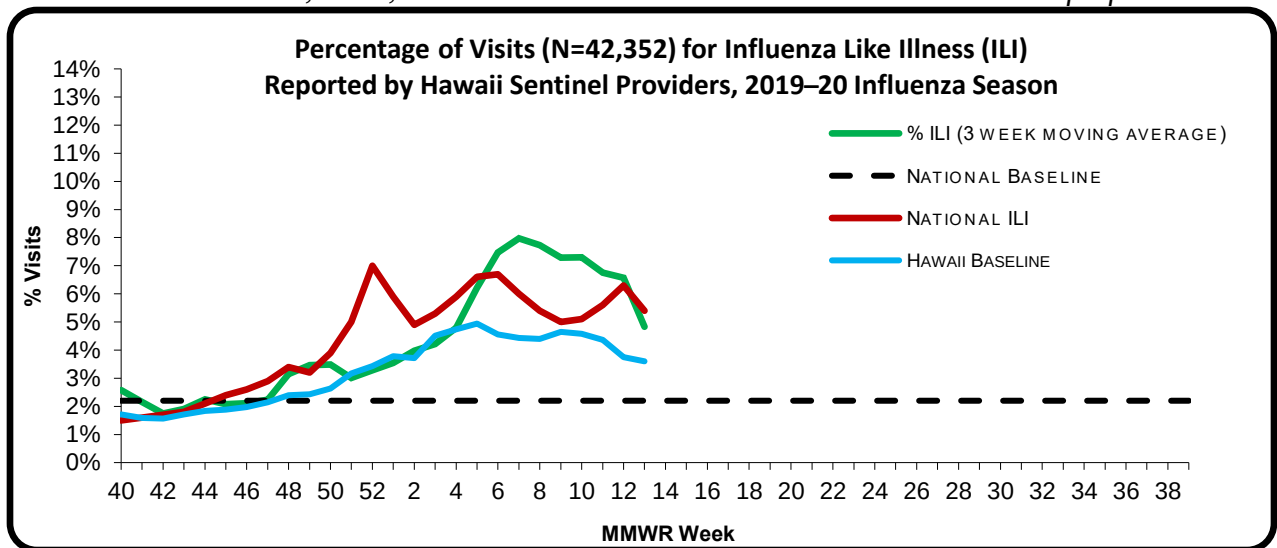
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath).

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 13** of the current influenza season:

- **1.9%** (season to date: **4.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (**2.4%**)⁵ (i.e., inside the 95% confidence interval) and lower than the national ILI rate (**5.4%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Local Activity⁷.
- ILI Cluster Activity: Four new clusters were reported to HDOH during week 13. One cluster occurred at a long-term care facility on Maui and included cases of parainfluenza. Three clusters from week 12 occurred at correctional centers on Oahu, Maui, and Hawaii island. These clusters included cases of influenza A and B.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21-39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

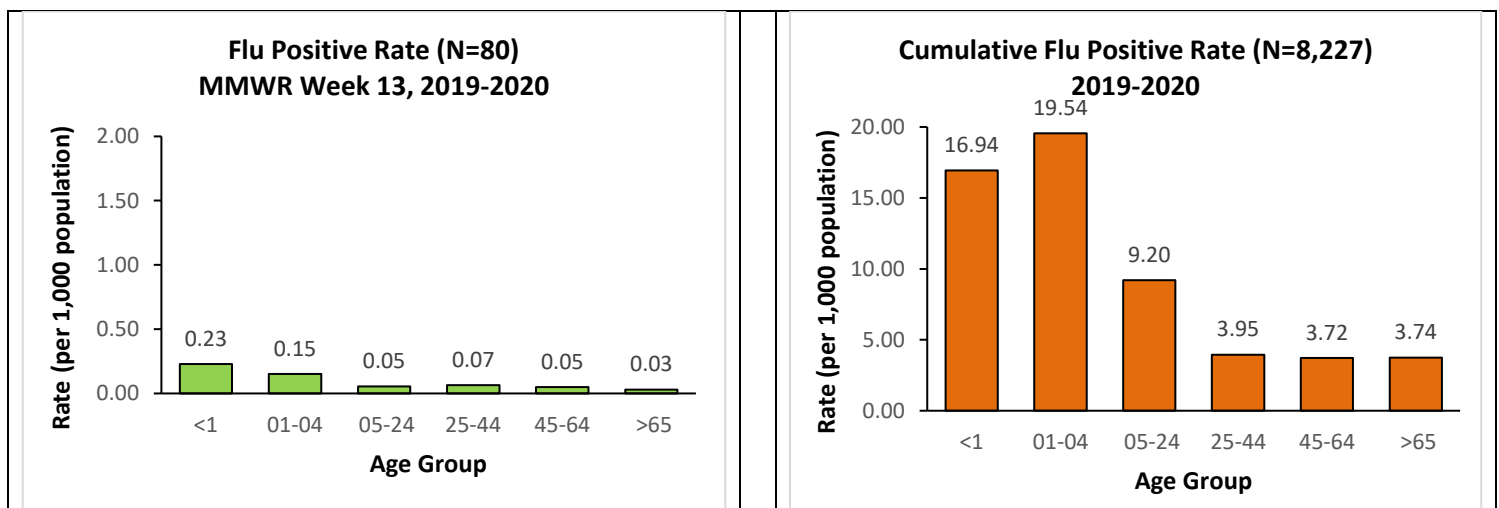
A. INFLUENZA:

- The following reflects laboratory findings for week 13 of the 2019–20 influenza season:
 - A total of **1,921** specimens have been tested statewide for influenza viruses (positive: 80 [4.2%]). (Season to date: 35,097 tested [23.4% positive])
 - 495 (25.8%) were screened only by rapid antigen tests with no confirmatory testing.
 - 1,426 (74.2%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 1,841 (95.8%) were negative.

Influenza type	Current week 13 (%)	Season to date (%)
Influenza A (H1) ⁹	3 (3.8)	1,250 (15.2)
Influenza A (H3)	0 (0.0)	66 (0.8)
Influenza A no subtyping	49 (61.2)	4,633 (56.3)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	1 (1.2)	399 (4.9)
Influenza B no genotyping	27 (33.8)	1,878 (22.8)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



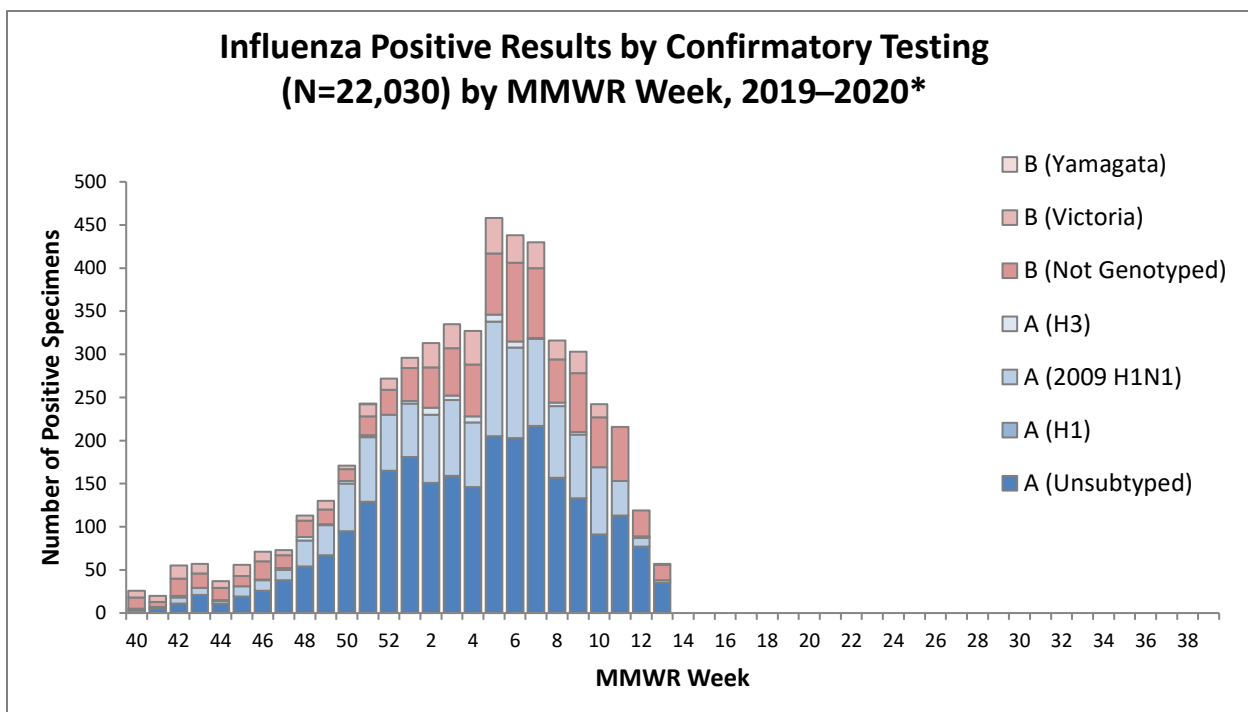
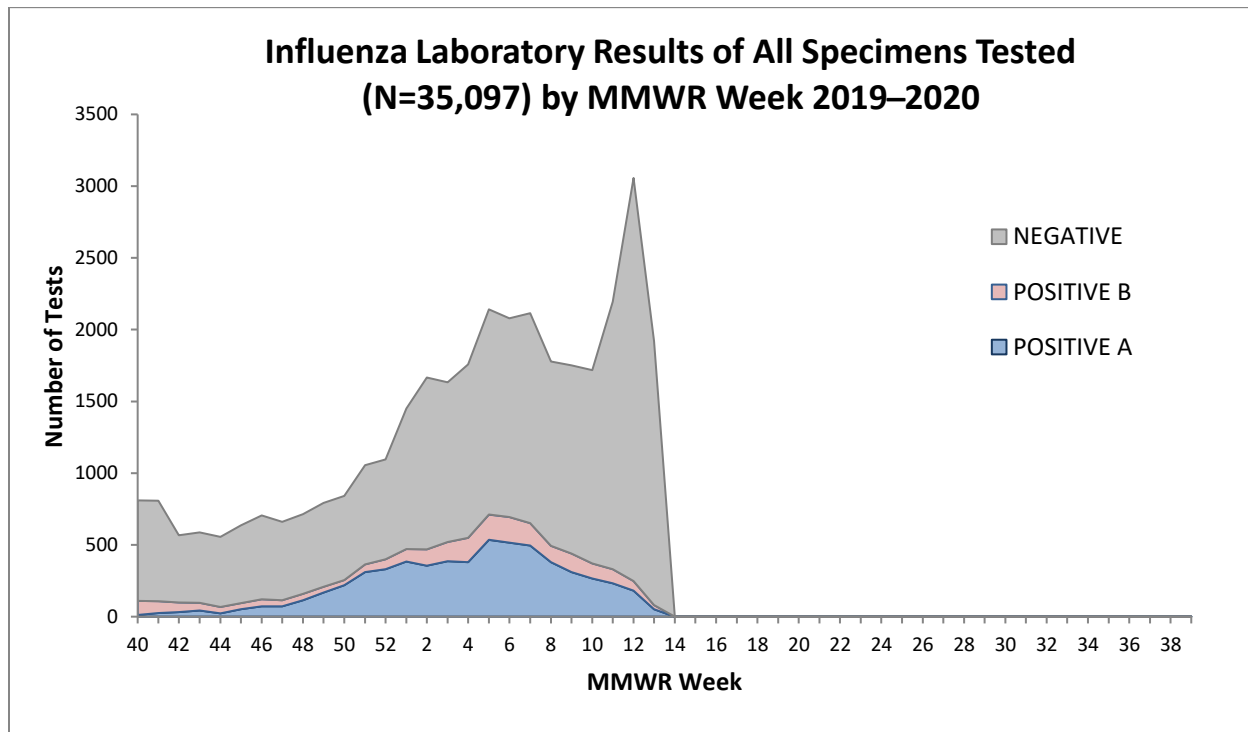
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients with a negative influenza test performed at Hawaii's major private laboratories (i.e., CLH and DLS) will be selected for COVID-19 testing. Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath). Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 14¹¹ of the 2019–20 influenza/respiratory disease season:

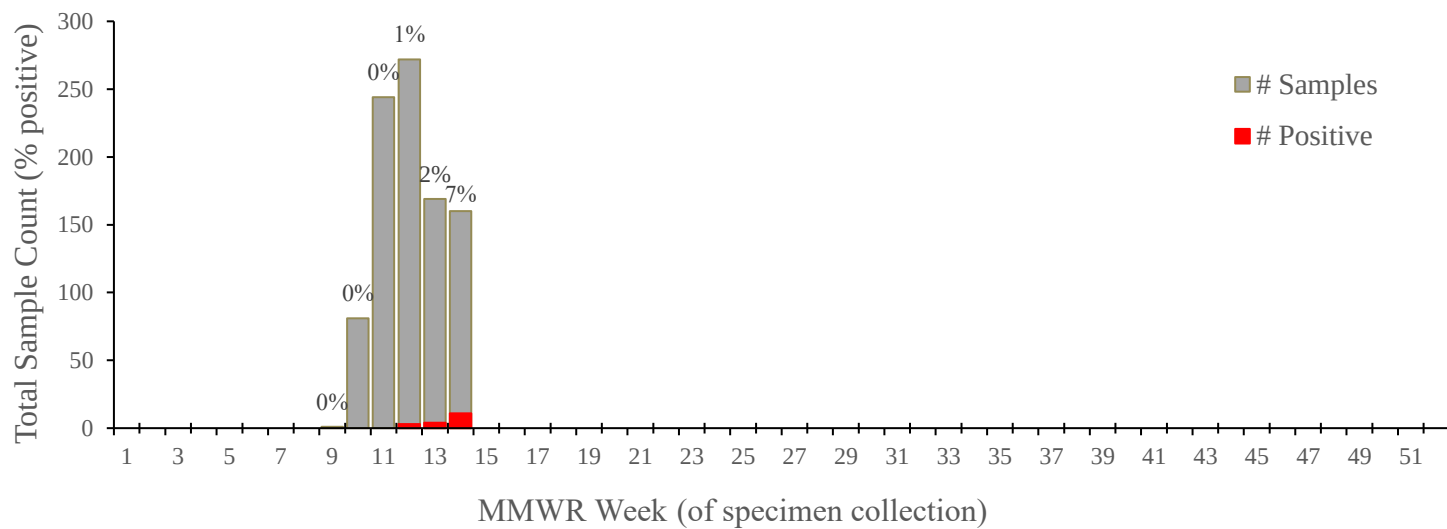
- *COVID-19 geographic spread: Regional¹²*
- *A total of 159 surveillance specimens have been tested statewide for COVID-19 (positive: 11 [6.9%]).*
 - *One positive specimen occurring during week 14 was excluded when further investigation determined it to be travel-associated and therefore did not meet surveillance criteria.*
 - *Travel history for one positive specimen occurring during week 14 has not been confirmed yet. Investigation for this case is ongoing.*
- *Season to date: A total of 925 surveillance specimens have been tested for COVID-19 (positive: 17 [1.8%])*
 - *392 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	124	0	0-17	182	0
Honolulu	538	2.8	18-64	546	2.5
Kauai	42	0	65+	180	1.6
Maui	131	1.5			
Missing	90	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

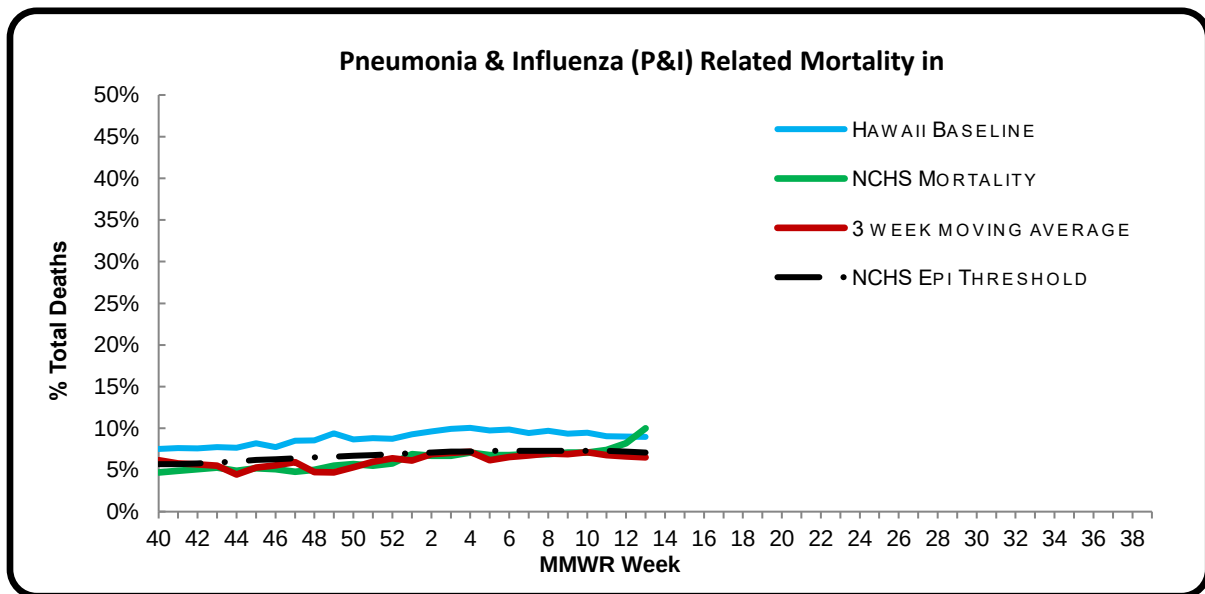
COVID-19 Surveillance Samples Tested (N=925),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 13** of the current influenza season:

- **6.9%** of all deaths that occurred in Hawaii during week 13 were related to pneumonia or influenza. For the current season (season to date: **6.3%**), there have been 6,019 deaths from any cause, 376 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**10.0%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**7.1%**) (i.e., inside the 95% confidence interval) for week 13.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 13. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, seven influenza associated pediatric deaths occurring between weeks 5 (week ending February 1, 2020) and 13 (week ending March 28, 2020) were reported to CDC during week 13. Four were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza A viruses, all of which were subtyped as A(H1N1)pdm09 viruses. Three were associated with influenza B viruses, one of which was a B/Victoria virus. (2019-2020 season total: 162).

Of the 162 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 102 deaths were associated with influenza B viruses, and 25 had a lineage determined; all were B/Victoria viruses
- 60 deaths were associated with influenza A viruses, and 35 were subtyped; 34 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 13.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

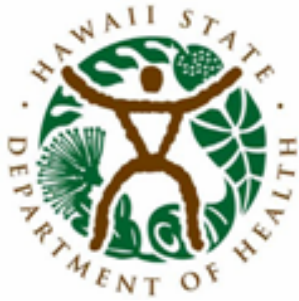
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 14: MARCH 29, 2020–APRIL 4, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 14

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.3%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and comparable to the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	1.1%	Lower than the previous week. This number means that many, if not all, of the 98.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.7%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 15)	4.3%	Sentinel surveillance specimens selected among influenza negative specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	4	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

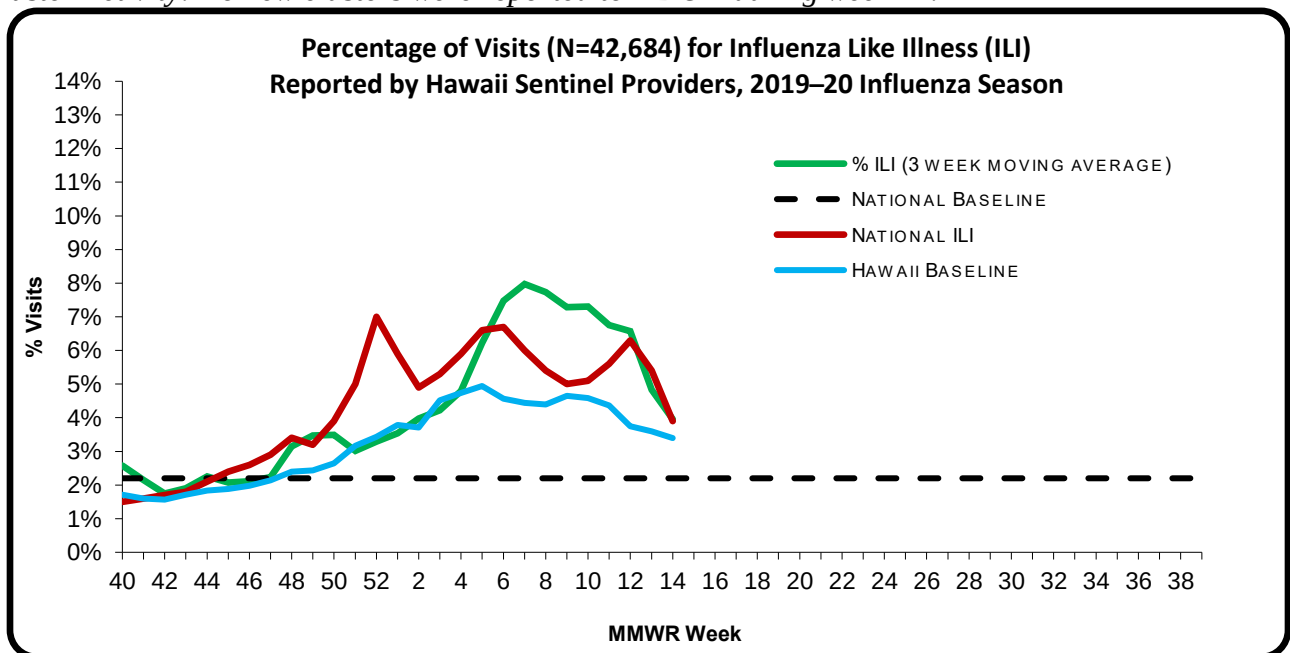
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath).

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 14** of the current influenza season:

- **3.3%** (season to date: **4.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (**2.4%**)⁵ (i.e., inside the 95% confidence interval) and comparable to the national ILI rate (**3.9%**) (i.e., inside the 95% confidence interval).
- ILI activity level: *Minimal*⁶
- Geographic Spread: *Sporadic Activity*⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 14.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

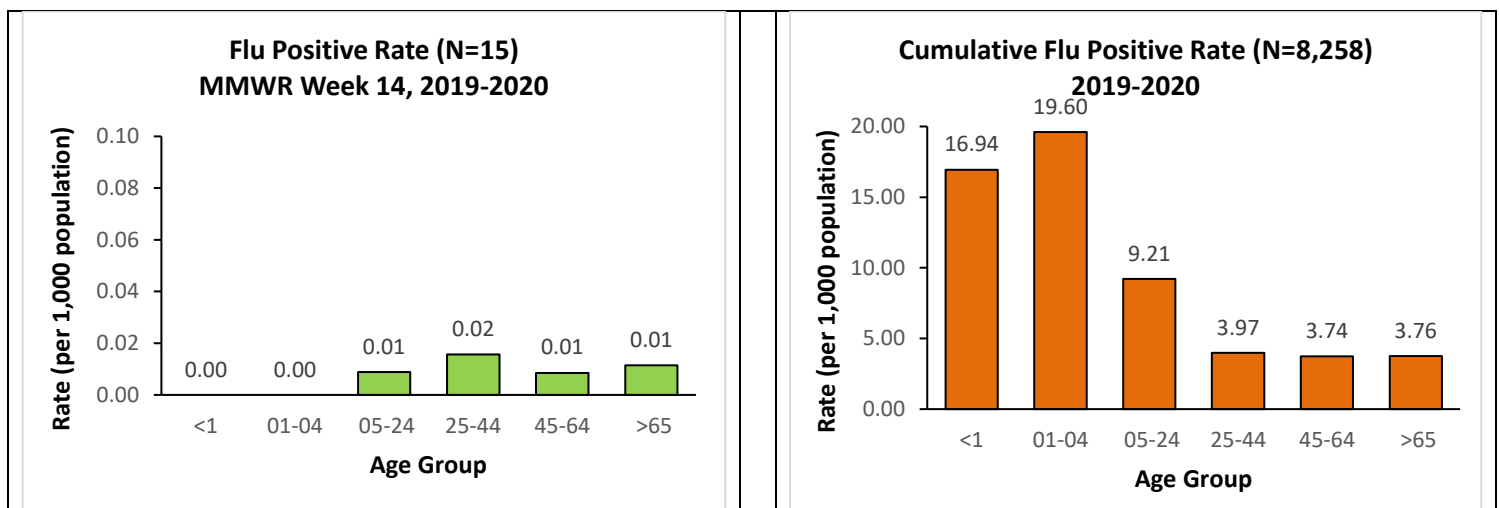
A. INFLUENZA:

- The following reflects laboratory findings for week 14 of the 2019–20 influenza season:
 - A total of **1,324** specimens have been tested statewide for influenza viruses (positive: 15 [**1.1%**]). (Season to date: 36,441 tested [**22.7%** positive])
 - 183 (13.8%) were screened only by rapid antigen tests with no confirmatory testing.
 - 1,141 (86.2%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 1,309 (98.9%) were negative.

Influenza type	Current week 14 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,294 (15.7)
Influenza A (H3)	0 (0.0)	68 (0.8)
Influenza A no subtyping	11 (73.3)	4,608 (55.8)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	437 (5.3)
Influenza B no genotyping	4 (26.7)	1,850 (22.4)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



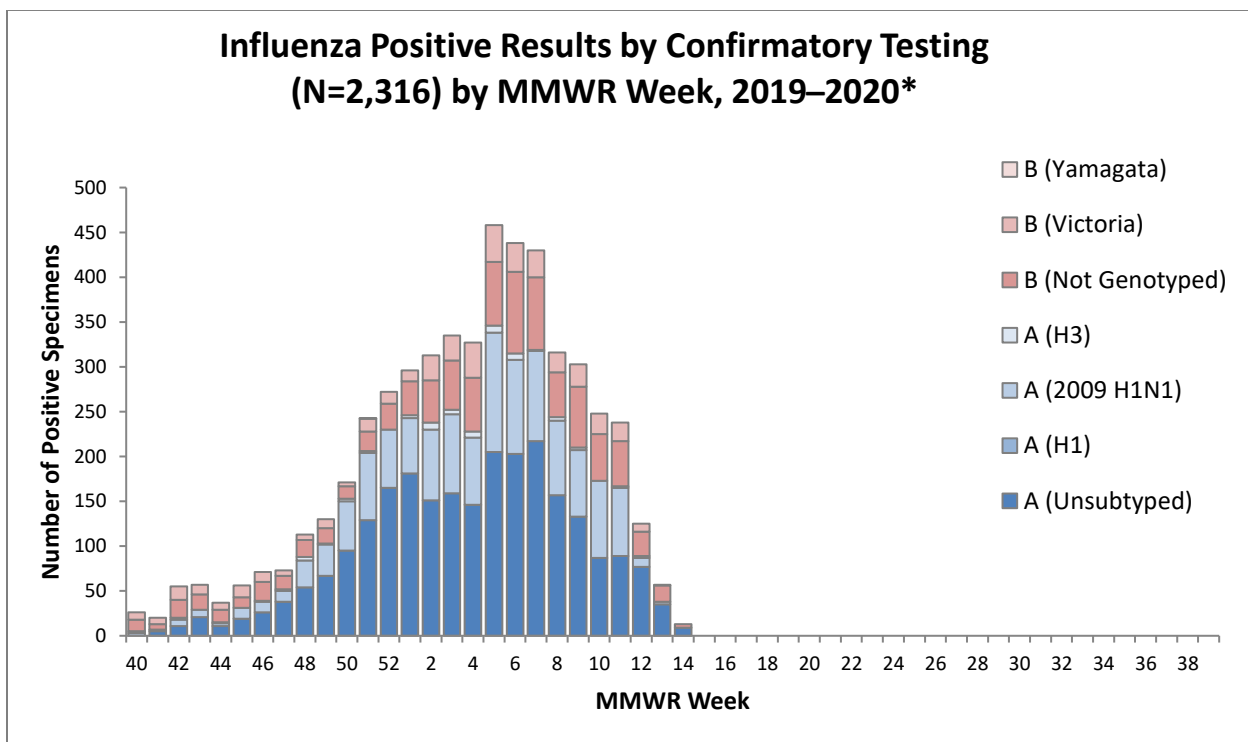
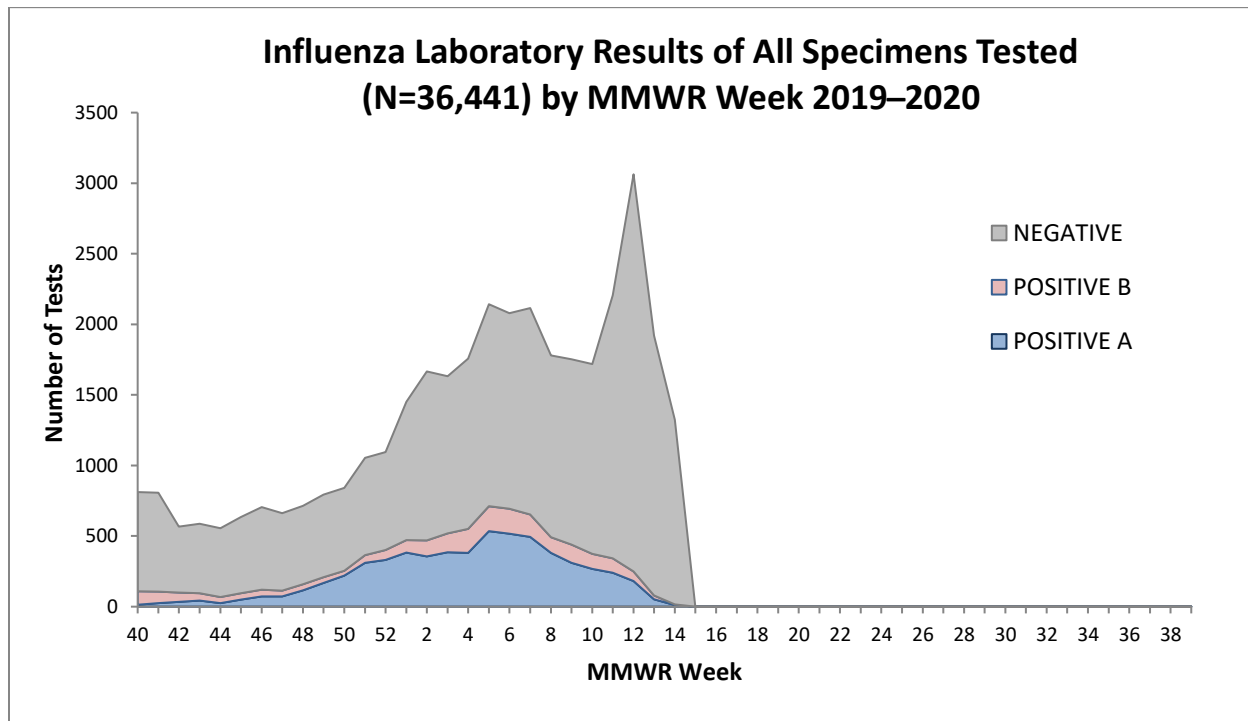
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																									
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																					
Adenovirus	X		X		X		X	X	X	X							X	X		X	X			X	X	X																																															
Coronavirus															X		X	X		X	X		X	X	X																																																
Coxsackie Virus																																																																									
Cytomegalovirus																																																																									
Echovirus																																																																									
Enterovirus																																																																									
Herpes Simplex Virus, Type 1																																																																									
Metapneumovirus													X							X	X	X	X	X	X	X	X																																														
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X																																													
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																														
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																														
Varicella Zoster Virus																																																																									
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																															
Influenza A (H3)	X		X		X		X	X	X	X	X				X	X		X	X	X	X	X			X																																																
Influenza A (Other seasonal H1)																																																																									
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																															
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																															

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients with a negative influenza test performed at Hawaii's major private laboratories (i.e., CLH and DLS) will be selected for COVID-19 testing. Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath). Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 15¹¹ of the 2019–20 influenza/respiratory disease season:

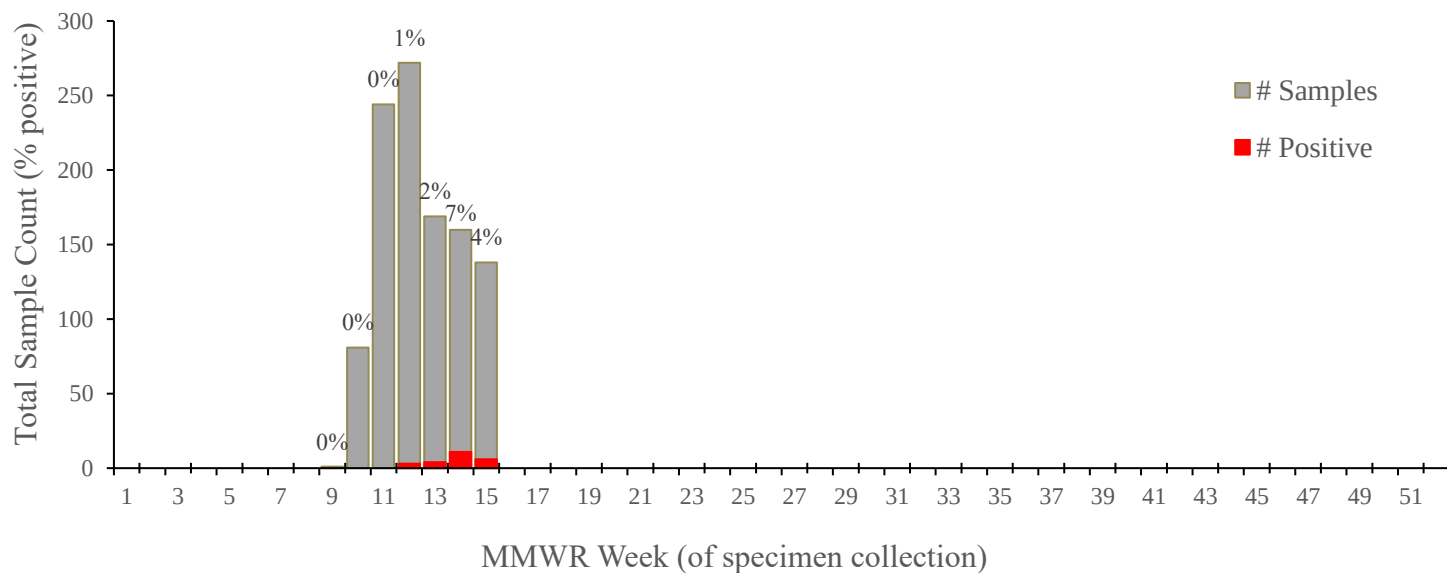
- *COVID-19 geographic spread: Regional¹²*
- *A total of 138 surveillance specimens have been tested statewide for COVID-19 (positive: 6 [4.3%]).*
- *Season to date: A total of 1,084 surveillance specimens have been tested for COVID-19 (positive: 23 [2.1%])*
 - *440 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	136	0	0-17	191	0
Honolulu	622	2.4	18-64	681	2.9
Kauai	50	0	65+	212	0.4
Maui	177	4.5			
Missing	99	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

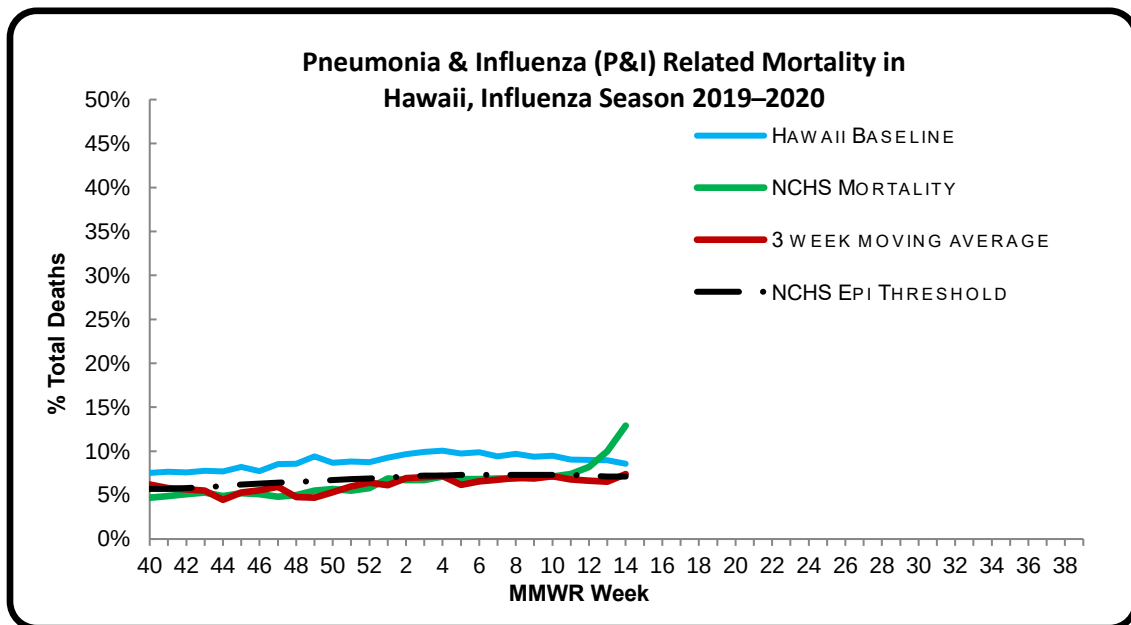
COVID-19 Surveillance Samples Tested (N=1,084),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 14** of the current influenza season:

- **7.4%** of all deaths that occurred in Hawaii during week 14 were related to pneumonia or influenza. For the current season (season to date: **6.3%**), there have been 6,262 deaths from any cause, 394 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**12.9%**) (i.e., outside the 95% confidence interval) and comparable to the national epidemic threshold (**7.1%**) (i.e., inside the 95% confidence interval) for week 14.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 14. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, four influenza associated pediatric deaths occurring between weeks 7 (week ending February 15, 2020) and 14 (week ending April 4, 2020) were reported to CDC during week 14. Two were associated with

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

influenza A viruses, one of which was subtyped as an A(H1N1)pdm09 virus. Two were associated with influenza B viruses, neither of which had a lineage determined. (2019-2020 season total: 162).

Of the 166 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 104 deaths were associated with influenza B viruses, and 25 had a lineage determined; all were B/Victoria viruses
- 62 deaths were associated with influenza A viruses, and 36 were subtyped; 35 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 14.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

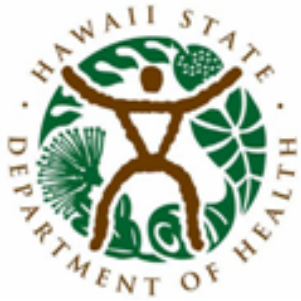
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 15: APRIL 5, 2020–APRIL 11, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 15

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.6%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.3%	Lower than the previous week. This number means that many, if not all, of the 99.7% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.1%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 16)	0.0%	Sentinel surveillance specimens selected among influenza negative specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.3%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	2	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

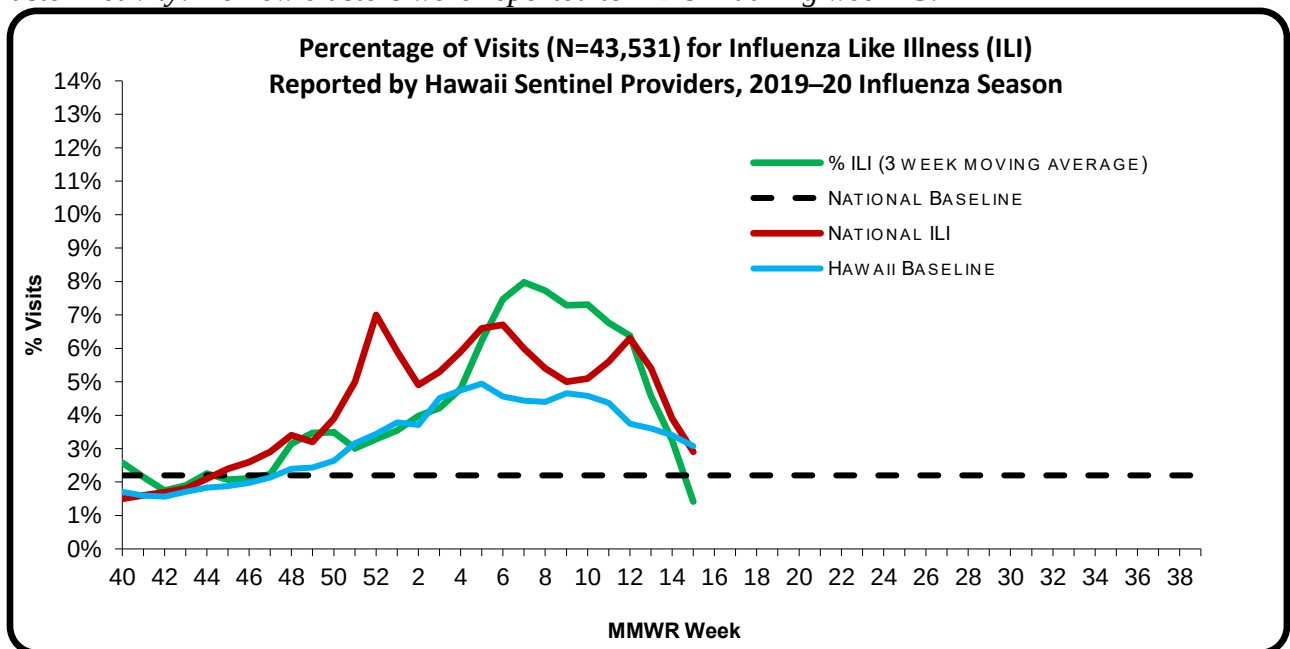
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath).

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 15** of the current influenza season:

- **0.6%** (season to date: **4.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**2.9%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 15.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

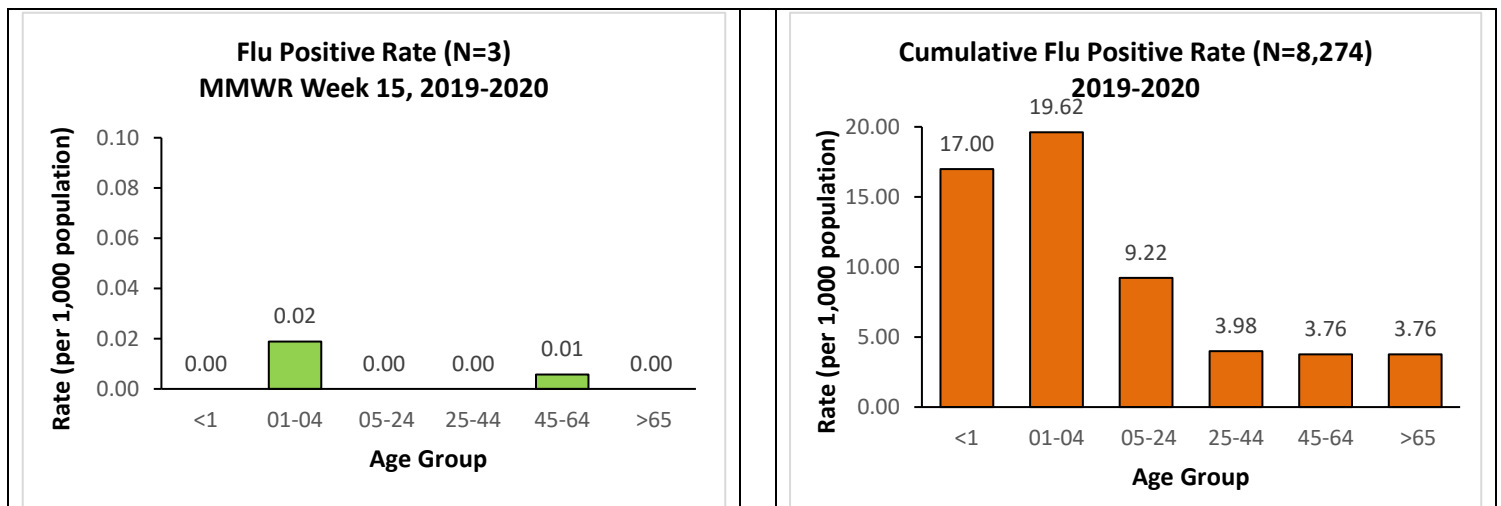
A. INFLUENZA:

- The following reflects laboratory findings for week 15 of the 2019–20 influenza season:
 - A total of **945** specimens have been tested statewide for influenza viruses (positive: 3 [0.3%]). (Season to date: 37,413 tested [22.1% positive])
 - 163 (17.2%) were screened only by rapid antigen tests with no confirmatory testing.
 - 782 (82.8%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 942 (99.7%) were negative.

Influenza type	Current week 15 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,313 (15.9)
Influenza A (H3)	0 (0.0)	68 (0.8)
Influenza A no subtyping	2 (66.7)	4,601 (55.6)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	444 (5.4)
Influenza B no genotyping	1 (33.3)	1,847 (22.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



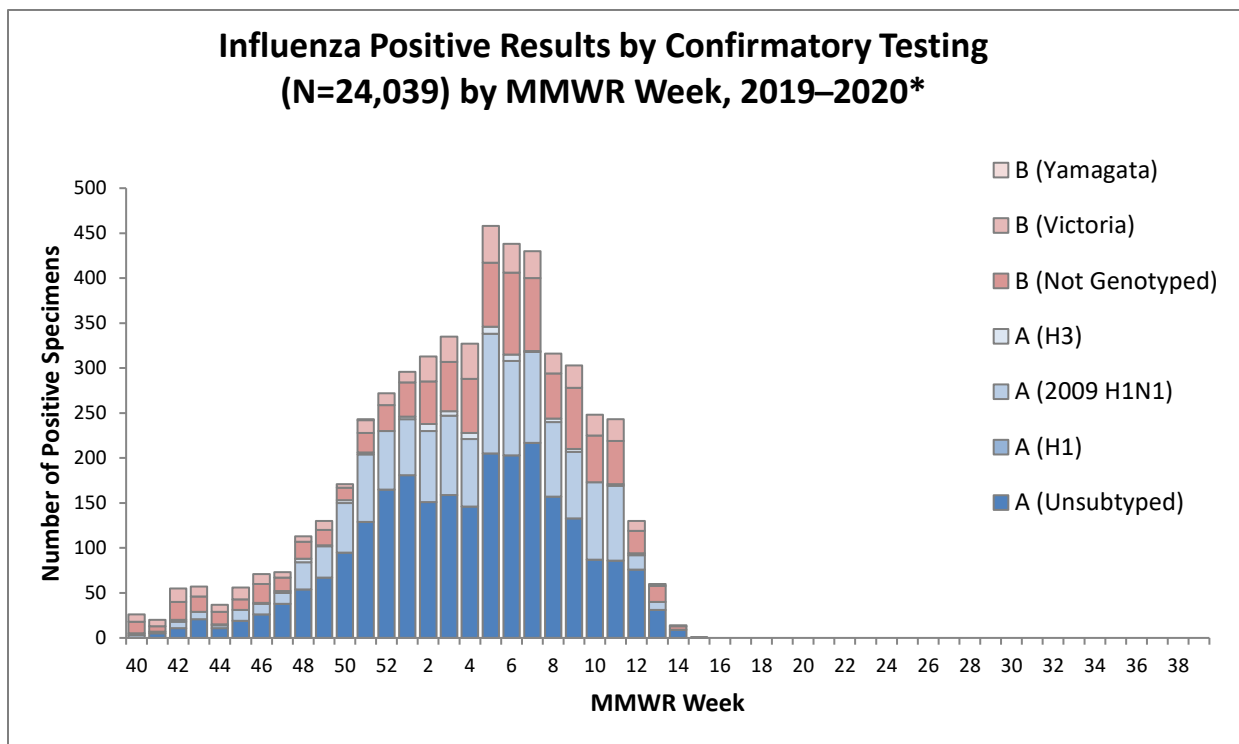
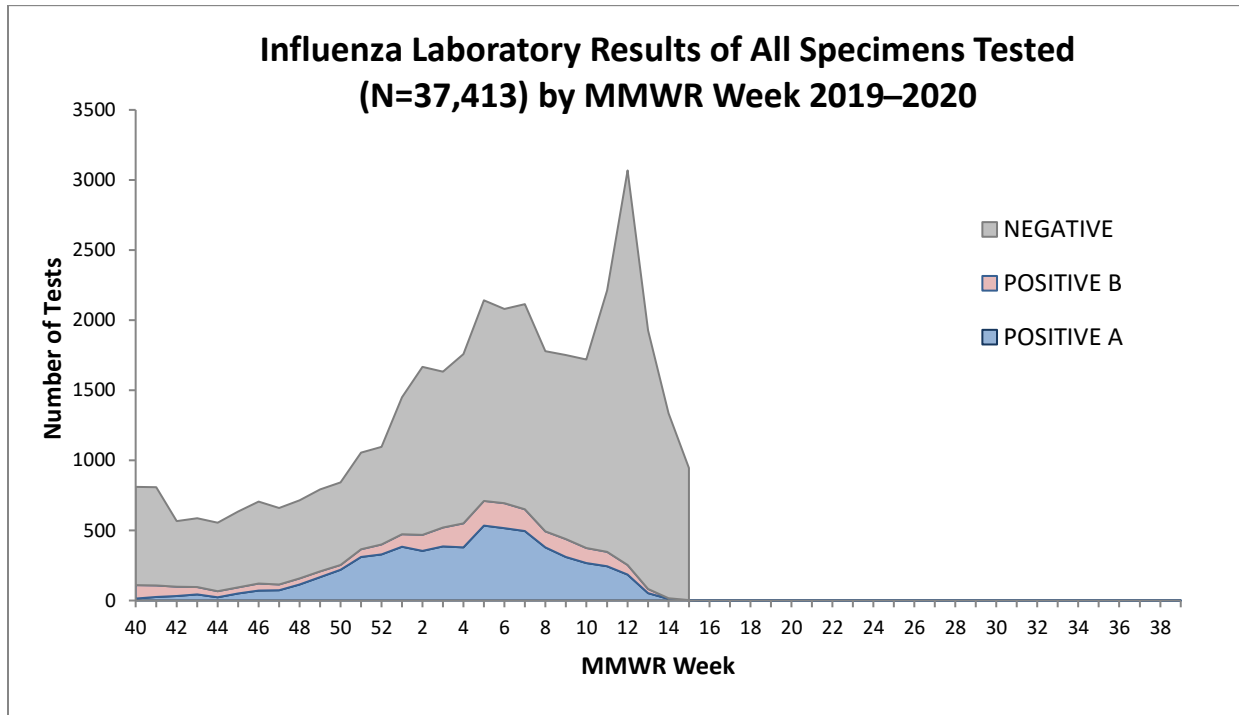
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients with a negative influenza test performed at Hawaii's major private laboratories (i.e., CLH and DLS) will be selected for COVID-19 testing. Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath). Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 16¹¹ of the 2019–20 influenza/respiratory disease season:

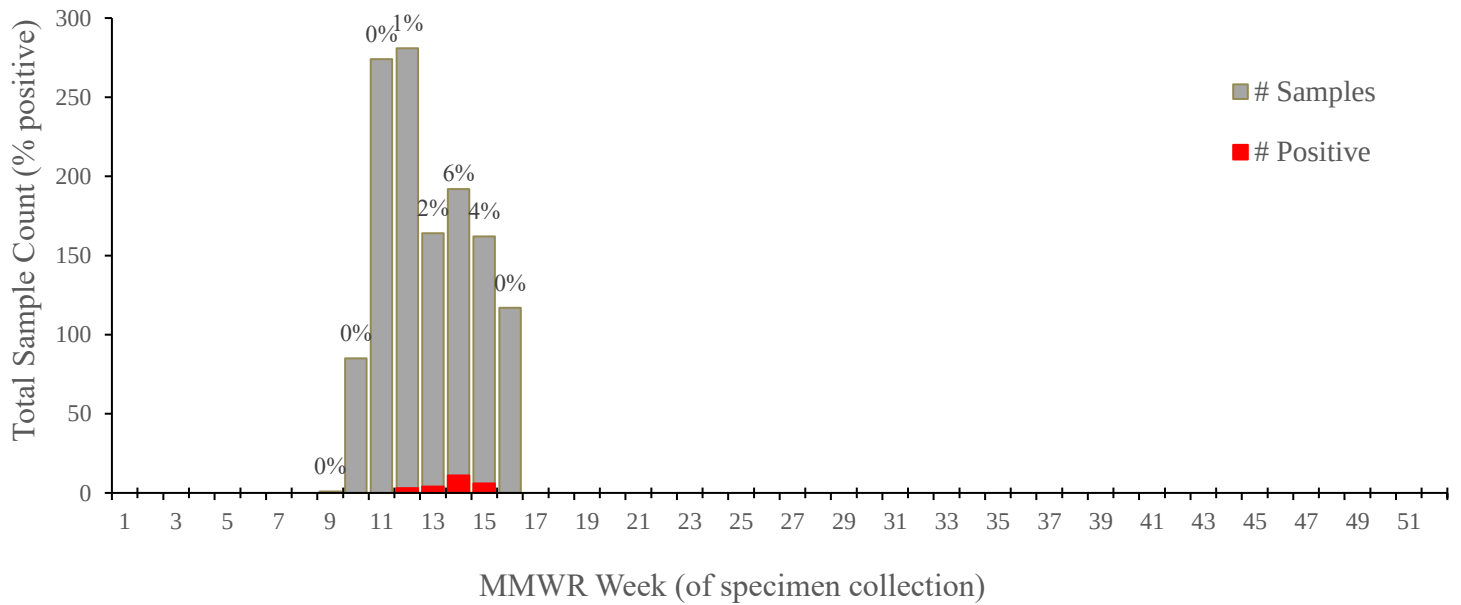
- *COVID-19 geographic spread: Regional¹²*
- *A total of 117 surveillance specimens have been tested statewide for COVID-19 (positive: 0 [0.0%]).*
- *Although no positive specimens were detected through sentinel surveillance, there is evidence of localized community transmission detected by other surveillance methods such as case investigations, direct physician reports, and cluster investigations.*
- *Season to date: A total of 1,276 surveillance specimens have been tested for COVID-19 (positive: 24 [1.9%])*
 - *One additional positive specimen occurring during week 13 was detected.*
 - *480 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	169	0	0-17	216	0
Honolulu	701	2.3	18-64	811	2.6
Kauai	54	0	65+	249	1.2
Maui	226	3.5			
Missing	126	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

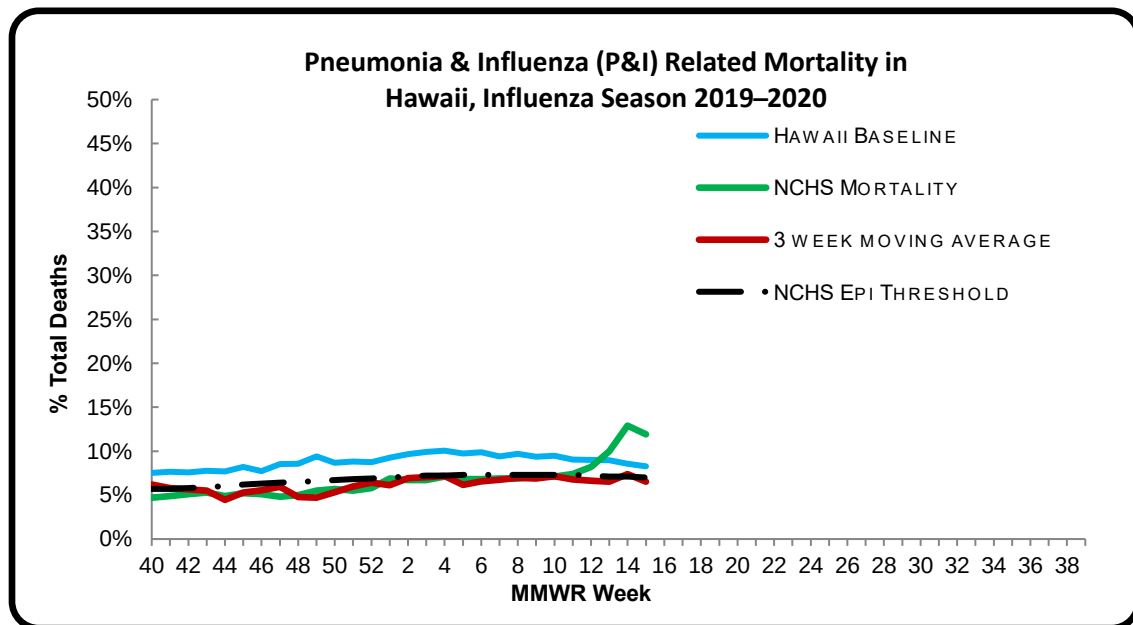
COVID-19 Surveillance Samples Tested (N=1,276),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 15** of the current influenza season:

- **5.3%** of all deaths that occurred in Hawaii during week 15 were related to pneumonia or influenza. For the current season (season to date: **6.3%**), there have been 6,490 deaths from any cause, 406 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**11.9%**) (i.e., outside the 95% confidence interval) and comparable to the national epidemic threshold (**7.0%**) (i.e., inside the 95% confidence interval) for week 15.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 15. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, two influenza associated pediatric deaths occurring during the 2019-2020 season were reported to CDC during week 15. One death was associated with an influenza A(H1N1)pdm09 virus and occurred during

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

week 52 (week ending December 28, 2019). One death was associated with an influenza B/Victoria virus and occurred during week 2 (week ending January 11, 2020). (2019-2020 season total: 168).

Of the 168 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 105 deaths were associated with influenza B viruses, and 26 had a lineage determined; all were B/Victoria viruses
- 63 deaths were associated with influenza A viruses, and 37 were subtyped; 36 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 15.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 16: APRIL 12, 2020–APRIL 18, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 16

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.6%	Comparable to the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.4%	Higher than the previous week. This number means that many, if not all, of the 99.6% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.7%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 17)	1.2%	Sentinel surveillance specimens selected among influenza negative specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.2%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

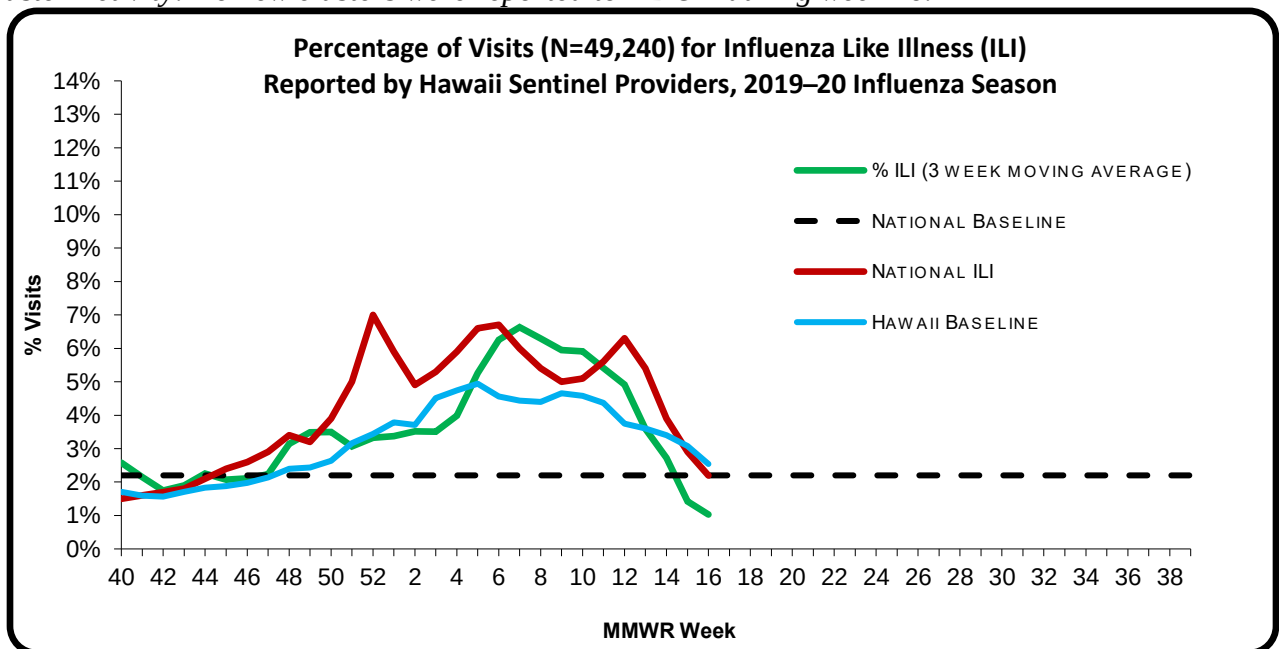
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath).

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 16** of the current influenza season:

- **0.6%** (season to date: **3.7%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**2.2%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 16.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

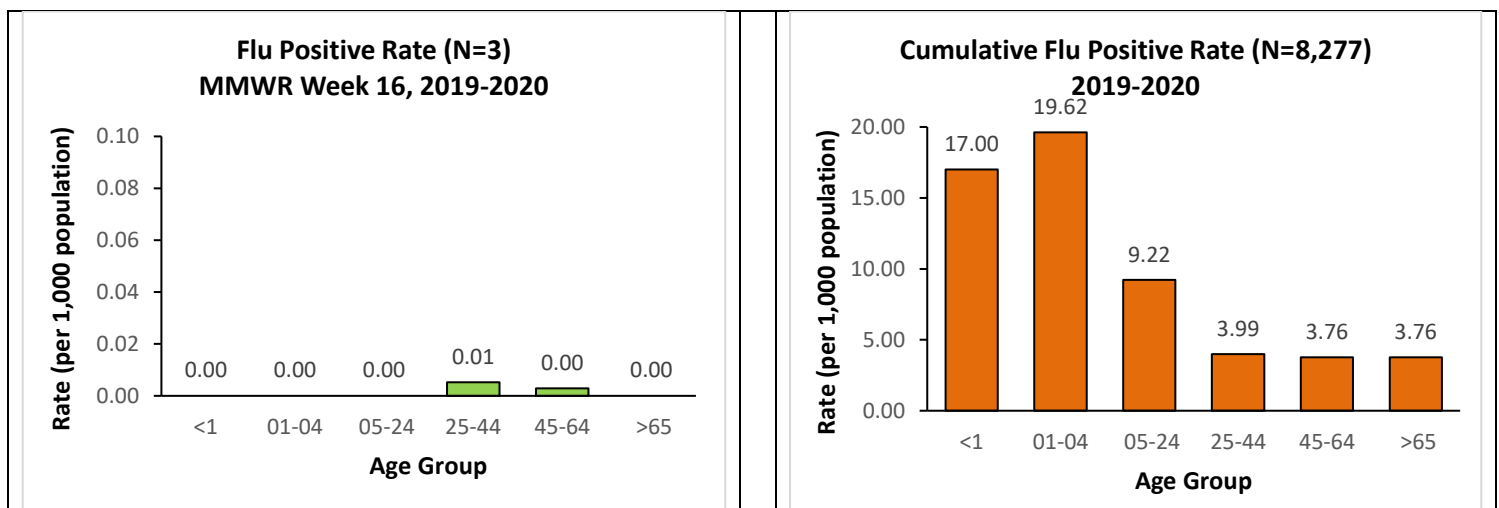
A. INFLUENZA:

- The following reflects laboratory findings for week 16 of the 2019–20 influenza season:
 - A total of **759** specimens have been tested statewide for influenza viruses (positive: 3 [0.4%]). (Season to date: 38,174 tested [21.7% positive])
 - 131 (17.3%) were screened only by rapid antigen tests with no confirmatory testing.
 - 628 (82.7%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 756 (99.6%) were negative.

