

HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 40: OCTOBER 2, 2016 – OCTOBER 8, 2016

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.**

REPORT SNAPSHOT FOR WEEK 40

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.3%	Higher than the previous week, comparable to Hawaii's historical baseline, higher than the national ILI rate; comparable to the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 0 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.3%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	6.3%	Lower than the previous week. This number means that many, if not all, of the 93.7% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	6.3%	

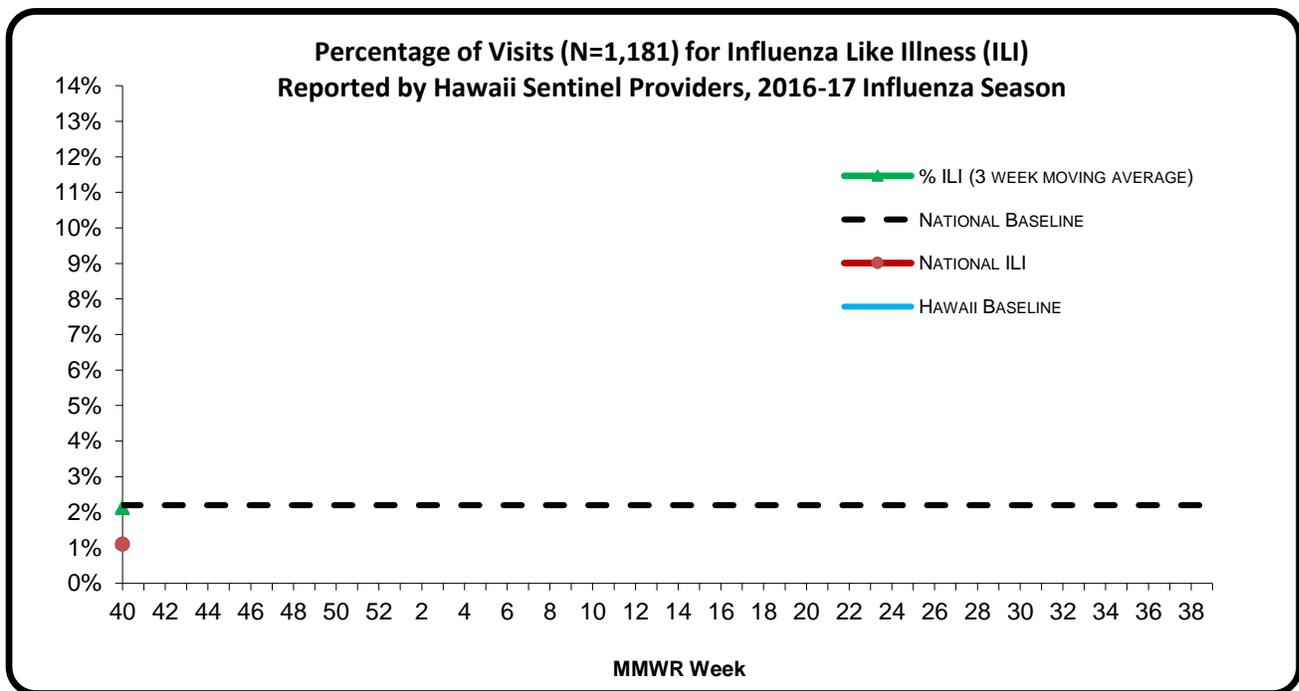
¹ MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 2.3% (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^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii’s ILI outpatient visits were comparable the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.1%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No 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 five flu seasons of historical data (2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015).

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.

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 criteria⁵ 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](#)).

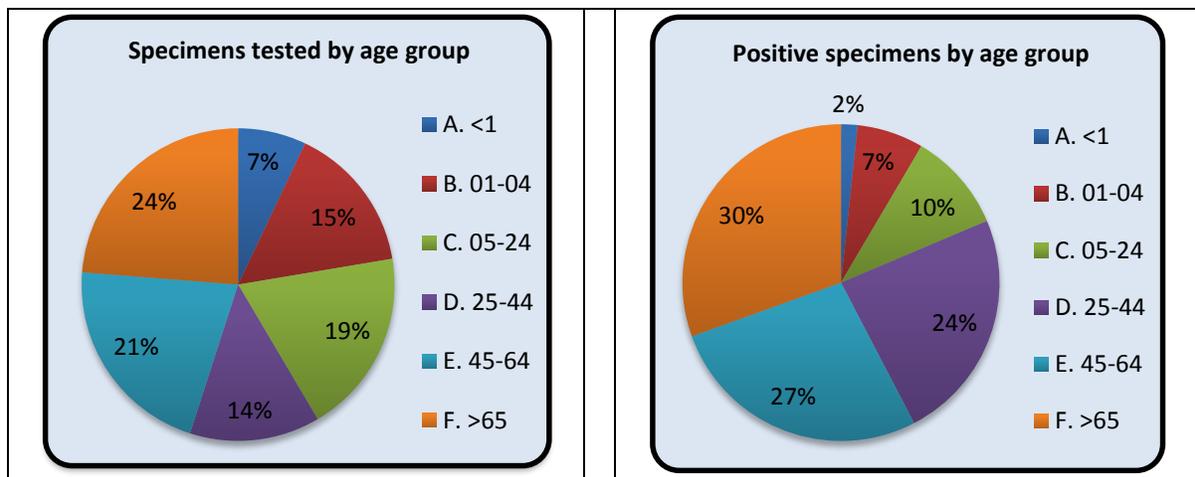
A. INFLUENZA:

- The following reflects laboratory findings for week 40 of the 2016-17 flu season:
 - A total of 935 specimens have been tested statewide for influenza viruses (positive: 59 [6.3%]). (Season to date: 935 tested [6.3% positive])
 - 492 (52.6%) were screened only by rapid antigen tests with no confirmatory testing
 - 443 (47.4%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 876 (93.7%) were negative.

Influenza type	Current week 40 (%)	Season to date (%)
2009 H1N1	0 (0.0)	0 (0.0)
Influenza A (H3)	2 (3.4)	2 (3.4)
Influenza A no subtyping	51 (86.4)	51 (86.4)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	0 (0.0)
Influenza B no genotyping	6 (10.2)	6 (10.2)

1. AGE DISTRIBUTION

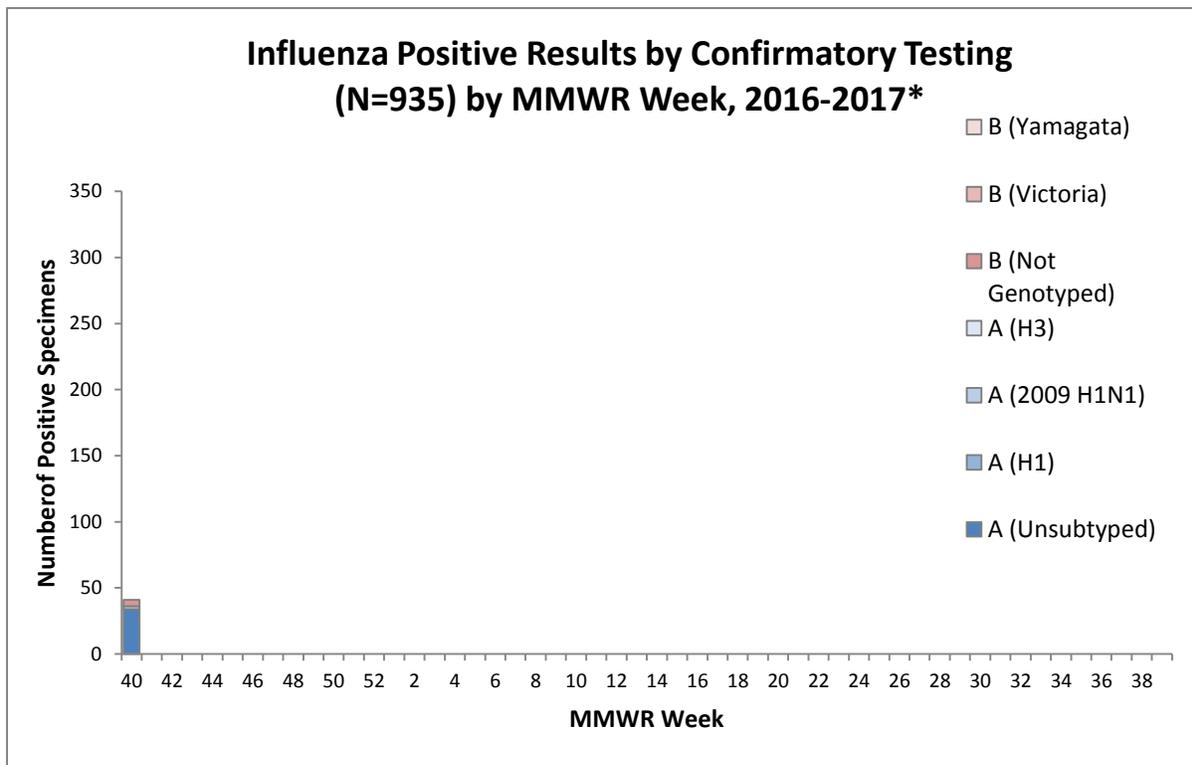
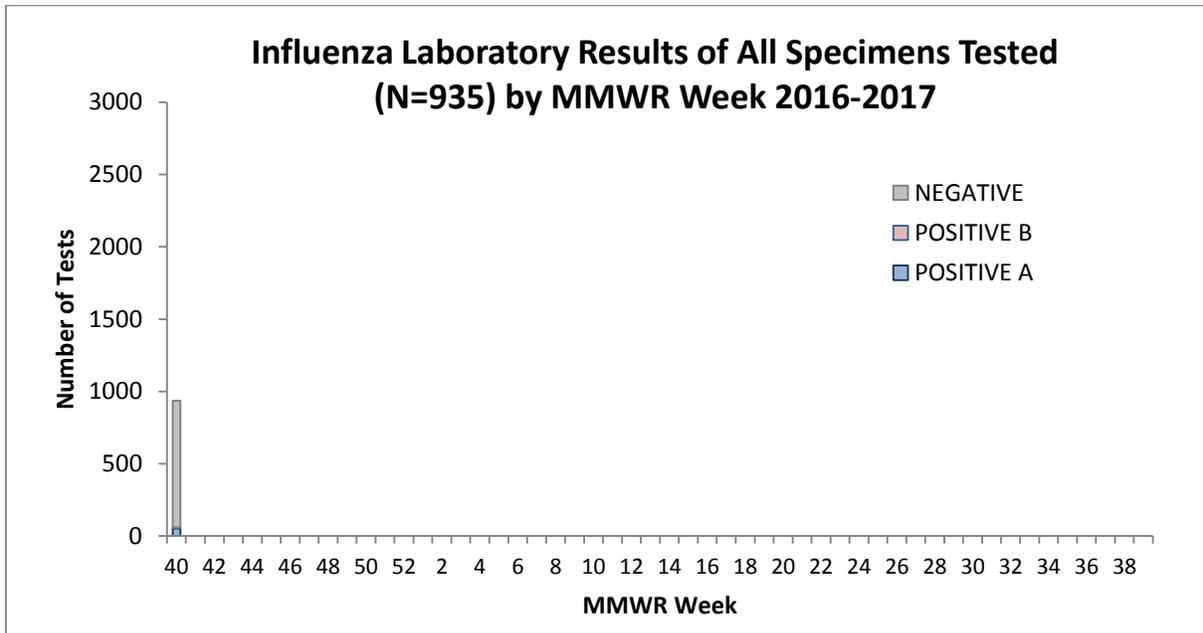
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.



⁵ 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.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

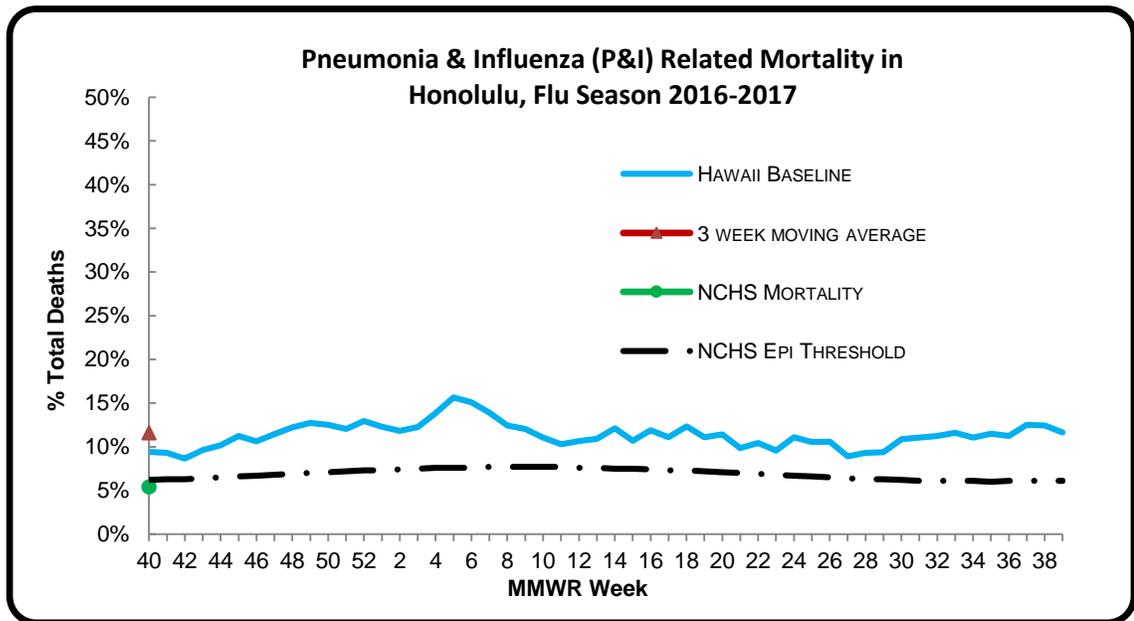


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- **6.3%** of all deaths that occurred in Honolulu during week 40 were related to pneumonia or influenza. For the current season (season to date: **6.3%**), there have been 95 deaths from any cause, 6 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁶ (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the CDC’s National Center for Health Statistics (NCHS) P&I mortality⁷ (5.4%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.3%) (i.e., inside the 95% confidence interval).



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁸:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 40. (Season total: 0).

⁶ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁷ 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

⁸ 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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *No human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2016–2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 **October 3, 2016**.

APPENDIX 1: ADDITIONAL INFORMATION

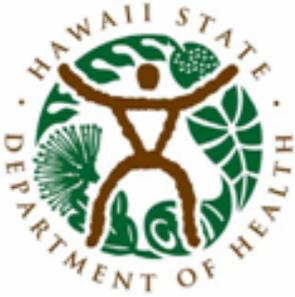
For more information regarding local and national influenza surveillance programs, visit the following sites.

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	2013	2014	2015	2016	2017
1	1/5/2013	1/4/2014	1/10/2015	1/9/2016	1/7/2017
2	1/12/2013	1/11/2014	1/17/2015	1/16/2016	1/14/2017
3	1/19/2013	1/18/2014	1/24/2015	1/23/2016	1/21/2017
4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
8	2/23/2013	2/22/2014	2/28/2015	2/27/2016	2/25/2017
9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
10	3/9/2013	3/8/2014	3/14/2015	3/12/2016	3/11/2017
11	3/16/2013	3/15/2014	3/21/2015	3/19/2016	3/18/2017
12	3/23/2013	3/22/2014	3/28/2015	3/26/2016	3/25/2017
13	3/30/2013	3/29/2014	4/4/2015	4/2/2016	4/1/2017
14	4/6/2013	4/5/2014	4/11/2015	4/9/2016	4/8/2017
15	4/13/2013	4/12/2014	4/18/2015	4/16/2016	4/15/2017
16	4/20/2013	4/19/2014	4/25/2015	4/23/2016	4/22/2017
17	4/27/2013	4/26/2014	5/2/2015	4/30/2016	4/29/2017
18	5/4/2013	5/3/2014	5/9/2015	5/7/2016	5/6/2017
19	5/11/2013	5/10/2014	5/16/2015	5/14/2016	5/13/2017
20	5/18/2013	5/17/2014	5/23/2015	5/21/2016	5/20/2017
21	5/25/2013	5/24/2014	5/30/2015	5/28/2016	5/27/2017
22	6/1/2013	5/31/2014	6/6/2015	6/4/2016	6/3/2017
23	6/8/2013	6/7/2014	6/13/2015	6/11/2016	6/10/2017
24	6/15/2013	6/14/2014	6/20/2015	6/18/2016	6/17/2017
25	6/22/2013	6/21/2014	6/27/2015	6/25/2016	6/24/2017
26	6/29/2013	6/28/2014	7/4/2015	7/2/2016	7/1/2017
27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
28	7/13/2013	7/12/2014	7/18/2015	7/16/2016	7/15/2017
29	7/20/2013	7/19/2014	7/25/2015	7/23/2016	7/22/2017
30	7/27/2013	7/26/2014	8/1/2015	7/30/2016	7/29/2017
31	8/3/2013	8/2/2014	8/8/2015	8/6/2016	8/5/2017
32	8/10/2013	8/9/2014	8/15/2015	8/13/2016	8/12/2017
33	8/17/2013	8/16/2014	8/22/2015	8/20/2016	8/19/2017
34	8/24/2013	8/23/2014	8/29/2015	8/27/2016	8/26/2017
35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
38	9/21/2013	9/20/2014	9/26/2015	9/24/2016	9/23/2017
39	9/28/2013	9/27/2014	10/3/2015	10/1/2016	9/30/2017
40	10/5/2013	10/4/2014	10/10/2015	10/8/2016	10/7/2017
41	10/12/2013	10/11/2014	10/17/2015	10/15/2016	10/14/2017
42	10/19/2013	10/18/2014	10/24/2015	10/22/2016	10/21/2017
43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
45	11/9/2013	11/8/2014	11/14/2015	11/12/2016	11/11/2017
46	11/16/2013	11/15/2014	11/21/2015	11/19/2016	11/18/2017
47	11/23/2013	11/22/2014	11/28/2015	11/26/2016	11/25/2017
48	11/30/2013	11/29/2014	12/5/2015	12/3/2016	12/2/2017
49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 41: OCTOBER 9, 2016 – OCTOBER 15, 2016

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.**

REPORT SNAPSHOT FOR WEEK 41

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

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, the national ILI rate, and the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 0 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.0%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	5.8%	Lower than the previous week. This number means that many, if not all, of the 94.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	6.1%	

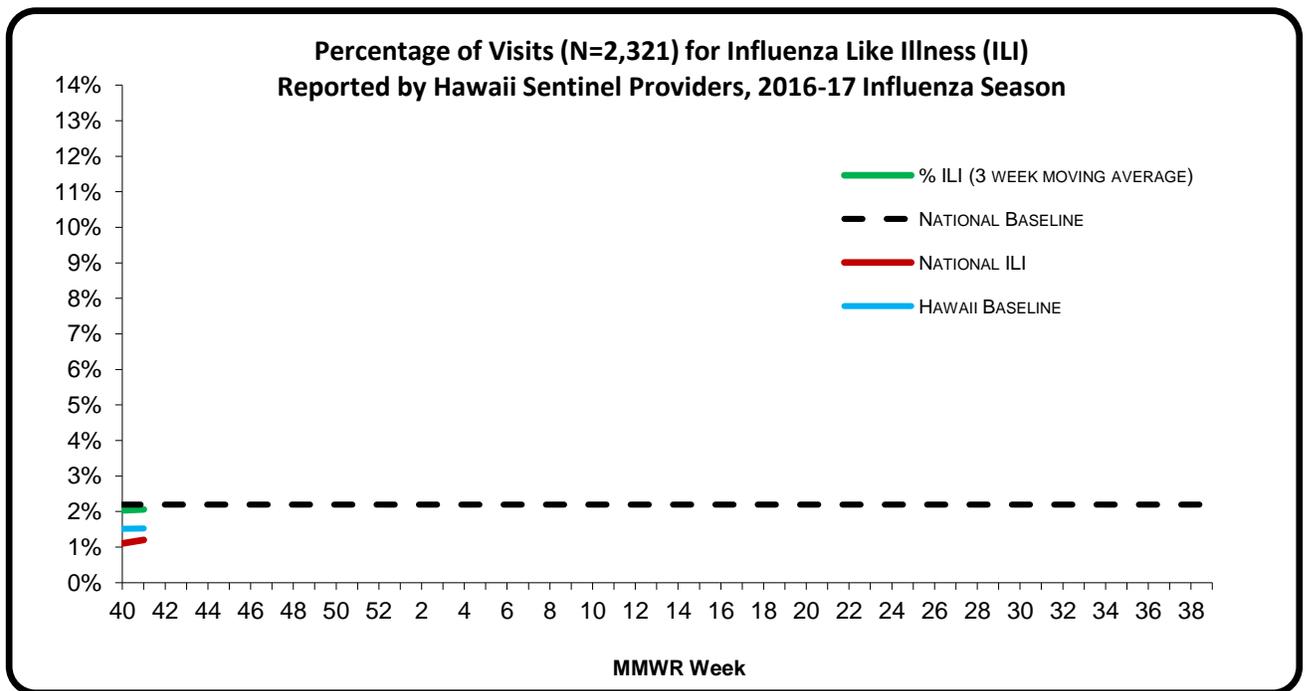
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INFLUENZA SURVEILLANCE

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:

- 1.8% (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 the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) and the national ILI rate (1.2%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 41.



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

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.

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 criteria⁵ 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](#)).

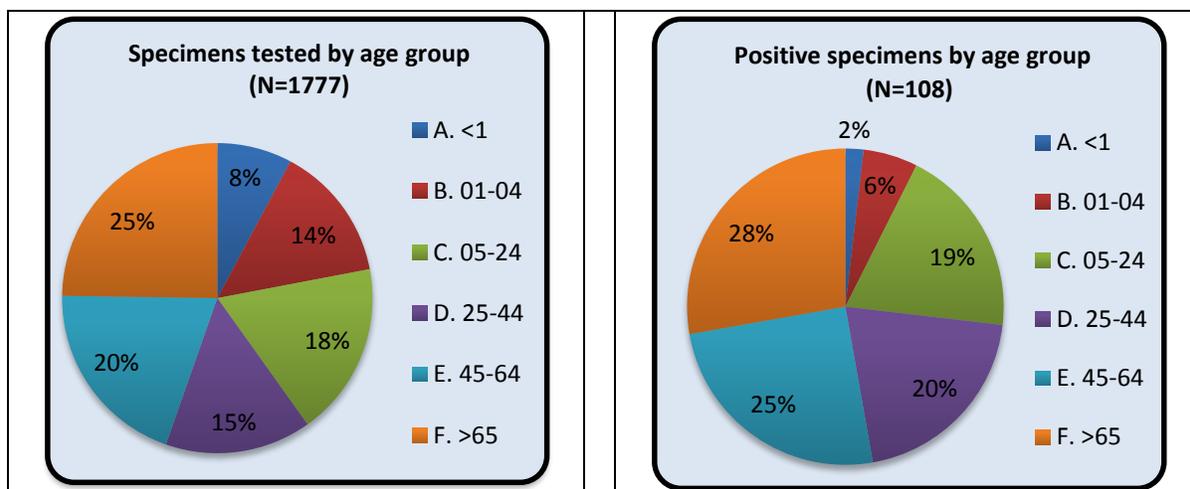
A. INFLUENZA:

- The following reflects laboratory findings for week 41 of the 2016-17 influenza season:
 - A total of **841** specimens have been tested statewide for influenza viruses (positive: **49** [5.8%]). (Season to date: **1777** tested [6.1% positive])
 - 443 (52.7%) were screened only by rapid antigen tests with no confirmatory testing
 - 398 (47.3%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 792 (94.2%) were negative.

<i>Influenza type</i>	<i>Current week 41 (%)</i>	<i>Season to date (%)</i>
2009 H1N1	1 (2.0)	1 (0.9)
Influenza A (H3)	0 (0.0)	2 (1.9)
Influenza A no subtyping	39 (79.6)	90 (83.3)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	0 (0.0)
Influenza B no genotyping	9 (18.4)	15 (13.9)

1. AGE DISTRIBUTION

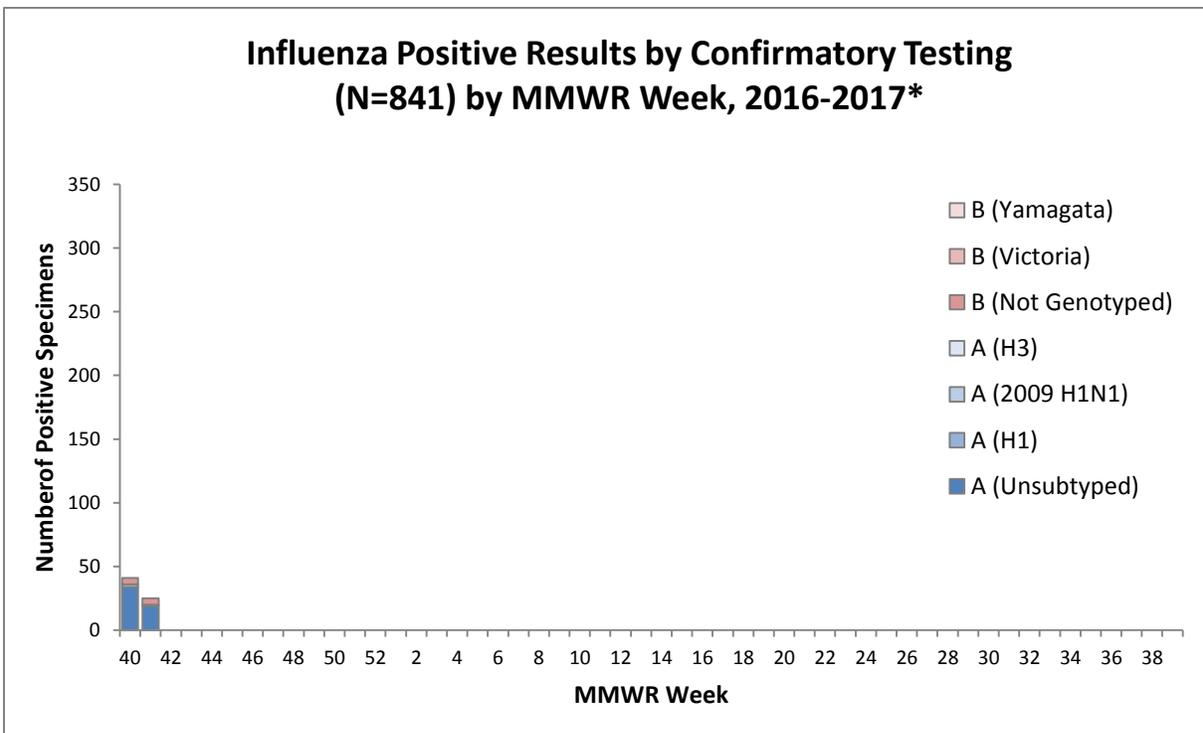
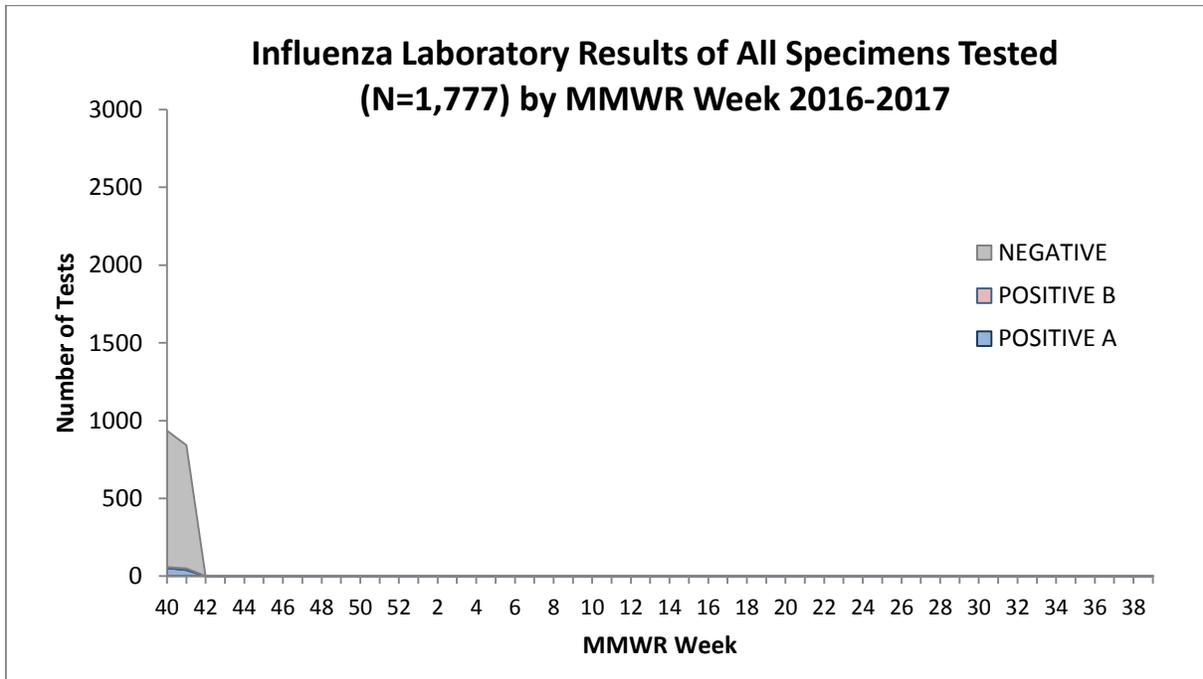
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.



