



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 40: OCTOBER 4, 2015 – OCTOBER 10, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.9%	Higher than the previous week and the national ILI rate; comparable to the national baseline; lower than Hawaii's historical 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	9.7%	Comparable to the historical baseline for Hawaii, the epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	11.6%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	11.6%	

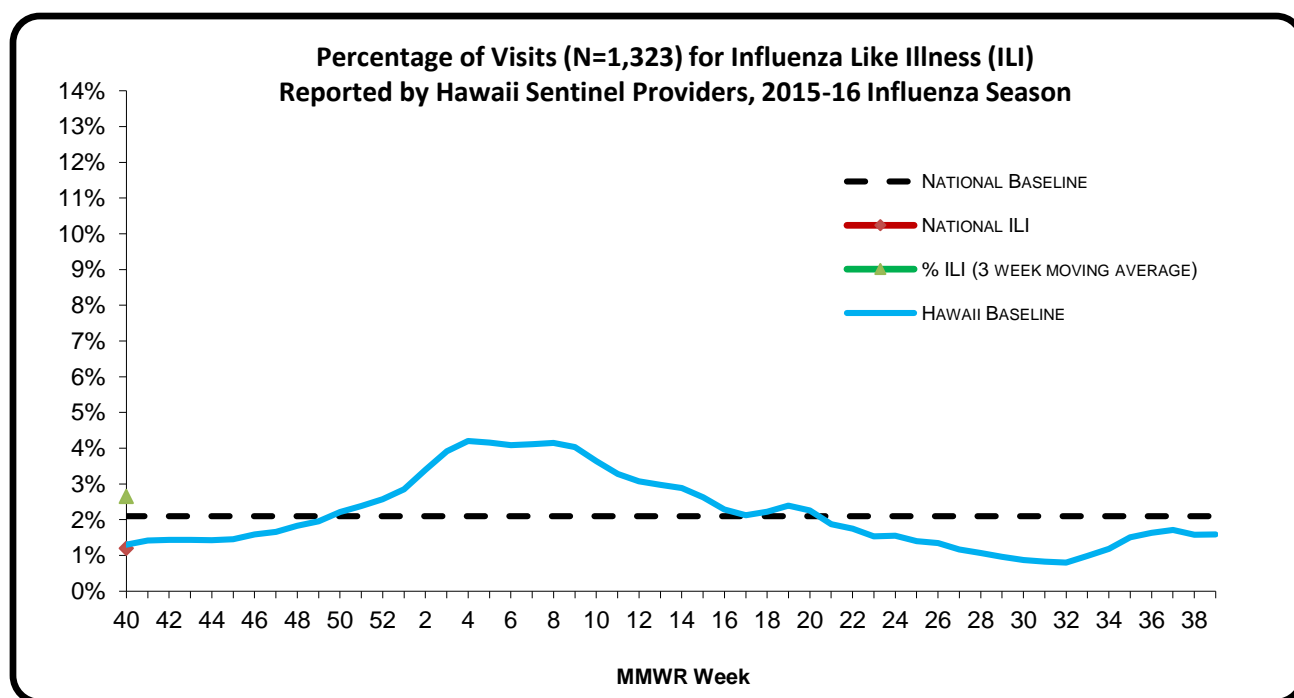
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **2.9%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were lower than the historical baseline in Hawaii<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval, but higher than the national ILI rate (1.2%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** No ILI clusters were reported to HDOH during week 40. There has been a total of 0 ILI clusters this season.



<sup>2</sup> The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–10, 2010–2011, 2011–2012, 2012–2013, and 2013–2014).

<sup>3</sup> 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.

<sup>4</sup> 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.

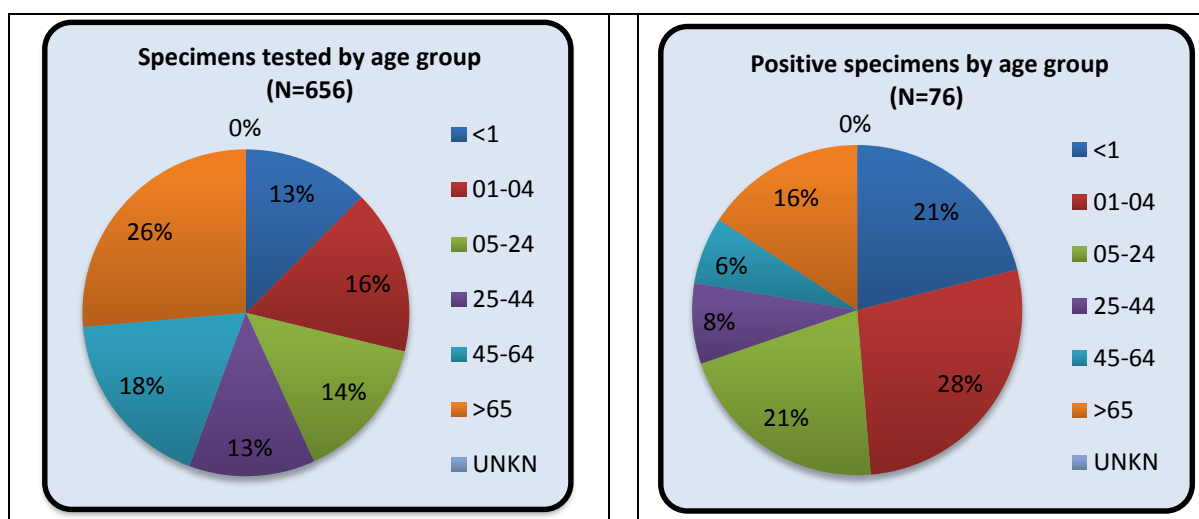
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2014-15 flu season:
  - A total of **656** specimens have been tested statewide for influenza viruses (positive: **76** [11.6%]). (Season to date: **656** tested [11.6% positive])
    - 358 (54.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 298 (45.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 580 (88.4%) were negative.
  - The 76 total positive cases included 61 (9.3%) cases of influenza A and 15 (2.3%) cases of influenza B (detected using any method). (Season to date: 9.3% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 61 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

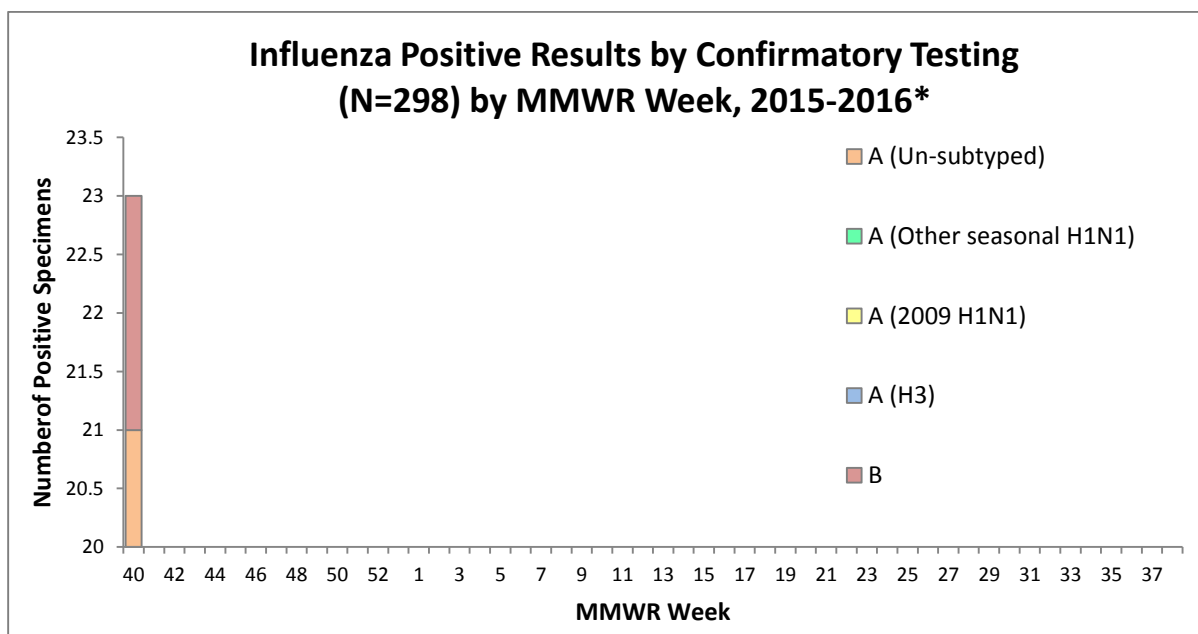
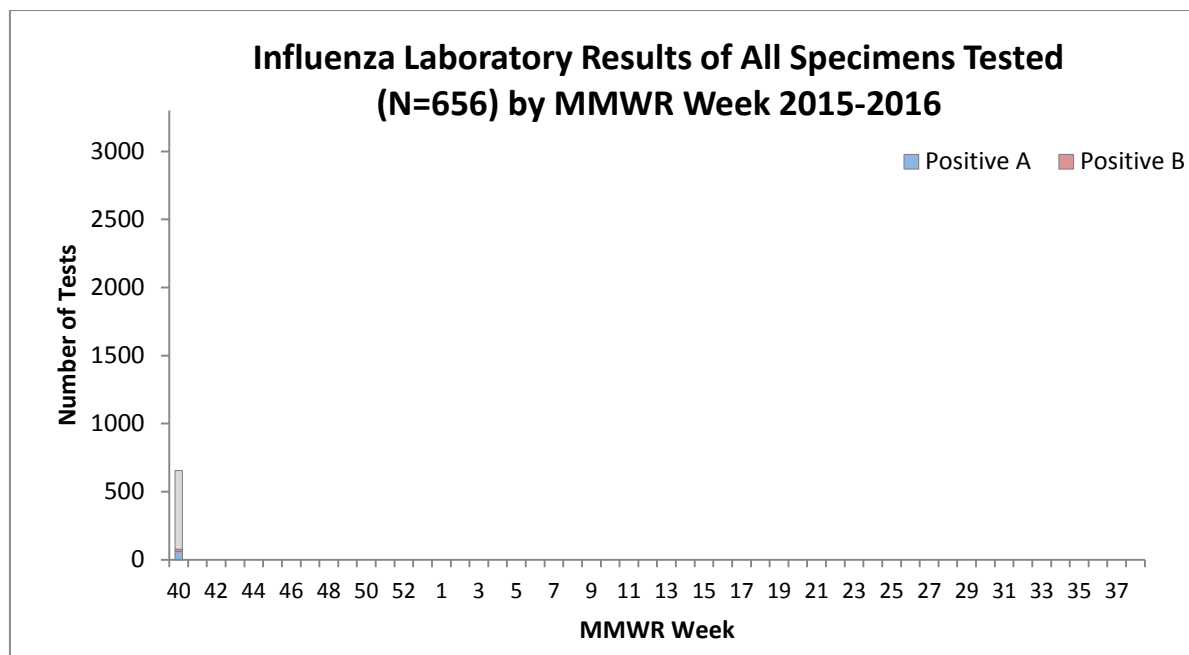
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2014–15 influenza season.



<sup>5</sup> 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 2014–2015 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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



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

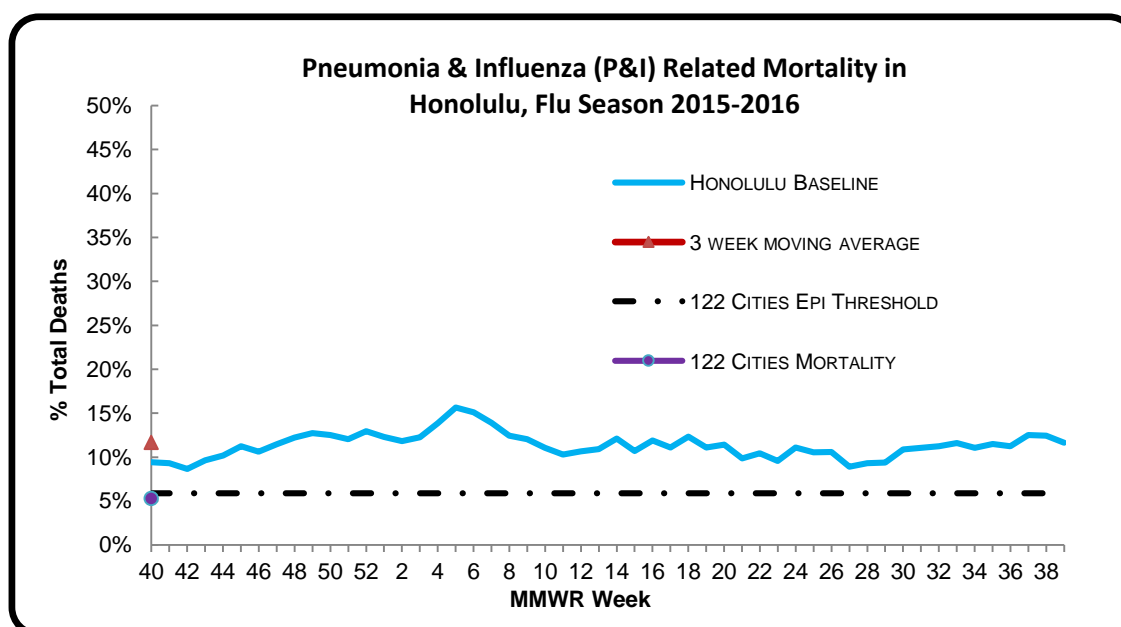
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2014–15 FLU SEASON**

MMWR Week (2015-2016)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Adenovirus																																																					
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus																																																					
Respiratory Syncytial Virus	X																		X																																		
Rhinovirus																																																					
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
Influenza A (H3)																																																					
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X																		X																																		
Influenza B	X																																																				