Influenza type	Current week 16 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,323 (16.0)
Influenza A (H3)	0 (0.0)	68 (0.8)
Influenza A no subtyping	0 (0.0)	4,591 (55.5)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	444 (5.4)
Influenza B no genotyping	3 (100.0)	1,850 (22.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



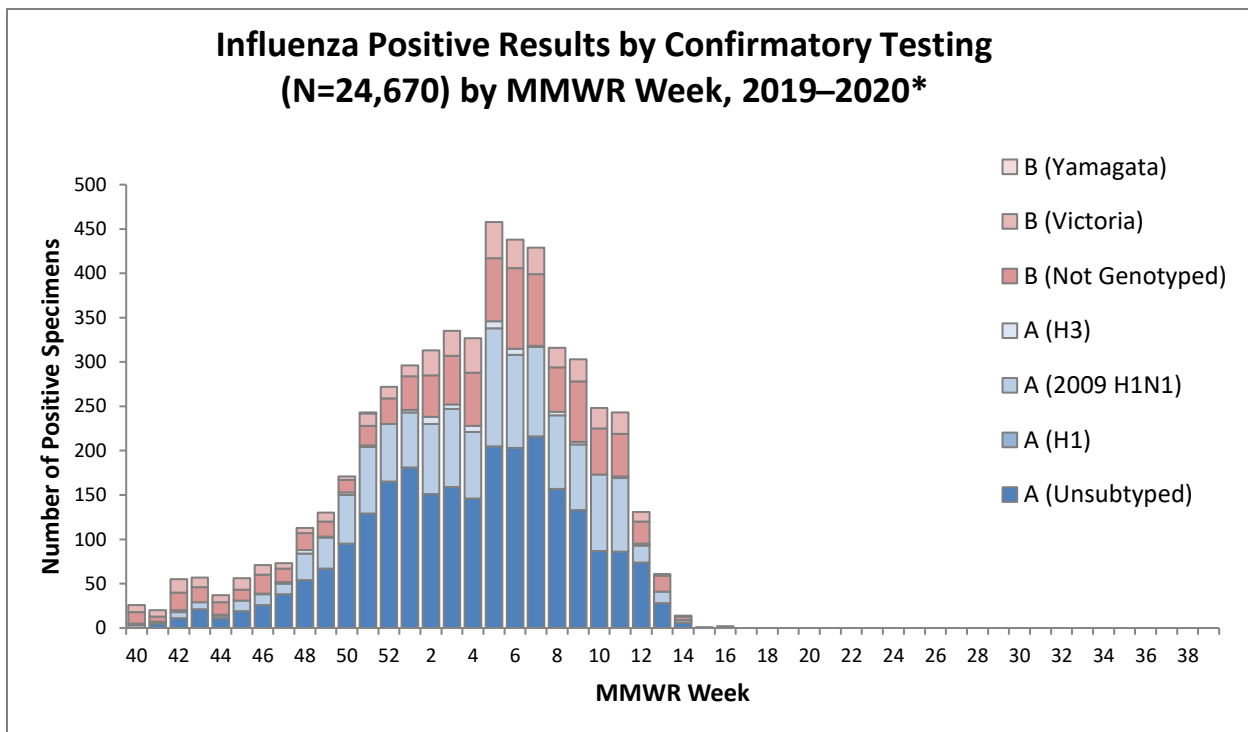
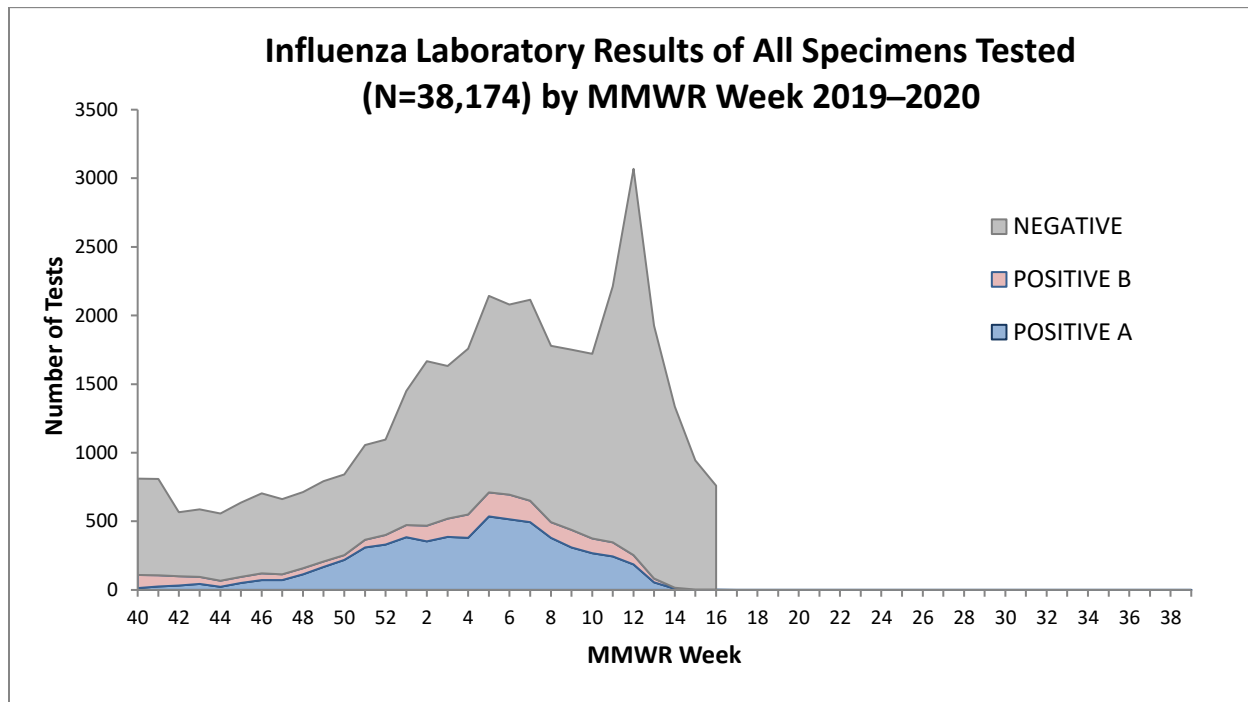
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients with a negative influenza test performed at Hawaii's major private laboratories (i.e., CLH and DLS) will be selected for COVID-19 testing. Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms (i.e., fever PLUS cough or shortness of breath). Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 17¹¹ of the 2019–20 influenza/respiratory disease season:

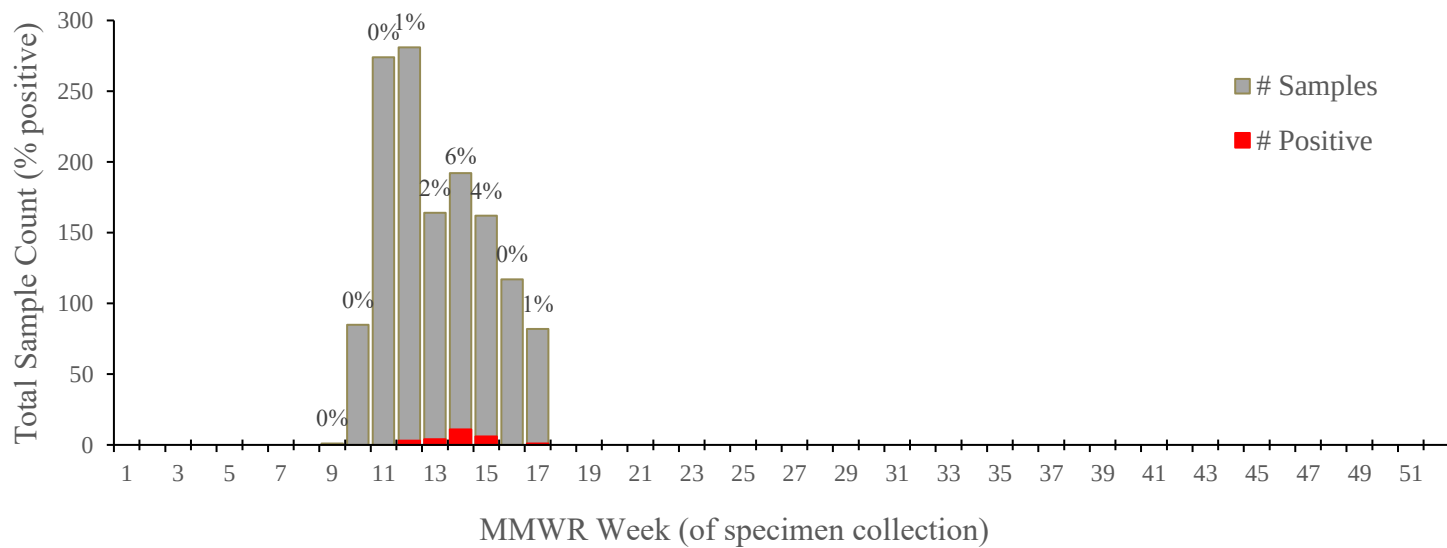
- *COVID-19 geographic spread: Regional¹²*
- *A total of 82 surveillance specimens have been tested statewide for COVID-19 (positive: 1 [1.2%]).*
- *Season to date: A total of 1,372 surveillance specimens have been tested for COVID-19 (positive: 25 [1.8%])*
 - *503 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	187	0	0-17	221	0
Honolulu	754	2.0	18-64	868	2.6
Kauai	54	0	65+	283	0.7
Maui	241	4.1			
Missing	136	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

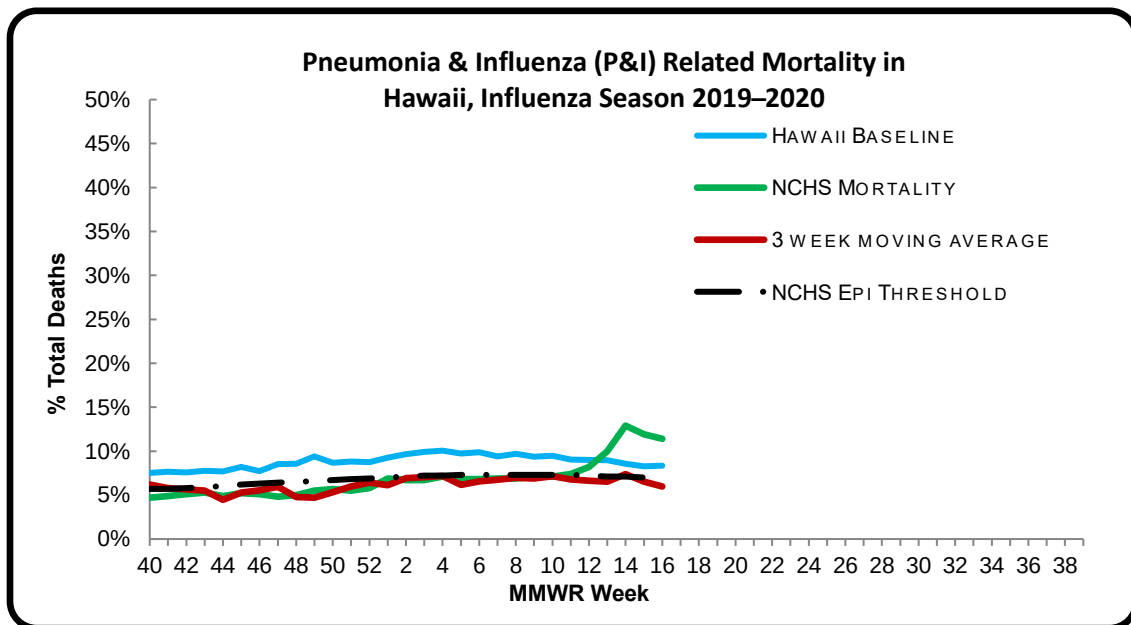
COVID-19 Surveillance Samples Tested (N=1,372),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 16** of the current influenza season:

- **5.2%** of all deaths that occurred in Hawaii during week 16 were related to pneumonia or influenza. For the current season (season to date: **6.2%**), there have been 6,738 deaths from any cause, 419 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (9.3%) (i.e., outside the 95% confidence interval) and comparable to the national epidemic threshold (6.9%) (i.e., inside the 95% confidence interval) for week 16.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 16. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

- Nationally, one influenza associated pediatric death occurring during the 2019-2020 season was reported to CDC during week 16. The death was associated with an influenza B virus with no lineage determined and occurred during week 5 (week ending February 1, 2020). (2019-2020 season total: 169).

Of the 169 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 106 deaths were associated with influenza B viruses, and 26 had a lineage determined; all were B/Victoria viruses
- 63 deaths were associated with influenza A viruses, and 37 were subtyped; 36 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 16.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 17: APRIL 19, 2020–APRIL 25, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 17

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.3%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Lower than the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.4%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 18)	0.0%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	3.4%	Lower than Hawaii's historical baseline, lower than the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

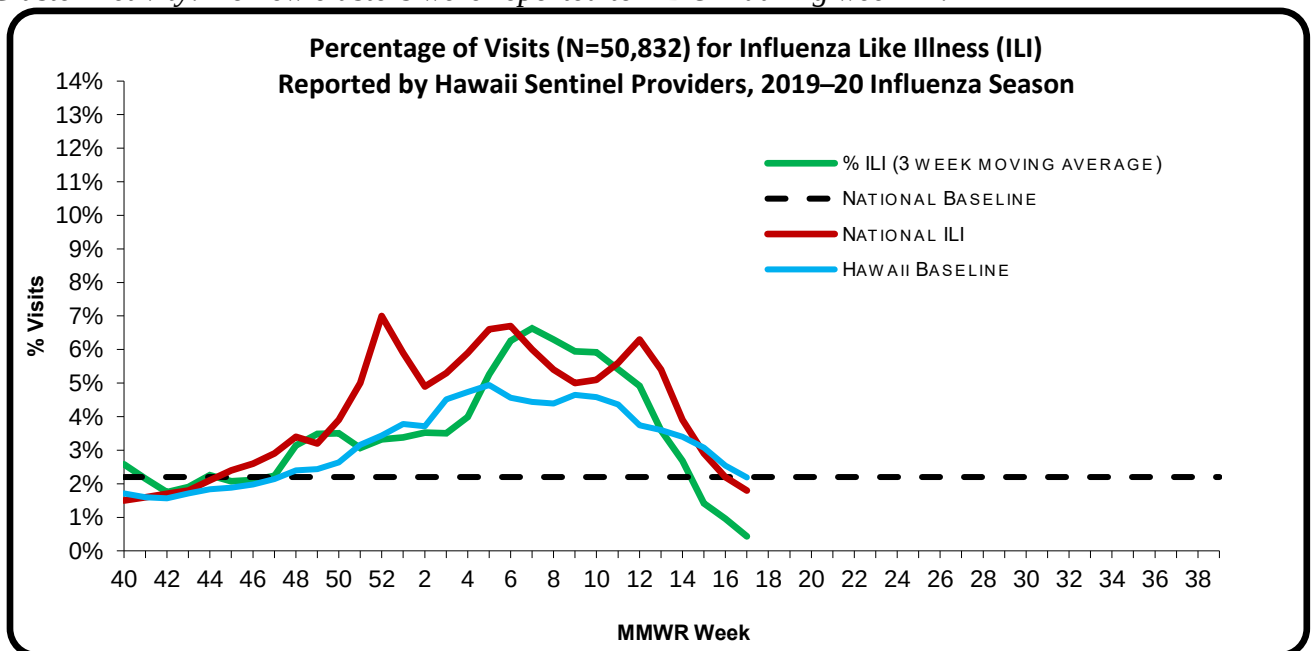
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 17** of the current influenza season:

- **0.3%** (season to date: **3.6%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.8%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 17.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

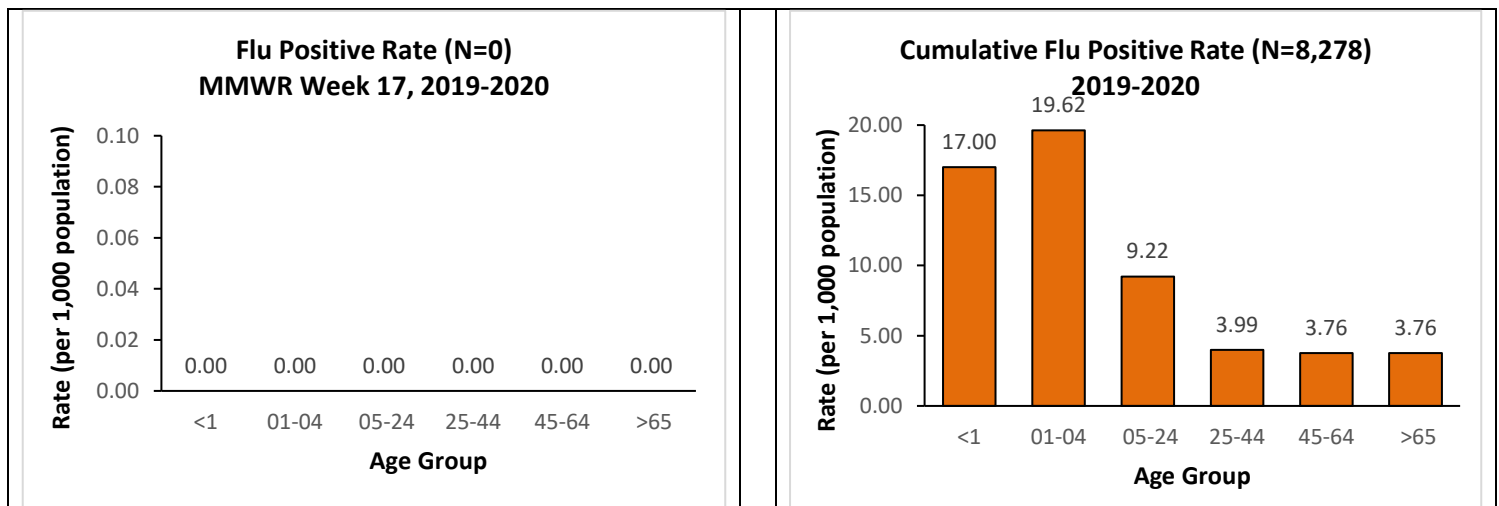
A. INFLUENZA:

- The following reflects laboratory findings for week 17 of the 2019–20 influenza season:
 - A total of **452** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 38,644 tested [21.4% positive])
 - 88 (19.5%) were screened only by rapid antigen tests with no confirmatory testing.
 - 364 (80.5%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 452 (100.0%) were negative.

Influenza type	Current week 17 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,323 (16.0)
Influenza A (H3)	0 (0.0)	68 (0.8)
Influenza A no subtyping	0 (0.0)	4,592 (55.5)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	447 (5.4)
Influenza B no genotyping	0 (0.0)	1,847 (22.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



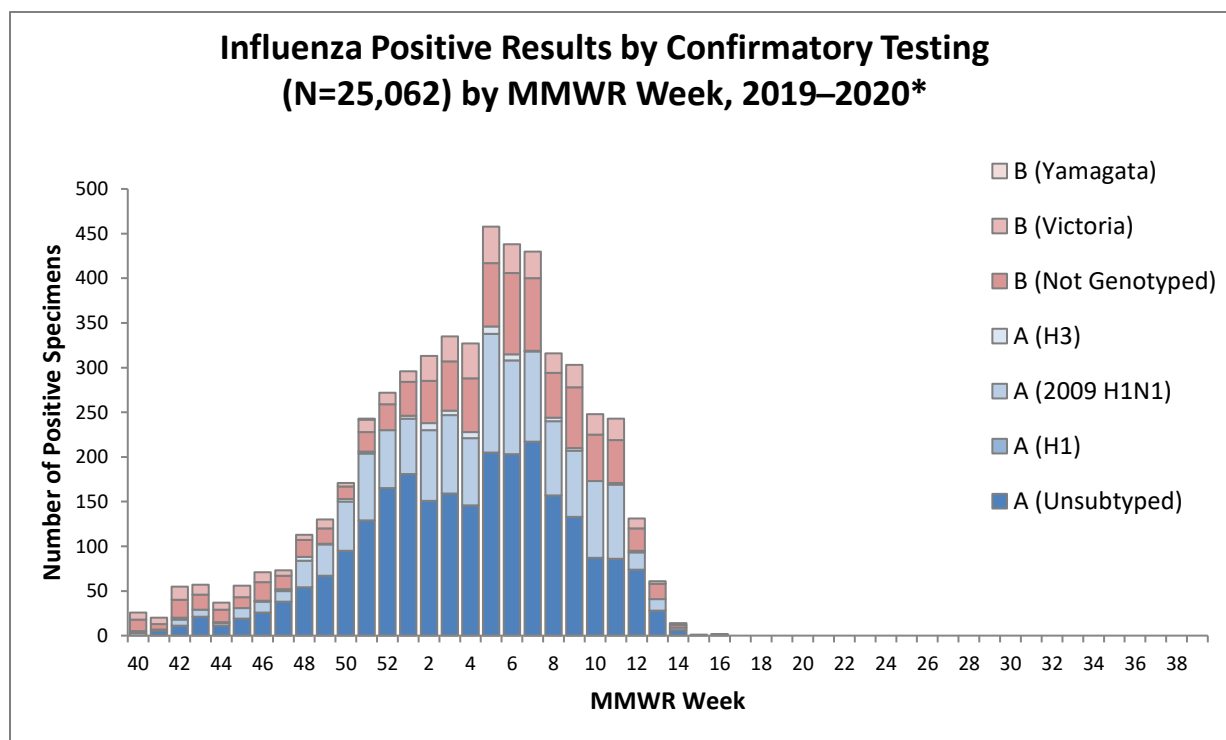
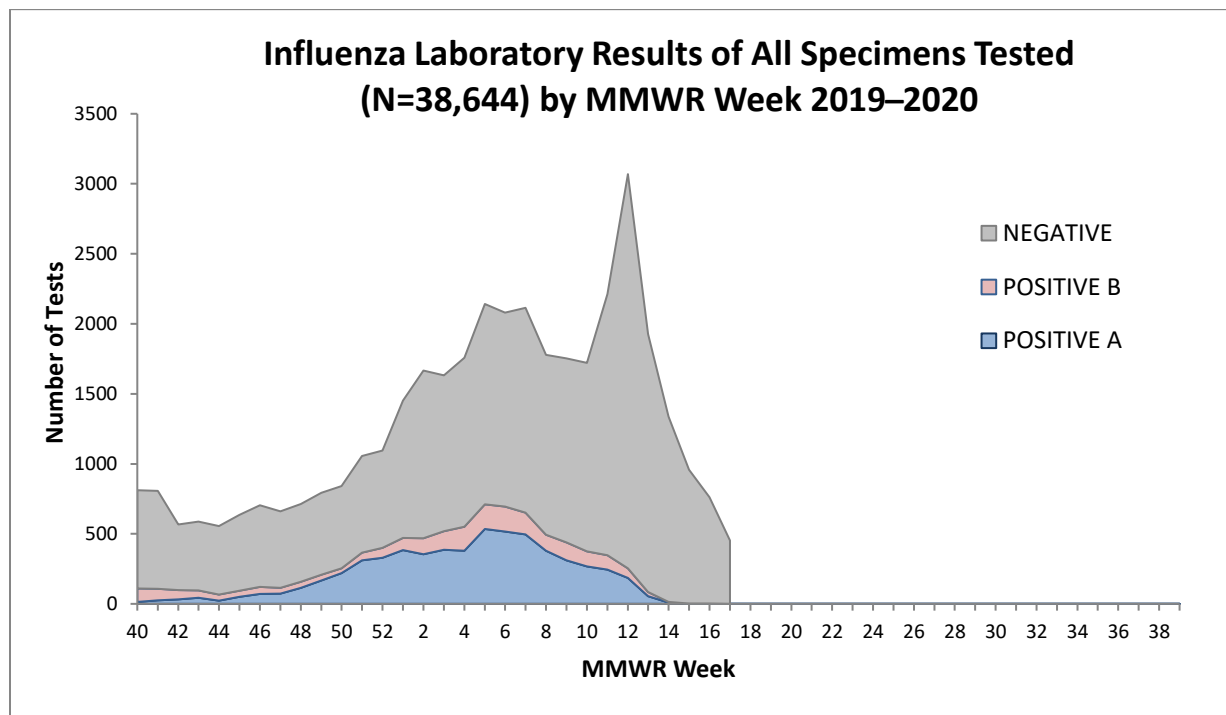
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 18¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Local¹²*
- *A total of 68 surveillance specimens have been tested statewide for COVID-19 (positive: 0 [0.0%]).*
 - *Although no positive specimens were detected through sentinel surveillance, there is evidence of localized community transmission detected by other surveillance methods such as case investigations and direct physician reports.*
- *Season to date: A total of 1,443 surveillance specimens have been tested for COVID-19 (positive: 25 [1.7%])*
 - *516 specimens have been tested at SLD¹³.*

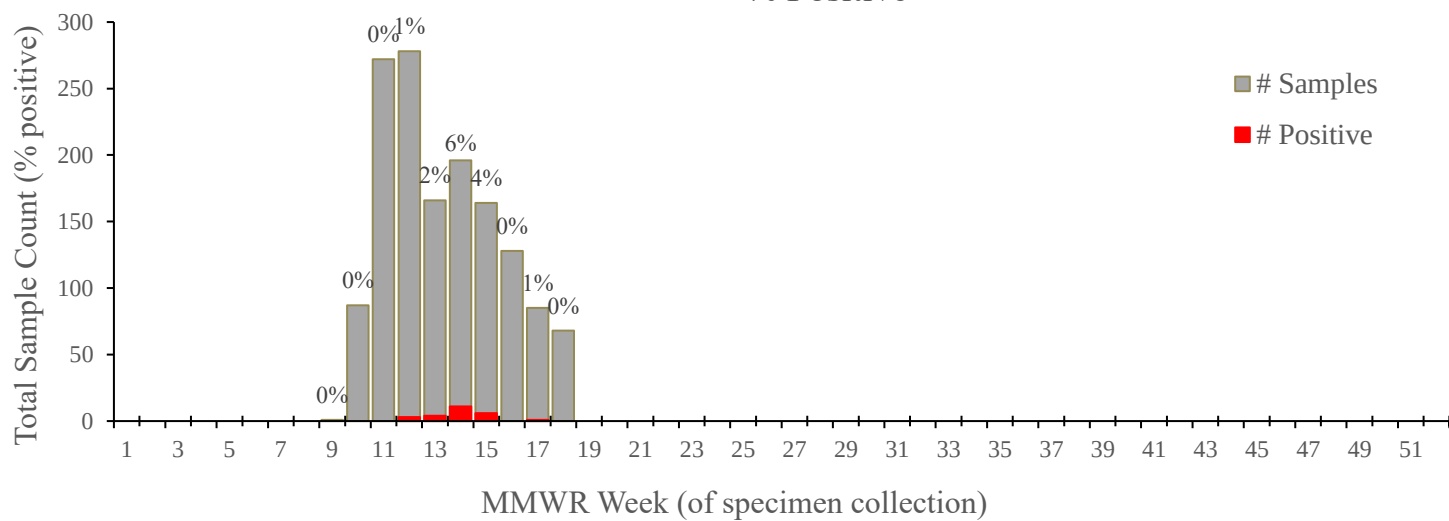
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	189	0	0-17	228	0
Honolulu	808	1.9	18-64	910	2.5
Kauai	53	0	65+	305	0.7
Maui	250	4.0			
Missing	143	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=1,443), % Positive

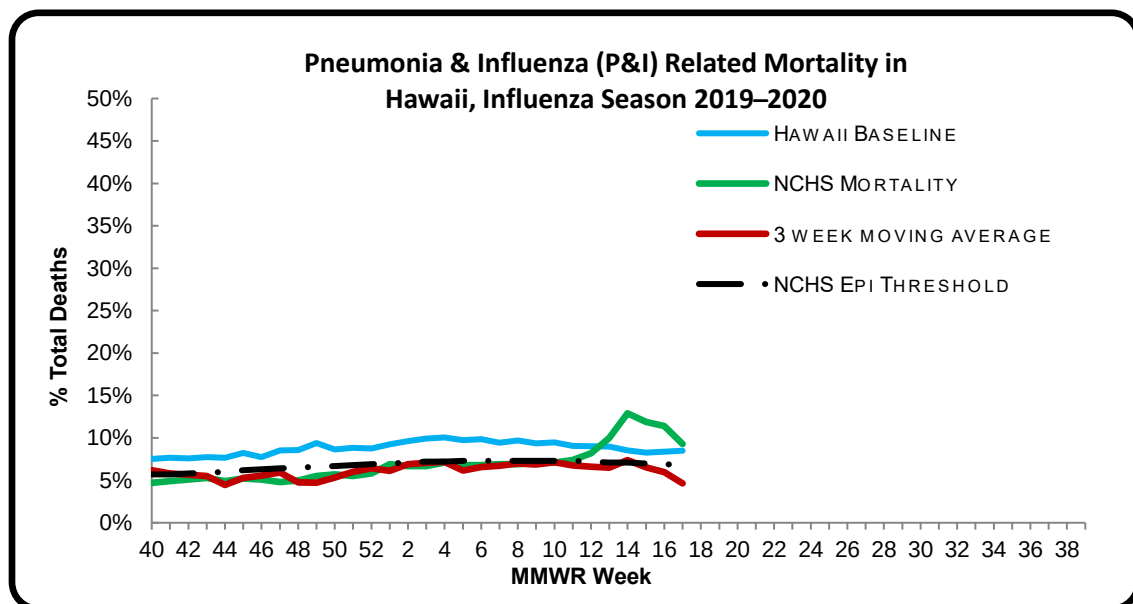


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 17** of the current influenza season:

- **3.4%** of all deaths that occurred in Hawaii during week 17 were related to pneumonia or influenza. For the current season (season to date: **6.1%**), there have been 6,973 deaths from any cause, 427 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii¹⁴ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (9.3%) (i.e., outside the 95% confidence interval) and lower than the national epidemic threshold (6.8%) (i.e., outside the 95% confidence interval) for week 17.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 17. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, one influenza associated pediatric death occurring during the 2019-2020 season was reported to CDC during week 17. The death was associated with an influenza B virus with no lineage determined and occurred during week 52 (week ending December 28, 2019). (2019-2020 season total: 170).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 170 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 107 deaths were associated with influenza B viruses, and 26 had a lineage determined; all were B/Victoria viruses
- 63 deaths were associated with influenza A viruses, and 37 were subtyped; 36 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 17.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 28, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 18: APRIL 26, 2020–MAY 2, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 18

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.4%	Higher than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.3%	Lower than the previous week. This number means that many, if not all, of the 99.7% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.2%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 19)	0.0%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.2%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	4	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

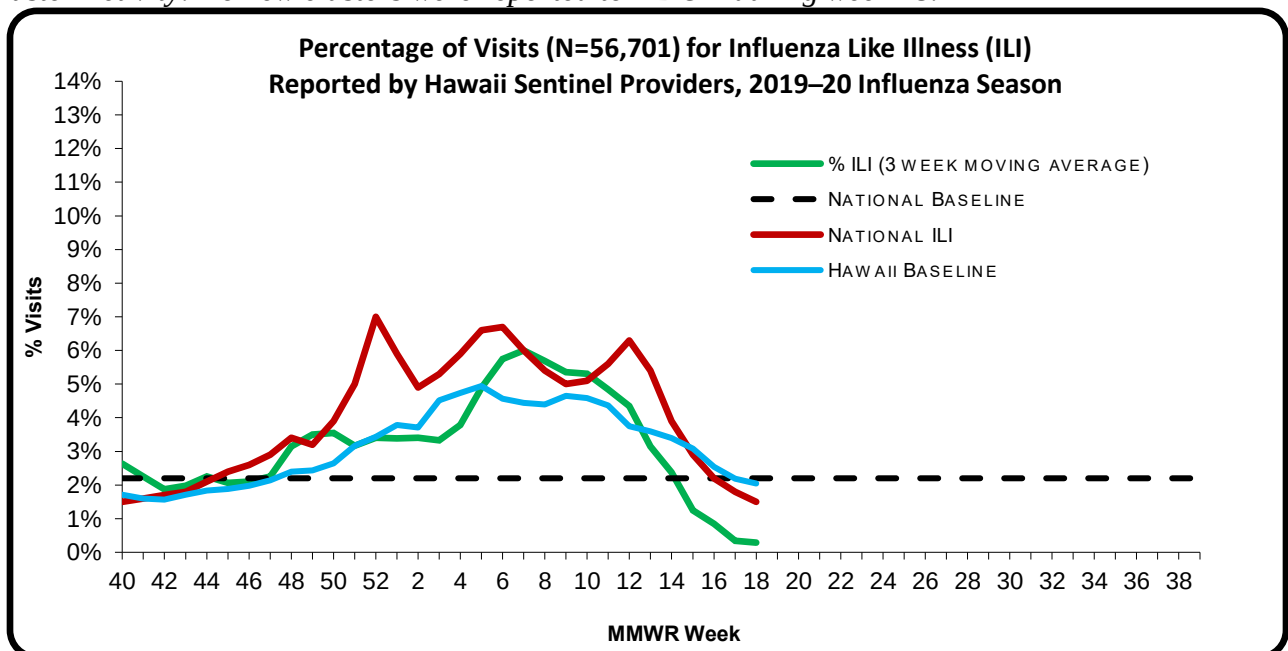
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 18** of the current influenza season:

- **0.4%** (season to date: **3.4%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.5%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 18.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

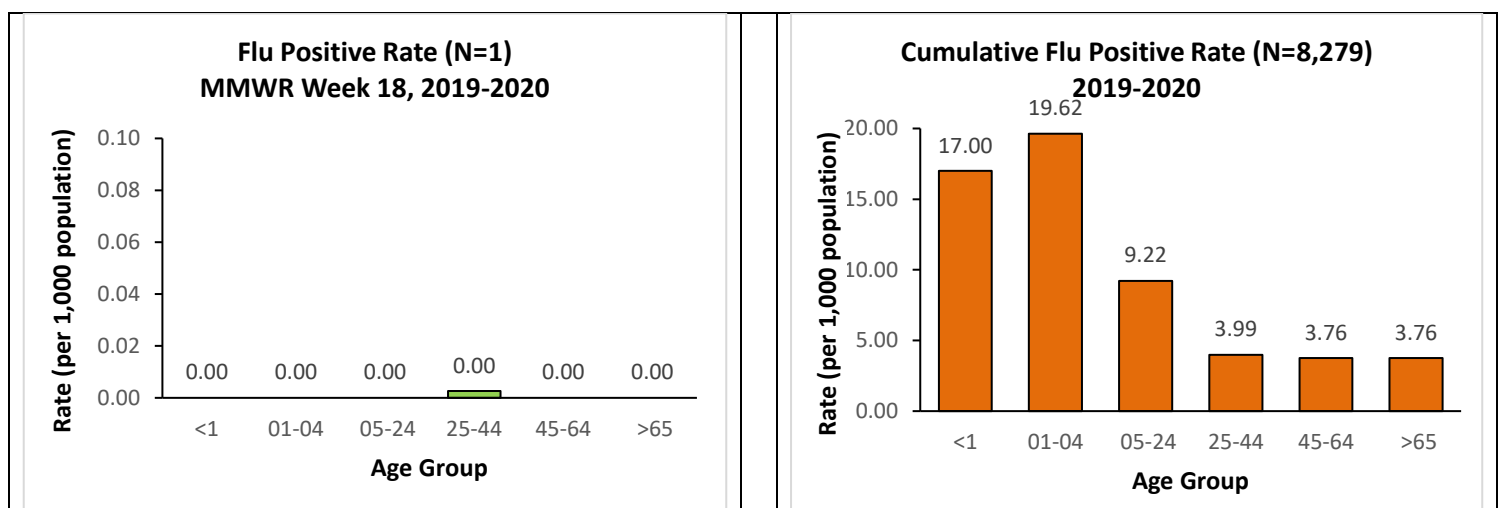
A. INFLUENZA:

- The following reflects laboratory findings for week 18 of the 2019–20 influenza season:
 - A total of **385** specimens have been tested statewide for influenza viruses (positive: 1 [0.3%]). (Season to date: 39,030 tested [21.2% positive])
 - 100 (26.0%) were screened only by rapid antigen tests with no confirmatory testing.
 - 285 (74.0%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 384 (99.7%) were negative.

Influenza type	Current week 18 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,323 (16.0)
Influenza A (H3)	0 (0.0)	68 (0.8)
Influenza A no subtyping	0 (0.0)	4,592 (55.5)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	447 (5.4)
Influenza B no genotyping	1 (0.0)	1,848 (22.3)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



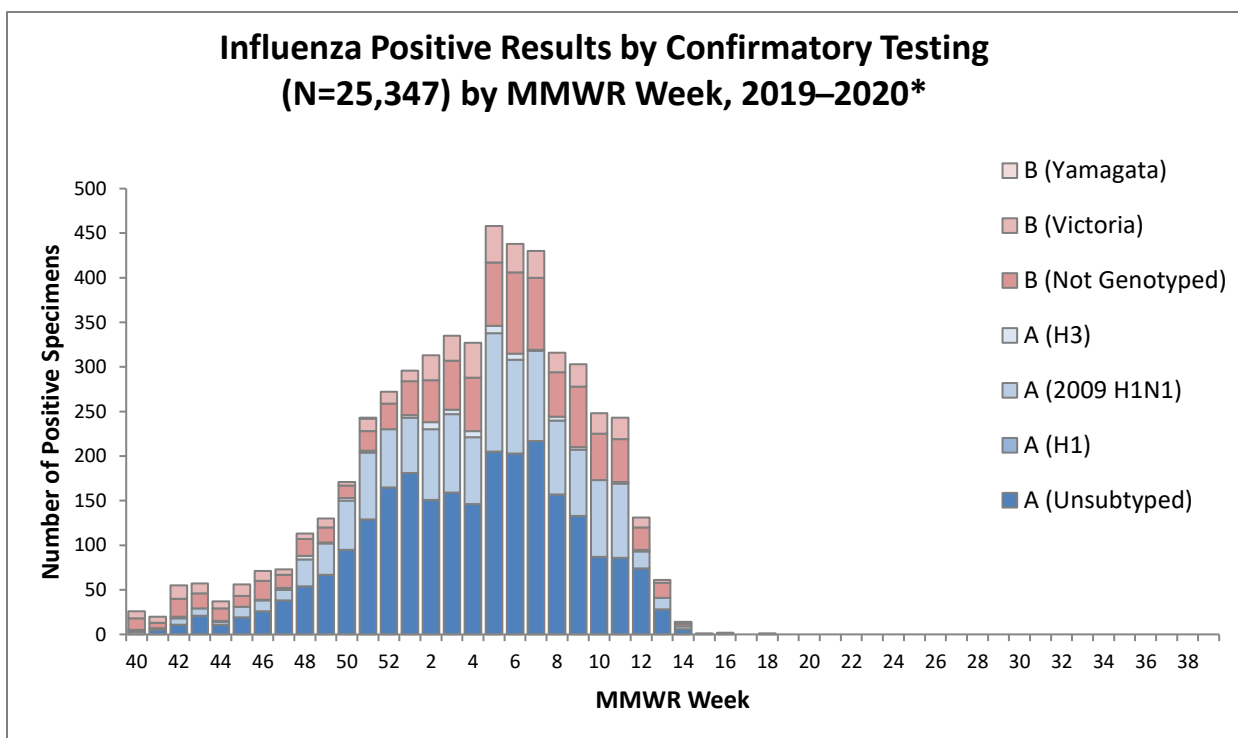
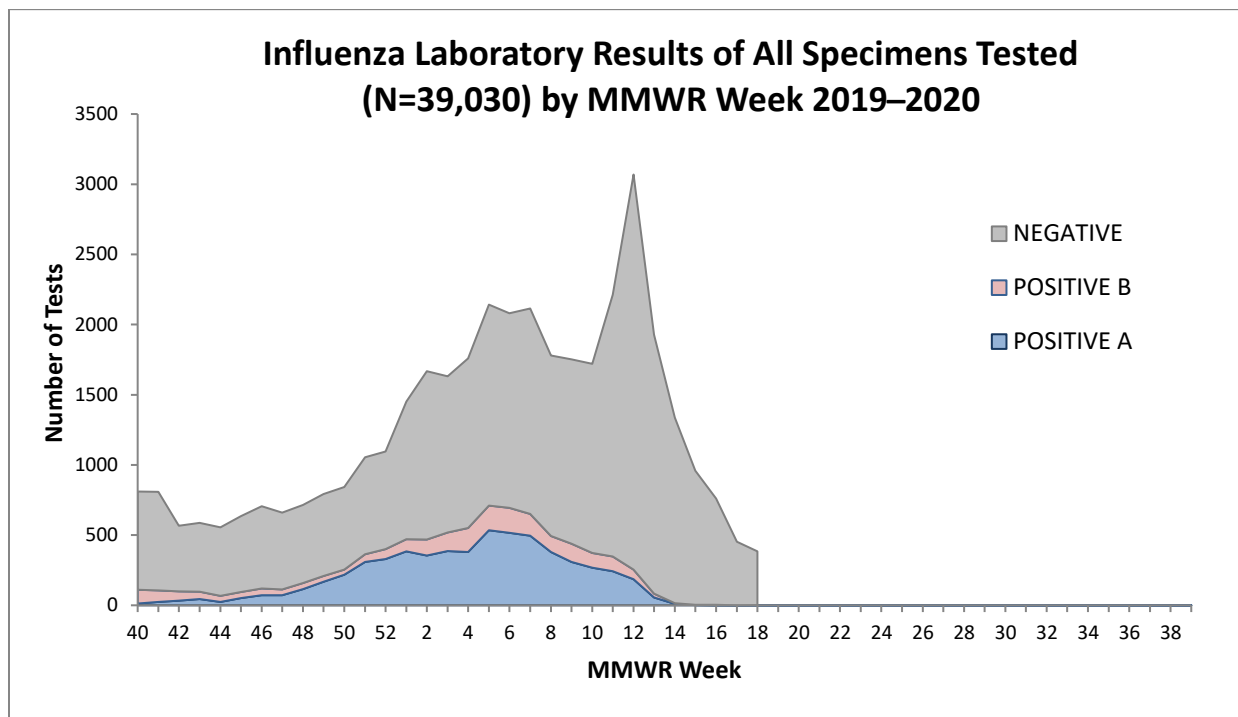
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 19¹¹ of the 2019–20 influenza/respiratory disease season:

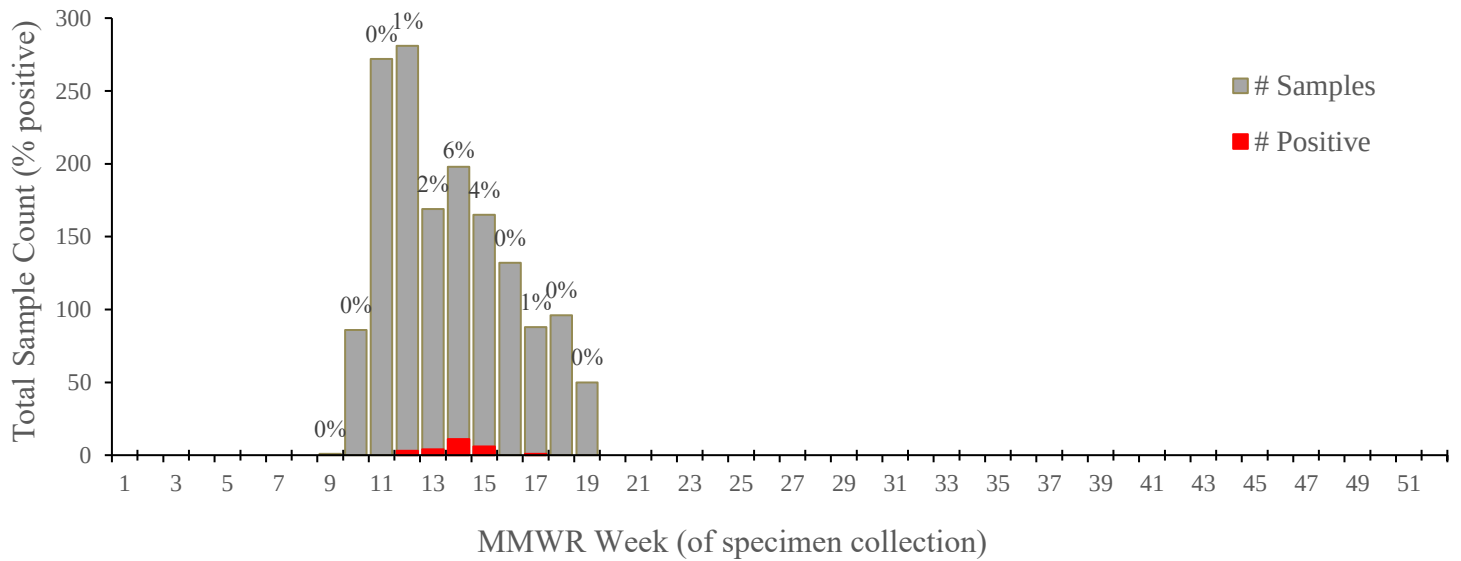
- *COVID-19 geographic spread: Local¹²*
- *A total of 50 surveillance specimens have been tested statewide for COVID-19 (positive: 0 [0.0%]).*
 - *Although no positive specimens were detected through sentinel surveillance, there is evidence of localized community transmission detected by other surveillance methods such as case investigations, cluster investigations, and direct physician reports.*
- *Season to date: A total of 1,536 surveillance specimens have been tested for COVID-19 (positive: 25 [1.6%])*
 - *540 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	202	0	0-17	236	0
Honolulu	856	1.8	18-64	955	2.4
Kauai	59	0	65+	345	0.6
Maui	261	3.8			
Missing	158	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

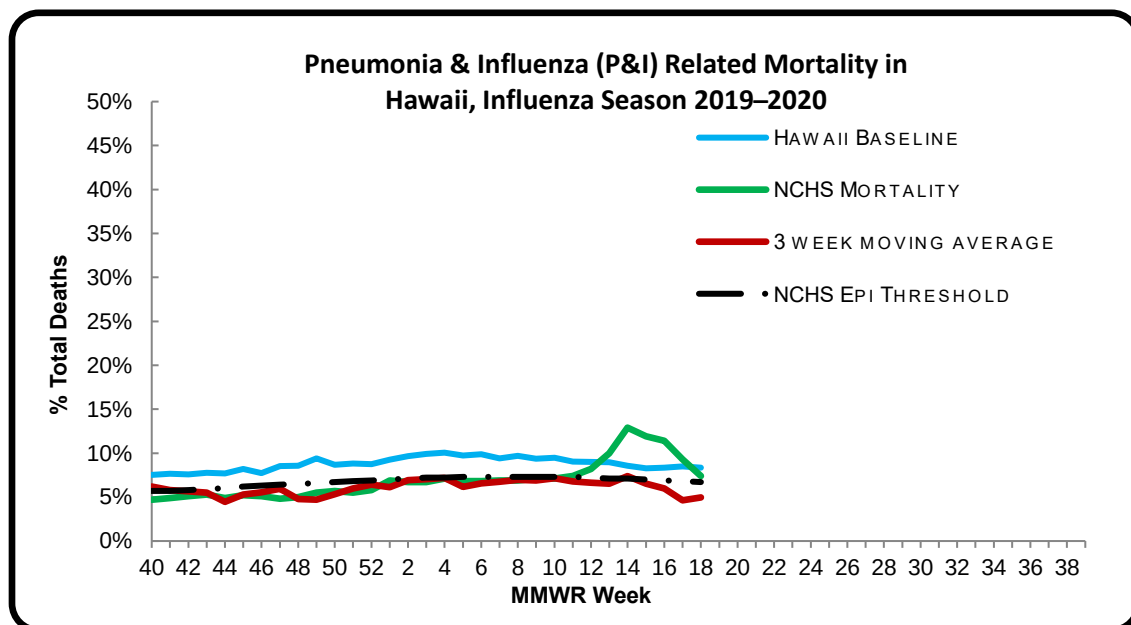
COVID-19 Surveillance Samples Tested (N=1,536),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 18** of the current influenza season:

- **6.2%** of all deaths that occurred in Hawaii during week 18 were related to pneumonia or influenza. For the current season (season to date: **6.1%**), there have been 7,199 deaths from any cause, 441 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**7.4%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**6.7%**) (i.e., inside the 95% confidence interval) for week 18.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 18. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, four influenza associated pediatric deaths occurring during the 2019-2020 season were reported to CDC during week 18. Three were associated with an influenza A(H1N1)pdm09 virus and occurred during weeks

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

3 (week ending January 18, 2020) and 11 (week ending March 14, 2020). One was associated with an influenza B virus with no lineage determined and occurred during week 17 (week ending April 25, 2020). (2019-2020 season total: 170).

Of the 174 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 108 deaths were associated with influenza B viruses, and 26 had a lineage determined; all were B/Victoria viruses
- 66 deaths were associated with influenza A viruses, and 40 were subtyped; 39 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 18.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**. Since the last update, two new laboratory-confirmed human cases of influenza A(H9N2) virus infections were reported from China. The first case was reported to WHO in a 3-year-old girl with onset

of illness on March 22, 2020. The patient had mild illness and history of environmental exposure to domestic poultry before onset of symptoms. The second human case of infection was reported to WHO in a 5-year-old girl with onset of illness on April 20, 2020. The patient had mild illness but was admitted to hospital for isolation and subsequently discharged. The patient had a history of exposure to slaughtered poultry brought home from a live bird market.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

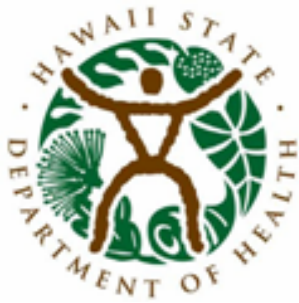
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 19: MAY 3, 2020–MAY 9, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 19

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.1%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.3%	Lower than the previous week. This number means that many, if not all, of the 99.7% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.5%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 20)	1.2%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	4.2%	Lower than Hawaii's historical baseline, comparable to the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

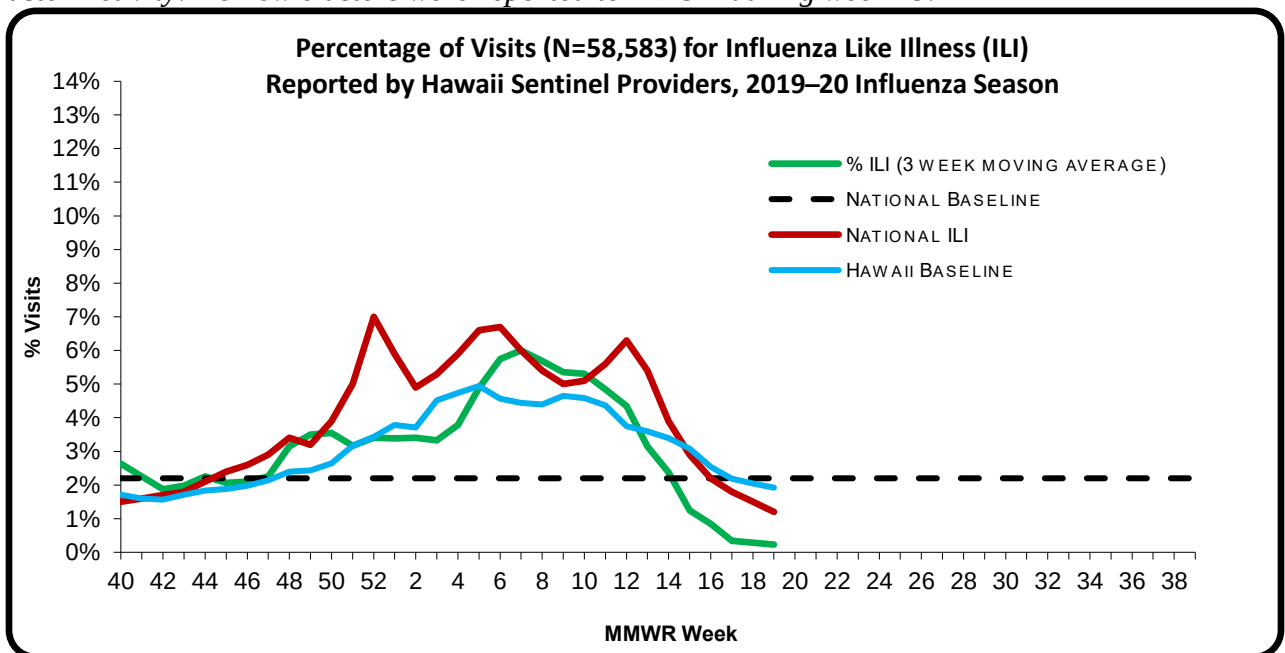
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 19** of the current influenza season:

- **0.1%** (season to date: **3.3%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.2%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 19.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

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⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

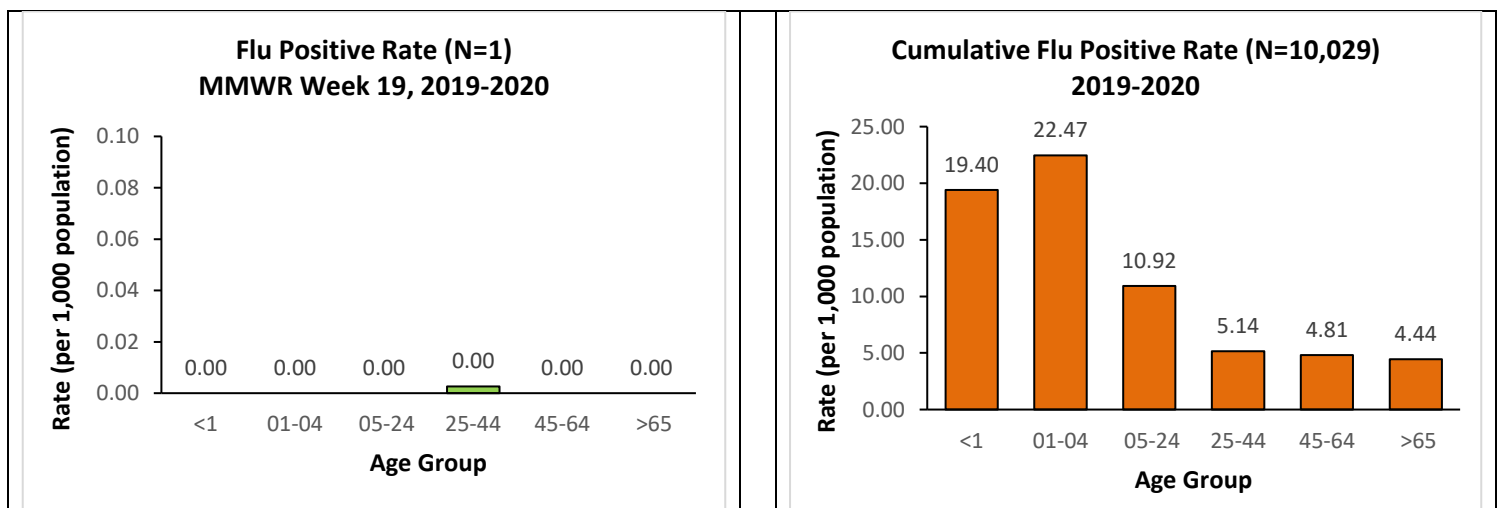
A. INFLUENZA:

- The following reflects laboratory findings for week 19 of the 2019–20 influenza season:
 - A total of **305** specimens have been tested statewide for influenza viruses (positive: 1 [0.3%]). (Season to date: 44,589 tested [22.5% positive])
 - 83 (27.2%) were screened only by rapid antigen tests with no confirmatory testing.
 - 222 (72.8%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 304 (99.7%) were negative.

Influenza type	Current week 19 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,433 (14.3)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	0 (0.0)	5,778 (57.6)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	447 (4.5)
Influenza B no genotyping	1 (100.0)	2,304 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



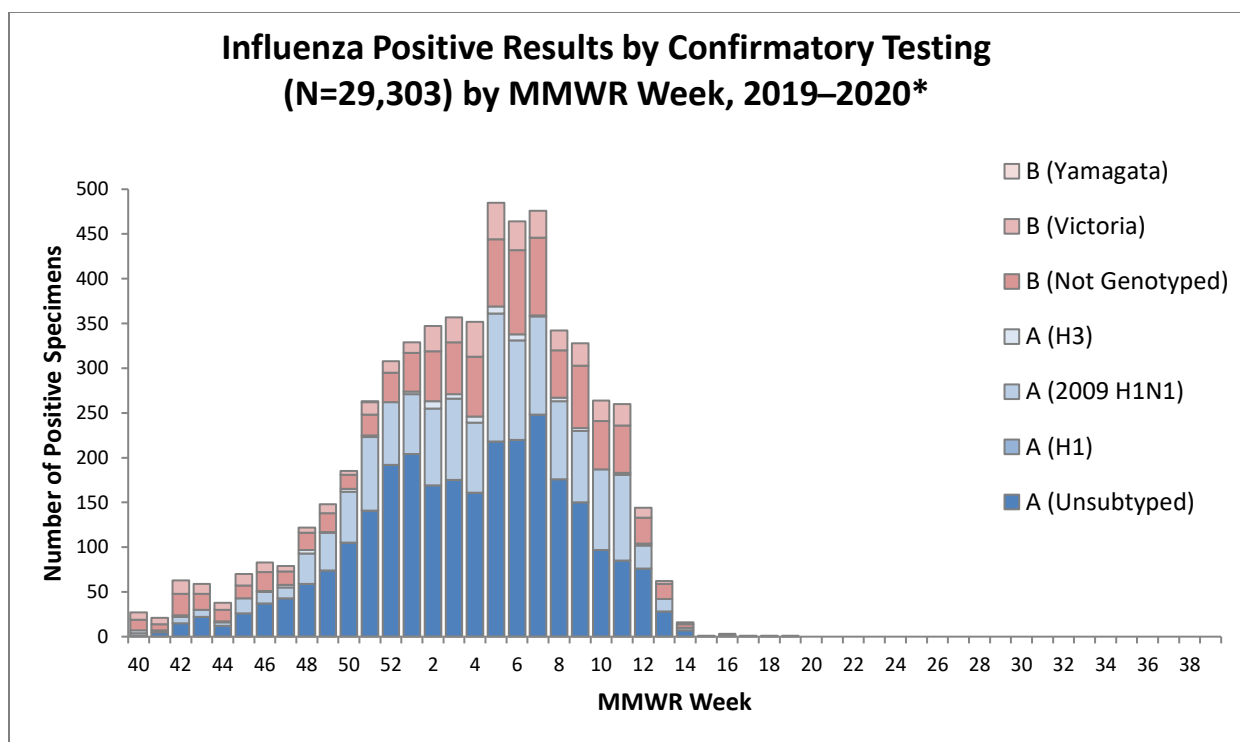
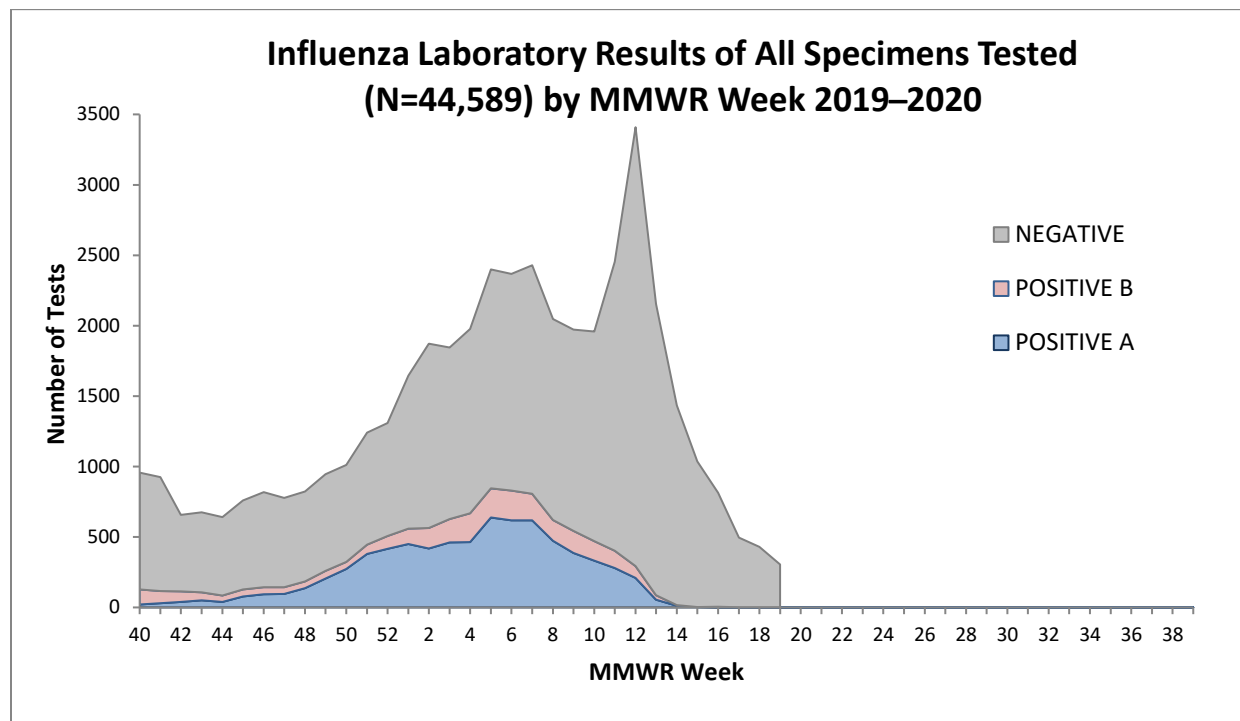
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 20¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Local*¹²
- *A total of 86 surveillance specimens have been tested statewide for COVID-19 (positive: 1 [1.2%]).*
- *Season to date: A total of 1,606 surveillance specimens have been tested for COVID-19 (positive: 26 [1.6%])*
 - *581 specimens have been tested at SLD*¹³.