⁵ 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.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

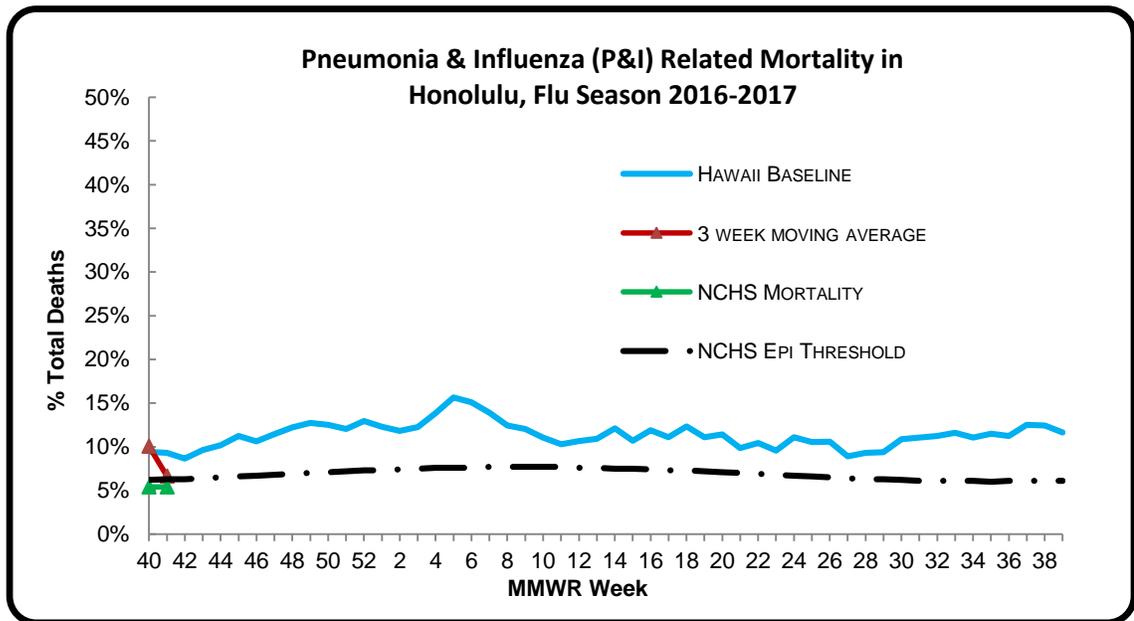


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- **7.0%** of all deaths that occurred in Honolulu during week 41 were related to pneumonia or influenza. For the current season (season to date: **6.6%**), there have been 181 deaths from any cause, 12 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁶ (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the CDC’s National Center for Health Statistics (NCHS) P&I mortality⁷ (5.4%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.4%) (i.e., inside the 95% confidence interval).



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁸:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 41. (Season total: 0).

⁶ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

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⁸ 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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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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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](#)).

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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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 **October 3, 2016**.

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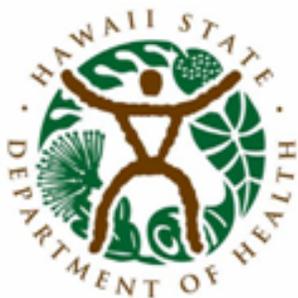
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APPENDIX 2: MMWR WEEK DATES

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53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 42: OCTOBER 16, 2016 – OCTOBER 22, 2016

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.**

REPORT SNAPSHOT FOR WEEK 42

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.0%	Higher than the previous week; comparable to Hawaii’s historical baseline, the national ILI rate, and the national baseline.
Number of ILI clusters reported to HDOH	1	There has been a total of 1 cluster this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.1%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	5.2%	Lower than the previous week. This number means that many, if not all, of the 94.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	5.8%	

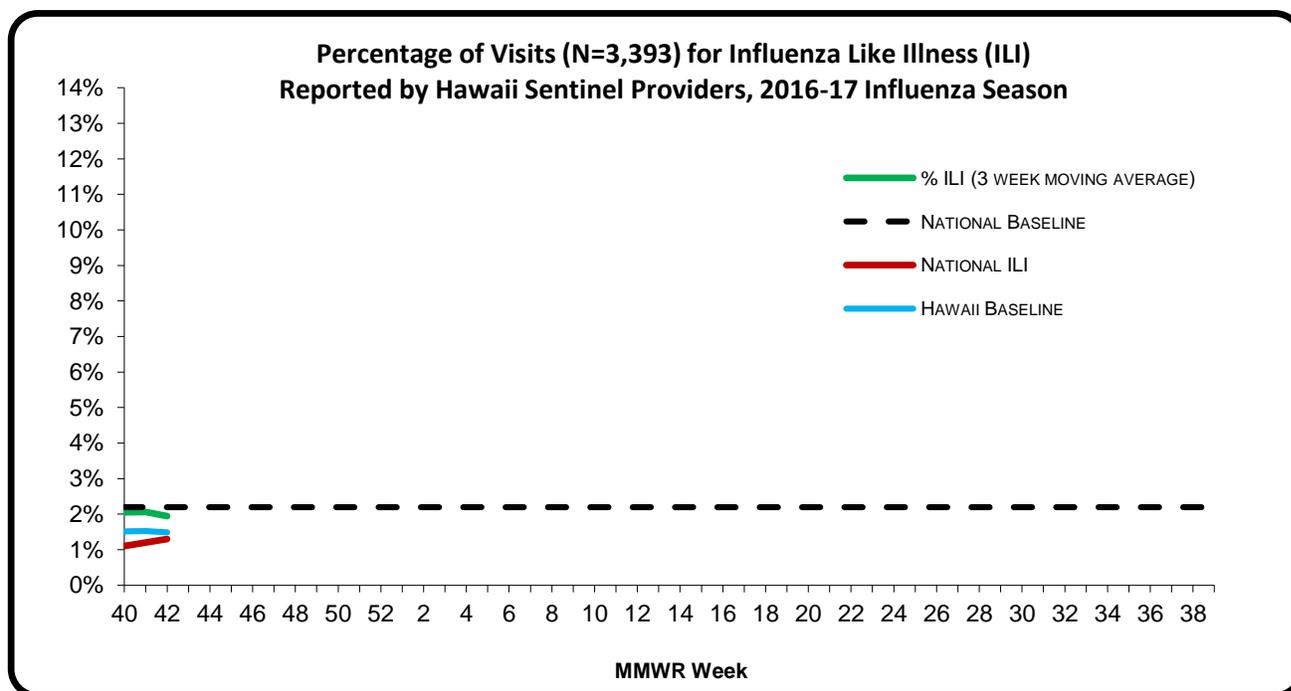
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 2.0% (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 the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) and the national ILI rate (1.3%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: One cluster was reported to HDOH during week 42. The cluster occurred at a hospital on Oahu and had confirmed cases of influenza B.



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

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.

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 criteria⁵ 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](#)).

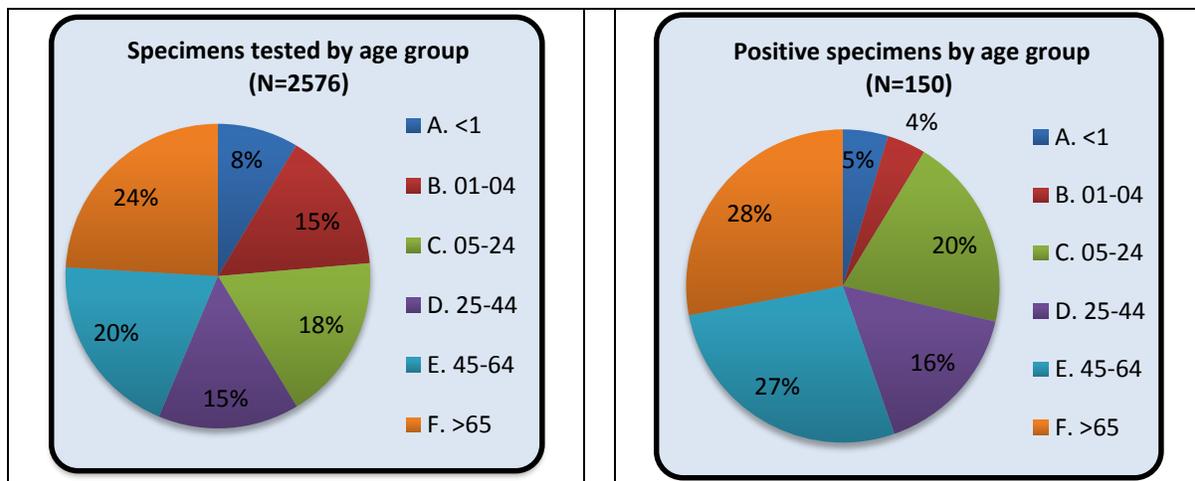
A. INFLUENZA:

- The following reflects laboratory findings for week 42 of the 2016-17 influenza season:
 - A total of **806** specimens have been tested statewide for influenza viruses (positive: **42** [5.2%]). (Season to date: **2,576** tested [5.8% positive])
 - 528 (65.5%) were screened only by rapid antigen tests with no confirmatory testing
 - 278 (34.5%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 764 (94.8%) were negative.

<i>Influenza type</i>	<i>Current week 42 (%)</i>	<i>Season to date (%)</i>
2009 H1N1	0 (0.0)	1 (0.7)
Influenza A (H3)	0 (0.0)	2 (1.3)
Influenza A no subtyping	33 (78.6)	123 (82.0)
Influenza B (Yamagata)	0 (0.0)	0 (0.0)
Influenza B (Victoria)	0 (0.0)	0 (0.0)
Influenza B no genotyping	9 (21.4)	24 (16.0)

1. AGE DISTRIBUTION

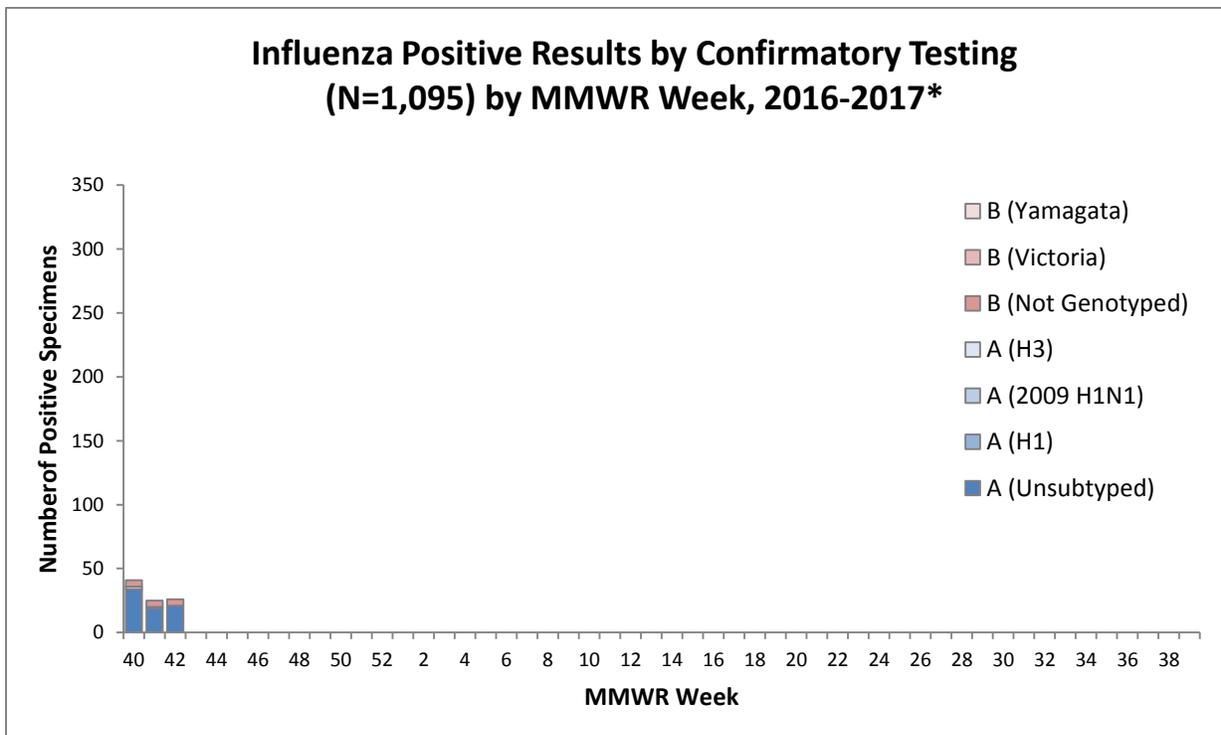
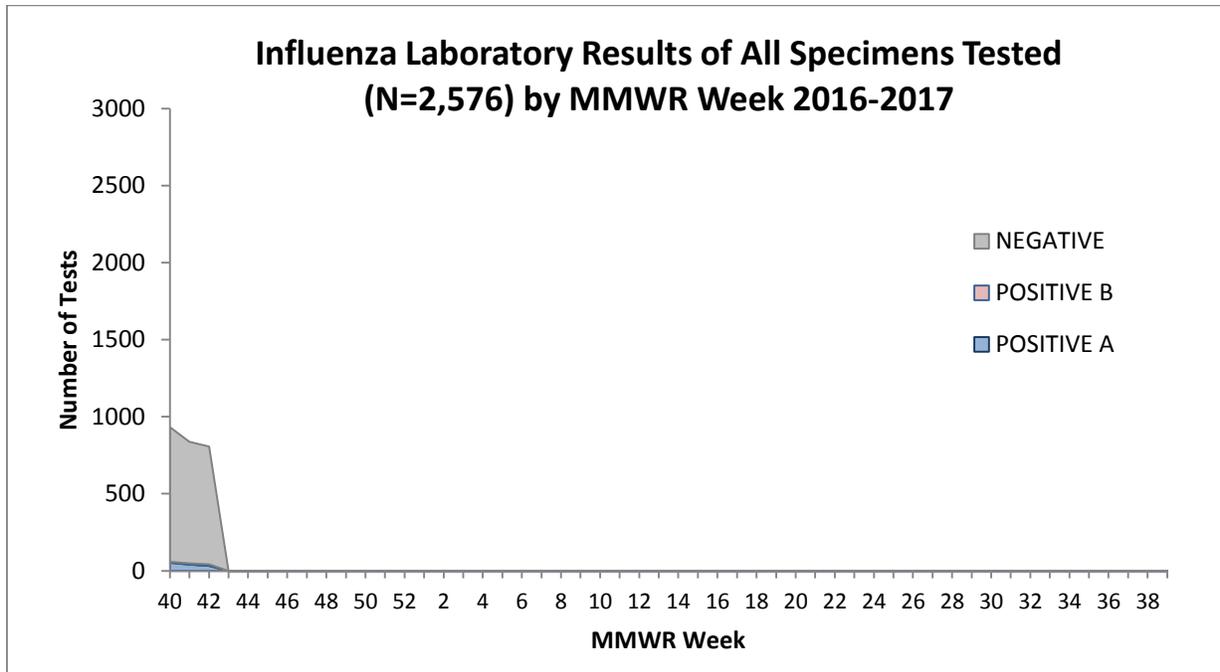
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.



⁵ 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.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

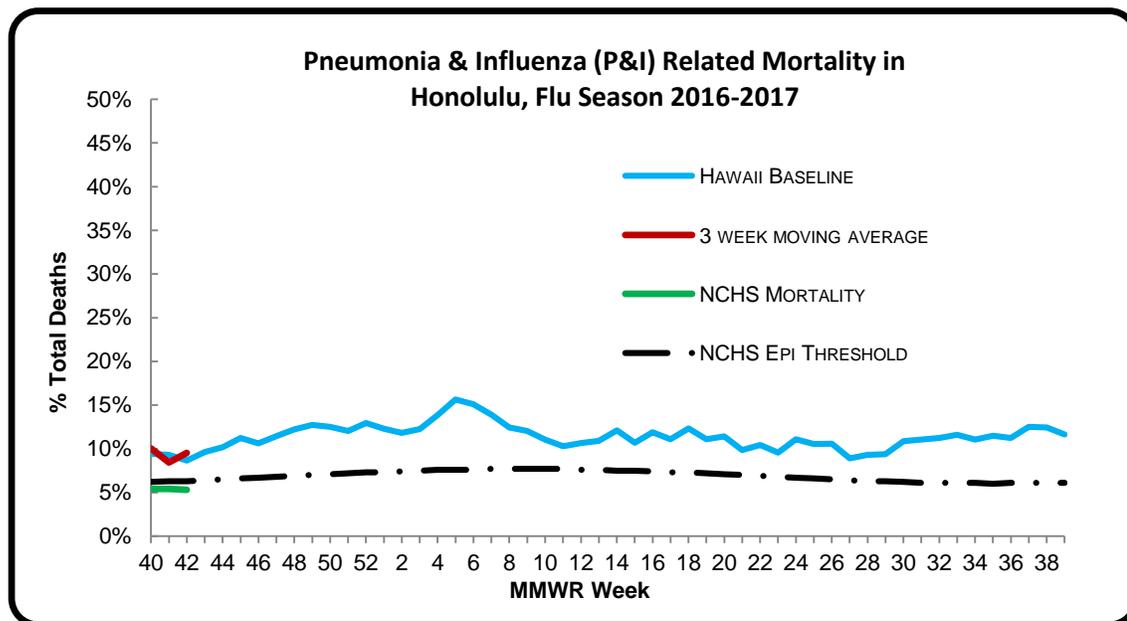


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- **12.1%** of all deaths that occurred in Honolulu during week 42 were related to pneumonia or influenza. For the current season (season to date: **8.3%**), there have been 264 deaths from any cause, 22 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁶ (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality⁷ (5.3%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.5%) (i.e., inside the 95% confidence interval).



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁸:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 42. (Season total: 0).

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47	11/23/2013	11/22/2014	11/28/2015	11/26/2016	11/25/2017
48	11/30/2013	11/29/2014	12/5/2015	12/3/2016	12/2/2017
49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 43: OCTOBER 23, 2016 – OCTOBER 29, 2016

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.**

REPORT SNAPSHOT FOR WEEK 43

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

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, Hawaii’s historical baseline, and the national baseline; comparable to the national ILI rate.
Number of ILI clusters reported to HDOH	1	There have been 2 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.3%	Comparable to the historical baseline for Hawaii and the national epidemic threshold; Higher than the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	5.7%	Higher than the previous week. This number means that many, if not all, of the 94.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	6.3%	

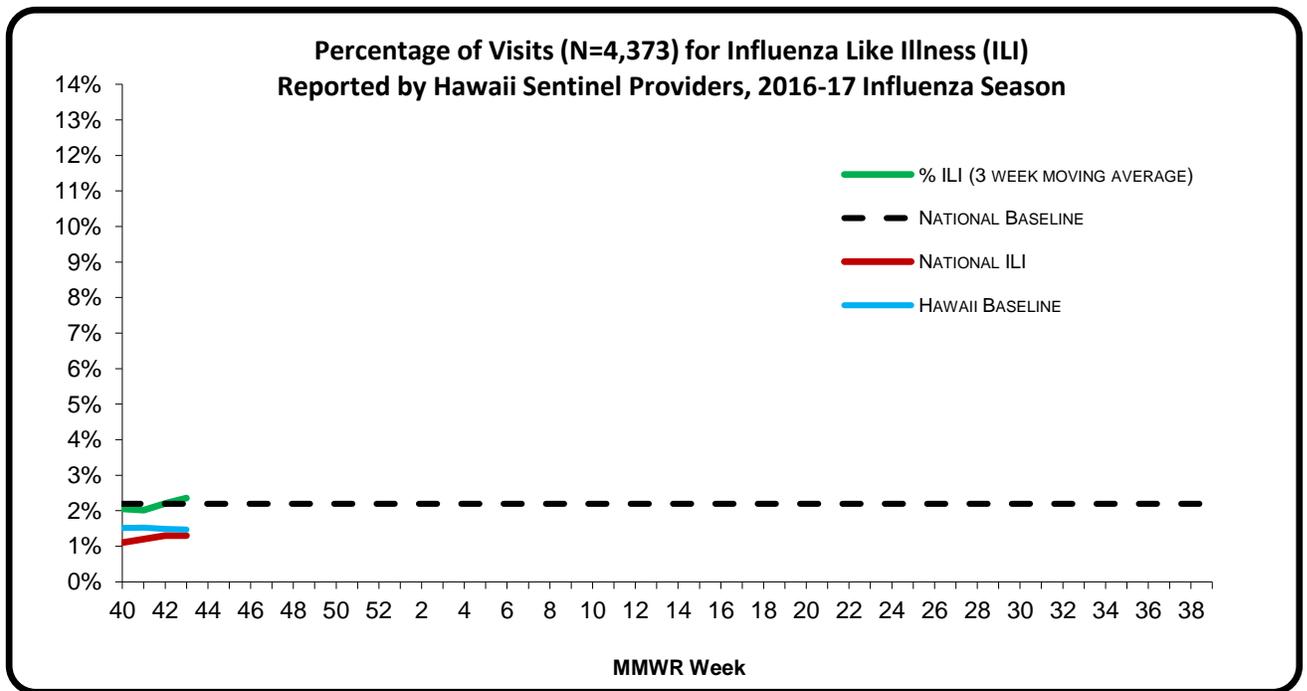
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 2.8% (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 the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) but higher than the national ILI rate (1.3%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: One influenza-like illness cluster was reported to HDOH during week 43. The cluster occurred at a long term care facility on Oahu and had cases who tested negative for influenza.



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

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.

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 criteria⁵ 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](#)).

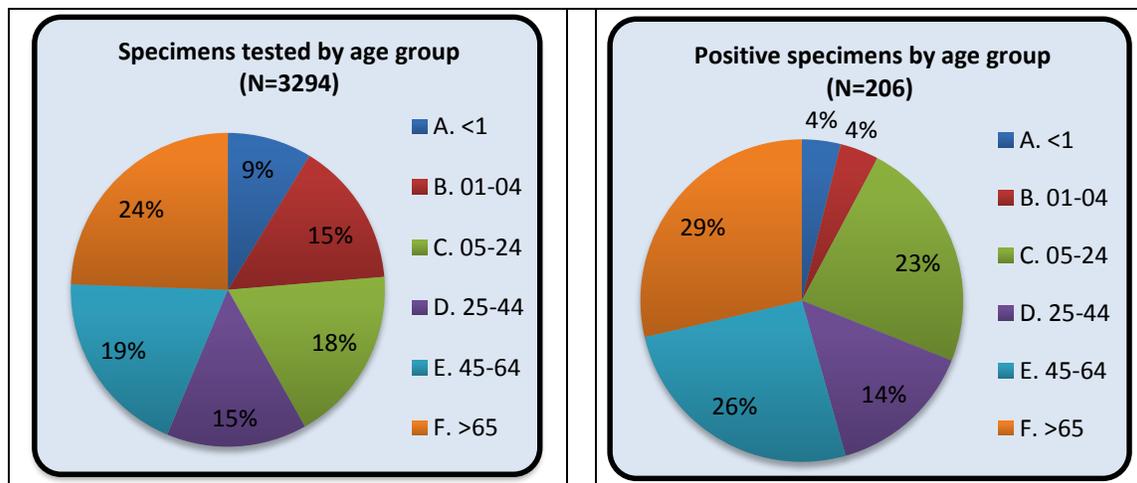
A. INFLUENZA:

- The following reflects laboratory findings for week 43 of the 2016-17 influenza season:
 - A total of **704** specimens have been tested statewide for influenza viruses (positive: **40** [5.7%]). (Season to date: **3,294** tested [6.3% positive])
 - 430 (61.1%) were screened only by rapid antigen tests with no confirmatory testing
 - 274 (38.9%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 664 (94.3%) were negative.

Influenza type	Current week 43 (%)	Season to date (%)
2009 H1N1	0 (0.0)	7 (3.4)
Influenza A (H3)	5 (12.5)	29 (14.1)
Influenza A no subtyping	28 (70.0)	137 (66.5)
Influenza B (Yamagata)	0 (0.0)	4 (1.9)
Influenza B (Victoria)	0 (0.0)	1 (0.5)
Influenza B no genotyping	7 (17.5)	28 (13.6)

1. AGE DISTRIBUTION

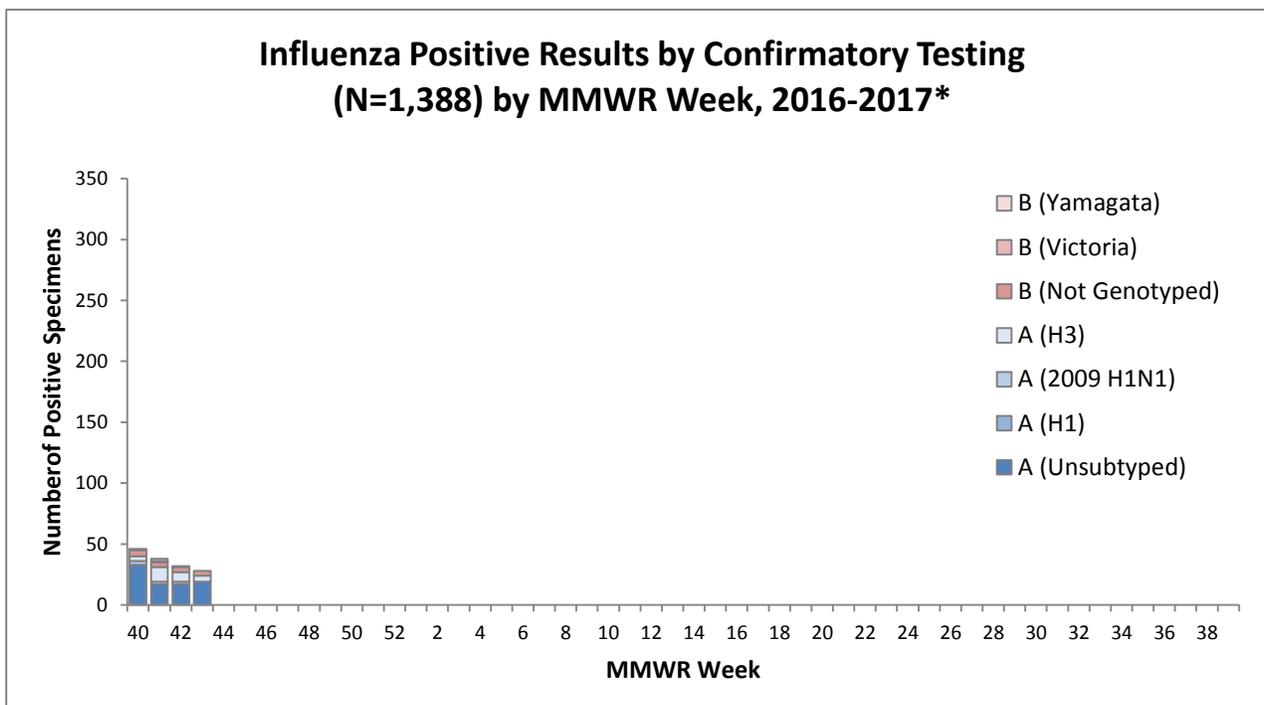
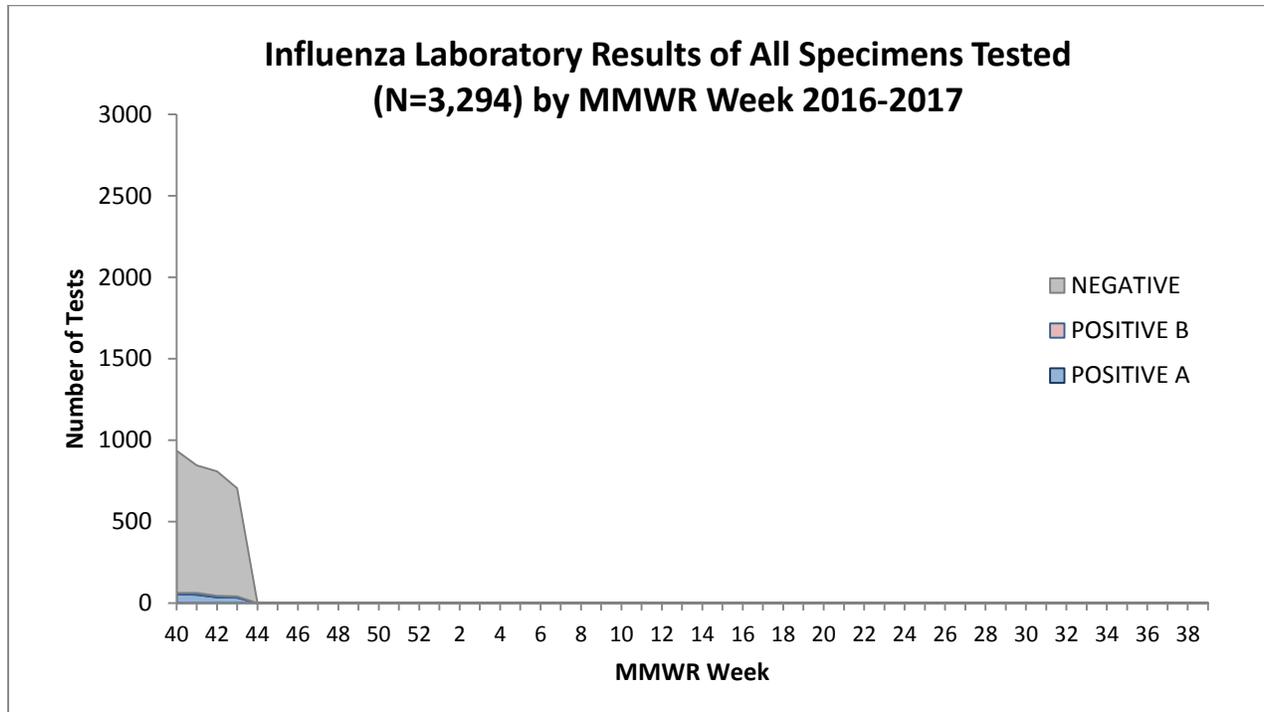
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.