**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:

- *9.7% of all deaths that occurred in Honolulu during week 40 were related to pneumonia or influenza. For the current season (season to date: 9.7%), there have been 93 deaths from any cause, 9 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup>(5.3%) (i.e., inside the 95% confidence interval) and the epidemic threshold (5.9%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 40 (Season total: 0).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. One of the well-known avian influenza sub-types is H5N1 virus. Highly pathogenic avian influenza (HPAI) H5Nx has spread amongst wild and commercial flocks in 21 states in the mainland United States during the 2014–2015 influenza season. There have been no reported human cases and human infection is considered rare and not easily spread to others. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 15, 2015**. Since the previous update on September 4, 2015, two new laboratory-confirmed human cases of avian influenza A H7N9 were reported to WHO from China. No new laboratory-confirmed human cases of avian influenza A H5N1 have been reported to WHO. The public health risk from both avian influenza strains remains unchanged.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2011	2012	2013	2014	2015
1	1/8/2011	1/7/2012	1/5/2013	1/4/2014	1/10/2015
2	1/15/2011	1/14/2012	1/12/2013	1/11/2014	1/17/2015
3	1/22/2011	1/21/2012	1/19/2013	1/18/2014	1/24/2015
4	1/29/2011	1/28/2012	1/26/2013	1/25/2014	1/31/2015
5	2/5/2011	2/4/2012	2/2/2013	2/1/2014	2/7/2015
6	2/12/2011	2/11/2012	2/9/2013	2/8/2014	2/14/2015
7	2/19/2011	2/18/2012	2/16/2013	2/15/2014	2/21/2015
8	2/26/2011	2/25/2012	2/23/2013	2/22/2014	2/28/2015
9	3/5/2011	3/3/2012	3/2/2013	3/1/2014	3/7/2015
10	3/12/2011	3/10/2012	3/9/2013	3/8/2014	3/14/2015
11	3/19/2011	3/17/2012	3/16/2013	3/15/2014	3/21/2015
12	3/26/2011	3/24/2012	3/23/2013	3/22/2014	3/28/2015
13	4/2/2011	3/31/2012	3/30/2013	3/29/2014	4/4/2015
14	4/9/2011	4/7/2012	4/6/2013	4/5/2014	4/11/2015
15	4/16/2011	4/14/2012	4/13/2013	4/12/2014	4/18/2015
16	4/23/2011	4/21/2012	4/20/2013	4/19/2014	4/25/2015
17	4/30/2011	4/28/2012	4/27/2013	4/26/2014	5/2/2015
18	5/7/2011	5/5/2012	5/4/2013	5/3/2014	5/9/2015
19	5/14/2011	5/12/2012	5/11/2013	5/10/2014	5/16/2015
20	5/21/2011	5/19/2012	5/18/2013	5/17/2014	5/23/2015
21	5/28/2011	5/26/2012	5/25/2013	5/24/2014	5/30/2015
22	6/4/2011	6/2/2012	6/1/2013	5/31/2014	6/6/2015
23	6/11/2011	6/9/2012	6/8/2013	6/7/2014	6/13/2015
24	6/18/2011	6/16/2012	6/15/2013	6/14/2014	6/20/2015
25	6/25/2011	6/23/2012	6/22/2013	6/21/2014	6/27/2015
26	7/2/2011	6/30/2012	6/29/2013	6/28/2014	7/4/2015
27	7/9/2011	7/7/2012	7/6/2013	7/5/2014	7/11/2015
28	7/16/2011	7/14/2012	7/13/2013	7/12/2014	7/18/2015
29	7/23/2011	7/21/2012	7/20/2013	7/19/2014	7/25/2015
30	7/30/2011	7/28/2012	7/27/2013	7/26/2014	8/1/2015
31	8/6/2011	8/4/2012	8/3/2013	8/2/2014	8/8/2015
32	8/13/2011	8/11/2012	8/10/2013	8/9/2014	8/15/2015
33	8/20/2011	8/18/2012	8/17/2013	8/16/2014	8/22/2015
34	8/27/2011	8/25/2012	8/24/2013	8/23/2014	8/29/2015
35	9/3/2011	9/1/2012	8/31/2013	8/30/2014	9/5/2015
36	9/10/2011	9/8/2012	9/7/2013	9/6/2014	9/12/2015
37	9/17/2011	9/15/2012	9/14/2013	9/13/2014	9/19/2015
38	9/24/2011	9/22/2012	9/21/2013	9/20/2014	9/26/2015
39	10/1/2011	9/29/2012	9/28/2013	9/27/2014	10/3/2015
40	10/8/2011	10/6/2012	10/5/2013	10/4/2014	10/10/2015
41	10/15/2011	10/13/2012	10/12/2013	10/11/2014	10/17/2015
42	10/22/2011	10/20/2012	10/19/2013	10/18/2014	10/24/2015
43	10/29/2011	10/27/2012	10/26/2013	10/25/2014	10/31/2015
44	11/5/2011	11/3/2012	11/2/2013	11/1/2014	11/7/2015
45	11/12/2011	11/10/2012	11/9/2013	11/8/2014	11/14/2015
46	11/19/2011	11/17/2012	11/16/2013	11/15/2014	11/21/2015
47	11/26/2011	11/24/2012	11/23/2013	11/22/2014	11/28/2015
48	12/3/2011	12/1/2012	11/30/2013	11/29/2014	12/5/2015
49	12/10/2011	12/8/2012	12/7/2013	12/6/2014	12/12/2015
50	12/17/2011	12/15/2012	12/14/2013	12/13/2014	12/19/2015
51	12/24/2011	12/22/2012	12/21/2013	12/20/2014	12/26/2015
52	12/31/2011	12/29/2012	12/28/2013	12/27/2014	1/2/2016
53				1/3/2015	



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 41: OCTOBER 11, 2015 – OCTOBER 17, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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 the national baseline; higher than Hawaii's historical baseline and the national ILI rate.
Number of ILI clusters reported to HDOH	2	There has been a total of 2 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	14.6%	Comparable to the historical baseline for Hawaii; higher than the epidemic threshold and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	12.3%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	11.9%	

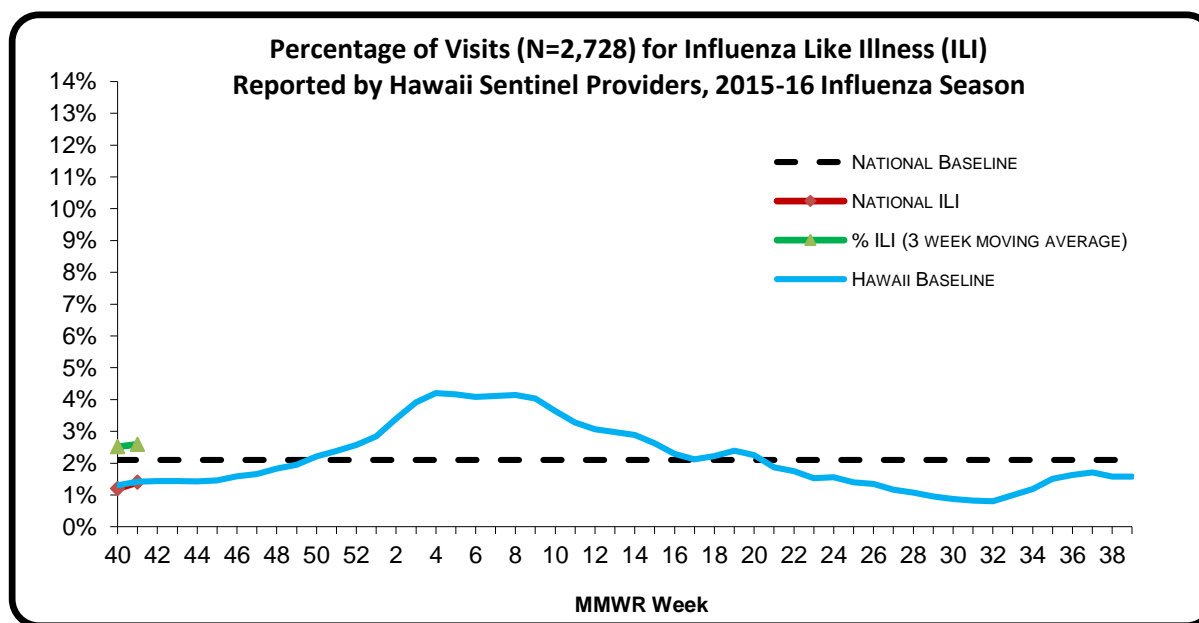
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 41** of the current influenza season:

- **2.4%** (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<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable the national baseline (2.1%)<sup>4</sup> (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 ILI clusters were reported to HDOH during week 41. Both clusters occurred at long-term care facilities on Oahu. One had cases of influenza A and B. There has been a total of 2 ILI clusters this season.



<sup>2</sup> The Hawaii historical baseline (%ILI) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–10, 2010–2011, 2011–2012, 2012–2013, and 2013–2014).

<sup>3</sup> 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.

<sup>4</sup> 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.



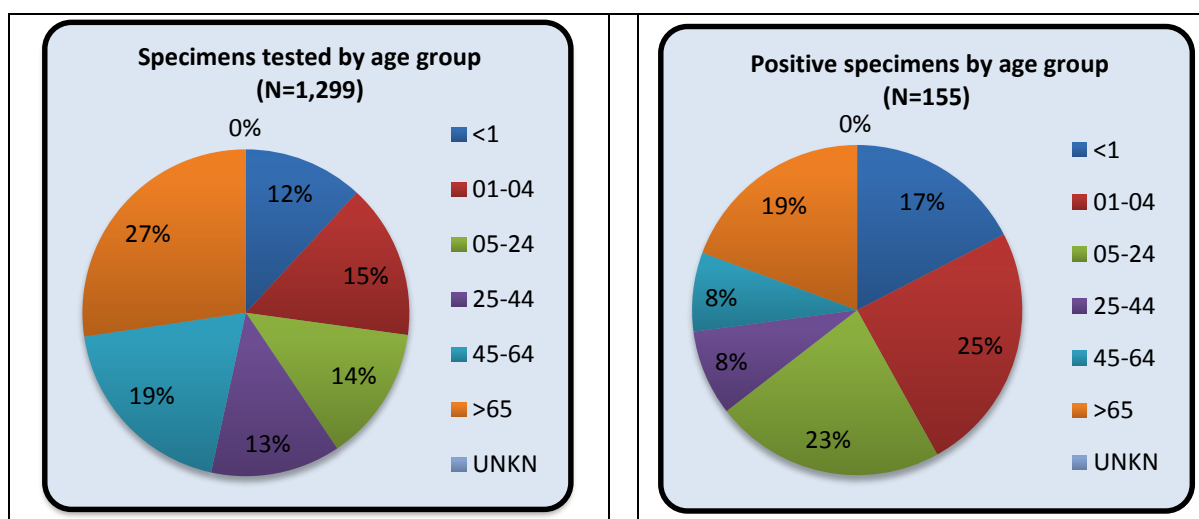
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2014-15 flu season:
  - A total of **643** specimens have been tested statewide for influenza viruses (positive: **79** [12.3%]). (Season to date: **1,299** tested [11.9% positive])
    - 363 (56.5 %) were screened only by rapid antigen tests with no confirmatory testing
    - 280 (43.5%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 564 (87.7%) were negative.
  - The 79 total positive cases included 70 (10.9%) cases of influenza A and 9 (1.4%) cases of influenza B (detected using any method). (Season to date: 10.1% influenza A and 1.8% influenza B)
    - Breakdown of influenza A cases:
      - 70 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

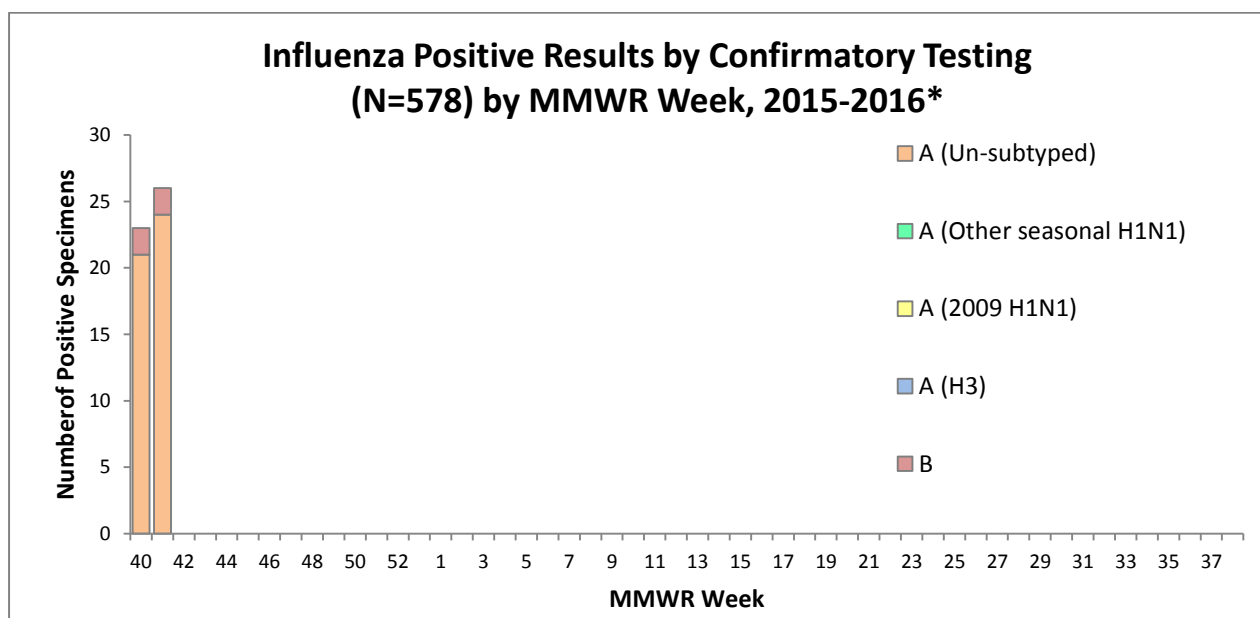
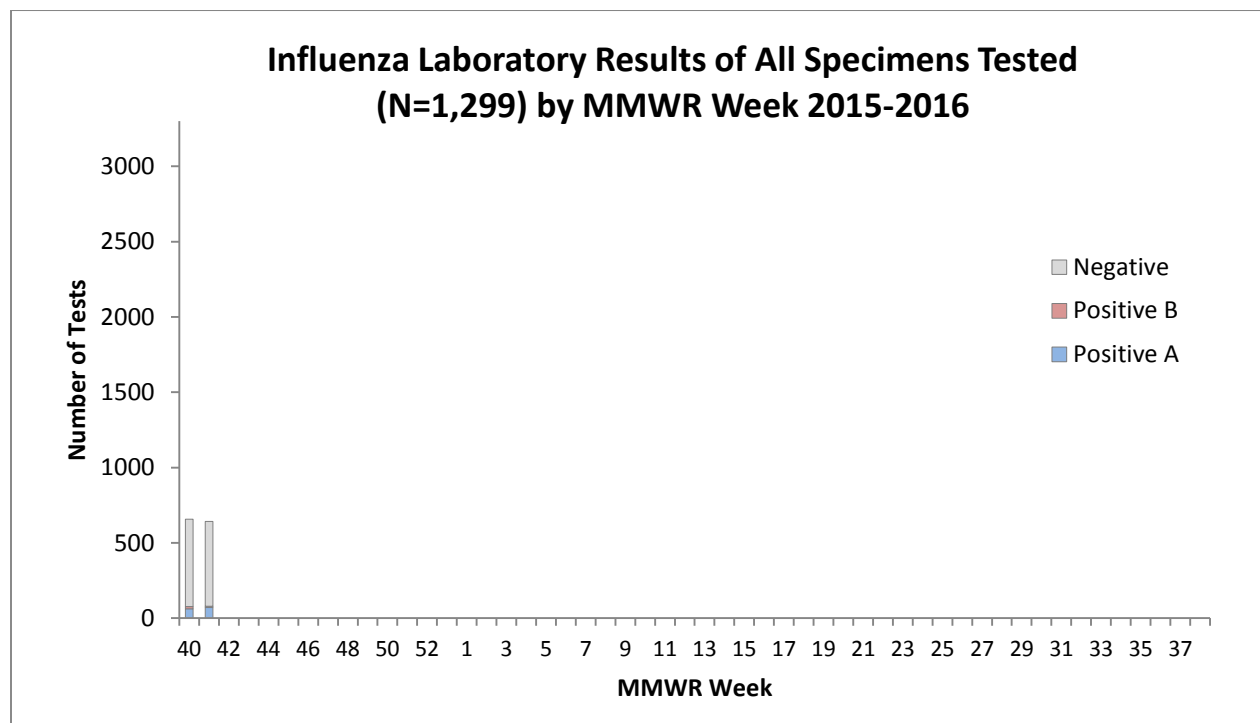
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2014–15 influenza season.