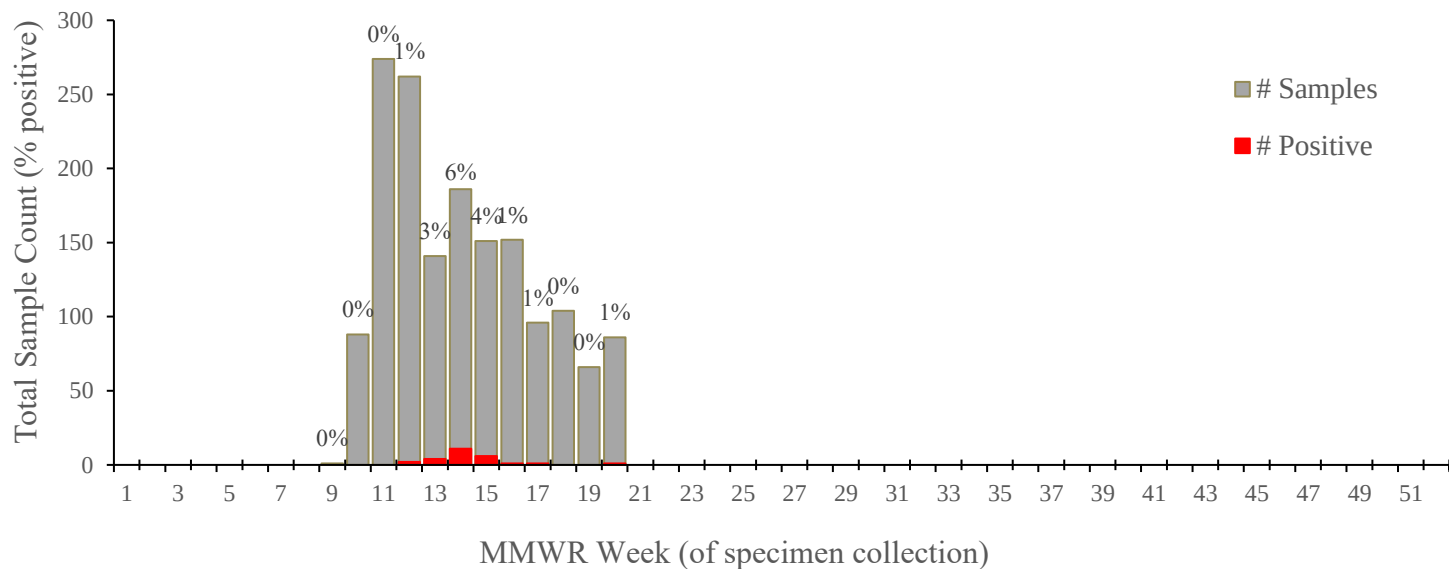
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	202	0.5	0-17	242	0
Honolulu	911	1.8	18-64	1,007	2.4
Kauai	64	0	65+	357	0.8
Maui	255	3.9			
Missing	174	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=1,606), % Positive

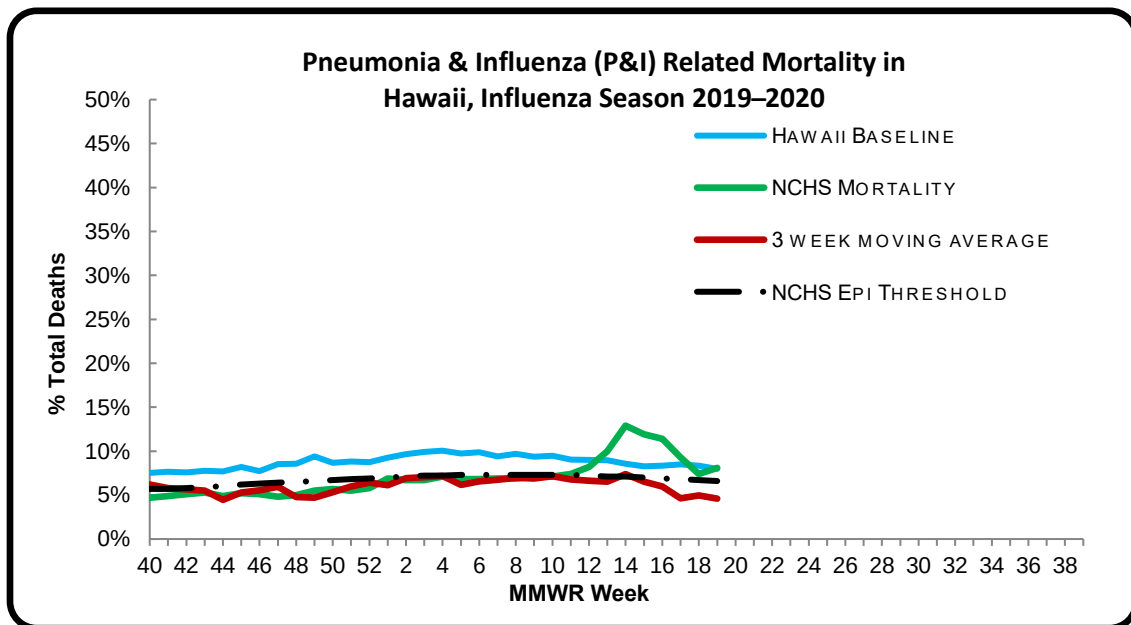


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 19** of the current influenza season:

- **4.2%** of all deaths that occurred in Hawaii during week 19 were related to pneumonia or influenza. For the current season (season to date: **6.1%**), there have been 7,439 deaths from any cause, 451 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii¹⁴ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**8.1%**) (i.e., outside the 95% confidence interval) and comparable to the national epidemic threshold (**6.6%**) (i.e., inside the 95% confidence interval) for week 19.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 19. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 19. (2019–2020 season total: 174).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 174 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 108 deaths were associated with influenza B viruses, and 26 had a lineage determined; all were B/Victoria viruses
- 66 deaths were associated with influenza A viruses, and 40 were subtyped; 39 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 19.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 20: MAY 10, 2020–MAY 16, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 20

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.3%	Higher than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.6%	Higher than the previous week. This number means that many, if not all, of the 99.4% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.3%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 21)	0.0%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.3%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

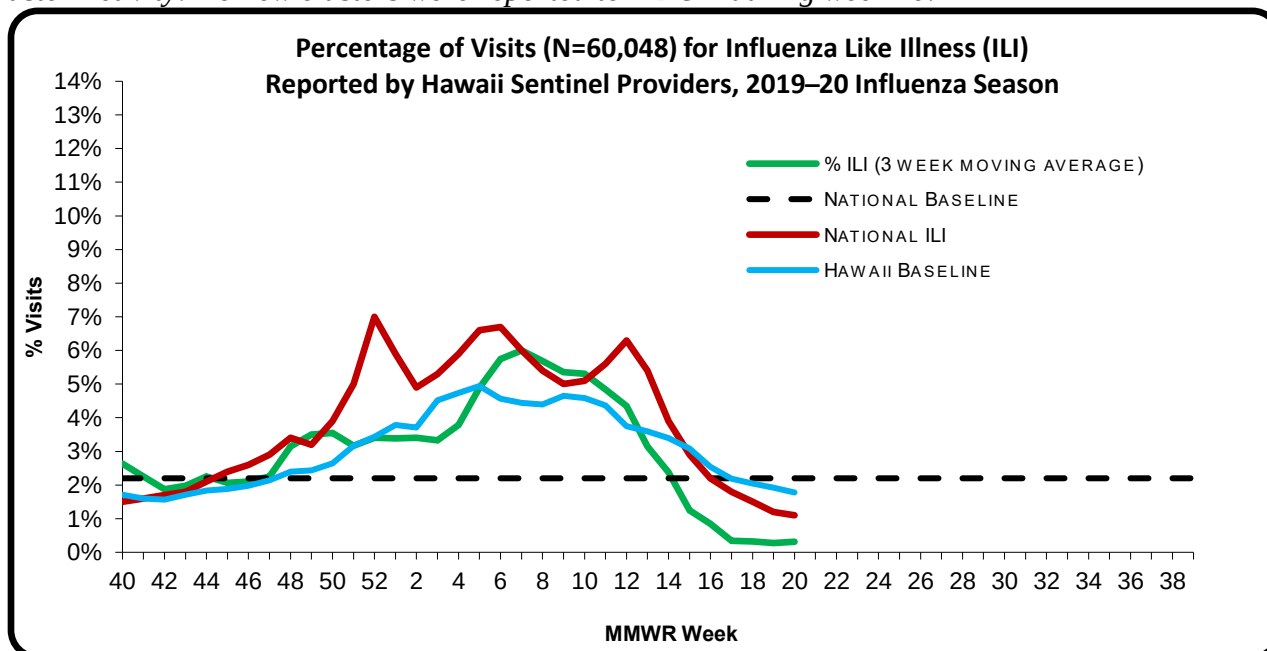
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 20** of the current influenza season:

- **0.3%** (season to date: **3.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.1%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 20.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

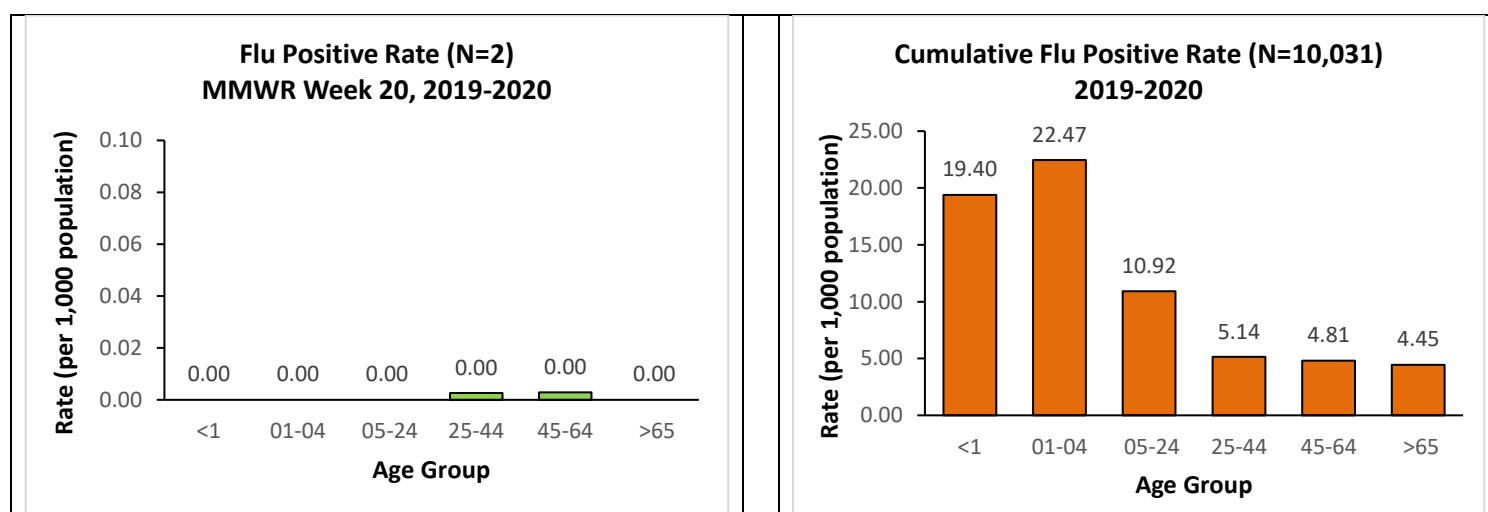
A. INFLUENZA:

- The following reflects laboratory findings for week 20 of the 2019–20 influenza season:
 - A total of **321** specimens have been tested statewide for influenza viruses (positive: 2 [**0.6%**]). (Season to date: 44,926 tested [**22.3%** positive])
 - 88 (27.4%) were screened only by rapid antigen tests with no confirmatory testing.
 - 233 (72.6%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 319 (99.4%) were negative.

Influenza type	Current week 20 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,433 (14.3)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	2 (100.0)	5,780 (57.6)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	448 (4.5)
Influenza B no genotyping	0 (0.0)	2,301 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



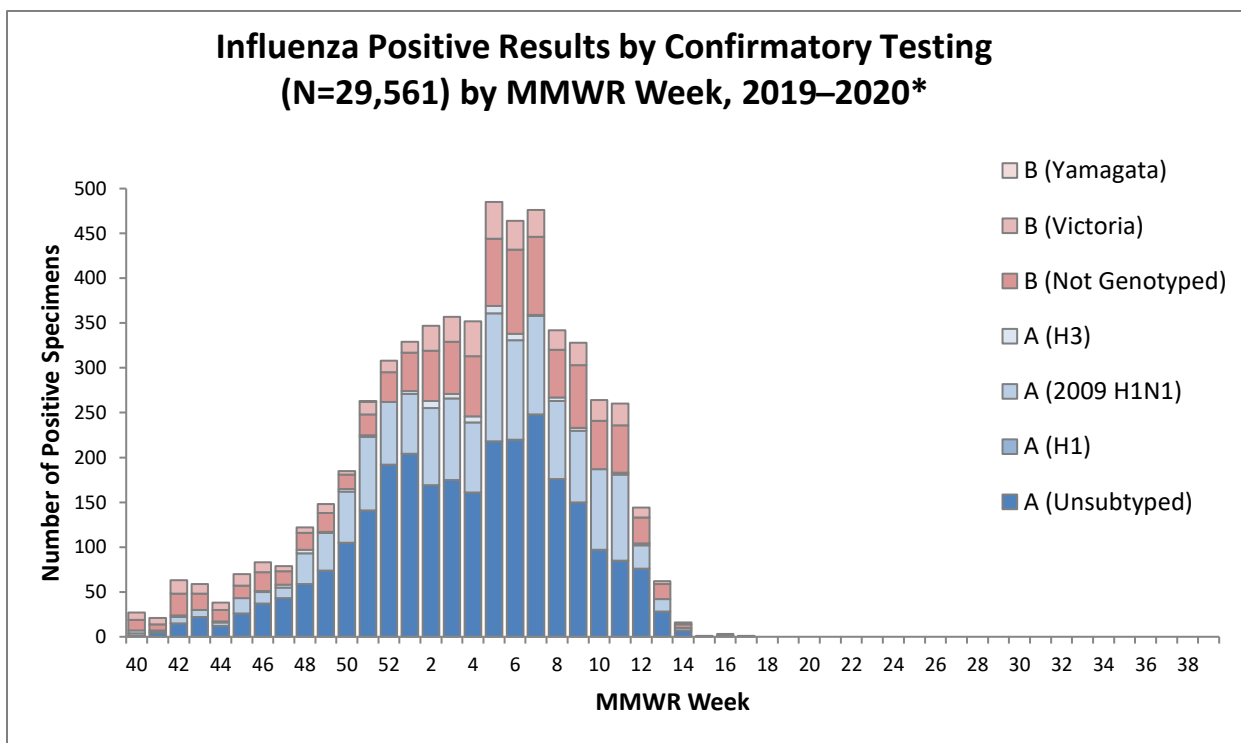
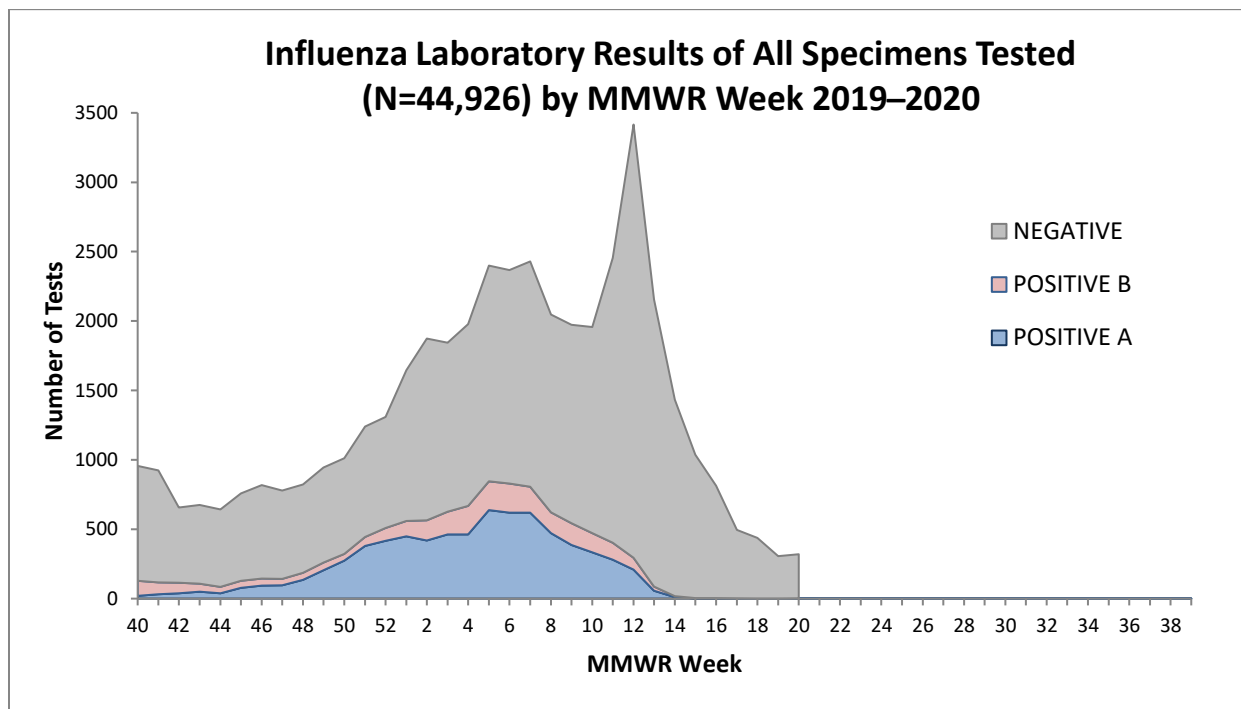
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 21¹¹ of the 2019–20 influenza/respiratory disease season:

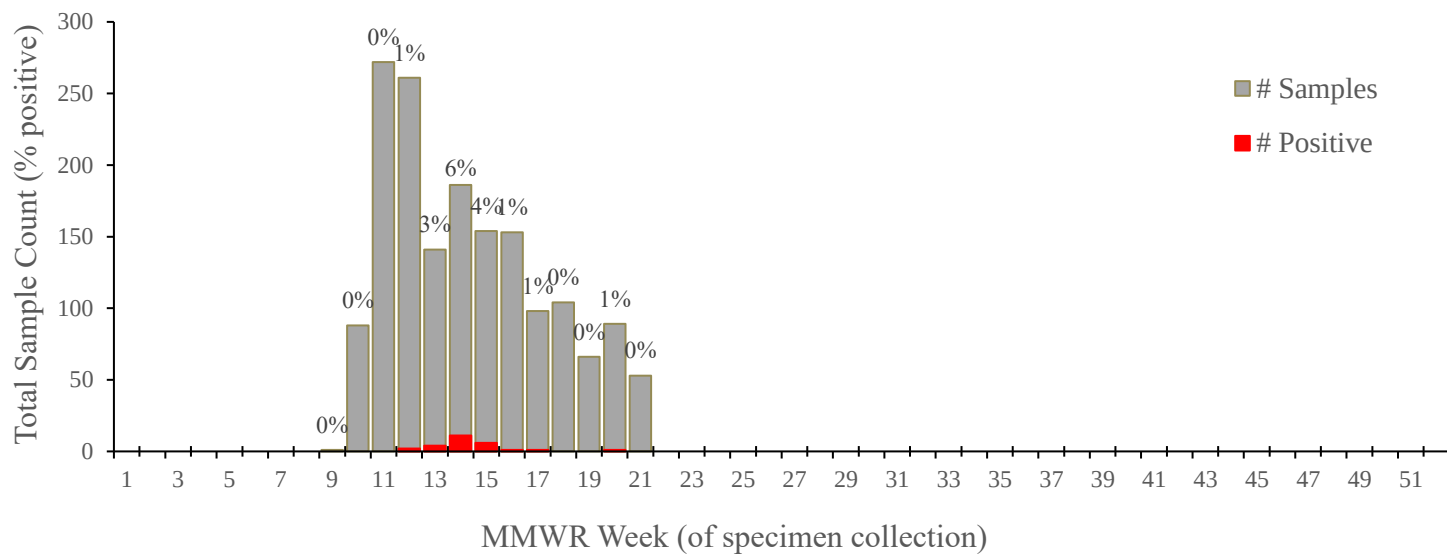
- *COVID-19 geographic spread: Local*¹²
- *A total of 53 surveillance specimens have been tested statewide for COVID-19 (positive: 0 [0.0%]).*
- *Season to date: A total of 1,665 surveillance specimens have been tested for COVID-19 (positive: 26 [1.6%])*
 - *592 specimens have been tested at SLD*¹³.

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	209	0.5	0-17	244	0
Honolulu	952	1.7	18-64	1,039	2.2
Kauai	71	0	65+	382	0.8
Maui	258	3.5			
Missing	175	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

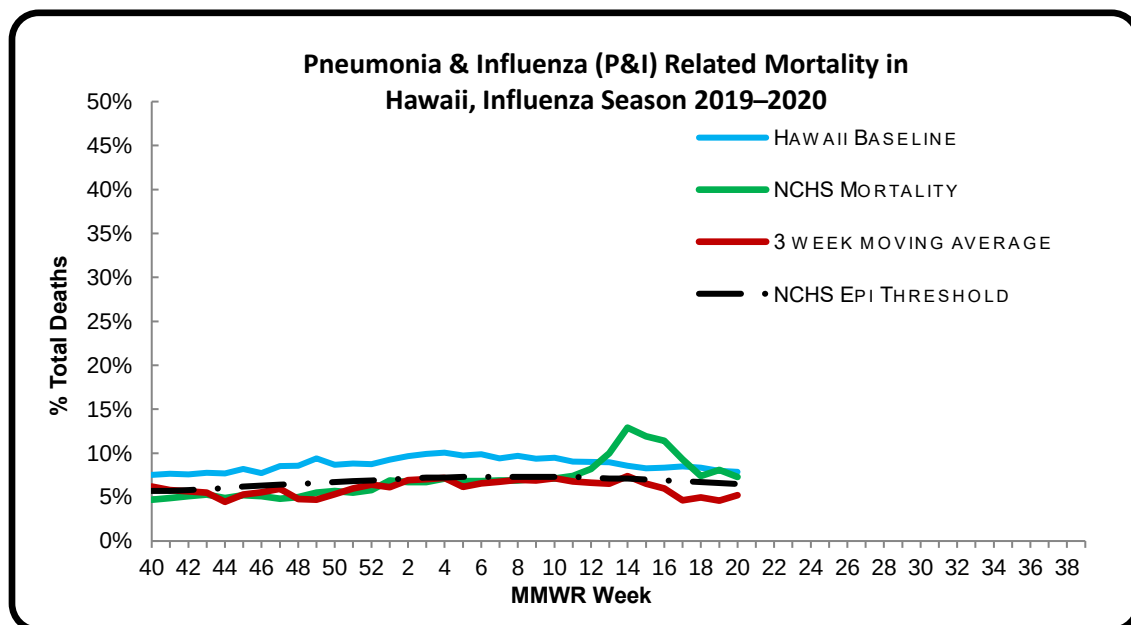
COVID-19 Surveillance Samples Tested (N=1,665),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 20** of the current influenza season:

- **5.3%** of all deaths that occurred in Hawaii during week 20 were related to pneumonia or influenza. For the current season (season to date: **6.0%**), there have been 7,686 deaths from any cause, 464 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (7.3%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.5%) (i.e., inside the 95% confidence interval) for week 20.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 20. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, two influenza-associated pediatric deaths occurring during the 2019-2020 season were reported to CDC during week 20. One was associated with an influenza A virus with no subtyping performed and occurred

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

during week 20 (week ending May 16, 2020). One was associated with an influenza B virus with no lineage determined and occurred during week 9 (week ending February 9, 2020). (2019-2020 season total: 176).

Of the 174 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 109 deaths were associated with influenza B viruses, and 26 had a lineage determined; all were B/Victoria viruses
- 67 deaths were associated with influenza A viruses, and 40 were subtyped; 39 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 20.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 21: MAY 17, 2020–MAY 23, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 21

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.8%	Higher than the previous week. Lower than Hawaii's historical baseline, comparable to the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.8%	Higher than the previous week. This number means that many, if not all, of the 99.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.2%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 22)	1.6%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.1%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	3	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

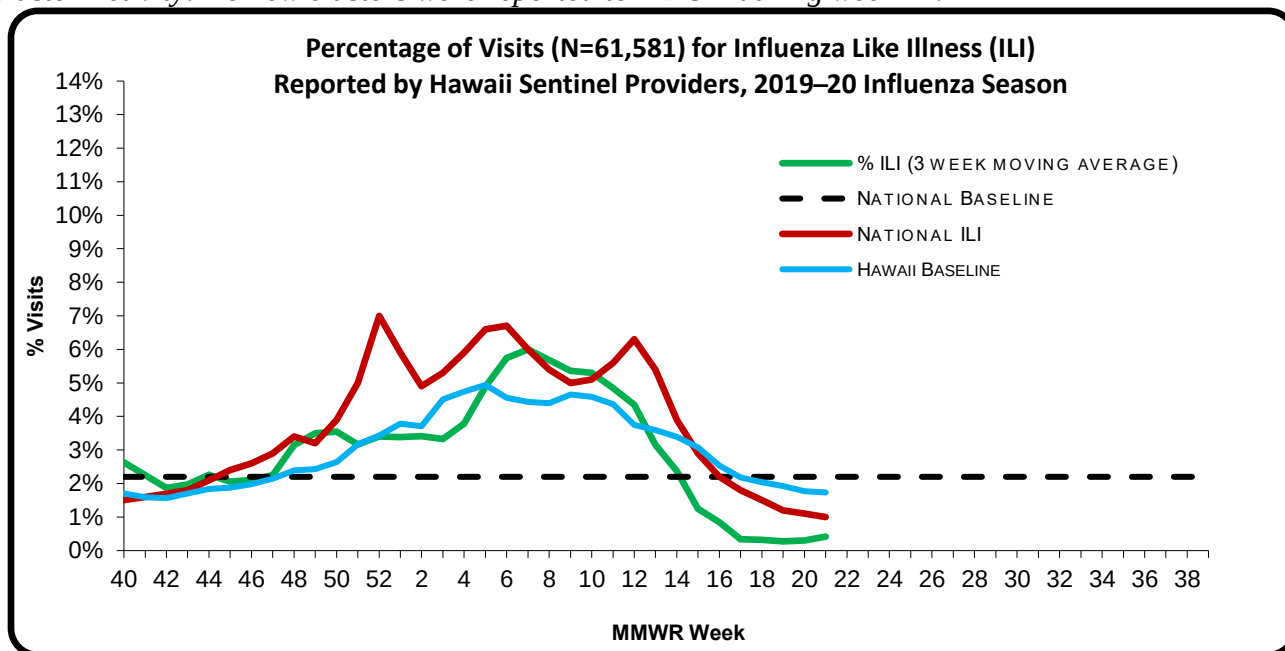
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 21** of the current influenza season:

- **0.8%** (season to date: **3.2%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.0%**) (i.e., inside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 21.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

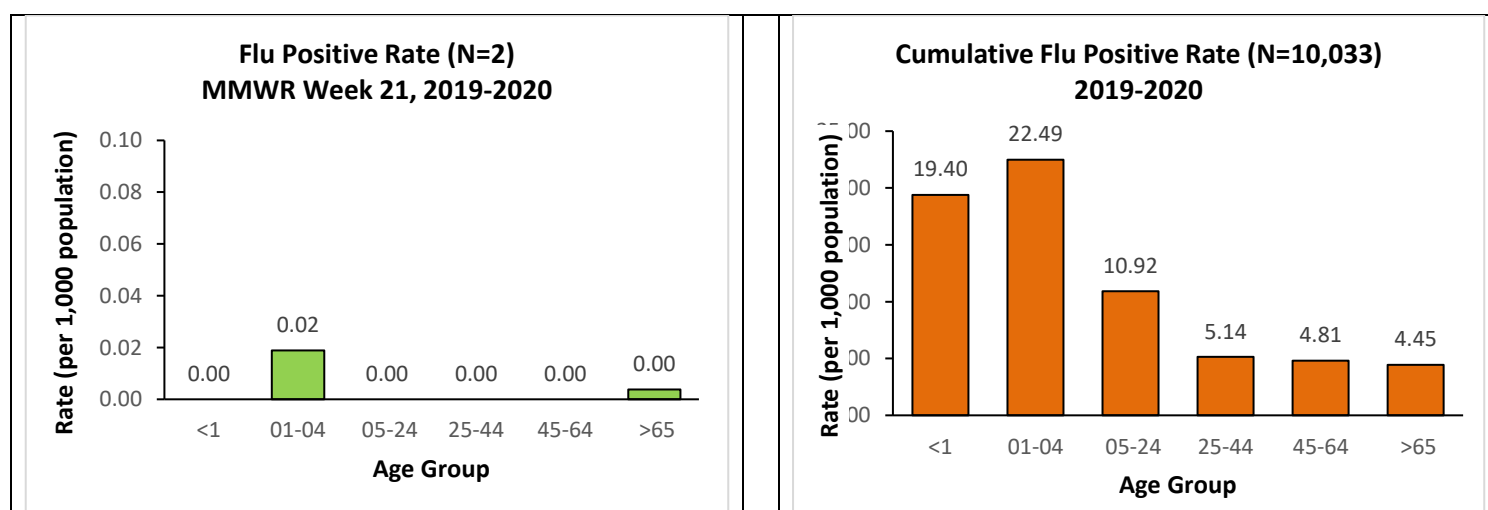
A. INFLUENZA:

- The following reflects laboratory findings for week 21 of the 2019–20 influenza season:
 - A total of 257 specimens have been tested statewide for influenza viruses (positive: 2 [0.8%]). (Season to date: 45,183 tested [22.2% positive])
 - 76 (29.6%) were screened only by rapid antigen tests with no confirmatory testing.
 - 181 (70.4%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 255 (99.2%) were negative.

Influenza type	Current week 21 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,433 (14.3)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	2 (100.0)	5,782 (57.6)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	448 (4.5)
Influenza B no genotyping	0 (0.0)	2,301 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



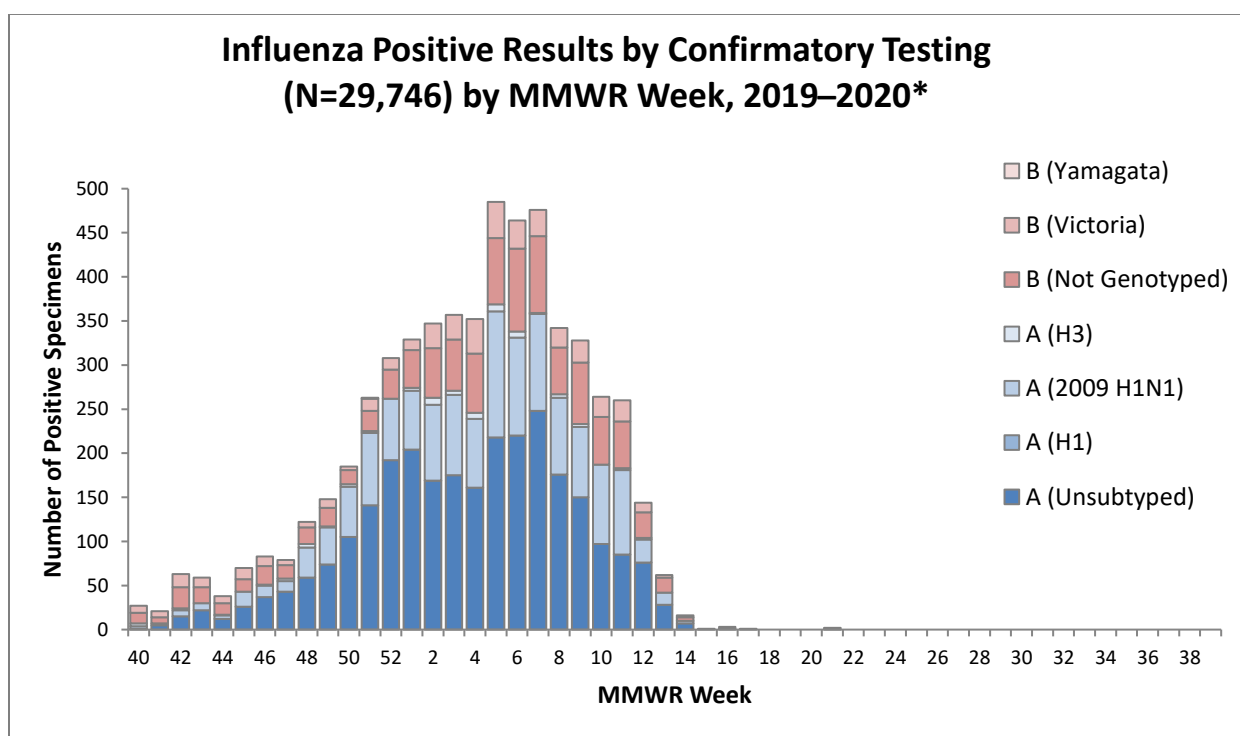
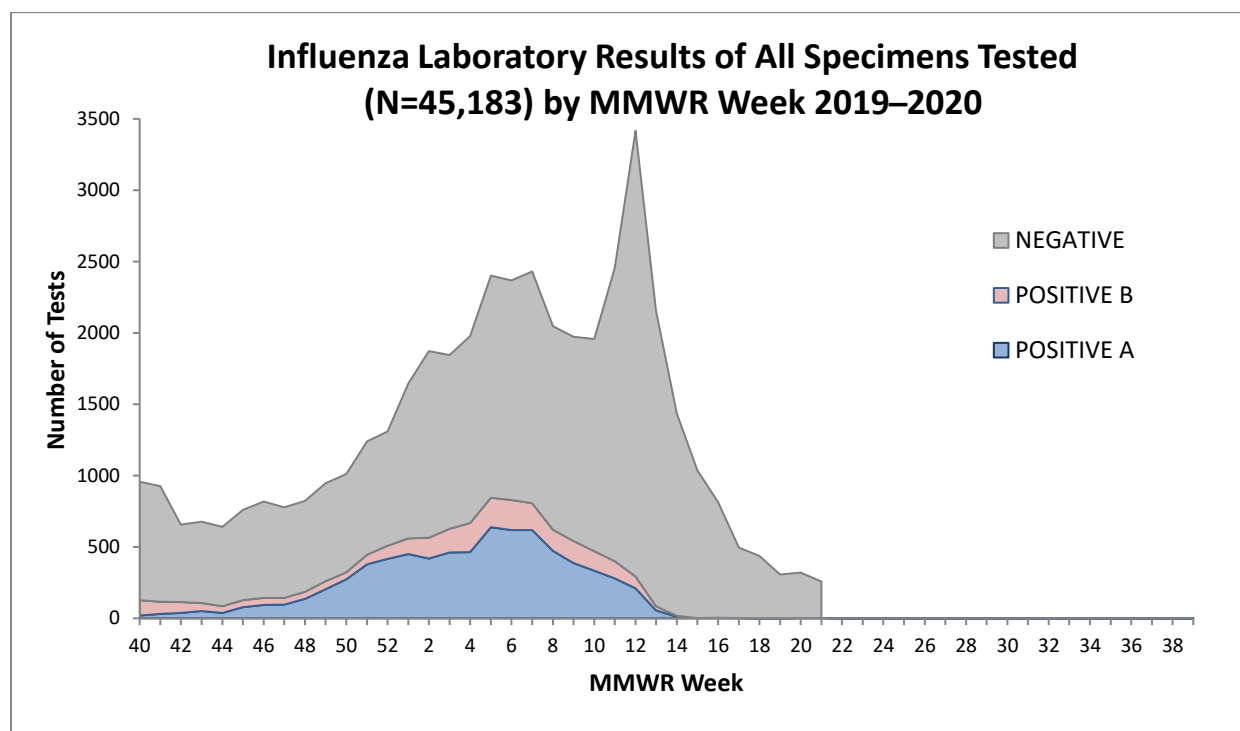
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 22¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Local*¹²
- *A total of 62 surveillance specimens have been tested statewide for COVID-19 (positive: 1 [1.6%]).*
- *Season to date: A total of 1,746 surveillance specimens have been tested for COVID-19 (positive: 27 [1.5%])*
 - *614 specimens have been tested at SLD*¹³.

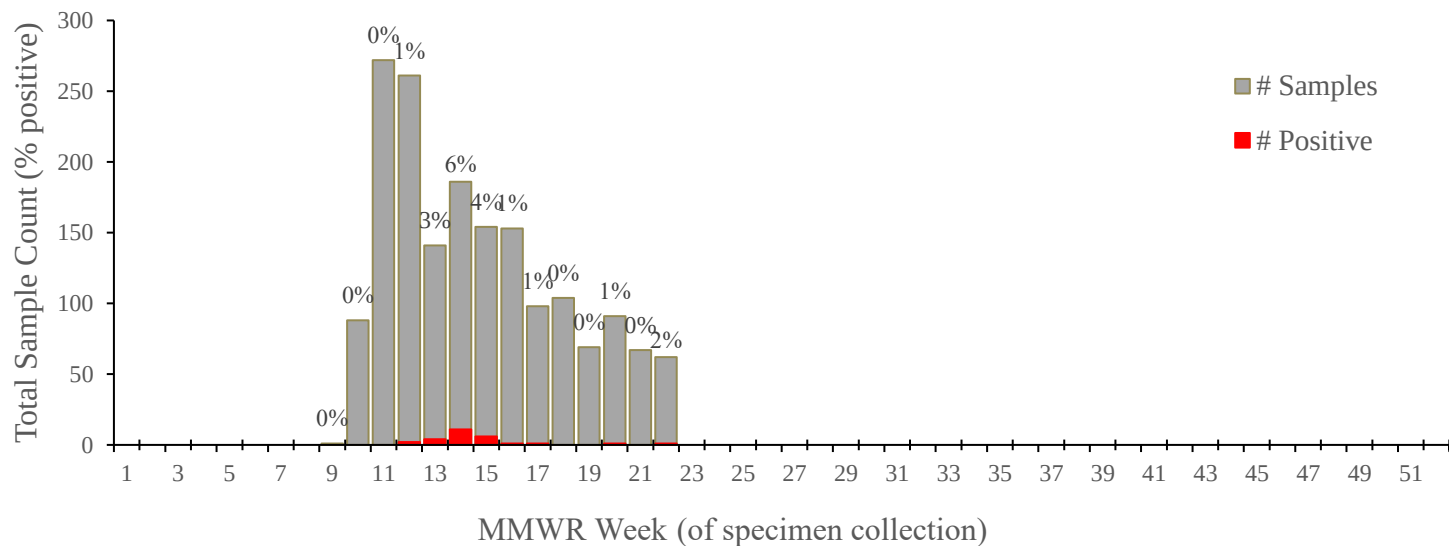
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	214	0.5	0-17	255	0
Honolulu	1,012	1.7	18-64	1,079	2.2
Kauai	74	0	65+	412	0.7
Maui	262	3.4			
Missing	184	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=1,746), % Positive

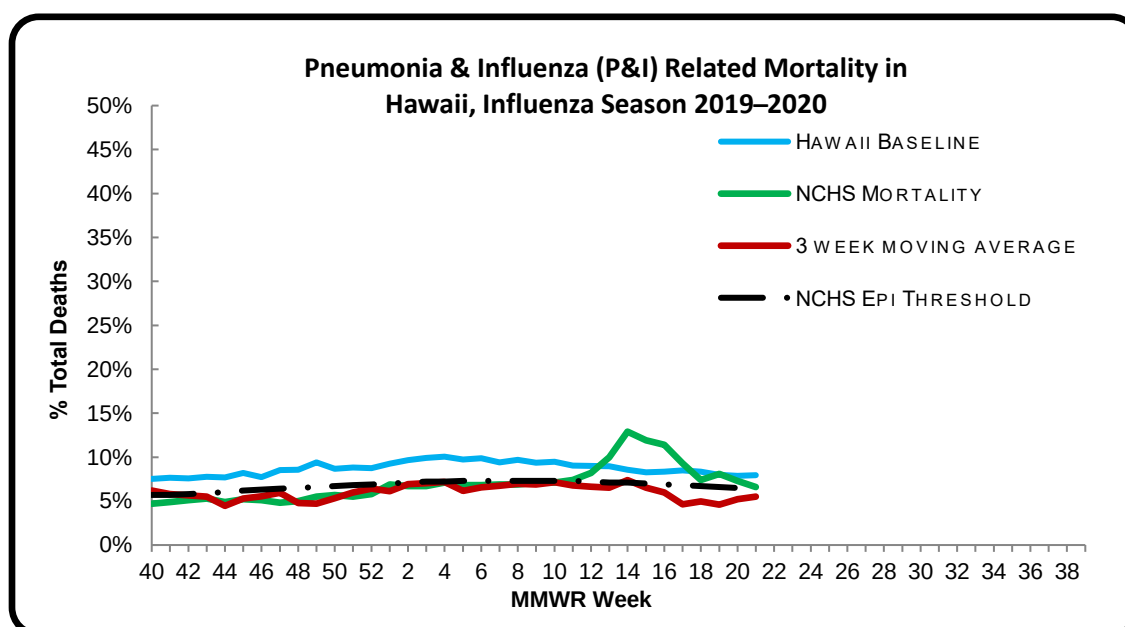


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 21** of the current influenza season:

- **7.1%** of all deaths that occurred in Hawaii during week 21 were related to pneumonia or influenza. For the current season (season to date: **6.1%**), there have been 7,927 deaths from any cause, 481 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**6.6%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**6.4%**) (i.e., inside the 95% confidence interval) for week 21.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 21. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, three influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 21. Two were associated with influenza A(H1N1)pdm09 viruses and occurred during week

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

6 (week ending February 8, 2020) and week 11 (week ending March 14, 2020). One was associated with an influenza B virus with no lineage determined and occurred during week 17 (week ending April 25, 2020). (2019-2020 season total: 179).

Of the 179 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 110 deaths were associated with influenza B viruses, and 26 had a lineage determined; all were B/Victoria viruses
- 69 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 21.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

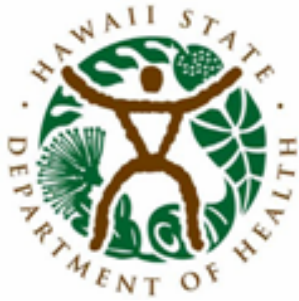
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 22: MAY 24, 2020–MAY 30, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 22

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.3%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.8%	Comparable to the previous week. This number means that many, if not all, of the 99.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.1%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 23)	1.6%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.0%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	3	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

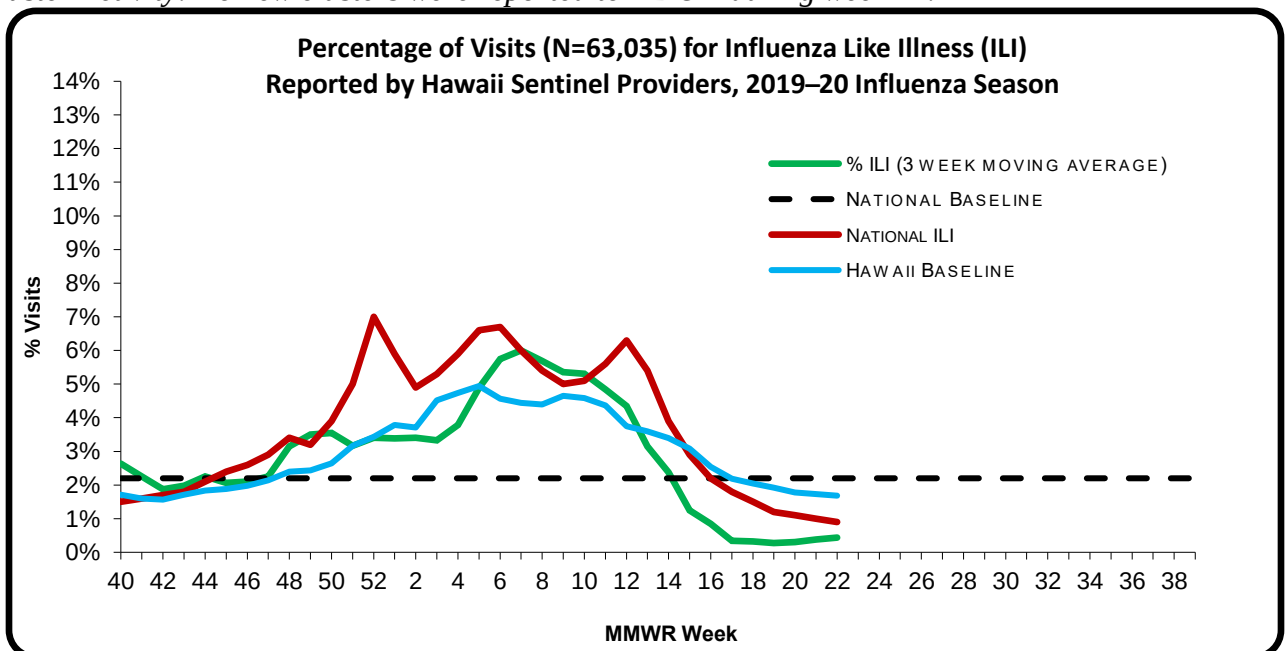
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 22** of the current influenza season:

- **0.3%** (season to date: **3.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**0.9%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 22.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

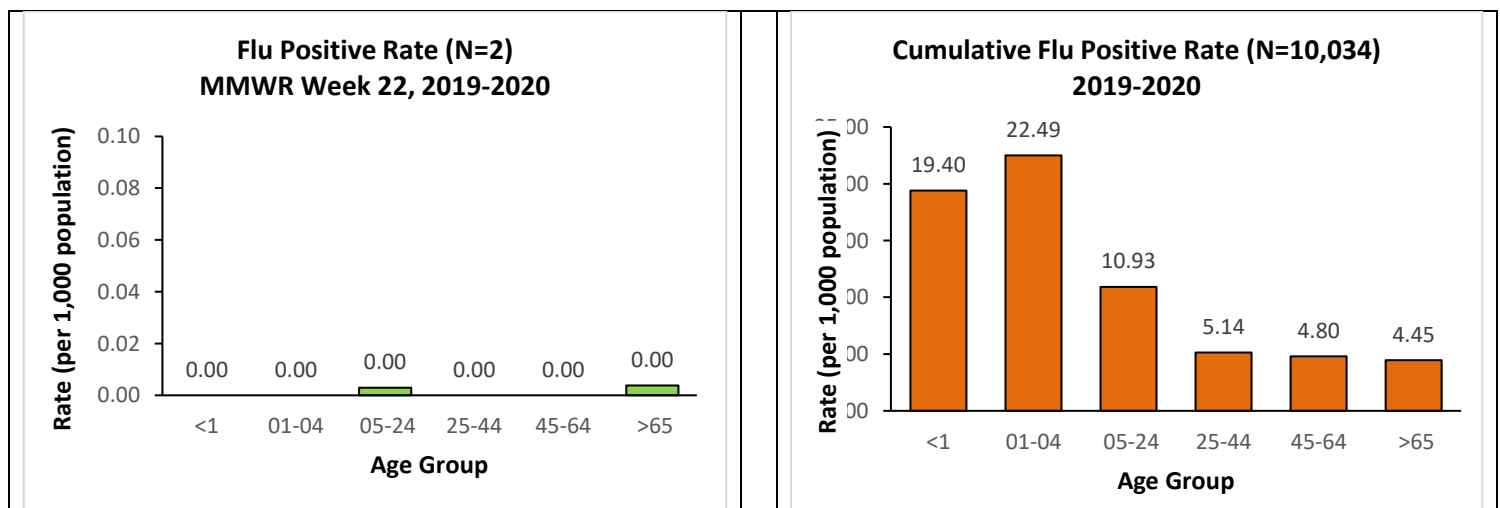
A. INFLUENZA:

- The following reflects laboratory findings for week 22 of the 2019–20 influenza season:
 - A total of 252 specimens have been tested statewide for influenza viruses (positive: 2 [0.8%]). (Season to date: 45,414 tested [22.1% positive])
 - 80 (31.7%) were screened only by rapid antigen tests with no confirmatory testing.
 - 172 (68.3%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 250 (99.2%) were negative.

Influenza type	Current week 22 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,428 (14.2)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	2 (100.0)	5,784 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	448 (4.5)
Influenza B no genotyping	0 (0.0)	2,300 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



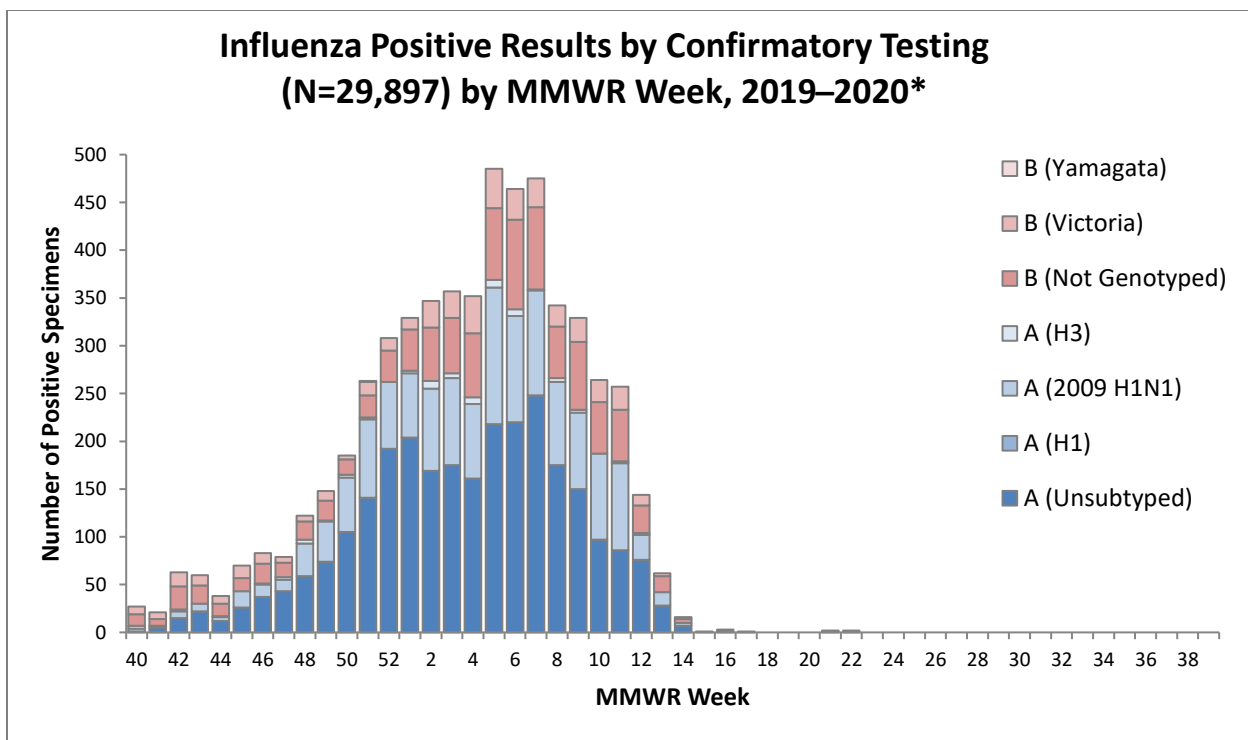
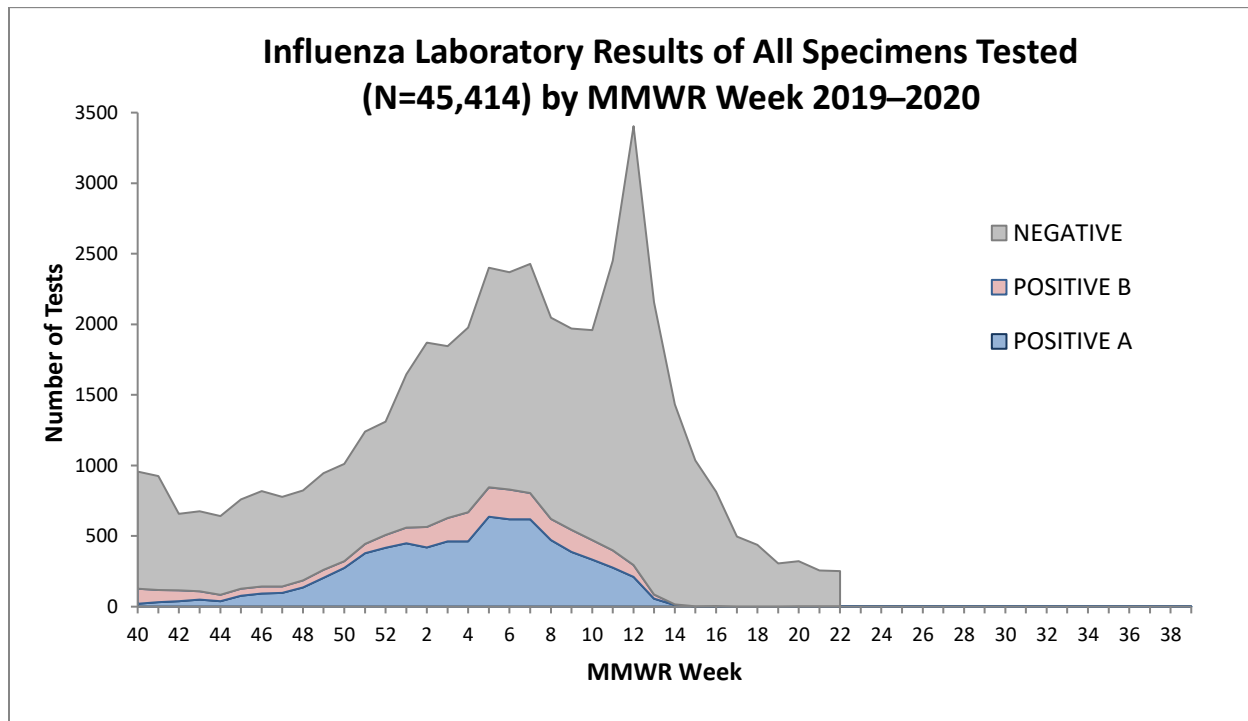
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 23¹¹ of the 2019–20 influenza/respiratory disease season:

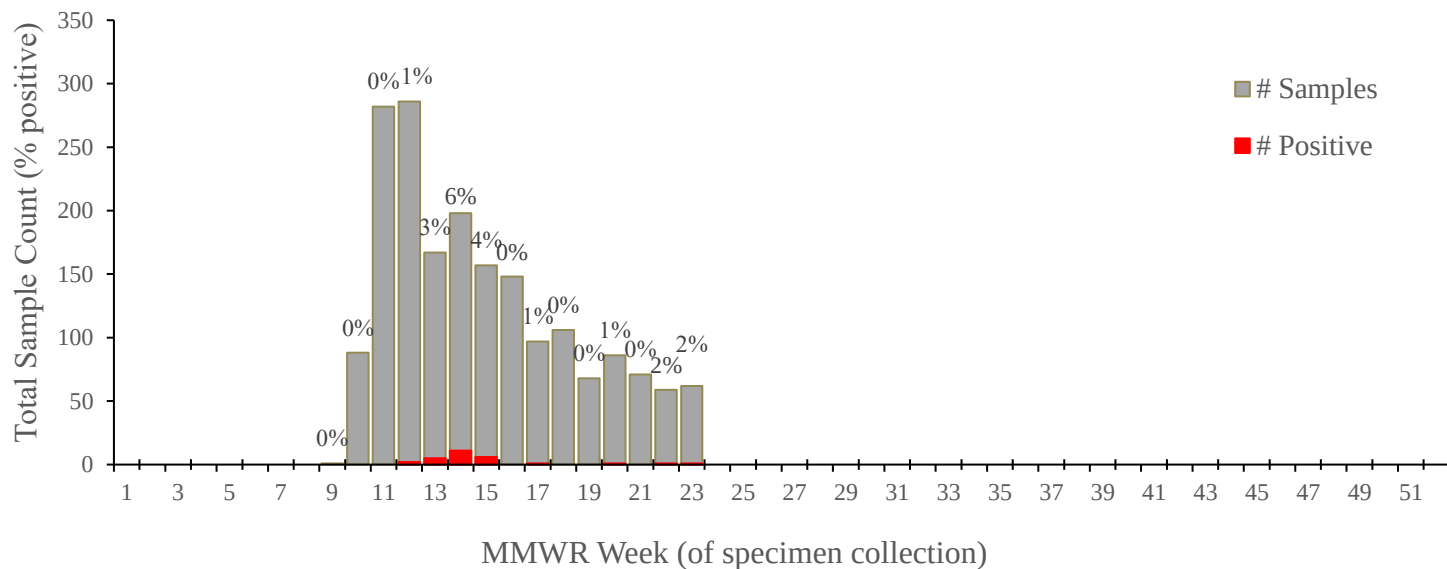
- *COVID-19 geographic spread: Local*¹²
- *A total of 62 surveillance specimens have been tested statewide for COVID-19 (positive: 1 [1.6%]).*
- *Season to date: A total of 1,876 surveillance specimens have been tested for COVID-19 (positive: 28 [1.6%])*
 - *658 specimens have been tested at SLD*¹³.

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	231	0.4	0-17	277	0
Honolulu	1,069	1.7	18-64	1,134	2.2
Kauai	85	0	65+	465	0.6
Maui	294	3.1			
Missing	197	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

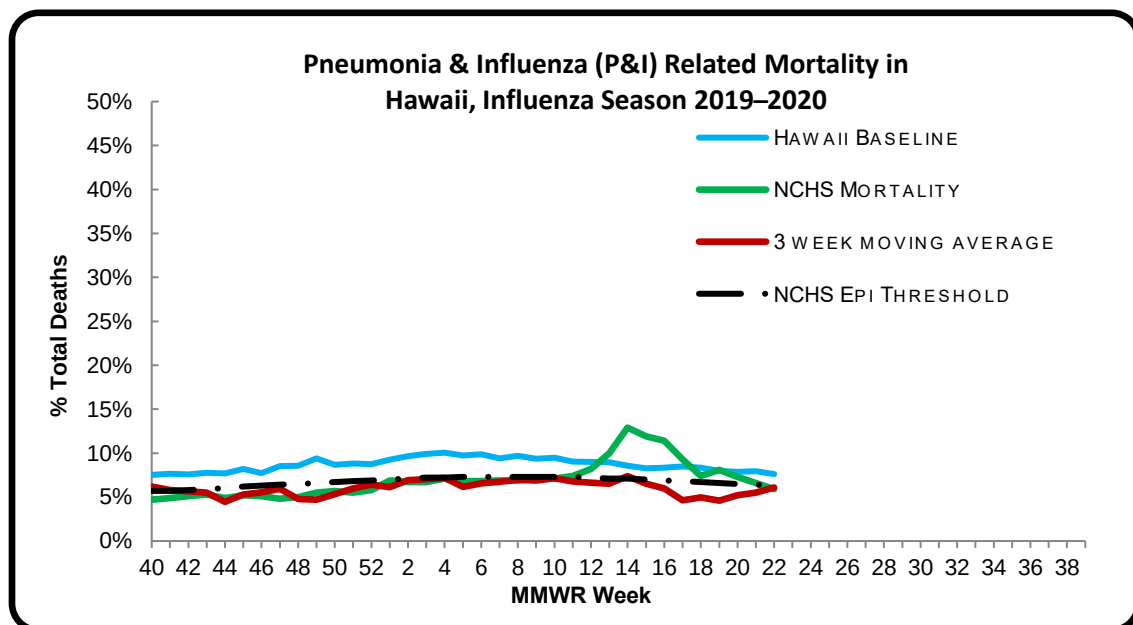
COVID-19 Surveillance Samples Tested (N=1,876),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 22** of the current influenza season:

- **6.0%** of all deaths that occurred in Hawaii during week 22 were related to pneumonia or influenza. For the current season (season to date: **6.1%**), there have been 8,127 deaths from any cause, 493 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.9%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.3%) (i.e., inside the 95% confidence interval) for week 22.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 22. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, three influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 22. One death was associated an influenza A virus which was not subtyped and occurred

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

during week 5 (week ending February 1, 2020); one was associated with an influenza B/Victoria virus and occurred during week 6 (week ending February 8, 2020); one death was associated with influenza B virus with no lineage determined and occurred during week 7 (week ending February 15, 2020). (2019-2020 season total: 182).

Of the 182 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 112 deaths were associated with influenza B viruses, and 27 had a lineage determined; all were B/Victoria viruses
- 70 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 22.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 23: MAY 31, 2020–JUNE 6, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 23

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.2%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.5%	Lower than the previous week. This number means that many, if not all, of the 99.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	22.0%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 24)	0.0%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

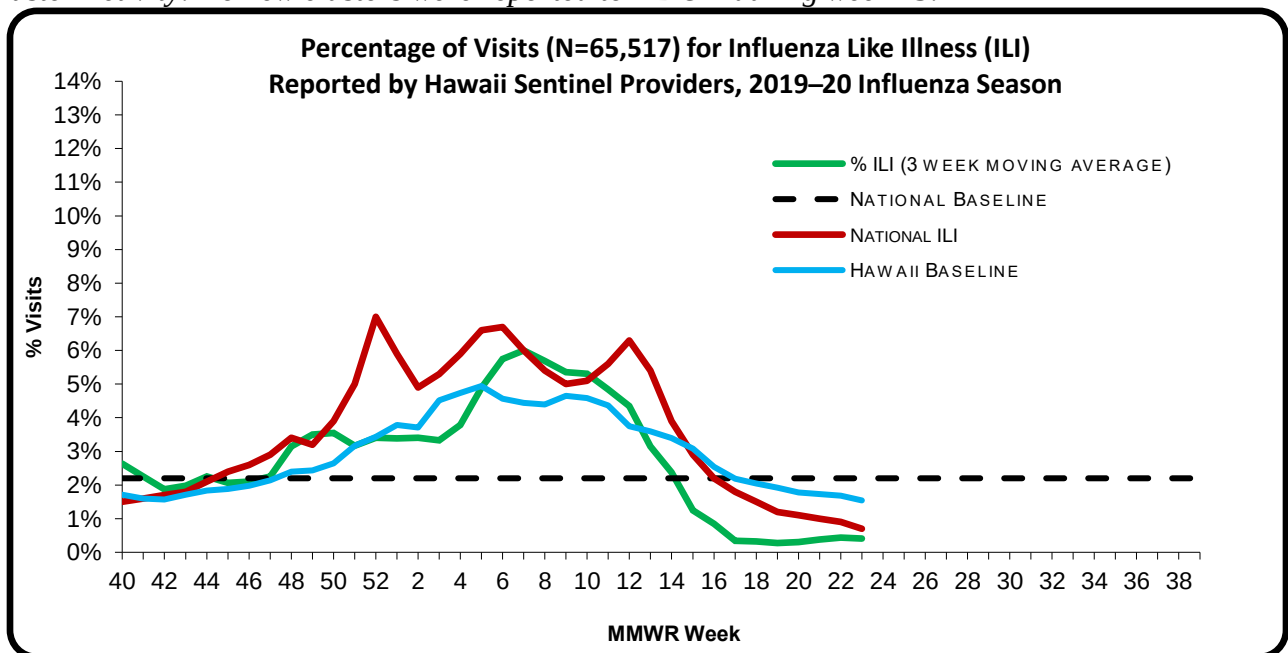
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 23** of the current influenza season:

- **0.2%** (season to date: **3.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**0.7%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 23.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

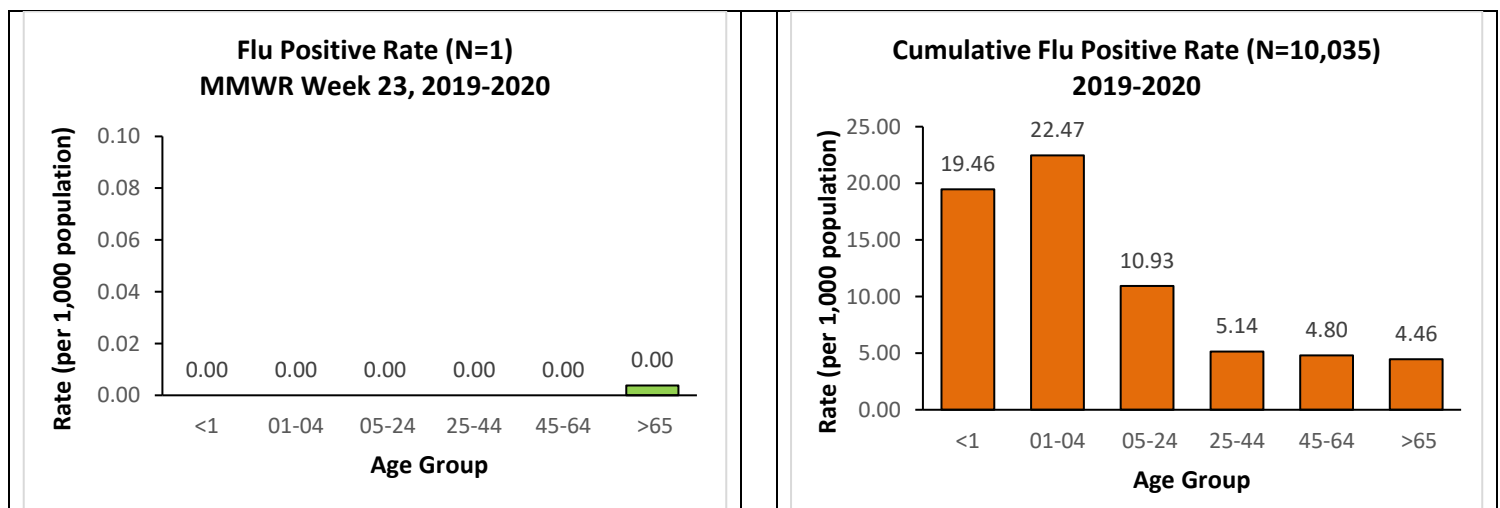
A. INFLUENZA:

- The following reflects laboratory findings for week 23 of the 2019–20 influenza season:
 - A total of **211** specimens have been tested statewide for influenza viruses (positive: 1 [0.5%]). (Season to date: 45,638 tested [22.0% positive])
 - 58 (27.5%) were screened only by rapid antigen tests with no confirmatory testing.
 - 153 (72.5%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 210 (99.5%) were negative.