⁵ 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.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

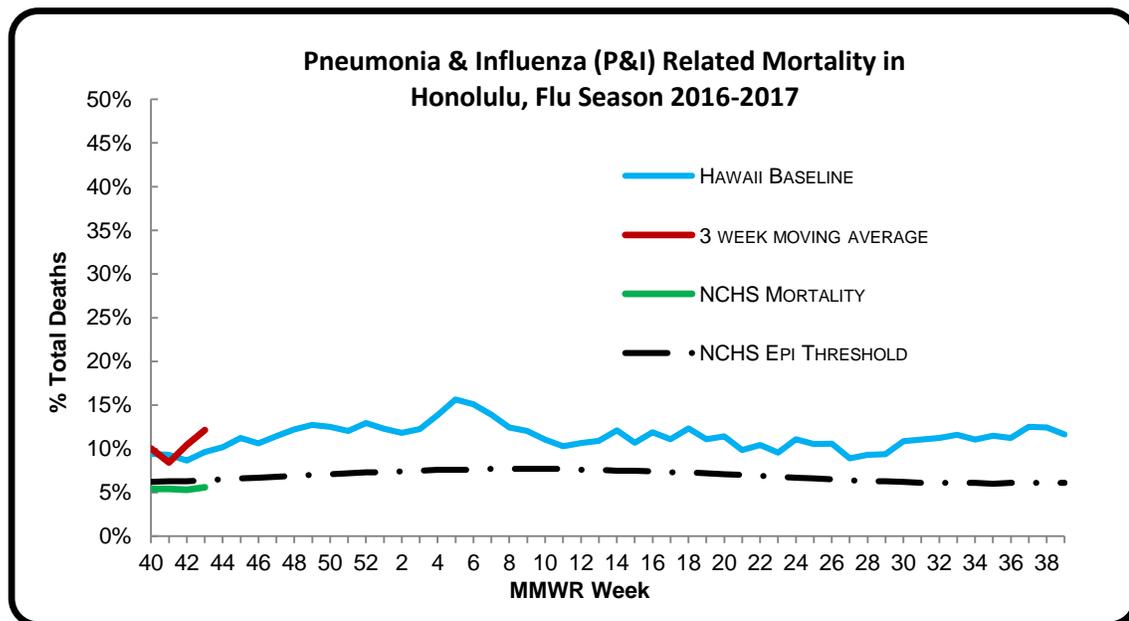


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- *12.3% of all deaths that occurred in Honolulu during week 43 were related to pneumonia or influenza. For the current season (season to date: 9.5%), there have been 370 deaths from any cause, 35 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii⁶ (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was higher than the CDC's National Center for Health Statistics (NCHS) P&I mortality⁷ (5.6%) (i.e., outside the 95% confidence interval) but comparable to the epidemic threshold (6.5%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁸:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 43. (Season total: 0).

⁶ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁷ 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

⁸ 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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *No human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2016–2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 **October 3, 2016**.

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	2013	2014	2015	2016	2017
1	1/5/2013	1/4/2014	1/10/2015	1/9/2016	1/7/2017
2	1/12/2013	1/11/2014	1/17/2015	1/16/2016	1/14/2017
3	1/19/2013	1/18/2014	1/24/2015	1/23/2016	1/21/2017
4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
8	2/23/2013	2/22/2014	2/28/2015	2/27/2016	2/25/2017
9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
10	3/9/2013	3/8/2014	3/14/2015	3/12/2016	3/11/2017
11	3/16/2013	3/15/2014	3/21/2015	3/19/2016	3/18/2017
12	3/23/2013	3/22/2014	3/28/2015	3/26/2016	3/25/2017
13	3/30/2013	3/29/2014	4/4/2015	4/2/2016	4/1/2017
14	4/6/2013	4/5/2014	4/11/2015	4/9/2016	4/8/2017
15	4/13/2013	4/12/2014	4/18/2015	4/16/2016	4/15/2017
16	4/20/2013	4/19/2014	4/25/2015	4/23/2016	4/22/2017
17	4/27/2013	4/26/2014	5/2/2015	4/30/2016	4/29/2017
18	5/4/2013	5/3/2014	5/9/2015	5/7/2016	5/6/2017
19	5/11/2013	5/10/2014	5/16/2015	5/14/2016	5/13/2017
20	5/18/2013	5/17/2014	5/23/2015	5/21/2016	5/20/2017
21	5/25/2013	5/24/2014	5/30/2015	5/28/2016	5/27/2017
22	6/1/2013	5/31/2014	6/6/2015	6/4/2016	6/3/2017
23	6/8/2013	6/7/2014	6/13/2015	6/11/2016	6/10/2017
24	6/15/2013	6/14/2014	6/20/2015	6/18/2016	6/17/2017
25	6/22/2013	6/21/2014	6/27/2015	6/25/2016	6/24/2017
26	6/29/2013	6/28/2014	7/4/2015	7/2/2016	7/1/2017
27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
28	7/13/2013	7/12/2014	7/18/2015	7/16/2016	7/15/2017
29	7/20/2013	7/19/2014	7/25/2015	7/23/2016	7/22/2017
30	7/27/2013	7/26/2014	8/1/2015	7/30/2016	7/29/2017
31	8/3/2013	8/2/2014	8/8/2015	8/6/2016	8/5/2017
32	8/10/2013	8/9/2014	8/15/2015	8/13/2016	8/12/2017
33	8/17/2013	8/16/2014	8/22/2015	8/20/2016	8/19/2017
34	8/24/2013	8/23/2014	8/29/2015	8/27/2016	8/26/2017
35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
38	9/21/2013	9/20/2014	9/26/2015	9/24/2016	9/23/2017
39	9/28/2013	9/27/2014	10/3/2015	10/1/2016	9/30/2017
40	10/5/2013	10/4/2014	10/10/2015	10/8/2016	10/7/2017
41	10/12/2013	10/11/2014	10/17/2015	10/15/2016	10/14/2017
42	10/19/2013	10/18/2014	10/24/2015	10/22/2016	10/21/2017
43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
45	11/9/2013	11/8/2014	11/14/2015	11/12/2016	11/11/2017
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50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 44: OCTOBER 30, 2016 – NOVEMBER 5, 2016

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.**

REPORT SNAPSHOT FOR WEEK 44

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.2%	Higher than the previous week, Hawaii’s historical baseline, and the national baseline; comparable to the national ILI rate.
Number of ILI clusters reported to HDOH	2	There have been 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	11.6%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	7.3%	Higher than the previous week. This number means that many, if not all, of the 92.7% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	6.4%	

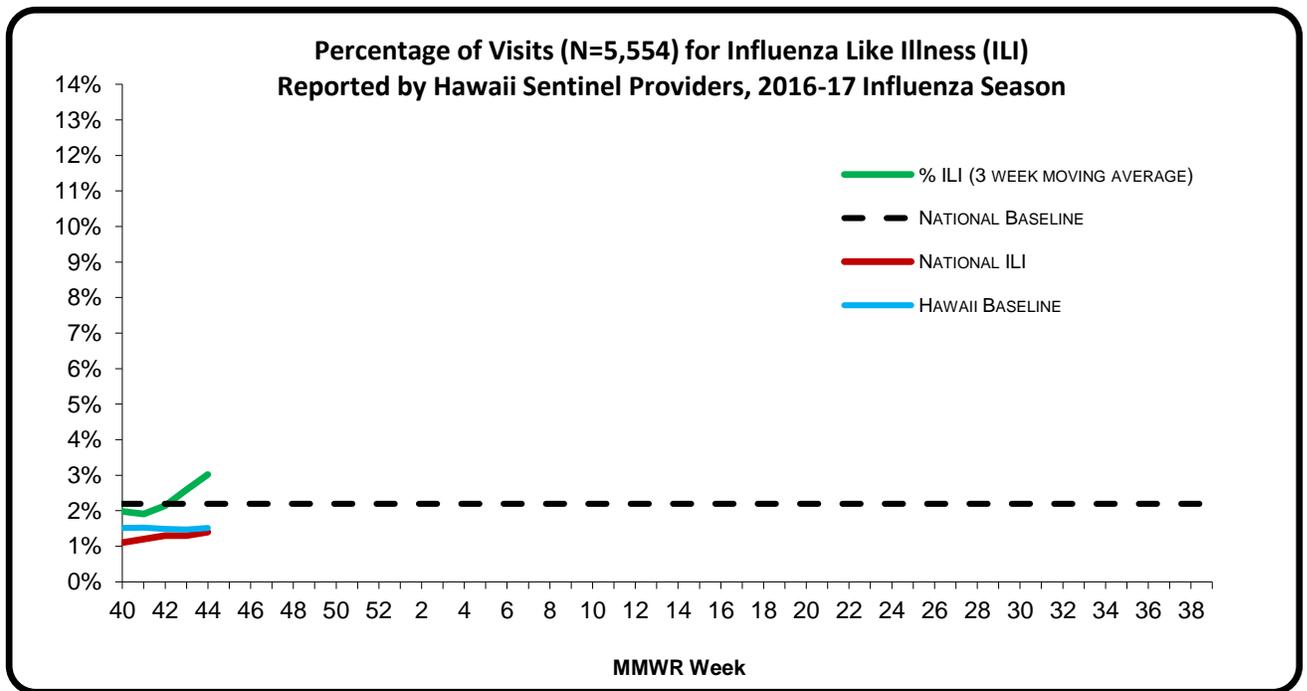
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 3.2% (season to date: 2.3%) 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 the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) but higher than the national ILI rate (1.4%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: Two influenza-like illness clusters were reported to HDOH during week 44. Both clusters occurred at different long term care facilities on Oahu and had cases of influenza A.



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

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.

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 criteria⁵ 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](#)).

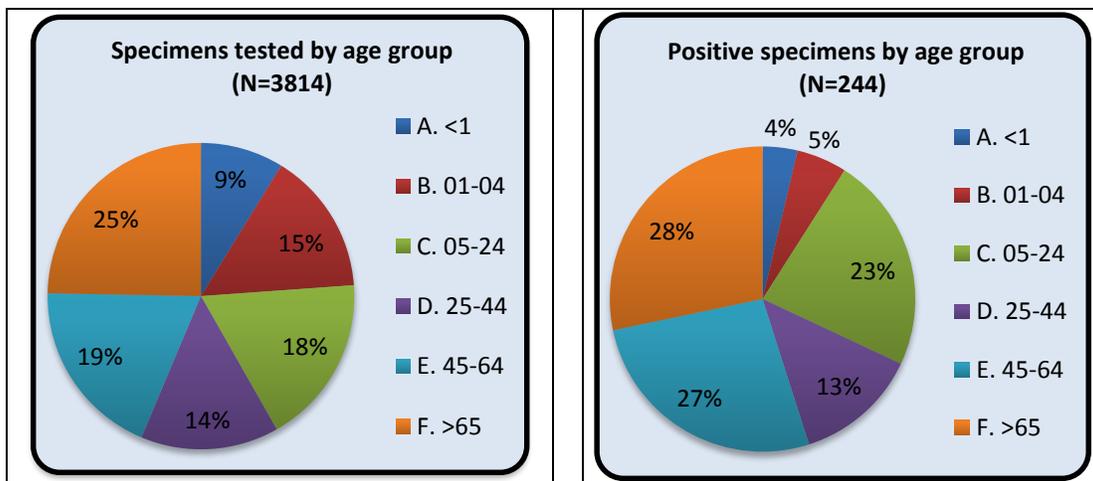
A. INFLUENZA:

- The following reflects laboratory findings for week 44 of the 2016-17 influenza season:
 - A total of 520 specimens have been tested statewide for influenza viruses (positive: 38 [7.3%]). (Season to date: 3,814 tested [6.4% positive])
 - 257 (49.4%) were screened only by rapid antigen tests with no confirmatory testing
 - 263 (50.6%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 482 (92.7%) were negative.

<i>Influenza type</i>	<i>Current week 44 (%)</i>	<i>Season to date (%)</i>
<i>2009 H1N1</i>	0 (0.0)	7 (2.9)
<i>Influenza A (H3)</i>	0 (0.0)	29 (11.9)
<i>Influenza A no subtyping</i>	35 (92.1)	172 (70.5)
<i>Influenza B (Yamagata)</i>	0 (0.0)	4 (1.6)
<i>Influenza B (Victoria)</i>	0 (0.0)	1 (0.4)
<i>Influenza B no genotyping</i>	3 (7.9)	31 (12.7)

1. AGE DISTRIBUTION

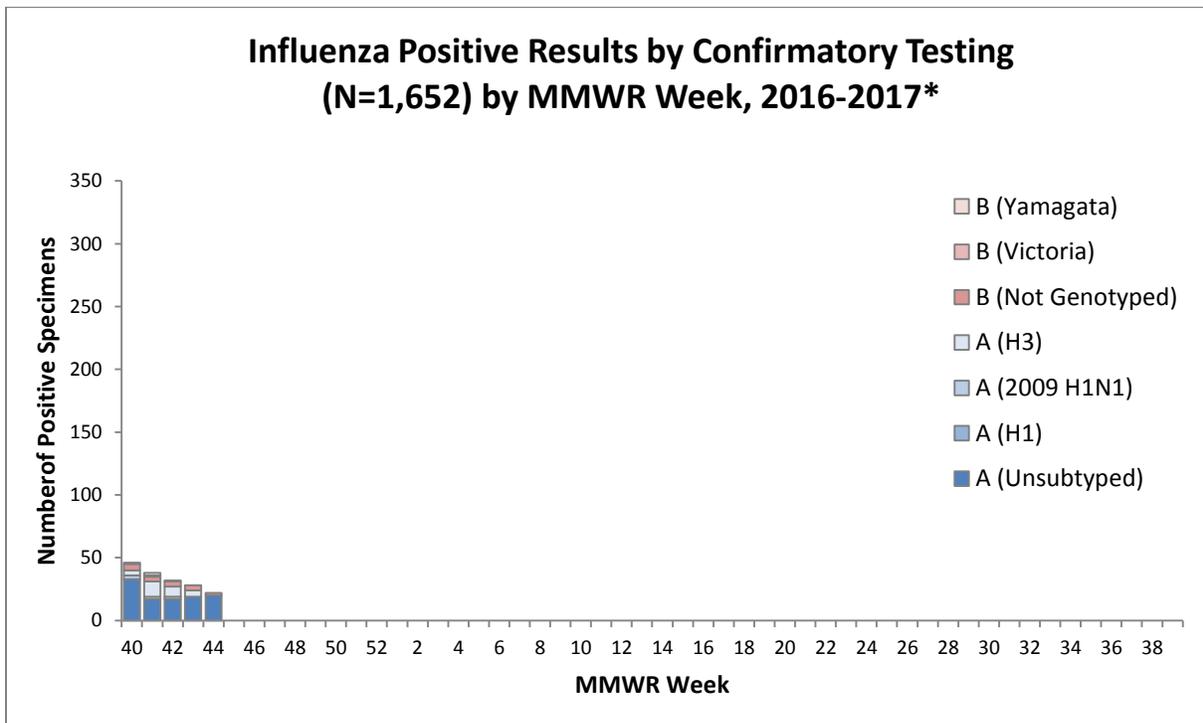
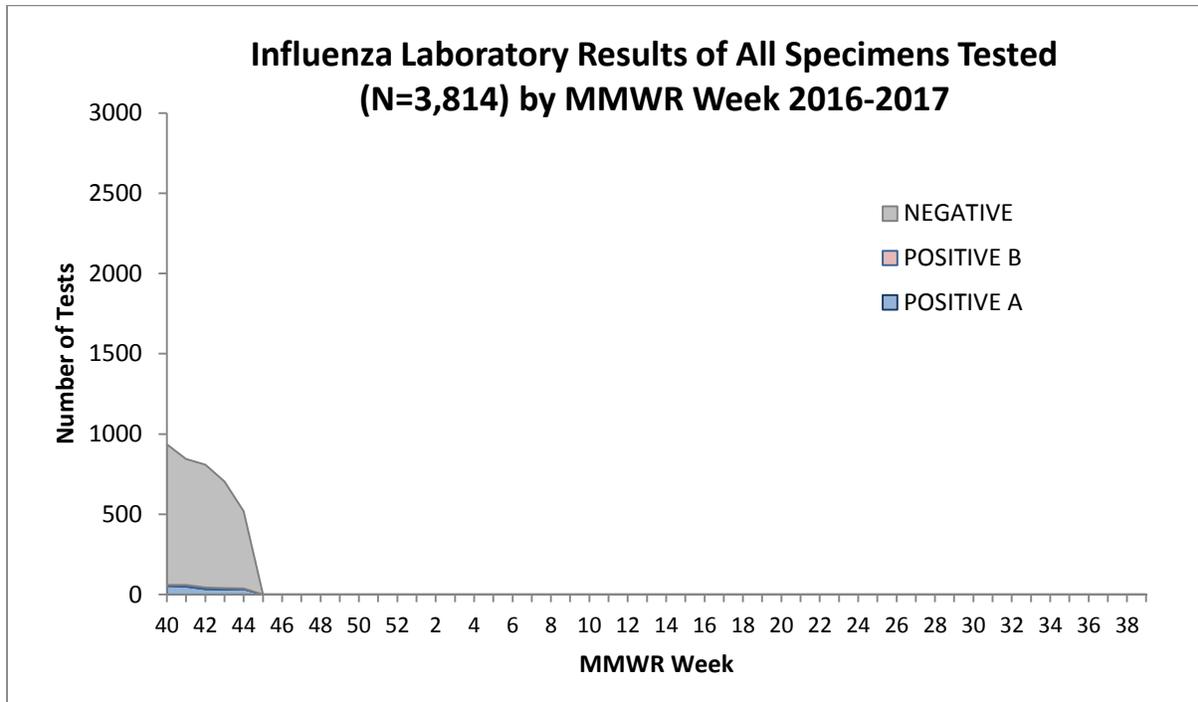
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.



⁵ 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.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

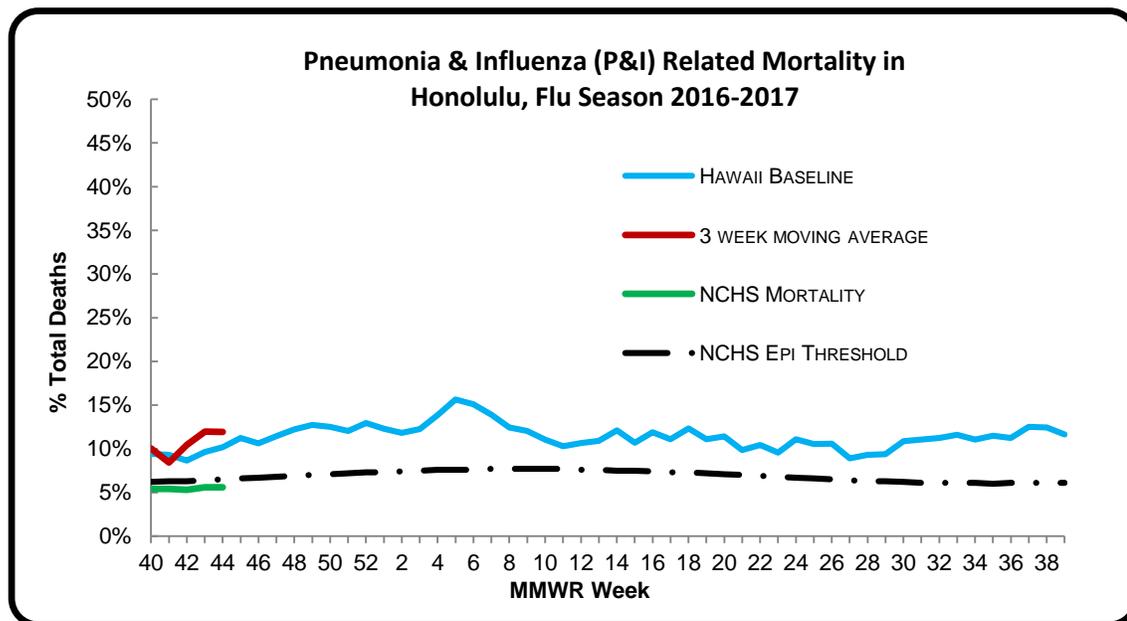


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- **11.6%** of all deaths that occurred in Honolulu during week 44 were related to pneumonia or influenza. For the current season (season to date: **9.9%**), there have been 465 deaths from any cause, 46 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁶ (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the CDC’s National Center for Health Statistics (NCHS) P&I mortality⁷ (5.6%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.6%) (i.e., inside the 95% confidence interval).



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁸:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 44. (Season total: 0).

⁶ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁷ 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

⁸ 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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *No human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2016–2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 **October 3, 2016**.

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

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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.

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51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 45: NOVEMBER 6, 2016 – NOVEMBER 12, 2016

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.**

REPORT SNAPSHOT FOR WEEK 45

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.8%	Lower than the previous week; Higher than Hawaii’s historical baseline and the national ILI rate; comparable to the national baseline.
Number of ILI clusters reported to HDOH	0	There have been 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	11.4%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	10.9%	Higher than the previous week. This number means that many, if not all, of the 89.1% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	7.0%	

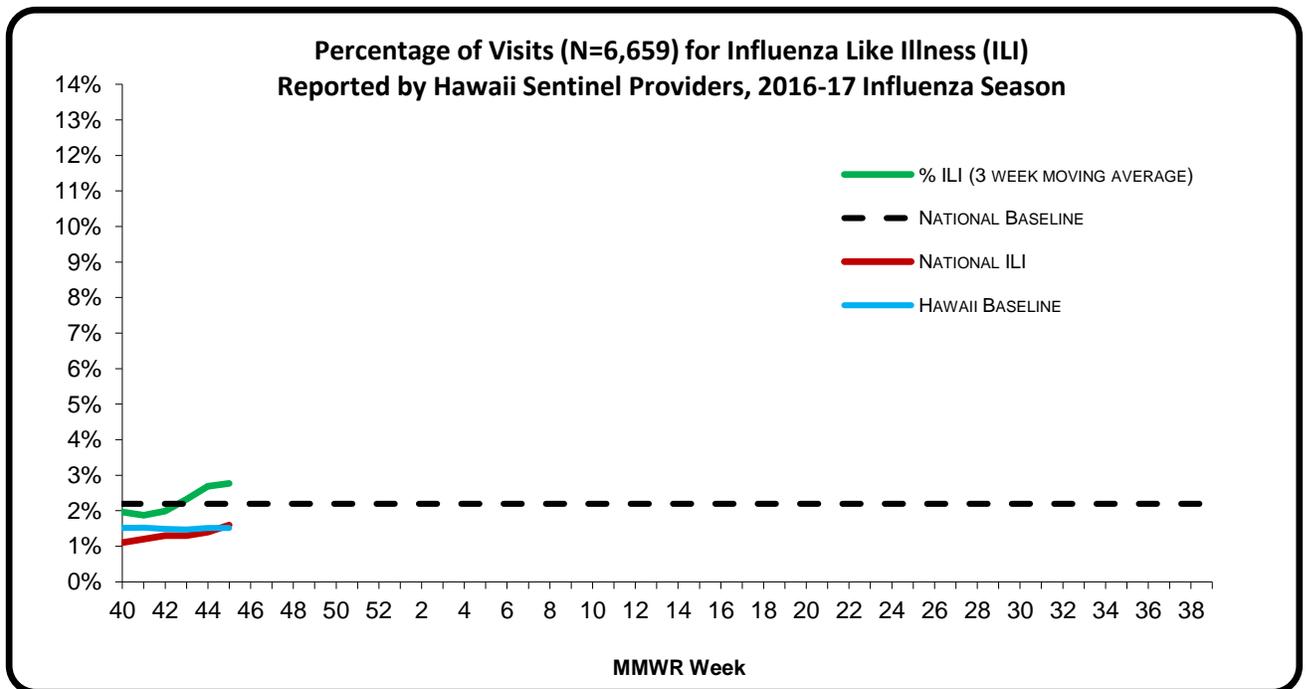
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 2.8% (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 the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) but higher than the national ILI rate (1.6%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 45.



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

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.

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 criteria⁵ 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](#)).

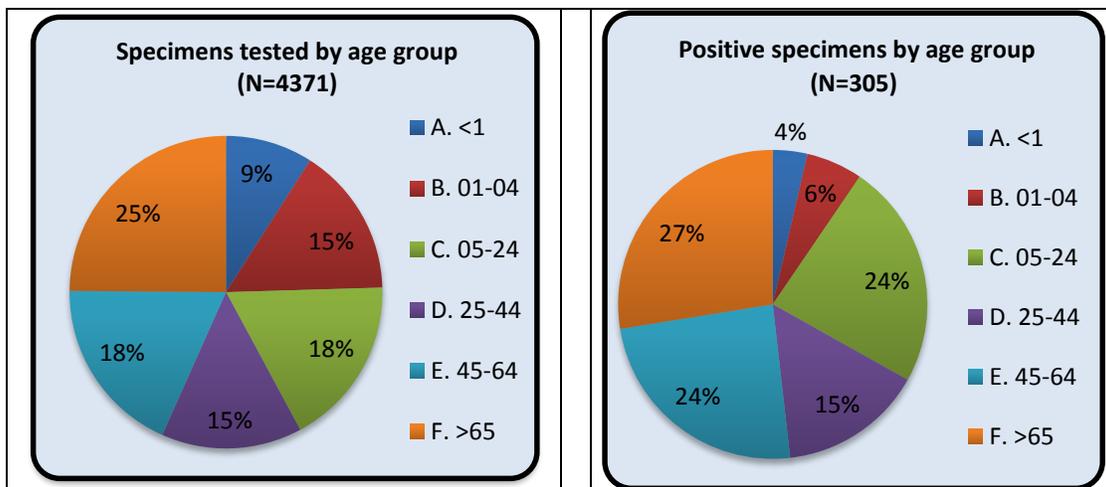
A. INFLUENZA:

- The following reflects laboratory findings for week 45 of the 2016-17 influenza season:
 - A total of 558 specimens have been tested statewide for influenza viruses (positive: 61 [10.9%]). (Season to date: 4,371 tested [7.0% positive])
 - 320 (57.3%) were screened only by rapid antigen tests with no confirmatory testing
 - 238 (42.7%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 497 (89.1%) were negative.