<sup>5</sup> 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 2014–2015 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

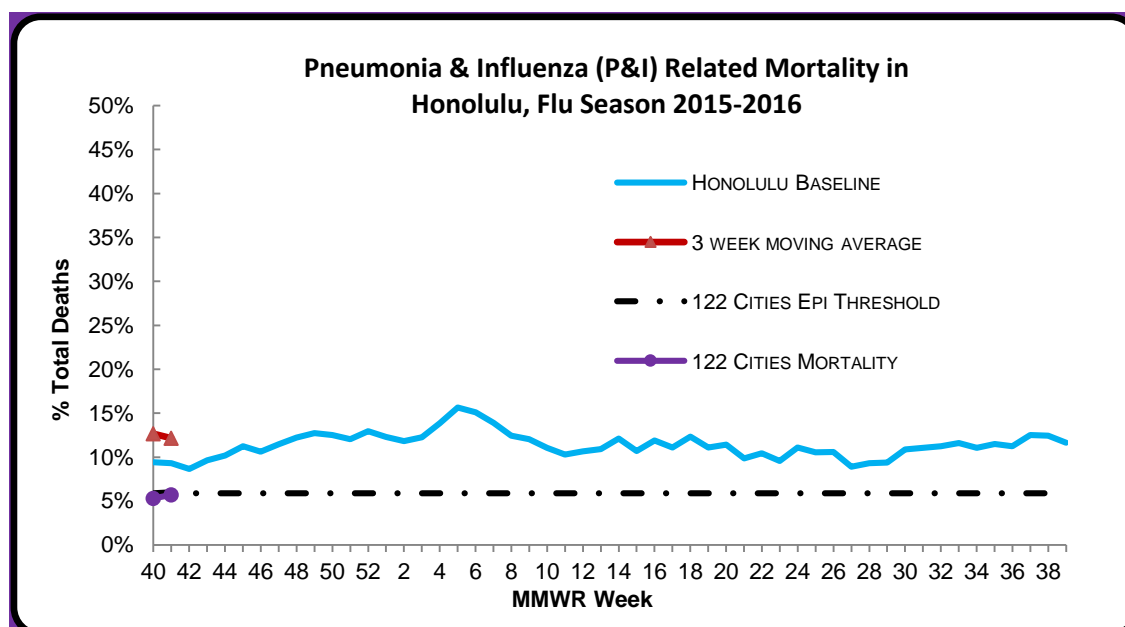
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																						
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Adenovirus																																																						
Coronavirus																																																						
Coxsackie Virus																																																						
Cytomegalovirus																																																						
Echovirus																																																						
Enterovirus																																																						
Herpes Simplex Virus, Type 1																																																						
Metapneumovirus																																																						
Parainfluenza Virus	X																		X	X																																		
Respiratory Syncytial Virus	X	X																																																				
Rhinovirus																																																						
Varicella Zoster Virus																																																						
Influenza 2009 H1N1																																																						
Influenza A (H3)																																																						
Influenza A (Other seasonal H1N1)																																																						
Influenza A (unsubtyped)	X	X																	X	X																																		
Influenza B	X	X																	X	X																																		

**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:

- **14.6%** of all deaths that occurred in Honolulu during week 41 were related to pneumonia or influenza. For the current season (season to date: **12.1%**), there have been 182 deaths from any cause, 22 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.7%) (i.e., outside the 95% confidence interval) and the epidemic threshold (6.0%) (i.e., outside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 41 (Season total: 0).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. One of the well-known avian influenza sub-types is H5N1 virus. Highly pathogenic avian influenza (HPAI) H5Nx spread amongst wild and commercial flocks in 21 states in the mainland United States during the 2014-2015 influenza season. There have been no reported human cases and human infection is considered rare and not easily spread to others. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 15, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2011	2012	2013	2014	2015
1	1/8/2011	1/7/2012	1/5/2013	1/4/2014	1/10/2015
2	1/15/2011	1/14/2012	1/12/2013	1/11/2014	1/17/2015
3	1/22/2011	1/21/2012	1/19/2013	1/18/2014	1/24/2015
4	1/29/2011	1/28/2012	1/26/2013	1/25/2014	1/31/2015
5	2/5/2011	2/4/2012	2/2/2013	2/1/2014	2/7/2015
6	2/12/2011	2/11/2012	2/9/2013	2/8/2014	2/14/2015
7	2/19/2011	2/18/2012	2/16/2013	2/15/2014	2/21/2015
8	2/26/2011	2/25/2012	2/23/2013	2/22/2014	2/28/2015
9	3/5/2011	3/3/2012	3/2/2013	3/1/2014	3/7/2015
10	3/12/2011	3/10/2012	3/9/2013	3/8/2014	3/14/2015
11	3/19/2011	3/17/2012	3/16/2013	3/15/2014	3/21/2015
12	3/26/2011	3/24/2012	3/23/2013	3/22/2014	3/28/2015
13	4/2/2011	3/31/2012	3/30/2013	3/29/2014	4/4/2015
14	4/9/2011	4/7/2012	4/6/2013	4/5/2014	4/11/2015
15	4/16/2011	4/14/2012	4/13/2013	4/12/2014	4/18/2015
16	4/23/2011	4/21/2012	4/20/2013	4/19/2014	4/25/2015
17	4/30/2011	4/28/2012	4/27/2013	4/26/2014	5/2/2015
18	5/7/2011	5/5/2012	5/4/2013	5/3/2014	5/9/2015
19	5/14/2011	5/12/2012	5/11/2013	5/10/2014	5/16/2015
20	5/21/2011	5/19/2012	5/18/2013	5/17/2014	5/23/2015
21	5/28/2011	5/26/2012	5/25/2013	5/24/2014	5/30/2015
22	6/4/2011	6/2/2012	6/1/2013	5/31/2014	6/6/2015
23	6/11/2011	6/9/2012	6/8/2013	6/7/2014	6/13/2015
24	6/18/2011	6/16/2012	6/15/2013	6/14/2014	6/20/2015
25	6/25/2011	6/23/2012	6/22/2013	6/21/2014	6/27/2015
26	7/2/2011	6/30/2012	6/29/2013	6/28/2014	7/4/2015
27	7/9/2011	7/7/2012	7/6/2013	7/5/2014	7/11/2015
28	7/16/2011	7/14/2012	7/13/2013	7/12/2014	7/18/2015
29	7/23/2011	7/21/2012	7/20/2013	7/19/2014	7/25/2015
30	7/30/2011	7/28/2012	7/27/2013	7/26/2014	8/1/2015
31	8/6/2011	8/4/2012	8/3/2013	8/2/2014	8/8/2015
32	8/13/2011	8/11/2012	8/10/2013	8/9/2014	8/15/2015
33	8/20/2011	8/18/2012	8/17/2013	8/16/2014	8/22/2015
34	8/27/2011	8/25/2012	8/24/2013	8/23/2014	8/29/2015
35	9/3/2011	9/1/2012	8/31/2013	8/30/2014	9/5/2015
36	9/10/2011	9/8/2012	9/7/2013	9/6/2014	9/12/2015
37	9/17/2011	9/15/2012	9/14/2013	9/13/2014	9/19/2015
38	9/24/2011	9/22/2012	9/21/2013	9/20/2014	9/26/2015
39	10/1/2011	9/29/2012	9/28/2013	9/27/2014	10/3/2015
40	10/8/2011	10/6/2012	10/5/2013	10/4/2014	10/10/2015
41	10/15/2011	10/13/2012	10/12/2013	10/11/2014	10/17/2015
42	10/22/2011	10/20/2012	10/19/2013	10/18/2014	10/24/2015
43	10/29/2011	10/27/2012	10/26/2013	10/25/2014	10/31/2015
44	11/5/2011	11/3/2012	11/2/2013	11/1/2014	11/7/2015
45	11/12/2011	11/10/2012	11/9/2013	11/8/2014	11/14/2015
46	11/19/2011	11/17/2012	11/16/2013	11/15/2014	11/21/2015
47	11/26/2011	11/24/2012	11/23/2013	11/22/2014	11/28/2015
48	12/3/2011	12/1/2012	11/30/2013	11/29/2014	12/5/2015
49	12/10/2011	12/8/2012	12/7/2013	12/6/2014	12/12/2015
50	12/17/2011	12/15/2012	12/14/2013	12/13/2014	12/19/2015
51	12/24/2011	12/22/2012	12/21/2013	12/20/2014	12/26/2015
52	12/31/2011	12/29/2012	12/28/2013	12/27/2014	1/2/2016
53				1/3/2015	





# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 42: OCTOBER 18, 2015 – OCTOBER 24, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.6%	Lower than the previous week; comparable to the national baseline, Hawaii's historical baseline and the national ILI rate.
Number of ILI clusters reported to HDOH	0	There has been a total of 2 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.9%	Comparable to the historical baseline for Hawaii and the national epidemic threshold; higher than the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	7.5%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	10.4%	

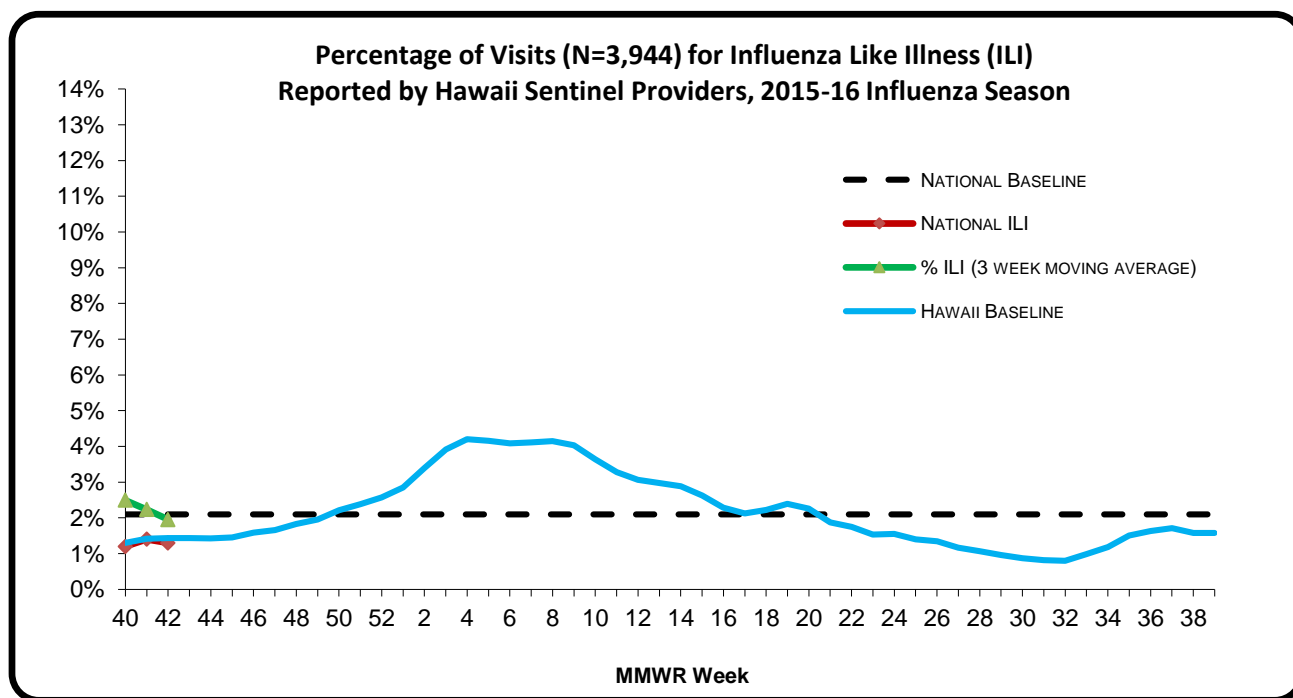
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **1.6%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval and the national ILI rate (1.3%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 42. There has been a total of 2 ILI clusters this season.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

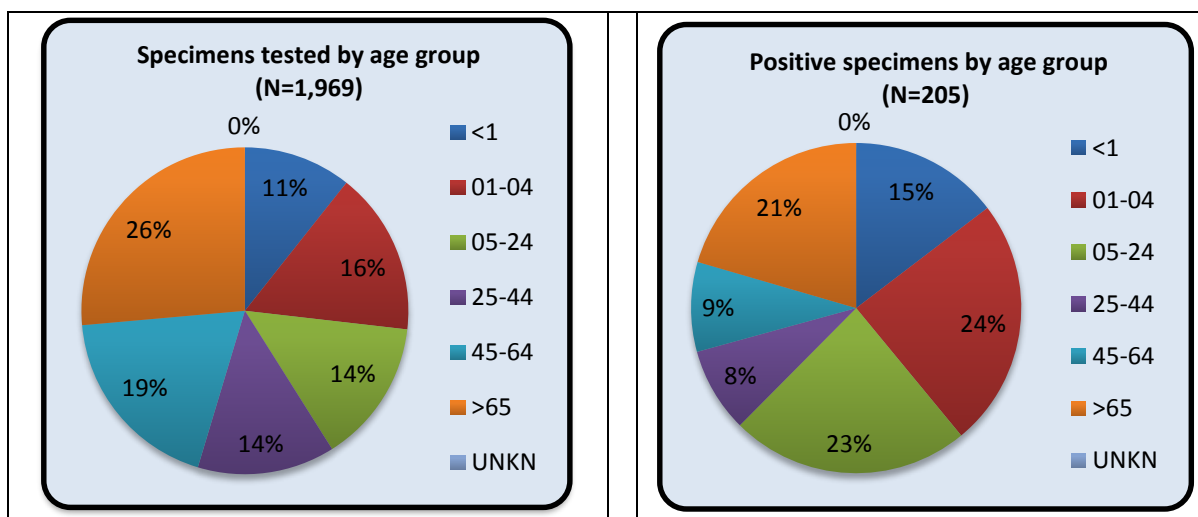
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **670** specimens have been tested statewide for influenza viruses (positive: **50** [7.5%]). (Season to date: **1,969** tested [10.4% positive])
    - 368 (54.9 %) were screened only by rapid antigen tests with no confirmatory testing
    - 302 (45.1%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 620 (92.5%) were negative.
  - The 50 total positive cases included 46 (6.9%) cases of influenza A and 4 (0.6%) cases of influenza B (detected using any method). (Season to date: 9.0% influenza A and 1.4% influenza B)
    - Breakdown of influenza A cases:
      - 46 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

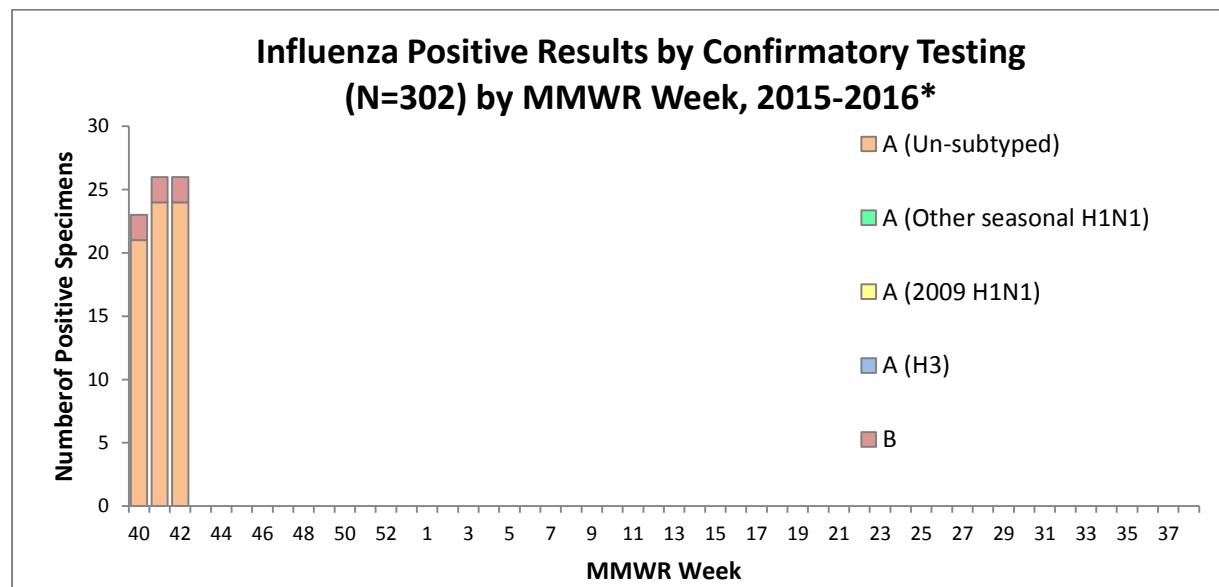
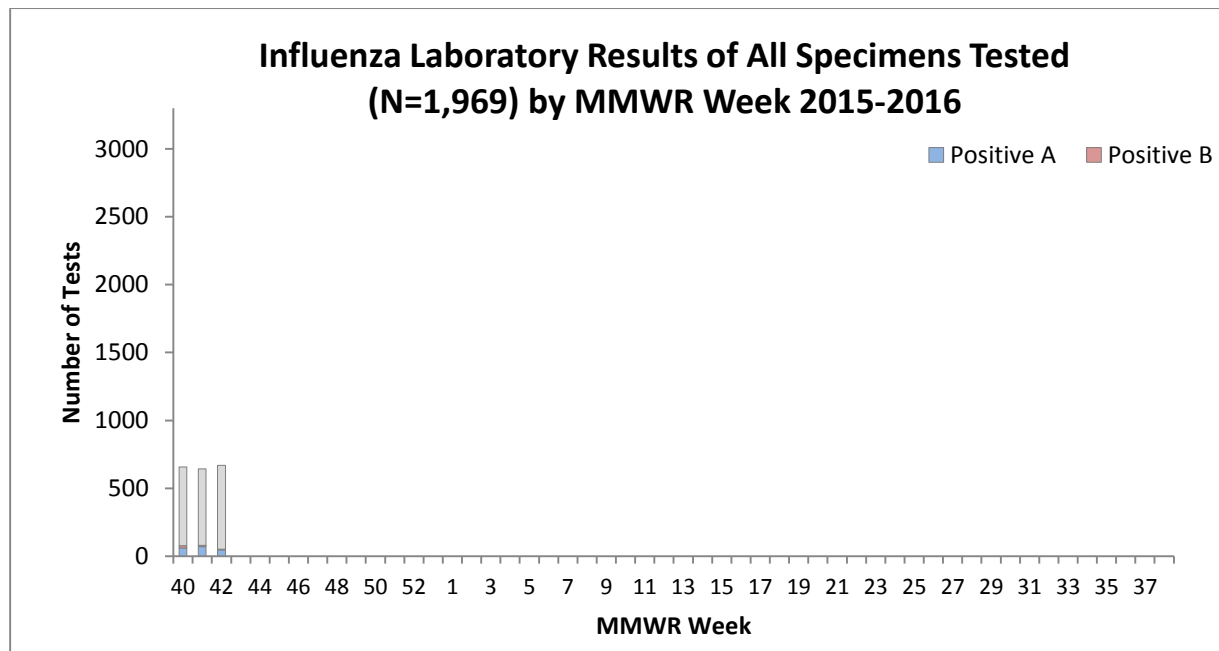
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