Influenza type	Current week 23 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,430 (14.3)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	1 (100.0)	5,784 (57.6)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	448 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



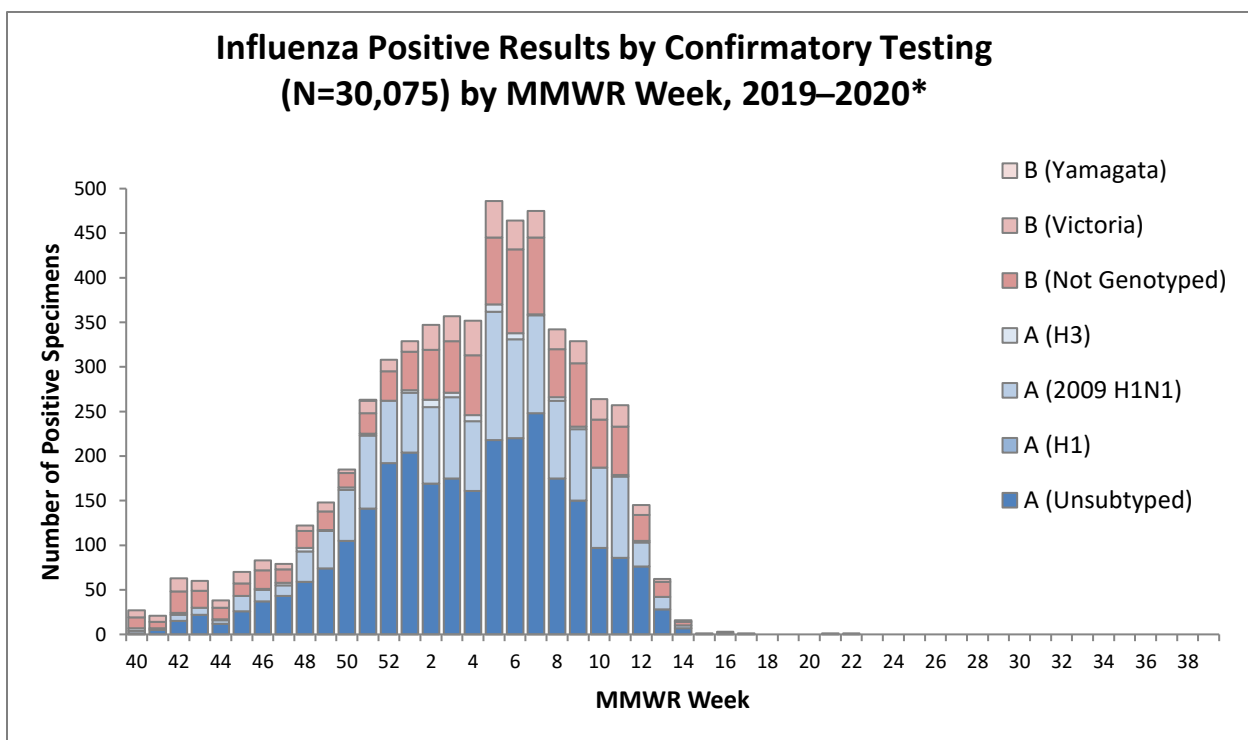
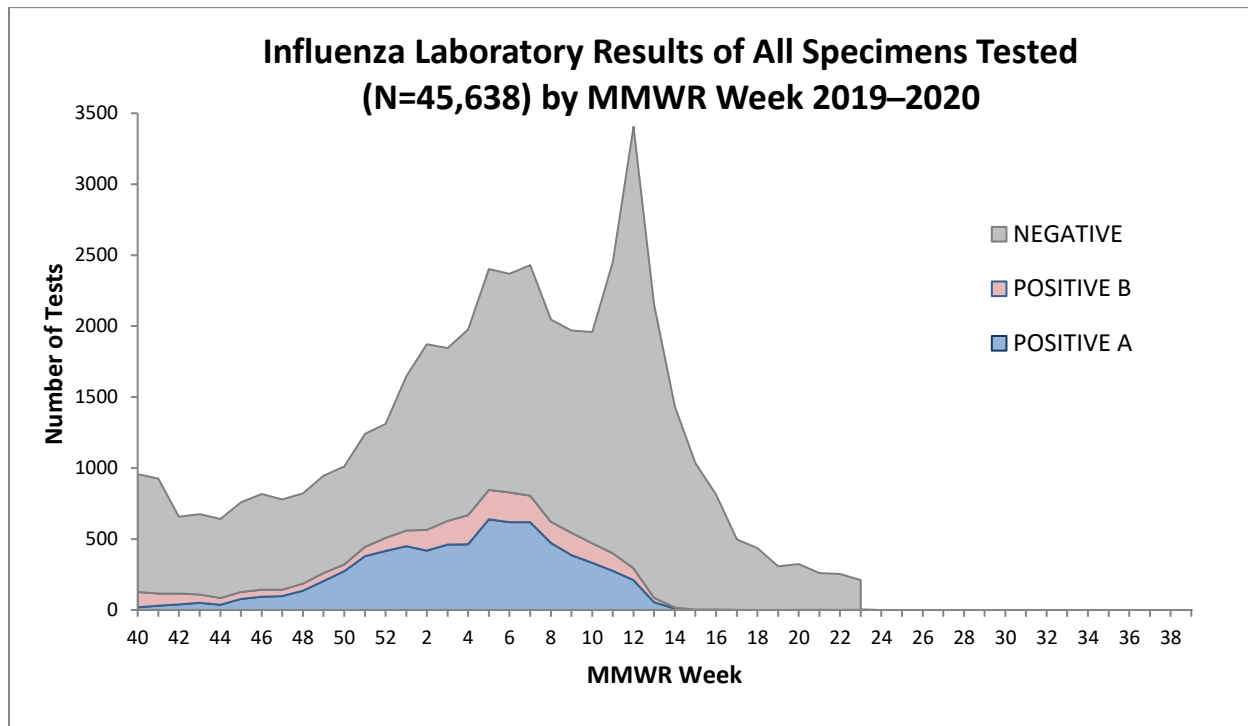
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 24¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Local*¹²
- *A total of 56 surveillance specimens have been tested statewide for COVID-19 (positive: 0 [0.0%]).*
- *Season to date: A total of 1,939 surveillance specimens have been tested for COVID-19 (positive: 28 [1.4%])*
 - *679 specimens have been tested at SLD*¹³.

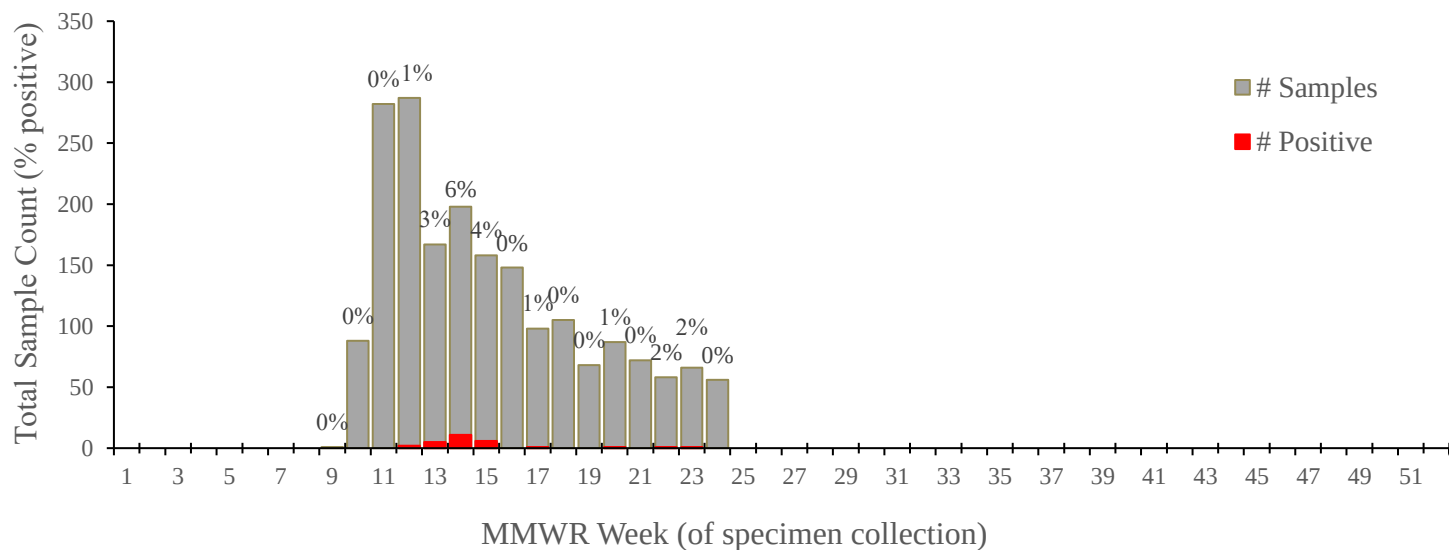
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	234	0.4	0-17	290	0
Honolulu	1,106	1.6	18-64	1,167	2.1
Kauai	92	0	65+	482	0.6
Maui	305	3.0			
Missing	202	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=1,939), % Positive

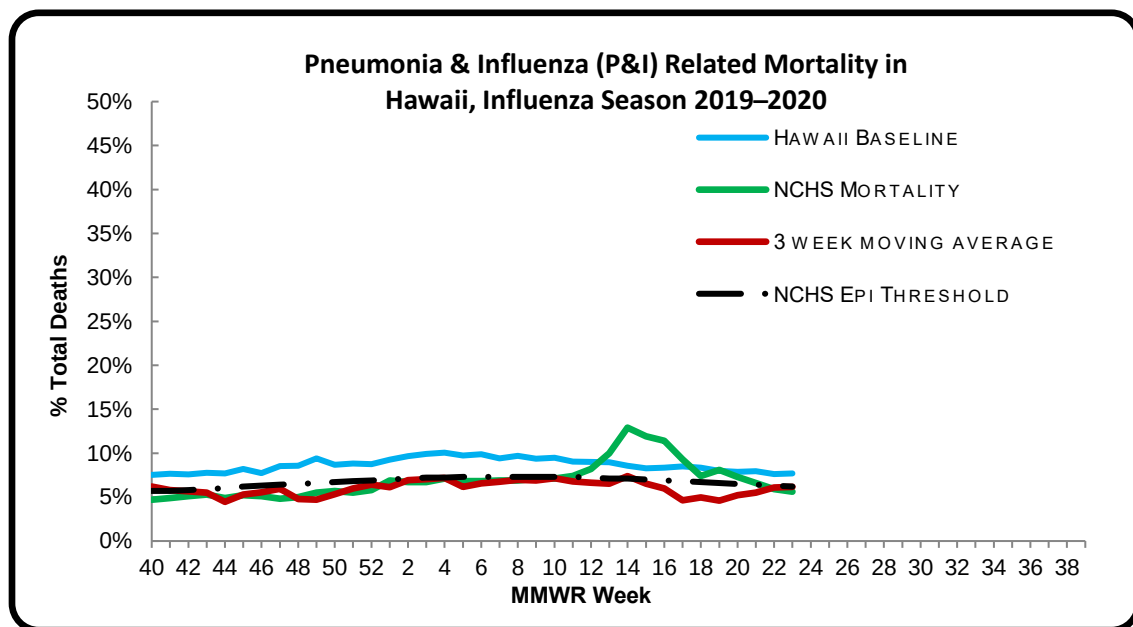


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 23** of the current influenza season:

- **5.4%** of all deaths that occurred in Hawaii during week 23 were related to pneumonia or influenza. For the current season (season to date: **6.1%**), there have been 8,349 deaths from any cause, 505 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.6%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (6.2%) (i.e., inside the 95% confidence interval) for week 23.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 23. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 23. (2019–2020 season total: 182).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 182 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 112 deaths were associated with influenza B viruses, and 27 had a lineage determined; all were B/Victoria viruses
- 70 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 23.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 24: JUNE 7, 2020–JUNE 13, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 24

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.2%	Comparable to the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Lower than the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.9%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 25)	3.5%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	2.0%	Lower than Hawaii's historical baseline, lower than the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

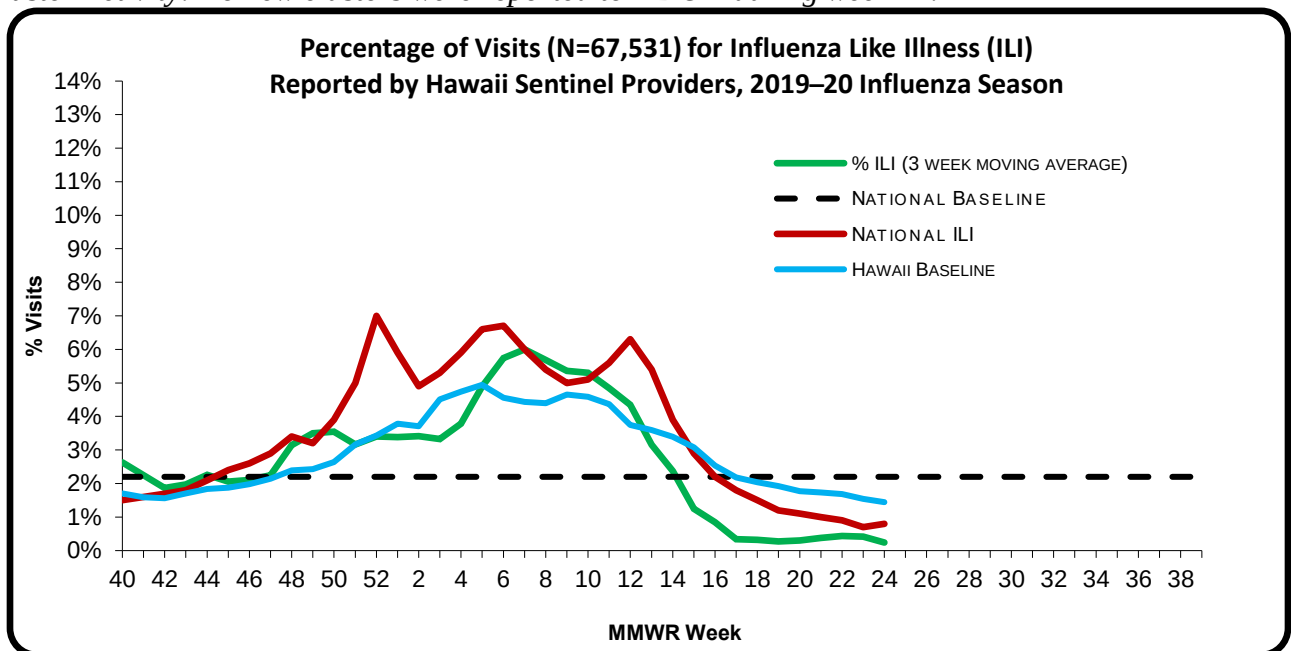
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 24** of the current influenza season:

- **0.2%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**0.8%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 24.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

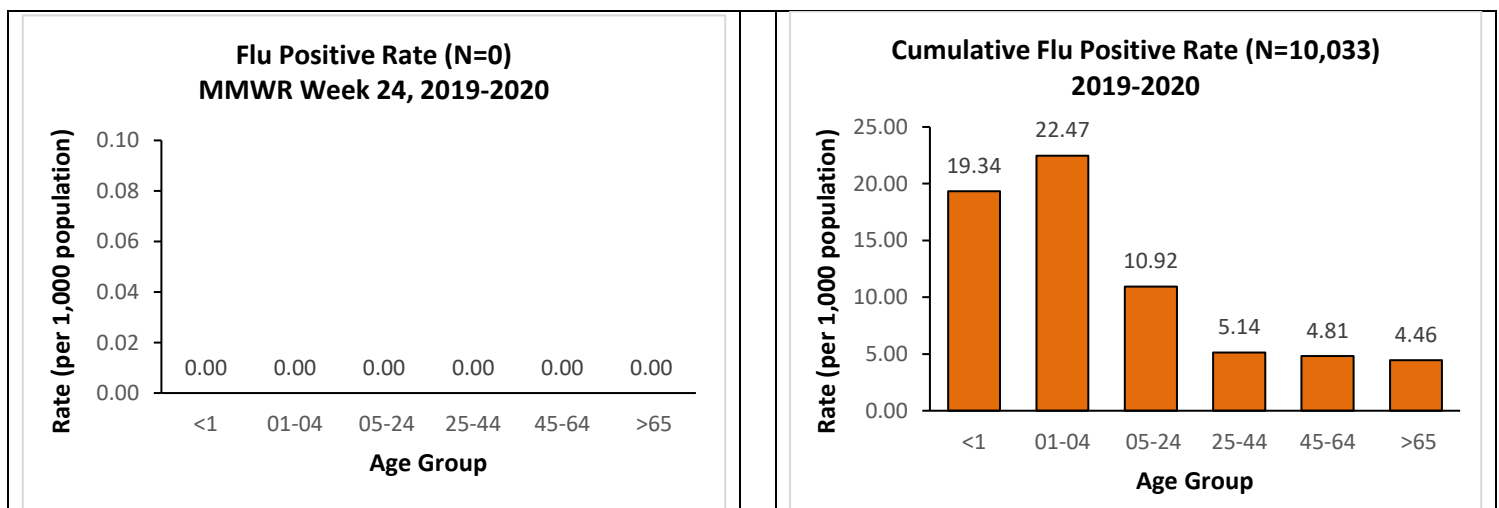
A. INFLUENZA:

- The following reflects laboratory findings for week 24 of the 2019–20 influenza season:
 - A total of **281** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 45,895 tested [21.9% positive])
 - 80 (28.5%) were screened only by rapid antigen tests with no confirmatory testing.
 - 201 (71.5%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 281 (100.0%) were negative.

Influenza type	Current week 24 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	0 (0.0)	5,783 (57.6)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	448 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



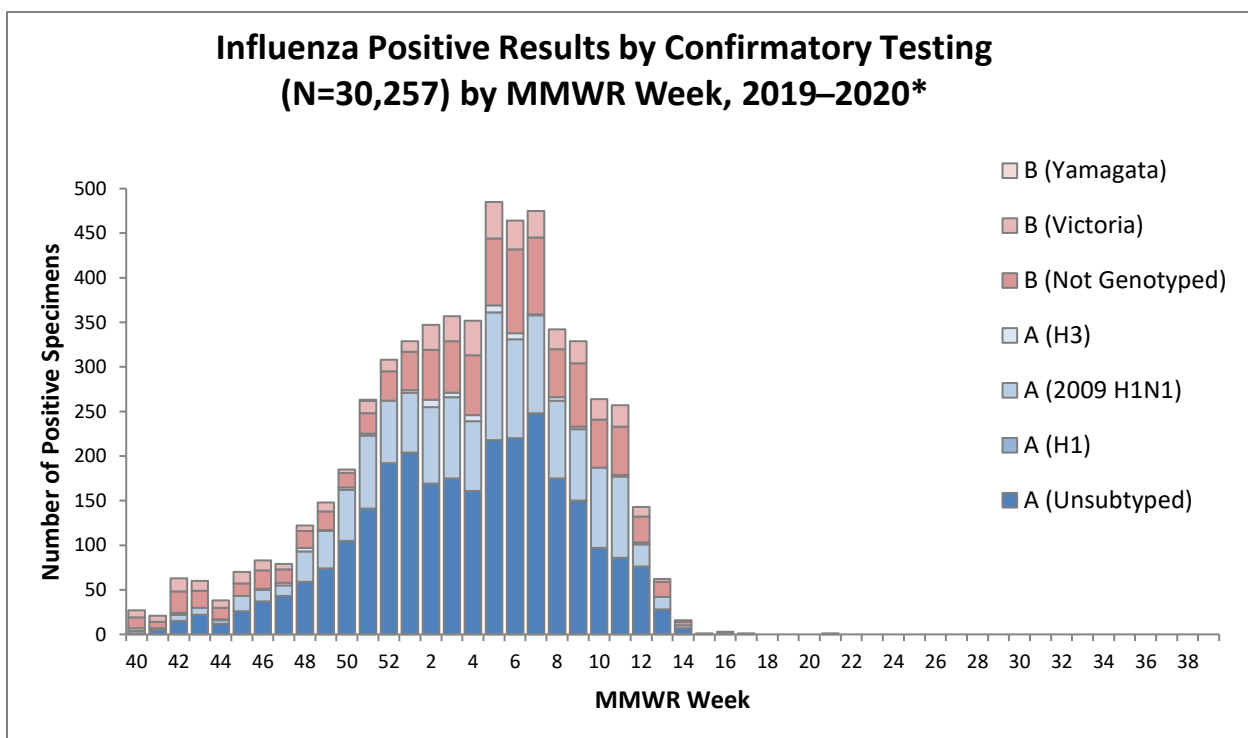
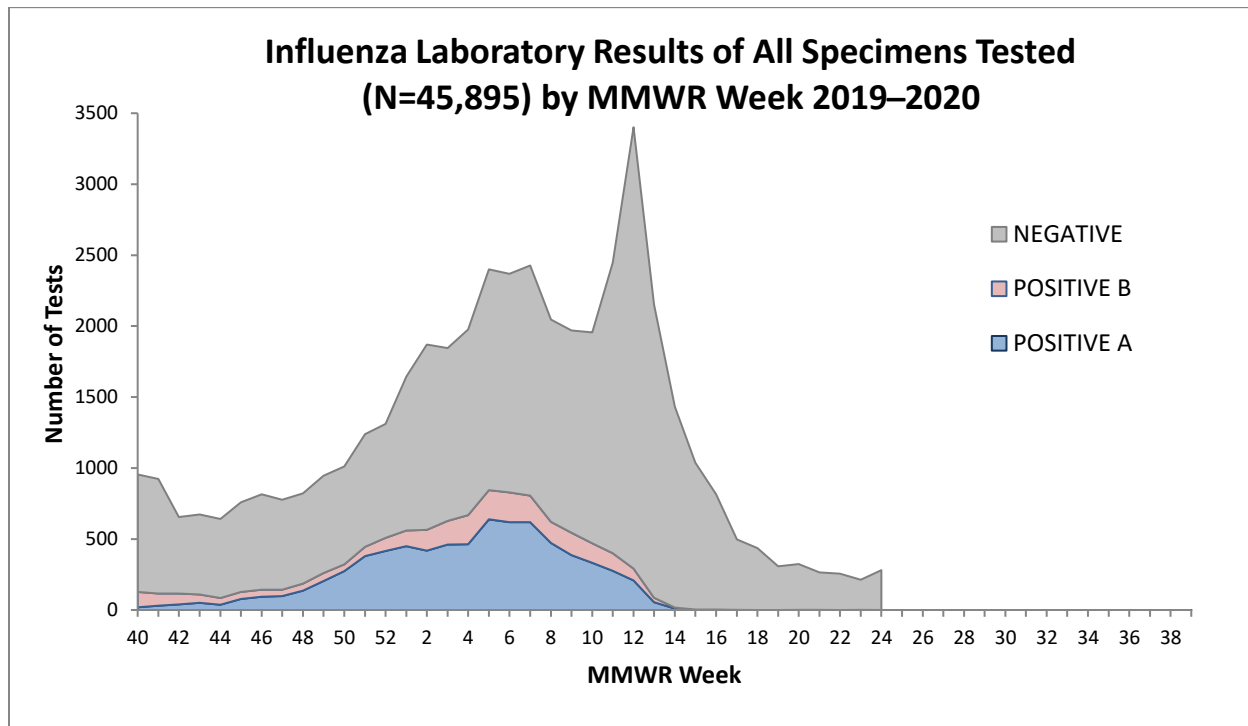
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 25¹¹ of the 2019–20 influenza/respiratory disease season:

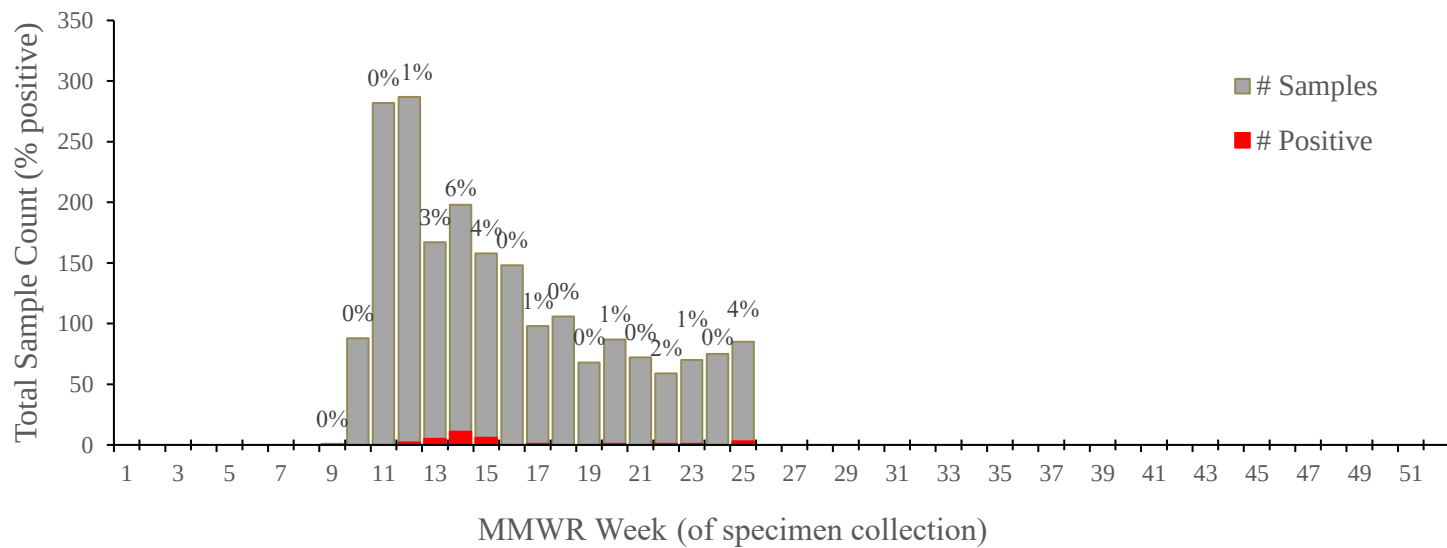
- *COVID-19 geographic spread: Regional¹²*
- *A total of 85 surveillance specimens have been tested statewide for COVID-19 (positive: 3 [3.5%]).*
- *Season to date: A total of 2,049 surveillance specimens have been tested for COVID-19 (positive: 31 [1.5%])*
 - *699 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	238	0.4	0-17	311	0
Honolulu	1,181	1.7	18-64	1,235	2.2
Kauai	100	1.0	65+	503	0.8
Maui	316	2.9			
Missing	214	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

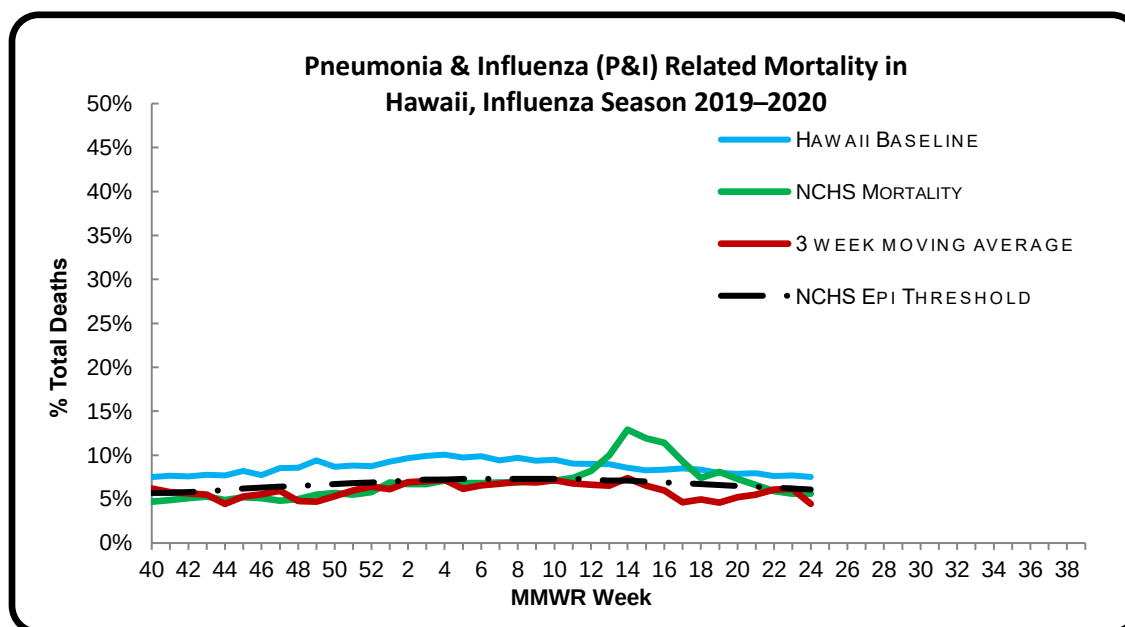
COVID-19 Surveillance Samples Tested (N=2,049),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 24** of the current influenza season:

- **2.0%** of all deaths that occurred in Hawaii during week 24 were related to pneumonia or influenza. For the current season (season to date: **6.0%**), there have been 8,553 deaths from any cause, 509 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii¹⁴ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.6%) (i.e., outside the 95% confidence interval) and lower than the national epidemic threshold (6.1%) (i.e., outside the 95% confidence interval) for week 24.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 24. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, three influenza-associated pediatric deaths occurring during the 2019-2020 season were reported to CDC during week 24. One death was associated with an influenza B/Victoria virus and occurred during week 5

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

(week ending February 1, 2020); one death was associated with an influenza B virus with no lineage determined and occurred during week 10 (week ending March 7, 2020); and one death was associated with an influenza A virus which was not subtyped and occurred during week 13 (week ending March 28, 2020). (2019-2020 season total: 185).

Of the 185 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 114 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 71 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 24.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

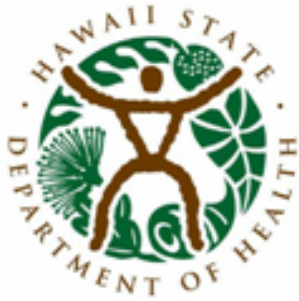
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 25: JUNE 14, 2020–JUNE 20, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 25

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.3%	Higher than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	1.5%	Higher than the previous week. This number means that many, if not all, of the 98.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.7%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 26)	4.1%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	4.3%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

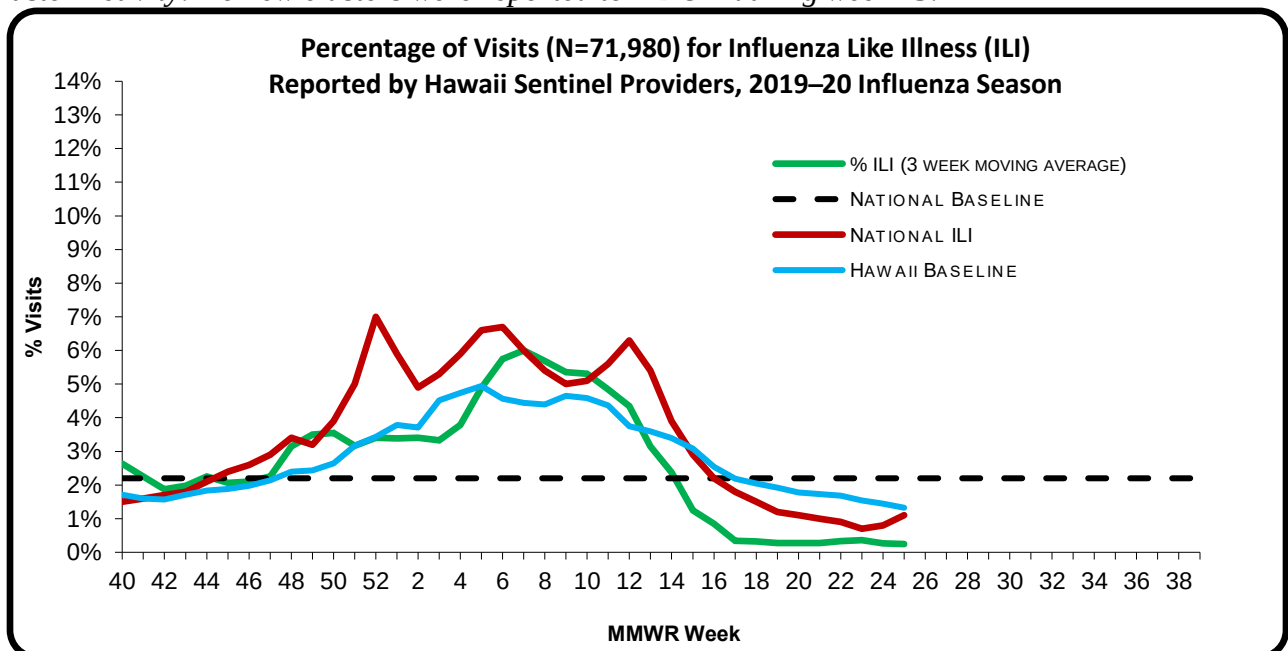
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 25** of the current influenza season:

- **0.3%** (season to date: **2.7%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.1%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 25.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

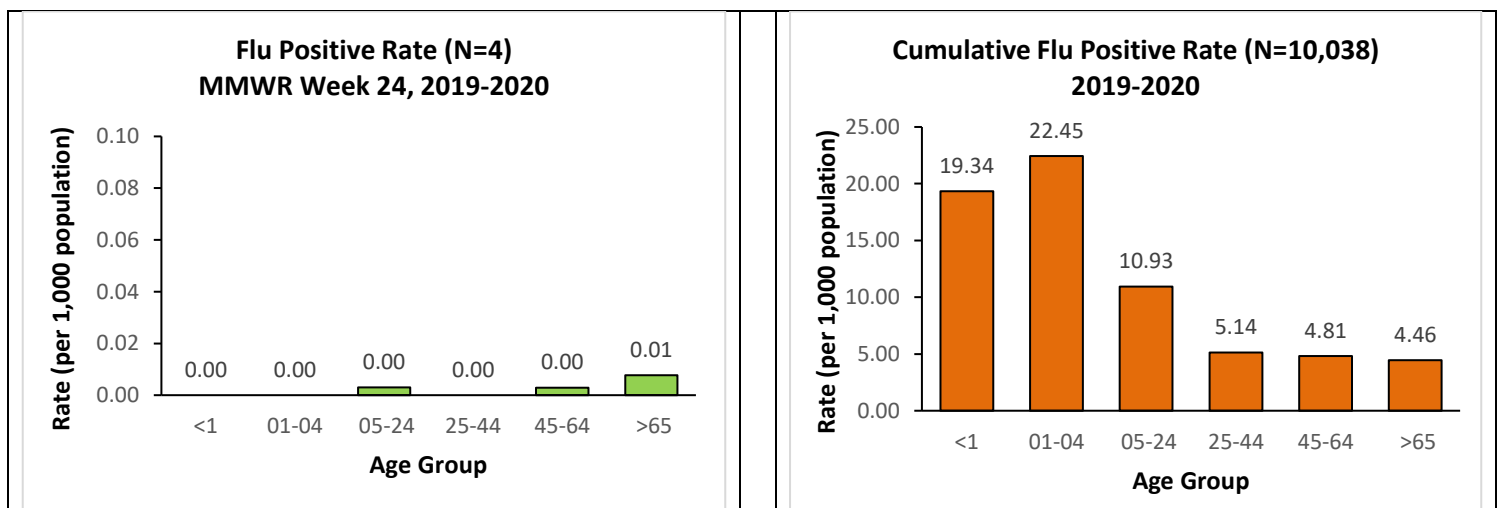
A. INFLUENZA:

- The following reflects laboratory findings for week 25 of the 2019–20 influenza season:
 - A total of 272 specimens have been tested statewide for influenza viruses (positive: 4 [1.5%]). (Season to date: 46,177 tested [21.7% positive])
 - 70 (25.7%) were screened only by rapid antigen tests with no confirmatory testing.
 - 202 (74.3%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 268 (98.5%) were negative.

Influenza type	Current week 25 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	3 (75.0)	5,787 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	1 (25.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



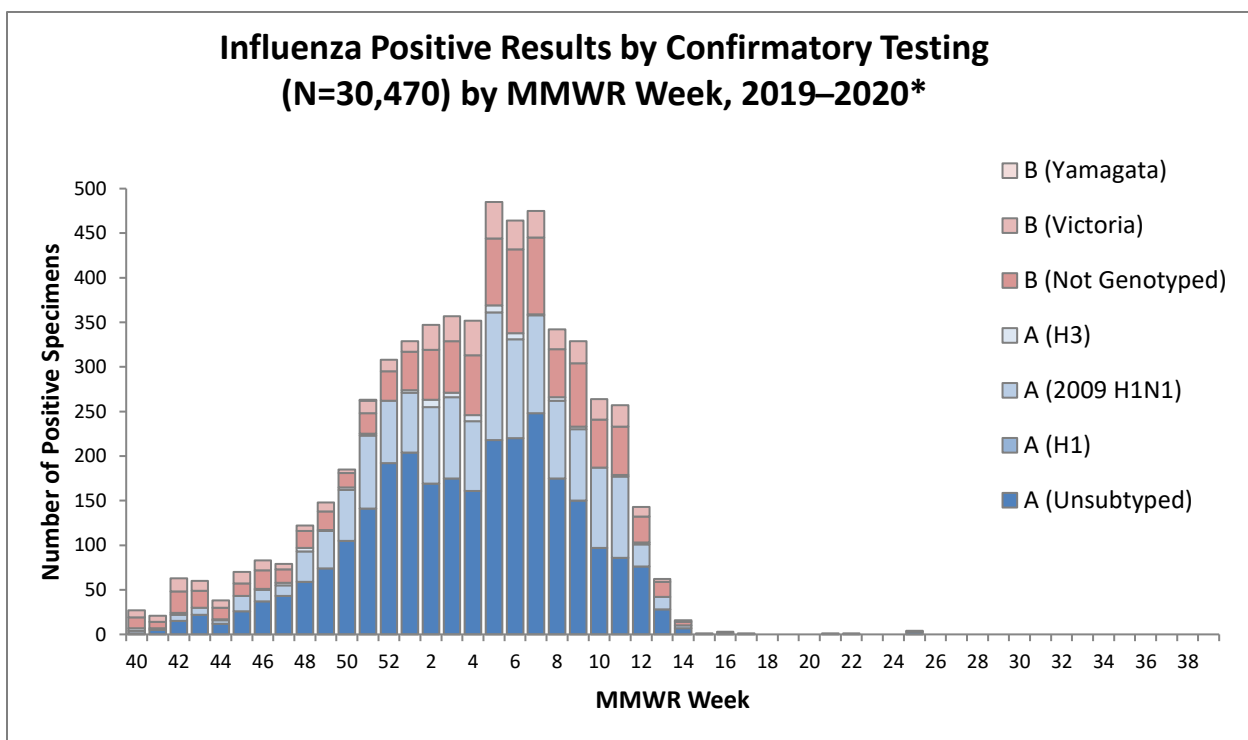
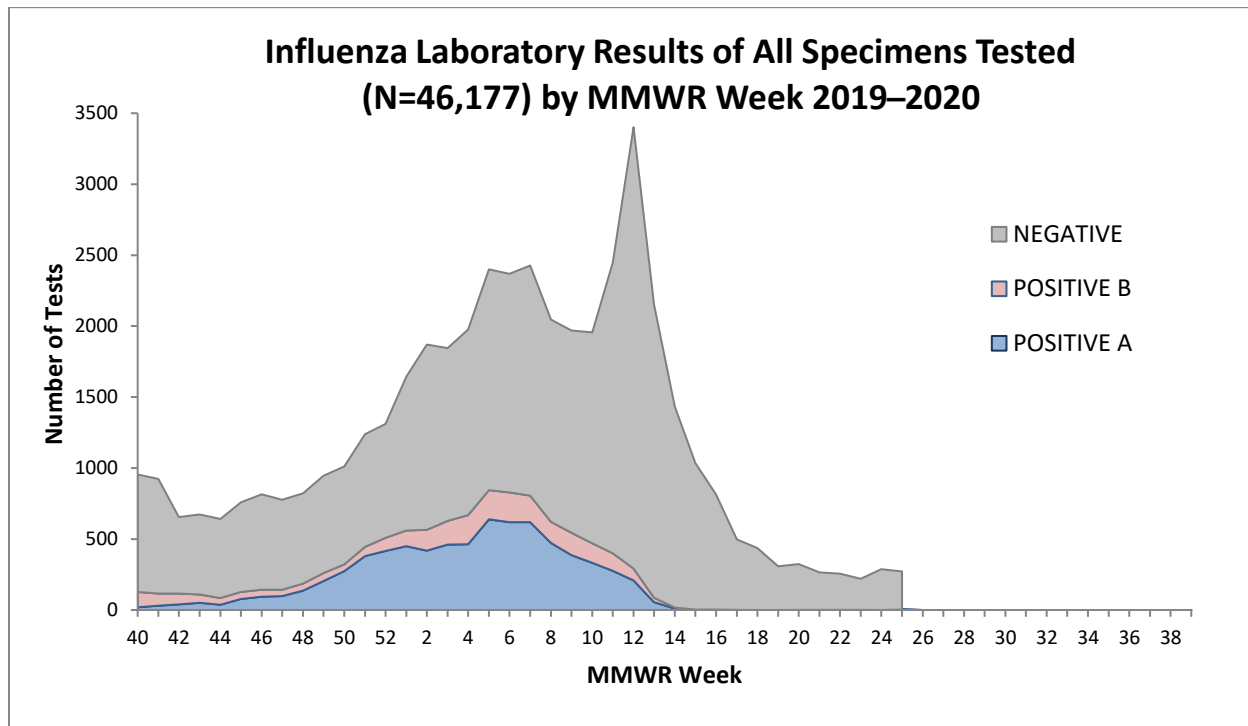
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 26¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 73 surveillance specimens have been tested statewide for COVID-19 (positive: 3 [4.1%]).*
 - *One additional positive occurring during week 25 was detected.*
- *Season to date: A total of 2,134 surveillance specimens have been tested for COVID-19 (positive: 35 [1.6%])*
 - *712 specimens have been tested at SLD¹³.*

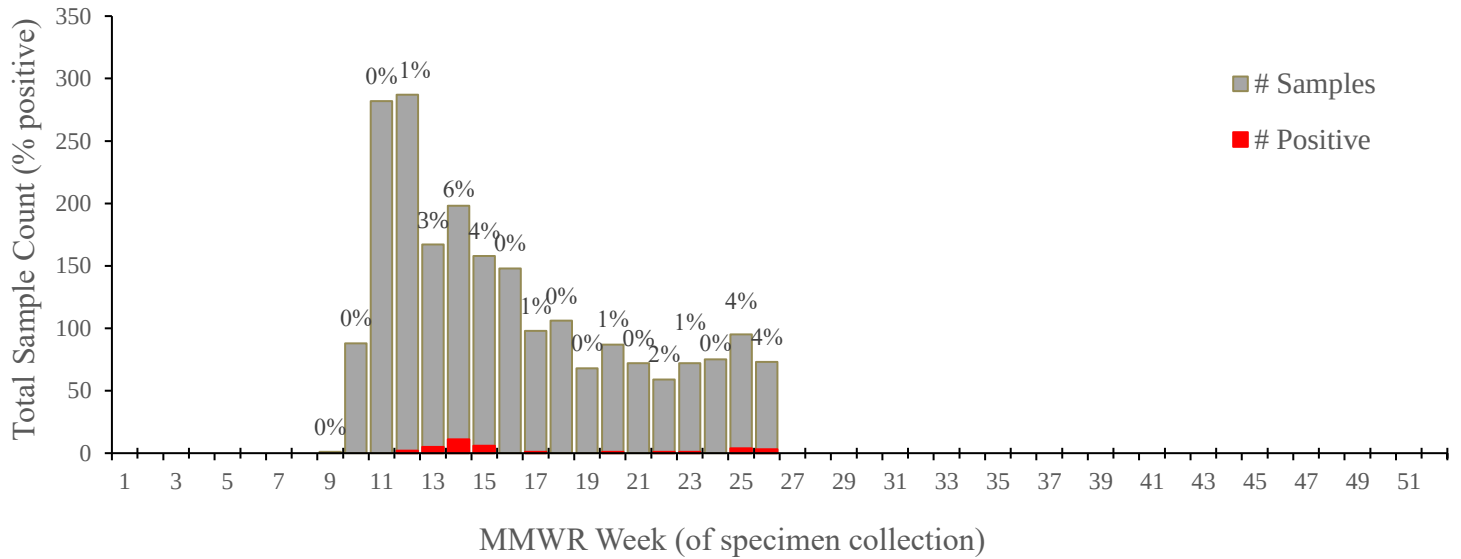
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	244	0.4	0-17	323	0
Honolulu	1,244	1.9	18-64	1,287	2.3
Kauai	111	0.9	65+	524	1.0
Maui	318	2.8			
Missing	217	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,134), % Positive

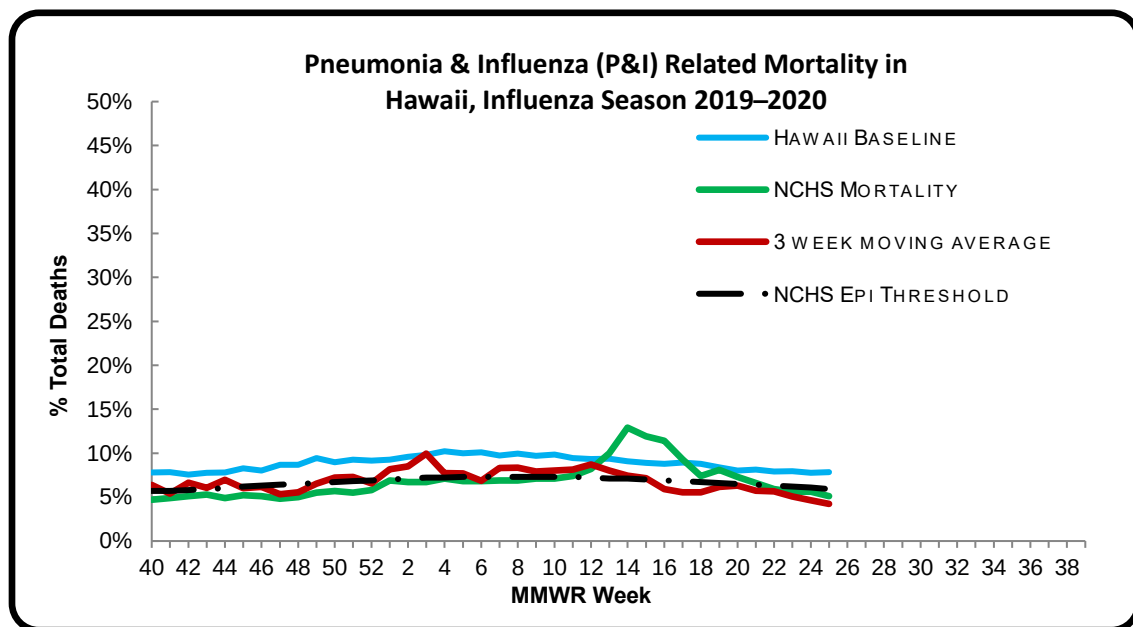


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 25** of the current influenza season:

- **4.3%** of all deaths that occurred in Hawaii during week 25 were related to pneumonia or influenza. For the current season (season to date: **6.8%**), there have been 8,344 deaths from any cause, 570 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.1%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (5.9%) (i.e., inside the 95% confidence interval) for week 25.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 25. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 25. (2019–2020 season total: 185).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 185 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 114 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 71 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 25.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

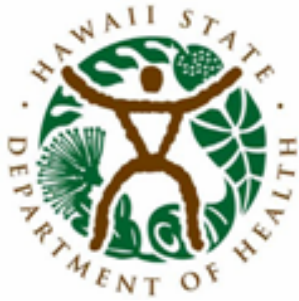
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 26: JUNE 21, 2020–JUNE 27, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 26

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.1%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Lower than the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.6%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 27)	5.6%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	1.0%	Lower than Hawaii's historical baseline, lower than the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

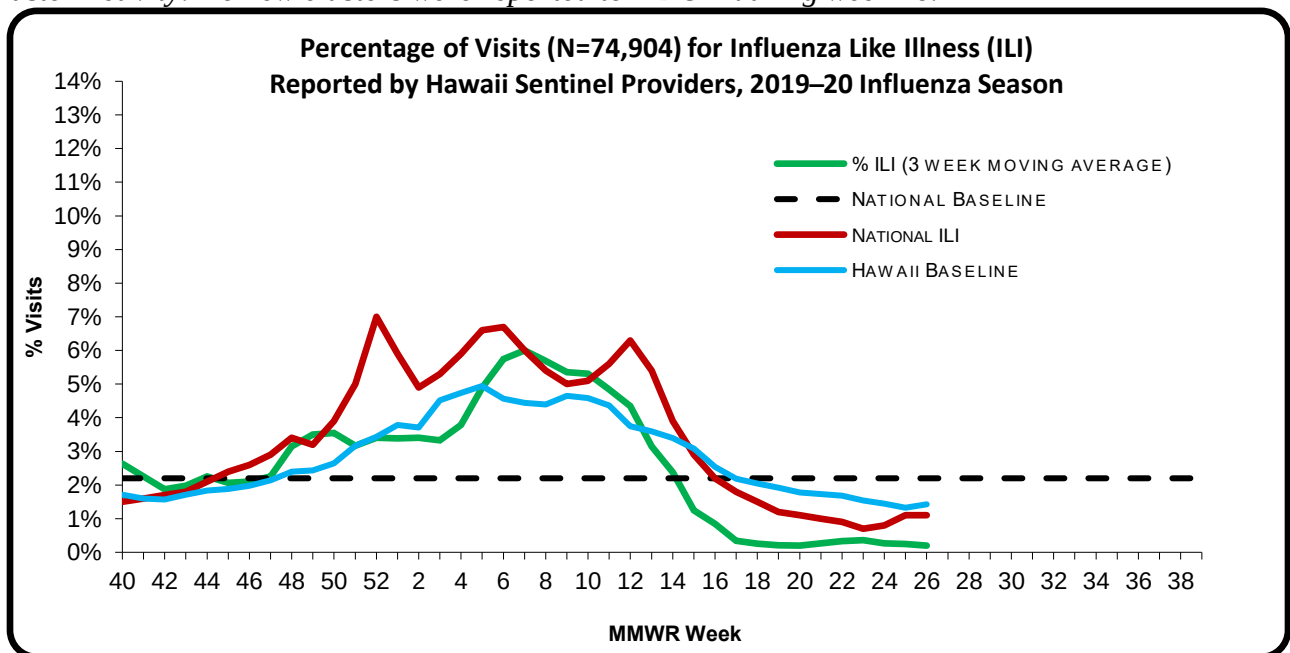
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 26** of the current influenza season:

- **0.1%** (season to date: **2.6%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.1%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 26.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21-39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

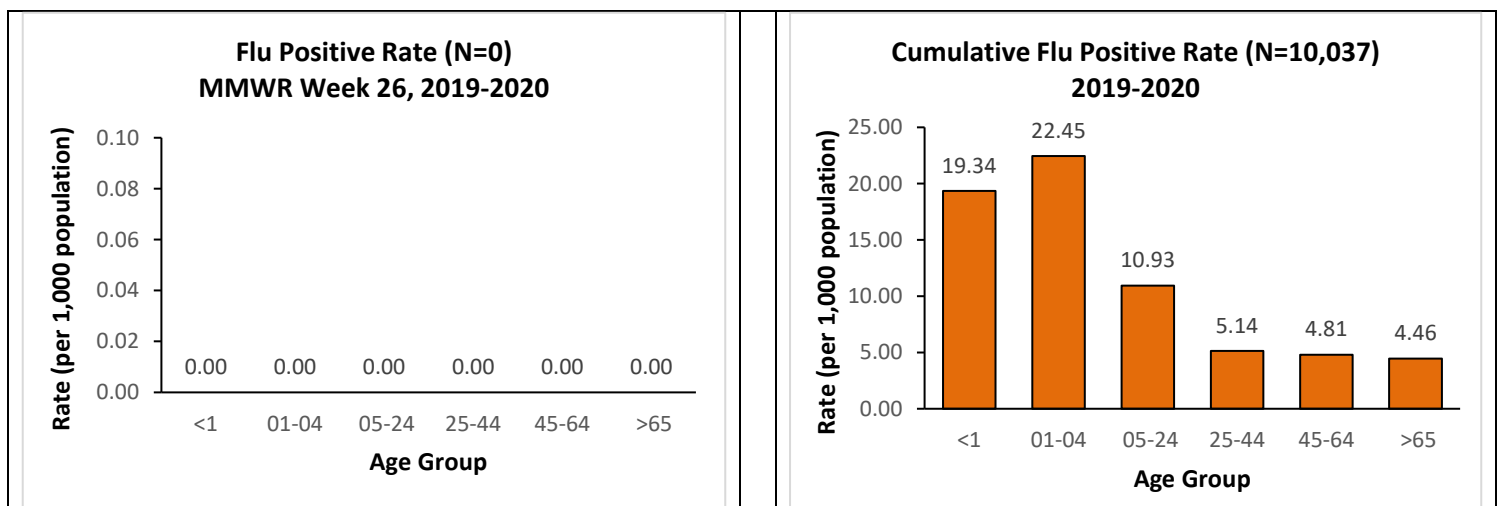
A. INFLUENZA:

- The following reflects laboratory findings for week 26 of the 2019–20 influenza season:
 - A total of **318** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 46,494 tested [21.6% positive])
 - 109 (34.3%) were screened only by rapid antigen tests with no confirmatory testing.
 - 209 (65.7%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 318 (100.0%) were negative.