Influenza type	Current week 45 (%)	Season to date (%)
2009 H1N1	0 (0.0)	7 (2.3)
Influenza A (H3)	0 (0.0)	29 (9.5)
Influenza A no subtyping	59 (96.7)	231 (75.7)
Influenza B (Yamagata)	0 (0.0)	4 (1.3)
Influenza B (Victoria)	1 (1.6)	2 (0.7)
Influenza B no genotyping	1 (1.6)	32 (10.5)

1. AGE DISTRIBUTION

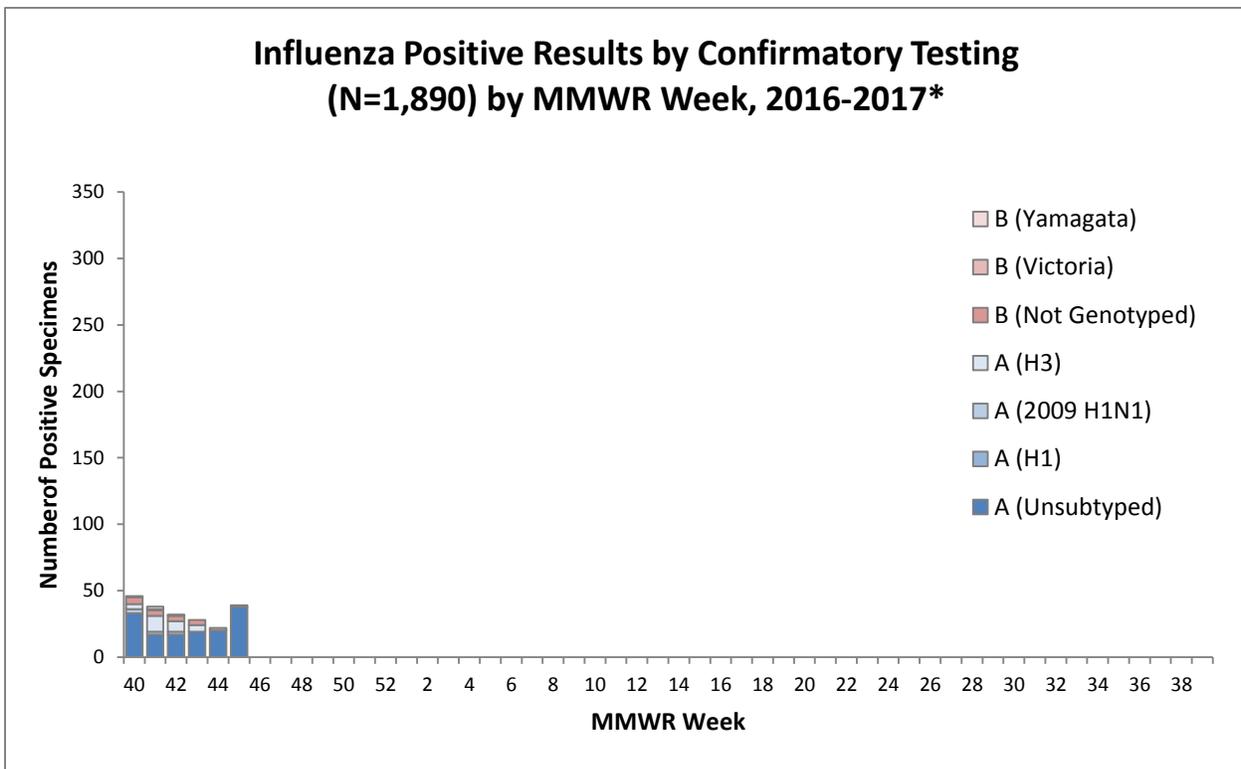
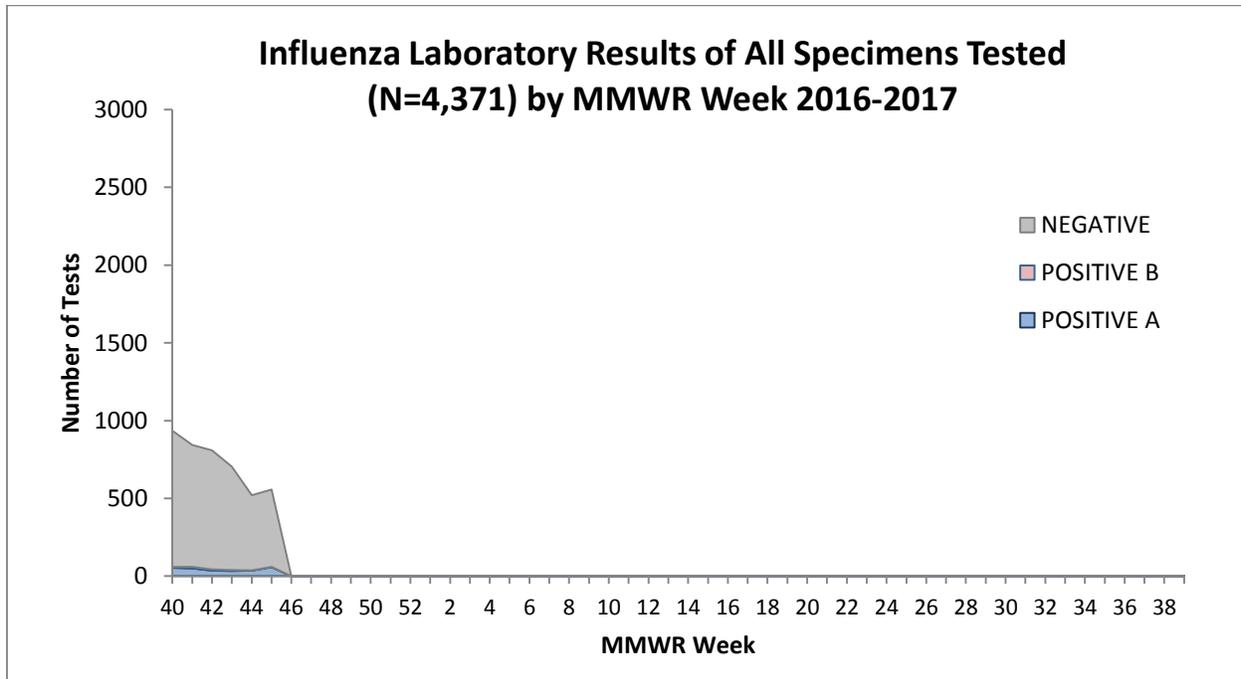
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.



⁵ 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.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

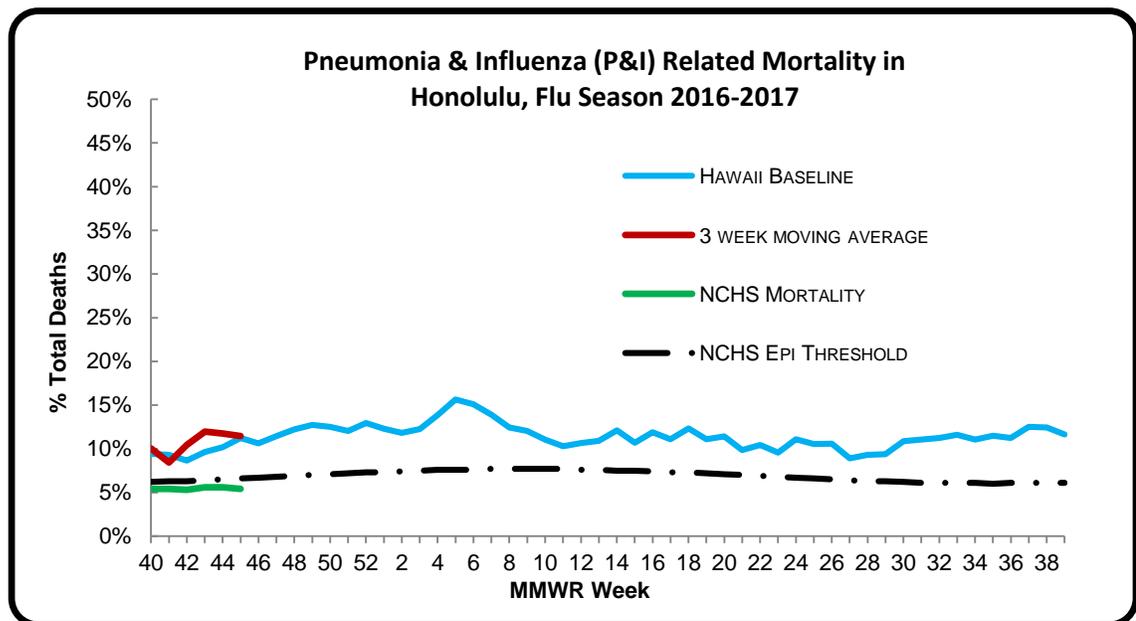


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- **11.4%** of all deaths that occurred in Honolulu during week 45 were related to pneumonia or influenza. For the current season (season to date: **10.1%**), there have been 553 deaths from any cause, 56 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁶ (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the CDC's National Center for Health Statistics (NCHS) P&I mortality⁷ (5.4%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.7%) (i.e., inside the 95% confidence interval).



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁸:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 45. (Season total: 0).

⁶ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

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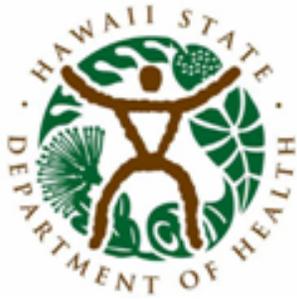
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42	10/19/2013	10/18/2014	10/24/2015	10/22/2016	10/21/2017
43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
45	11/9/2013	11/8/2014	11/14/2015	11/12/2016	11/11/2017
46	11/16/2013	11/15/2014	11/21/2015	11/19/2016	11/18/2017
47	11/23/2013	11/22/2014	11/28/2015	11/26/2016	11/25/2017
48	11/30/2013	11/29/2014	12/5/2015	12/3/2016	12/2/2017
49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 46: NOVEMBER 13, 2016 – NOVEMBER 19, 2016

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.**

REPORT SNAPSHOT FOR WEEK 46

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

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, the national baseline, and the national ILI rate.
Number of ILI clusters reported to HDOH	0	There have been 4 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	15.7%	Comparable to the historical baseline for Hawaii; higher than the national epidemic threshold and the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	12.0%	Higher than the previous week. This number means that many, if not all, of the 88.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	8.0%	

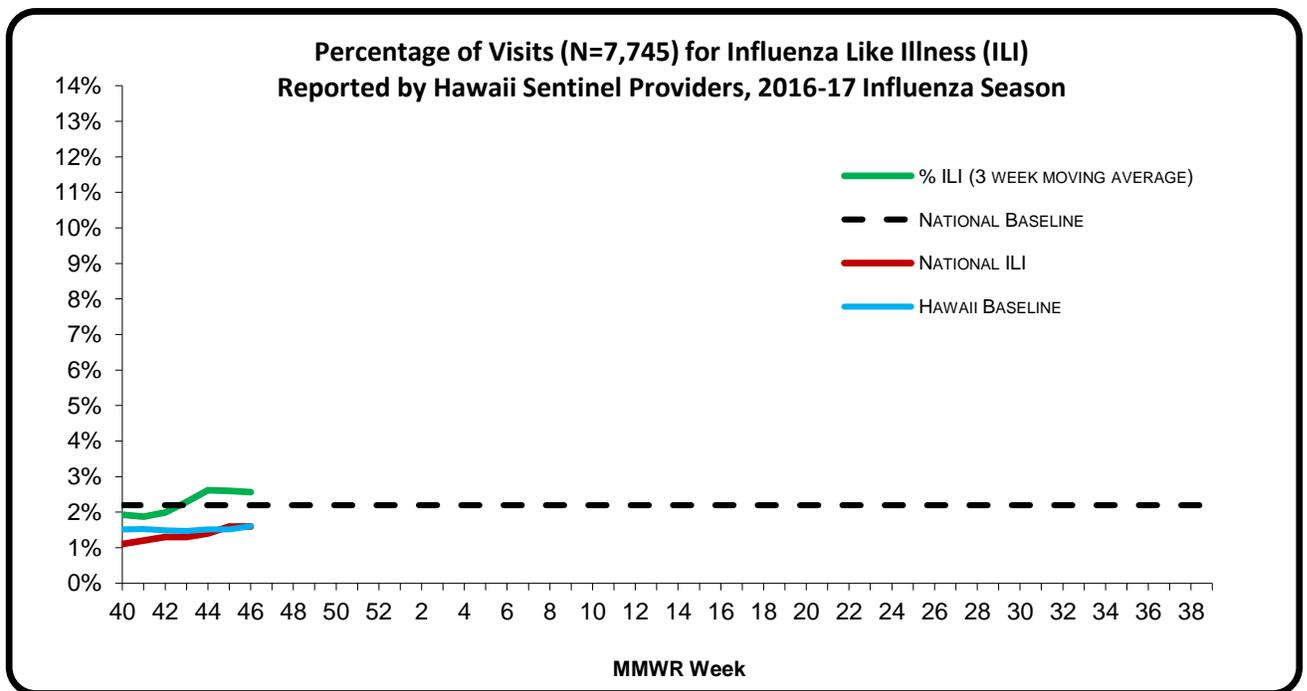
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- **2.4%** (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 the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) and the national ILI rate (1.6%) (i.e., inside the 95% confidence interval).
- **ILI Cluster Activity:** No clusters were reported to HDOH during week 46.



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

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.

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 criteria⁵ 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](#)).

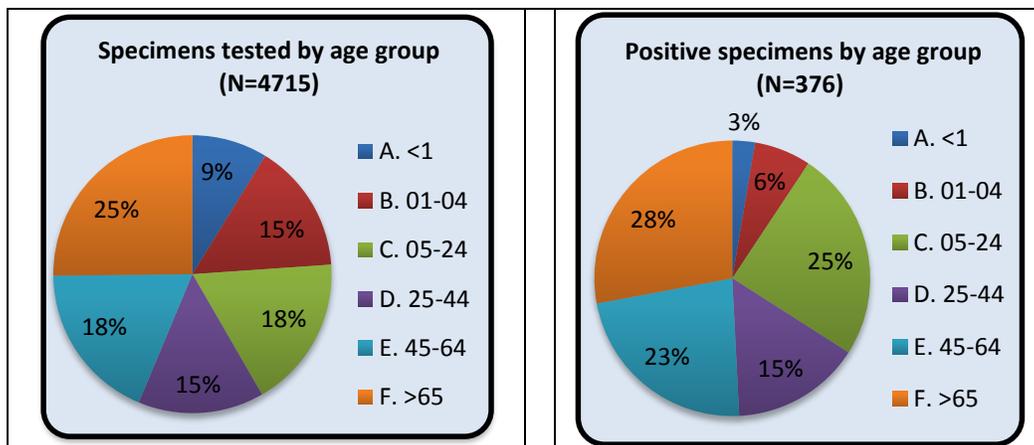
A. INFLUENZA:

- The following reflects laboratory findings for week 46 of the 2016-17 influenza season:
 - A total of 524 specimens have been tested statewide for influenza viruses (positive: 63 [12.0%]). (Season to date: 4,715 tested [8.0% positive])
 - 270 (51.5%) were screened only by rapid antigen tests with no confirmatory testing
 - 254 (48.5%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 461 (88.0%) were negative.

Influenza type	Current week 46 (%)	Season to date (%)
Influenza A (H1) ⁶	0 (0.0)	9 (2.4)
Influenza A (H3)	3 (4.8)	57 (15.2)
Influenza A no subtyping	50 (79.4)	261 (69.4)
Influenza B (Yamagata)	3 (4.8)	11 (2.9)
Influenza B (Victoria)	0 (0.0)	4 (1.1)
Influenza B no genotyping	7 (11.1)	34 (9.0)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

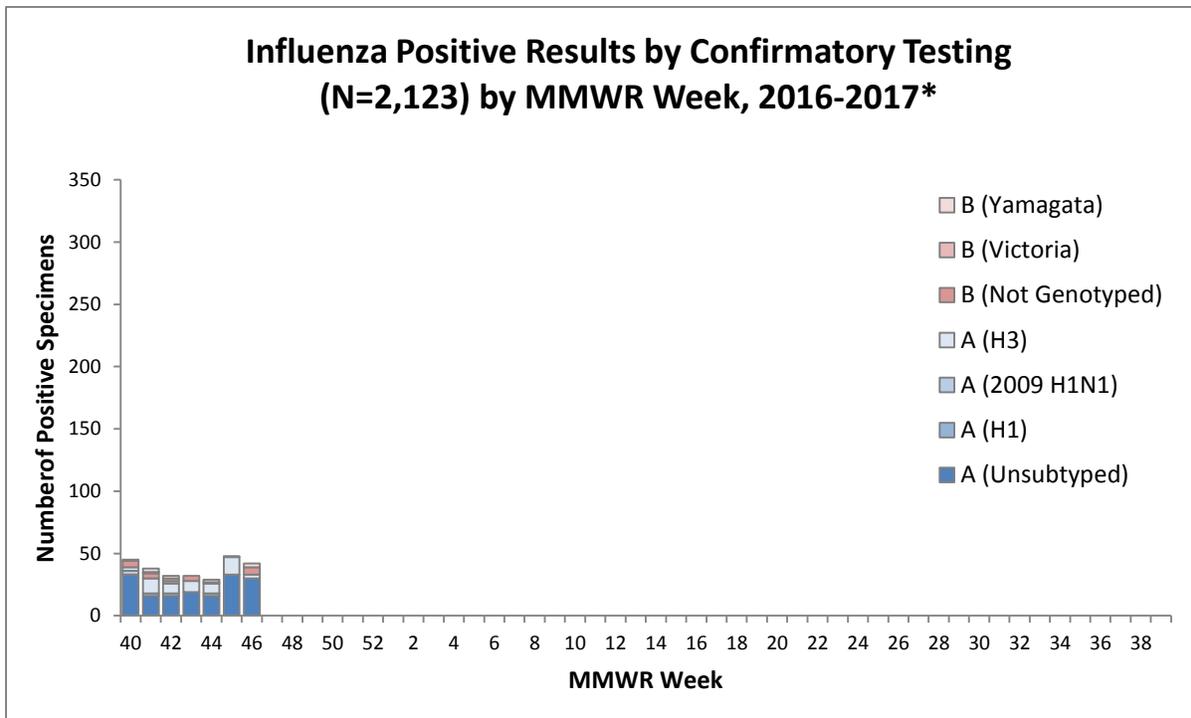
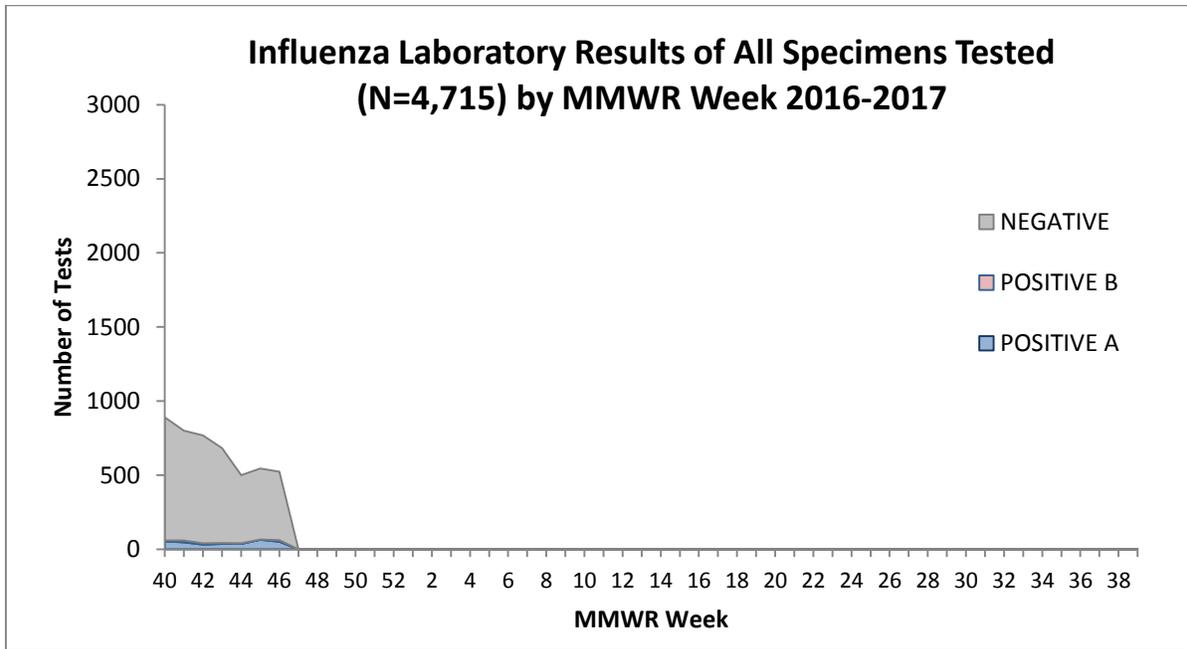


⁵ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁶ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

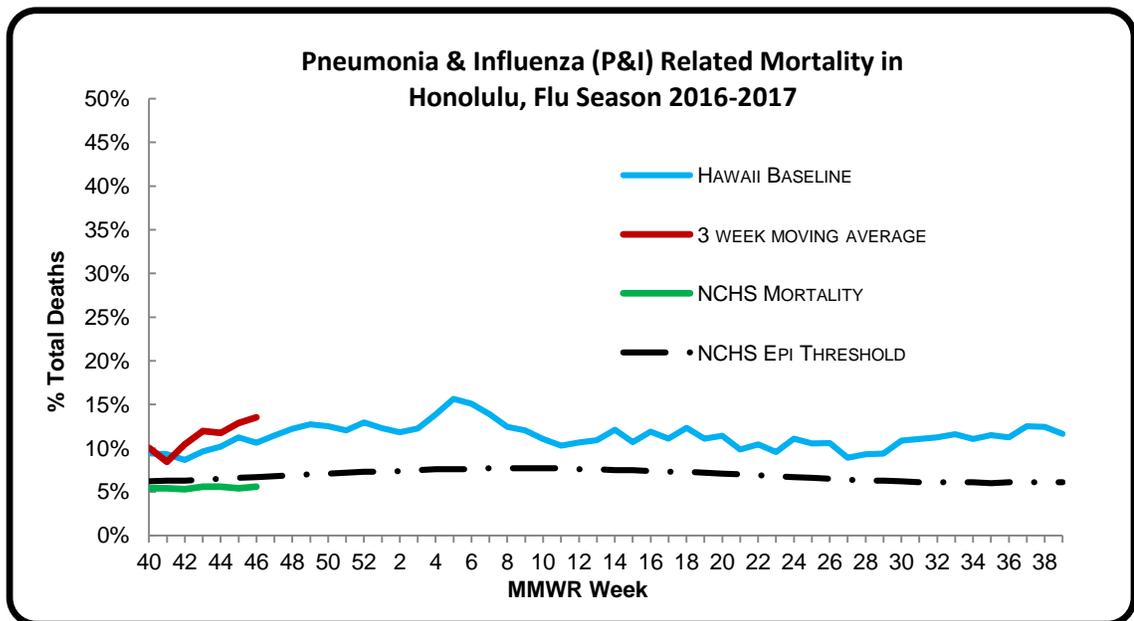


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- 15.7% of all deaths that occurred in Honolulu during week 46 were related to pneumonia or influenza. For the current season (season to date: 10.8%), there have been 623 deaths from any cause, 67 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ (5.6%) (i.e., outside the 95% confidence interval) and the epidemic threshold (6.8%) (i.e., outside the 95% confidence interval).



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 46. (Season total: 0).

⁷ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁸ 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

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.

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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *One human infection with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2016–2017 influenza season.*
- *One human infection with novel influenza A H1N1v virus has been reported to WHO from the Netherlands during the 2016-2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 21, 2016**. Since the last update, one new lab-confirmed case of H5N6 was reported from China. The case remains hospitalized in critical condition and the investigation of the source of exposure is ongoing. Two new laboratory confirmed cases of H7N9 were also reported from China. One case had known exposure to live poultry; no exposure history is available for the second case.

APPENDIX 1: ADDITIONAL INFORMATION

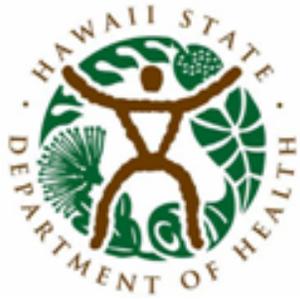
For more information regarding local and national influenza surveillance programs, visit the following sites.

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	2013	2014	2015	2016	2017
1	1/5/2013	1/4/2014	1/10/2015	1/9/2016	1/7/2017
2	1/12/2013	1/11/2014	1/17/2015	1/16/2016	1/14/2017
3	1/19/2013	1/18/2014	1/24/2015	1/23/2016	1/21/2017
4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
8	2/23/2013	2/22/2014	2/28/2015	2/27/2016	2/25/2017
9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
10	3/9/2013	3/8/2014	3/14/2015	3/12/2016	3/11/2017
11	3/16/2013	3/15/2014	3/21/2015	3/19/2016	3/18/2017
12	3/23/2013	3/22/2014	3/28/2015	3/26/2016	3/25/2017
13	3/30/2013	3/29/2014	4/4/2015	4/2/2016	4/1/2017
14	4/6/2013	4/5/2014	4/11/2015	4/9/2016	4/8/2017
15	4/13/2013	4/12/2014	4/18/2015	4/16/2016	4/15/2017
16	4/20/2013	4/19/2014	4/25/2015	4/23/2016	4/22/2017
17	4/27/2013	4/26/2014	5/2/2015	4/30/2016	4/29/2017
18	5/4/2013	5/3/2014	5/9/2015	5/7/2016	5/6/2017
19	5/11/2013	5/10/2014	5/16/2015	5/14/2016	5/13/2017
20	5/18/2013	5/17/2014	5/23/2015	5/21/2016	5/20/2017
21	5/25/2013	5/24/2014	5/30/2015	5/28/2016	5/27/2017
22	6/1/2013	5/31/2014	6/6/2015	6/4/2016	6/3/2017
23	6/8/2013	6/7/2014	6/13/2015	6/11/2016	6/10/2017
24	6/15/2013	6/14/2014	6/20/2015	6/18/2016	6/17/2017
25	6/22/2013	6/21/2014	6/27/2015	6/25/2016	6/24/2017
26	6/29/2013	6/28/2014	7/4/2015	7/2/2016	7/1/2017
27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
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30	7/27/2013	7/26/2014	8/1/2015	7/30/2016	7/29/2017
31	8/3/2013	8/2/2014	8/8/2015	8/6/2016	8/5/2017
32	8/10/2013	8/9/2014	8/15/2015	8/13/2016	8/12/2017
33	8/17/2013	8/16/2014	8/22/2015	8/20/2016	8/19/2017
34	8/24/2013	8/23/2014	8/29/2015	8/27/2016	8/26/2017
35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
38	9/21/2013	9/20/2014	9/26/2015	9/24/2016	9/23/2017
39	9/28/2013	9/27/2014	10/3/2015	10/1/2016	9/30/2017
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49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
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51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 47: NOVEMBER 20, 2016 – NOVEMBER 26, 2016

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.**

REPORT SNAPSHOT FOR WEEK 47

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.4%	Higher than the previous week, Hawaii’s historical baseline, and the national ILI rate; comparable to the national baseline.
Number of ILI clusters reported to HDOH	1	There have been 5 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	13.2%	Comparable to the historical baseline for Hawaii and the national epidemic threshold; higher than and the NCHS average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	11.2%	Lower than the previous week. This number means that many, if not all, of the 88.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	8.3%	

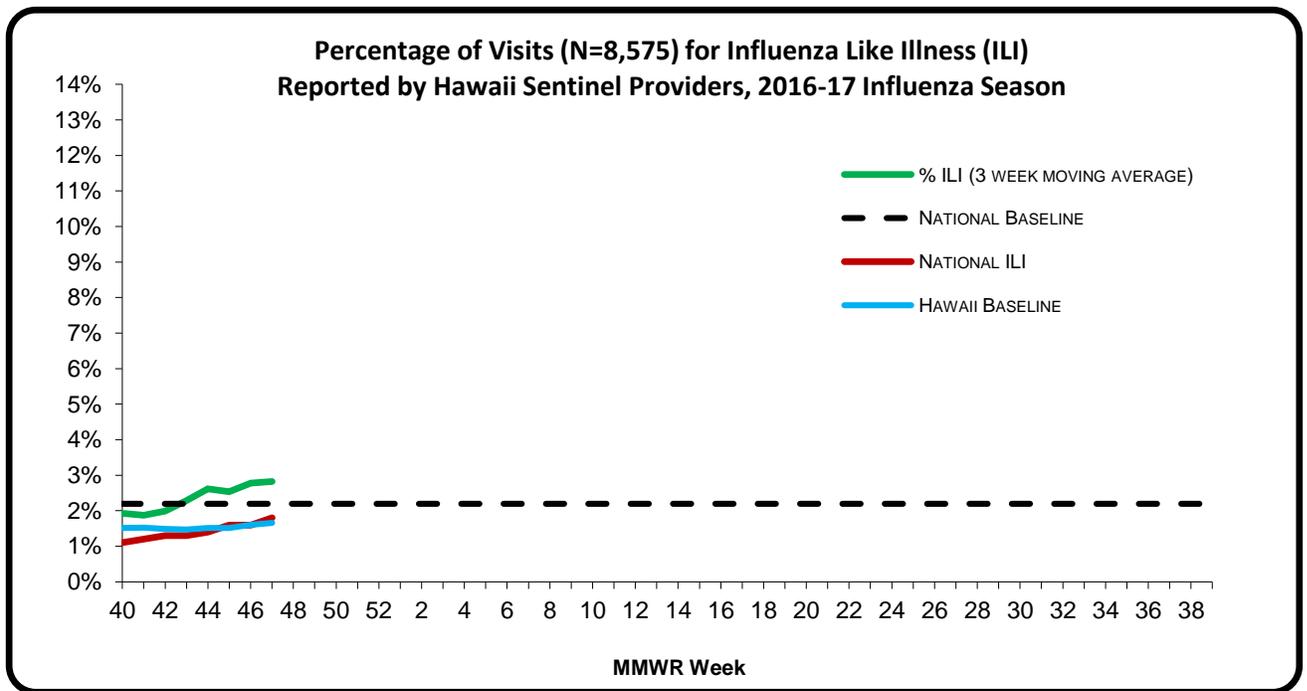
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- **3.4%** (season to date: **2.3%**) 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 the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.8%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** One cluster was reported to HDOH during week 47. The cluster occurred at a senior living center and had confirmed cases of influenza A.