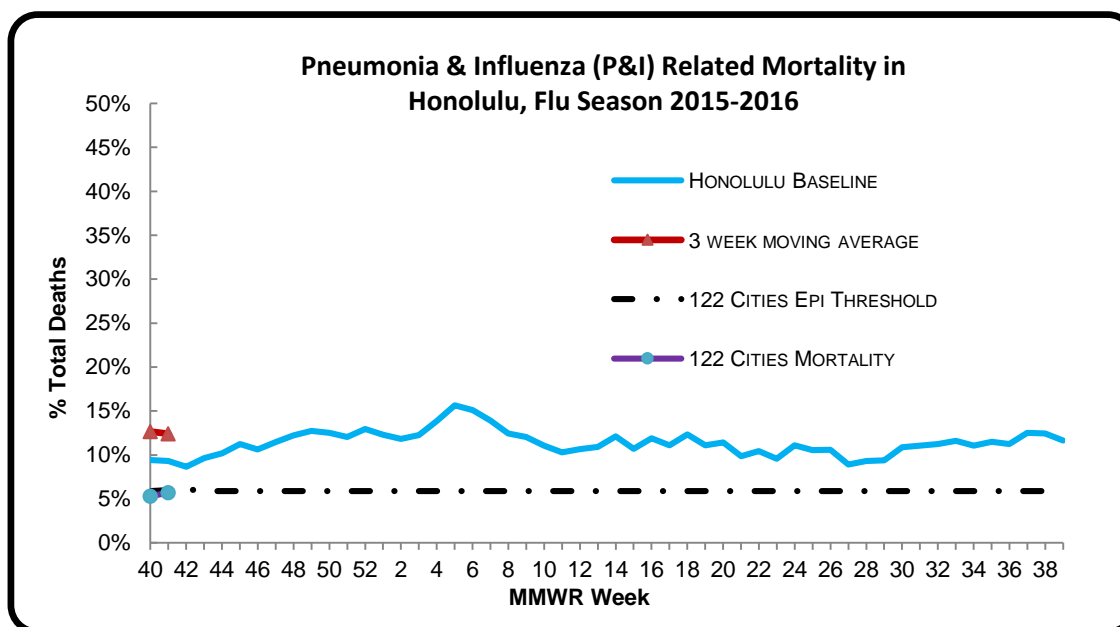
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Adenovirus																																																					
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus	X		X																																																		
Respiratory Syncytial Virus	X	X	X																																																		
Rhinovirus																																																					
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
Influenza A (H3)																																																					
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X	X	X																X	X	X																																
Influenza B	X	X	X																X	X	X																																

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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:

- *12.9% of all deaths that occurred in Honolulu during week 42 were related to pneumonia or influenza. For the current season (season to date: 12.4%), there have been 275 deaths from any cause, 34 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.8%) (i.e., outside the 95% confidence interval, but comparable to the epidemic threshold (6.1%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 42 (Season total: 0).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. One of the well-known avian influenza sub-types is H5N1 virus. Highly pathogenic avian influenza (HPAI) H5Nx spread amongst wild and commercial flocks in 21 states in the mainland United States during the 2014-2015 influenza season. There have been no reported human cases and human infection is considered rare and not easily spread to others. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 15, 2015**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2011	2012	2013	2014	2015
1	1/8/2011	1/7/2012	1/5/2013	1/4/2014	1/10/2015
2	1/15/2011	1/14/2012	1/12/2013	1/11/2014	1/17/2015
3	1/22/2011	1/21/2012	1/19/2013	1/18/2014	1/24/2015
4	1/29/2011	1/28/2012	1/26/2013	1/25/2014	1/31/2015
5	2/5/2011	2/4/2012	2/2/2013	2/1/2014	2/7/2015
6	2/12/2011	2/11/2012	2/9/2013	2/8/2014	2/14/2015
7	2/19/2011	2/18/2012	2/16/2013	2/15/2014	2/21/2015
8	2/26/2011	2/25/2012	2/23/2013	2/22/2014	2/28/2015
9	3/5/2011	3/3/2012	3/2/2013	3/1/2014	3/7/2015
10	3/12/2011	3/10/2012	3/9/2013	3/8/2014	3/14/2015
11	3/19/2011	3/17/2012	3/16/2013	3/15/2014	3/21/2015
12	3/26/2011	3/24/2012	3/23/2013	3/22/2014	3/28/2015
13	4/2/2011	3/31/2012	3/30/2013	3/29/2014	4/4/2015
14	4/9/2011	4/7/2012	4/6/2013	4/5/2014	4/11/2015
15	4/16/2011	4/14/2012	4/13/2013	4/12/2014	4/18/2015
16	4/23/2011	4/21/2012	4/20/2013	4/19/2014	4/25/2015
17	4/30/2011	4/28/2012	4/27/2013	4/26/2014	5/2/2015
18	5/7/2011	5/5/2012	5/4/2013	5/3/2014	5/9/2015
19	5/14/2011	5/12/2012	5/11/2013	5/10/2014	5/16/2015
20	5/21/2011	5/19/2012	5/18/2013	5/17/2014	5/23/2015
21	5/28/2011	5/26/2012	5/25/2013	5/24/2014	5/30/2015
22	6/4/2011	6/2/2012	6/1/2013	5/31/2014	6/6/2015
23	6/11/2011	6/9/2012	6/8/2013	6/7/2014	6/13/2015
24	6/18/2011	6/16/2012	6/15/2013	6/14/2014	6/20/2015
25	6/25/2011	6/23/2012	6/22/2013	6/21/2014	6/27/2015
26	7/2/2011	6/30/2012	6/29/2013	6/28/2014	7/4/2015
27	7/9/2011	7/7/2012	7/6/2013	7/5/2014	7/11/2015
28	7/16/2011	7/14/2012	7/13/2013	7/12/2014	7/18/2015
29	7/23/2011	7/21/2012	7/20/2013	7/19/2014	7/25/2015
30	7/30/2011	7/28/2012	7/27/2013	7/26/2014	8/1/2015
31	8/6/2011	8/4/2012	8/3/2013	8/2/2014	8/8/2015
32	8/13/2011	8/11/2012	8/10/2013	8/9/2014	8/15/2015
33	8/20/2011	8/18/2012	8/17/2013	8/16/2014	8/22/2015
34	8/27/2011	8/25/2012	8/24/2013	8/23/2014	8/29/2015
35	9/3/2011	9/1/2012	8/31/2013	8/30/2014	9/5/2015
36	9/10/2011	9/8/2012	9/7/2013	9/6/2014	9/12/2015
37	9/17/2011	9/15/2012	9/14/2013	9/13/2014	9/19/2015
38	9/24/2011	9/22/2012	9/21/2013	9/20/2014	9/26/2015
39	10/1/2011	9/29/2012	9/28/2013	9/27/2014	10/3/2015
40	10/8/2011	10/6/2012	10/5/2013	10/4/2014	10/10/2015
41	10/15/2011	10/13/2012	10/12/2013	10/11/2014	10/17/2015
42	10/22/2011	10/20/2012	10/19/2013	10/18/2014	10/24/2015
43	10/29/2011	10/27/2012	10/26/2013	10/25/2014	10/31/2015
44	11/5/2011	11/3/2012	11/2/2013	11/1/2014	11/7/2015
45	11/12/2011	11/10/2012	11/9/2013	11/8/2014	11/14/2015
46	11/19/2011	11/17/2012	11/16/2013	11/15/2014	11/21/2015
47	11/26/2011	11/24/2012	11/23/2013	11/22/2014	11/28/2015
48	12/3/2011	12/1/2012	11/30/2013	11/29/2014	12/5/2015
49	12/10/2011	12/8/2012	12/7/2013	12/6/2014	12/12/2015
50	12/17/2011	12/15/2012	12/14/2013	12/13/2014	12/19/2015
51	12/24/2011	12/22/2012	12/21/2013	12/20/2014	12/26/2015
52	12/31/2011	12/29/2012	12/28/2013	12/27/2014	1/2/2016
53				1/3/2015	



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 43: OCTOBER 25, 2015 – OCTOBER 31, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.9%	Higher than the previous week; comparable to the national baseline, Hawaii's historical baseline and the national ILI rate.
Number of ILI clusters reported to HDOH	0	There has been a total of 2 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.3%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	11.3%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	10.6%	

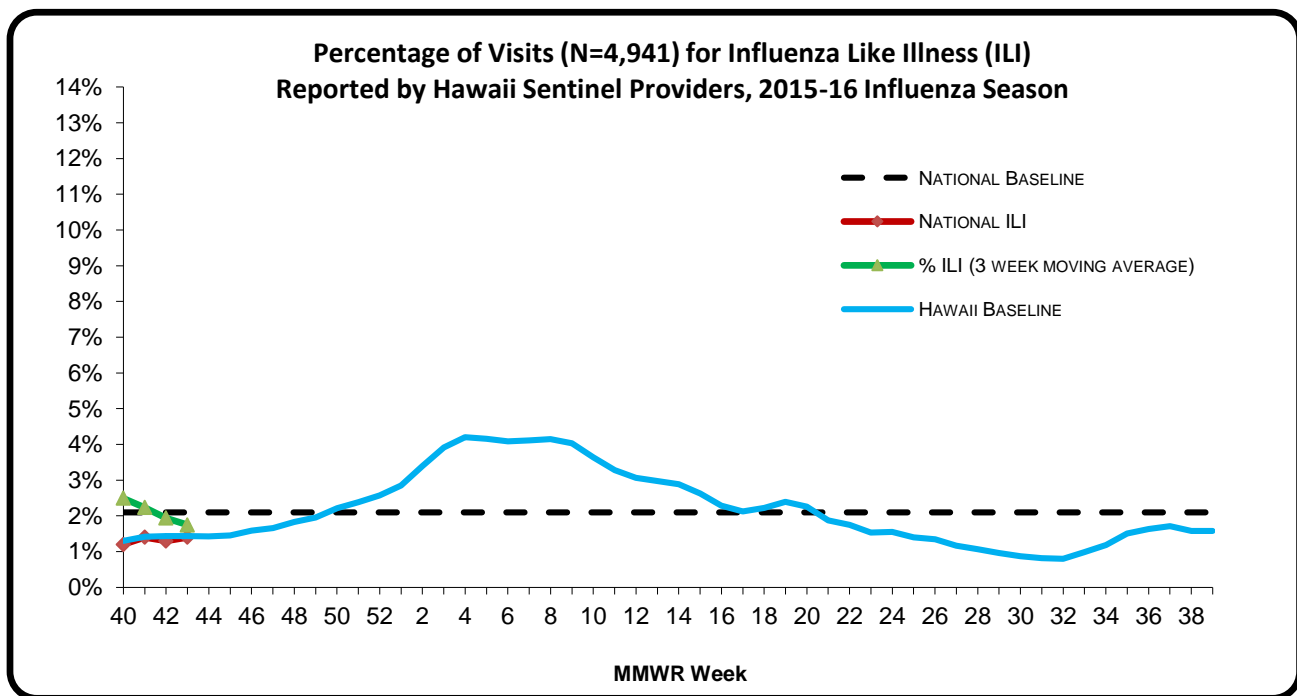
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **1.9%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval and the national ILI rate (1.4%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 43. There has been a total of 2 ILI clusters this season.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

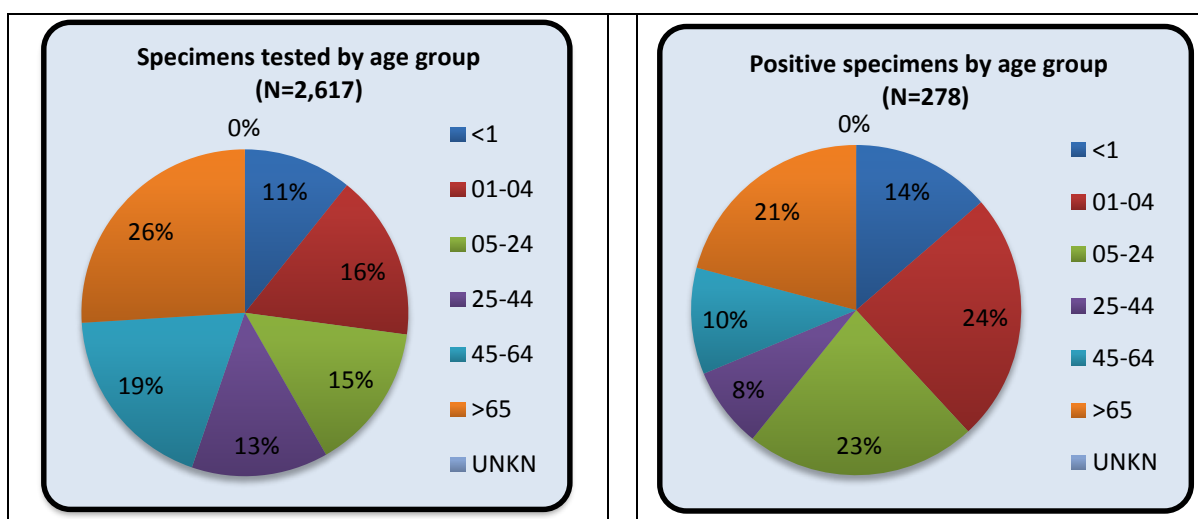
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **648** specimens have been tested statewide for influenza viruses (positive: **73** [11.3%]). (Season to date: **2,617** tested [10.6% positive])
    - 367 (56.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 281 (43.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 575 (88.7%) were negative.
  - The 73 total positive cases included 71 (11.0%) cases of influenza A and 2 (0.3%) cases of influenza B (detected using any method). (Season to date: 9.5% influenza A and 1.1% influenza B)
    - Breakdown of influenza A cases:
      - 71 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