Influenza type	Current week 26 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	0 (0.0)	5,786 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



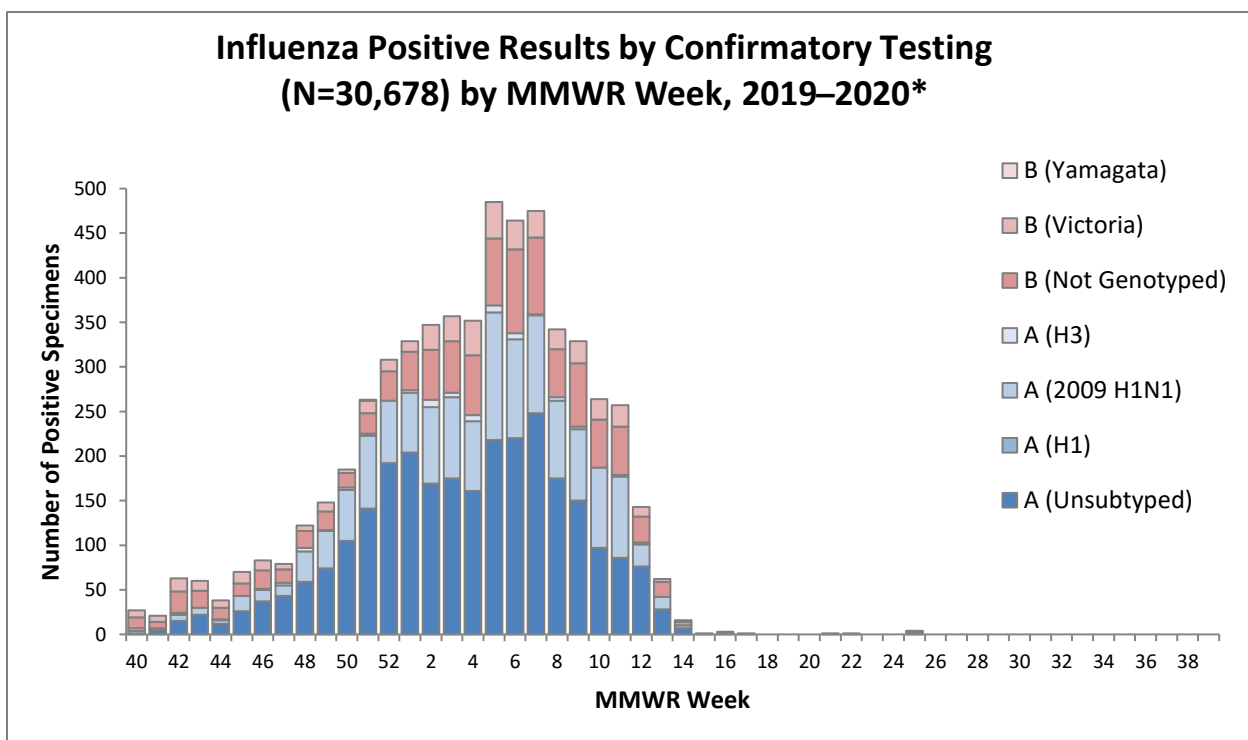
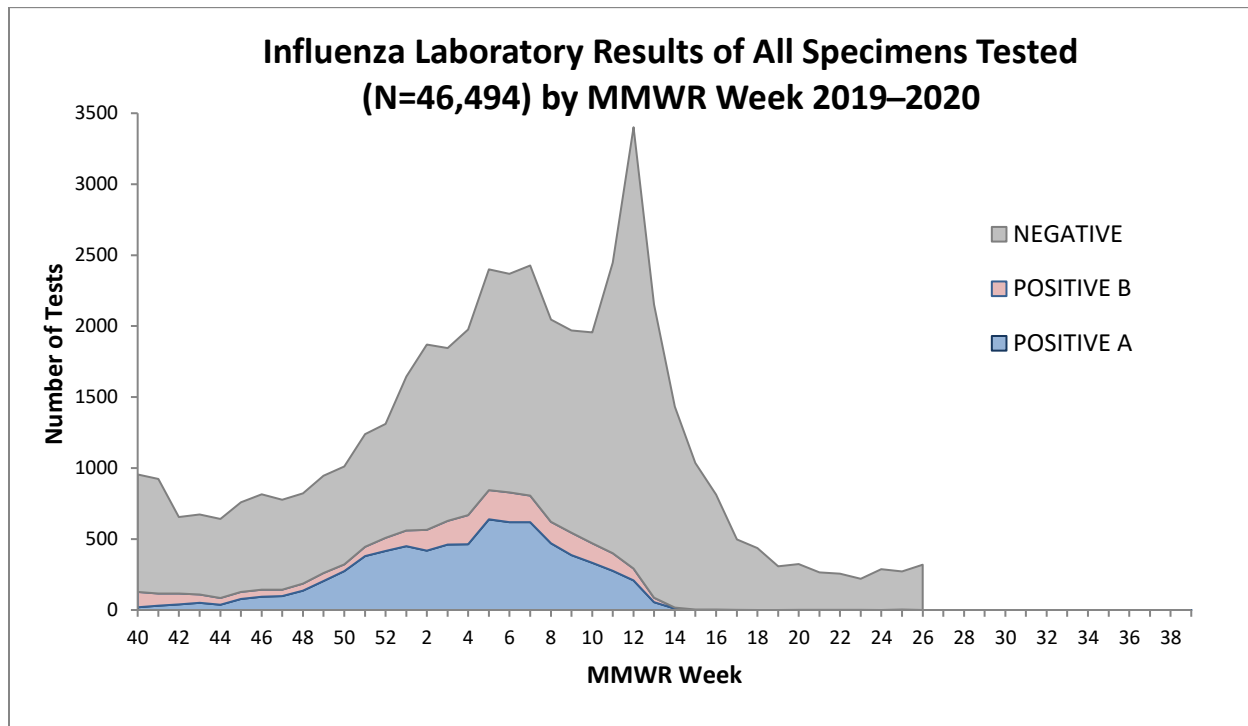
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 27¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 72 surveillance specimens have been tested statewide for COVID-19 (positive: 4 [5.6%]).*
- *Season to date: A total of 2,216 surveillance specimens have been tested for COVID-19 (positive: 39 [1.8%])*
 - *733 specimens have been tested at SLD¹³.*

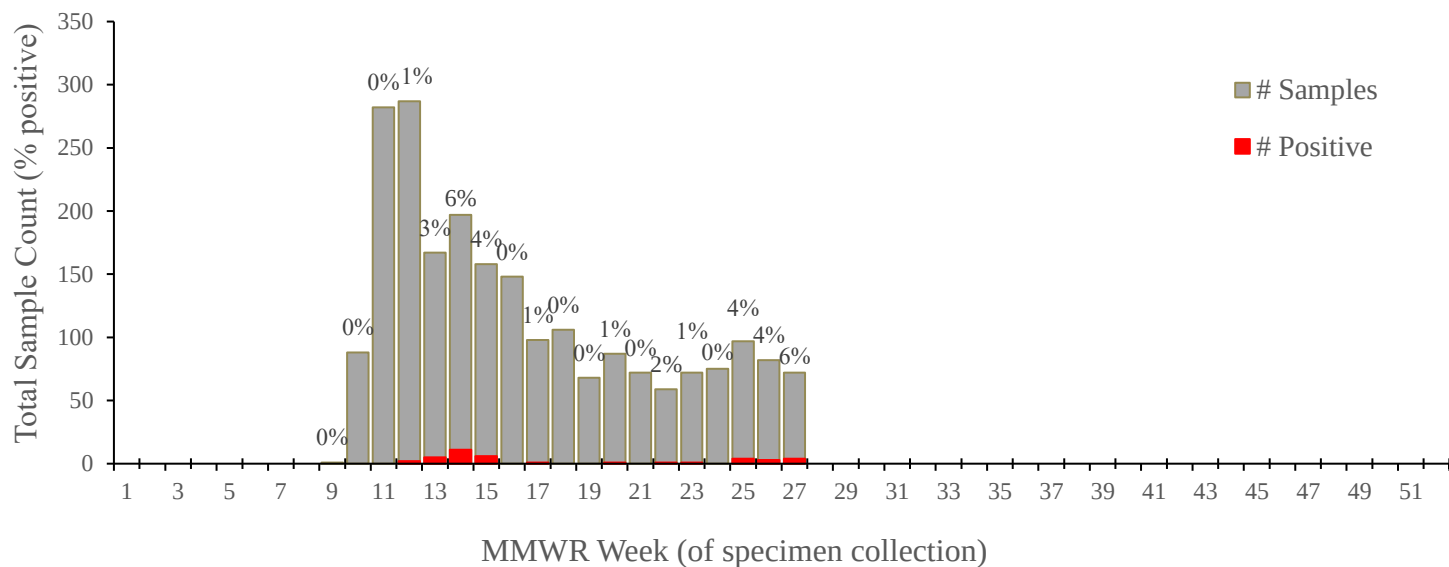
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	256	0.4	0-17	337	0.3
Honolulu	1,295	2.2	18-64	1,334	2.5
Kauai	122	0.8	65+	545	0.9
Maui	325	2.8			
Missing	218	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,216), % Positive

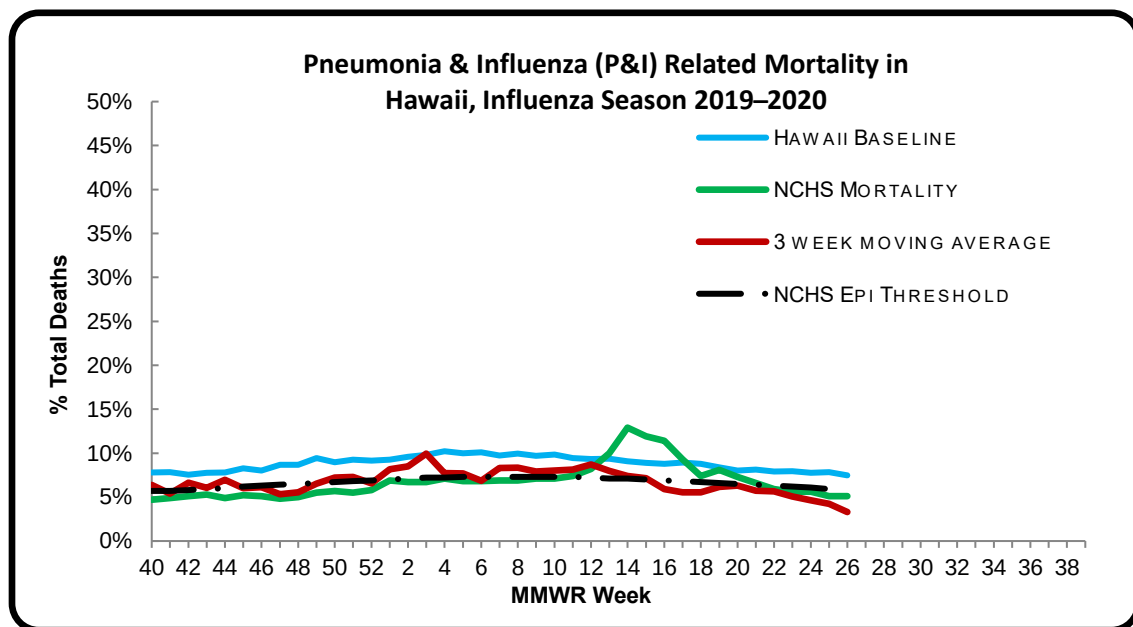


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 26** of the current influenza season:

- **1.0%** of all deaths that occurred in Hawaii during week 26 were related to pneumonia or influenza. For the current season (season to date: **6.8%**), there have been 8,452 deaths from any cause, 571 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii¹⁴ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.1%) (i.e., outside the 95% confidence interval) and lower than the national epidemic threshold (5.9%) (i.e., outside the 95% confidence interval) for week 26.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 26. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 26. (2019–2020 season total: 185).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 185 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 114 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 71 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 26.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 8, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

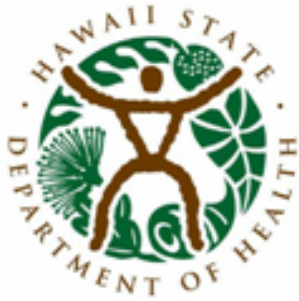
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 27: JUNE 28, 2020–JULY 4, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 27

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.5%	Higher than the previous week. Comparable to Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	1.6%	Higher than the previous week. This number means that many, if not all, of the 98.4% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.5%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 28)	10.4%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	1.2%	Lower than Hawaii's historical baseline, lower than the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

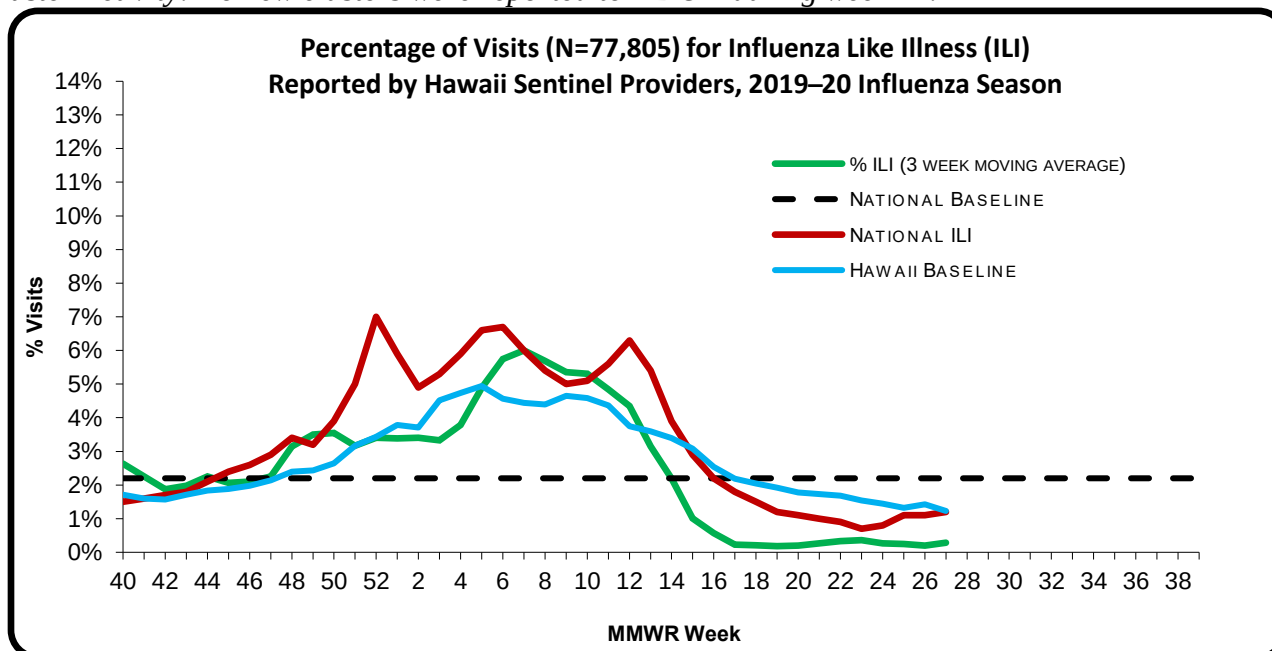
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 27** of the current influenza season:

- **0.5%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.2%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 27.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

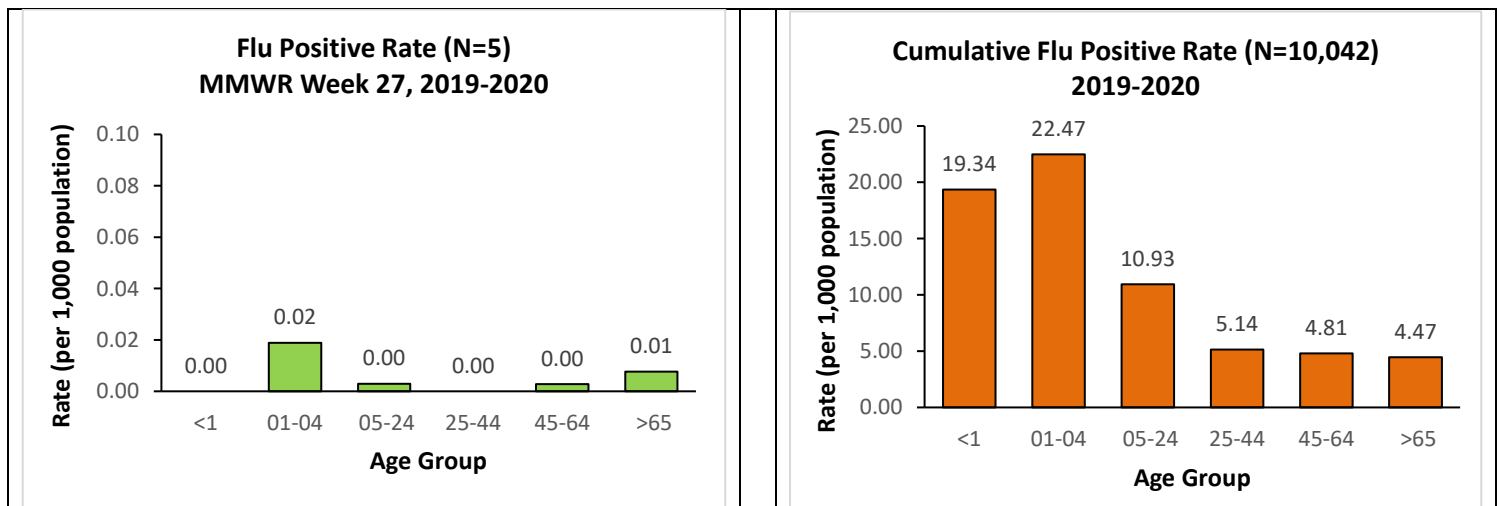
A. INFLUENZA:

- The following reflects laboratory findings for week 27 of the 2019–20 influenza season:
 - A total of **305** specimens have been tested statewide for influenza viruses (positive: 5 [**1.6%**]). (Season to date: 46,811 tested [**21.5%** positive])
 - 84 (27.5%) were screened only by rapid antigen tests with no confirmatory testing.
 - 221 (72.5%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 300 (98.4%) were negative.

Influenza type	Current week 27 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	5 (100.0)	5,791 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (23.0)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



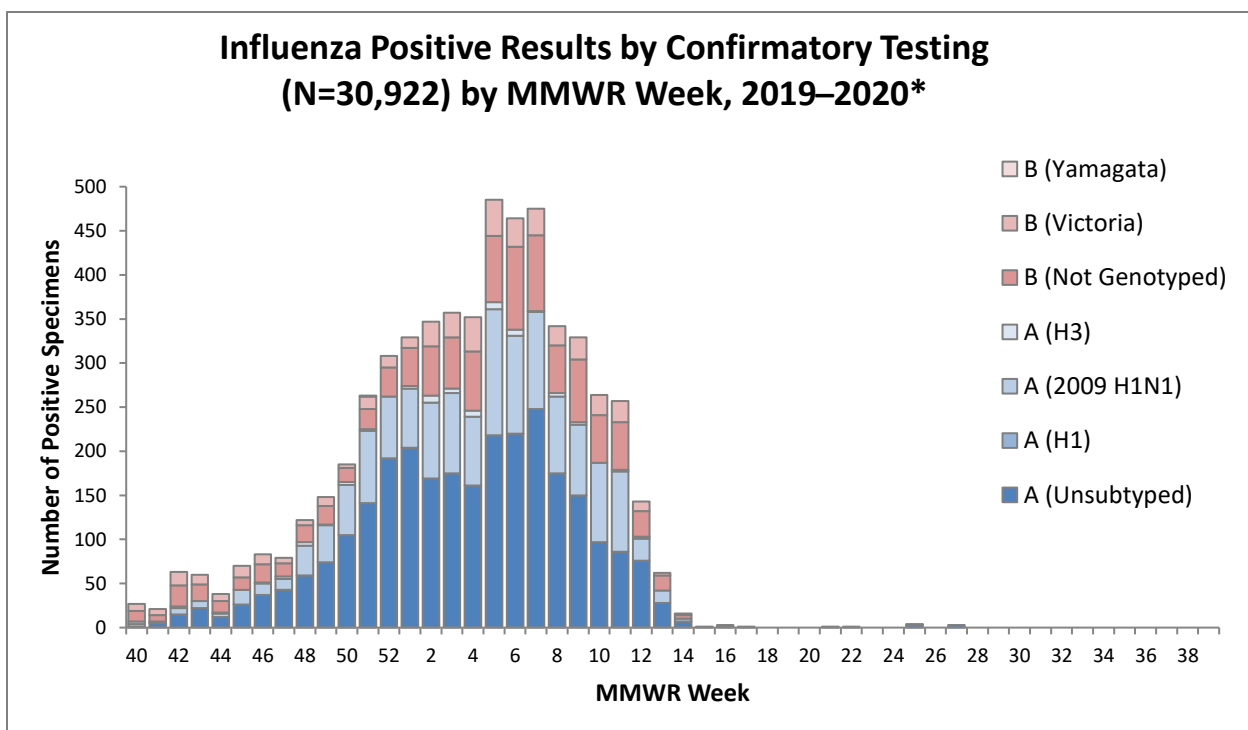
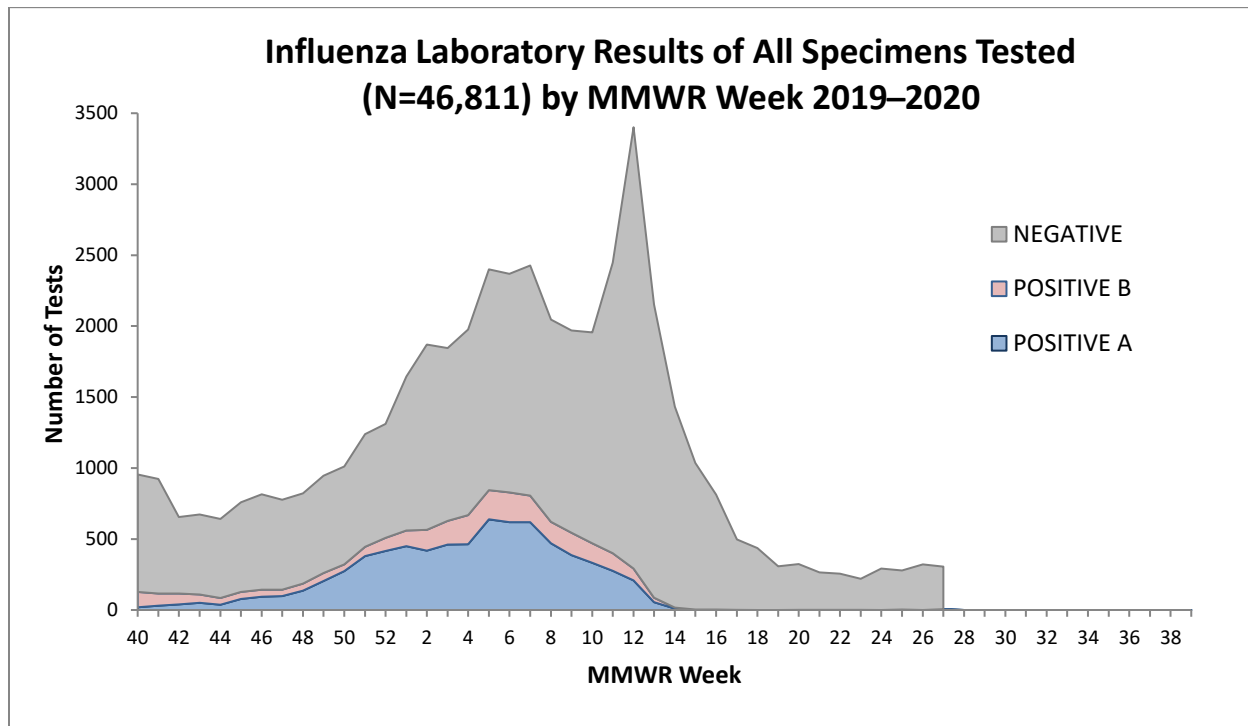
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																										
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																						
Adenovirus	X		X		X		X	X	X	X							X	X		X	X			X	X	X					X	X			X		X																																					
Coronavirus															X		X	X		X	X		X	X	X			X	X			X																																										
Coxsackie Virus																												X	X					X																																								
Cytomegalovirus																																																																										
Echovirus																																																																										
Enterovirus																																																																										
Herpes Simplex Virus, Type 1																																																																										
Metapneumovirus													X								X	X	X	X	X	X	X						X																																									
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X				X		X																																									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X																																									
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X						X	X																																			
Varicella Zoster Virus																																																																										
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																
Influenza A (H3)	X		X		X		X	X	X	X	X				X	X		X	X	X	X	X		X																																																		
Influenza A (Other seasonal H1)																																																																										
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X				X		X																																		
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X				X																																				

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 28¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 77 surveillance specimens have been tested statewide for COVID-19 (positive: 8 [10.4%]).*
- *Season to date: A total of 2,319 surveillance specimens have been tested for COVID-19 (positive: 47 [2.0%])*
 - *757 specimens have been tested at SLD¹³.*

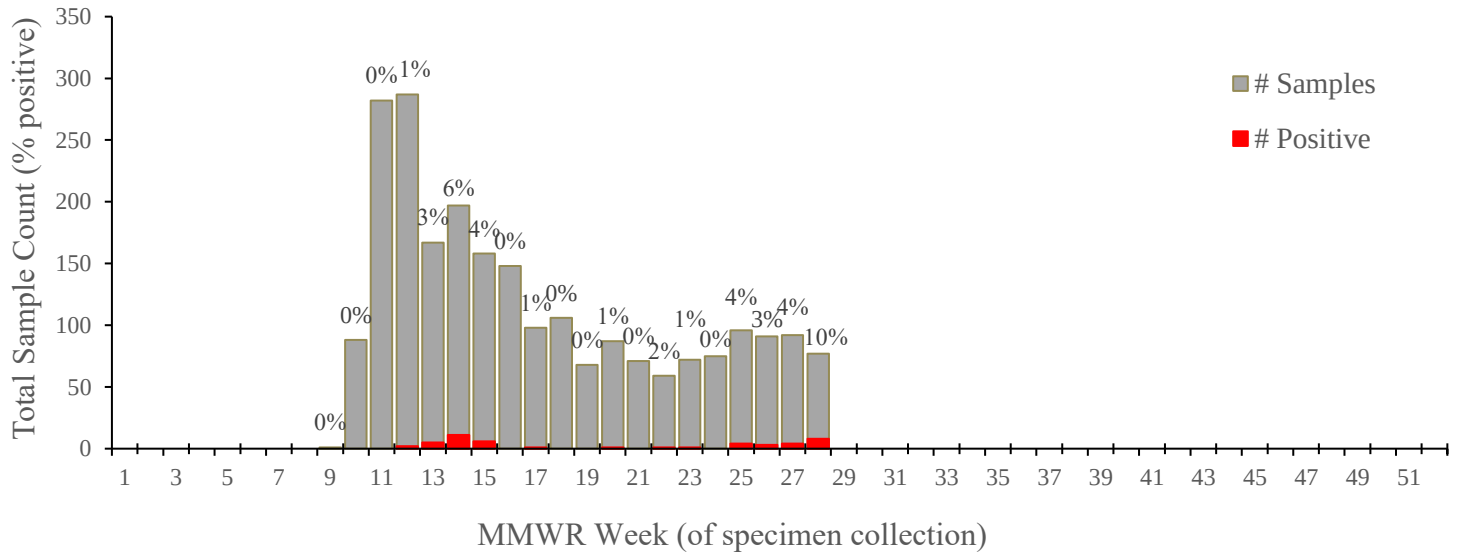
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	267	0.4	0-17	351	0.6
Honolulu	1,369	2.6	18-64	1,400	2.8
Kauai	131	0.8	65+	568	1.1
Maui	334	3.0			
Missing	218	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,319), % Positive

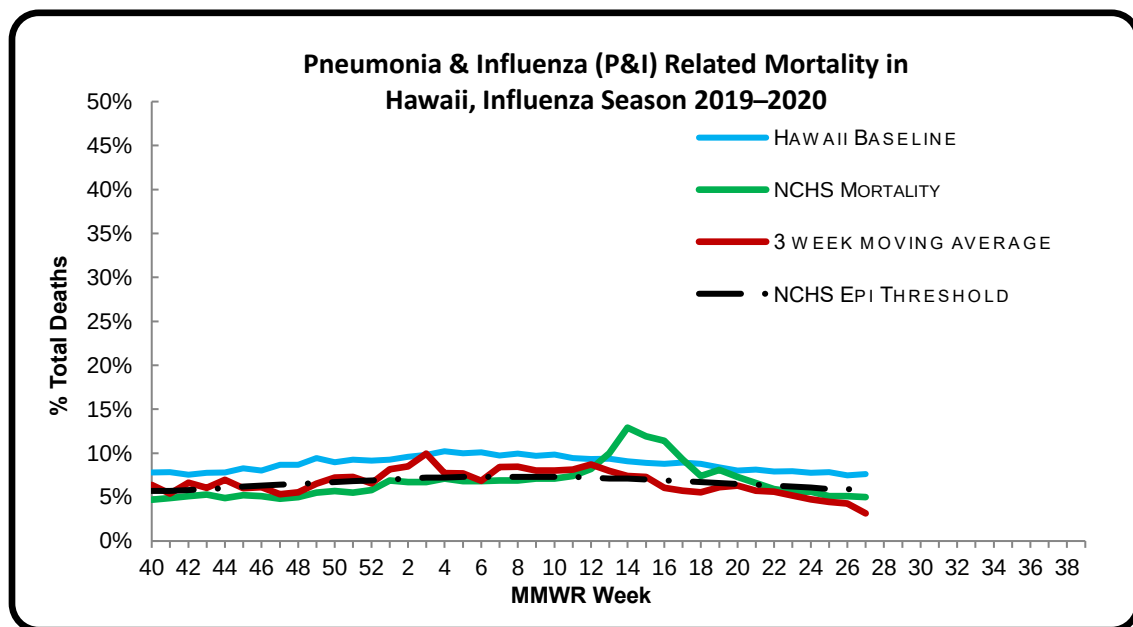


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 27** of the current influenza season:

- **1.2%** of all deaths that occurred in Hawaii during week 27 were related to pneumonia or influenza. For the current season (season to date: **6.8%**), there have been 8,635 deaths from any cause, 584 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii¹⁴ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.0%) (i.e., outside the 95% confidence interval) and lower than the national epidemic threshold (5.8%) (i.e., outside the 95% confidence interval) for week 27.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 27. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 27. (2019–2020 season total: 185).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 185 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 114 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 71 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 27.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**. Since the previous update, two new laboratory-confirmed human cases of influenza A(H9N2) virus infections were reported from China. The first case was in a 6-year-old male who was hospitalized, treated with oseltamivir, and discharged. The patient had exposure to domestic poultry at his home. The second case was detected in a 10-month-old male who had mild illness, was not hospitalized, and was treated with oseltamivir. The patient had exposure to a live bird market. One human case of infection with a swine influenza

A(HN1)v virus was detected in a 2-year old male from Germany. The case recovered and no further cases were detected among contacts. The patient had visited a swine farm and had close contact with pigs. One human case of infection with a swine influenza A(H1N2)v virus was reported from Brazil in a 22-year-old female who worked in a swine slaughterhouse. A second individual who also worked at the slaughterhouse developed respiratory symptoms during the same timeframe as the confirmed case, but no sample was collected from this person. No other suspected cases amongst contacts of the confirmed case have been identified.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

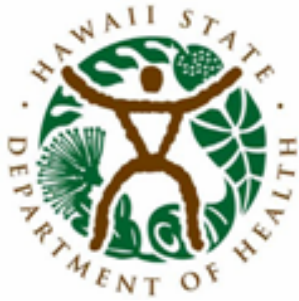
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 28: JULY 5, 2020–JULY 11, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 28

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.9%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	1.2%	Lower than the previous week. This number means that many, if not all, of the 98.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.3%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 29)	2.8%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	4.0%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

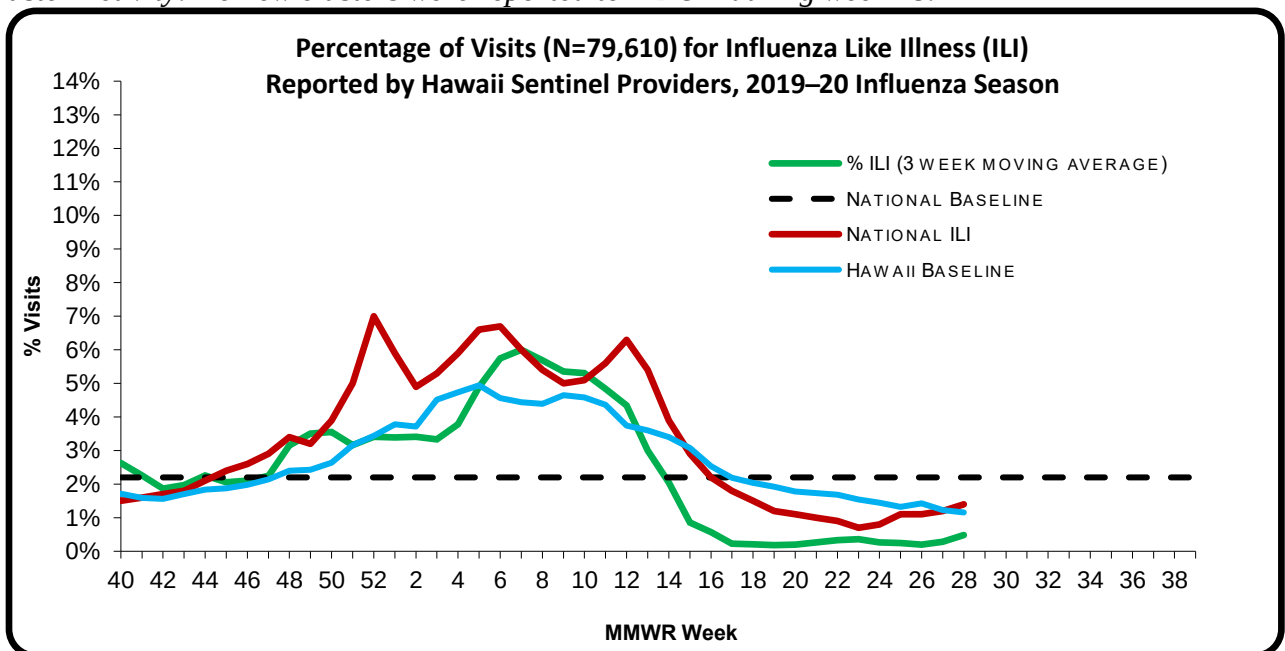
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 28** of the current influenza season:

- **0.9%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.4%**) (i.e., inside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 28.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

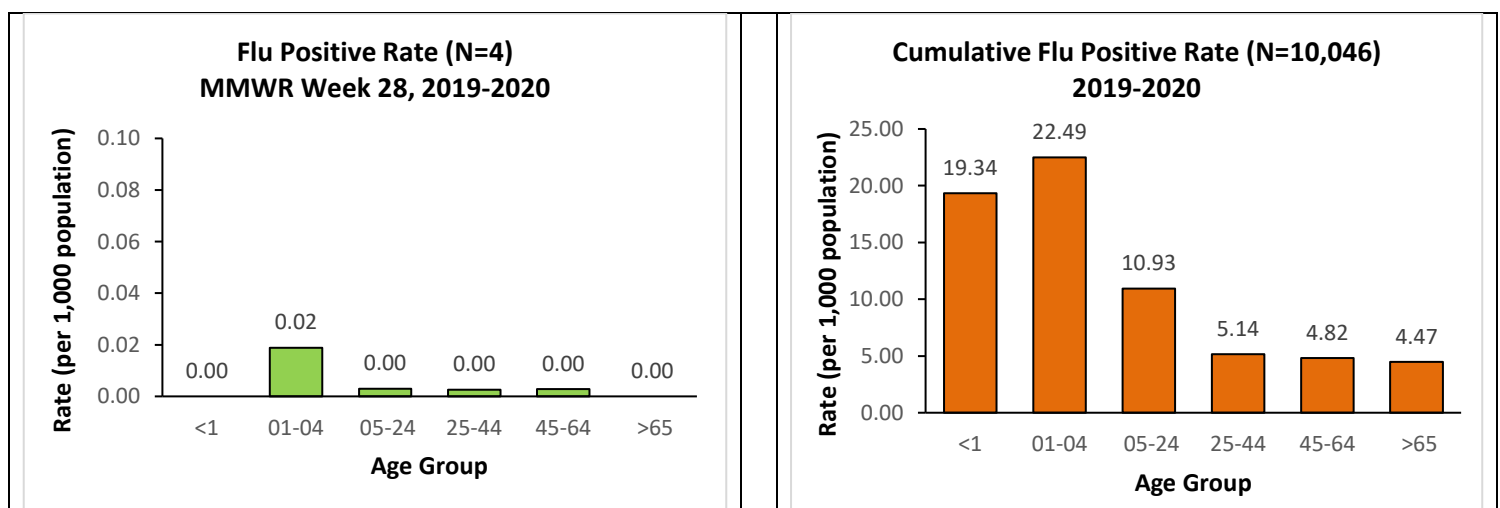
A. INFLUENZA:

- The following reflects laboratory findings for week 28 of the 2019–20 influenza season:
 - A total of **335** specimens have been tested statewide for influenza viruses (positive: 4 [**1.2%**]). (Season to date: 47,152 tested [**21.3%** positive])
 - 111 (33.1%) were screened only by rapid antigen tests with no confirmatory testing.
 - 224 (66.9%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 331 (98.8%) were negative.

Influenza type	Current week 28 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	3 (75.0)	5,794 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	1 (25.0)	2,305 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



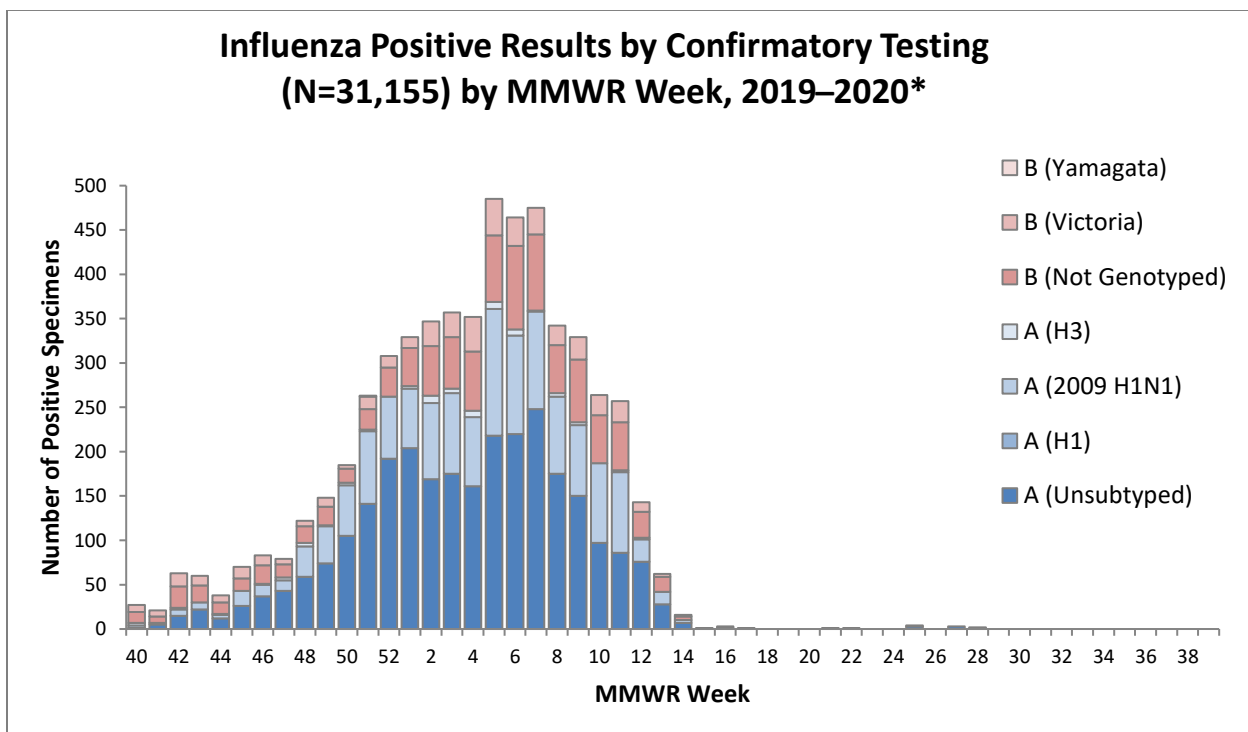
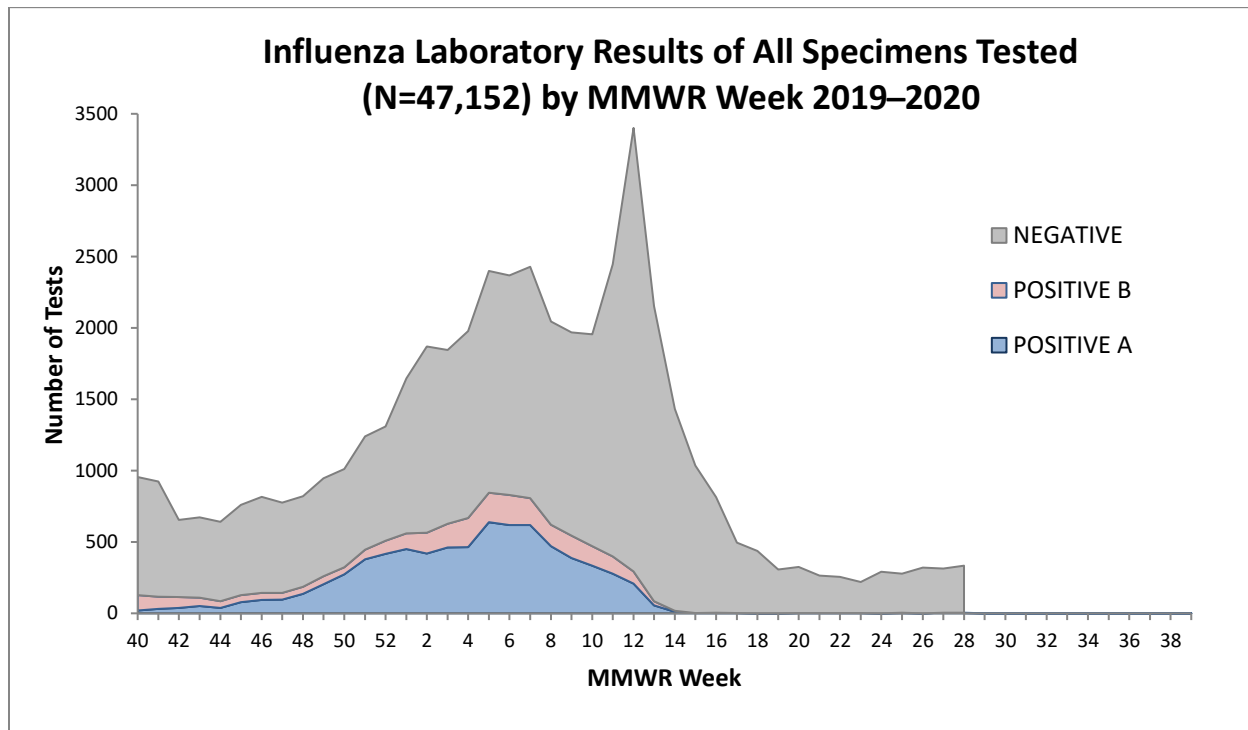
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 29¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 72 surveillance specimens have been tested statewide for COVID-19 (positive: 2 [2.8%]).*
 - *One additional positive occurring during week 27 was detected.*
- *Season to date: A total of 2,404 surveillance specimens have been tested for COVID-19 (positive: 50 [2.1%])*
 - *776 specimens have been tested at SLD¹³.*

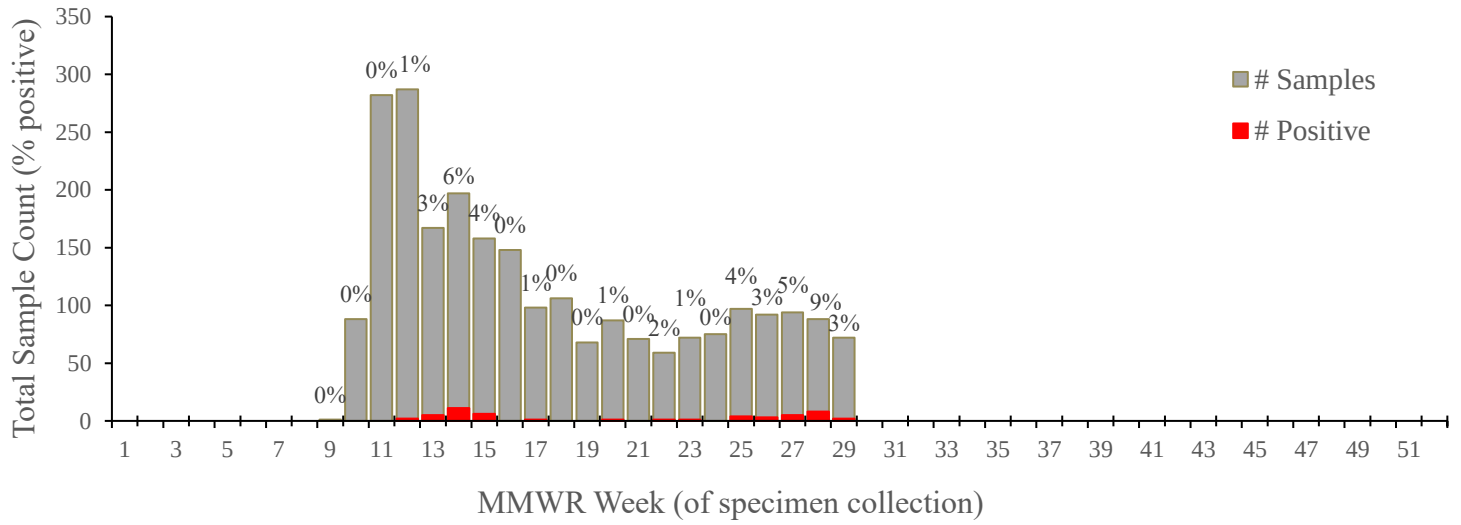
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	278	0.4	0-17	363	0.6
Honolulu	1,419	2.7	18-64	1,445	2.8
Kauai	140	0.7	65+	596	1.3
Maui	341	2.9			
Missing	226	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,404), % Positive

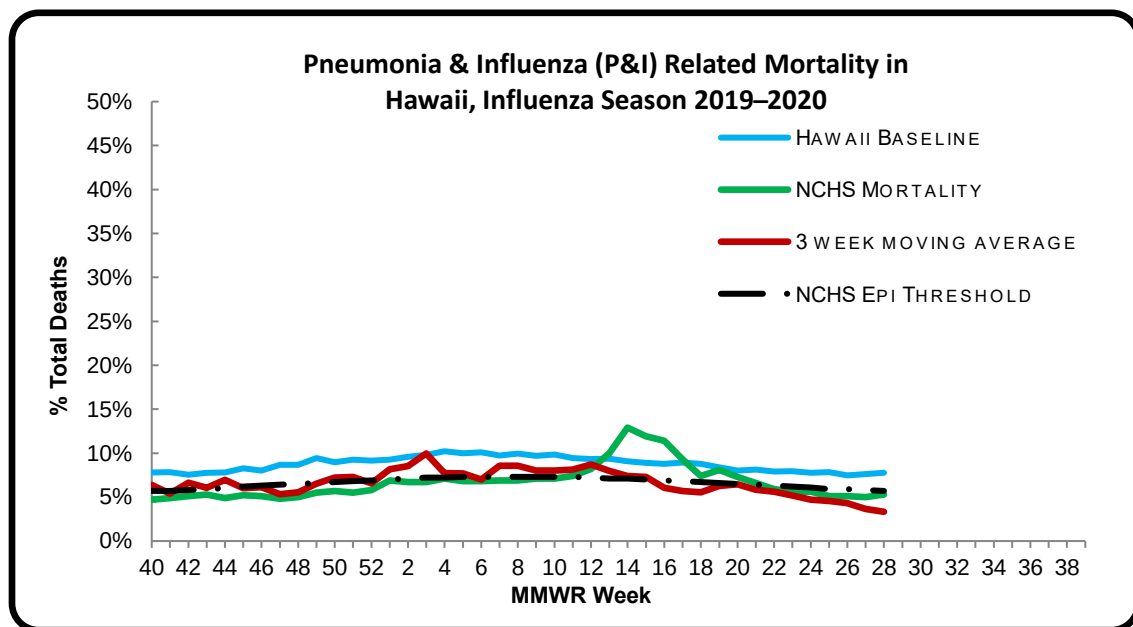


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 28** of the current influenza season:

- **4.0%** of all deaths that occurred in Hawaii during week 28 were related to pneumonia or influenza. For the current season (season to date: **6.6%**), there have been 9,050 deaths from any cause, 600 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.3%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (5.7%) (i.e., inside the 95% confidence interval) for week 28.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 28. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 28. (2019–2020 season total: 185).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 185 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 114 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 71 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 28.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

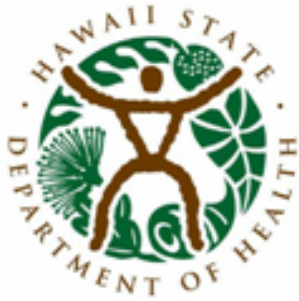
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 29: JULY 12, 2020–JULY 18, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 29

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.3%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Lower than the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.2%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 30)	10.4%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.0%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

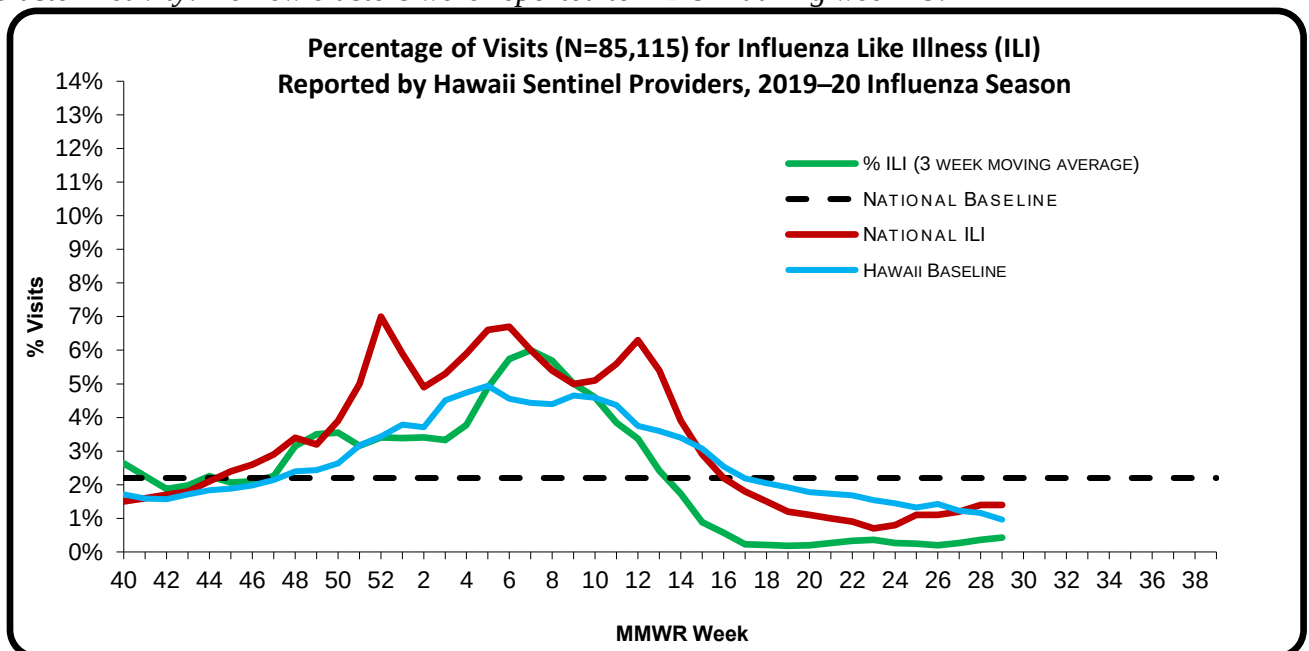
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 29** of the current influenza season:

- **0.3%** (season to date: **2.4%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.4%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 29.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

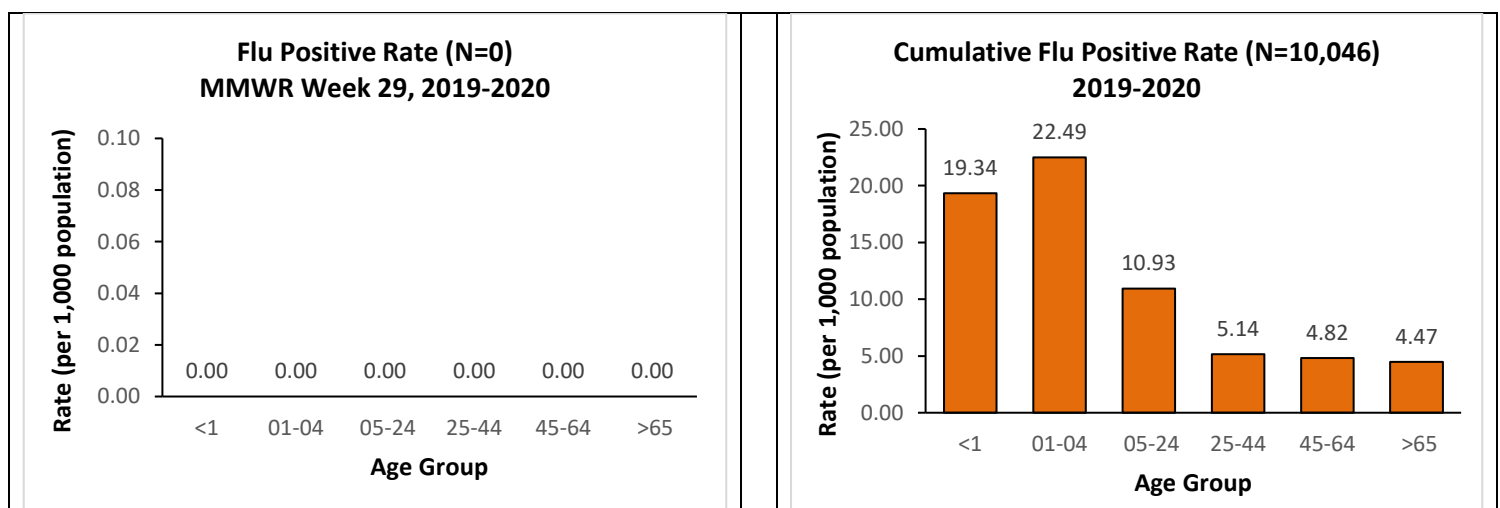
A. INFLUENZA:

- The following reflects laboratory findings for week 29 of the 2019–20 influenza season:
 - A total of **296** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 47,446 tested [21.2% positive])
 - 93 (31.4%) were screened only by rapid antigen tests with no confirmatory testing.
 - 203 (68.6%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 296 (100.0%) were negative.

Influenza type	Current week 29 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	70 (0.7)
Influenza A no subtyping	0 (0.0)	5,794 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,305 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



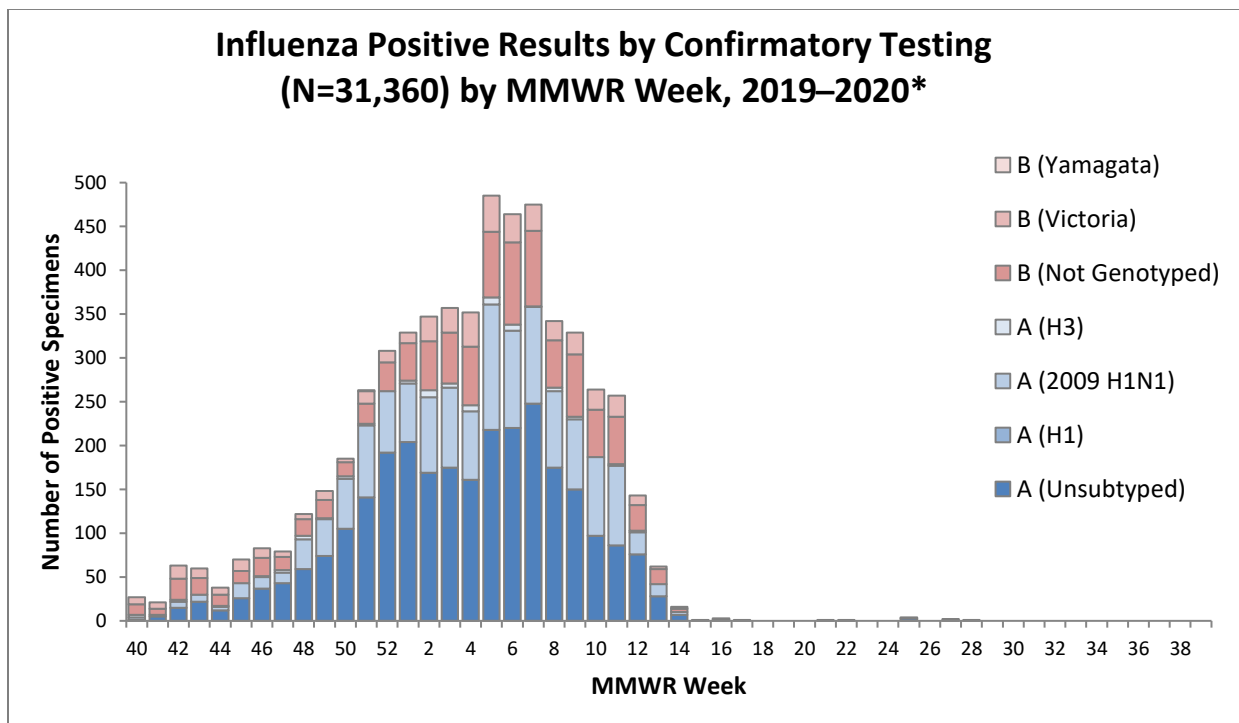
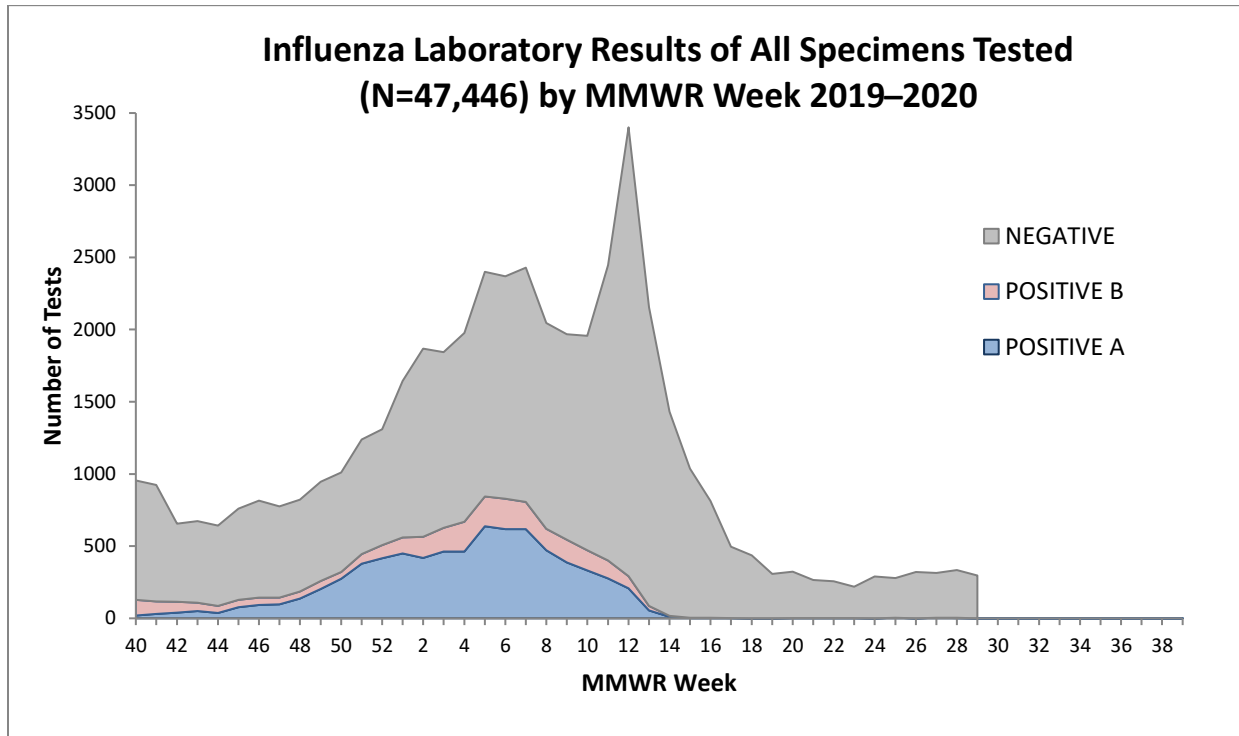
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																									
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																					
Adenovirus	X		X		X		X	X	X	X							X	X		X	X		X	X	X						X	X			X	X																																					
Coronavirus															X		X	X		X	X		X	X	X			X	X		X																																										
Coxsackie Virus																												X	X			X																																									
Cytomegalovirus																																																																									
Echovirus																																																																									
Enterovirus																																																																									
Herpes Simplex Virus, Type 1																																																																									
Metapneumovirus													X							X	X	X	X	X	X	X	X					X																																									
Parainfluenza Virus						X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X			X		X																																									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X																																								
Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X						X	X																																		
Varicella Zoster Virus																																																																									
Influenza 2009 H1N1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																															
Influenza A (H3)	X		X		X		X	X	X	X	X				X	X		X	X	X	X	X			X																																																
Influenza A (Other seasonal H1)																																																																									
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X			X		X	X																																
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X						X		X																																		

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 30¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 77 surveillance specimens have been tested statewide for COVID-19 (positive: 8 [10.4%]).*
- *Season to date: A total of 2,480 surveillance specimens have been tested for COVID-19 (positive: 58 [2.3%])*
 - *783 specimens have been tested at SLD¹³.*

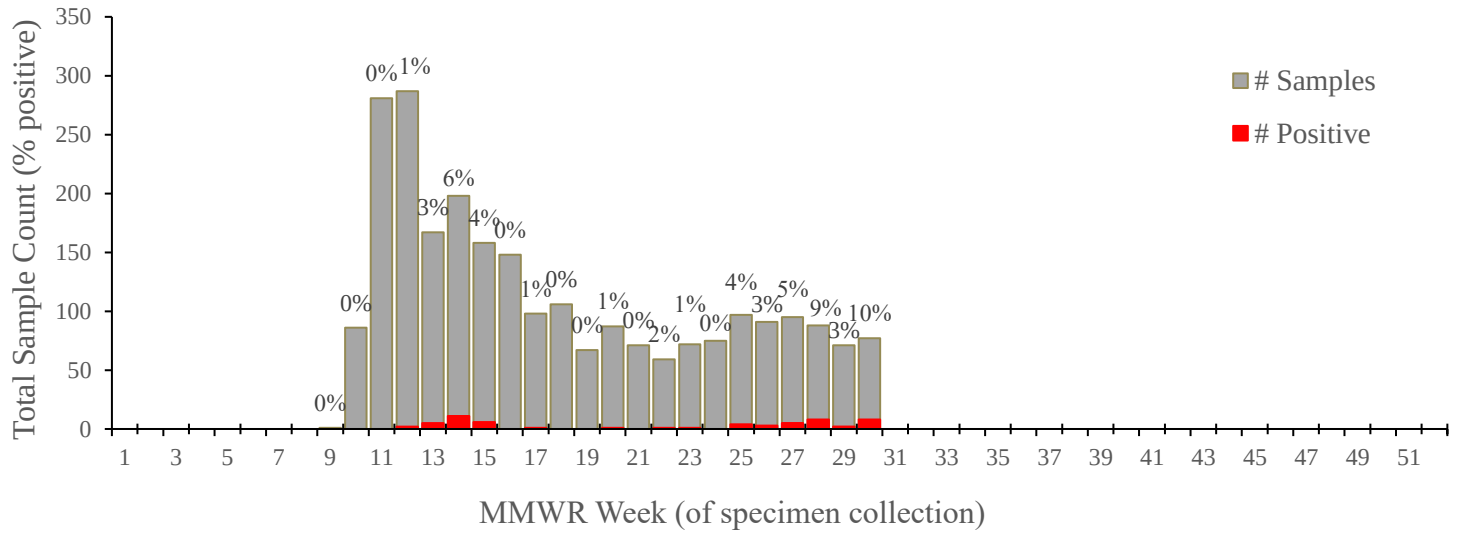
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	291	0.3	0-17	371	0.5
Honolulu	1,466	3.1	18-64	1,495	3.1
Kauai	146	0.7	65+	614	1.6
Maui	349	2.9			
Missing	228	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,480), % Positive

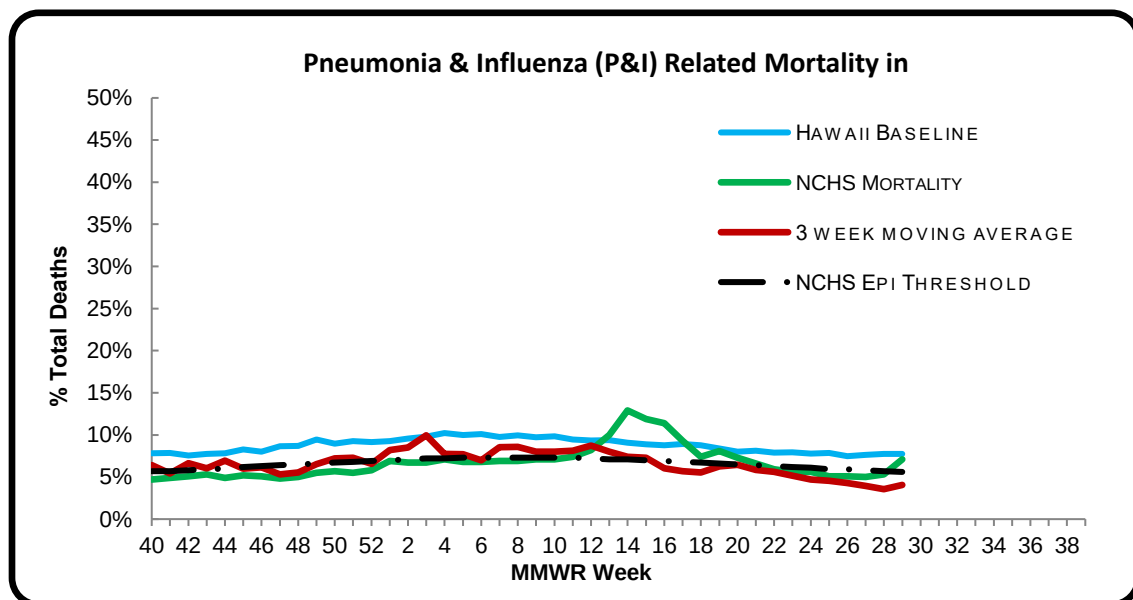


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 29** of the current influenza season:

- **5.0%** of all deaths that occurred in Hawaii during week 29 were related to pneumonia or influenza. For the current season (season to date: **6.6%**), there have been 9,253 deaths from any cause, 611 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**7.1%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.6%**) (i.e., inside the 95% confidence interval) for week 29.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 29. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019-2020 season were reported to CDC during week 29. (2019-2020 season total: 185).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 185 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 114 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 71 deaths were associated with influenza A viruses, and 42 were subtyped; 41 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *No variant or novel influenza infections have been reported to HDOH during the 2019–2020 influenza season.*
- *One human infection with a novel influenza A virus, H1N1v (1), H3N2v, and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A (H1N1)v virus were reported to CDC during week 29.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

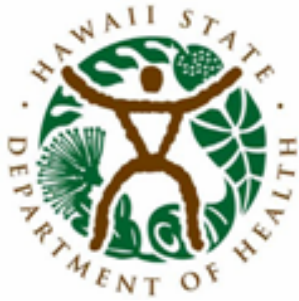
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 30: JULY 19, 2020–JULY 25, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 30

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.6%	Higher than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.6%	Higher than the previous week. This number means that many, if not all, of the 99.4% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	21.0%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 31)	22.9%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.2%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

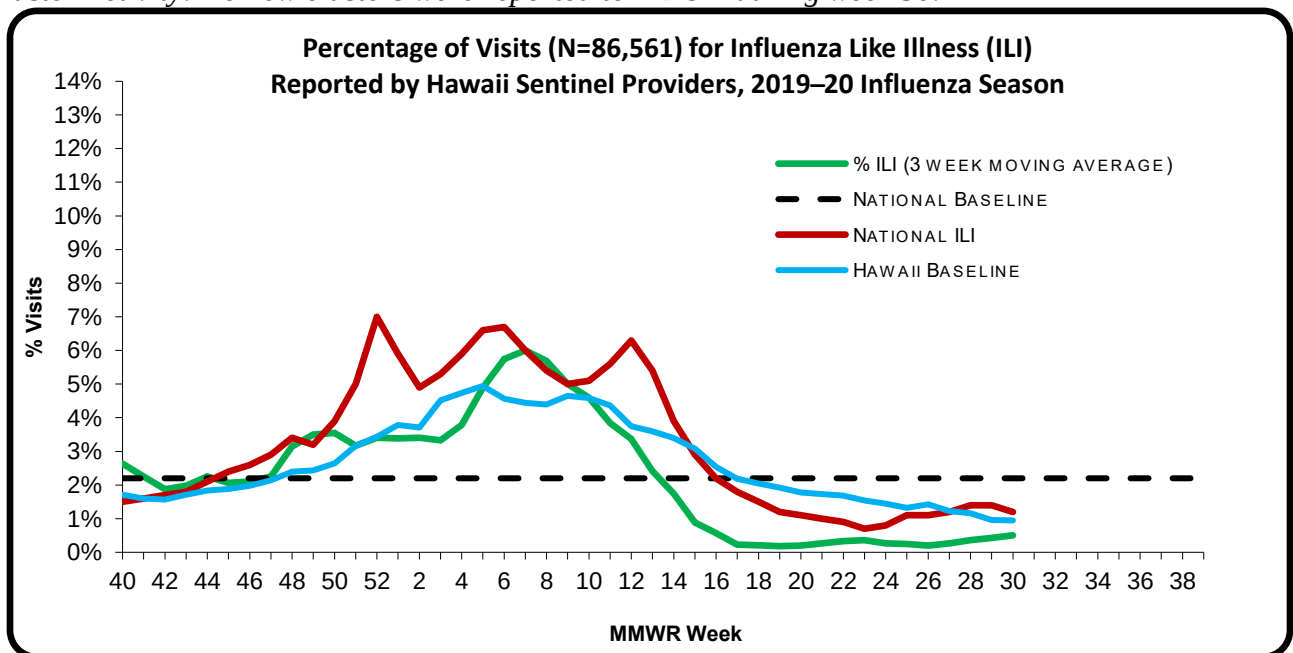
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 30** of the current influenza season:

- **0.6%** (season to date: **2.3%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.2%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 30.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

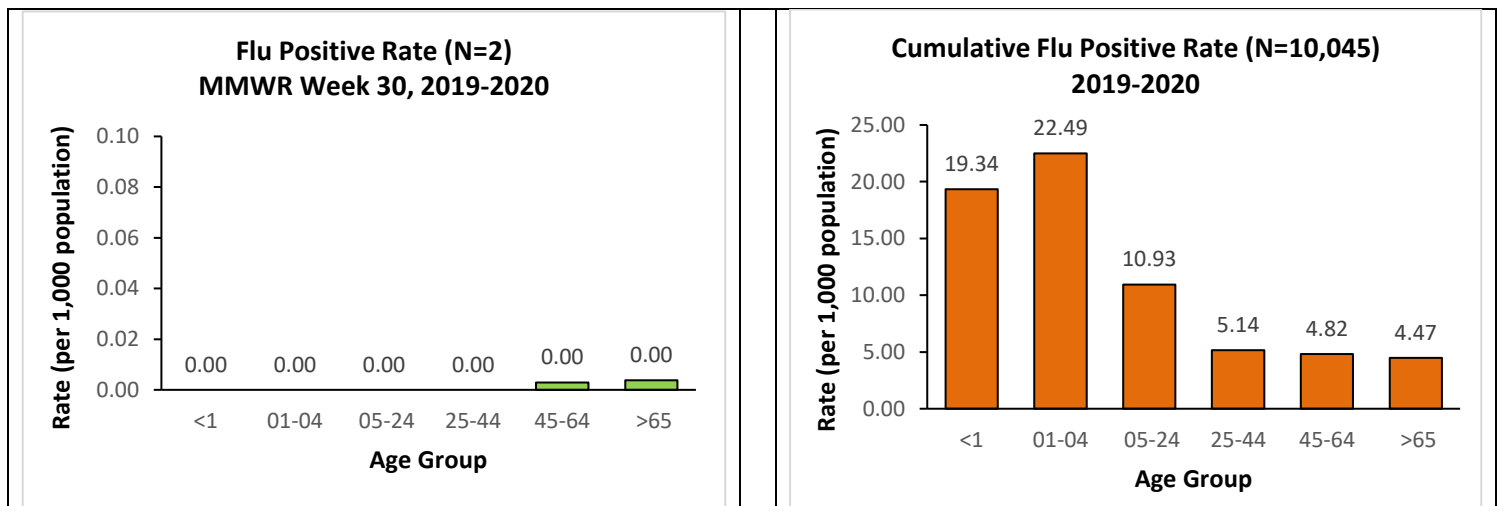
A. INFLUENZA:

- The following reflects laboratory findings for week 30 of the 2019–20 influenza season:
 - A total of **314** specimens have been tested statewide for influenza viruses (positive: 2 [**0.6%**]). (Season to date: 47,759 tested [**21.0%** positive])
 - 126 (40.1%) were screened only by rapid antigen tests with no confirmatory testing.
 - 188 (59.9%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 312 (99.4%) were negative.