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

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.

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 criteria⁵ 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](#)).

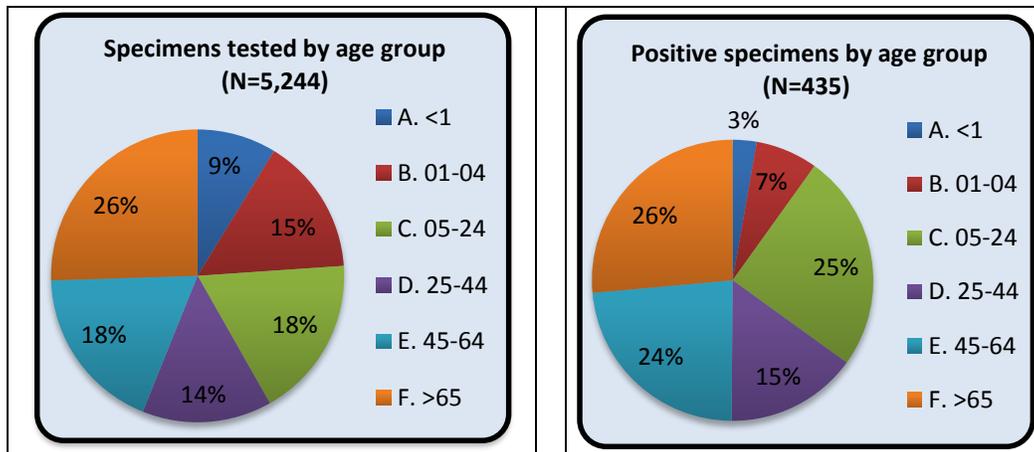
A. INFLUENZA:

- The following reflects laboratory findings for week 47 of the 2016-17 influenza season:
 - A total of 529 specimens have been tested statewide for influenza viruses (positive: 59 [11.2%]). (Season to date: 5,244 tested [8.3% positive])
 - 319 (60.3%) were screened only by rapid antigen tests with no confirmatory testing
 - 210 (39.7%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 470 (88.8%) were negative.

Influenza type	Current week 47 (%)	Season to date (%)
Influenza A (H1) ⁶	0 (0.0)	9 (2.1)
Influenza A (H3)	3 (5.0)	60 (13.8)
Influenza A no subtyping	50 (84.8)	311 (71.5)
Influenza B (Yamagata)	0 (0.0)	11 (2.5)
Influenza B (Victoria)	0 (0.0)	4 (1.0)
Influenza B no genotyping	6 (10.2)	40 (9.2)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

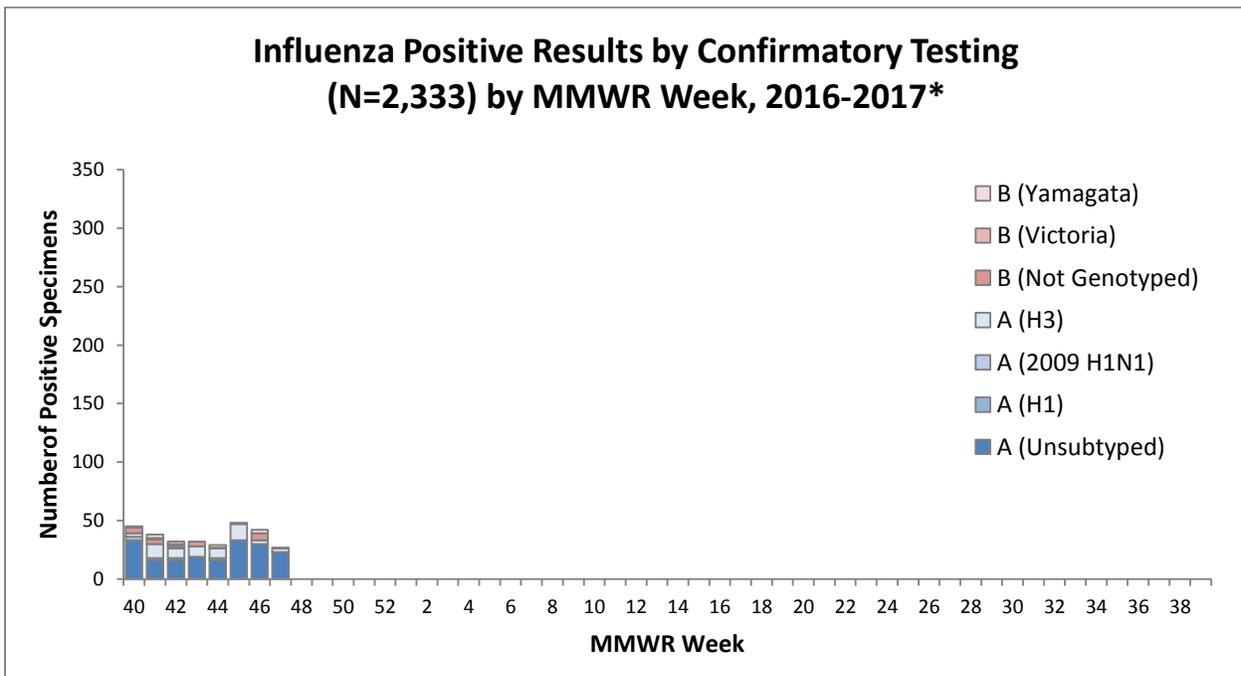
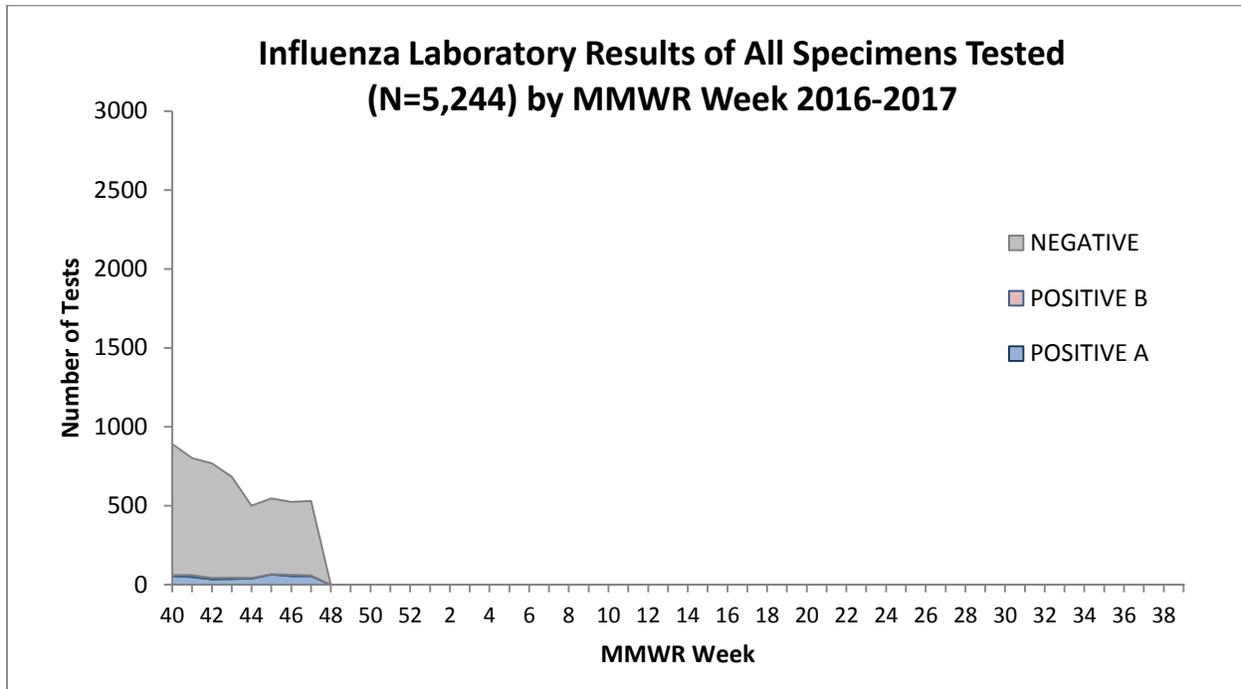


⁵ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁶ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

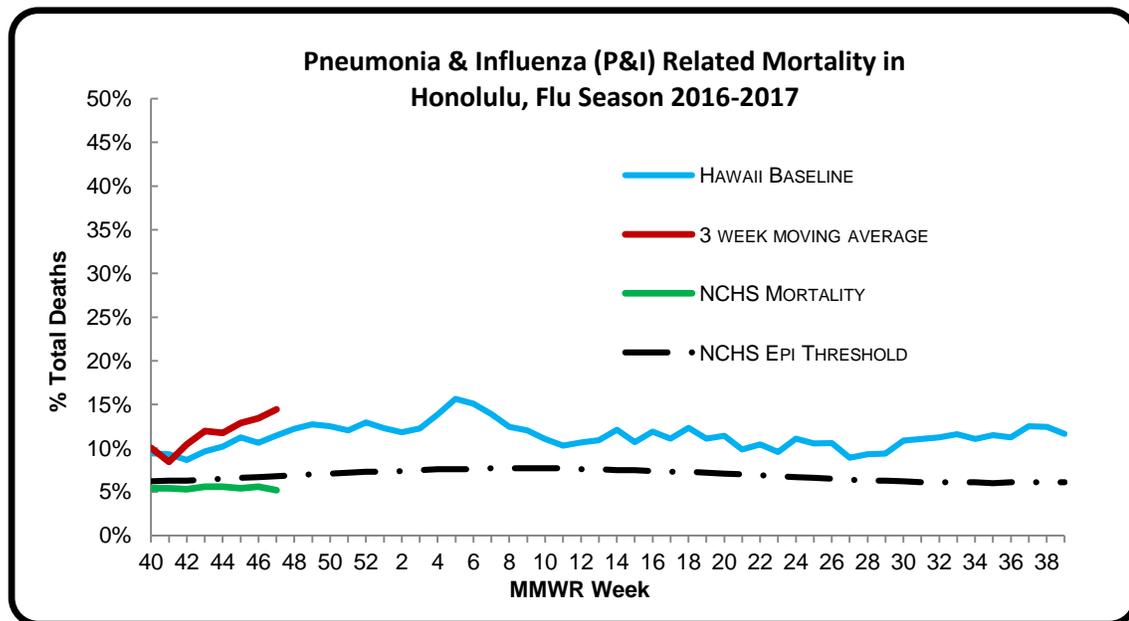


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- 13.2% of all deaths that occurred in Honolulu during week 47 were related to pneumonia or influenza. For the current season (season to date: 11.0%), there have been 699 deaths from any cause, 77 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ (5.2%) (i.e., outside the 95% confidence interval) and comparable to the epidemic threshold (6.9%) (i.e., inside the 95% confidence interval).



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 47. (Season total: 0).

⁷ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

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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.

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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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](#)).

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- *One human infection with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2016–2017 influenza season.*
- *One human infection with novel influenza A H1N1v virus has been reported to WHO from the Netherlands during the 2016-2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 21, 2016**.

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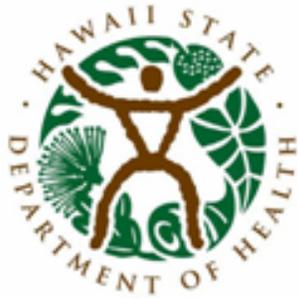
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APPENDIX 2: MMWR WEEK DATES

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.

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26	6/29/2013	6/28/2014	7/4/2015	7/2/2016	7/1/2017
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30	7/27/2013	7/26/2014	8/1/2015	7/30/2016	7/29/2017
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36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
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49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 48: NOVEMBER 27, 2016 – DECEMBER 3, 2016

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.**

REPORT SNAPSHOT FOR WEEK 48

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.6%	Lower than the previous week; comparable to Hawaii’s historical baseline, the national ILI rate, and national baseline.
Number of ILI clusters reported to HDOH	1	There have been 6 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	16.4%	Comparable to the historical baseline for Hawaii. Due to data processing problems, NCHS mortality surveillance data for this week will not be published.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	16.2%	Higher than the previous week. This number means that many, if not all, of the 83.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.1%	

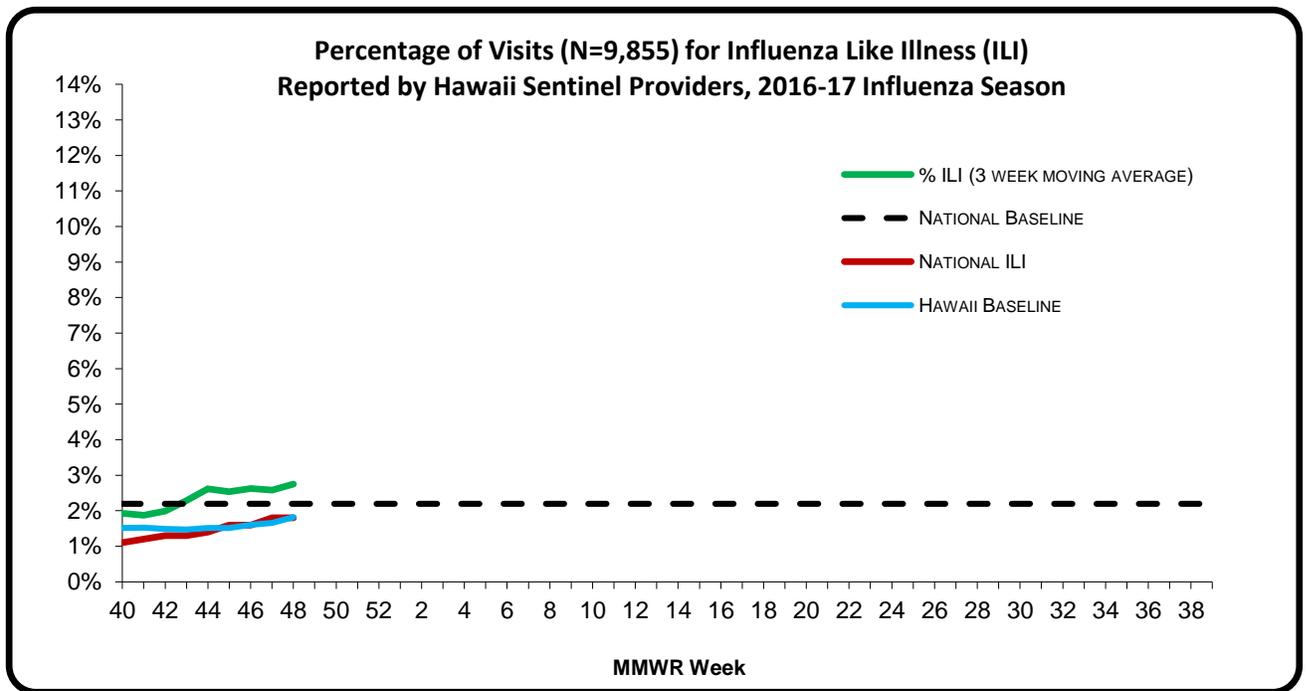
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 2.6% (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^{2,3} (i.e., inside the 95% confidence interval).
- Hawaii’s ILI outpatient visits were comparable the national baseline (2.2%)⁴ (i.e., inside the 95% confidence interval) and the national ILI rate (1.8%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: One cluster was reported to HDOH during week 48. The cluster occurred at an elementary school on Oahu and had confirmed cases of influenza B.



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

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.

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 criteria⁵ 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](#)).

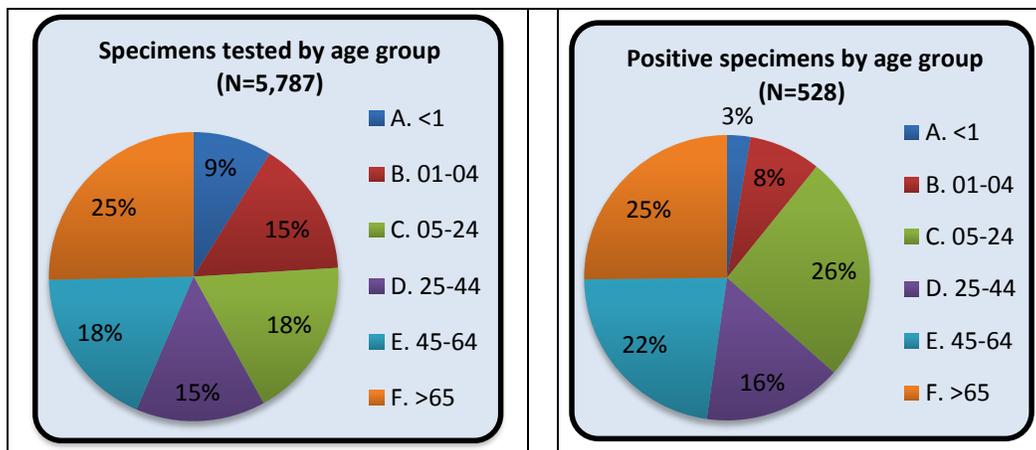
A. INFLUENZA:

- The following reflects laboratory findings for week 48 of the 2016-17 influenza season:
 - A total of 537 specimens have been tested statewide for influenza viruses (positive: 87 [16.2%]). (Season to date: 5,787 tested [9.1% positive])
 - 306 (57.0%) were screened only by rapid antigen tests with no confirmatory testing
 - 231 (43.0%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 450 (83.8%) were negative.

Influenza type	Current week 48 (%)	Season to date (%)
Influenza A (H1) ⁶	0 (0.0)	9 (1.7)
Influenza A (H3)	4 (4.6)	74 (14.0)
Influenza A no subtyping	70 (80.5)	377 (71.4)
Influenza B (Yamagata)	0 (0.0)	11 (2.1)
Influenza B (Victoria)	0 (0.0)	4 (0.8)
Influenza B no genotyping	13 (14.9)	53 (10.0)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

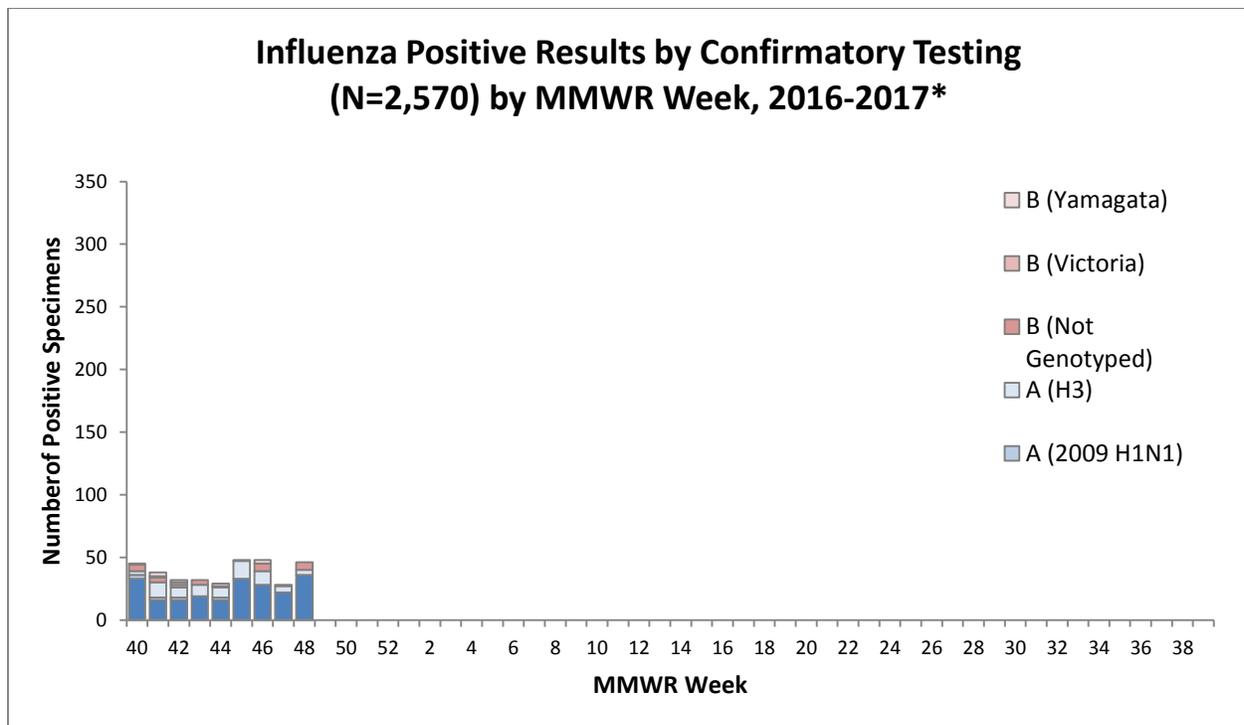
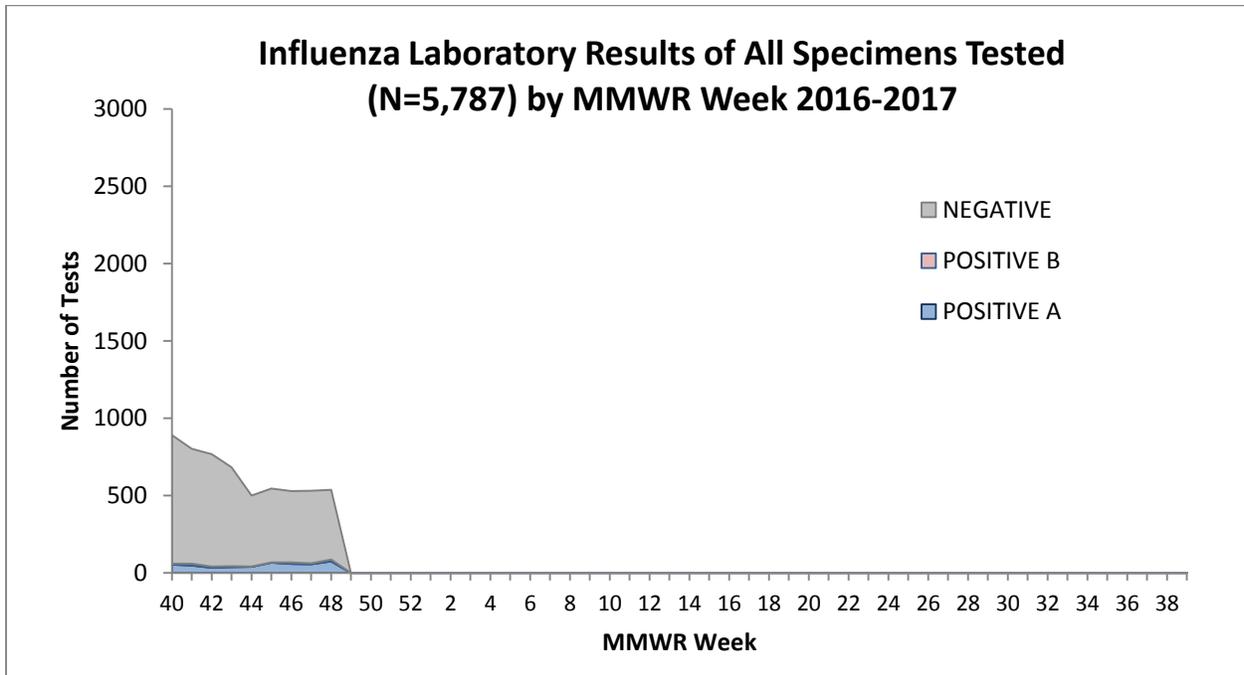


⁵ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁶ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

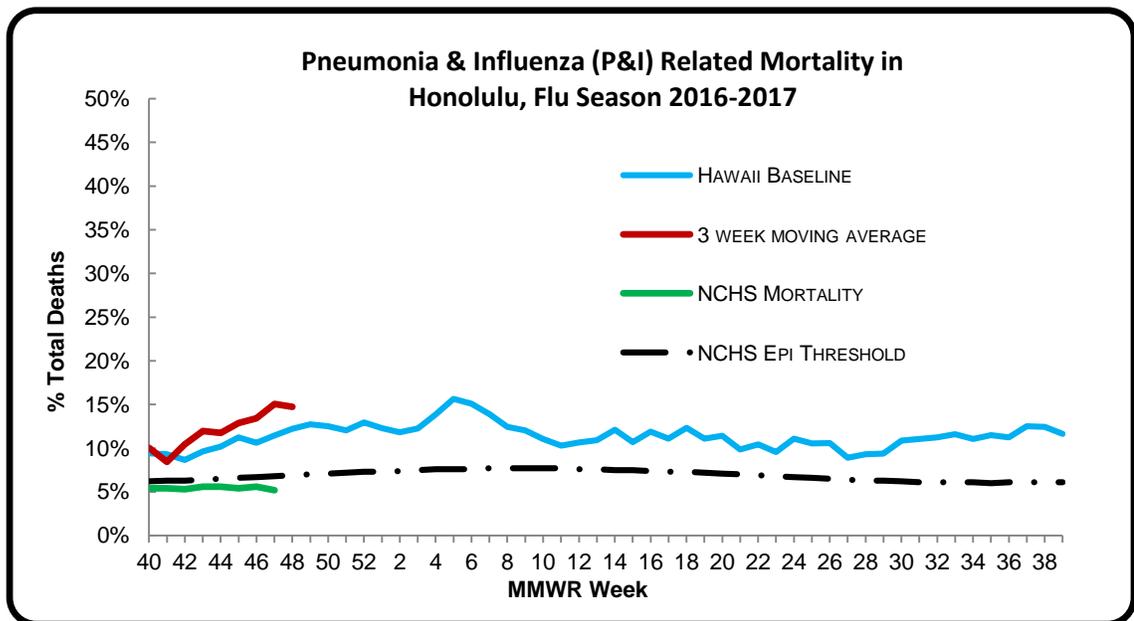


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For week 48 of the current influenza season:

- **16.4%** of all deaths that occurred in Honolulu during week 48 were related to pneumonia or influenza. For the current season (season to date: **11.7%**), there have been 803 deaths from any cause, 94 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ will not be published this week due to data processing issues.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 48. (Season total: 0).