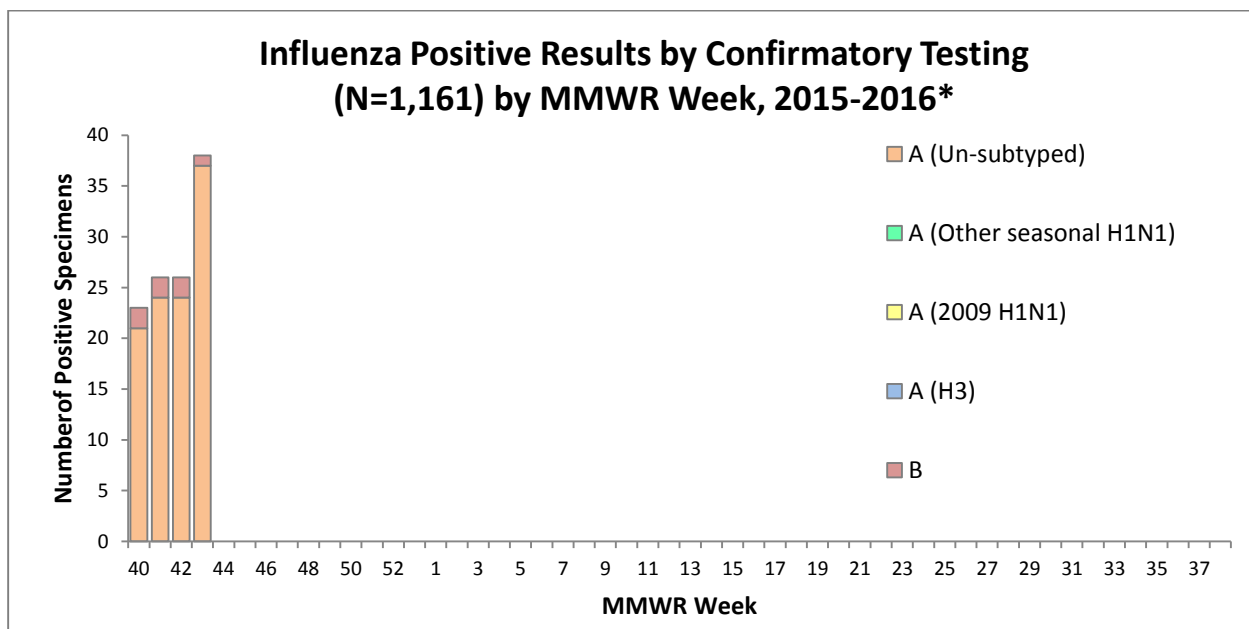
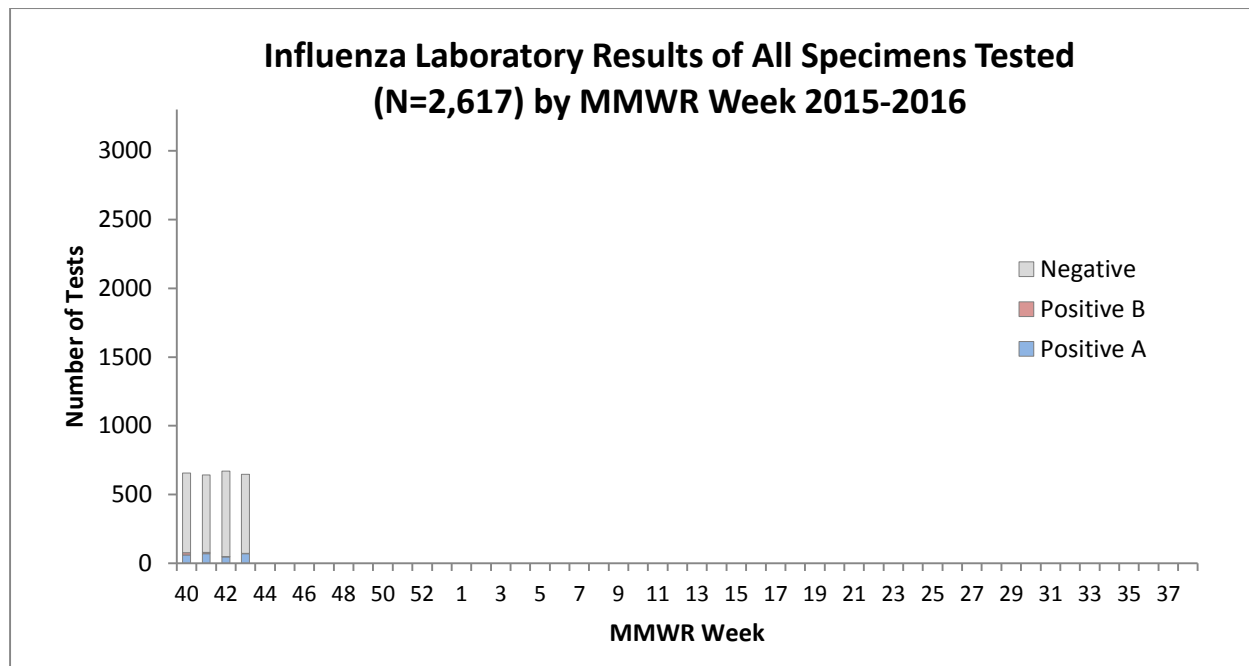
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

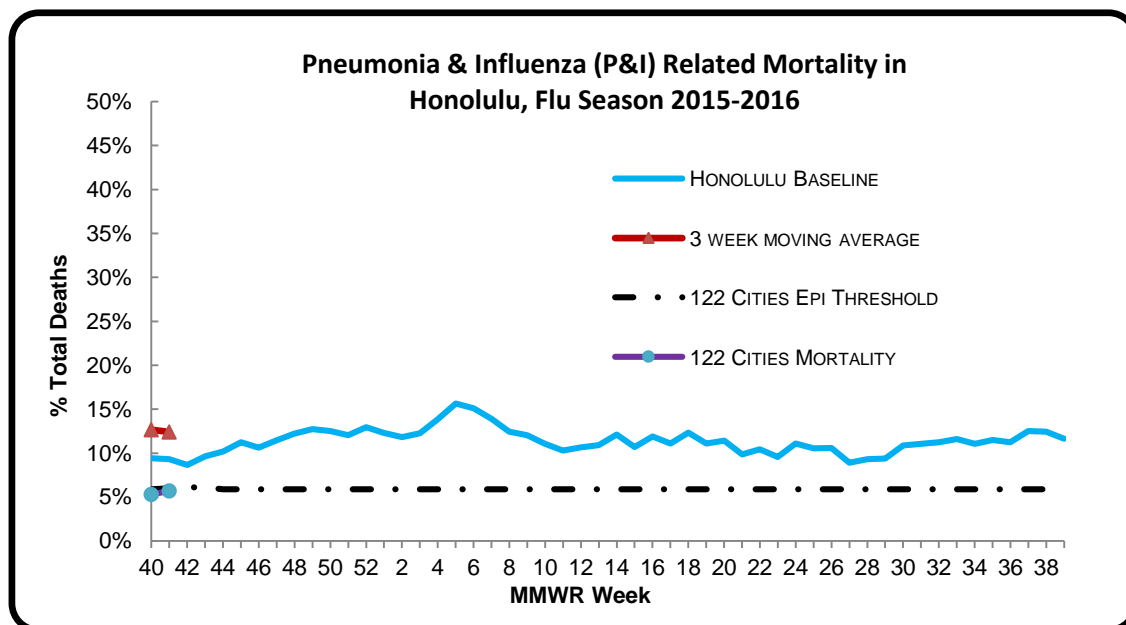
[illegible]



**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:

- *10.3% of all deaths that occurred in Honolulu during week 43 were related to pneumonia or influenza. For the current season (season to date: 11.9%), there have been 353 deaths from any cause, 42 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup>(5.5%) (i.e., inside the 95% confidence interval and the epidemic threshold (6.4%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 43 (Season total: 0).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. One of the well-known avian influenza sub-types is H5N1 virus. Highly pathogenic avian influenza (HPAI) H5Nx spread amongst wild and commercial flocks in 21 states in the mainland United States during the 2014-2015 influenza season. There have been no reported human cases and human infection is considered rare and not easily spread to others. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 15, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2011	2012	2013	2014	2015
1	1/8/2011	1/7/2012	1/5/2013	1/4/2014	1/10/2015
2	1/15/2011	1/14/2012	1/12/2013	1/11/2014	1/17/2015
3	1/22/2011	1/21/2012	1/19/2013	1/18/2014	1/24/2015
4	1/29/2011	1/28/2012	1/26/2013	1/25/2014	1/31/2015
5	2/5/2011	2/4/2012	2/2/2013	2/1/2014	2/7/2015
6	2/12/2011	2/11/2012	2/9/2013	2/8/2014	2/14/2015
7	2/19/2011	2/18/2012	2/16/2013	2/15/2014	2/21/2015
8	2/26/2011	2/25/2012	2/23/2013	2/22/2014	2/28/2015
9	3/5/2011	3/3/2012	3/2/2013	3/1/2014	3/7/2015
10	3/12/2011	3/10/2012	3/9/2013	3/8/2014	3/14/2015
11	3/19/2011	3/17/2012	3/16/2013	3/15/2014	3/21/2015
12	3/26/2011	3/24/2012	3/23/2013	3/22/2014	3/28/2015
13	4/2/2011	3/31/2012	3/30/2013	3/29/2014	4/4/2015
14	4/9/2011	4/7/2012	4/6/2013	4/5/2014	4/11/2015
15	4/16/2011	4/14/2012	4/13/2013	4/12/2014	4/18/2015
16	4/23/2011	4/21/2012	4/20/2013	4/19/2014	4/25/2015
17	4/30/2011	4/28/2012	4/27/2013	4/26/2014	5/2/2015
18	5/7/2011	5/5/2012	5/4/2013	5/3/2014	5/9/2015
19	5/14/2011	5/12/2012	5/11/2013	5/10/2014	5/16/2015
20	5/21/2011	5/19/2012	5/18/2013	5/17/2014	5/23/2015
21	5/28/2011	5/26/2012	5/25/2013	5/24/2014	5/30/2015
22	6/4/2011	6/2/2012	6/1/2013	5/31/2014	6/6/2015
23	6/11/2011	6/9/2012	6/8/2013	6/7/2014	6/13/2015
24	6/18/2011	6/16/2012	6/15/2013	6/14/2014	6/20/2015
25	6/25/2011	6/23/2012	6/22/2013	6/21/2014	6/27/2015
26	7/2/2011	6/30/2012	6/29/2013	6/28/2014	7/4/2015
27	7/9/2011	7/7/2012	7/6/2013	7/5/2014	7/11/2015
28	7/16/2011	7/14/2012	7/13/2013	7/12/2014	7/18/2015
29	7/23/2011	7/21/2012	7/20/2013	7/19/2014	7/25/2015
30	7/30/2011	7/28/2012	7/27/2013	7/26/2014	8/1/2015
31	8/6/2011	8/4/2012	8/3/2013	8/2/2014	8/8/2015
32	8/13/2011	8/11/2012	8/10/2013	8/9/2014	8/15/2015
33	8/20/2011	8/18/2012	8/17/2013	8/16/2014	8/22/2015
34	8/27/2011	8/25/2012	8/24/2013	8/23/2014	8/29/2015
35	9/3/2011	9/1/2012	8/31/2013	8/30/2014	9/5/2015
36	9/10/2011	9/8/2012	9/7/2013	9/6/2014	9/12/2015
37	9/17/2011	9/15/2012	9/14/2013	9/13/2014	9/19/2015
38	9/24/2011	9/22/2012	9/21/2013	9/20/2014	9/26/2015
39	10/1/2011	9/29/2012	9/28/2013	9/27/2014	10/3/2015
40	10/8/2011	10/6/2012	10/5/2013	10/4/2014	10/10/2015
41	10/15/2011	10/13/2012	10/12/2013	10/11/2014	10/17/2015
42	10/22/2011	10/20/2012	10/19/2013	10/18/2014	10/24/2015
43	10/29/2011	10/27/2012	10/26/2013	10/25/2014	10/31/2015
44	11/5/2011	11/3/2012	11/2/2013	11/1/2014	11/7/2015
45	11/12/2011	11/10/2012	11/9/2013	11/8/2014	11/14/2015
46	11/19/2011	11/17/2012	11/16/2013	11/15/2014	11/21/2015
47	11/26/2011	11/24/2012	11/23/2013	11/22/2014	11/28/2015
48	12/3/2011	12/1/2012	11/30/2013	11/29/2014	12/5/2015
49	12/10/2011	12/8/2012	12/7/2013	12/6/2014	12/12/2015
50	12/17/2011	12/15/2012	12/14/2013	12/13/2014	12/19/2015
51	12/24/2011	12/22/2012	12/21/2013	12/20/2014	12/26/2015
52	12/31/2011	12/29/2012	12/28/2013	12/27/2014	1/2/2016
53				1/3/2015	



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

**WEEK 44:** NOVEMBER 1, 2015 – NOVEMBER 7, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.6%	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	0	There has been a total of 2 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	9.1%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	8.9%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	10.3%	

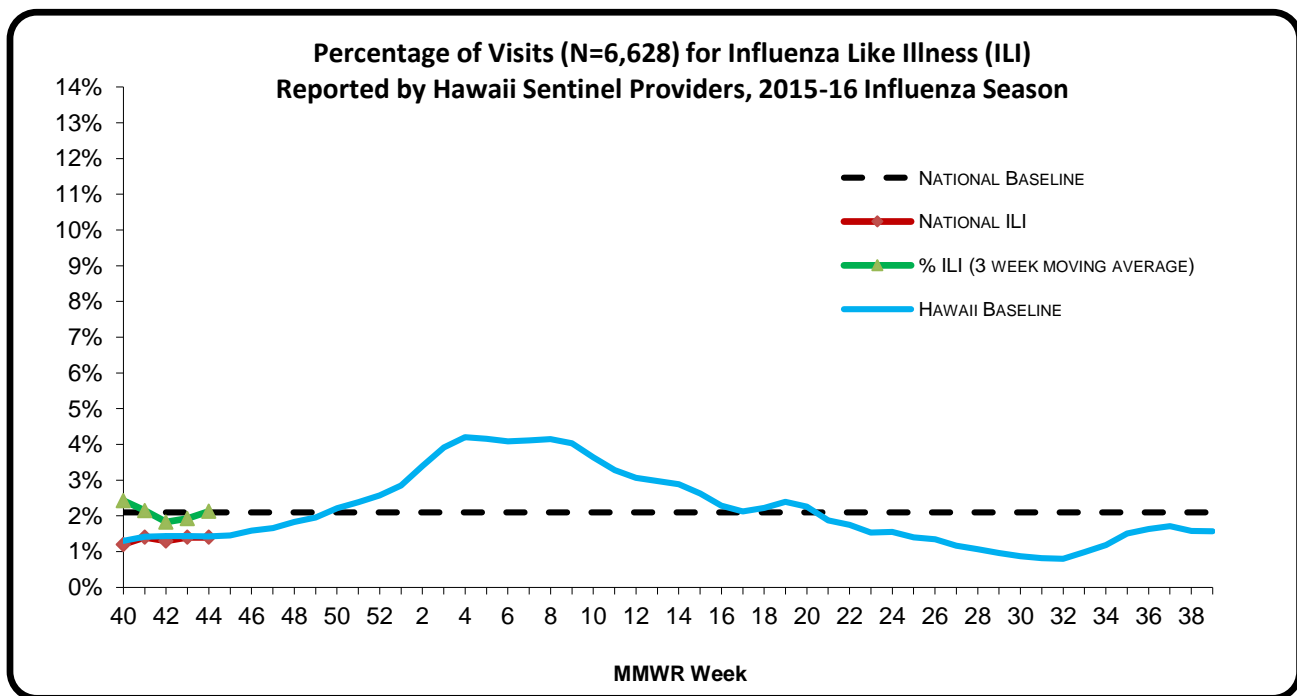
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **2.6%** (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<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval), but higher than the national ILI rate (1.4%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 44. There has been a total of 2 ILI clusters this season.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

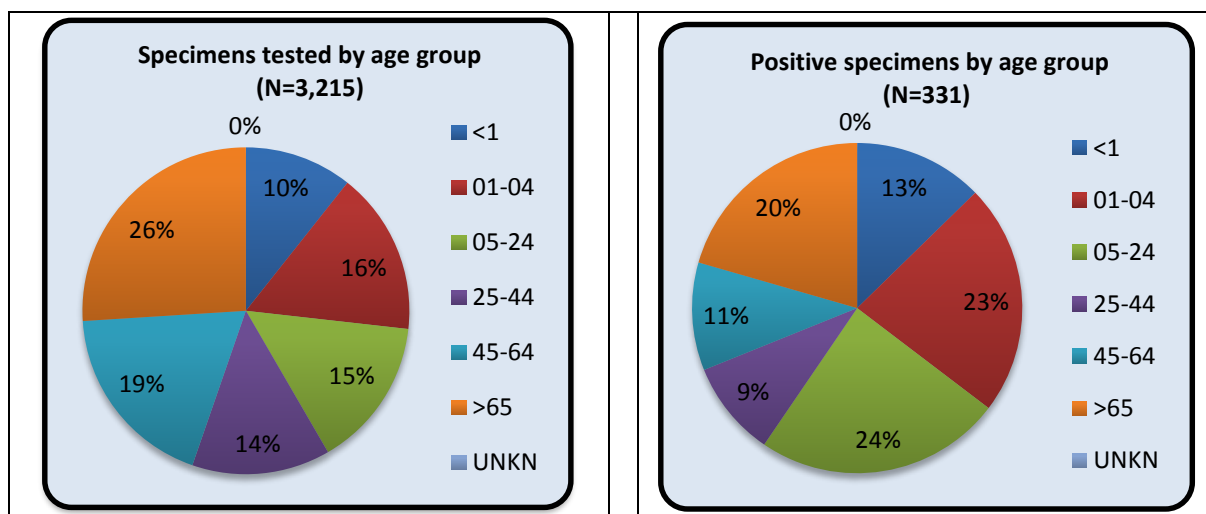
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **598** specimens have been tested statewide for influenza viruses (positive: **53** [8.9%]). (Season to date: **3,215** tested [10.3% positive])
    - 371 (62.0%) were screened only by rapid antigen tests with no confirmatory testing
    - 227 (38.0%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 545 (91.1%) were negative.
  - The 53 total positive cases included 48 (8.0%) cases of influenza A and 5 (0.8%) cases of influenza B (detected using any method). (Season to date: 9.2% influenza A and 1.1% influenza B)
    - Breakdown of influenza A cases:
      - 48 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