Influenza type	Current week 30 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	71 (0.7)
Influenza A no subtyping	1 (50.0)	5,791 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	1 (50.0)	2,306 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



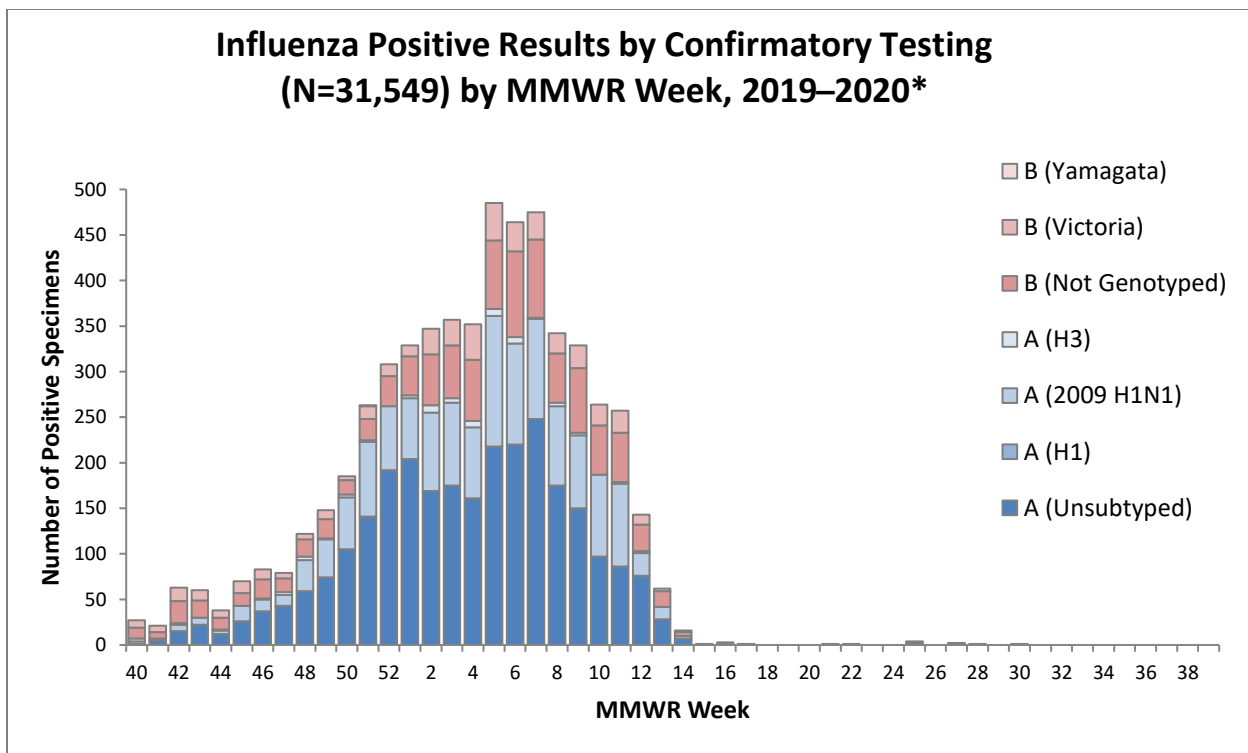
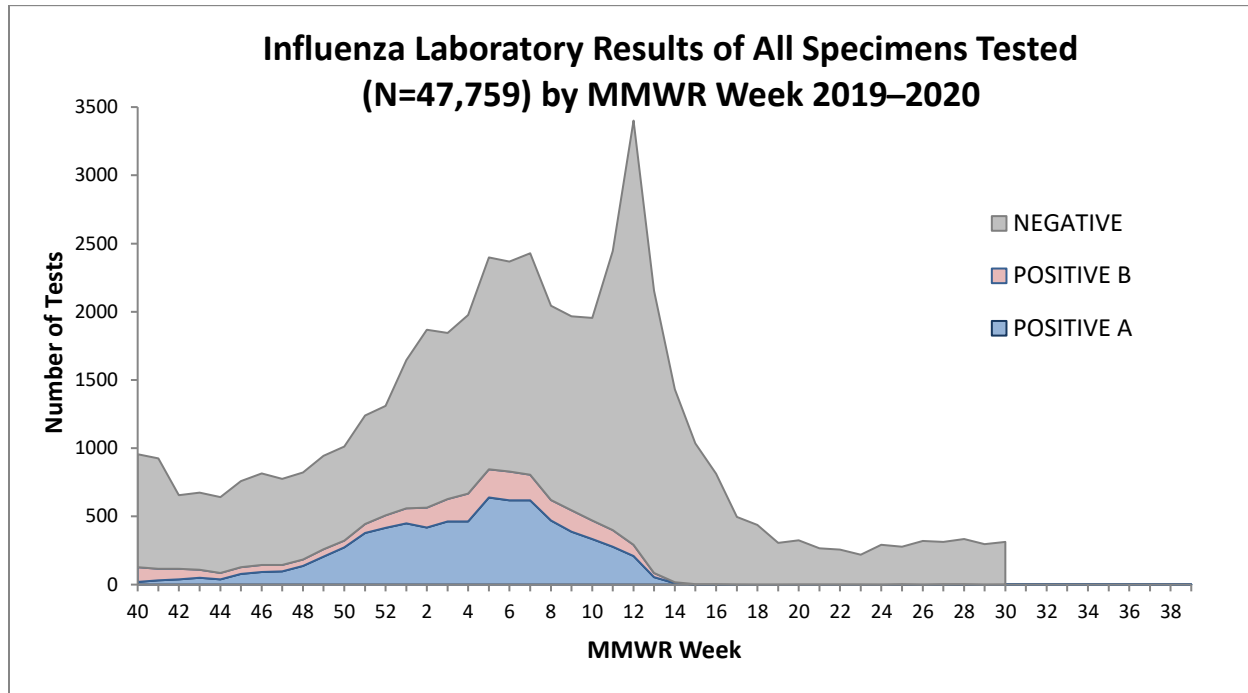
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 30¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 83 surveillance specimens have been tested statewide for COVID-19 (positive: 19 [22.9%]).*
 - *One additional positive occurring during week 30 was detected.*
- *Season to date: A total of 2,716 surveillance specimens have been tested for COVID-19 (positive: 78 [2.9%])*
 - *802 specimens have been tested at SLD¹³.*

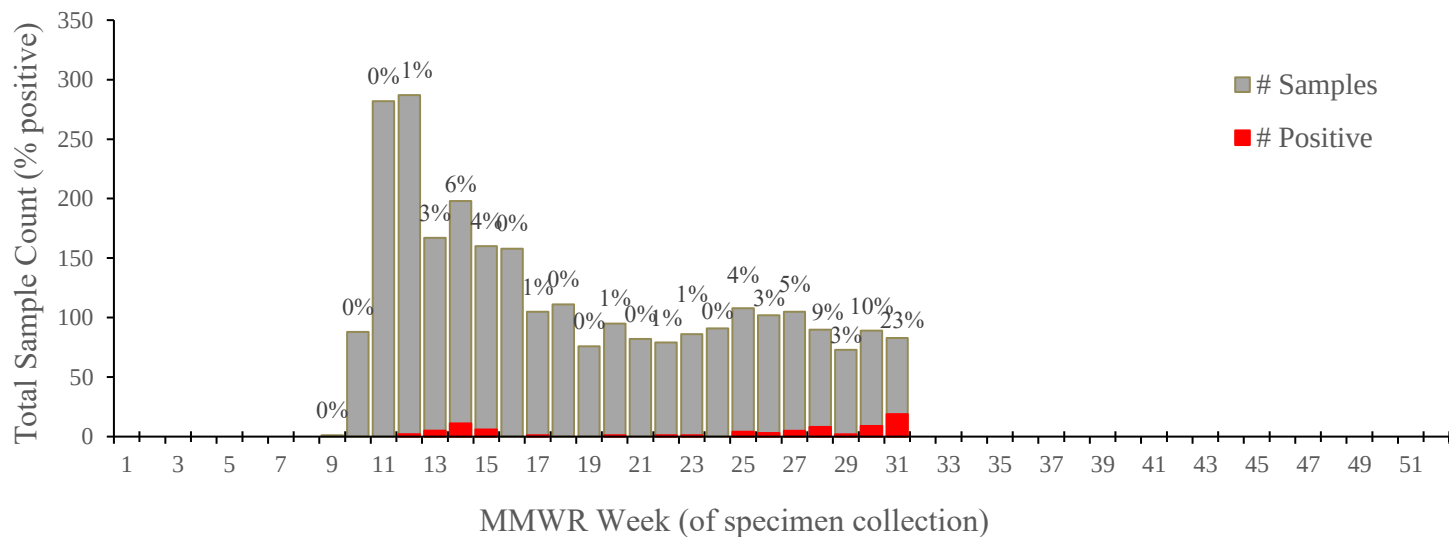
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	298	0.3	0-17	406	2.2
Honolulu	1,666	3.9	18-64	1,629	3.6
Kauai	152	0.7	65+	681	1.6
Maui	365	2.7			
Missing	235	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,716), % Positive

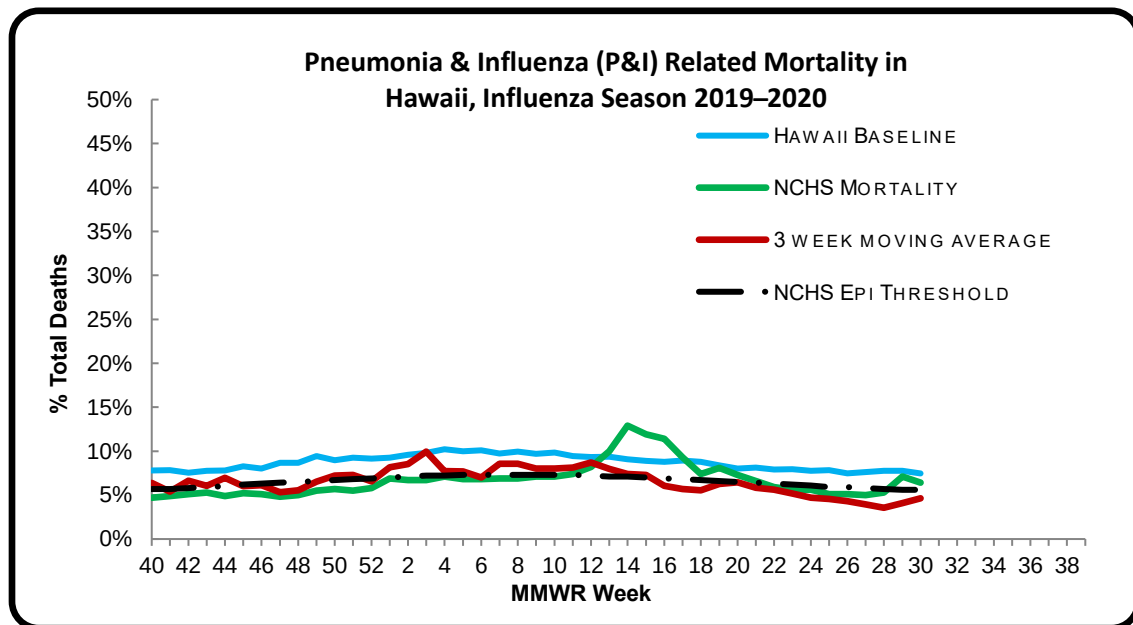


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 30** of the current influenza season:

- **5.2%** of all deaths that occurred in Hawaii during week 30 were related to pneumonia or influenza. For the current season (season to date: **6.6%**), there have been 9,350 deaths from any cause, 616 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**6.4%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.6%**) (i.e., inside the 95% confidence interval) for week 30.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 30. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

- Nationally, one influenza-associated pediatric death occurring during the 2019-2020 season was reported to CDC during week 30. This death was associated with an influenza A(H1N1)pdm09 virus and occurred during week 9 (week ending February 29, 2020). (2019-2020 season total: 186).

Of the 185 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 114 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
 - *One human infection with a novel influenza A virus was reported to HDOH during week 30. This person was infected with an influenza A(H3N2)v virus. The patient is less than age 18 years, did not require hospitalization, and has recovered from their illness. Symptoms included fever, chills, and sore throat. No exposure to swine has been reported.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *One new human infection with novel influenza A virus was reported to CDC during week 30.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have

been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

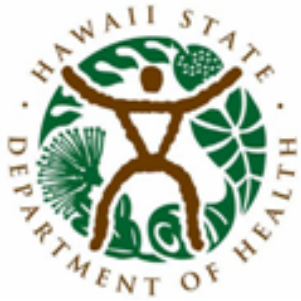
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 31: JULY 26, 2020–AUGUST 1, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 31

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.9%	Higher than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.3%	Lower than the previous week. This number means that many, if not all, of the 99.7% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.9%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 32)	11.2%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	2.0%	Lower than Hawaii's historical baseline, lower than the national epidemic threshold and lower than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

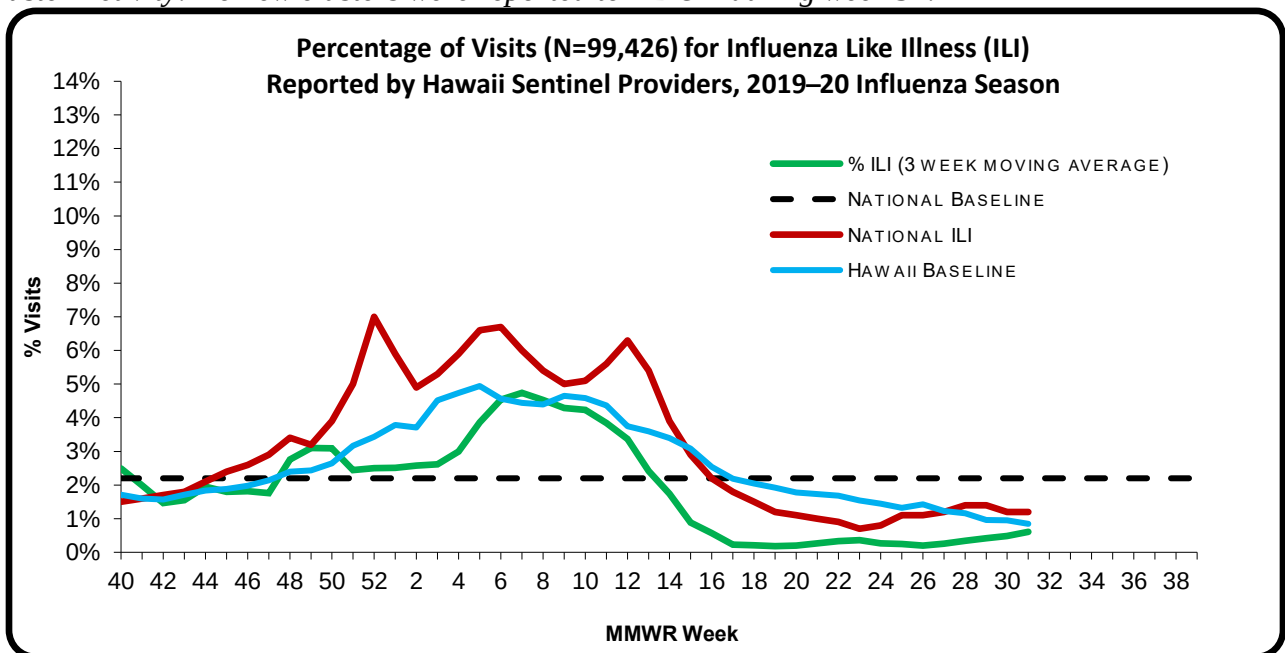
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 31** of the current influenza season:

- **0.9%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.2%**) (i.e., inside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 31.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

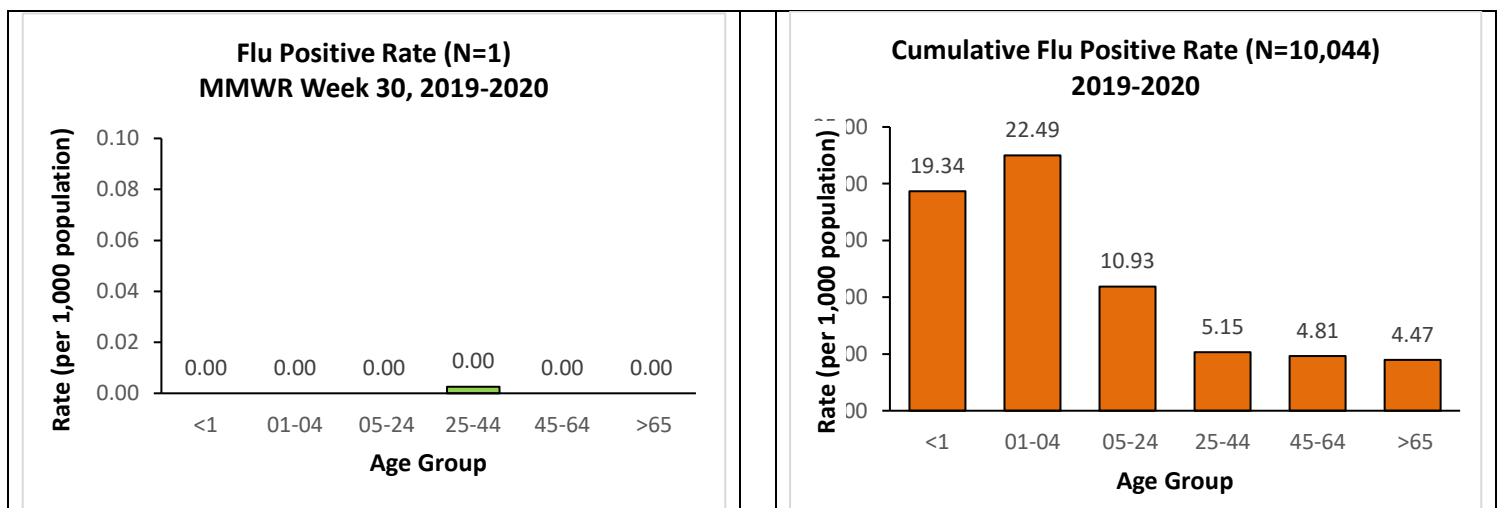
A. INFLUENZA:

- The following reflects laboratory findings for week 31 of the 2019–20 influenza season:
 - A total of **323** specimens have been tested statewide for influenza viruses (positive: 1 [0.3%]). (Season to date: 48,083 tested [20.9% positive])
 - 113 (35.0%) were screened only by rapid antigen tests with no confirmatory testing.
 - 210 (65.0%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 322 (99.7%) were negative.

Influenza type	Current week 31 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	71 (0.7)
Influenza A no subtyping	1 (100.0)	5,792 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



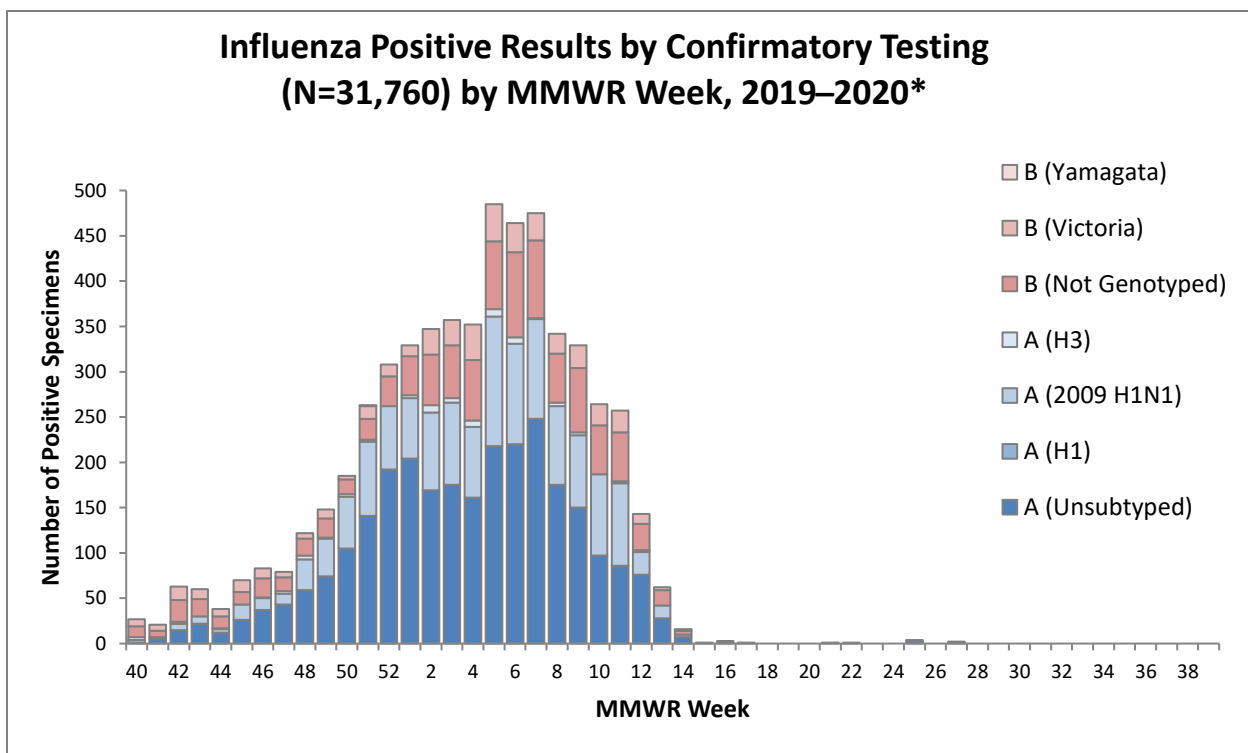
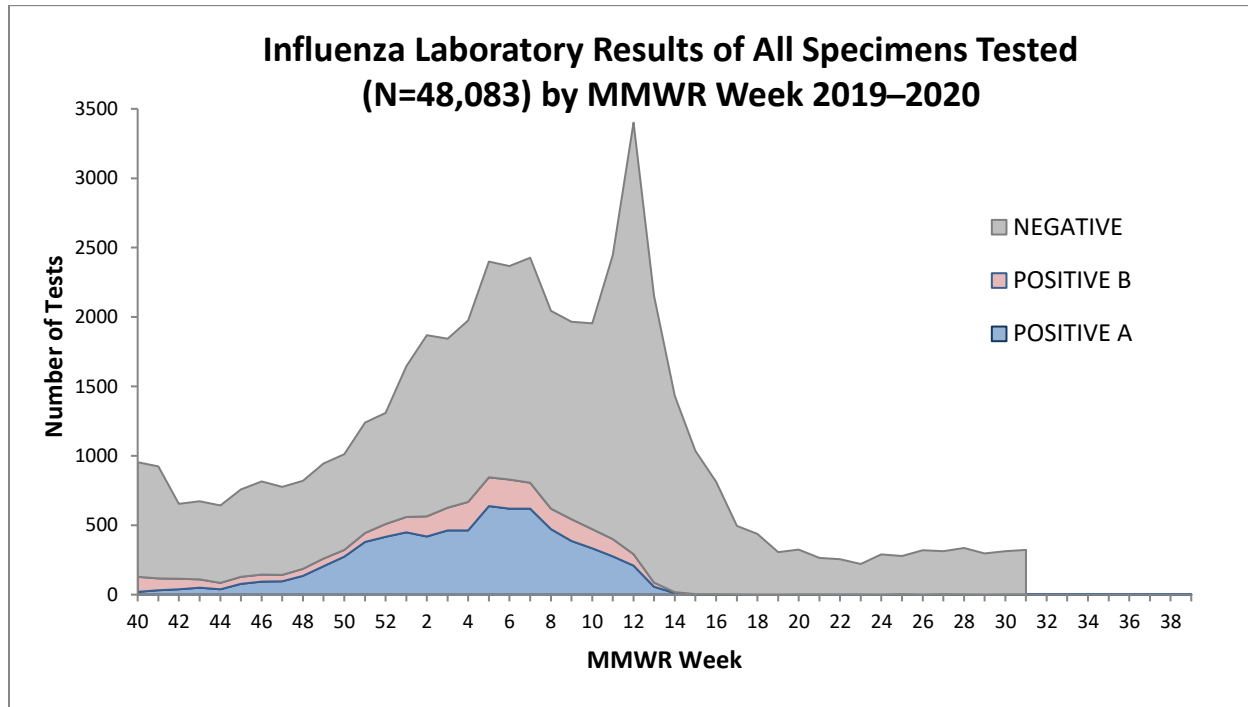
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 32¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional*¹²
- *A total of 116 surveillance specimens have been tested statewide for COVID-19 (positive: 13 [11.2%]).*
 - *One additional positive occurring during week 31 was detected.*
- *Season to date: A total of 2,831 surveillance specimens have been tested for COVID-19 (positive: 92 [2.9%])*
 - *806 specimens have been tested at SLD*¹³.

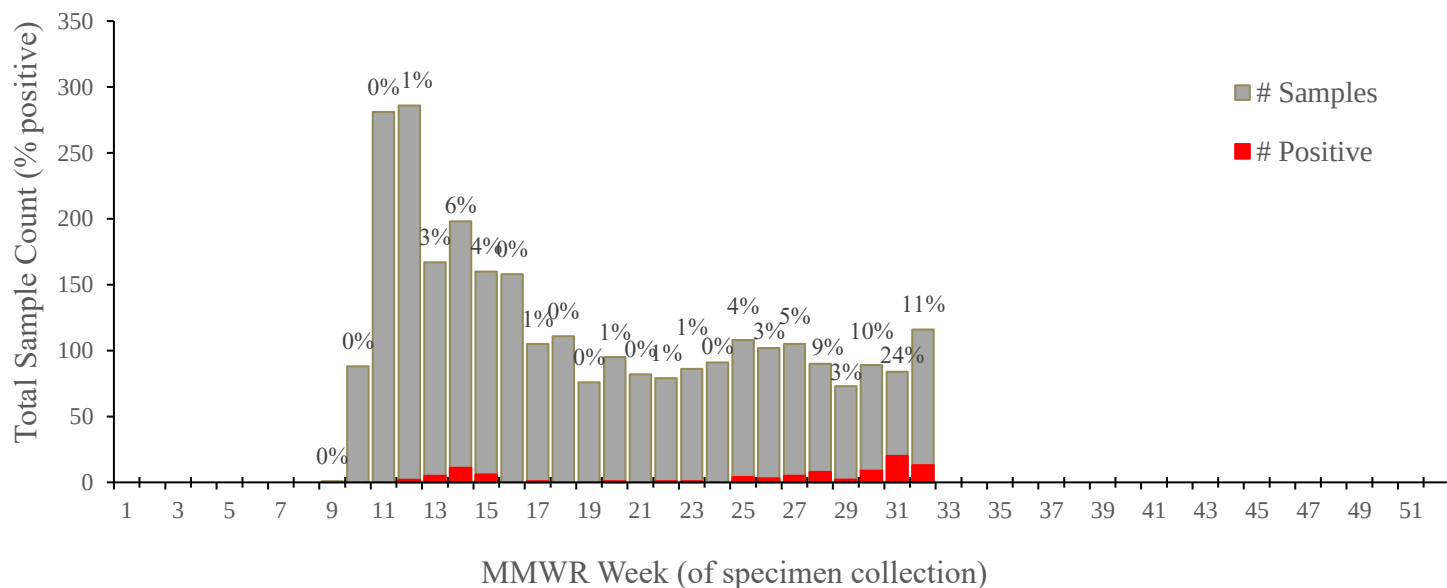
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	306	0.3	0-17	427	2.3
Honolulu	1,762	4.5	18-64	1,699	4.0
Kauai	159	0.6	65+	705	2.0
Maui	371	2.7			
Missing	233	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,831), % Positive

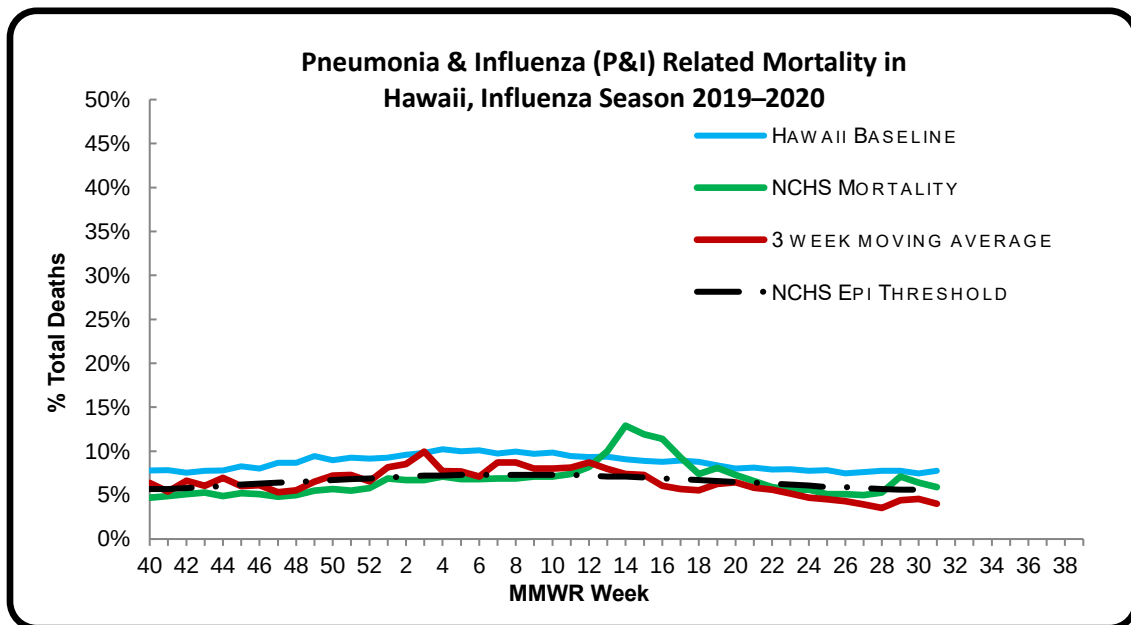


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 31** of the current influenza season:

- **2.0%** of all deaths that occurred in Hawaii during week 31 were related to pneumonia or influenza. For the current season (season to date: **6.6%**), there have been 9,481 deaths from any cause, 623 of which were due to P&I.
- The P&I rate was lower than the historical baseline in Hawaii¹⁴ (i.e., outside the 95% confidence interval).
- The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.9%) (i.e., outside the 95% confidence interval) and lower than the national epidemic threshold (5.5%) (i.e., outside the 95% confidence interval) for week 31.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 31. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

- Nationally, one influenza-associated pediatric death occurring during the 2019-2020 season was reported to CDC during week 31. This death was associated with an influenza B virus and occurred during week 20 (week ending May 25, 2020). (2019-2020 season total: 187).

Of the 187 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 115 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 31.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

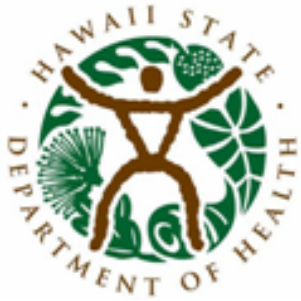
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 32: AUGUST 2, 2020–AUGUST 8, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 32

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.9%	Comparable to the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Lower than the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.8%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 33)	22.7%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.6%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

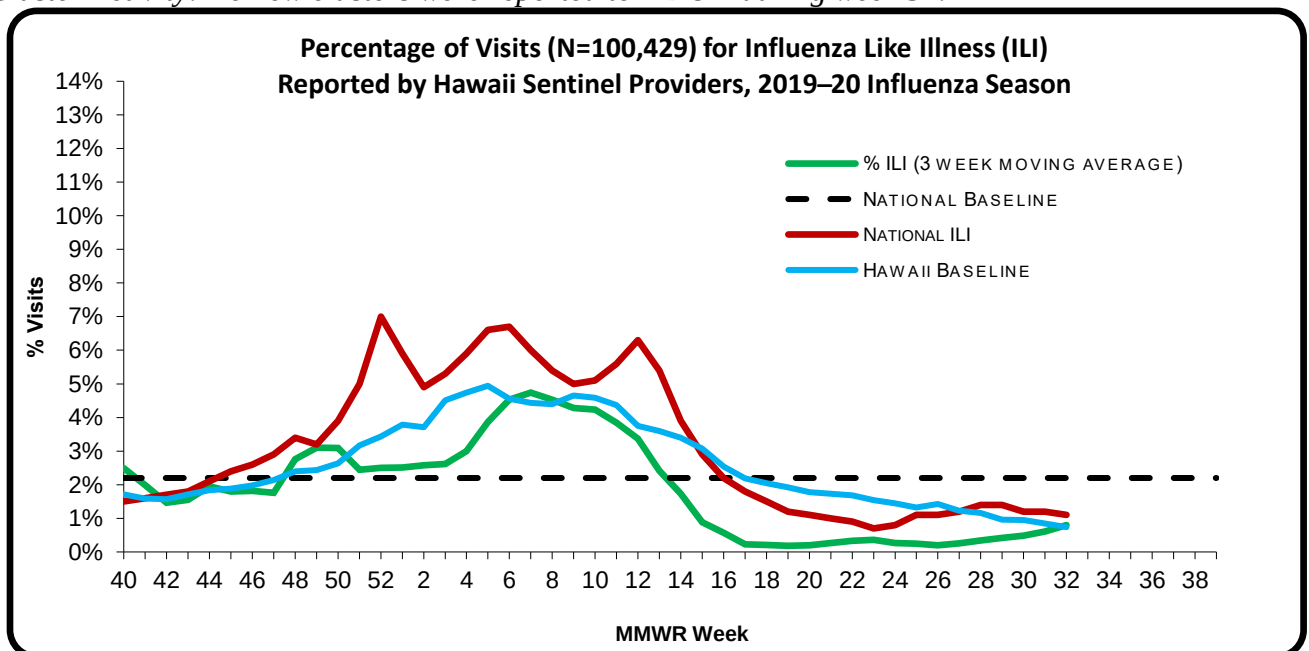
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 32** of the current influenza season:

- **0.9%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.1%**) (i.e., inside the 95% confidence interval).
- ILI activity level: *Minimal*⁶
- Geographic Spread: *Sporadic Activity*⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 32.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

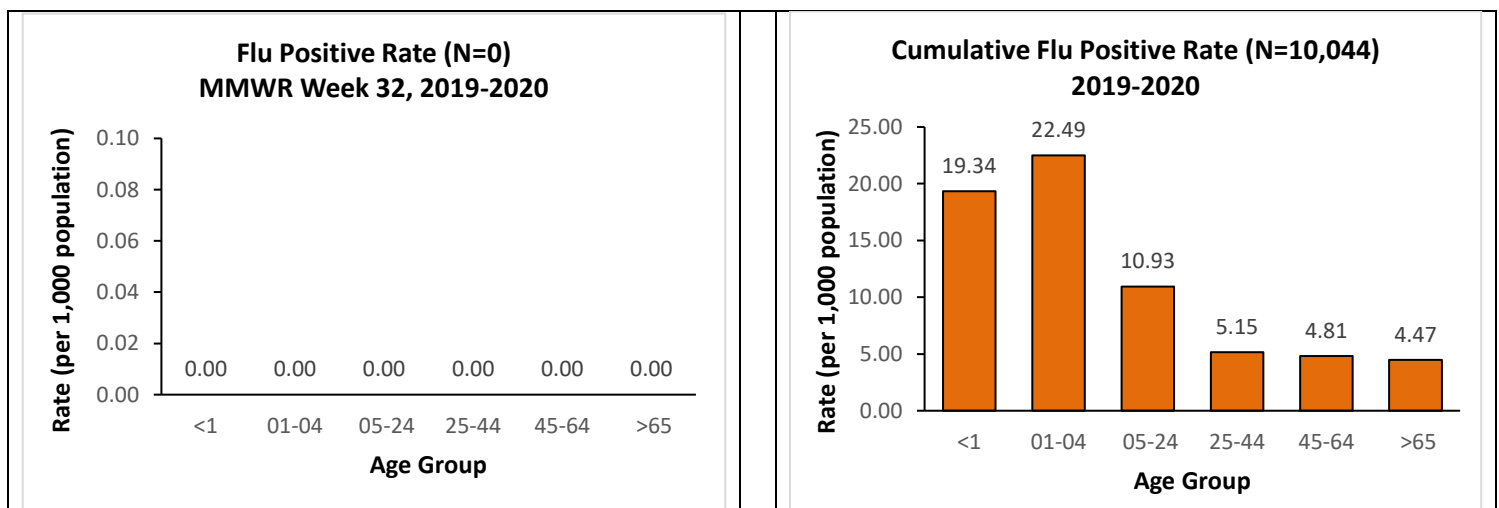
A. INFLUENZA:

- The following reflects laboratory findings for week 32 of the 2019–20 influenza season:
 - A total of **149** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 48,232 tested [20.8% positive])
 - 21 (14.1%) were screened only by rapid antigen tests with no confirmatory testing.
 - 128 (85.9%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 149 (100.0%) were negative.

Influenza type	Current week 32 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	71 (0.7)
Influenza A no subtyping	0 (0.0)	5,792 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



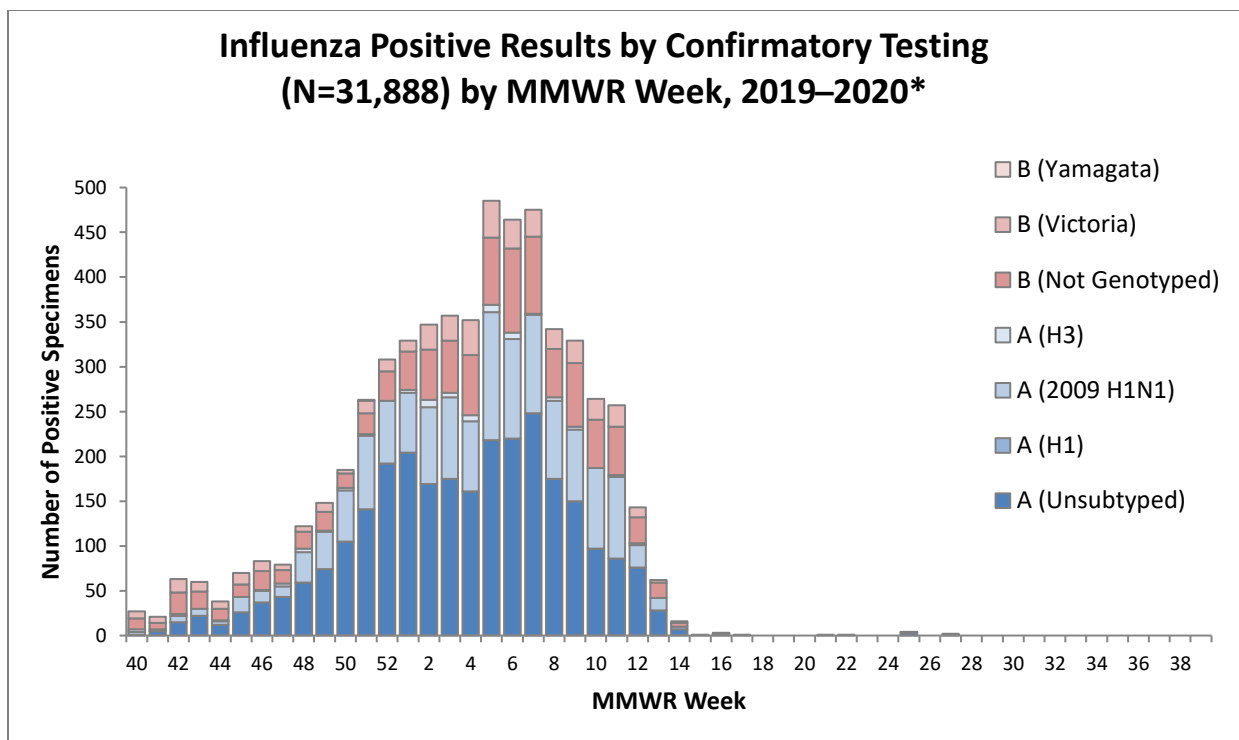
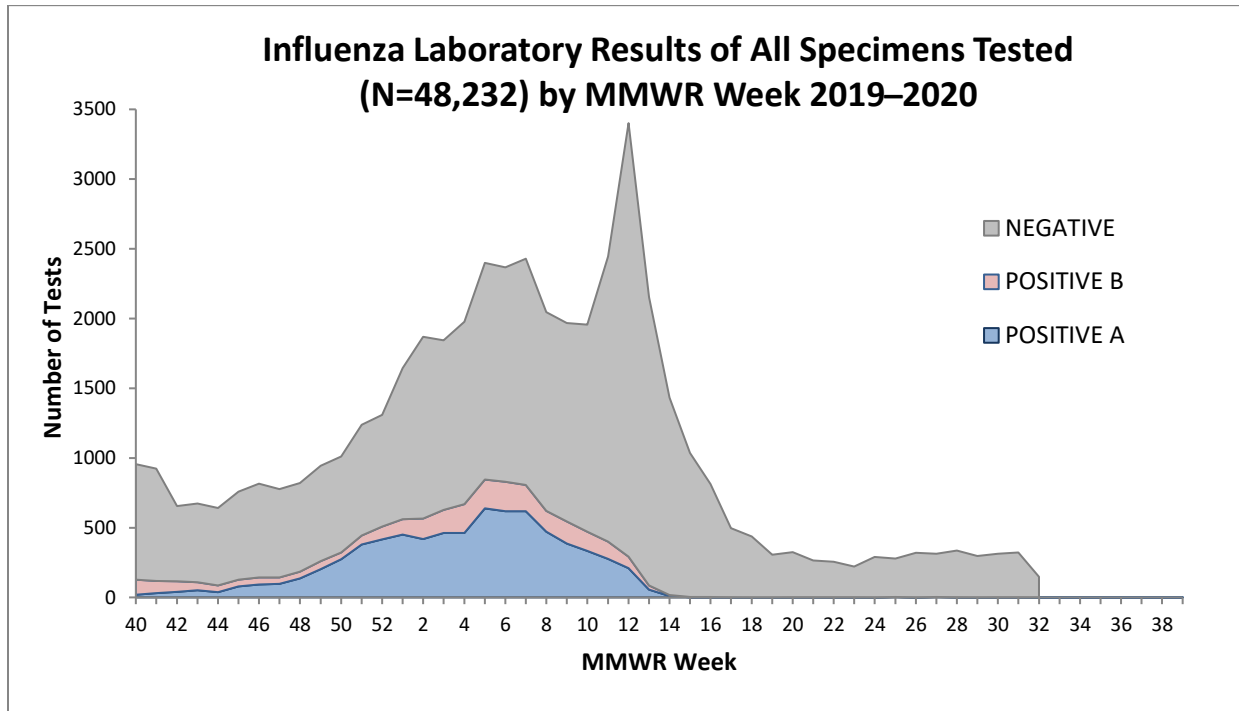
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 33¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 97 surveillance specimens have been tested statewide for COVID-19 (positive: 22 [22.7%]).*
- *Season to date: A total of 2,928 surveillance specimens have been tested for COVID-19 (positive: 114 [3.9%])*
 - *818 specimens have been tested at SLD¹³.*

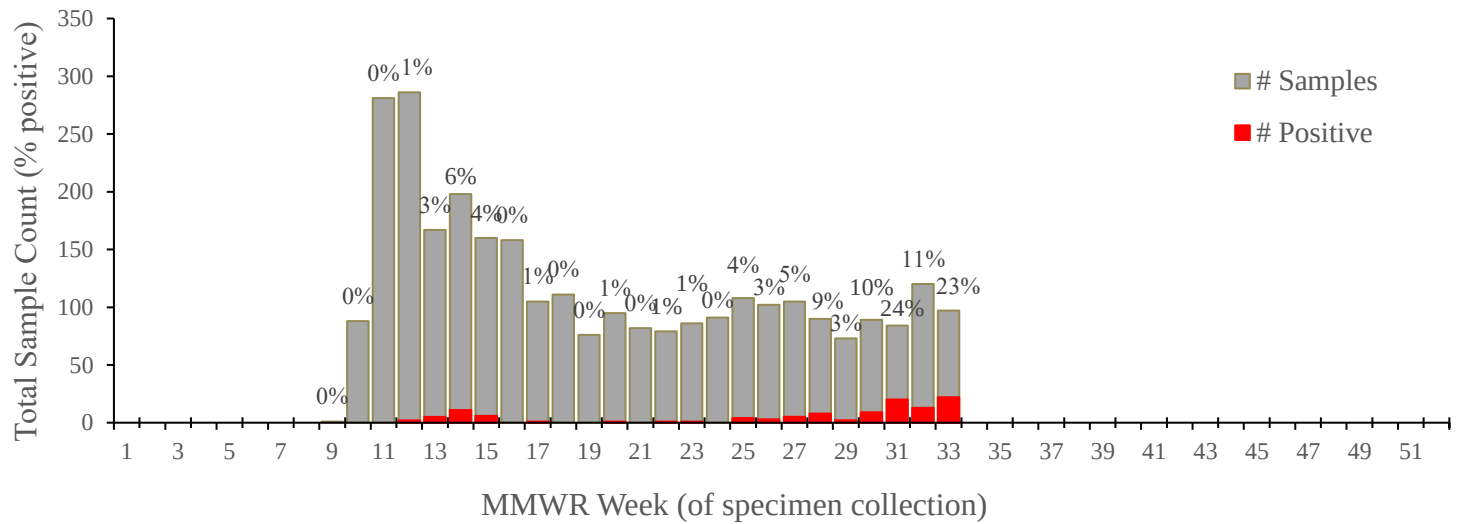
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	308	0.3	0-17	434	2.7
Honolulu	1,847	5.5	18-64	1,756	4.5
Kauai	163	0.6	65+	738	3.1
Maui	380	2.6			
Missing	230	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=2,928), % Positive

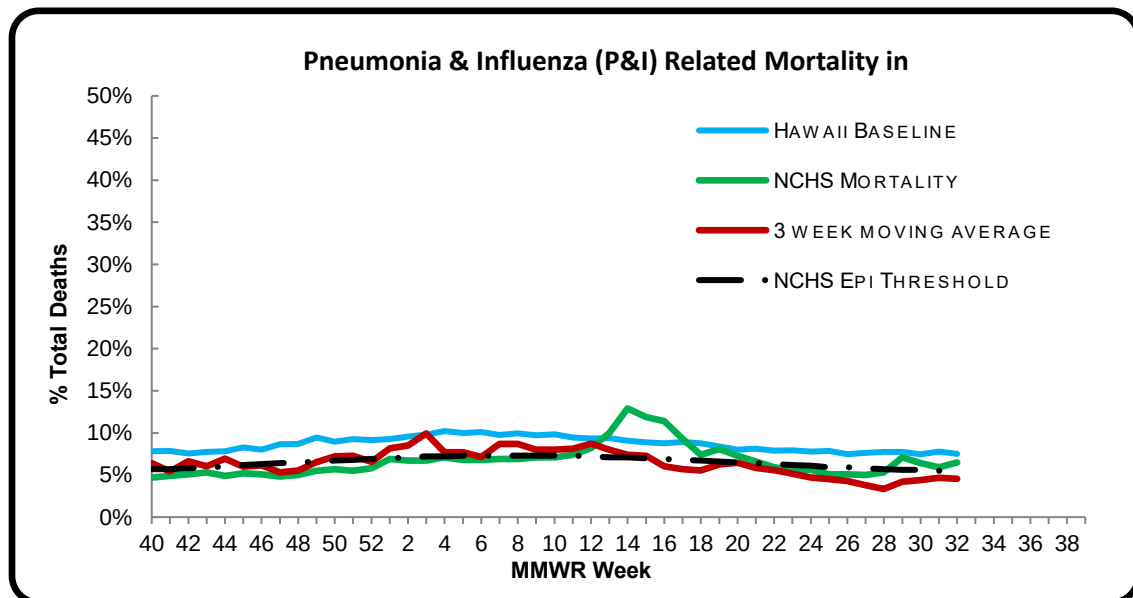


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 32** of the current influenza season:

- **5.6%** of all deaths that occurred in Hawaii during week 32 were related to pneumonia or influenza. For the current season (season to date: **6.5%**), there have been 9,929 deaths from any cause, 643 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**6.5%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.5%**) (i.e., outside the 95% confidence interval) for week 32.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 32. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 32. (2019–2020 season total: 187).

Of the 187 influenza-associated pediatric deaths occurring during the 2019–2020 season and reported to CDC:

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

- 115 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 32.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

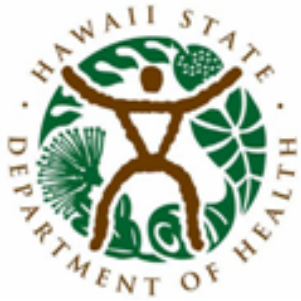
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 33: AUGUST 9, 2020–AUGUST 15, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 33

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.3%	Lower than the previous week. Comparable to Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Lower than the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.8%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 34)	18.6%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

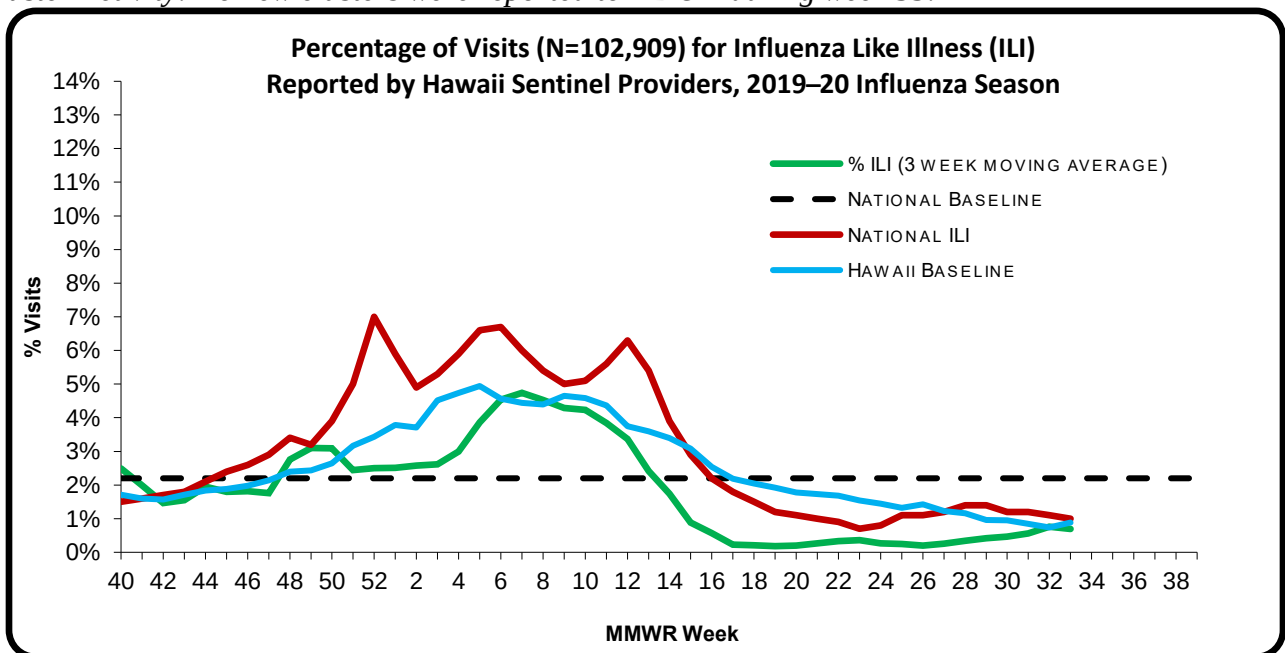
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 33** of the current influenza season:

- **0.3%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.0%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 33.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

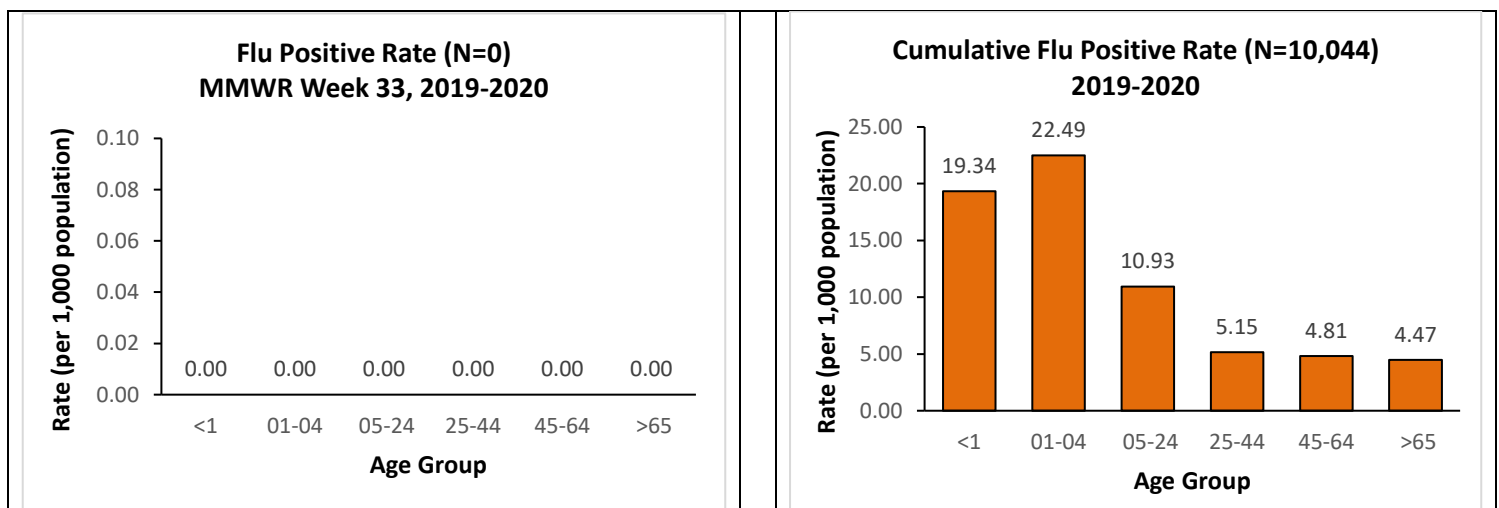
A. INFLUENZA:

- The following reflects laboratory findings for week 33 of the 2019–20 influenza season:
 - A total of **123** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 48,354 tested [20.8% positive])
 - 0 (0.0%) were screened only by rapid antigen tests with no confirmatory testing.
 - 123 (100.0%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 123 (100.0%) were negative.

Influenza type	Current week 33 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	71 (0.7)
Influenza A no subtyping	0 (0.0)	5,792 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



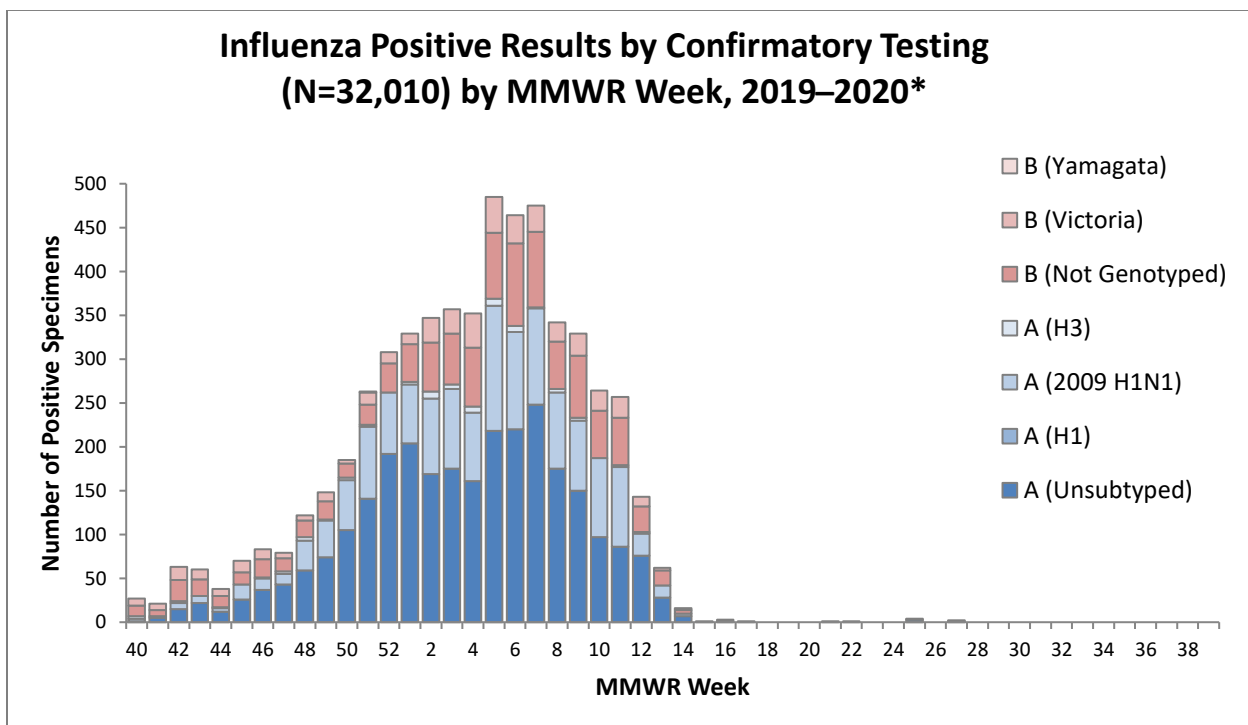
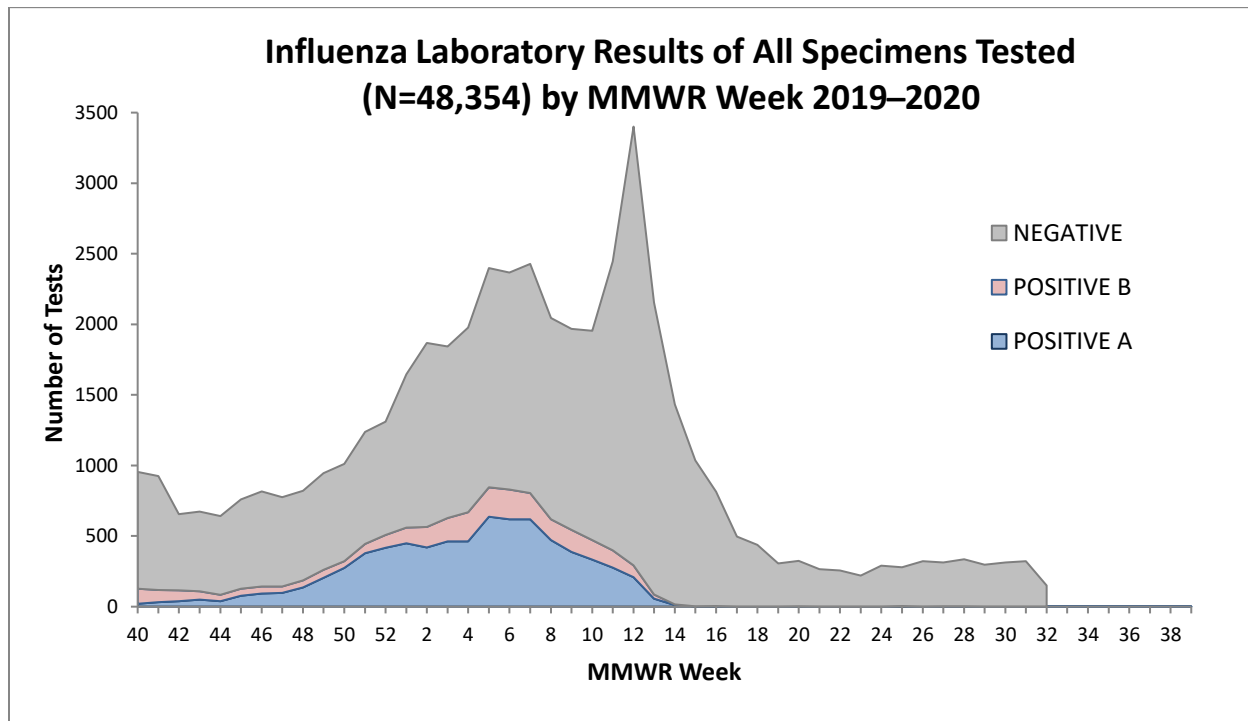
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 34¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 97 surveillance specimens have been tested statewide for COVID-19 (positive: 18 [18.6%]).*
- *Season to date: A total of 3,030 surveillance specimens have been tested for COVID-19 (positive: 132 [4.4%])*
 - *824 specimens have been tested at SLD¹³.*

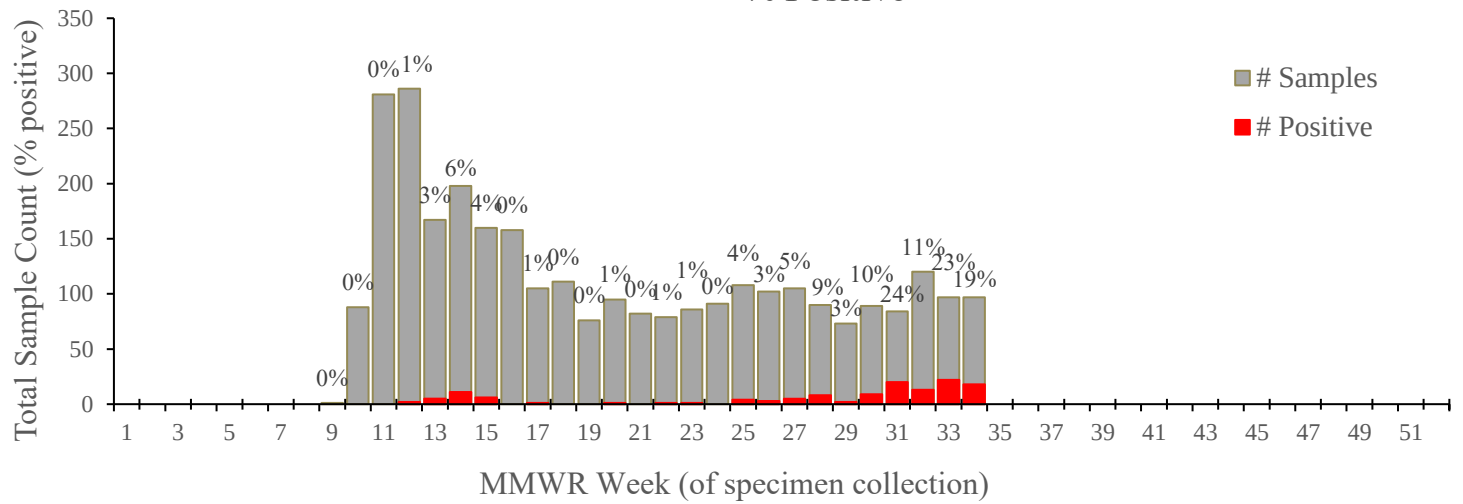
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	316	0.6	0-17	445	2.7
Honolulu	1,919	6.1	18-64	1,825	5.2
Kauai	169	0.6	65+	760	3.2
Maui	393	2.8			
Missing	233	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=3,030), % Positive

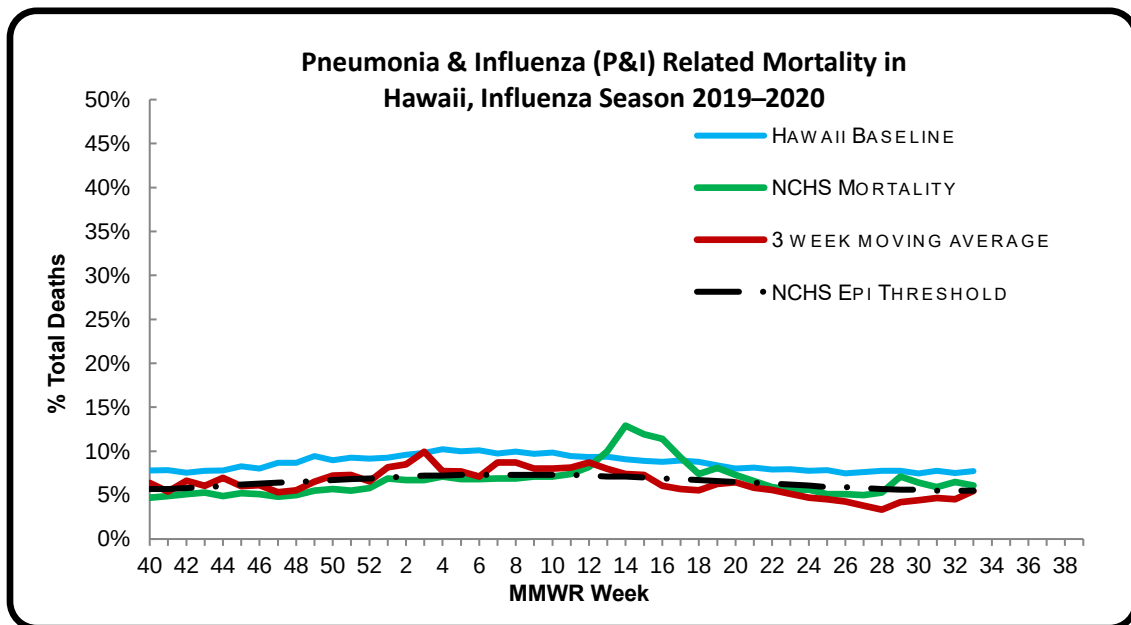


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 33** of the current influenza season:

- **6.4%** of all deaths that occurred in Hawaii during week 33 were related to pneumonia or influenza. For the current season (season to date: **6.5%**), there have been 10,023 deaths from any cause, 649 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**6.1%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.5%**) (i.e., inside the 95% confidence interval) for week 33.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 33. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

- Nationally, one influenza-associated pediatric death occurring during the 2019-2020 season was reported to CDC during week 33. This death was associated with an influenza B virus and occurred during week 8 (week ending February 22, 2020). (2019-2020 season total: 188).