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27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
28	7/13/2013	7/12/2014	7/18/2015	7/16/2016	7/15/2017
29	7/20/2013	7/19/2014	7/25/2015	7/23/2016	7/22/2017
30	7/27/2013	7/26/2014	8/1/2015	7/30/2016	7/29/2017
31	8/3/2013	8/2/2014	8/8/2015	8/6/2016	8/5/2017
32	8/10/2013	8/9/2014	8/15/2015	8/13/2016	8/12/2017
33	8/17/2013	8/16/2014	8/22/2015	8/20/2016	8/19/2017
34	8/24/2013	8/23/2014	8/29/2015	8/27/2016	8/26/2017
35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
38	9/21/2013	9/20/2014	9/26/2015	9/24/2016	9/23/2017
39	9/28/2013	9/27/2014	10/3/2015	10/1/2016	9/30/2017
40	10/5/2013	10/4/2014	10/10/2015	10/8/2016	10/7/2017
41	10/12/2013	10/11/2014	10/17/2015	10/15/2016	10/14/2017
42	10/19/2013	10/18/2014	10/24/2015	10/22/2016	10/21/2017
43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
45	11/9/2013	11/8/2014	11/14/2015	11/12/2016	11/11/2017
46	11/16/2013	11/15/2014	11/21/2015	11/19/2016	11/18/2017
47	11/23/2013	11/22/2014	11/28/2015	11/26/2016	11/25/2017
48	11/30/2013	11/29/2014	12/5/2015	12/3/2016	12/2/2017
49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 49: DECEMBER 4, 2016 – DECEMBER 10, 2016

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.**

REPORT SNAPSHOT FOR WEEK 49

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.5%	Higher than the previous week, Hawaii’s historical baseline, the national ILI rate, and national baseline.
Number of ILI clusters reported to HDOH	1	There have been 7 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	13.9%	Comparable to the historical baseline for Hawaii. Due to data processing problems, NCHS mortality surveillance data for this week will be delayed.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	20.5%	Higher than the previous week. This number means that many, if not all, of the 79.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	10.0%	

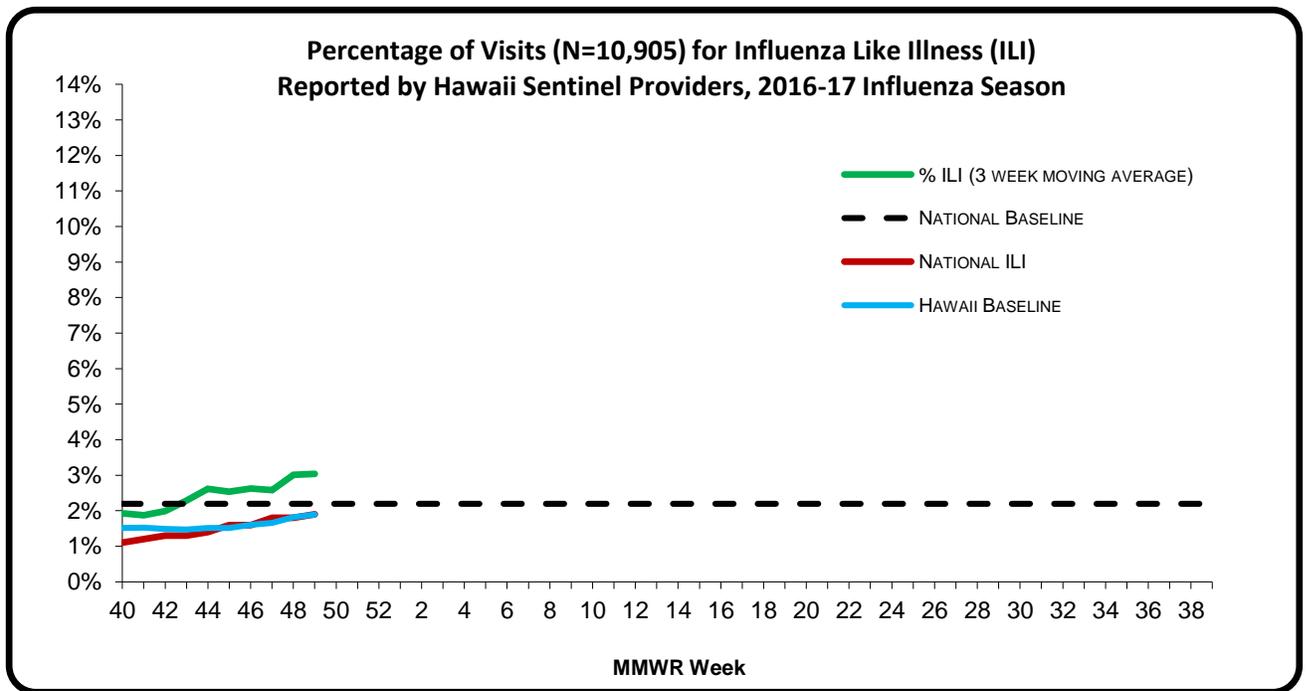
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- **3.5%** (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 (2.2%)⁴ (i.e., outside the 95% confidence interval) and the national ILI rate (1.9%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** One cluster was reported to HDOH during week 49. The cluster occurred at a long term care facility on Oahu and had cases of influenza A.



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

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.

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 criteria⁵ 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](#)).

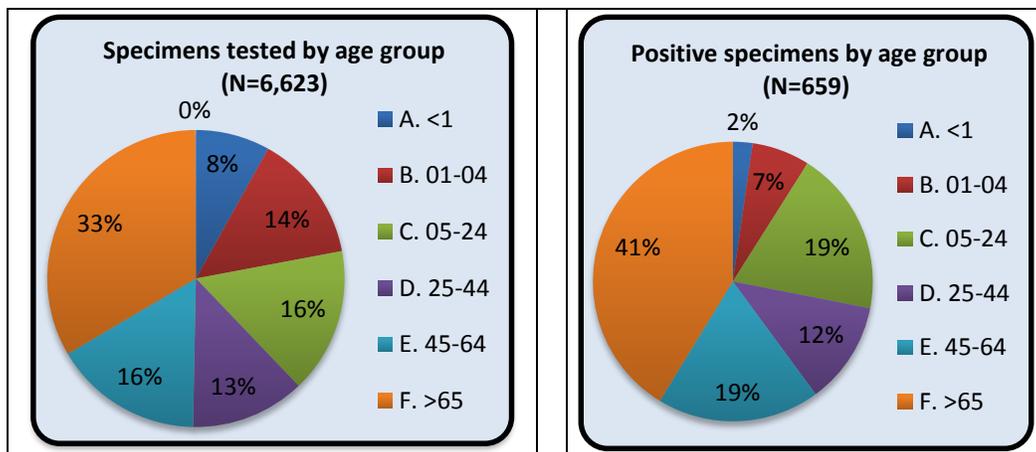
A. INFLUENZA:

- The following reflects laboratory findings for week 49 of the 2016-17 influenza season:
 - A total of **659** specimens have been tested statewide for influenza viruses (positive: **135 [20.5%]**). (Season to date: **6,623** tested [**10.0%** positive])
 - 370 (56.1%) were screened only by rapid antigen tests with no confirmatory testing
 - 289 (43.9%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 524 (79.5%) were negative.

Influenza type	Current week 49 (%)	Season to date (%)
Influenza A (H1) ⁶	0 (0.0)	9 (1.4)
Influenza A (H3)	1 (0.7)	77 (11.7)
Influenza A no subtyping	117 (86.7)	491 (74.5)
Influenza B (Yamagata)	0 (0.0)	10 (1.5)
Influenza B (Victoria)	0 (0.0)	4 (0.6)
Influenza B no genotyping	17 (12.6)	68 (10.3)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

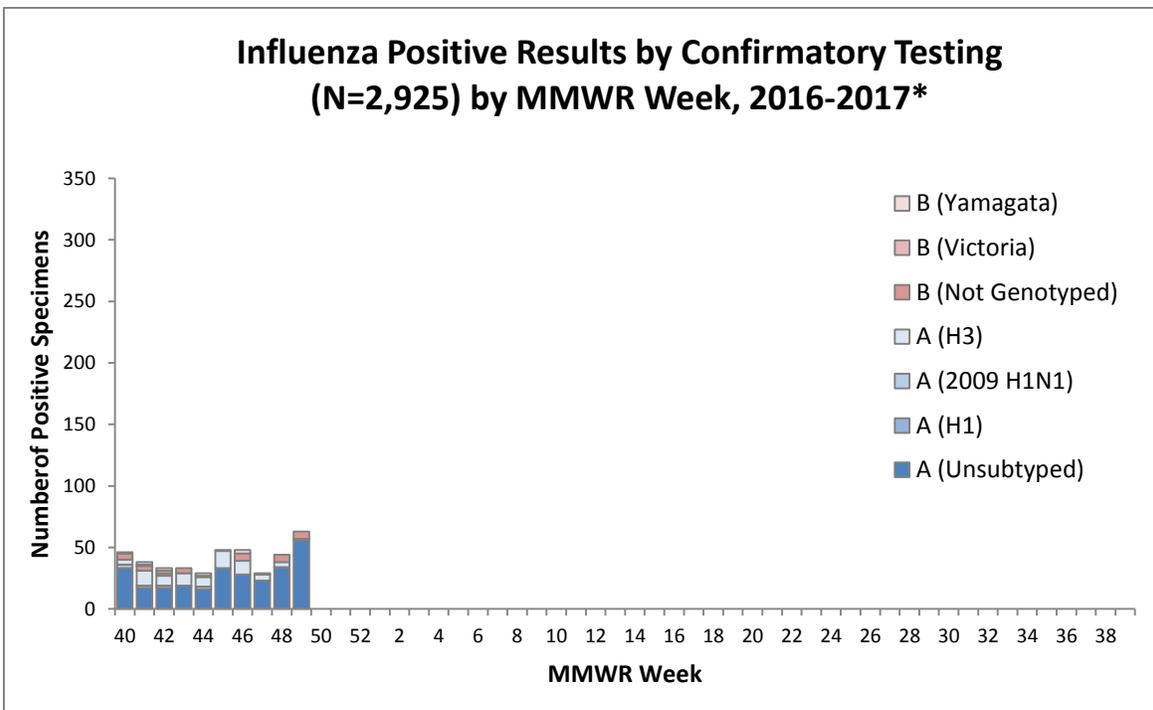
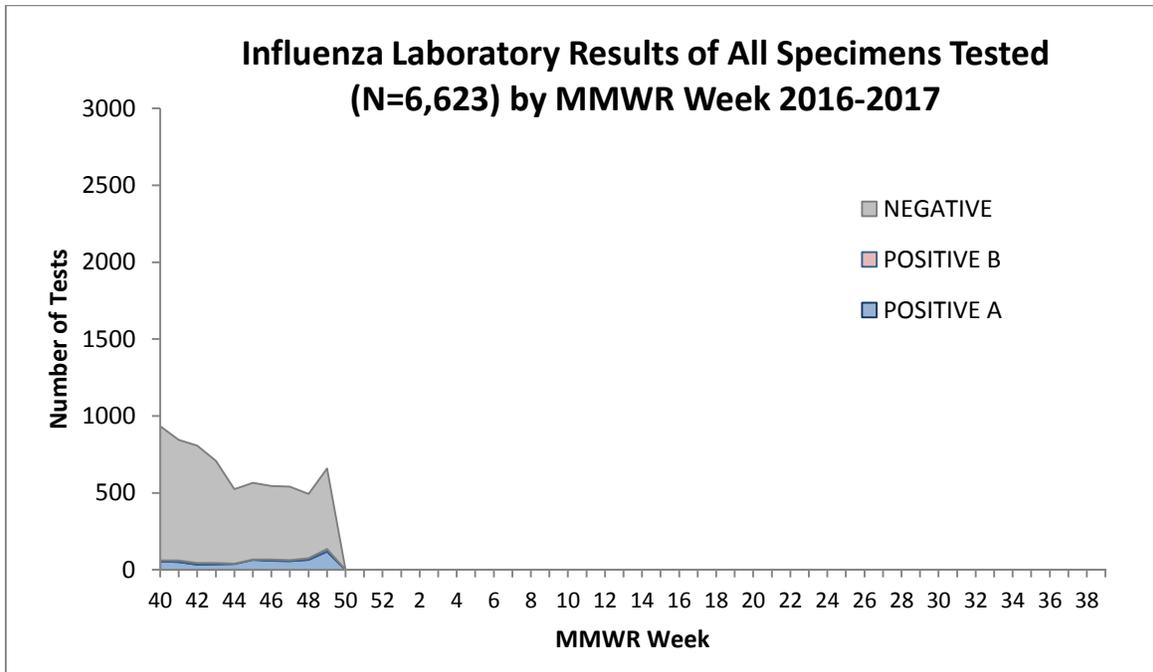


⁵ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁶ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

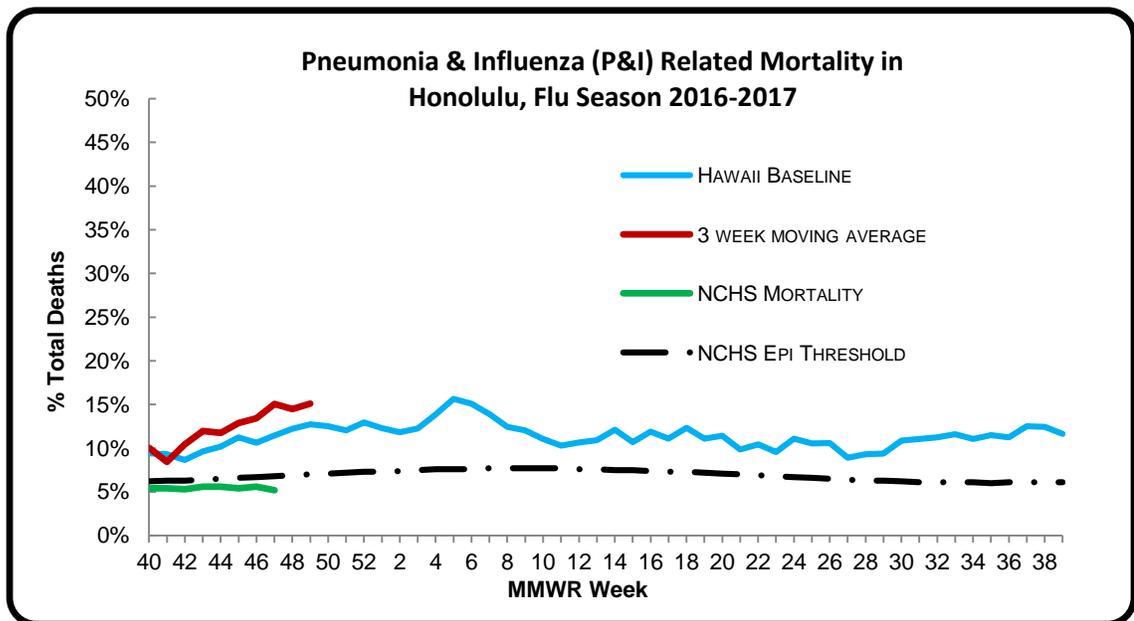


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- **13.9%** of all deaths that occurred in Honolulu during week 49 were related to pneumonia or influenza. For the current season (season to date: **12.0%**), there have been 911 deaths from any cause, 109 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ will not be published this week due to data processing issues.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 49. (Season total: 0).

⁷ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁸ 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

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.

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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *One human infection with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2016–2017 influenza season.*
- *One human infection with novel influenza A H1N1v virus has been reported to WHO from the Netherlands during the 2016-2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 21, 2016**.

APPENDIX 1: ADDITIONAL INFORMATION

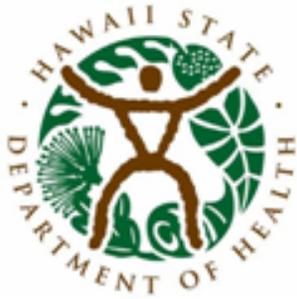
For more information regarding local and national influenza surveillance programs, visit the following sites.

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	2013	2014	2015	2016	2017
1	1/5/2013	1/4/2014	1/10/2015	1/9/2016	1/7/2017
2	1/12/2013	1/11/2014	1/17/2015	1/16/2016	1/14/2017
3	1/19/2013	1/18/2014	1/24/2015	1/23/2016	1/21/2017
4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
8	2/23/2013	2/22/2014	2/28/2015	2/27/2016	2/25/2017
9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
10	3/9/2013	3/8/2014	3/14/2015	3/12/2016	3/11/2017
11	3/16/2013	3/15/2014	3/21/2015	3/19/2016	3/18/2017
12	3/23/2013	3/22/2014	3/28/2015	3/26/2016	3/25/2017
13	3/30/2013	3/29/2014	4/4/2015	4/2/2016	4/1/2017
14	4/6/2013	4/5/2014	4/11/2015	4/9/2016	4/8/2017
15	4/13/2013	4/12/2014	4/18/2015	4/16/2016	4/15/2017
16	4/20/2013	4/19/2014	4/25/2015	4/23/2016	4/22/2017
17	4/27/2013	4/26/2014	5/2/2015	4/30/2016	4/29/2017
18	5/4/2013	5/3/2014	5/9/2015	5/7/2016	5/6/2017
19	5/11/2013	5/10/2014	5/16/2015	5/14/2016	5/13/2017
20	5/18/2013	5/17/2014	5/23/2015	5/21/2016	5/20/2017
21	5/25/2013	5/24/2014	5/30/2015	5/28/2016	5/27/2017
22	6/1/2013	5/31/2014	6/6/2015	6/4/2016	6/3/2017
23	6/8/2013	6/7/2014	6/13/2015	6/11/2016	6/10/2017
24	6/15/2013	6/14/2014	6/20/2015	6/18/2016	6/17/2017
25	6/22/2013	6/21/2014	6/27/2015	6/25/2016	6/24/2017
26	6/29/2013	6/28/2014	7/4/2015	7/2/2016	7/1/2017
27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
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35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
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41	10/12/2013	10/11/2014	10/17/2015	10/15/2016	10/14/2017
42	10/19/2013	10/18/2014	10/24/2015	10/22/2016	10/21/2017
43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
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49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 50: DECEMBER 11, 2016 – DECEMBER 17, 2016

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.**

REPORT SNAPSHOT FOR WEEK 50

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	5.4%	Higher than the previous week, Hawaii’s historical baseline, the national ILI rate, and national baseline.
Number of ILI clusters reported to HDOH	2	There have been 9 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	15.2%	Comparable to the historical baseline for Hawaii. Due to data processing problems, NCHS mortality surveillance data for this week will be delayed.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	22.7%	Higher than the previous week. This number means that many, if not all, of the 77.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	11.4%	

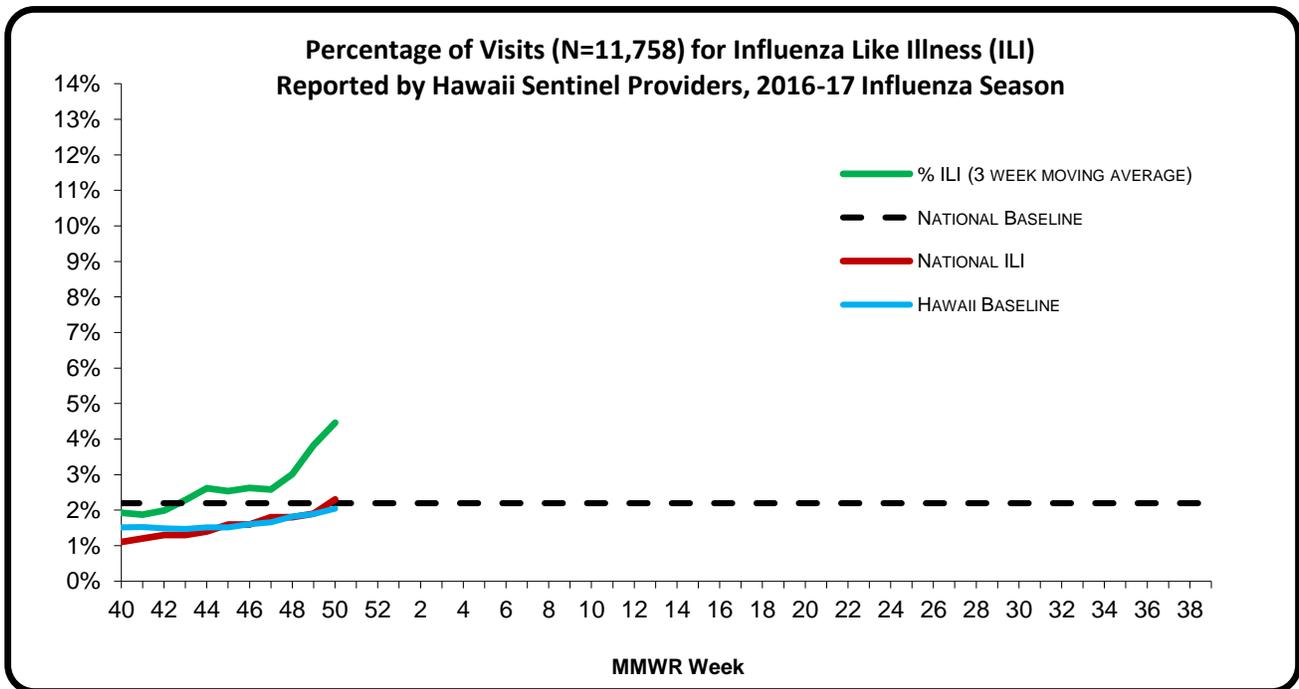
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- **5.4%** (season to date: **2.6%**) 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 (2.2%)⁴ (i.e., outside the 95% confidence interval) and the national ILI rate (2.3%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** Two clusters were reported to HDOH during week 50. Both clusters occurred at long term care facilities on Oahu and had cases of influenza A.



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

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.

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 criteria⁵ 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](#)).

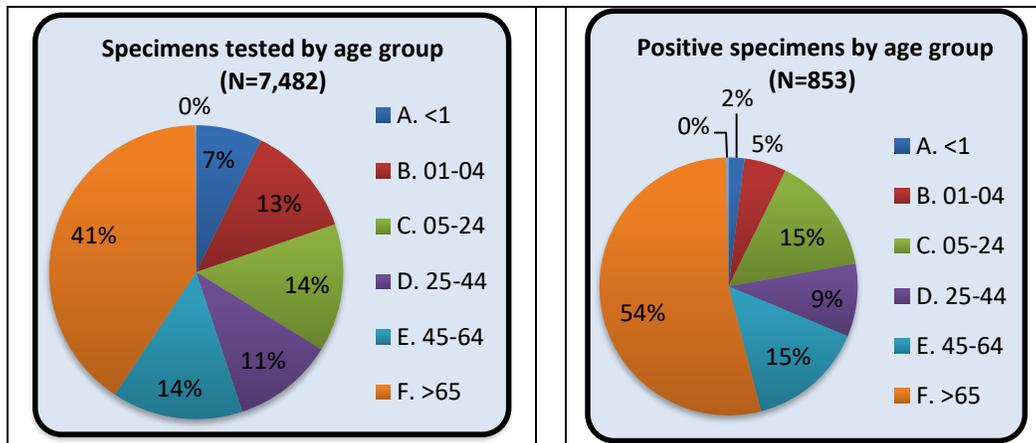
A. INFLUENZA:

- The following reflects laboratory findings for week 50 of the 2016-17 influenza season:
 - A total of **856** specimens have been tested statewide for influenza viruses (positive: **194 [22.7%]**). (Season to date: **7,482** tested [**11.4%** positive])
 - 491 (57.4%) were screened only by rapid antigen tests with no confirmatory testing
 - 365 (42.6%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 662 (77.3%) were negative.

<i>Influenza type</i>	<i>Current week 50 (%)</i>	<i>Season to date (%)</i>
<i>Influenza A (H1)⁶</i>	0 (0.0)	10 (1.2)
<i>Influenza A (H3)</i>	0 (0.0)	81 (9.5)
<i>Influenza A no subtyping</i>	177 (91.2)	663 (77.7)
<i>Influenza B (Yamagata)</i>	0 (0.0)	10 (1.2)
<i>Influenza B (Victoria)</i>	0 (0.0)	4 (0.5)
<i>Influenza B no genotyping</i>	17 (8.8)	85 (10.0)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

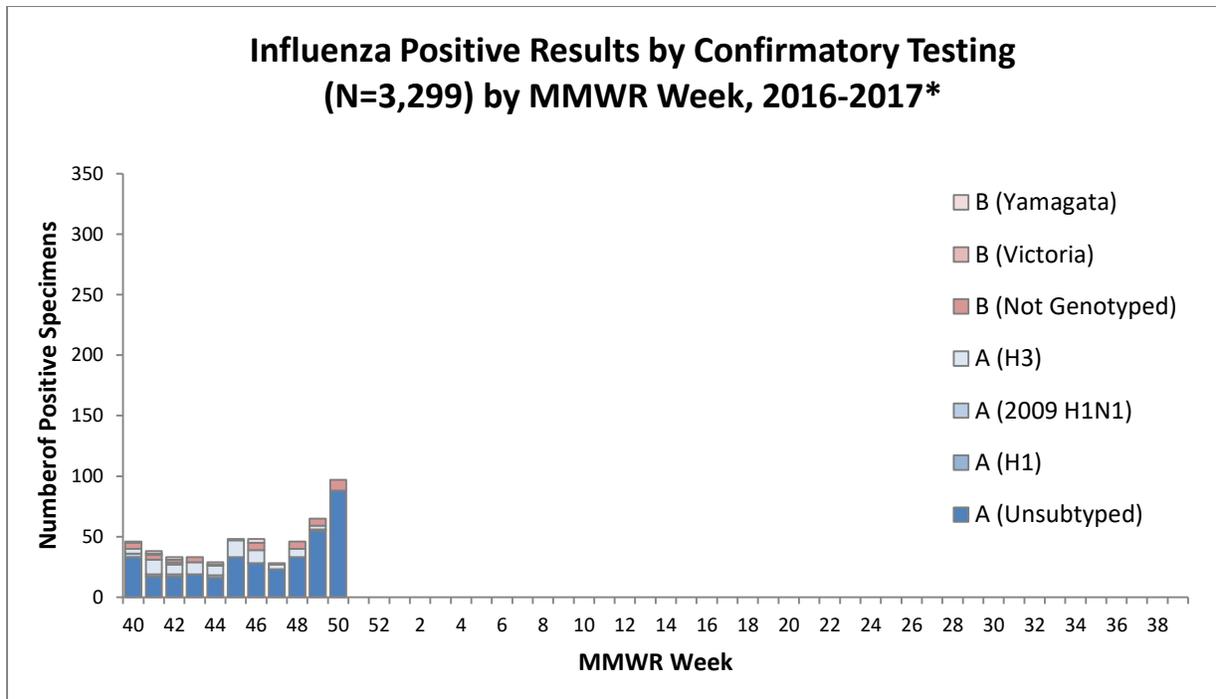
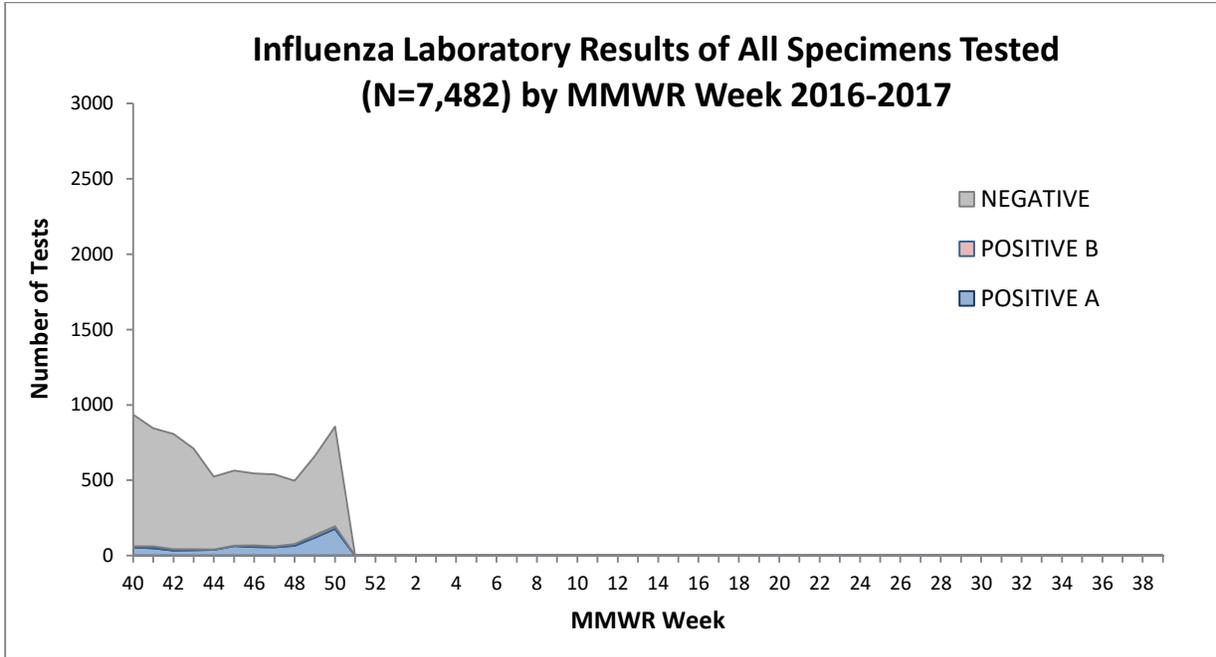


⁵ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁶ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

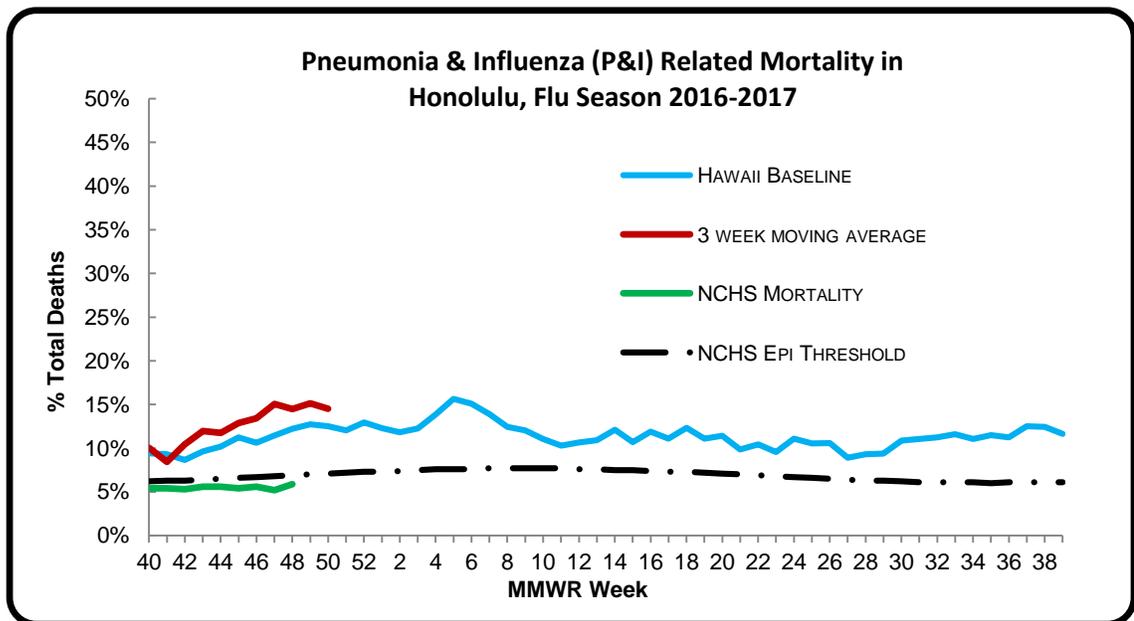


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- 15.2% of all deaths that occurred in Honolulu during week 50 were related to pneumonia or influenza. For the current season (season to date: 12.3%), there have been 1023 deaths from any cause, 126 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ will not be published this week due to data processing issues.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 50. (Season total: 0).