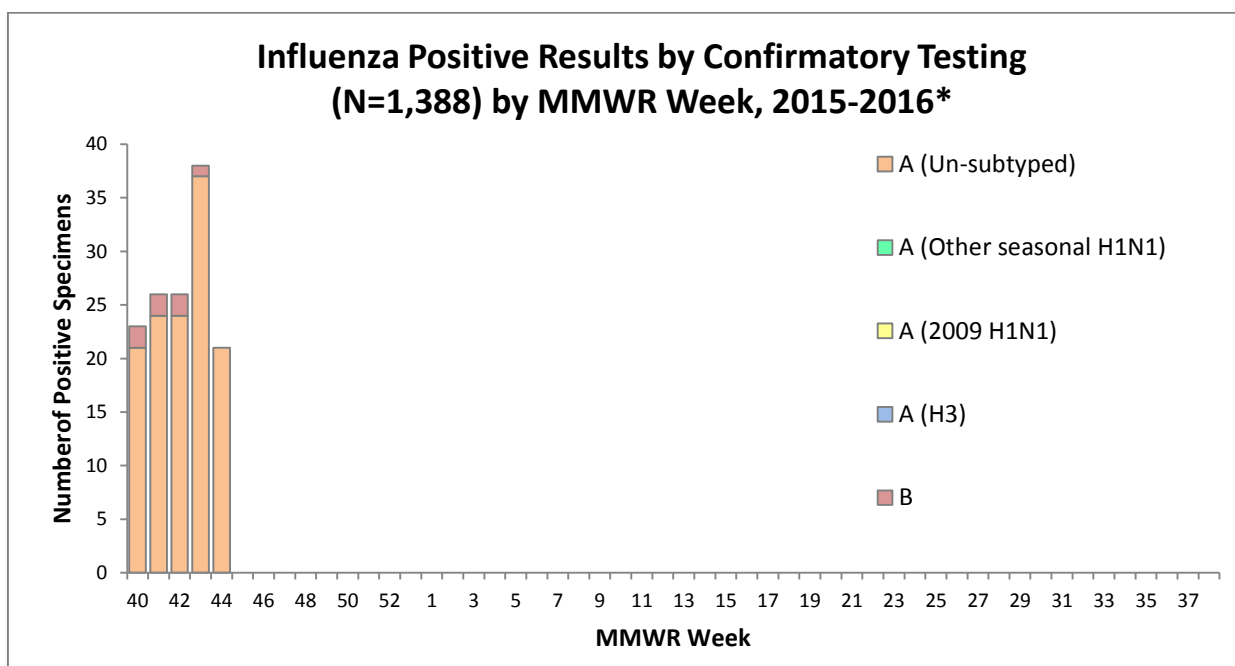
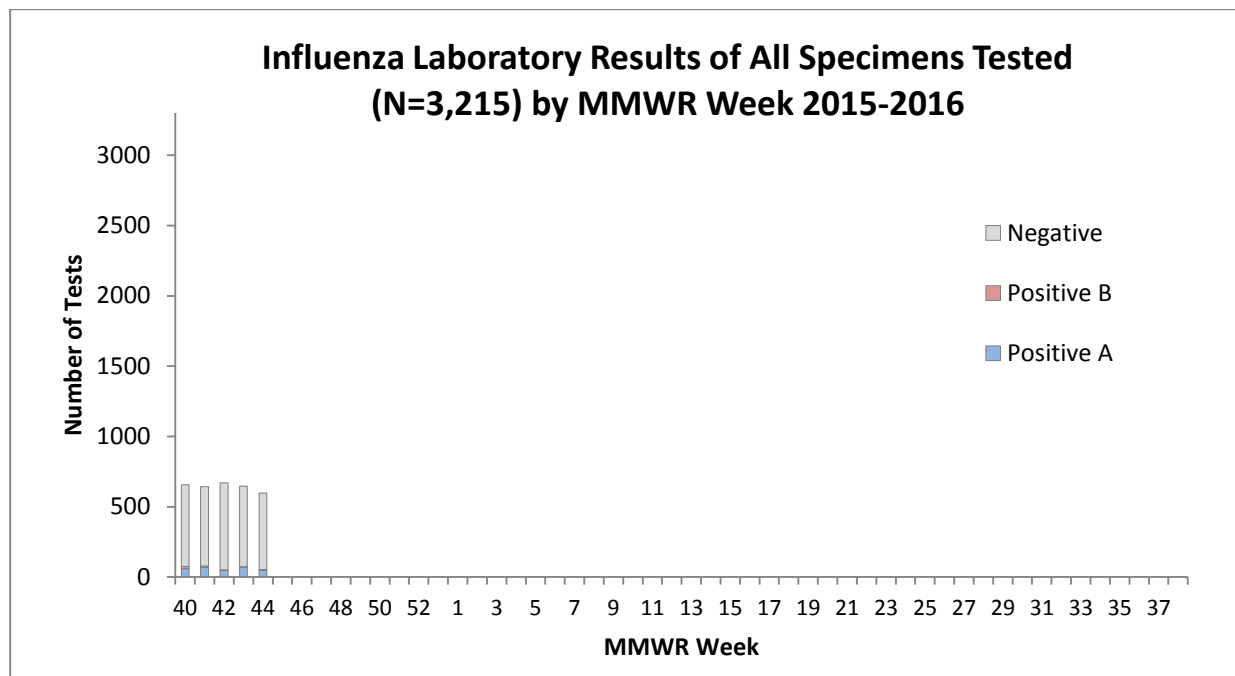


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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



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

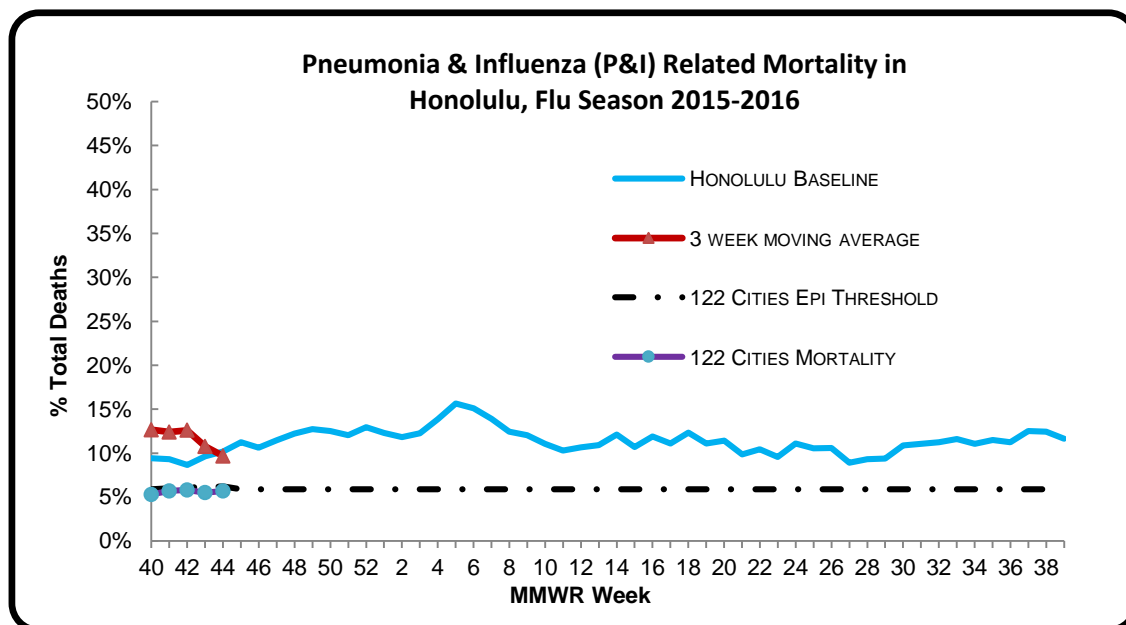
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Adenovirus																																																					
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus	X		X		X																																																
Respiratory Syncytial Virus	X	X	X	X	X																																																
Rhinovirus				X																																																	
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
Influenza A (H3)																																																					
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X	X	X	X	X																																																
Influenza B	X	X	X	X	X																																																

**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:

- **9.1%** of all deaths that occurred in Honolulu during week 44 were related to pneumonia or influenza. For the current season (season to date: **11.3%**), there have been 441 deaths from any cause, 50 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (5.7%) (i.e., inside the 95% confidence interval and the epidemic threshold (6.2%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 44 (Season total: 0).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. One of the well-known avian influenza sub-types is H5N1 virus. Highly pathogenic avian influenza (HPAI) H5Nx spread amongst wild and commercial flocks in 21 states in the mainland United States during the 2014-2015 influenza season. There have been no reported human cases and human infection is considered rare and not easily spread to others. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 13, 2015**. Since the last update, two laboratory confirmed cases of H7N9 were reported to WHO from China. No new cases of H5N1 have been reported to WHO since the last update.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2011	2012	2013	2014	2015
1	1/8/2011	1/7/2012	1/5/2013	1/4/2014	1/10/2015
2	1/15/2011	1/14/2012	1/12/2013	1/11/2014	1/17/2015
3	1/22/2011	1/21/2012	1/19/2013	1/18/2014	1/24/2015
4	1/29/2011	1/28/2012	1/26/2013	1/25/2014	1/31/2015
5	2/5/2011	2/4/2012	2/2/2013	2/1/2014	2/7/2015
6	2/12/2011	2/11/2012	2/9/2013	2/8/2014	2/14/2015
7	2/19/2011	2/18/2012	2/16/2013	2/15/2014	2/21/2015
8	2/26/2011	2/25/2012	2/23/2013	2/22/2014	2/28/2015
9	3/5/2011	3/3/2012	3/2/2013	3/1/2014	3/7/2015
10	3/12/2011	3/10/2012	3/9/2013	3/8/2014	3/14/2015
11	3/19/2011	3/17/2012	3/16/2013	3/15/2014	3/21/2015
12	3/26/2011	3/24/2012	3/23/2013	3/22/2014	3/28/2015
13	4/2/2011	3/31/2012	3/30/2013	3/29/2014	4/4/2015
14	4/9/2011	4/7/2012	4/6/2013	4/5/2014	4/11/2015
15	4/16/2011	4/14/2012	4/13/2013	4/12/2014	4/18/2015
16	4/23/2011	4/21/2012	4/20/2013	4/19/2014	4/25/2015
17	4/30/2011	4/28/2012	4/27/2013	4/26/2014	5/2/2015
18	5/7/2011	5/5/2012	5/4/2013	5/3/2014	5/9/2015
19	5/14/2011	5/12/2012	5/11/2013	5/10/2014	5/16/2015
20	5/21/2011	5/19/2012	5/18/2013	5/17/2014	5/23/2015
21	5/28/2011	5/26/2012	5/25/2013	5/24/2014	5/30/2015
22	6/4/2011	6/2/2012	6/1/2013	5/31/2014	6/6/2015
23	6/11/2011	6/9/2012	6/8/2013	6/7/2014	6/13/2015
24	6/18/2011	6/16/2012	6/15/2013	6/14/2014	6/20/2015
25	6/25/2011	6/23/2012	6/22/2013	6/21/2014	6/27/2015
26	7/2/2011	6/30/2012	6/29/2013	6/28/2014	7/4/2015
27	7/9/2011	7/7/2012	7/6/2013	7/5/2014	7/11/2015
28	7/16/2011	7/14/2012	7/13/2013	7/12/2014	7/18/2015
29	7/23/2011	7/21/2012	7/20/2013	7/19/2014	7/25/2015
30	7/30/2011	7/28/2012	7/27/2013	7/26/2014	8/1/2015
31	8/6/2011	8/4/2012	8/3/2013	8/2/2014	8/8/2015
32	8/13/2011	8/11/2012	8/10/2013	8/9/2014	8/15/2015
33	8/20/2011	8/18/2012	8/17/2013	8/16/2014	8/22/2015
34	8/27/2011	8/25/2012	8/24/2013	8/23/2014	8/29/2015
35	9/3/2011	9/1/2012	8/31/2013	8/30/2014	9/5/2015
36	9/10/2011	9/8/2012	9/7/2013	9/6/2014	9/12/2015
37	9/17/2011	9/15/2012	9/14/2013	9/13/2014	9/19/2015
38	9/24/2011	9/22/2012	9/21/2013	9/20/2014	9/26/2015
39	10/1/2011	9/29/2012	9/28/2013	9/27/2014	10/3/2015
40	10/8/2011	10/6/2012	10/5/2013	10/4/2014	10/10/2015
41	10/15/2011	10/13/2012	10/12/2013	10/11/2014	10/17/2015
42	10/22/2011	10/20/2012	10/19/2013	10/18/2014	10/24/2015
43	10/29/2011	10/27/2012	10/26/2013	10/25/2014	10/31/2015
44	11/5/2011	11/3/2012	11/2/2013	11/1/2014	11/7/2015
45	11/12/2011	11/10/2012	11/9/2013	11/8/2014	11/14/2015
46	11/19/2011	11/17/2012	11/16/2013	11/15/2014	11/21/2015
47	11/26/2011	11/24/2012	11/23/2013	11/22/2014	11/28/2015
48	12/3/2011	12/1/2012	11/30/2013	11/29/2014	12/5/2015
49	12/10/2011	12/8/2012	12/7/2013	12/6/2014	12/12/2015
50	12/17/2011	12/15/2012	12/14/2013	12/13/2014	12/19/2015
51	12/24/2011	12/22/2012	12/21/2013	12/20/2014	12/26/2015
52	12/31/2011	12/29/2012	12/28/2013	12/27/2014	1/2/2016
53				1/3/2015	



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 45: NOVEMBER 8, 2015 – NOVEMBER 14, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.3%	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 2 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.7%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	6.8%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	9.8%	