Of the 188 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 116 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 33.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

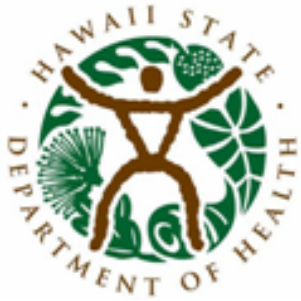
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 34: AUGUST 16, 2020–AUGUST 22, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 34

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.3%	Comparable to the previous week. Comparable to Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Comparable to the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.7%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 34)	17.8%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.4%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

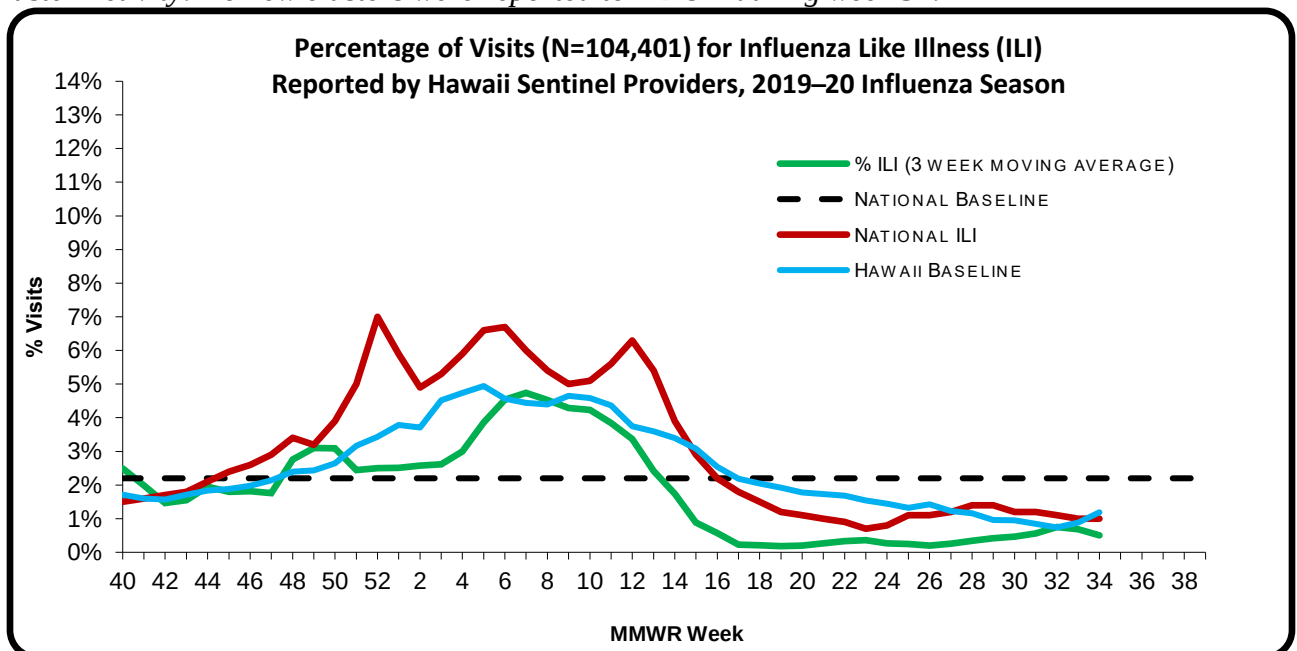
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 34** of the current influenza season:

- **0.3%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.0%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 34.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii’s major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

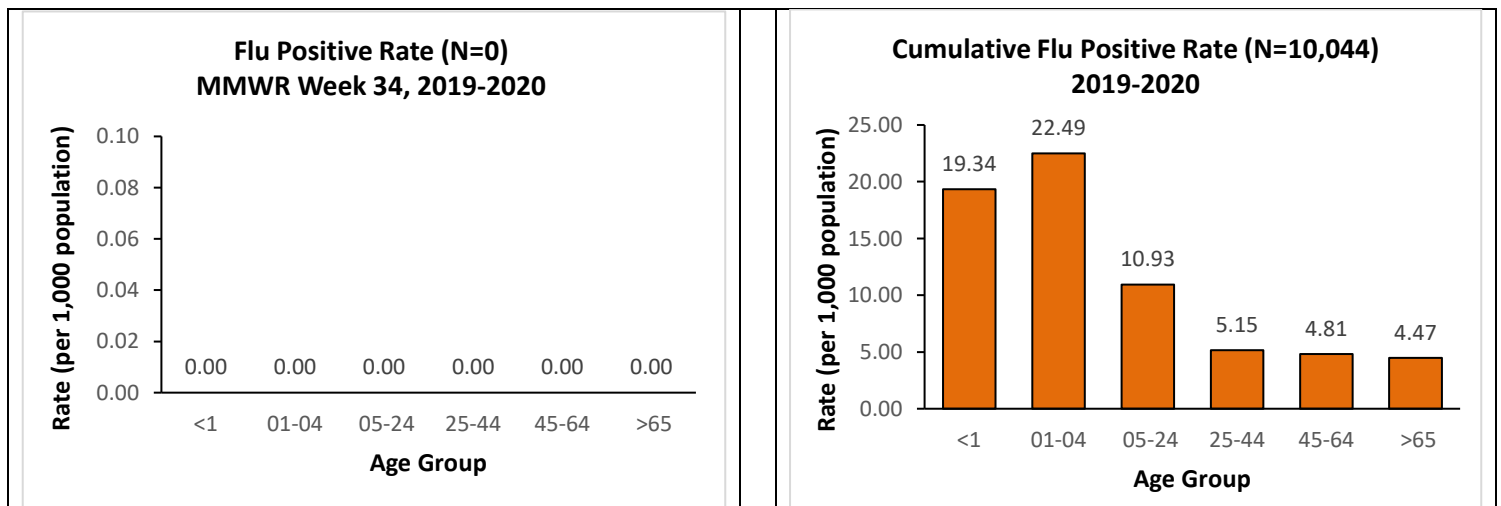
A. INFLUENZA:

- The following reflects laboratory findings for week 34 of the 2019–20 influenza season:
 - A total of **130** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 48,485 tested [20.7% positive])
 - 0 (0.0%) were screened only by rapid antigen tests with no confirmatory testing.
 - 130 (100.0%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 130 (100.0%) were negative.

Influenza type	Current week 34 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,427 (14.2)
Influenza A (H3)	0 (0.0)	71 (0.7)
Influenza A no subtyping	0 (0.0)	5,792 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



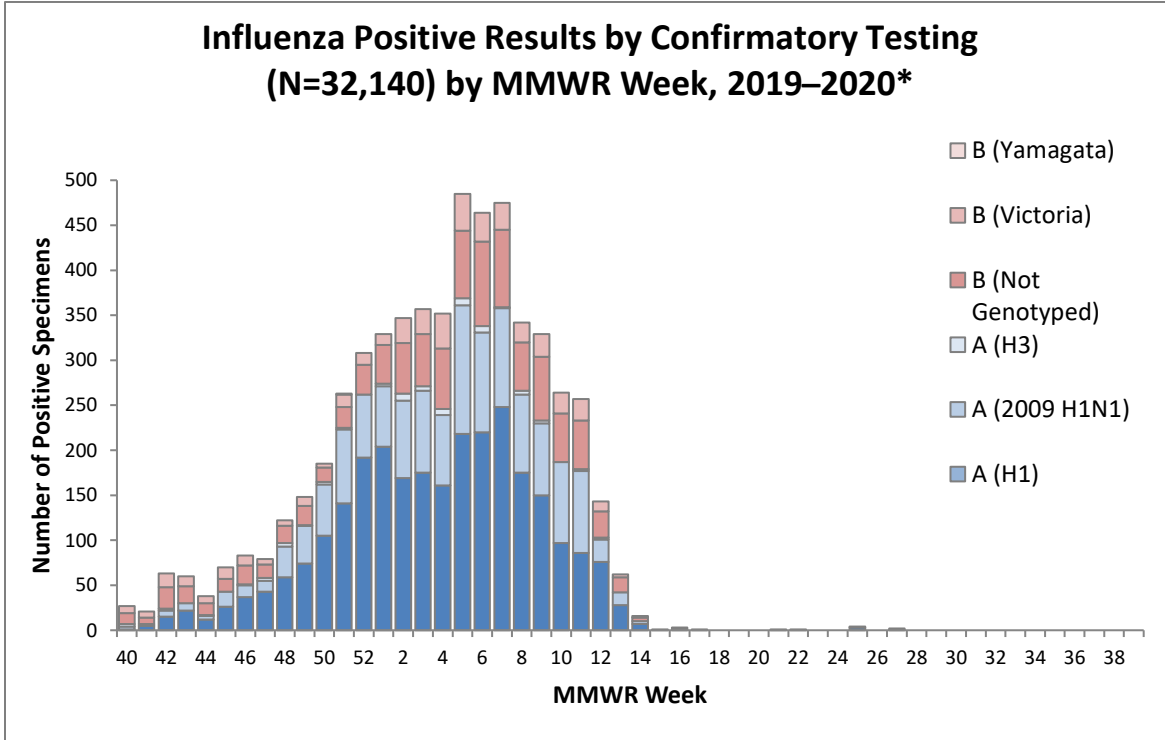
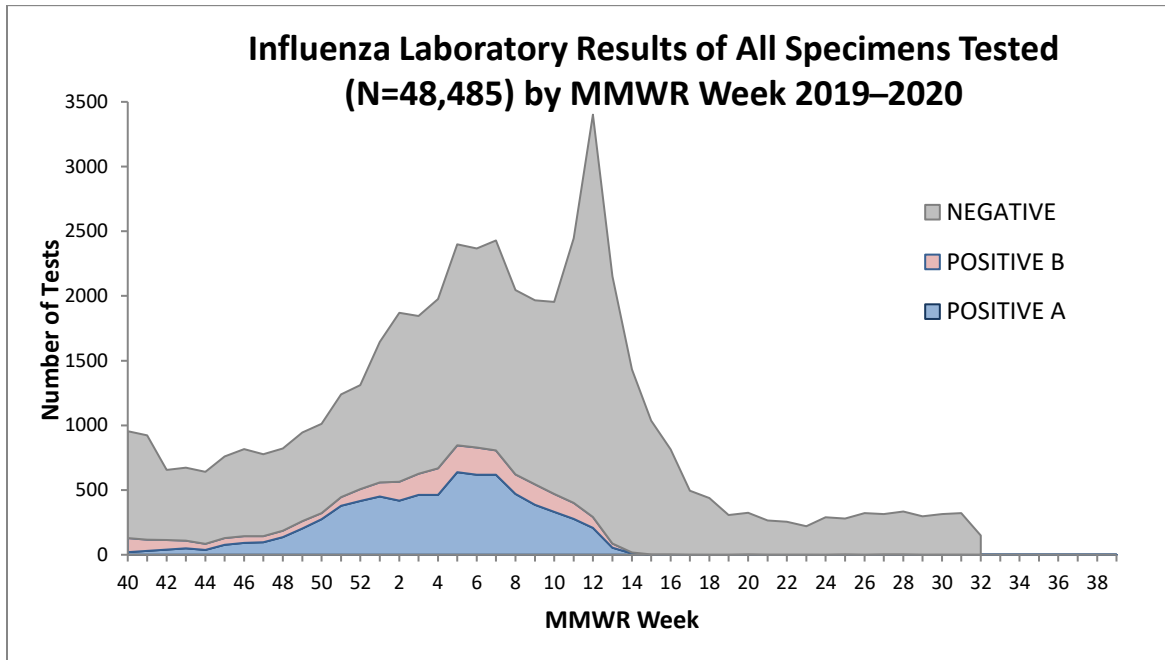
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks’ post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state’s population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 34¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 101 surveillance specimens have been tested statewide for COVID-19 (positive: 18 [17.8%]).*
- *Season to date: A total of 3,117 surveillance specimens have been tested for COVID-19 (positive: 142 [4.6%])*
 - *824 specimens have been tested at SLD¹³.*

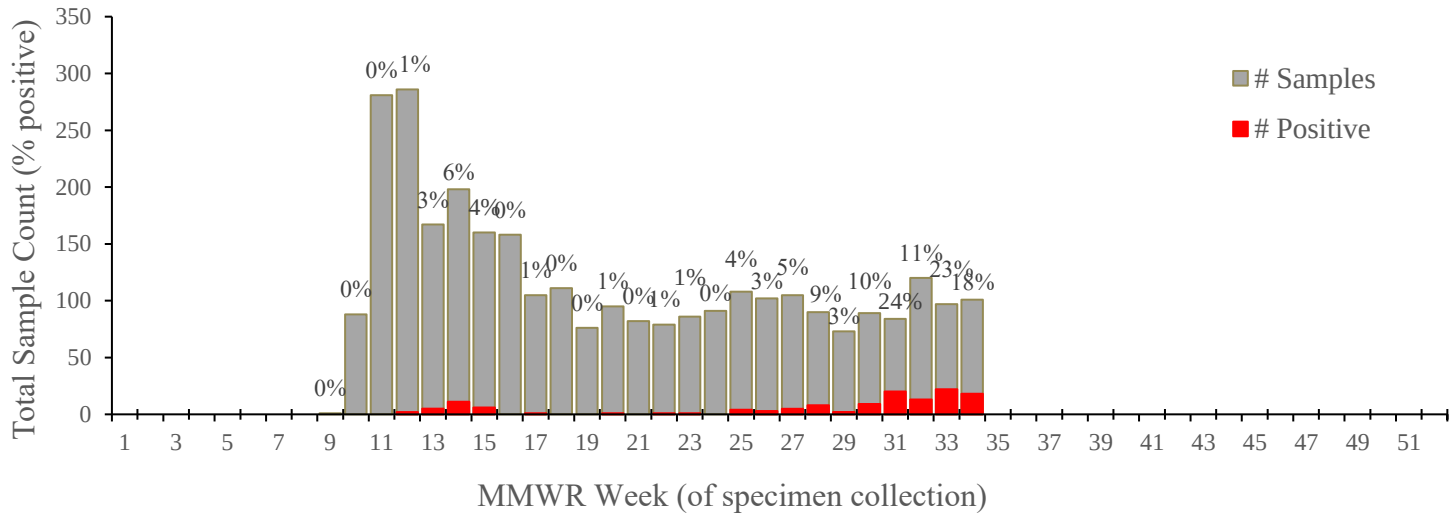
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	328	0.6	0-17	448	2.8
Honolulu	1,989	6.4	18-64	1,868	5.5
Kauai	170	0.6	65+	791	3.4
Maui	401	2.7			
Missing	229	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii’s private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=3,117), % Positive



III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

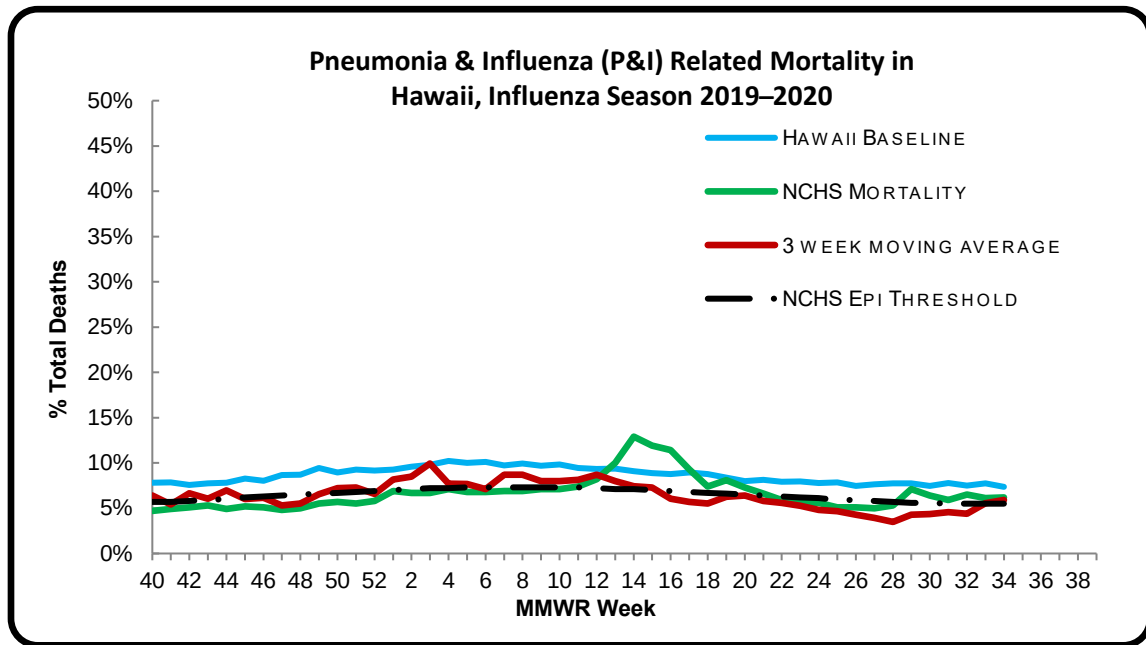
For **week 34** of the current influenza season:

5.4% of all deaths that occurred in Hawaii during week 34 were related to pneumonia or influenza. For the current season (season to date: 6.5%), there have been 10,382 deaths from any cause, 671 of which were due to P&I.

- *The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).*
- *The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (6.2%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (5.5%) (i.e., inside the 95% confidence interval) for week 34.*

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 34. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019-2020 season were reported to CDC during week 34. (2019-2020 season total: 188).

Of the 188 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 116 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 34.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

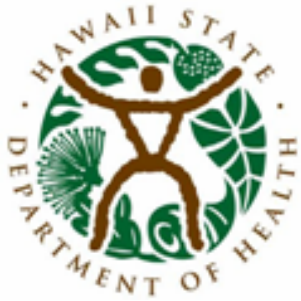
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 35: AUGUST 23, 2020–AUGUST 29, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 35

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.8%	Higher than the previous week. Comparable to Hawaii's historical baseline, comparable to the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Comparable to the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.3%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 36)	24.2%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.7%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

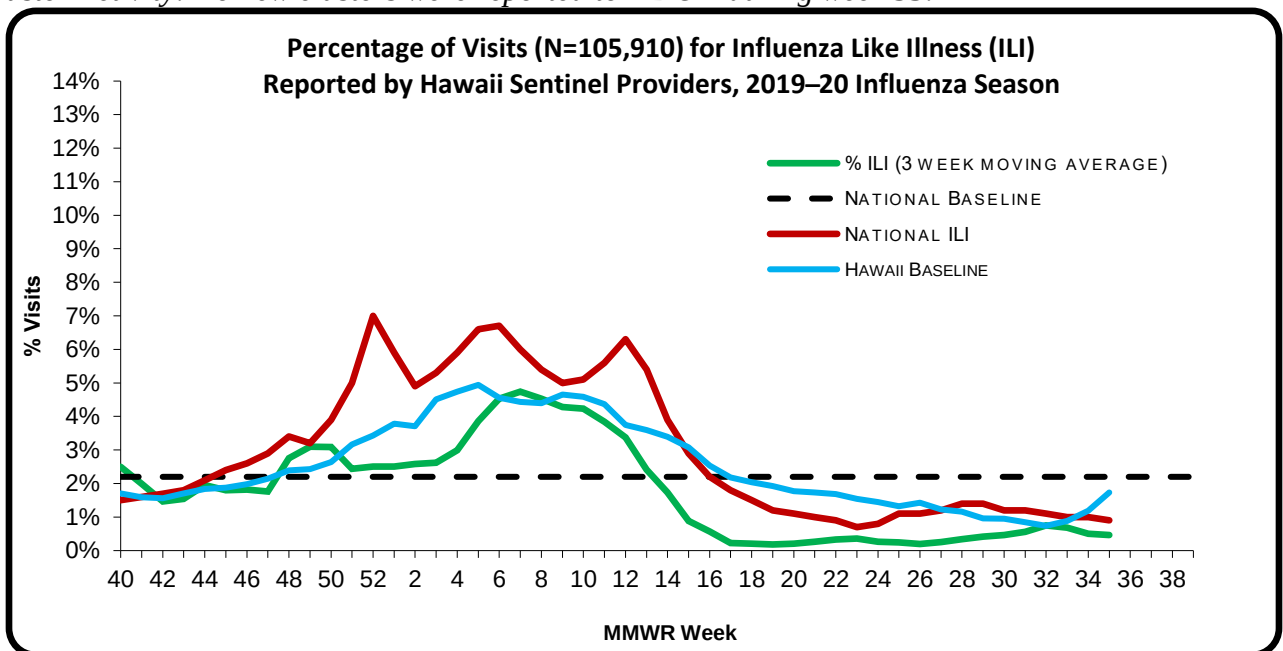
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 35** of the current influenza season:

- **0.8%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii^{3,4} (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**0.9%**) (i.e., inside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 35.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1–3), low (levels 4–5), moderate (levels 6–7), and high (levels 8–10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii’s major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

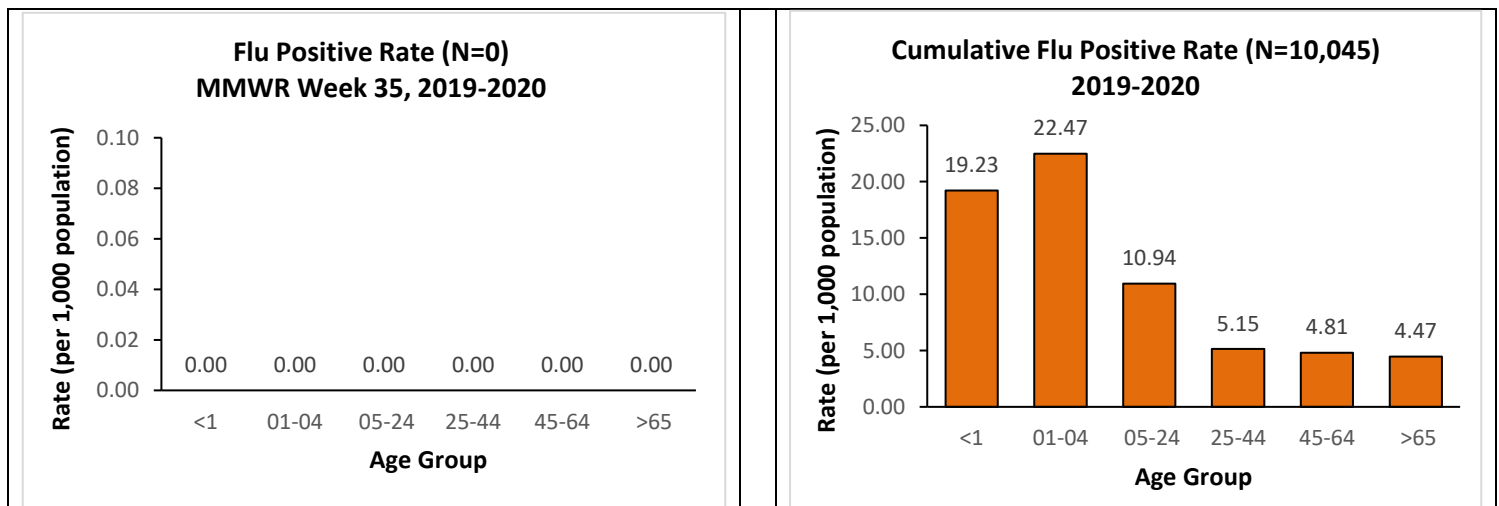
A. INFLUENZA:

- The following reflects laboratory findings for week 35 of the 2019–20 influenza season:
 - A total of **312** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 49,453 tested [20.3% positive])
 - 99 (31.7%) were screened only by rapid antigen tests with no confirmatory testing.
 - 213 (68.3%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 312 (100.0%) were negative.

Influenza type	Current week 35 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,428 (14.2)
Influenza A (H3)	0 (0.0)	76 (0.7)
Influenza A no subtyping	0 (0.0)	5,787 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



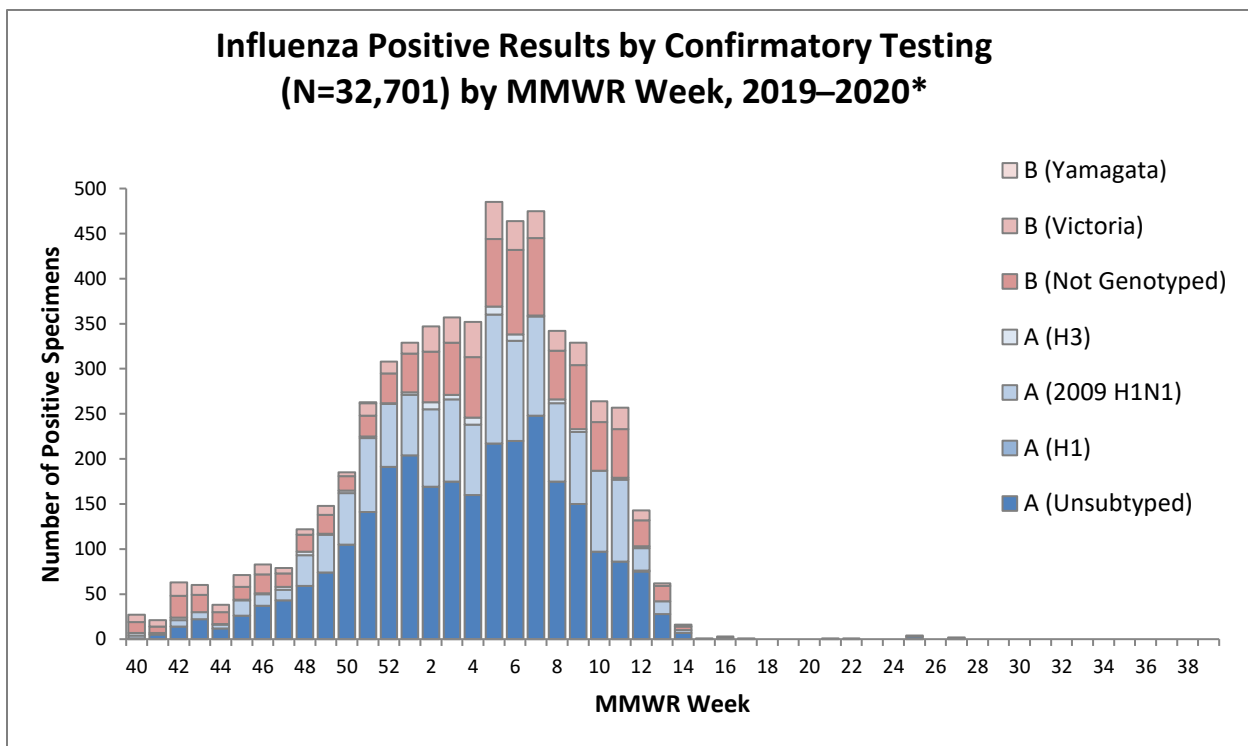
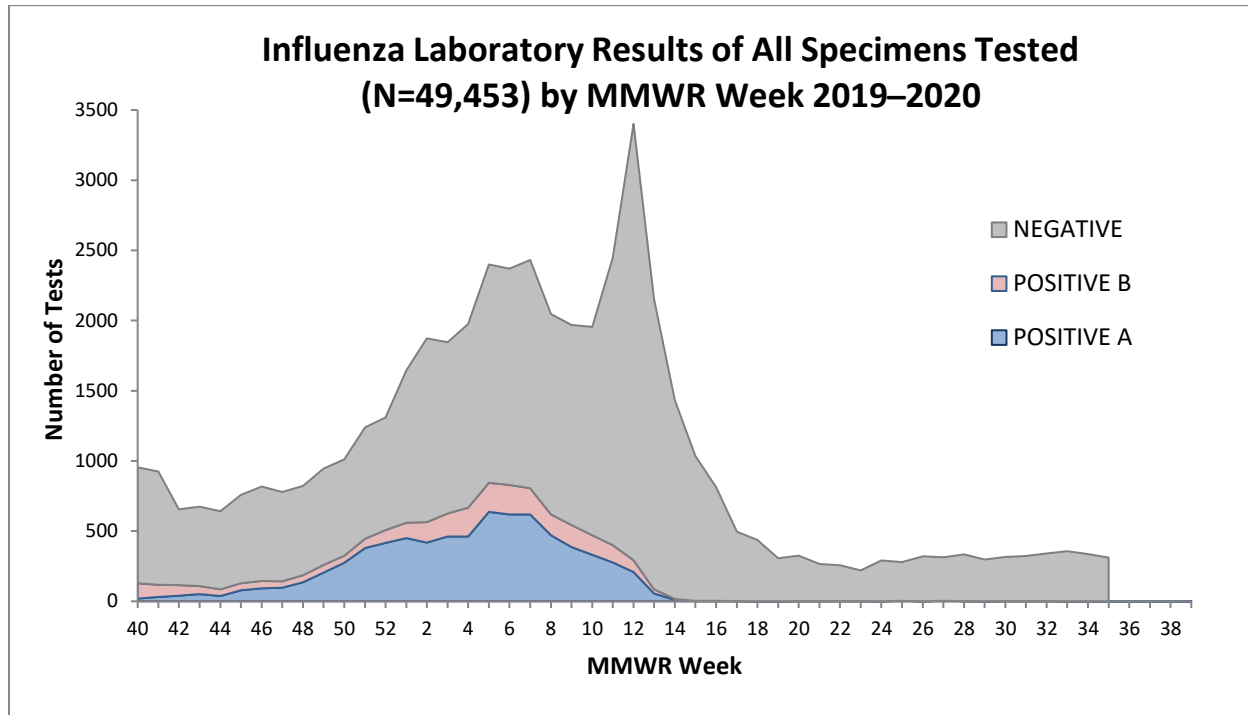
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks’ post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 36¹¹ of the 2019–20 influenza/respiratory disease season:

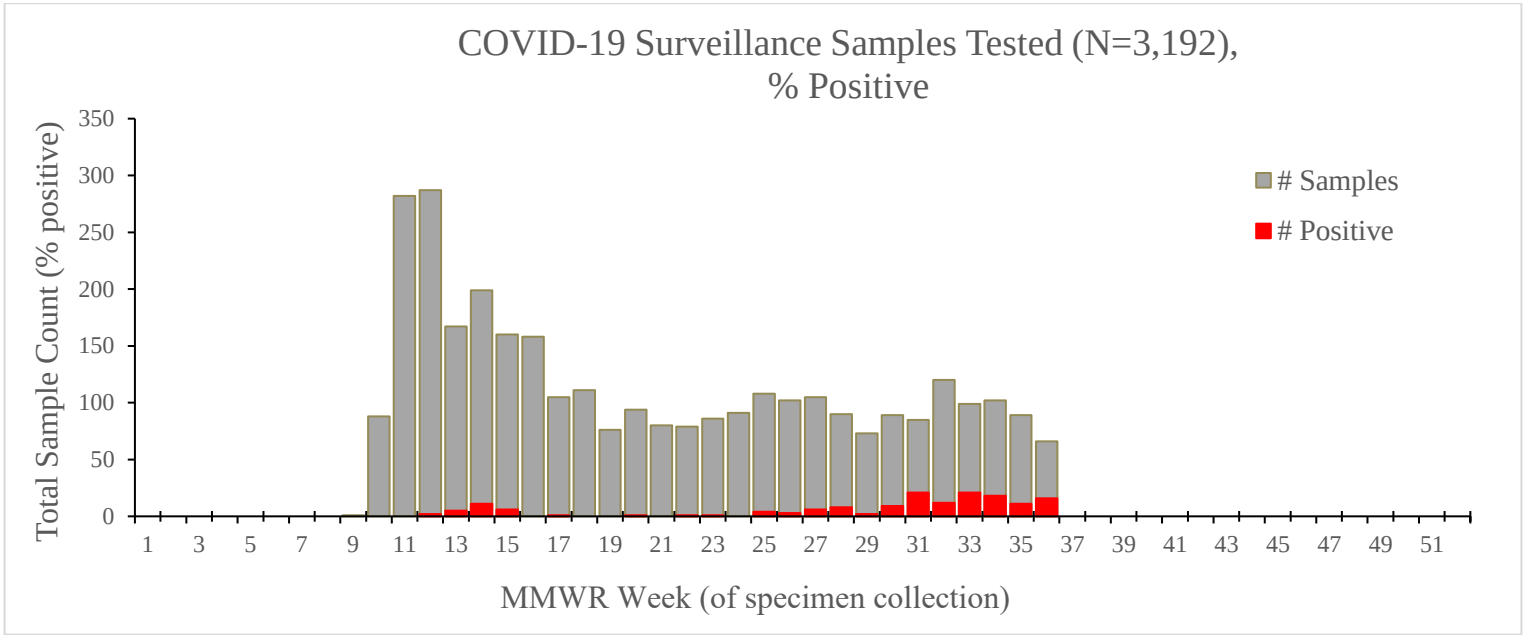
- *COVID-19 geographic spread: Regional¹²*
- *A total of 66 surveillance specimens have been tested statewide for COVID-19 (positive: 16 [24.2%]).*
- *Season to date: A total of 3,192 surveillance specimens have been tested for COVID-19 (positive: 159 [5.0%])*
 - *829 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	336	0.9	0-17	470	3.2
Honolulu	2,040	7.1	18-64	1,904	5.9
Kauai	171	0.6	65+	818	3.9
Maui	412	2.7			
Missing	233	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

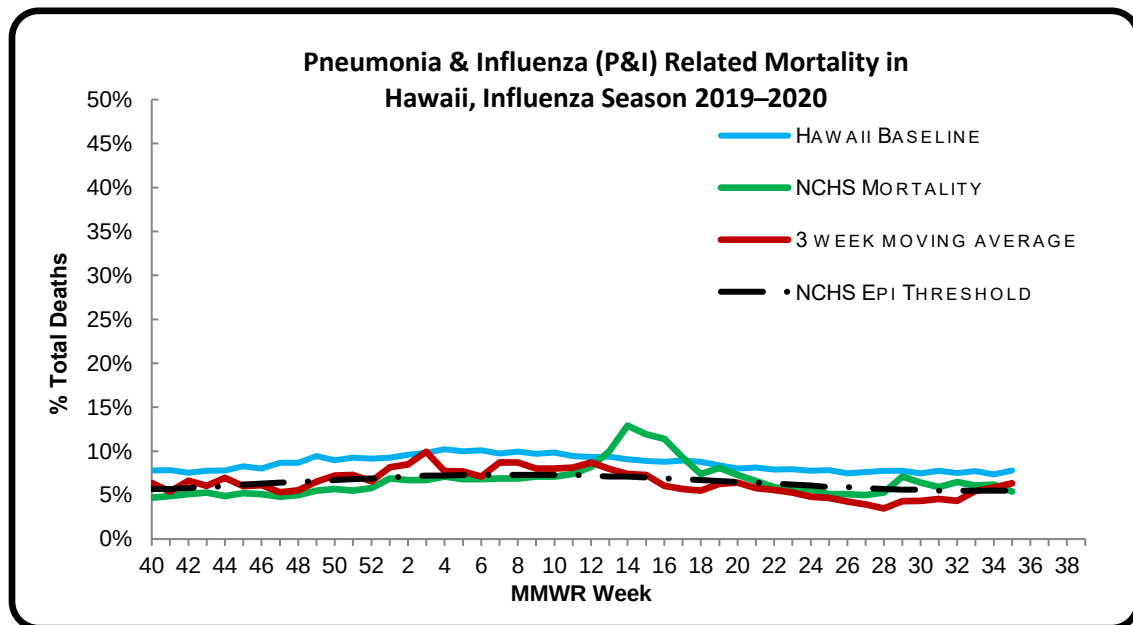


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 35** of the current influenza season:

- **6.7%** of all deaths that occurred in Hawaii during week 35 were related to pneumonia or influenza. For the current season (season to date: **6.5%**), there have been 10,603 deaths from any cause, 685 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**5.4%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.5%**) (i.e., inside the 95% confidence interval) for week 35.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 35. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 35. (2019–2020 season total: 188).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 188 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 116 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 35.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

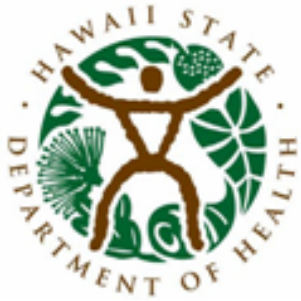
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 36: AUGUST 30, 2020–SEPTEMBER 5, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 36

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.1%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.5%	Higher than the previous week. This number means that many, if not all, of the 99.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.2%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 37)	9.3%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	1.7%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

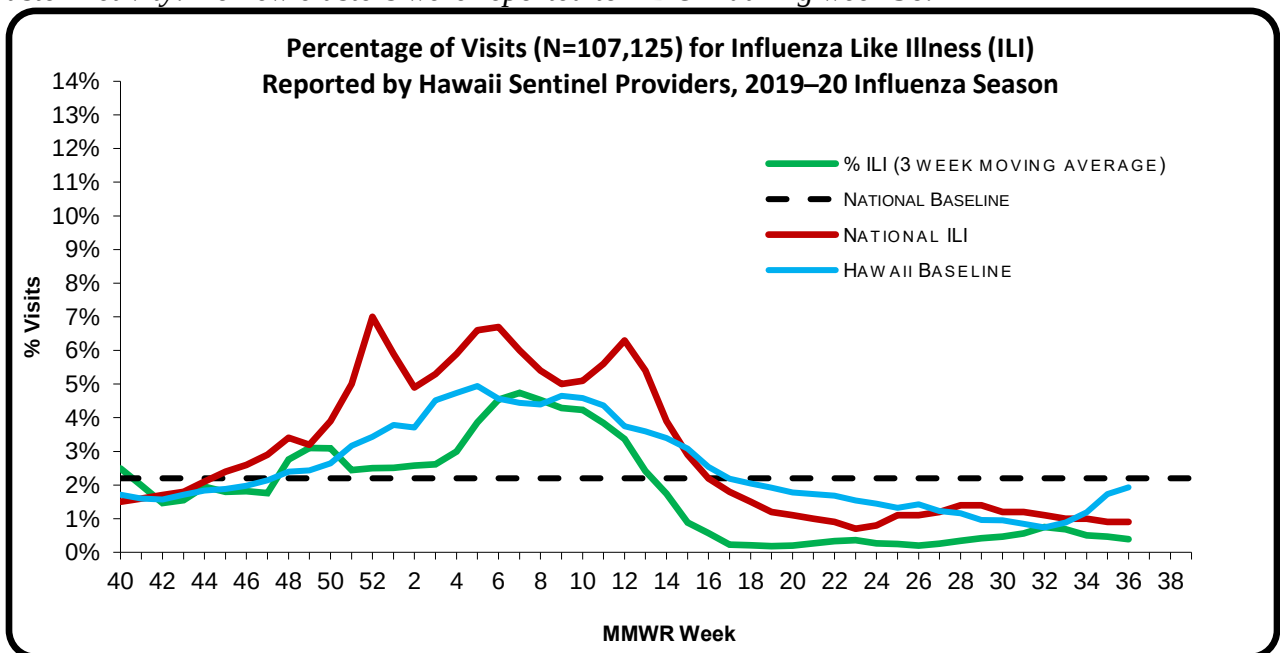
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 36** of the current influenza season:

- **0.1%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**0.9%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 36.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

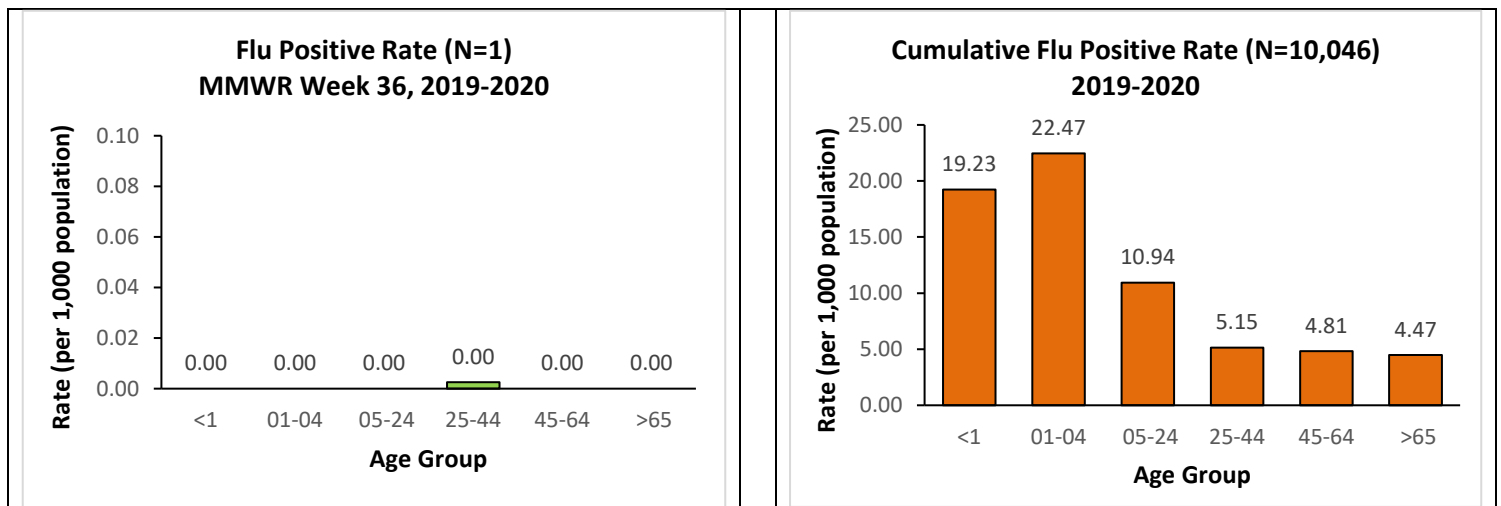
A. INFLUENZA:

- The following reflects laboratory findings for week 36 of the 2019–20 influenza season:
 - A total of 223 specimens have been tested statewide for influenza viruses (positive: 1 [0.5%]). (Season to date: 49,643 tested [20.2% positive])
 - 59 (26.5%) were screened only by rapid antigen tests with no confirmatory testing.
 - 164 (73.5%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 222 (99.5%) were negative.

Influenza type	Current week 36 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,428 (14.2)
Influenza A (H3)	0 (0.0)	76 (0.7)
Influenza A no subtyping	1 (100.0)	5,788 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



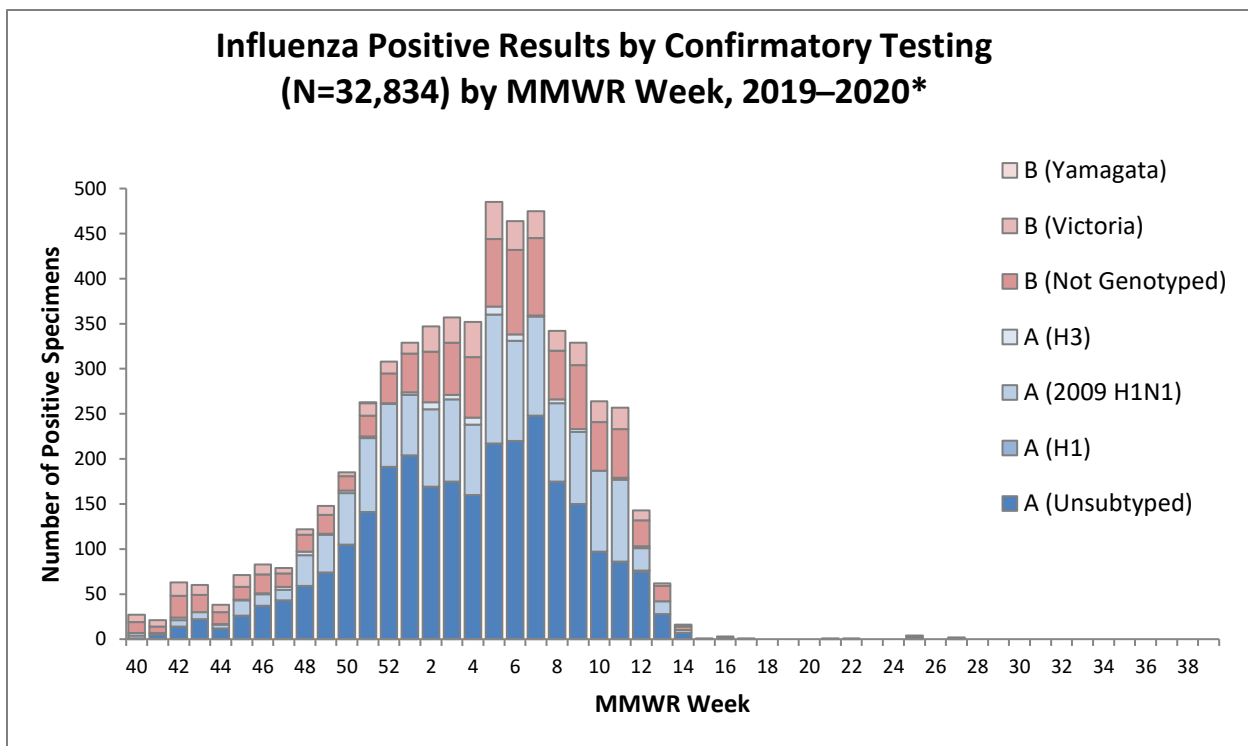
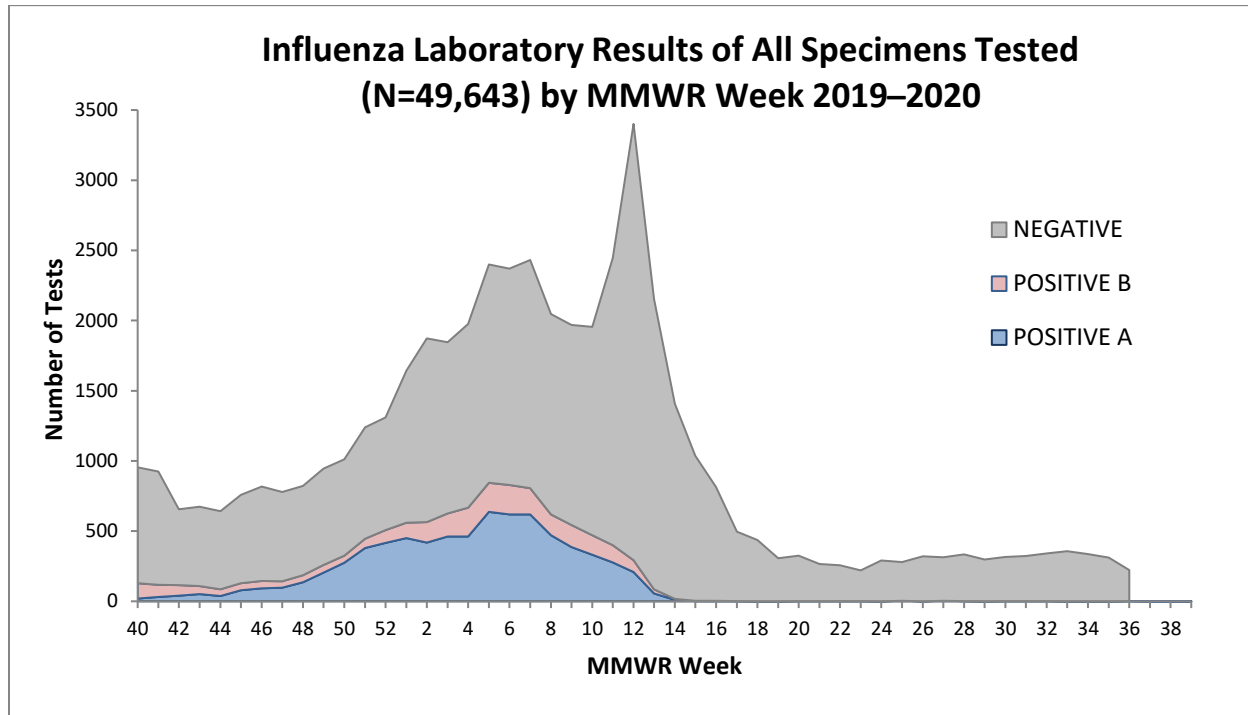
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2019–2020 FLU SEASON

MMWR Week (2019-2020)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Rhinovirus/Enterovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X							X	X		X	X		X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							X	X	X	X		X		X	X		X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 37¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 54 surveillance specimens have been tested statewide for COVID-19 (positive: 5 [9.3%]).*
- *Season to date: A total of 3,246 surveillance specimens have been tested for COVID-19 (positive: 164 [5.1%])*
 - *829 specimens have been tested at SLD¹³.*

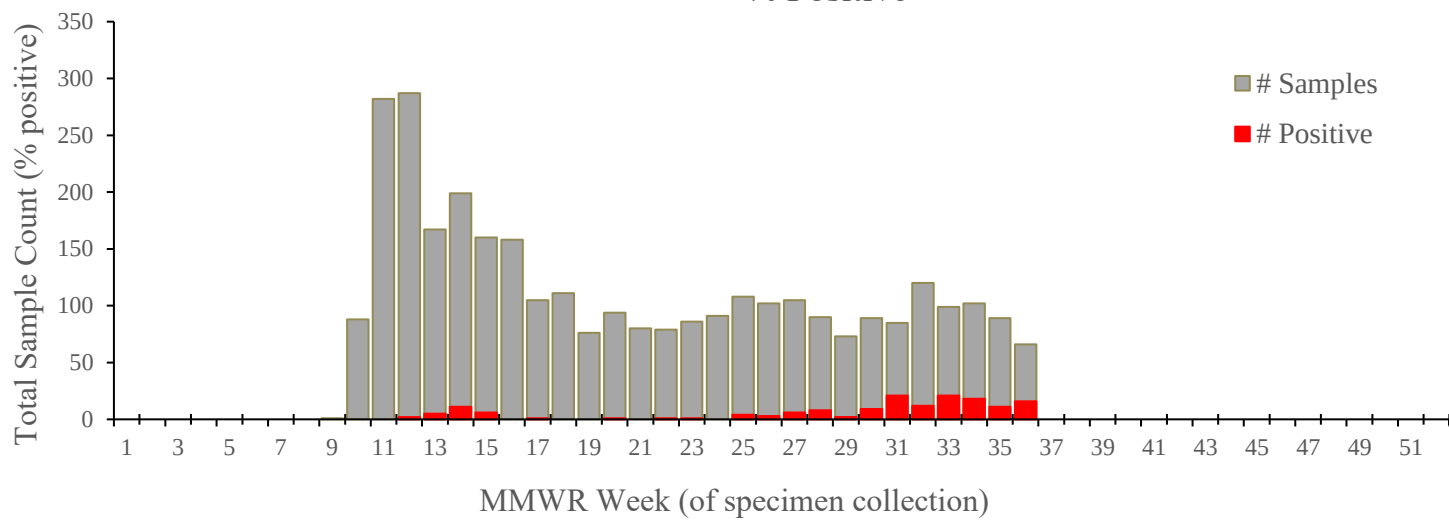
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	342	0.9	0-17	479	3.1
Honolulu	2,070	7.2	18-64	1,932	6.0
Kauai	176	0.6	65+	835	4.1
Maui	424	2.6			
Missing	234	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=3,192), % Positive

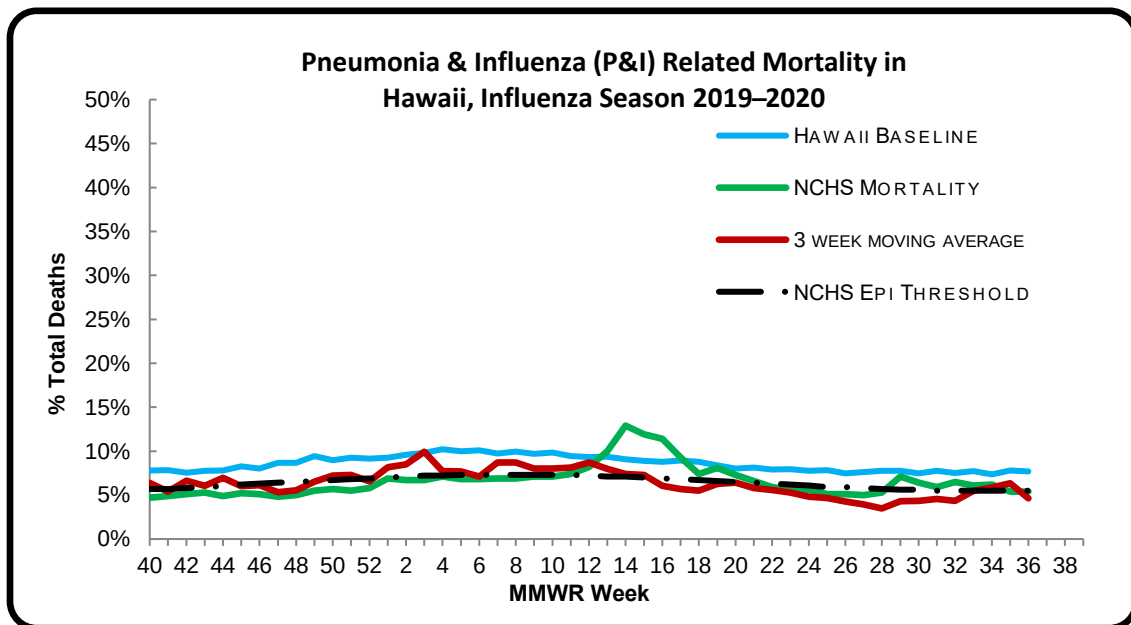


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 36** of the current influenza season:

- *1.7% of all deaths that occurred in Hawaii during week 36 were related to pneumonia or influenza. For the current season (season to date: 6.4%), there have been 10,662 deaths from any cause, 686 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii¹⁴ (i.e., outside the 95% confidence interval).*
- *The Hawaii P&I rate was lower than the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.4%) (i.e., outside the 95% confidence interval) and lower than the national epidemic threshold (5.5%) (i.e., outside the 95% confidence interval) for week 36.*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 36. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 36. (2019–2020 season total: 188).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 188 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 116 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 36.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

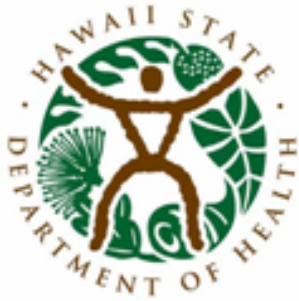
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 37: SEPTEMBER 6, 2020–SEPTEMBER 12, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 37

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.6%	Higher than the previous week. Lower than Hawaii's historical baseline, comparable to the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Lower than the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.1%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 38)	9.6%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.7%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

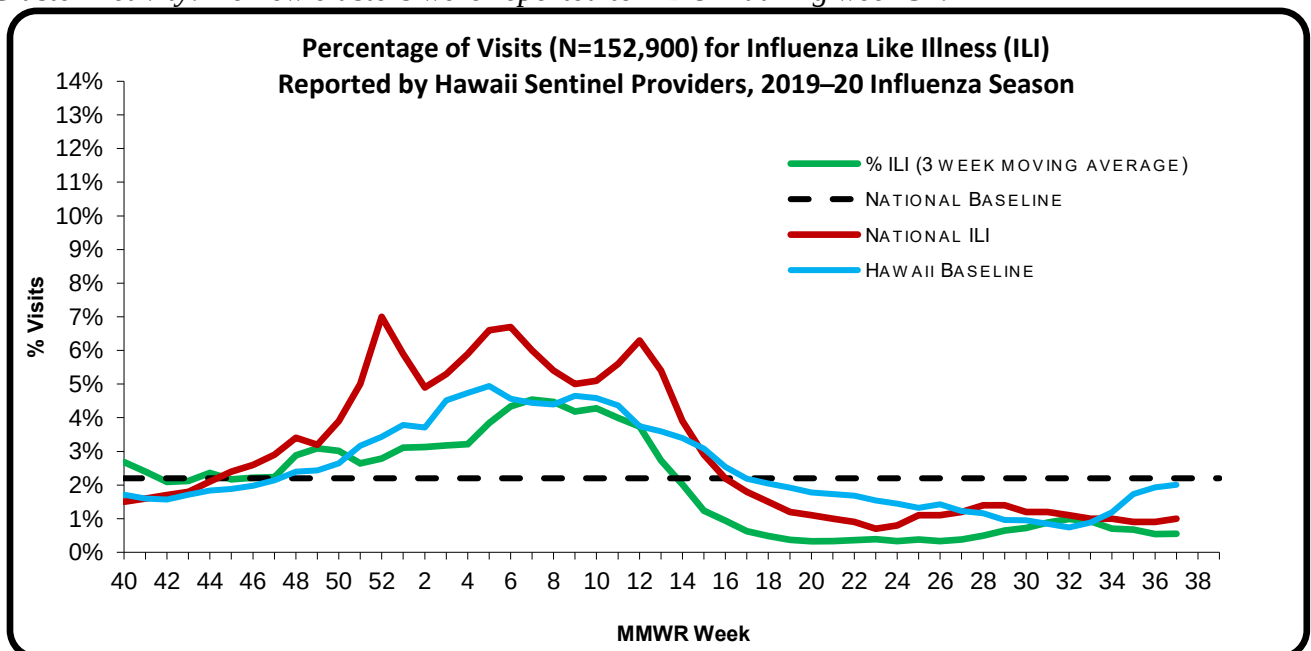
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 37** of the current influenza season:

- **0.6%** (season to date: **2.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.0%**) (i.e., inside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 37.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

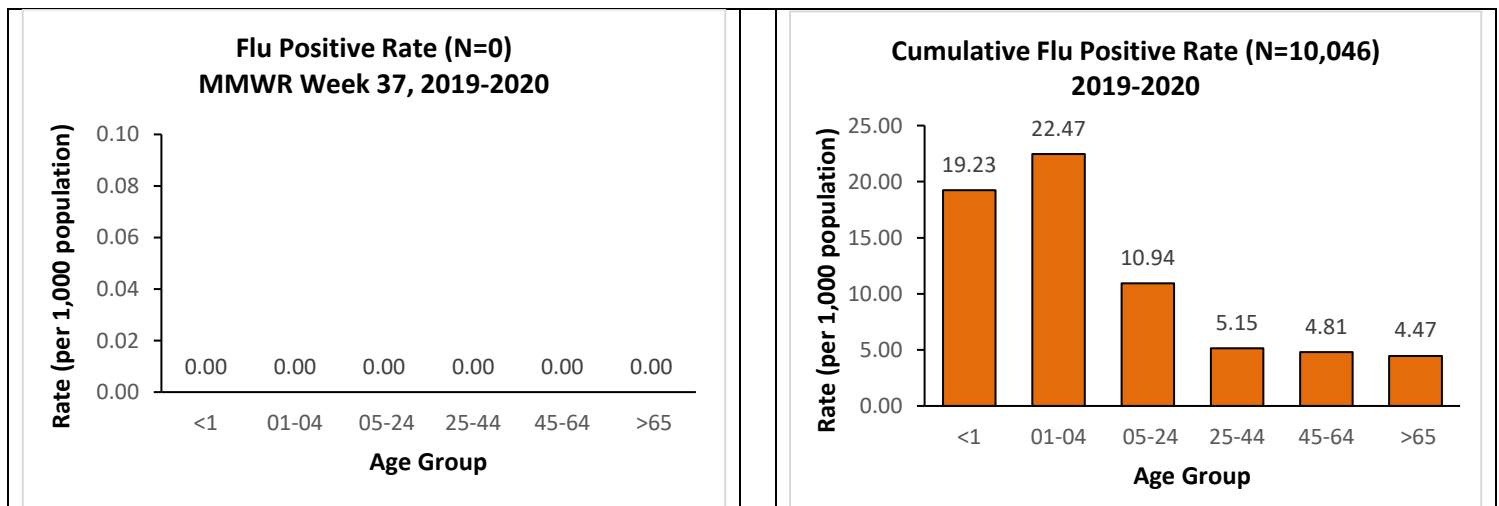
A. INFLUENZA:

- The following reflects laboratory findings for week 37 of the 2019–20 influenza season:
 - A total of **228** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 49,871 tested [20.1% positive])
 - 69 (30.3%) were screened only by rapid antigen tests with no confirmatory testing.
 - 159 (69.7%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 228 (100.0%) were negative.