⁷ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁸ 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

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.

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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *One human infection with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2016–2017 influenza season.*
- *One human infection with novel influenza A H1N1v virus has been reported to WHO from the Netherlands during the 2016-2017 influenza season.*
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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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 **December 19, 2016**. Since the last update, one laboratory-confirmed case of human infection with H5N6 has been reported to WHO from China. The case was hospitalized and in critical condition; exposure to poultry prior to illness was reported. Also, a total of 8 laboratory-confirmed cases of H7N9 were reported to WHO from mainland China, Hong Kong, and Macao since the last update. The Hong Kong and Macao cases reported exposure to poultry from Guangdong province and 5 cases from mainland China also reported exposure to poultry before illness. Of the 8 cases, all but one were in severe condition at the time of reporting; the Hong Kong case passed away.

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	2013	2014	2015	2016	2017
1	1/5/2013	1/4/2014	1/10/2015	1/9/2016	1/7/2017
2	1/12/2013	1/11/2014	1/17/2015	1/16/2016	1/14/2017
3	1/19/2013	1/18/2014	1/24/2015	1/23/2016	1/21/2017
4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
8	2/23/2013	2/22/2014	2/28/2015	2/27/2016	2/25/2017
9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
10	3/9/2013	3/8/2014	3/14/2015	3/12/2016	3/11/2017
11	3/16/2013	3/15/2014	3/21/2015	3/19/2016	3/18/2017
12	3/23/2013	3/22/2014	3/28/2015	3/26/2016	3/25/2017
13	3/30/2013	3/29/2014	4/4/2015	4/2/2016	4/1/2017
14	4/6/2013	4/5/2014	4/11/2015	4/9/2016	4/8/2017
15	4/13/2013	4/12/2014	4/18/2015	4/16/2016	4/15/2017
16	4/20/2013	4/19/2014	4/25/2015	4/23/2016	4/22/2017
17	4/27/2013	4/26/2014	5/2/2015	4/30/2016	4/29/2017
18	5/4/2013	5/3/2014	5/9/2015	5/7/2016	5/6/2017
19	5/11/2013	5/10/2014	5/16/2015	5/14/2016	5/13/2017
20	5/18/2013	5/17/2014	5/23/2015	5/21/2016	5/20/2017
21	5/25/2013	5/24/2014	5/30/2015	5/28/2016	5/27/2017
22	6/1/2013	5/31/2014	6/6/2015	6/4/2016	6/3/2017
23	6/8/2013	6/7/2014	6/13/2015	6/11/2016	6/10/2017
24	6/15/2013	6/14/2014	6/20/2015	6/18/2016	6/17/2017
25	6/22/2013	6/21/2014	6/27/2015	6/25/2016	6/24/2017
26	6/29/2013	6/28/2014	7/4/2015	7/2/2016	7/1/2017
27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
28	7/13/2013	7/12/2014	7/18/2015	7/16/2016	7/15/2017
29	7/20/2013	7/19/2014	7/25/2015	7/23/2016	7/22/2017
30	7/27/2013	7/26/2014	8/1/2015	7/30/2016	7/29/2017
31	8/3/2013	8/2/2014	8/8/2015	8/6/2016	8/5/2017
32	8/10/2013	8/9/2014	8/15/2015	8/13/2016	8/12/2017
33	8/17/2013	8/16/2014	8/22/2015	8/20/2016	8/19/2017
34	8/24/2013	8/23/2014	8/29/2015	8/27/2016	8/26/2017
35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
38	9/21/2013	9/20/2014	9/26/2015	9/24/2016	9/23/2017
39	9/28/2013	9/27/2014	10/3/2015	10/1/2016	9/30/2017
40	10/5/2013	10/4/2014	10/10/2015	10/8/2016	10/7/2017
41	10/12/2013	10/11/2014	10/17/2015	10/15/2016	10/14/2017
42	10/19/2013	10/18/2014	10/24/2015	10/22/2016	10/21/2017
43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
45	11/9/2013	11/8/2014	11/14/2015	11/12/2016	11/11/2017
46	11/16/2013	11/15/2014	11/21/2015	11/19/2016	11/18/2017
47	11/23/2013	11/22/2014	11/28/2015	11/26/2016	11/25/2017
48	11/30/2013	11/29/2014	12/5/2015	12/3/2016	12/2/2017
49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 51: DECEMBER 18, 2016 – DECEMBER 24, 2016

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.**

REPORT SNAPSHOT FOR WEEK 51

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.5%	Lower than the previous week, Comparable to Hawaii’s historical baseline, the national ILI rate, and national baseline.
Number of ILI clusters reported to HDOH	4	There have been 13 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	17.9%	Comparable to the historical baseline for Hawaii. Due to data processing problems, NCHS mortality surveillance data for this week will be delayed.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	22.7%	Comparable to the previous week. This number means that many, if not all, of the 77.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	12.5%	

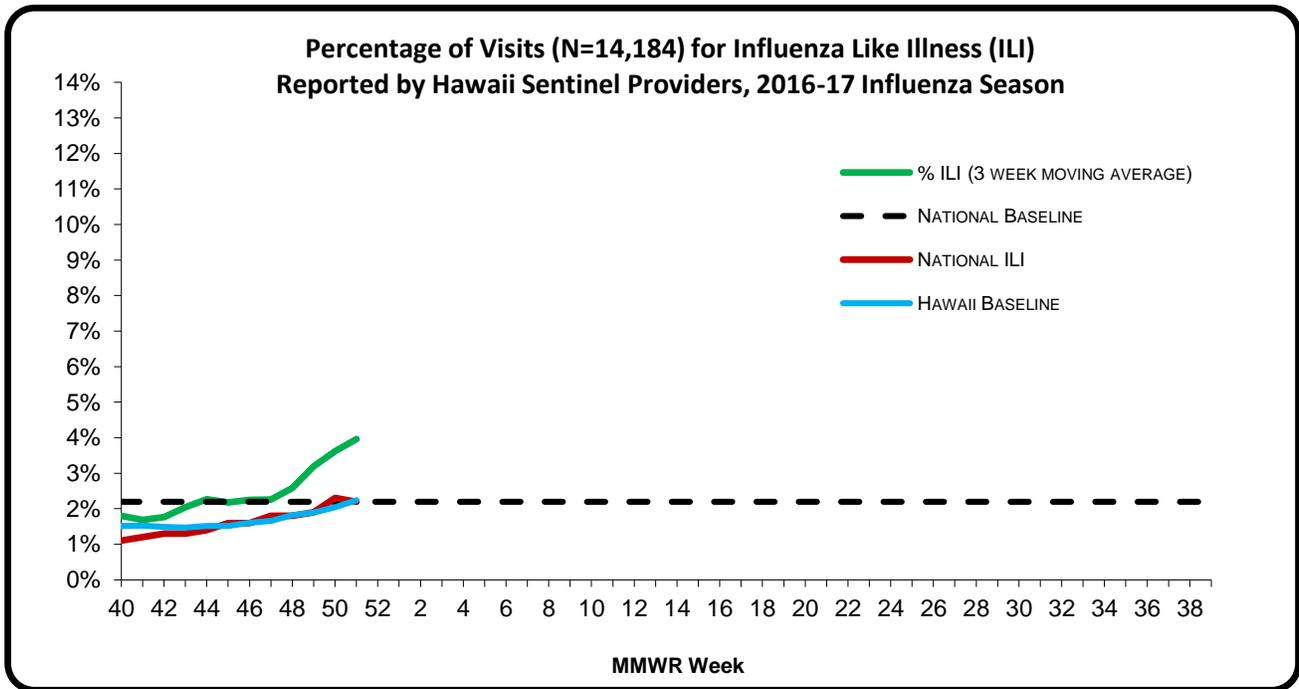
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 3.5% (season to date: 2.4%) 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 (2.2%)⁴ (i.e., inside the 95% confidence interval) and the national ILI rate (2.3%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: Four clusters were reported to HDOH during week 51. Two clusters occurred at long term care facilities, one was from a hospital, and one from a senior living center on Oahu. All clusters had cases of influenza A.



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

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.

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 criteria⁵ 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](#)).

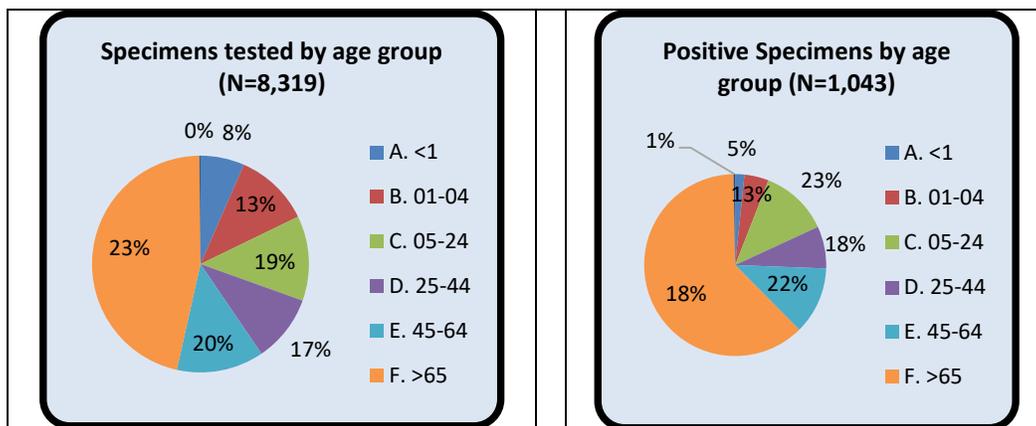
A. INFLUENZA:

- The following reflects laboratory findings for week 51 of the 2016-17 influenza season:
 - A total of 837 specimens have been tested statewide for influenza viruses (positive: 190 [22.7%]). (Season to date: 8,319 tested [12.5% positive])
 - 471 (56.3%) were screened only by rapid antigen tests with no confirmatory testing
 - 366 (43.7%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 647 (77.3%) were negative.

Influenza type	Current week 51 (%)	Season to date (%)
Influenza A (H1) ⁶	0 (0.0)	10 (1.0)
Influenza A (H3)	0 (0.0)	81 (7.8)
Influenza A no subtyping	171 (90.0)	834 (80.0)
Influenza B (Yamagata)	0 (0.0)	10 (1.0)
Influenza B (Victoria)	0 (0.0)	4 (0.4)
Influenza B no genotyping	19 (10.0)	104 (10.0)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

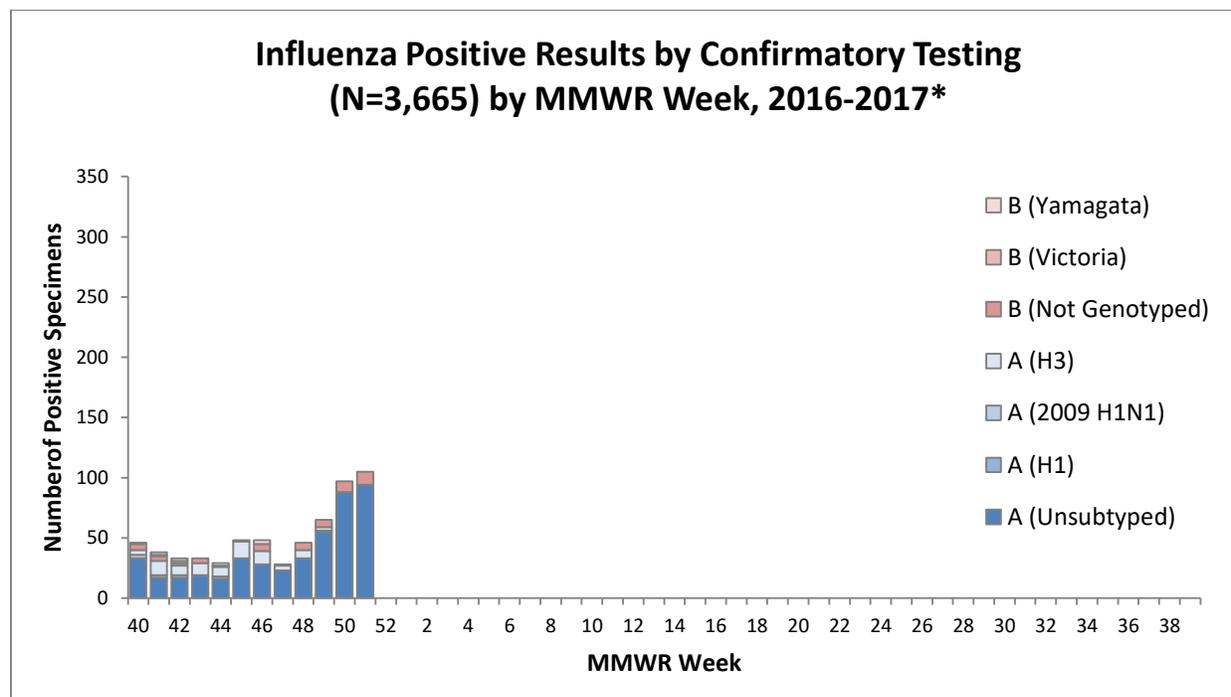
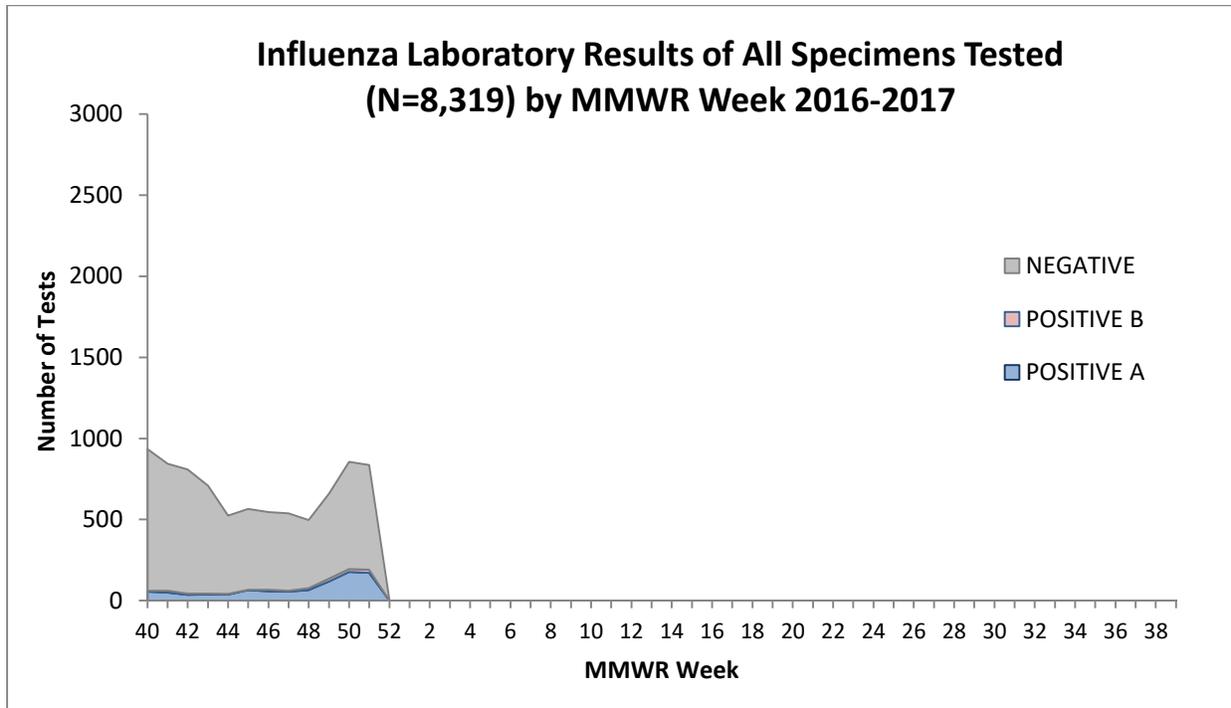


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2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

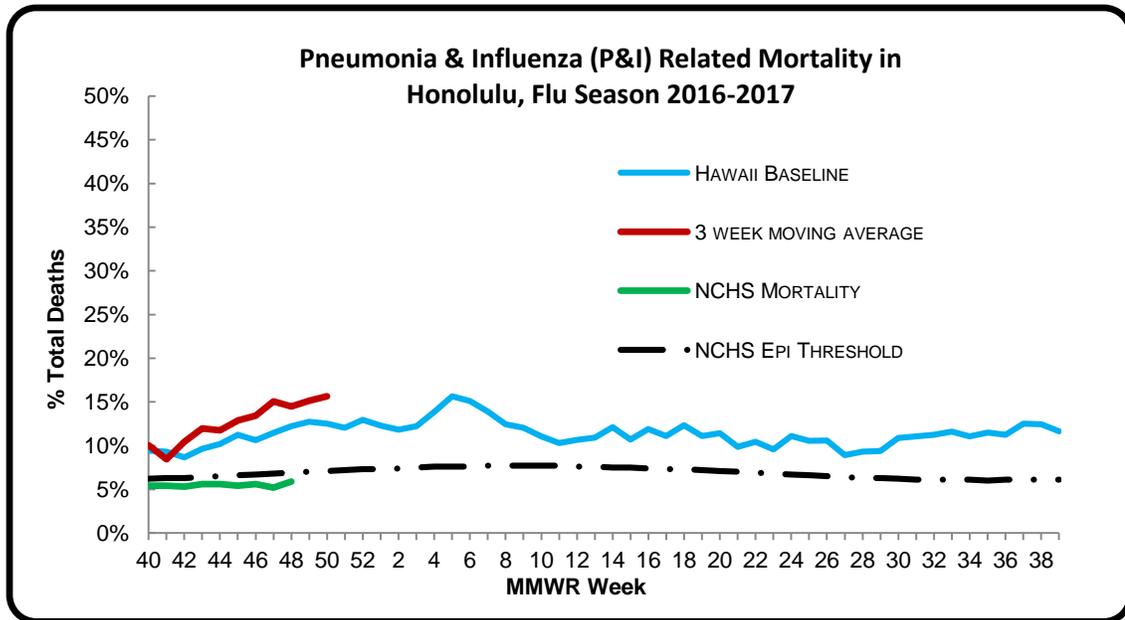


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For week 51 of the current influenza season:

- 17.9% of all deaths that occurred in Honolulu during week 51 were related to pneumonia or influenza. For the current season (season to date: 12.7%), there have been 1,107 deaths from any cause, 141 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ will not be published this week due to data processing issues.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 51. (Season total: 0).

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4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
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9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
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12	3/23/2013	3/22/2014	3/28/2015	3/26/2016	3/25/2017
13	3/30/2013	3/29/2014	4/4/2015	4/2/2016	4/1/2017
14	4/6/2013	4/5/2014	4/11/2015	4/9/2016	4/8/2017
15	4/13/2013	4/12/2014	4/18/2015	4/16/2016	4/15/2017
16	4/20/2013	4/19/2014	4/25/2015	4/23/2016	4/22/2017
17	4/27/2013	4/26/2014	5/2/2015	4/30/2016	4/29/2017
18	5/4/2013	5/3/2014	5/9/2015	5/7/2016	5/6/2017
19	5/11/2013	5/10/2014	5/16/2015	5/14/2016	5/13/2017
20	5/18/2013	5/17/2014	5/23/2015	5/21/2016	5/20/2017
21	5/25/2013	5/24/2014	5/30/2015	5/28/2016	5/27/2017
22	6/1/2013	5/31/2014	6/6/2015	6/4/2016	6/3/2017
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27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
28	7/13/2013	7/12/2014	7/18/2015	7/16/2016	7/15/2017
29	7/20/2013	7/19/2014	7/25/2015	7/23/2016	7/22/2017
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31	8/3/2013	8/2/2014	8/8/2015	8/6/2016	8/5/2017
32	8/10/2013	8/9/2014	8/15/2015	8/13/2016	8/12/2017
33	8/17/2013	8/16/2014	8/22/2015	8/20/2016	8/19/2017
34	8/24/2013	8/23/2014	8/29/2015	8/27/2016	8/26/2017
35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
38	9/21/2013	9/20/2014	9/26/2015	9/24/2016	9/23/2017
39	9/28/2013	9/27/2014	10/3/2015	10/1/2016	9/30/2017
40	10/5/2013	10/4/2014	10/10/2015	10/8/2016	10/7/2017
41	10/12/2013	10/11/2014	10/17/2015	10/15/2016	10/14/2017
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43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
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51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 52: DECEMBER 25, 2016 – DECEMBER 31, 2016

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.**

REPORT SNAPSHOT FOR WEEK 52

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.9%	Higher than the previous week, Comparable to Hawaii’s historical baseline and the national ILI rate, but Higher than the national baseline.
Number of ILI clusters reported to HDOH	2	There have been 15 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	21.9%	Comparable to the historical baseline for Hawaii. Due to data processing problems, NCHS mortality surveillance data for this week will be delayed.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	29.3%	Higher than the previous week. This number means that many, if not all, of the 70.7% 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%	

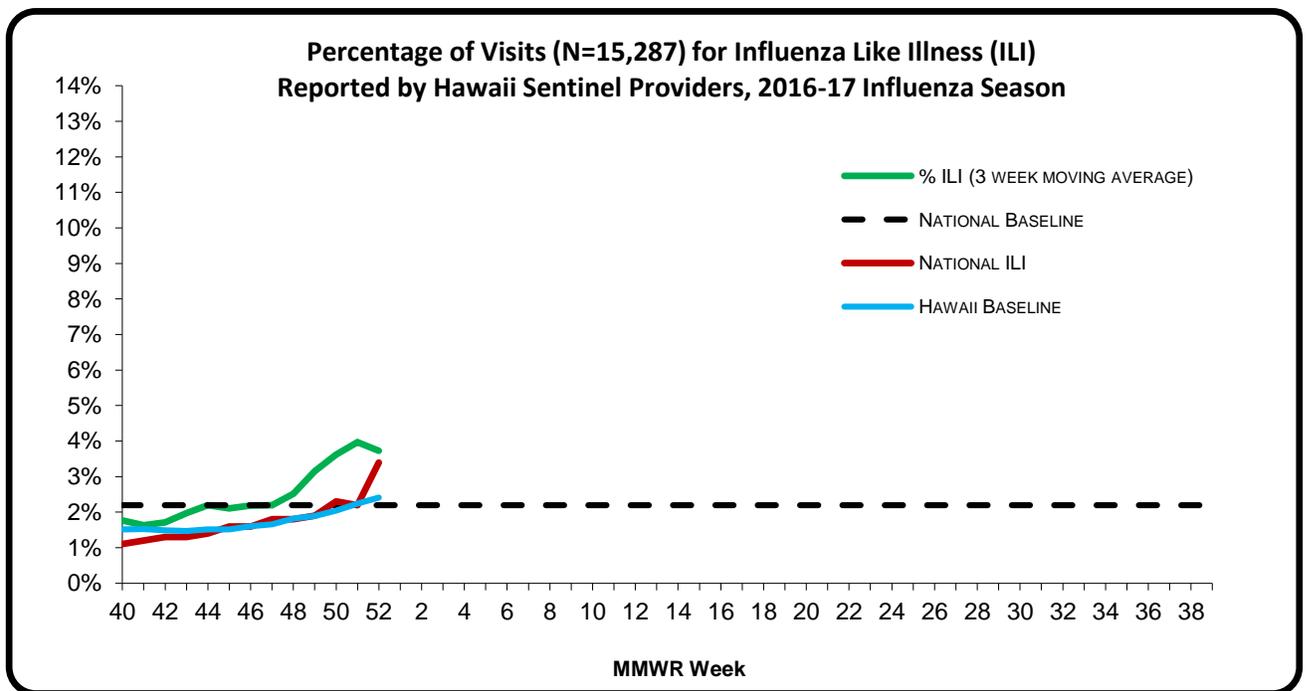
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- 3.9% (season to date: 2.4%) 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 (2.2%)⁴ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (3.4%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: Two clusters were reported to HDOH during week 52. One cluster occurred at a long term care facility and one was from an adult day care center on Oahu. Both clusters had cases of influenza A.



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

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.

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 criteria⁵ 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](#)).

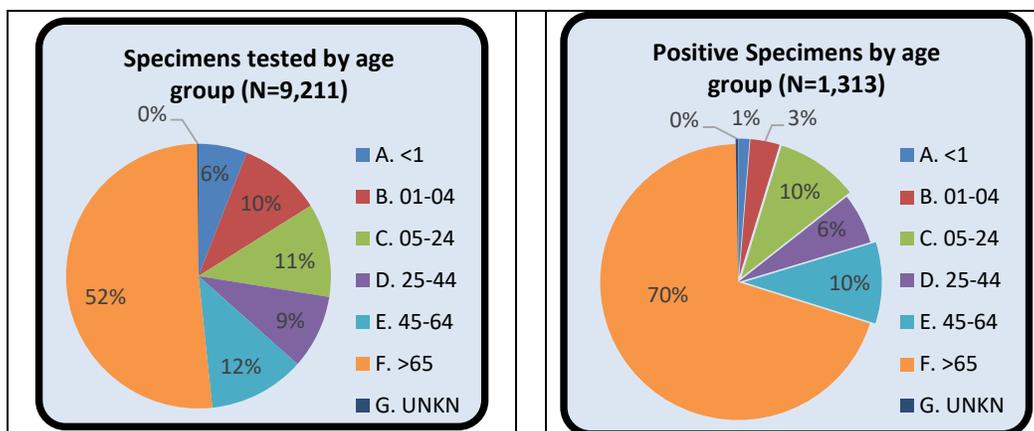
A. INFLUENZA:

- The following reflects laboratory findings for week 52 of the 2016-17 influenza season:
 - A total of 884 specimens have been tested statewide for influenza viruses (positive: 259 [29.3%]). (Season to date: 9,211 tested [14.3% positive])
 - 509 (57.6%) were screened only by rapid antigen tests with no confirmatory testing
 - 375 (42.4%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 625 (70.7%) were negative.