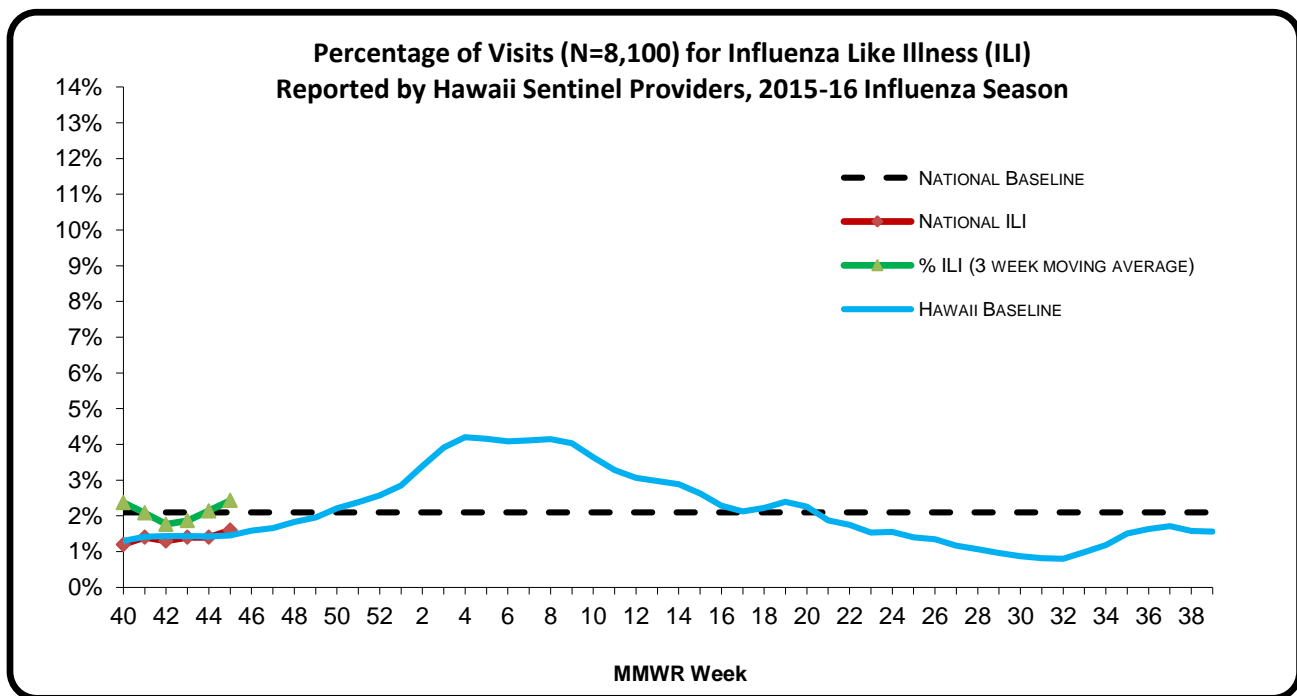
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **2.3%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (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 ILI clusters were reported to HDOH during week 45. There has been a total of 2 ILI clusters this season.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



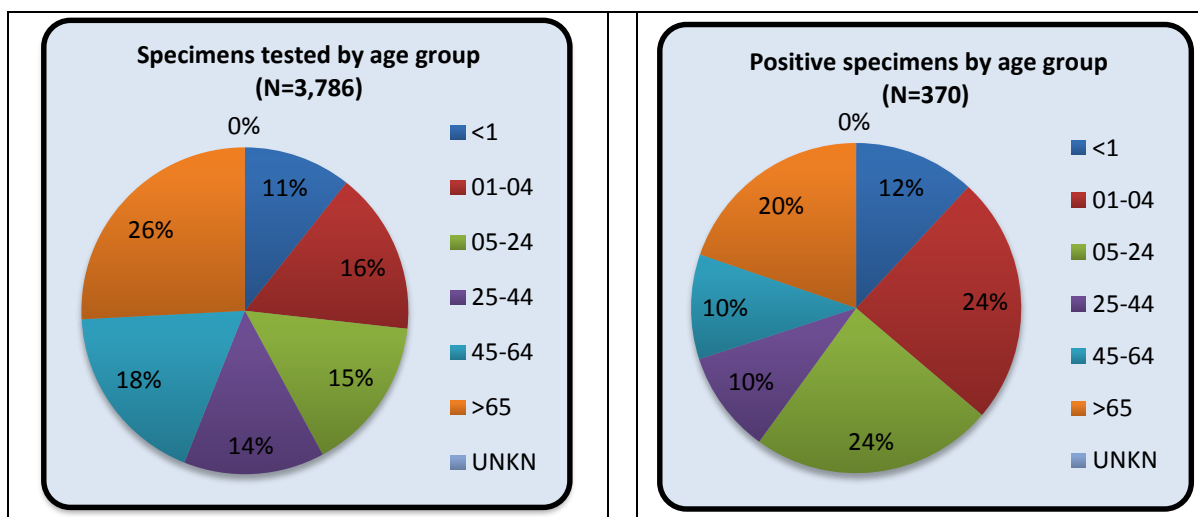
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **571** specimens have been tested statewide for influenza viruses (positive: **39** [6.8%]). (Season to date: **3,786** tested [9.8% positive])
    - 325 (56.9%) were screened only by rapid antigen tests with no confirmatory testing
    - 246 (43.1%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 532 (93.2%) were negative.
  - The 39 total positive cases included 35 (6.1%) cases of influenza A and 4 (0.7%) cases of influenza B (detected using any method). (Season to date: 8.7% influenza A and 1.0% influenza B)
    - Breakdown of influenza A cases:
      - 35 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

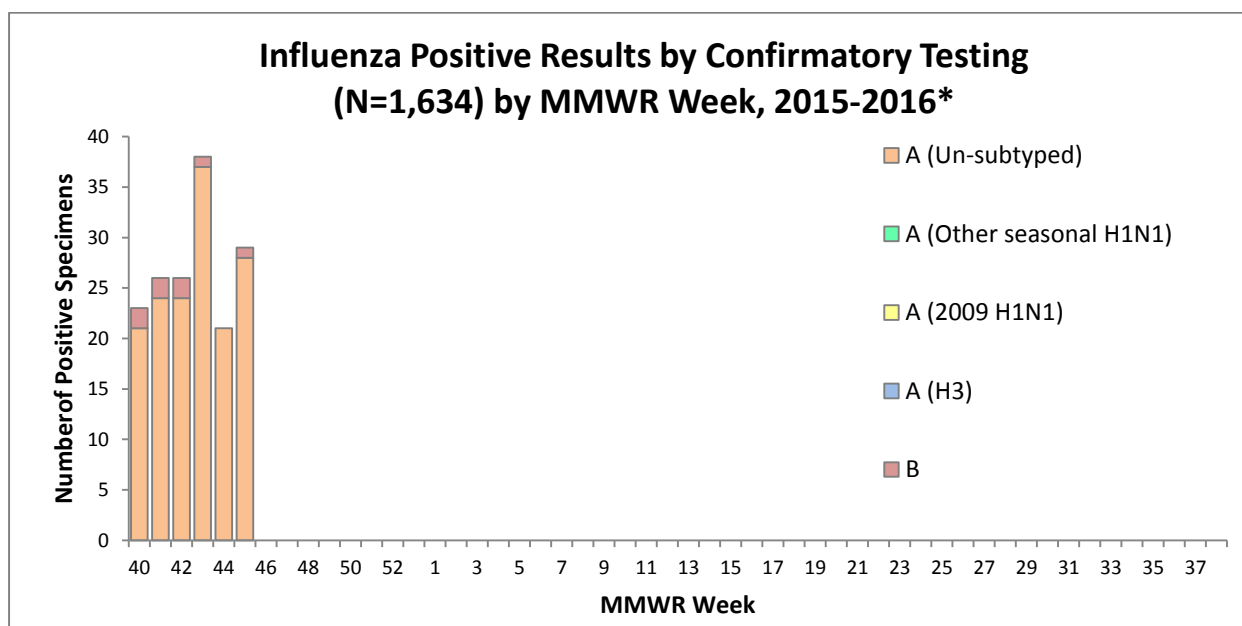
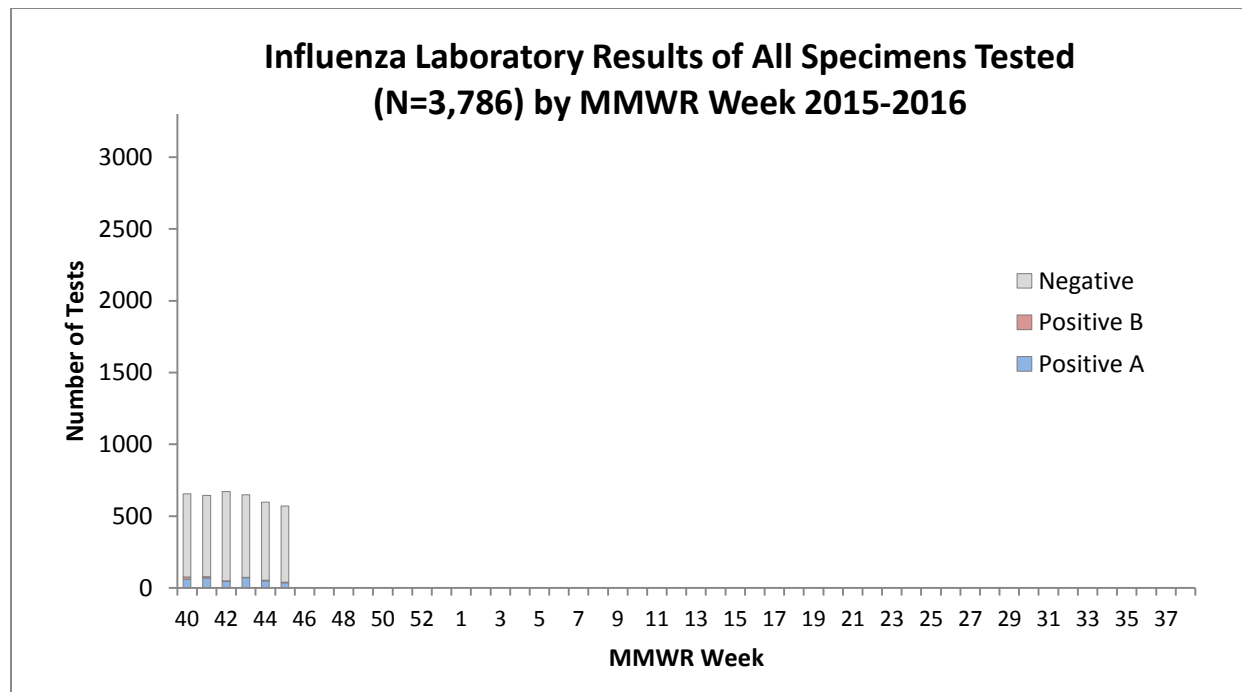


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

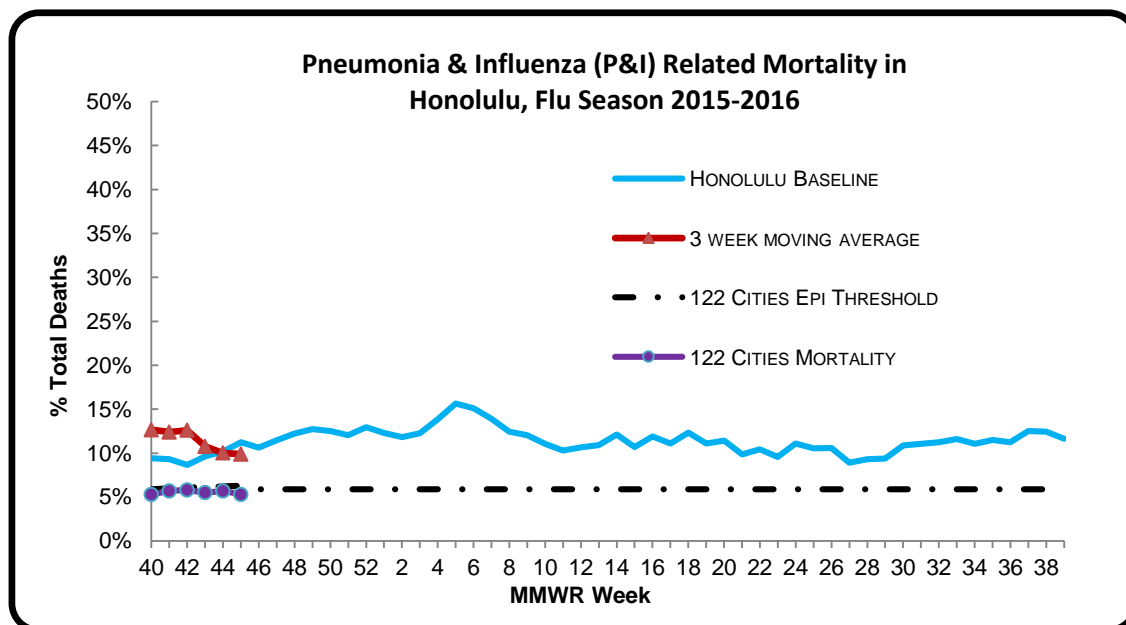
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																						
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
Adenovirus																																																						
Coronavirus																																																						
Coxsackie Virus																																																						
Cytomegalovirus																																																						
Echovirus																																																						
Enterovirus																																																						
Herpes Simplex Virus, Type 1																																																						
Metapneumovirus																																																						
Parainfluenza Virus	X		X		X	X																																																
Respiratory Syncytial Virus	X	X	X	X	X	X																																																
Rhinovirus				X																																																		
Varicella Zoster Virus																																																						
Influenza 2009 H1N1																																																						
Influenza A (H3)																																																						
Influenza A (Other seasonal H1N1)																																																						
Influenza A (unsubtyped)	X	X	X	X	X	X																																																
Influenza B	X	X	X	X	X	X																																																

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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:

- *10.7% of all deaths that occurred in Honolulu during week 45 were related to pneumonia or influenza. For the current season (season to date: 11.2%), there have been 516 deaths from any cause, 58 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup>(5.3%) (i.e., inside the 95% confidence interval and the epidemic threshold (6.3%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 45. This death was associated with an influenza A virus for which no subtyping was performed and occurred during week 44 (Season total: 1).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. One of the well-known avian influenza sub-types is H5N1 virus. Highly pathogenic avian influenza (HPAI) H5Nx spread amongst wild and commercial flocks in 21 states in the mainland United States during the 2014-2015 influenza season. There have been no reported human cases and human infection is considered rare and not easily spread to others. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 13, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2011	2012	2013	2014	2015
1	1/8/2011	1/7/2012	1/5/2013	1/4/2014	1/10/2015
2	1/15/2011	1/14/2012	1/12/2013	1/11/2014	1/17/2015
3	1/22/2011	1/21/2012	1/19/2013	1/18/2014	1/24/2015
4	1/29/2011	1/28/2012	1/26/2013	1/25/2014	1/31/2015
5	2/5/2011	2/4/2012	2/2/2013	2/1/2014	2/7/2015
6	2/12/2011	2/11/2012	2/9/2013	2/8/2014	2/14/2015
7	2/19/2011	2/18/2012	2/16/2013	2/15/2014	2/21/2015
8	2/26/2011	2/25/2012	2/23/2013	2/22/2014	2/28/2015
9	3/5/2011	3/3/2012	3/2/2013	3/1/2014	3/7/2015
10	3/12/2011	3/10/2012	3/9/2013	3/8/2014	3/14/2015
11	3/19/2011	3/17/2012	3/16/2013	3/15/2014	3/21/2015
12	3/26/2011	3/24/2012	3/23/2013	3/22/2014	3/28/2015
13	4/2/2011	3/31/2012	3/30/2013	3/29/2014	4/4/2015
14	4/9/2011	4/7/2012	4/6/2013	4/5/2014	4/11/2015
15	4/16/2011	4/14/2012	4/13/2013	4/12/2014	4/18/2015
16	4/23/2011	4/21/2012	4/20/2013	4/19/2014	4/25/2015
17	4/30/2011	4/28/2012	4/27/2013	4/26/2014	5/2/2015
18	5/7/2011	5/5/2012	5/4/2013	5/3/2014	5/9/2015
19	5/14/2011	5/12/2012	5/11/2013	5/10/2014	5/16/2015
20	5/21/2011	5/19/2012	5/18/2013	5/17/2014	5/23/2015
21	5/28/2011	5/26/2012	5/25/2013	5/24/2014	5/30/2015
22	6/4/2011	6/2/2012	6/1/2013	5/31/2014	6/6/2015
23	6/11/2011	6/9/2012	6/8/2013	6/7/2014	6/13/2015
24	6/18/2011	6/16/2012	6/15/2013	6/14/2014	6/20/2015
25	6/25/2011	6/23/2012	6/22/2013	6/21/2014	6/27/2015
26	7/2/2011	6/30/2012	6/29/2013	6/28/2014	7/4/2015
27	7/9/2011	7/7/2012	7/6/2013	7/5/2014	7/11/2015
28	7/16/2011	7/14/2012	7/13/2013	7/12/2014	7/18/2015
29	7/23/2011	7/21/2012	7/20/2013	7/19/2014	7/25/2015
30	7/30/2011	7/28/2012	7/27/2013	7/26/2014	8/1/2015
31	8/6/2011	8/4/2012	8/3/2013	8/2/2014	8/8/2015
32	8/13/2011	8/11/2012	8/10/2013	8/9/2014	8/15/2015
33	8/20/2011	8/18/2012	8/17/2013	8/16/2014	8/22/2015
34	8/27/2011	8/25/2012	8/24/2013	8/23/2014	8/29/2015
35	9/3/2011	9/1/2012	8/31/2013	8/30/2014	9/5/2015
36	9/10/2011	9/8/2012	9/7/2013	9/6/2014	9/12/2015
37	9/17/2011	9/15/2012	9/14/2013	9/13/2014	9/19/2015
38	9/24/2011	9/22/2012	9/21/2013	9/20/2014	9/26/2015
39	10/1/2011	9/29/2012	9/28/2013	9/27/2014	10/3/2015
40	10/8/2011	10/6/2012	10/5/2013	10/4/2014	10/10/2015
41	10/15/2011	10/13/2012	10/12/2013	10/11/2014	10/17/2015
42	10/22/2011	10/20/2012	10/19/2013	10/18/2014	10/24/2015
43	10/29/2011	10/27/2012	10/26/2013	10/25/2014	10/31/2015
44	11/5/2011	11/3/2012	11/2/2013	11/1/2014	11/7/2015
45	11/12/2011	11/10/2012	11/9/2013	11/8/2014	11/14/2015
46	11/19/2011	11/17/2012	11/16/2013	11/15/2014	11/21/2015
47	11/26/2011	11/24/2012	11/23/2013	11/22/2014	11/28/2015
48	12/3/2011	12/1/2012	11/30/2013	11/29/2014	12/5/2015
49	12/10/2011	12/8/2012	12/7/2013	12/6/2014	12/12/2015
50	12/17/2011	12/15/2012	12/14/2013	12/13/2014	12/19/2015
51	12/24/2011	12/22/2012	12/21/2013	12/20/2014	12/26/2015
52	12/31/2011	12/29/2012	12/28/2013	12/27/2014	1/2/2016
53				1/3/2015	