Influenza type	Current week 37 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,428 (14.2)
Influenza A (H3)	0 (0.0)	76 (0.7)
Influenza A no subtyping	0 (0.0)	5,788 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



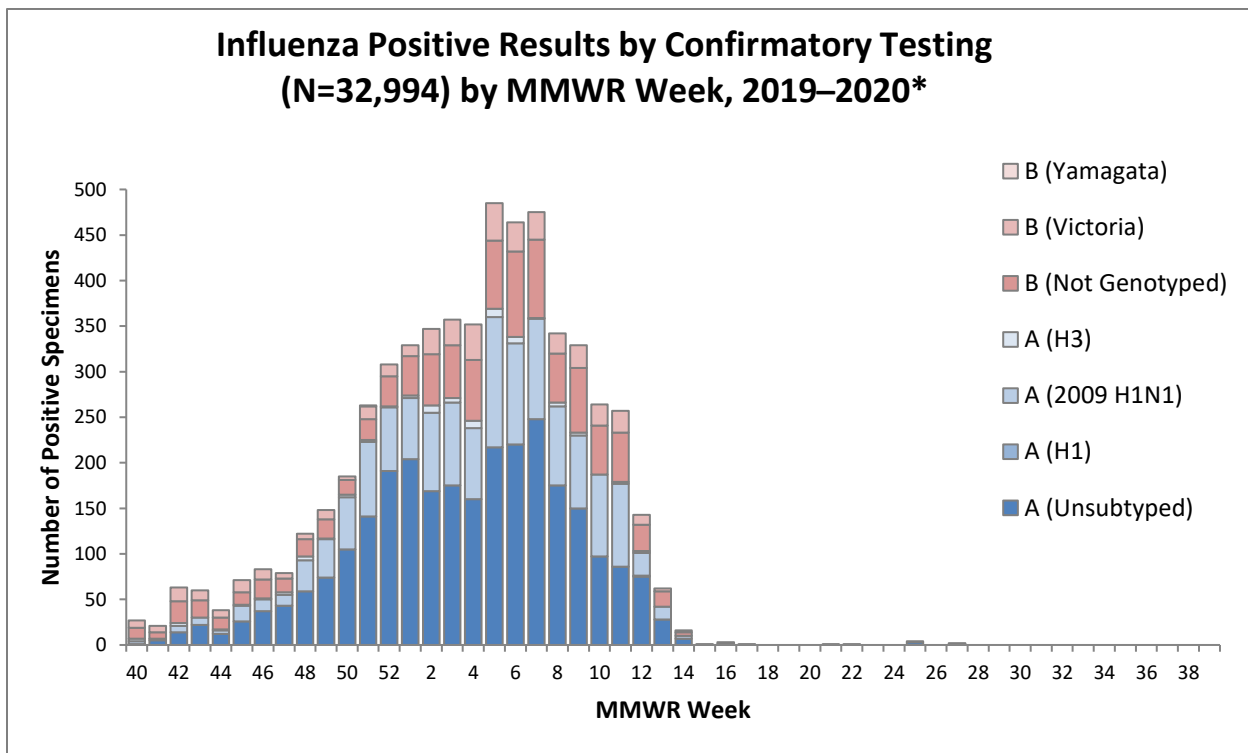
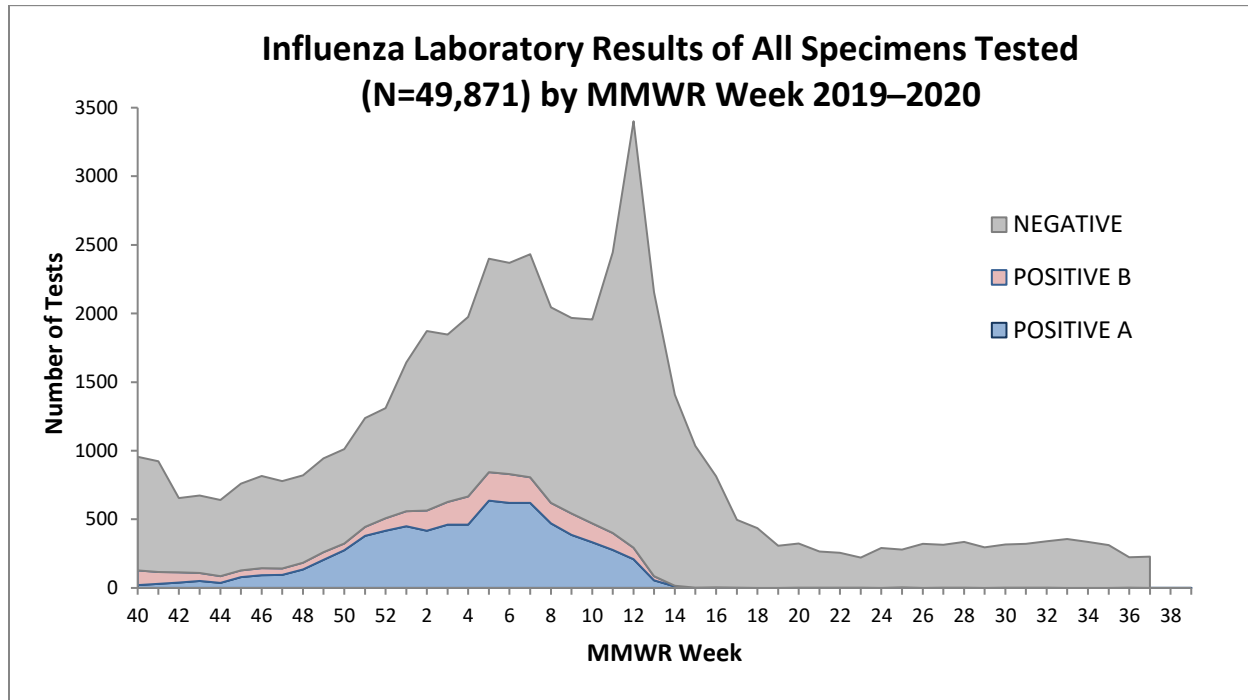
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state’s population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 38¹¹ of the 2019–20 influenza/respiratory disease season:

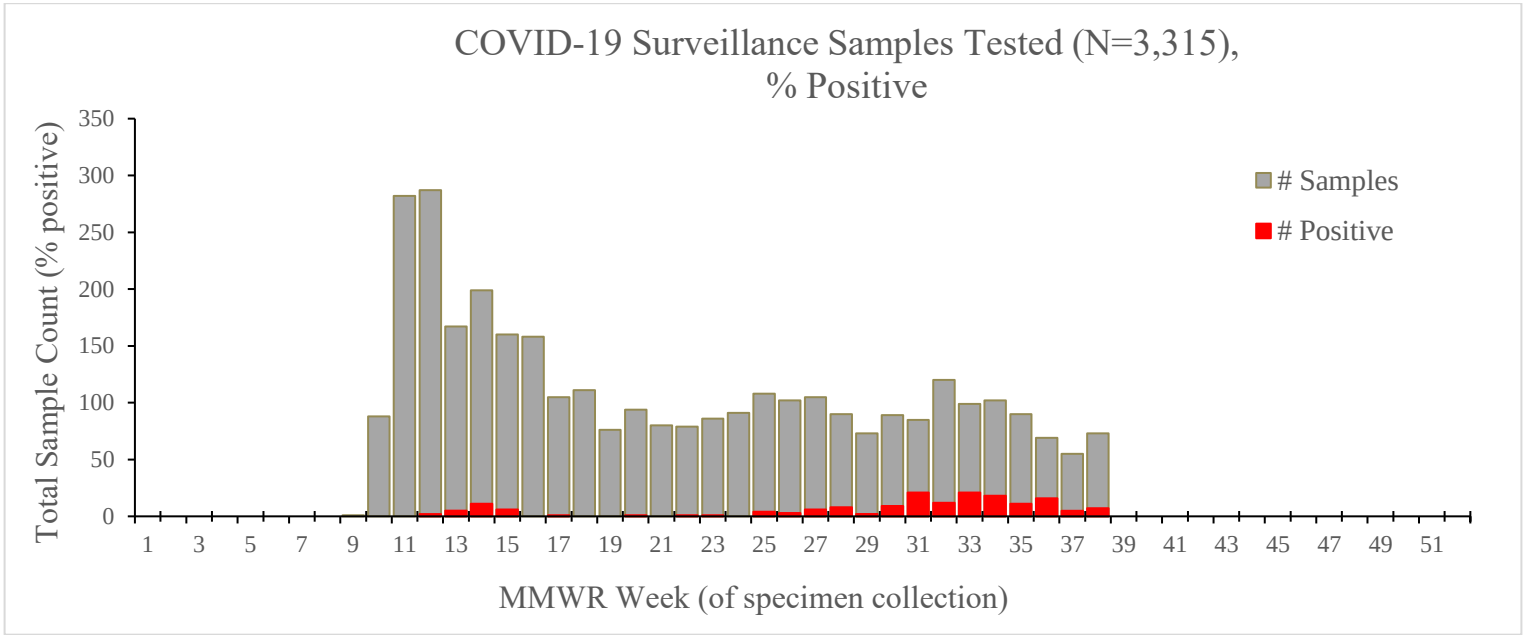
- *COVID-19 geographic spread: Regional¹²*
- *A total of 73 surveillance specimens have been tested statewide for COVID-19 (positive: 7 [9.6%]).*
- *Season to date: A total of 3,315 surveillance specimens have been tested for COVID-19 (positive: 171 [5.2%])*
 - *838 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	347	0.9	0-17	492	3.5
Honolulu	2,120	7.4	18-64	1,969	6.0
Kauai	176	0.6	65+	854	4.1
Maui	435	2.5			
Missing	237	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii’s private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

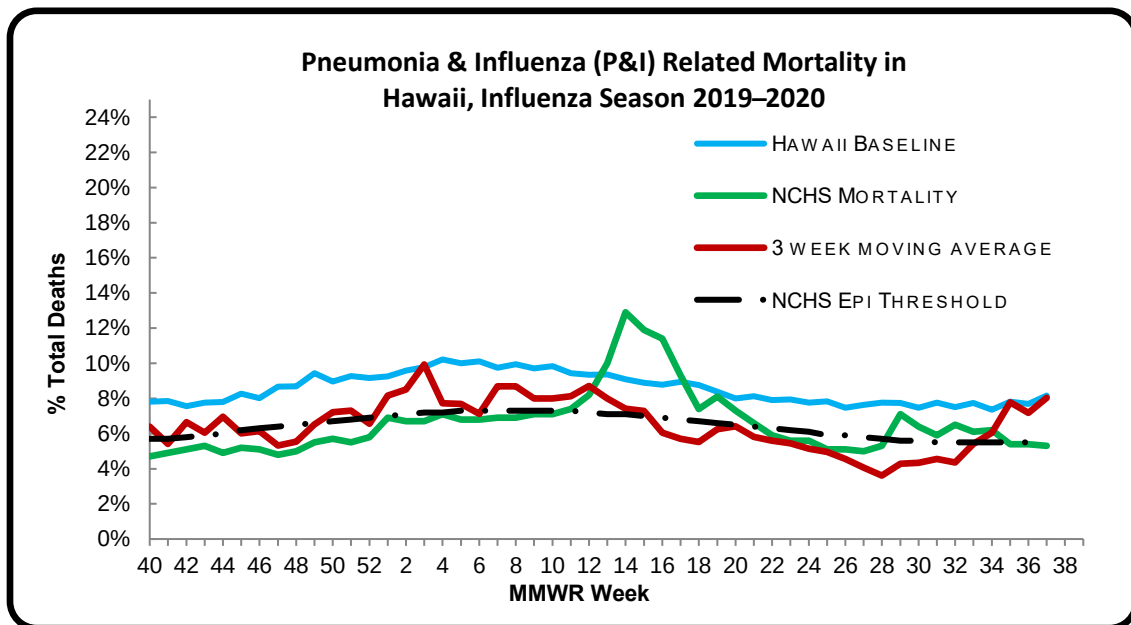


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 37** of the current influenza season:

- **8.7%** of all deaths that occurred in Hawaii during week 37 were related to pneumonia or influenza. For the current season (season to date: **6.6%**), there have been 11,127 deaths from any cause, 734 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (5.3%) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (5.5%) (i.e., inside the 95% confidence interval) for week 37.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 37. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 37. (2019–2020 season total: 188).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 188 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 116 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 37.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

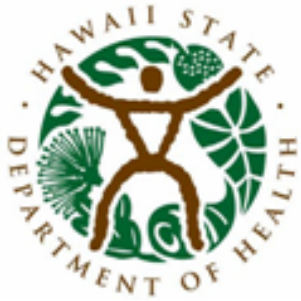
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 38: SEPTEMBER 13, 2020–SEPTEMBER 19, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 38

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.8%	Higher than the previous week. Lower than Hawaii's historical baseline, comparable to the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Comparable to the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	20.1%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 39)	9.8%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.6%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

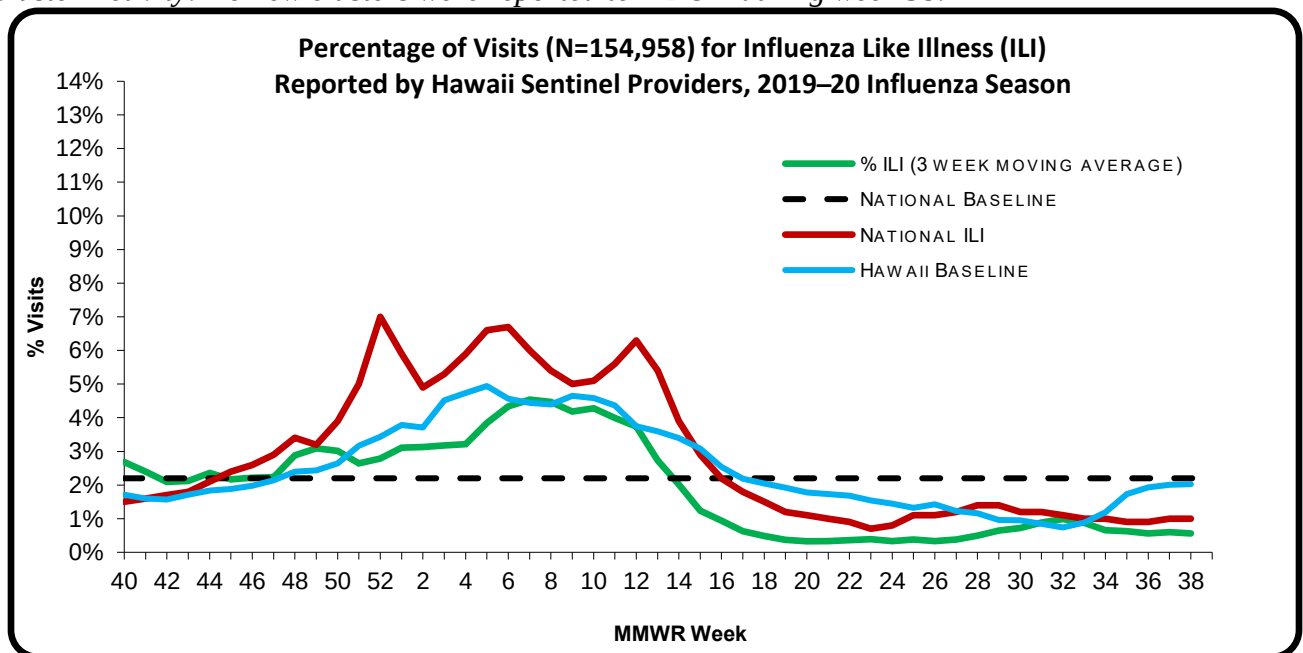
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 38** of the current influenza season:

- **0.8%** (season to date: **2.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (**1.0%**) (i.e., inside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 38.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

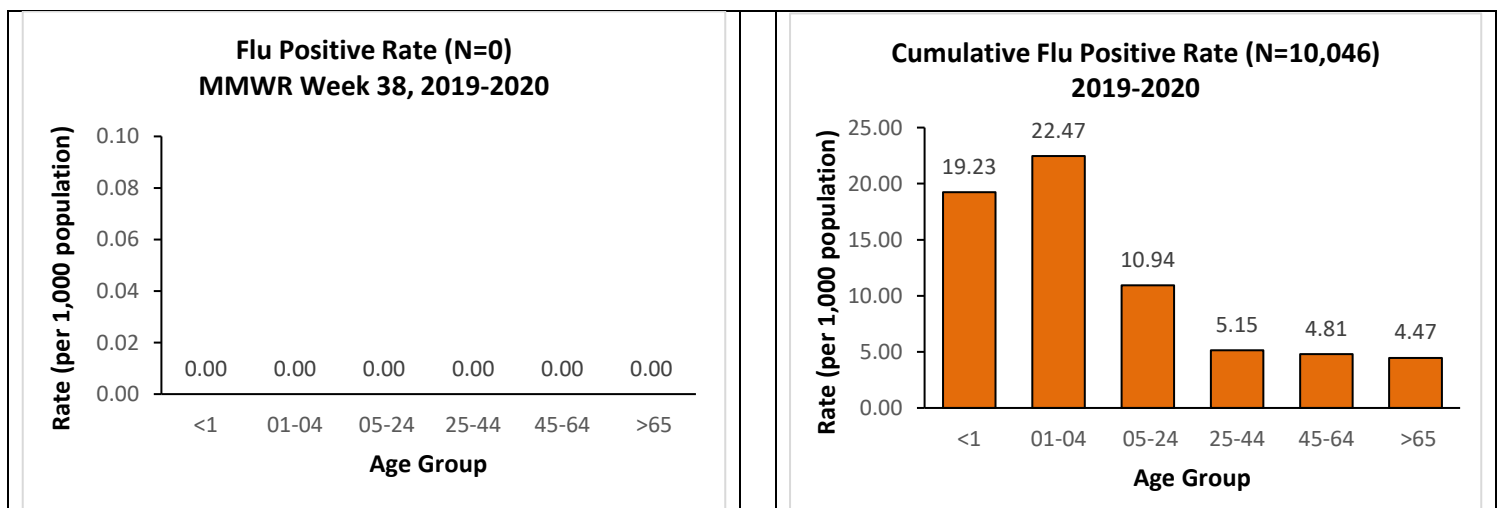
A. INFLUENZA:

- The following reflects laboratory findings for week 38 of the 2019–20 influenza season:
 - A total of **242** specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 50,114 tested [20.1% positive])
 - 68 (28.1%) were screened only by rapid antigen tests with no confirmatory testing.
 - 174 (71.9%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 242 (100.0%) were negative.

Influenza type	Current week 38 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,428 (14.2)
Influenza A (H3)	0 (0.0)	76 (0.7)
Influenza A no subtyping	0 (0.0)	5,788 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



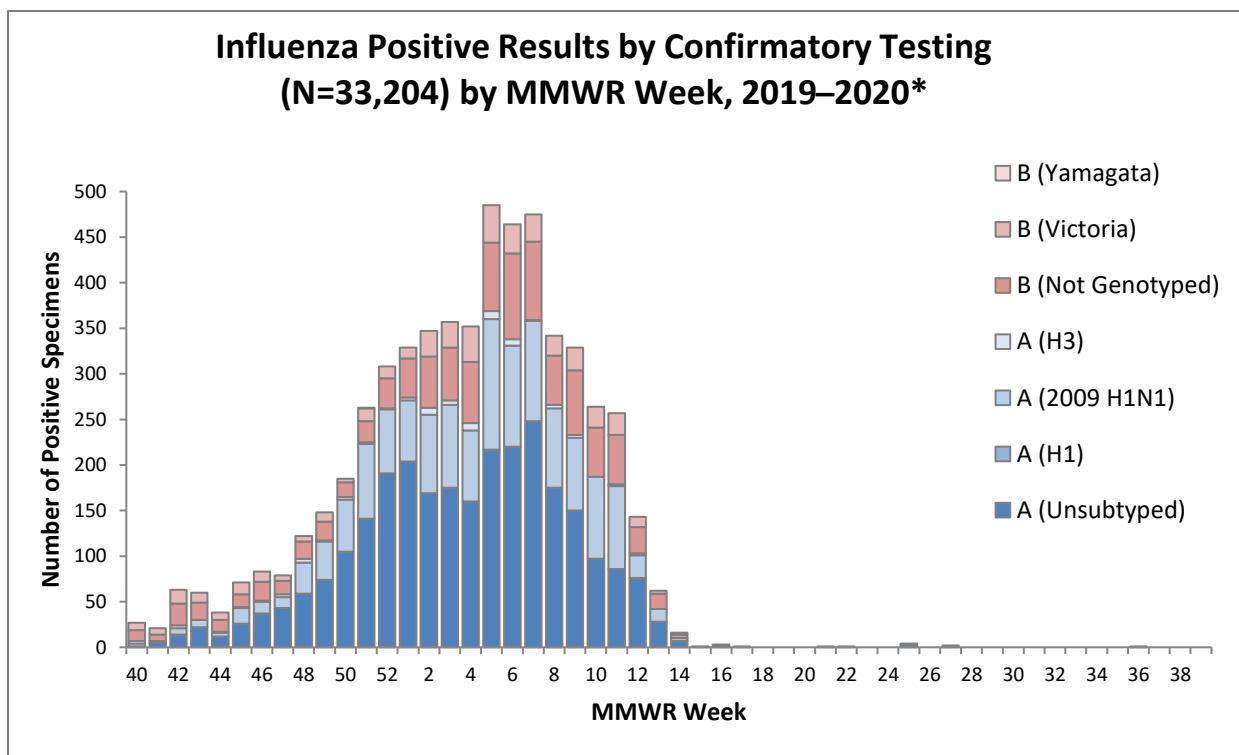
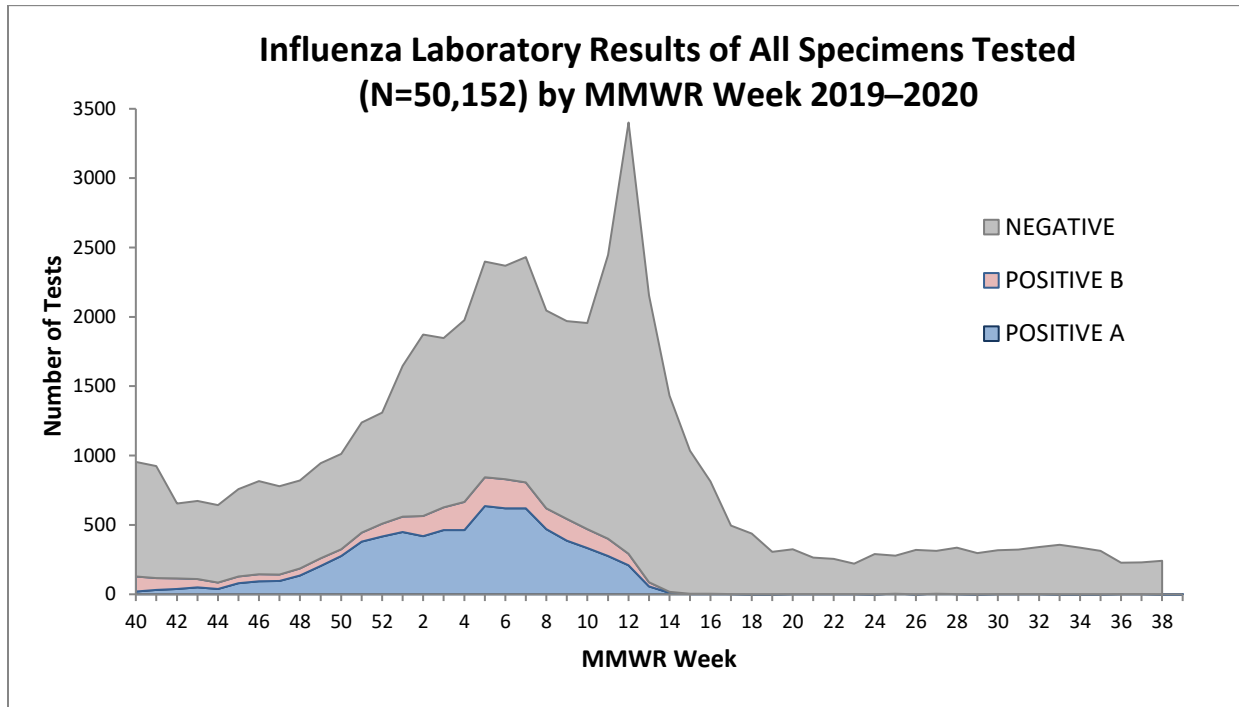
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 39¹¹ of the 2019–20 influenza/respiratory disease season:

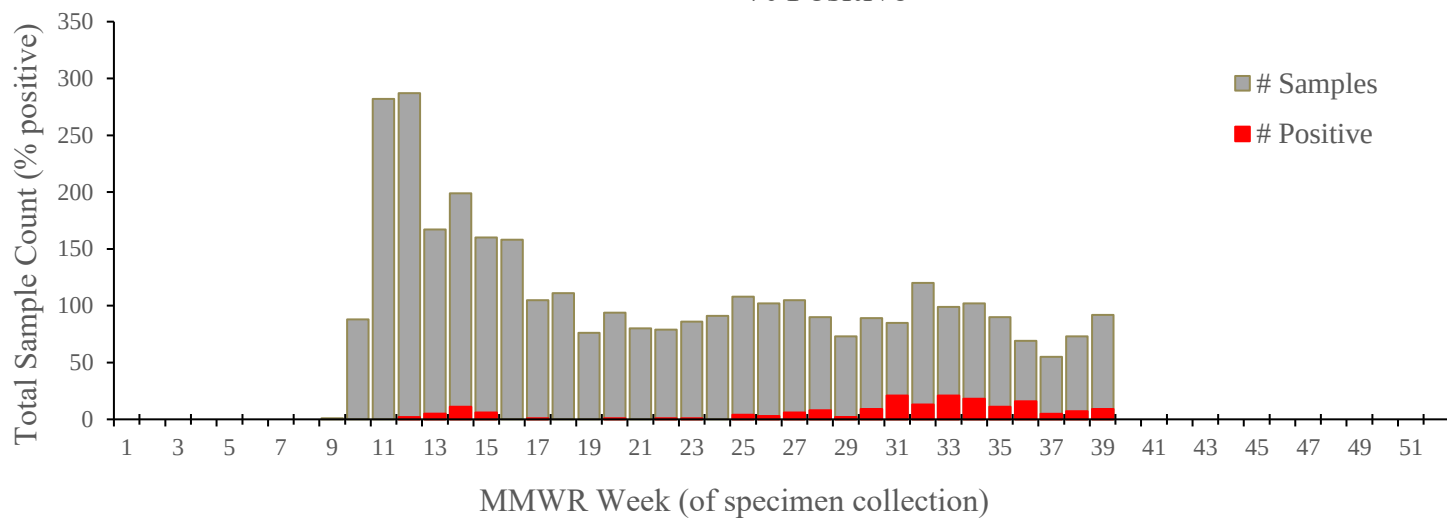
- *COVID-19 geographic spread: Regional¹²*
- *A total of 92 surveillance specimens have been tested statewide for COVID-19 (positive: 9 [9.8%]).*
 - *An additional positive from week 32 (week ending August 8, 2020) and week 38 (week ending September 19, 2020) was detected.*
- *Season to date: A total of 3,412 surveillance specimens have been tested for COVID-19 (positive: 182 [5.3%])*
 - *839 specimens have been tested at SLD¹³.*

Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	353	0.9	0-17	516	3.9
Honolulu	2,199	7.6	18-64	2,007	6.2
Kauai	177	0.6	65+	889	4.3
Maui	443	2.5			
Unknown	240	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

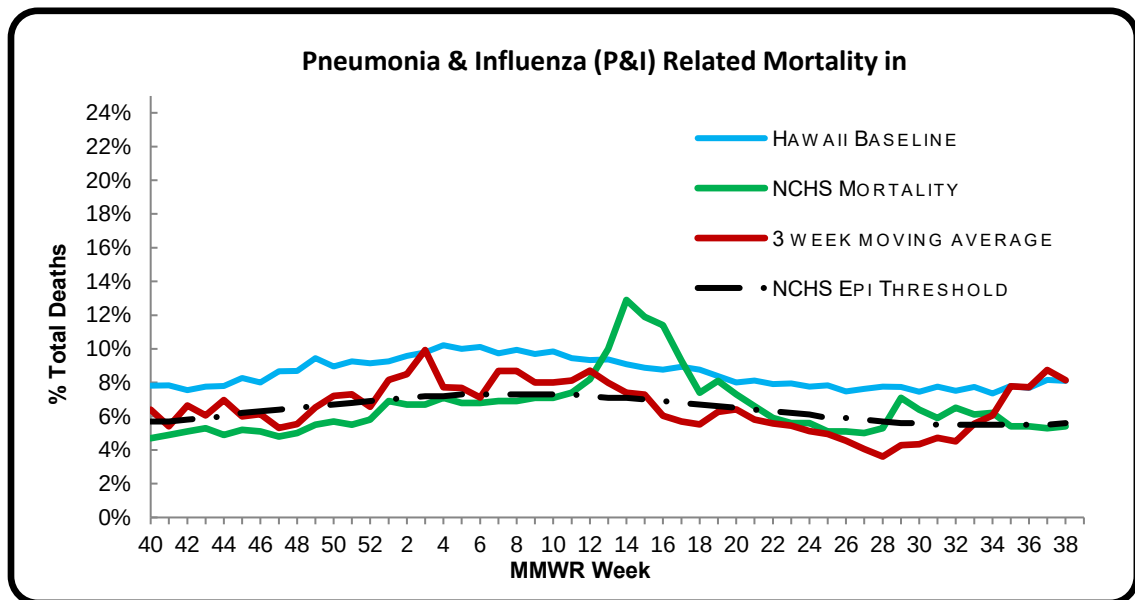
COVID-19 Surveillance Samples Tested (N=3,412),
% Positive

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 38** of the current influenza season:

- **8.6%** of all deaths that occurred in Hawaii during week 38 were related to pneumonia or influenza. For the current season (season to date: **6.7%**), there have been 11,362 deaths from any cause, 760 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**5.4%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.6%**) (i.e., inside the 95% confidence interval) for week 38.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 38. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, no influenza-associated pediatric deaths occurring during the 2019–2020 season were reported to CDC during week 38. (2019–2020 season total: 188).

Of the 188 influenza-associated pediatric deaths occurring during the 2019–2020 season and reported to CDC:

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, 2015–2016, 2016–2017, 2017–2018, and 2018–2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

- 116 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 38.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza

vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

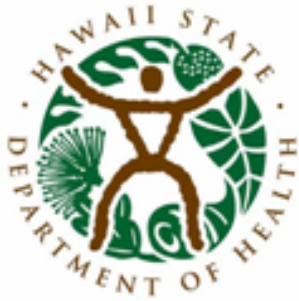
For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

Influenza/Respiratory Disease Surveillance Report Morbidity and Mortality Weekly Report (MMWR)¹

WEEK 39: SEPTEMBER 20, 2020–SEPTEMBER 26, 2020

OVERVIEW: The Hawaii State Department of Health (HDOH) monitors influenza and other respiratory pathogens, including COVID-19, throughout the state of Hawaii. Influenza surveillance in the state of Hawaii relies upon selected sentinel health practitioners, the State Laboratories Division (SLD), private laboratories, and the Office of Health Status Monitoring (OHSM). For detailed information concerning influenza, please visit the HDOH Disease Outbreak Control Division (HDOH DOCD) website ([here](#)). **All data and information are conditional and may change as more reports are received.** The data in this report reflect the 2019–20 influenza season which began the week ending October 5, 2019 (week 40¹ 2019) and will end the week ending on September 26, 2020 (week 39 2020).

REPORT SNAPSHOT FOR WEEK 39

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.4%	Lower than the previous week. Lower than Hawaii's historical baseline, lower than the national ILI rate, and lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 43 clusters this season.

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	0.0%	Comparable to the previous week. This number means that many, if not all, of the 100.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	19.9%	
Percent of respiratory sentinel surveillance specimens positive for COVID-19 (week 40)	10.4%	Sentinel surveillance specimens selected among respiratory specimens according to specific criteria ²

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.3%	Comparable to Hawaii's historical baseline, comparable to the national epidemic threshold and comparable to the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	1	

¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.** Data reported will begin on week 40, the traditional start date of flu season.

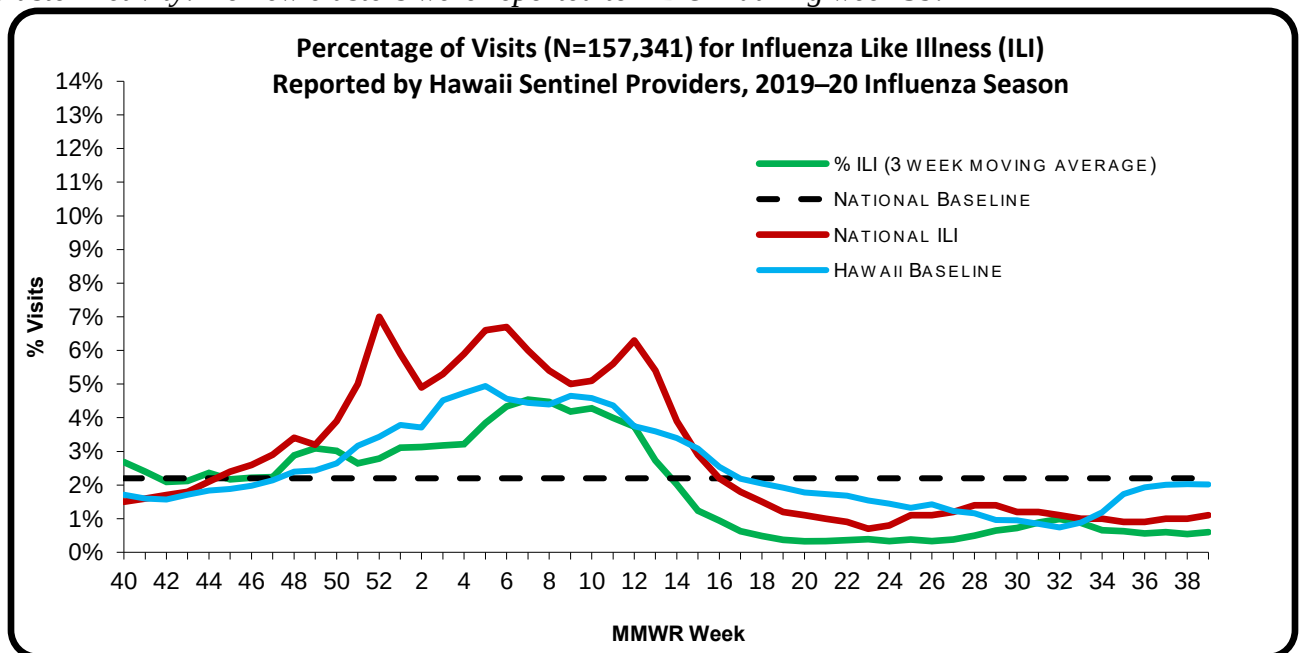
² Patients must meet the following criteria to be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, and demonstrates respiratory symptoms.

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits for ILI as well as the total number of patients who complained of symptoms consistent with an ILI. A patient with ILI must have the following: a fever (temperature of 100°F [37.8°C] or greater) AND a cough and/or a sore throat without a known cause other than influenza. ILI is based on reported symptoms and not laboratory confirmed tests; thus, ILI may represent other respiratory pathogens and not solely influenza. Further, sentinel providers report these numbers on a weekly basis; therefore, data are preliminary and may change depending on additional reporting. In combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website ([here](#)).

For **week 39** of the current influenza season:

- **0.4%** (season to date: **2.1%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii^{3,4} (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (**2.4%**)⁵ (i.e., outside the 95% confidence interval) and lower than the national ILI rate (**1.1%**) (i.e., outside the 95% confidence interval).
- ILI activity level: Minimal⁶
- Geographic Spread: Sporadic Activity⁷.
- ILI Cluster Activity: No new clusters were reported to HDOH during week 39.



³ The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁴ This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

⁵ The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

⁶ There are 10 activity levels classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), and high (levels 8-10).

⁷ The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses but does not measure the severity of influenza activity. Sporadic: no clusters reported to HDOH, Local: one or more clusters reported in one county, Regional: clusters reported two to three counties, Widespread: clusters reported in all counties. Hawaii does not report No Activity, as flu circulates year-round in Hawaii.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria⁸ are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

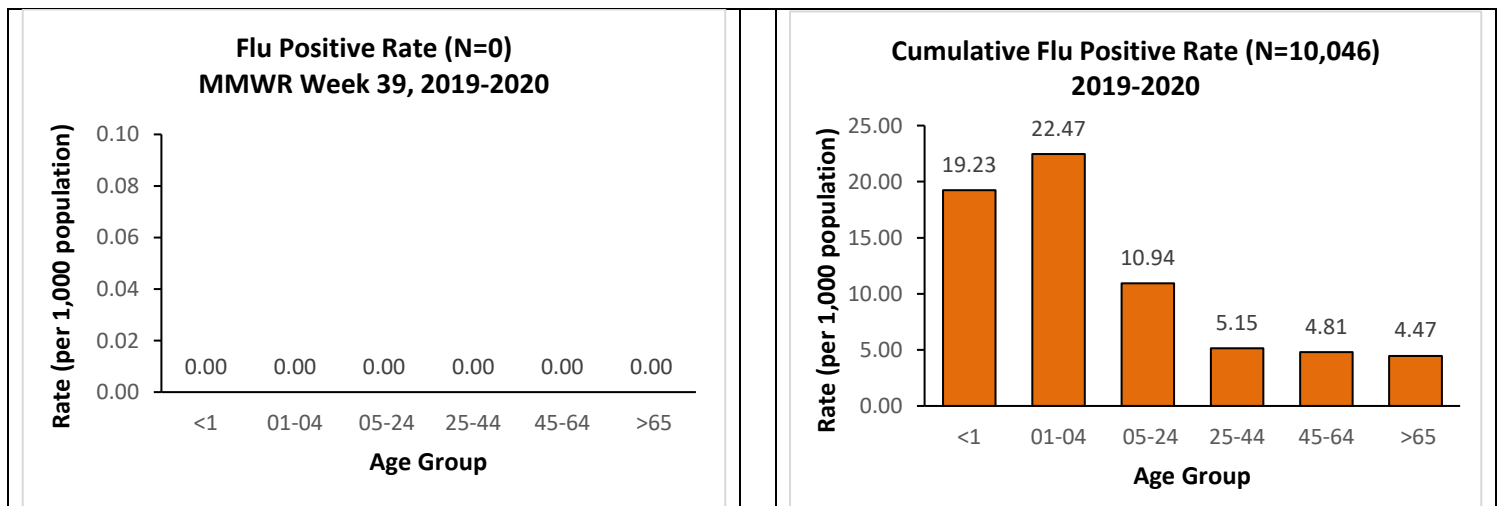
A. INFLUENZA:

- The following reflects laboratory findings for week 39 of the 2019–20 influenza season:
 - A total of 279 specimens have been tested statewide for influenza viruses (positive: 0 [0.0%]). (Season to date: 50,408 tested [19.9% positive])
 - 59 (21.1%) were screened only by rapid antigen tests with no confirmatory testing.
 - 220 (78.9%) underwent confirmatory testing (either RT-PCR or viral culture).
 - 279 (100.0%) were negative.

Influenza type	Current week 39 (%)	Season to date (%)
Influenza A (H1) ⁹	0 (0.0)	1,428 (14.2)
Influenza A (H3)	0 (0.0)	76 (0.7)
Influenza A no subtyping	0 (0.0)	5,788 (57.7)
Influenza B (Yamagata)	0 (0.0)	1 (0.0)
Influenza B (Victoria)	0 (0.0)	449 (4.5)
Influenza B no genotyping	0 (0.0)	2,304 (22.9)

1. AGE DISTRIBUTION

The charts below indicate the population-based rates of positive influenza cases in Hawaii by age group during the 2019–20 influenza season.¹⁰



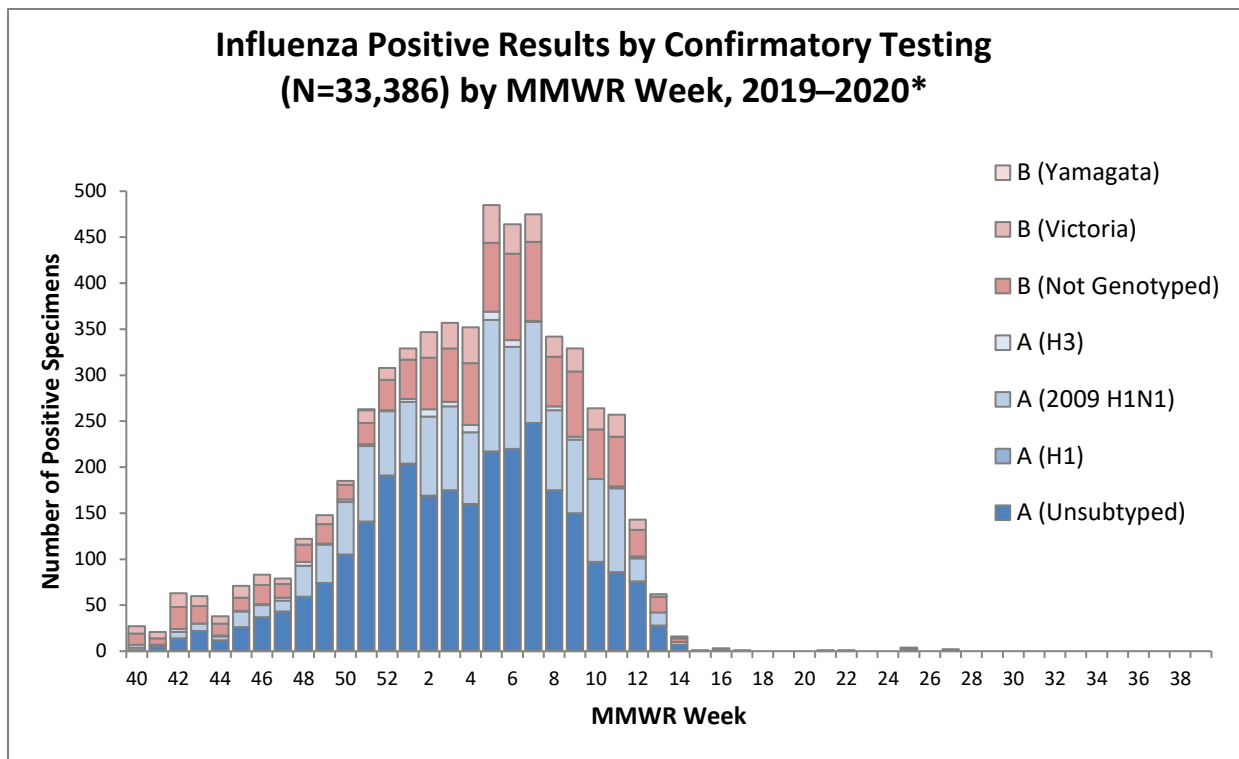
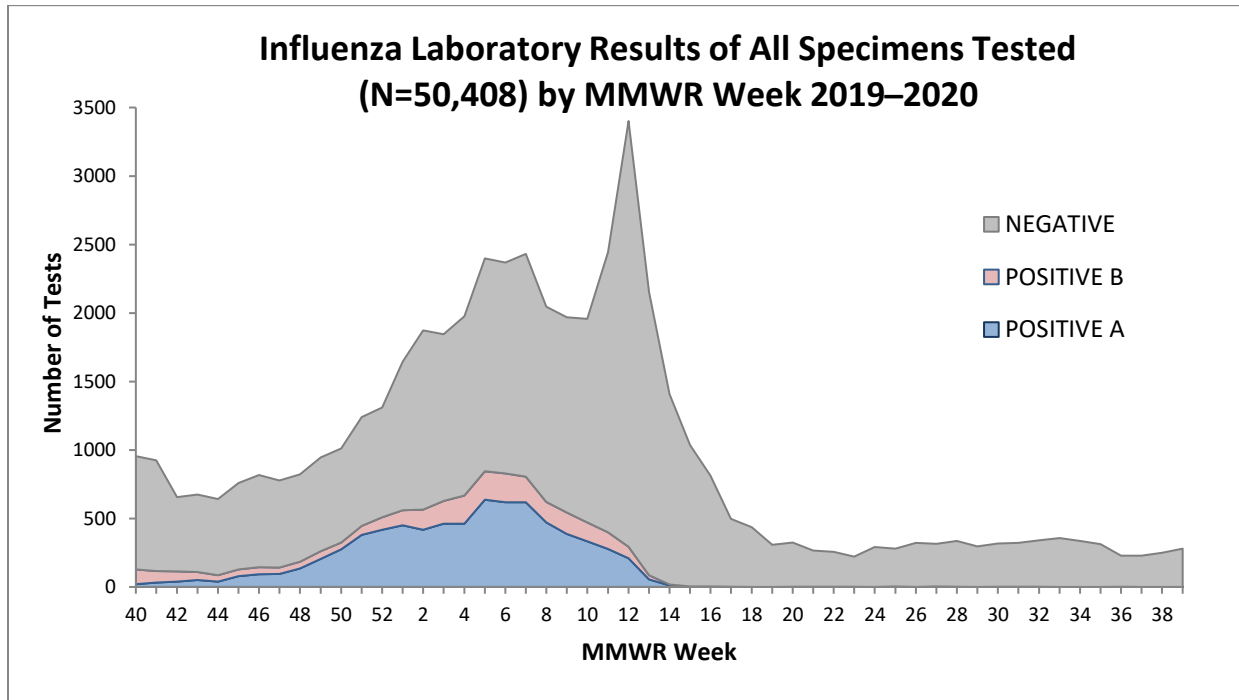
⁸ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks' post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁹ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

¹⁰ This represents an estimate of population-based rates based on available data.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2019–2020 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

B. OTHER RESPIRATORY PATHOGENS: The major clinical and commercial laboratories throughout the state of Hawaii have the testing capacity for non-influenza respiratory pathogens and report these to HDOH. However, such testing is performed as needed and when sufficient resources are available because of the high costs associated with respiratory panel tests. **Therefore, available data represent only the presence of circulating pathogens and cannot be used to determine specific trends.**

[illegible]

* The coronavirus presented on this table does not indicate the novel coronavirus (i.e., COVID-19).

C. COVID-19 SENTINEL SURVEILLANCE: HDOH is partnering with CDC to conduct community sentinel surveillance targeting outpatient healthcare settings to identify cases of COVID-19 among patients who have mild to moderate febrile respiratory illness. This program is designed to detect and track community spread of the disease and will be operated based on the framework of the existing influenza surveillance program. Respiratory specimens (i.e., nasopharyngeal swabs) from a subset of patients who meet the following criteria will be included in sentinel surveillance: no travel history outside of the state of Hawaii, no severe respiratory disease (i.e., pneumonia), no hospitalization, demonstrates respiratory symptoms. Additionally, patients will be selected to ensure geographic and age representation proportional to the state's population. For more information on surveillance of COVID-19 activity in the United States please visit the CDC COVIDView website ([here](#)).

The following reflects laboratory findings for week 40¹¹ of the 2019–20 influenza/respiratory disease season:

- *COVID-19 geographic spread: Regional¹²*
- *A total of 77 surveillance specimens have been tested statewide for COVID-19 (positive: 8 [10.4%]).*
- *Season to date: A total of 3,492 surveillance specimens have been tested for COVID-19 (positive: 189 [5.4%])*
 - *839 specimens have been tested at SLD¹³.*

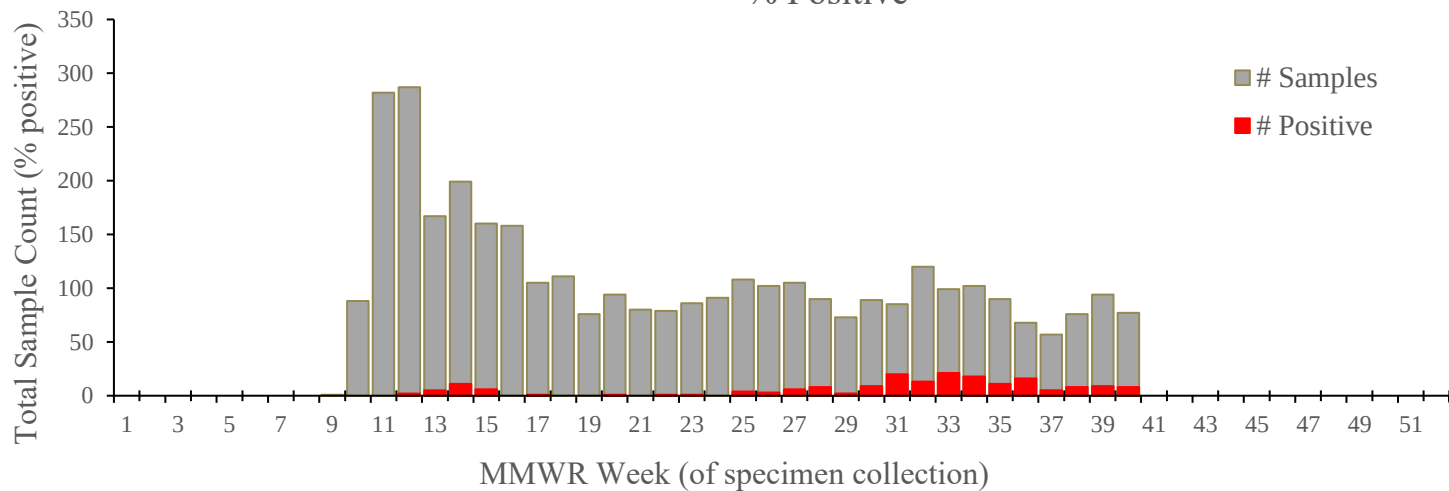
Cumulative Results					
County			Age		
	# Samples	% Positive		# Samples	% Positive
Hawaii	357	0.8	0-17	530	3.6
Honolulu	2,255	7.7	18-64	2,043	6.3
Kauai	184	0.5	65+	919	4.6
Maui	451	2.4			
Unknown	245	0			

¹¹ COVID sentinel surveillance data will be reported for one MMWR week ahead of the influenza surveillance data to provide most current data.

¹² No activity: No laboratory-confirmed cases of COVID-19, Sporadic: No laboratory-confirmed cases of COVID-19 detected through sentinel surveillance (i.e., only travel-associated cases detected), Local: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in one county, Regional: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in two to three counties, Widespread: Laboratory-confirmed cases of COVID-19 detected through sentinel surveillance in all counties. Geographic spread should be interpreted in the context of ILI activity level.

¹³ Many specimens requested by HDOH for COVID-19 testing are being tested at private laboratories. Specimens tested by private laboratories that meet the COVID-19 surveillance criteria will be included in the surveillance summary along with specimens tested by SLD. As Hawaii's private laboratories increase their testing capacity for COVID-19, fewer specimens may be tested by SLD.

COVID-19 Surveillance Samples Tested (N=3,492), % Positive

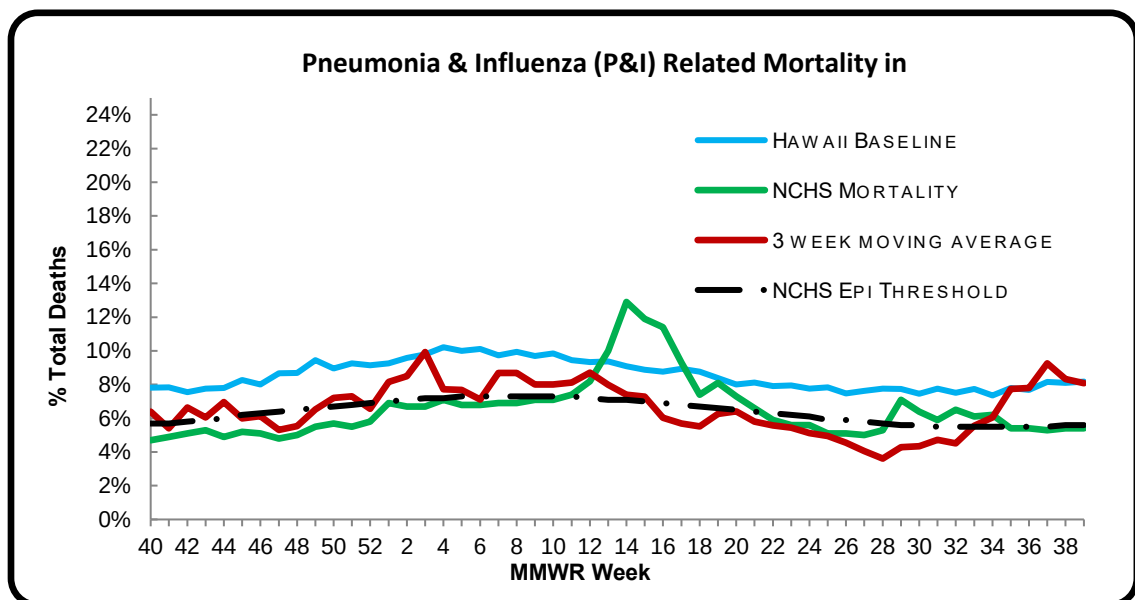


III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:

P&I mortality surveillance is collected by CDC through the National Center for Health Statistics (NCHS) using death certificate data. Each week the HDOH OHSM reports specific data from Honolulu to the CDC. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For **week 39** of the current influenza season:

- **6.3%** of all deaths that occurred in Hawaii during week 39 were related to pneumonia or influenza. For the current season (season to date: **6.7%**), there have been 11,638 deaths from any cause, 780 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii¹⁴ (i.e., inside the 95% confidence interval).
- The Hawaii P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality¹⁵ (**5.4%**) (i.e., inside the 95% confidence interval) and comparable to the national epidemic threshold (**5.6%**) (i.e., inside the 95% confidence interval) for week 39.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS¹⁶:

- No new influenza-associated pediatric deaths were reported to Hawaii during week 39. There has been a total of one influenza-associated pediatric death reported in Hawaii during the 2019–2020 season.
- Nationally, one influenza-associated pediatric death occurring during the 2019-2020 season was reported to CDC during week 39. This death was associated with an influenza B virus and occurred during week 4 (week ending January 25, 2020). (2019-2020 season total: 189).

⁸ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding 10 flu seasons of historical data (2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, and 2018-2019).

⁹ Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

¹⁰ Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week.

Of the 189 influenza-associated pediatric deaths occurring during the 2019-2020 season and reported to CDC:

- 117 deaths were associated with influenza B viruses, and 28 had a lineage determined; all were B/Victoria viruses
- 72 deaths were associated with influenza A viruses, and 43 were subtyped; 42 were A(H1N1)pdm09 viruses and one was an A(H3) virus.

IV. INFLUENZA WATCH: As part of a comprehensive influenza surveillance system and to prevent the spread of contagious respiratory diseases in humans, it is important to monitor all circulating influenza types. Several animal-origin influenza A subtypes are currently of interest: influenza A variant virus (H3N2v, H1N2v, and H1N1v) and Avian flu (H5N1 and H7N9). These types of influenza viruses may cause zoonotic (animal-associated) disease and are a public health concern.

A. VARIANT VIRUSES:

Influenza viruses that normally circulate in pigs are called “variant” viruses when they are found in people. These viruses were first identified in U.S. pigs in 2010. In 2011, 12 cases of H3N2v infection were detected in the United States. In 2012, 309 such cases (resulting in 16 hospitalizations and one death) across 12 states were detected, including one Hawaii case who recovered. Illness associated with H3N2v infection has been mostly mild with symptoms similar to those of seasonal flu. However, serious illness, resulting in hospitalization and death, has occurred in some cases. Most of these infections have been associated with prolonged exposure to pigs at agricultural fairs or similar settings. Limited human-to-human spread of this virus has been detected in the past, but no sustained community spread of H3N2v has been identified. More information regarding H3N2v, H1N1v, and H1N2v viruses may be found on the CDC website ([here](#)) and ([here](#)).

- *One variant or novel influenza infection has been reported to HDOH during the 2019–2020 influenza season.*
- *Two human infection with a novel influenza A virus, H1N1v (1), H3N2v (1), and H1N2v, has been reported during the 2019–2020 influenza season.*
 - *No new human infections with novel influenza A viruses were reported to CDC during week 39.*

B. AVIAN (OR BIRD) INFLUENZA:

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans and are generally not easily transmissible between person to person, but a few subtypes may cross the species barrier and cause disease in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15th, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information, the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a public health concern because of its high pandemic potential. Although H7N9 has not been detected in the United States, it remains a global concern given continuing epidemics in endemic countries. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with H7N9 viruses, including at least 613 deaths, have been reported to WHO. More information on H7N9 virus infections can be found ([here](#)). For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **July 10, 2020**.

V. INFLUENZA VACCINE: Annual influenza vaccination is recommended for all persons aged 6 months and older and is the most effective way to reduce the risk of getting sick with seasonal flu and spreading it to others. Influenza vaccination can reduce illnesses, visits to the doctor, influenza-related hospitalizations, and missed work and school days. Influenza vaccines become available by the end of October. It takes at least two weeks after vaccination to confer immunity against influenza virus infection. More information regarding influenza vaccination can be found ([here](#)).

A. COMPOSITION OF THE 2019–2020 INFLUENZA VACCINE:

The composition of the 2019–2020 influenza vaccine has been updated to better match circulating influenza viruses. The Advisory Committee on Immunization Practices (ACIP) has recommended that the 2019–2020 influenza trivalent vaccine contain an A/Brisbane/02/2018 (H1N1)pdm09-like virus, an A/Kansas/14/2017 (H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. Quadrivalent vaccines, which contain two influenza A and two influenza B viruses, are recommended to contain a B/Phuket/3073/2013-like (B/Yamagata lineage) virus in addition to the same viruses recommended for the trivalent vaccines. These vaccine recommendations were based on a number of factors, including global influenza virologic and epidemiologic surveillance, genetic and antigenic characterization, human serology studies, antiviral susceptibility, and the availability of candidate influenza viruses.

APPENDIX 1: ADDITIONAL INFORMATION

For more information regarding local and national influenza surveillance programs, visit the following sites.

Centers for Disease Control and Prevention	General Influenza National ILI and P&I Data Vaccine Virus Selection
Flu.gov	General Influenza Information
HDOH Flu and Pneumonia	General Influenza Surveillance To find out more information or join the sentinel physician program, email the Influenza Surveillance Coordinator
World Health Organization	General Global and Local Influenza Avian Influenza

APPENDIX 2: MMWR WEEK DATES

Please refer to the table below to interpret data presented by MMWR week. Week 40 is considered the traditional start for the flu season for the Northern Hemisphere.

MMWR WEEK	2016	2017	2018	2019	2020
1	1/9/2016	1/7/2017	1/6/2018	1/5/2019	1/4/2020
2	1/16/2016	1/14/2017	1/13/2018	1/12/2019	1/11/2020
3	1/23/2016	1/21/2017	1/20/2018	1/19/2019	1/18/2020
4	1/30/2016	1/28/2017	1/27/2018	1/26/2019	1/25/2020
5	2/6/2016	2/4/2017	2/3/2018	2/2/2019	2/1/2020
6	2/13/2016	2/11/2017	2/10/2018	2/9/2019	2/8/2020
7	2/20/2016	2/18/2017	2/17/2018	2/16/2019	2/15/2020
8	2/27/2016	2/25/2017	2/24/2018	2/23/2019	2/22/2020
9	3/5/2016	3/4/2017	3/3/2018	3/2/2019	2/29/2020
10	3/12/2016	3/11/2017	3/10/2018	3/9/2019	3/7/2020
11	3/19/2016	3/18/2017	3/17/2018	3/16/2019	3/14/2020
12	3/26/2016	3/25/2017	3/24/2018	3/23/2019	3/21/2020
13	4/2/2016	4/1/2017	3/31/2018	3/30/2019	3/28/2020
14	4/9/2016	4/8/2017	4/7/2018	4/6/2019	4/4/2020
15	4/16/2016	4/15/2017	4/14/2018	4/13/2019	4/11/2020
16	4/23/2016	4/22/2017	4/21/2018	4/20/2019	4/18/2020
17	4/30/2016	4/29/2017	4/28/2018	4/27/2019	4/25/2020
18	5/7/2016	5/6/2017	5/5/2018	5/4/2019	5/2/2020
19	5/14/2016	5/13/2017	5/12/2018	5/11/2019	5/9/2020
20	5/21/2016	5/20/2017	5/19/2018	5/18/2019	5/16/2020
21	5/28/2016	5/27/2017	5/26/2018	5/25/2019	5/23/2020
22	6/4/2016	6/3/2017	6/2/2018	6/1/2019	5/30/2020
23	6/11/2016	6/10/2017	6/9/2018	6/8/2019	6/6/2020
24	6/18/2016	6/17/2017	6/16/2018	6/15/2019	6/13/2020
25	6/25/2016	6/24/2017	6/23/2018	6/22/2019	6/20/2020
26	7/2/2016	7/1/2017	6/30/2018	6/29/2019	6/27/2020
27	7/9/2016	7/8/2017	7/7/2018	7/6/2019	7/4/2020
28	7/16/2016	7/15/2017	7/14/2018	7/13/2019	7/11/2020
29	7/23/2016	7/22/2017	7/21/2018	7/20/2019	7/18/2020
30	7/30/2016	7/29/2017	7/28/2018	7/27/2019	7/25/2020
31	8/6/2016	8/5/2017	8/4/2018	8/3/2019	8/1/2020
32	8/13/2016	8/12/2017	8/11/2018	8/10/2019	8/8/2020
33	8/20/2016	8/19/2017	8/18/2018	8/17/2019	8/15/2020
34	8/27/2016	8/26/2017	8/25/2018	8/24/2019	8/22/2020
35	9/3/2016	9/2/2017	9/1/2018	8/31/2019	8/29/2020
36	9/10/2016	9/9/2017	9/8/2018	9/7/2019	9/5/2020
37	9/17/2016	9/16/2017	9/15/2018	9/14/2019	9/12/2020
38	9/24/2016	9/23/2017	9/22/2018	9/21/2019	9/19/2020
39	10/1/2016	9/30/2017	9/29/2018	9/28/2019	9/26/2020
40	10/8/2016	10/7/2017	10/6/2018	10/5/2019	10/3/2020
41	10/15/2016	10/14/2017	10/13/2018	10/12/2019	10/10/2020
42	10/22/2016	10/21/2017	10/20/2018	10/19/2019	10/17/2020
43	10/29/2016	10/28/2017	10/27/2018	10/26/2019	10/24/2020
44	11/5/2016	11/4/2017	11/3/2018	11/2/2019	10/31/2020
45	11/12/2016	11/11/2017	11/10/2018	11/9/2019	11/7/2020
46	11/19/2016	11/18/2017	11/17/2018	11/16/2019	11/14/2020
47	11/26/2016	11/25/2017	11/24/2018	11/23/2019	11/21/2020
48	12/3/2016	12/2/2017	12/1/2018	11/30/2019	11/28/2020
49	12/10/2016	12/9/2017	12/8/2018	12/7/2019	12/5/2020
50	12/17/2016	12/16/2017	12/15/2018	12/14/2019	12/12/2020
51	12/24/2016	12/23/2017	12/22/2018	12/21/2019	12/19/2020
52	12/31/2016	12/30/2017	12/29/2018	12/28/2019	12/26/2020