Influenza type	Current week 52 (%)	Season to date (%)
Influenza A (H1) ⁶	0 (0.0)	12 (0.9)
Influenza A (H3)	0 (0.0)	104 (7.9)
Influenza A no subtyping	229 (88.4)	1048 (79.8)
Influenza B (Yamagata)	0 (0.0)	11 (0.8)
Influenza B (Victoria)	0 (0.0)	10 (0.8)
Influenza B no genotyping	30 (11.6)	128 (9.7)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

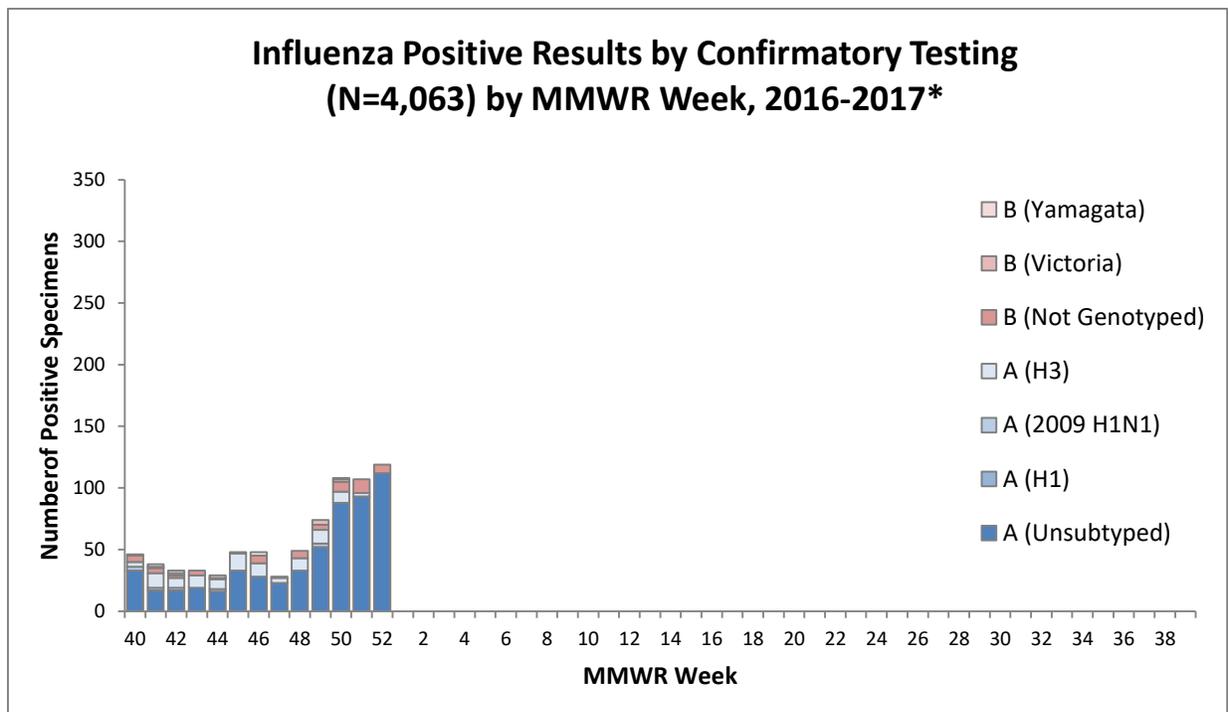
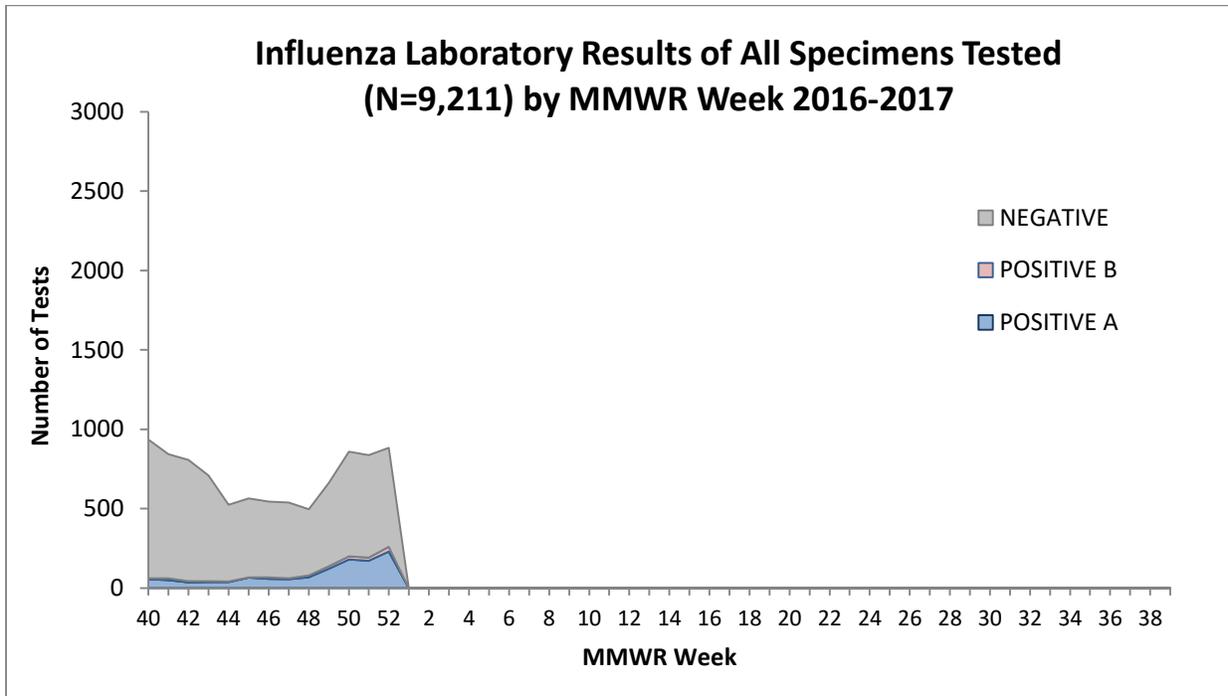


⁵ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁶ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

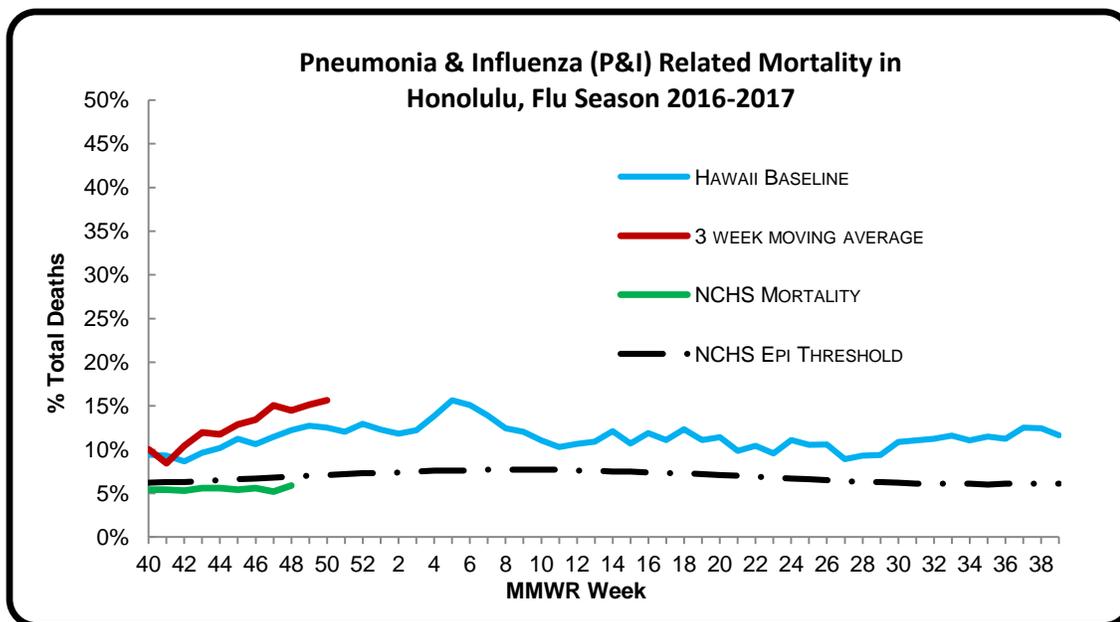


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- 21.9% of all deaths that occurred in Honolulu during week 52 were related to pneumonia or influenza. For the current season (season to date: 13.3%), there have been 1,180 deaths from any cause, 157 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ will not be published this week due to data processing issues.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 52. (Season total: 0).

⁷ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁸ 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

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.

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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *One human infection with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2016–2017 influenza season.*
- *One human infection with novel influenza A H1N1v virus has been reported to WHO from the Netherlands during the 2016-2017 influenza season.*
- *One human infection with novel influenza A H3N2v virus has been reported to WHO from Canada during the 2016-2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 **December 19, 2016**.

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	2013	2014	2015	2016	2017
1	1/5/2013	1/4/2014	1/10/2015	1/9/2016	1/7/2017
2	1/12/2013	1/11/2014	1/17/2015	1/16/2016	1/14/2017
3	1/19/2013	1/18/2014	1/24/2015	1/23/2016	1/21/2017
4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
8	2/23/2013	2/22/2014	2/28/2015	2/27/2016	2/25/2017
9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
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53					



HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 1: JANUARY 1, 2017 – JANUARY 7, 2017

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.**

REPORT SNAPSHOT FOR WEEK 1

The 2016–17 influenza season began during week 40¹ (2016) and will end on week 39 (2017)

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.6%	Higher than the previous week, Comparable to Hawaii’s historical baseline and the national ILI rate, but Higher than the national baseline.
Number of ILI clusters reported to HDOH	2	There have been 17 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	19.0%	Comparable to the historical baseline for Hawaii. Due to data processing problems, NCHS mortality surveillance data for this week will be delayed.
Number of influenza-associated pediatric deaths reported nationwide	3	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	25.7%	Lower than the previous week. This number means that many, if not all, of the 74.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	15.4%	

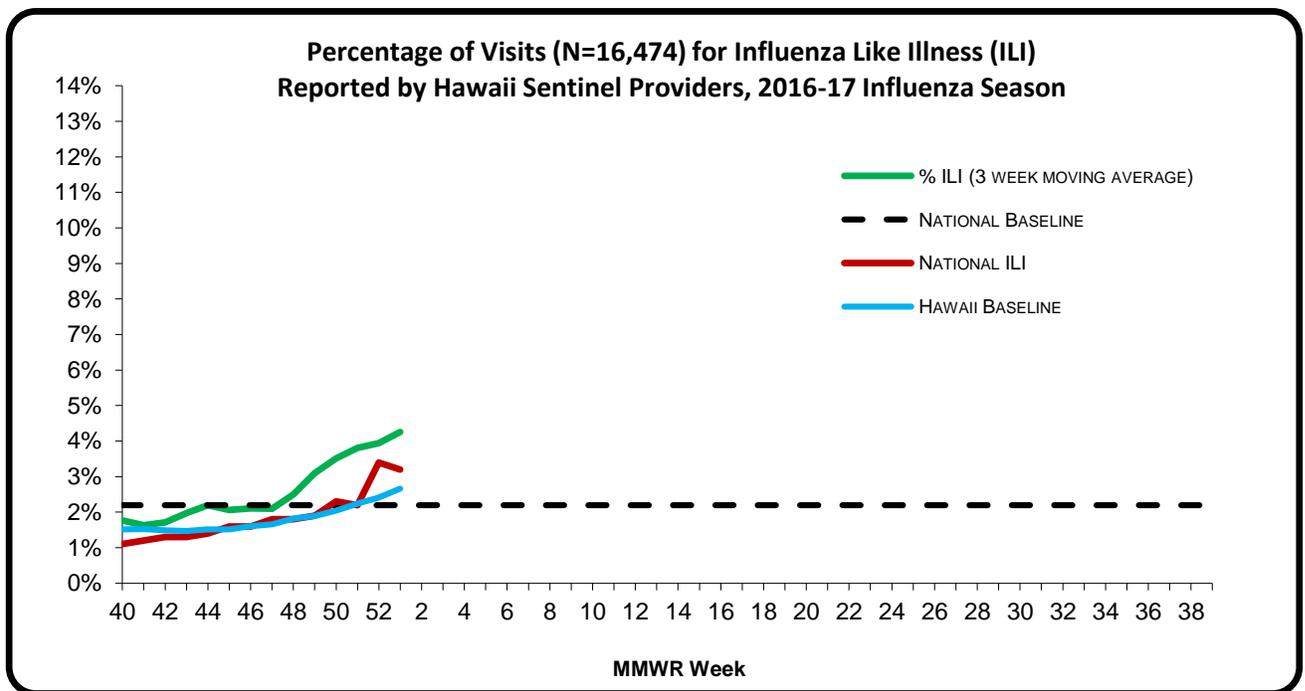
¹ MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

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:

- **4.6%** (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 (2.2%)⁴ (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (3.2%) (i.e., inside the 95% confidence interval).
- **ILI Cluster Activity:** Two clusters were reported to HDOH during week 1. Both clusters occurred at long-term care facilities. One was on Hawaii and the other one was on Maui. Both clusters had cases of influenza A.



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

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.

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 criteria⁵ 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](#)).

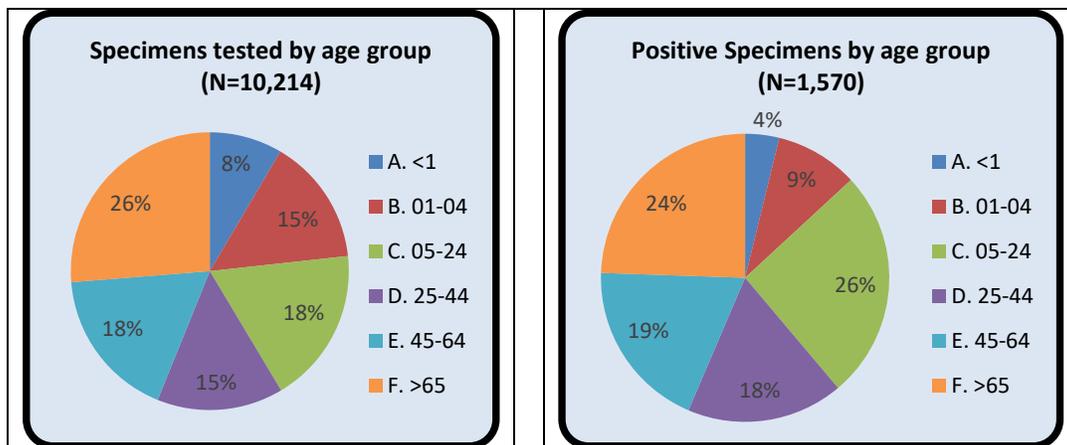
A. INFLUENZA:

- The following reflects laboratory findings for week 1 of the 2016-17 influenza season:
 - A total of **968** specimens have been tested statewide for influenza viruses (positive: **249 [25.7%]**). (Season to date: **10,214** tested [**15.4%** positive])
 - 572 (59.1%) were screened only by rapid antigen tests with no confirmatory testing
 - 396 (40.9%) underwent confirmatory testing (either RT-PCR or viral culture)
 - 719 (74.3%) were negative.

Influenza type	Current week 1 (%)	Season to date (%)
Influenza A (H1) ⁶	0 (0.0)	12 (0.8)
Influenza A (H3)	0 (0.0)	126 (8.0)
Influenza A no subtyping	222 (89.2)	1253 (79.8)
Influenza B (Yamagata)	0 (0.0)	11 (0.7)
Influenza B (Victoria)	0 (0.0)	10 (0.6)
Influenza B no genotyping	27 (10.8)	158 (10.0)

1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2016–17 influenza season.

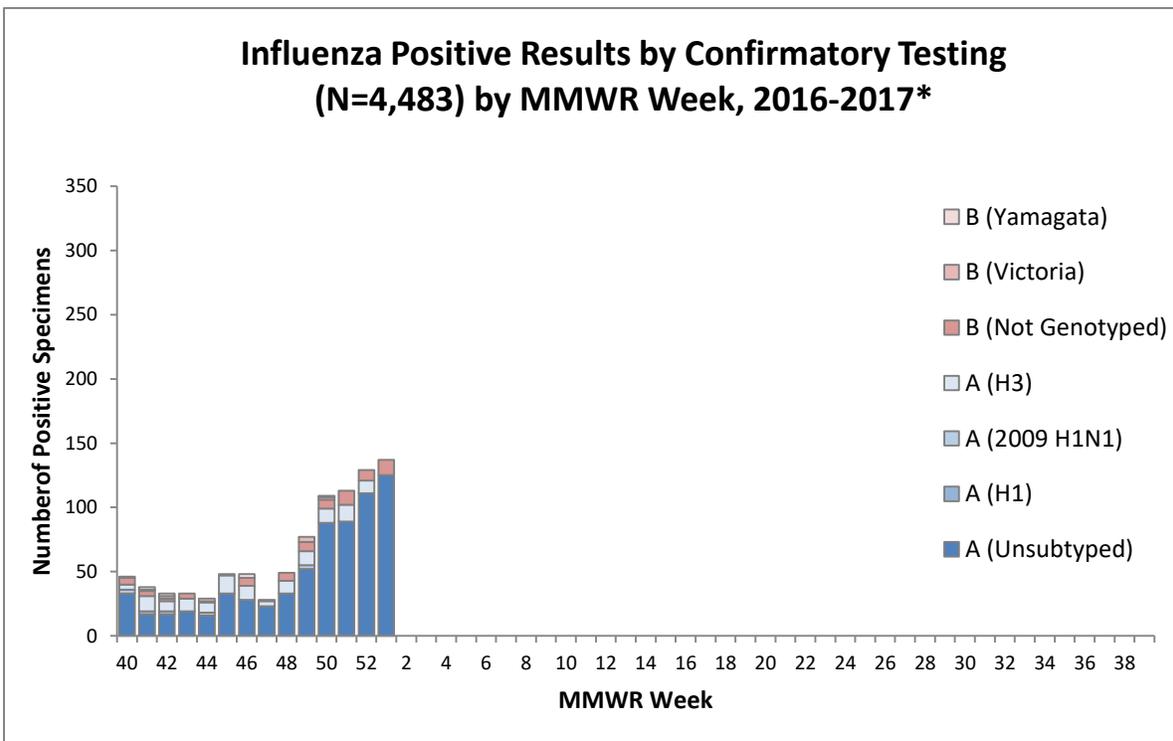
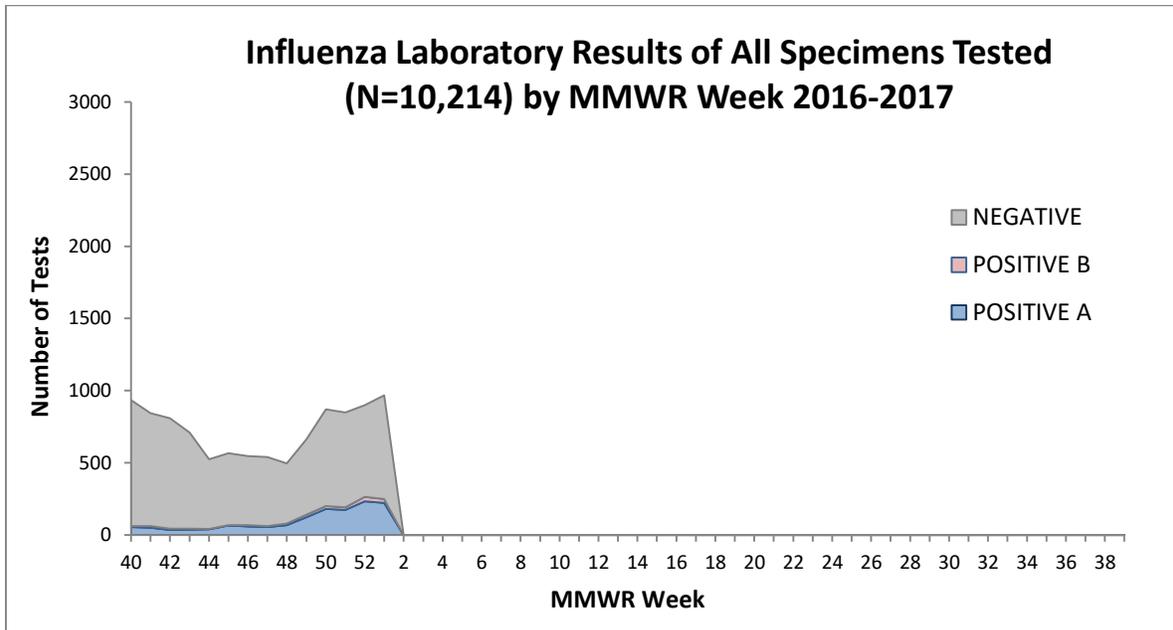


⁵ Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant women, or women up to 6 weeks post-partum; those with underlying medical conditions; and patients presenting with unusual or severe manifestations of influenza infection.

⁶ All influenza A H1 viruses detected this season have been 2009 H1N1. Other H1 viruses have not been detected since 2010.

2. LABORATORY TESTING

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 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).

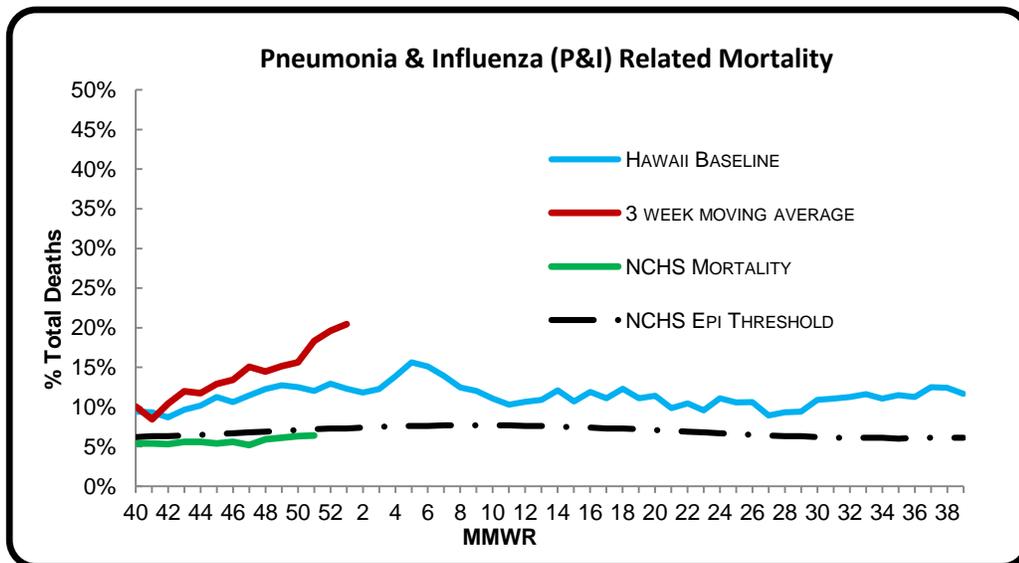


* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.

III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. 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:

- **19.0%** of all deaths that occurred in Honolulu during week 1 were related to pneumonia or influenza. For the current season (season to date: **13.7%**), there have been 1,259 deaths from any cause, 172 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii⁷ (i.e., inside the 95% confidence interval).
- The CDC’s National Center for Health Statistics (NCHS) P&I mortality⁸ will not be published this week due to data processing issues.



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS⁹:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, three influenza-associated pediatric deaths were reported to CDC during week 1. One death was associated with an influenza A (H3) virus and occurred during week 51 (the week ending December 24, 2016). One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 52 (the week ending December 31, 2016). One death was associated with an influenza B virus and occurred during week 51. (Season total: 3).

⁷ The Hawaii historical baseline (%P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–2010, 2010–2011, 2011–2012, 2012–2013, and 2013–14.).

⁸ 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

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.

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, and in 2012, 309 such cases across 12 states, including one case in Hawaii, were detected. 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 2016–2017 influenza season.*
- *One human infection with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2016–2017 influenza season.*
- *One human infection with novel influenza A H1N1v virus has been reported to WHO from the Netherlands during the 2016-2017 influenza season.*
- *One human infection with novel influenza A H3N2v virus has been reported to WHO from Canada during the 2016-2017 influenza season.*

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, but a few subtypes may pass the species barrier and cause sickness 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 potential public health concern. 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 **December 19, 2016**.

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	2013	2014	2015	2016	2017
1	1/5/2013	1/4/2014	1/10/2015	1/9/2016	1/7/2017
2	1/12/2013	1/11/2014	1/17/2015	1/16/2016	1/14/2017
3	1/19/2013	1/18/2014	1/24/2015	1/23/2016	1/21/2017
4	1/26/2013	1/25/2014	1/31/2015	1/30/2016	1/28/2017
5	2/2/2013	2/1/2014	2/7/2015	2/6/2016	2/4/2017
6	2/9/2013	2/8/2014	2/14/2015	2/13/2016	2/11/2017
7	2/16/2013	2/15/2014	2/21/2015	2/20/2016	2/18/2017
8	2/23/2013	2/22/2014	2/28/2015	2/27/2016	2/25/2017
9	3/2/2013	3/1/2014	3/7/2015	3/5/2016	3/4/2017
10	3/9/2013	3/8/2014	3/14/2015	3/12/2016	3/11/2017
11	3/16/2013	3/15/2014	3/21/2015	3/19/2016	3/18/2017
12	3/23/2013	3/22/2014	3/28/2015	3/26/2016	3/25/2017
13	3/30/2013	3/29/2014	4/4/2015	4/2/2016	4/1/2017
14	4/6/2013	4/5/2014	4/11/2015	4/9/2016	4/8/2017
15	4/13/2013	4/12/2014	4/18/2015	4/16/2016	4/15/2017
16	4/20/2013	4/19/2014	4/25/2015	4/23/2016	4/22/2017
17	4/27/2013	4/26/2014	5/2/2015	4/30/2016	4/29/2017
18	5/4/2013	5/3/2014	5/9/2015	5/7/2016	5/6/2017
19	5/11/2013	5/10/2014	5/16/2015	5/14/2016	5/13/2017
20	5/18/2013	5/17/2014	5/23/2015	5/21/2016	5/20/2017
21	5/25/2013	5/24/2014	5/30/2015	5/28/2016	5/27/2017
22	6/1/2013	5/31/2014	6/6/2015	6/4/2016	6/3/2017
23	6/8/2013	6/7/2014	6/13/2015	6/11/2016	6/10/2017
24	6/15/2013	6/14/2014	6/20/2015	6/18/2016	6/17/2017
25	6/22/2013	6/21/2014	6/27/2015	6/25/2016	6/24/2017
26	6/29/2013	6/28/2014	7/4/2015	7/2/2016	7/1/2017
27	7/6/2013	7/5/2014	7/11/2015	7/9/2016	7/8/2017
28	7/13/2013	7/12/2014	7/18/2015	7/16/2016	7/15/2017
29	7/20/2013	7/19/2014	7/25/2015	7/23/2016	7/22/2017
30	7/27/2013	7/26/2014	8/1/2015	7/30/2016	7/29/2017
31	8/3/2013	8/2/2014	8/8/2015	8/6/2016	8/5/2017
32	8/10/2013	8/9/2014	8/15/2015	8/13/2016	8/12/2017
33	8/17/2013	8/16/2014	8/22/2015	8/20/2016	8/19/2017
34	8/24/2013	8/23/2014	8/29/2015	8/27/2016	8/26/2017
35	8/31/2013	8/30/2014	9/5/2015	9/3/2016	9/2/2017
36	9/7/2013	9/6/2014	9/12/2015	9/10/2016	9/9/2017
37	9/14/2013	9/13/2014	9/19/2015	9/17/2016	9/16/2017
38	9/21/2013	9/20/2014	9/26/2015	9/24/2016	9/23/2017
39	9/28/2013	9/27/2014	10/3/2015	10/1/2016	9/30/2017
40	10/5/2013	10/4/2014	10/10/2015	10/8/2016	10/7/2017
41	10/12/2013	10/11/2014	10/17/2015	10/15/2016	10/14/2017
42	10/19/2013	10/18/2014	10/24/2015	10/22/2016	10/21/2017
43	10/26/2013	10/25/2014	10/31/2015	10/29/2016	10/28/2017
44	11/2/2013	11/1/2014	11/7/2015	11/5/2016	11/4/2017
45	11/9/2013	11/8/2014	11/14/2015	11/12/2016	11/11/2017
46	11/16/2013	11/15/2014	11/21/2015	11/19/2016	11/18/2017
47	11/23/2013	11/22/2014	11/28/2015	11/26/2016	11/25/2017
48	11/30/2013	11/29/2014	12/5/2015	12/3/2016	12/2/2017
49	12/7/2013	12/6/2014	12/12/2015	12/10/2016	12/9/2017
50	12/14/2013	12/13/2014	12/19/2015	12/17/2016	12/16/2017
51	12/21/2013	12/20/2014	12/26/2015	12/24/2016	12/23/2017
52	12/28/2013	12/27/2014	1/2/2016	12/31/2016	12/30/2017
53					