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

**WEEK 46:** NOVEMBER 15, 2015 – NOVEMBER 21, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.9%	Lower than the previous week; 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 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	13.0%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	6.7%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	9.4%	

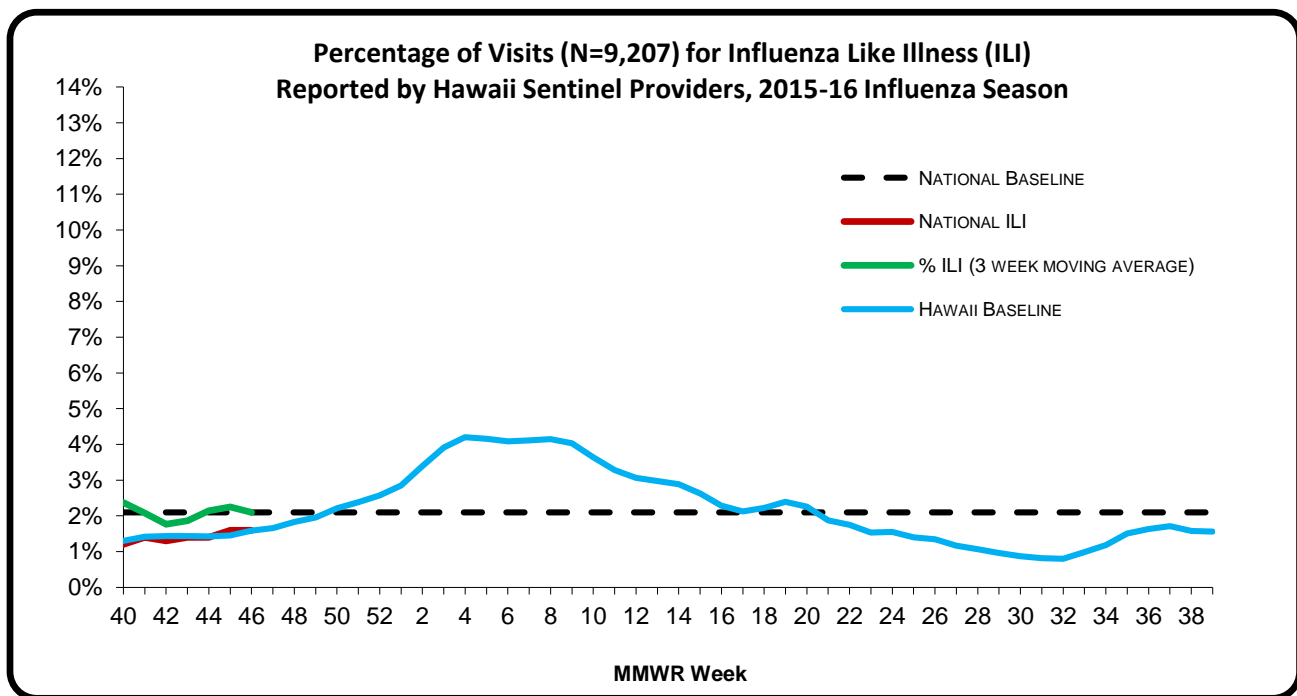
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **1.9%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (1.6%) (i.e., inside the 95% confidence interval).
- **ILI Cluster Activity:** One ILI cluster was reported to HDOH during week 46. The cluster occurred in a long term care facility on Oahu. There has been a total of 3 ILI clusters this season.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



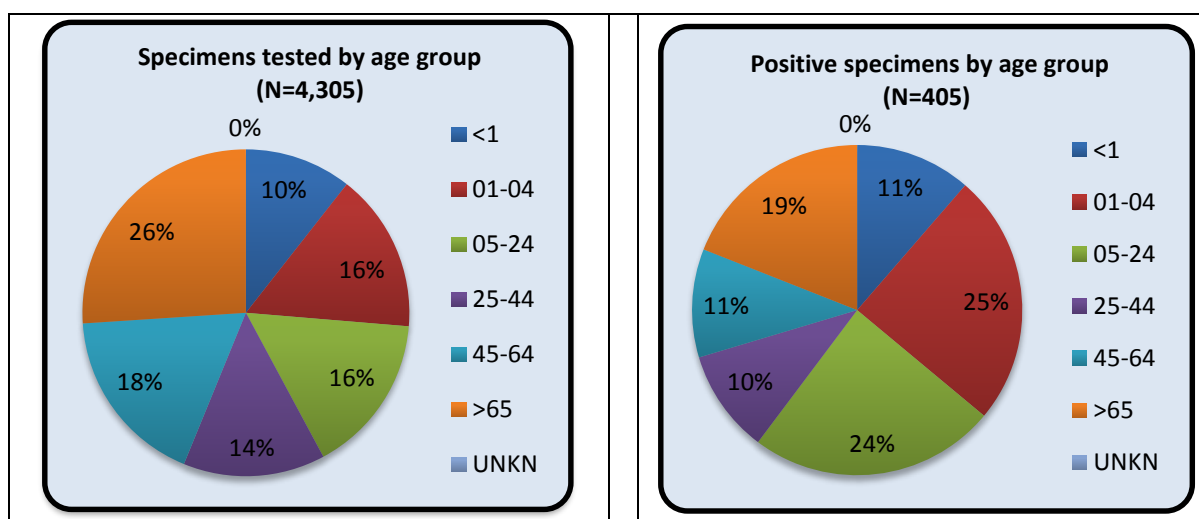
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **519** specimens have been tested statewide for influenza viruses (positive: **35** [6.7%]). (Season to date: **4,305** tested [9.4% positive])
    - 280 (53.9%) were screened only by rapid antigen tests with no confirmatory testing
    - 239 (46.1%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 484 (93.3%) were negative.
  - The 35 total positive cases included 31 (6.0%) cases of influenza A and 4 (0.8%) cases of influenza B (detected using any method). (Season to date: 8.4% influenza A and 1.0% influenza B)
    - Breakdown of influenza A cases:
      - 31 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

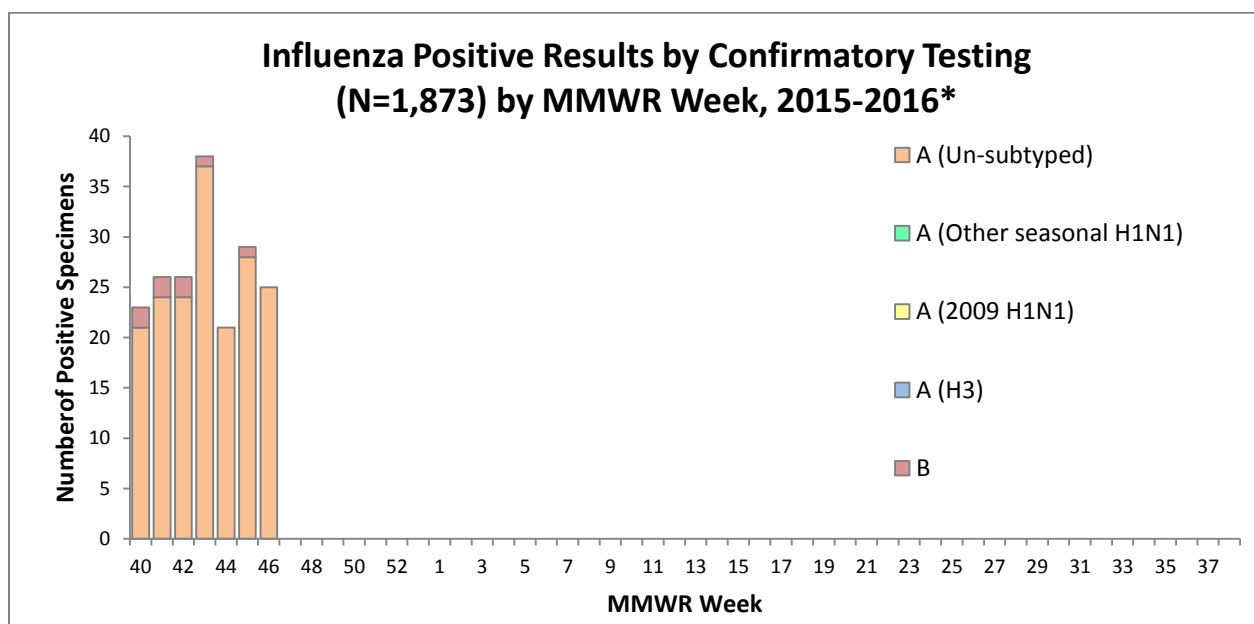
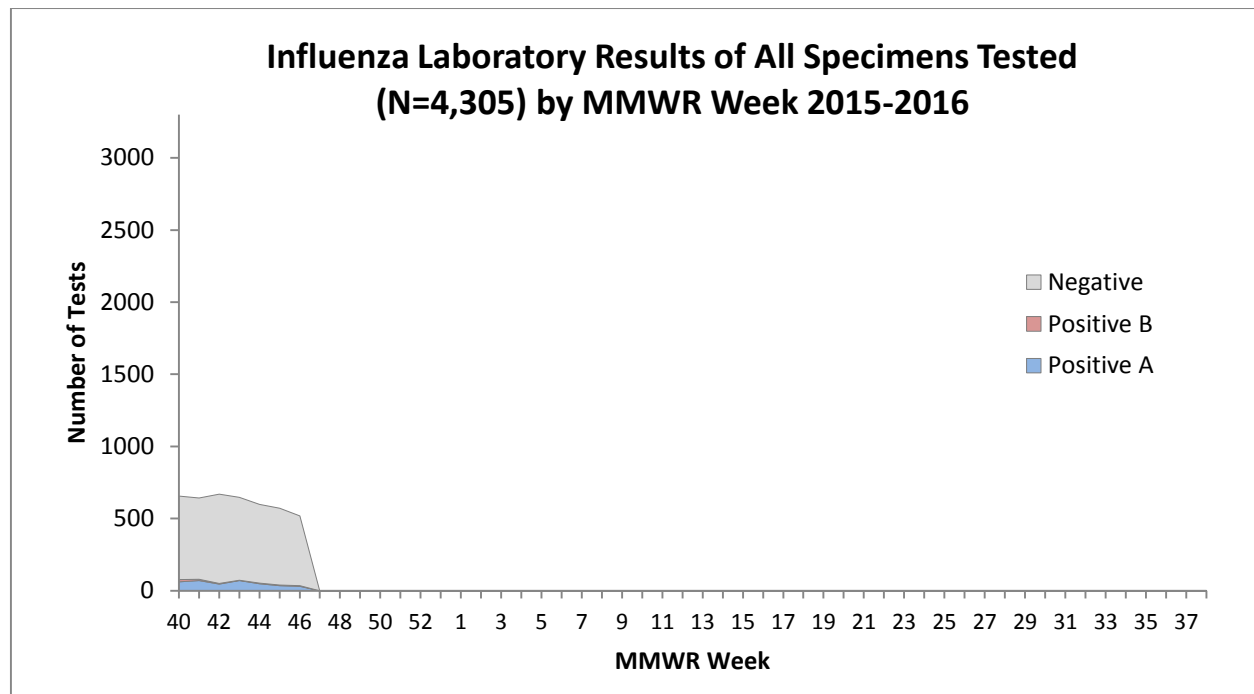
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

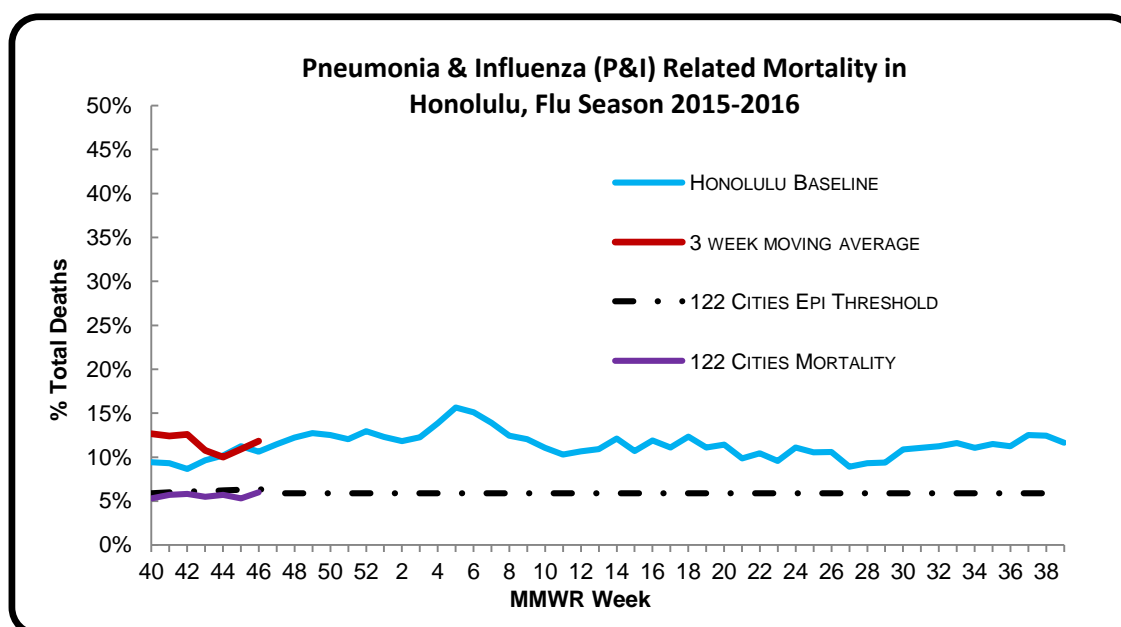
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Adenovirus																																																					
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X																																														
Parainfluenza Virus	X		X		X	X	X																																														
Respiratory Syncytial Virus	X	X	X	X	X	X	X																																														
Rhinovirus				X																																																	
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
Influenza A (H3)																																																					
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X	X	X	X	X	X	X																																														
Influenza B	X	X	X	X	X	X	X																																														

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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:

- **13.0%** of all deaths that occurred in Honolulu during week 46 were related to pneumonia or influenza. For the current season (season to date: **11.5%**), there have been 593 deaths from any cause, 68 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.0%) (i.e., inside the 95% confidence interval and the epidemic threshold (6.4%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 46. This death was associated with an influenza B virus and occurred during week 44 (Season total: 2).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 13, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

**WEEK 47:** NOVEMBER 22, 2015 – NOVEMBER 28, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.3%	Higher than the previous week, Hawaii's historical baseline, and the national ILI rate; comparable to the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.9%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	6.0%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	9.1%	

<sup>1</sup> 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.

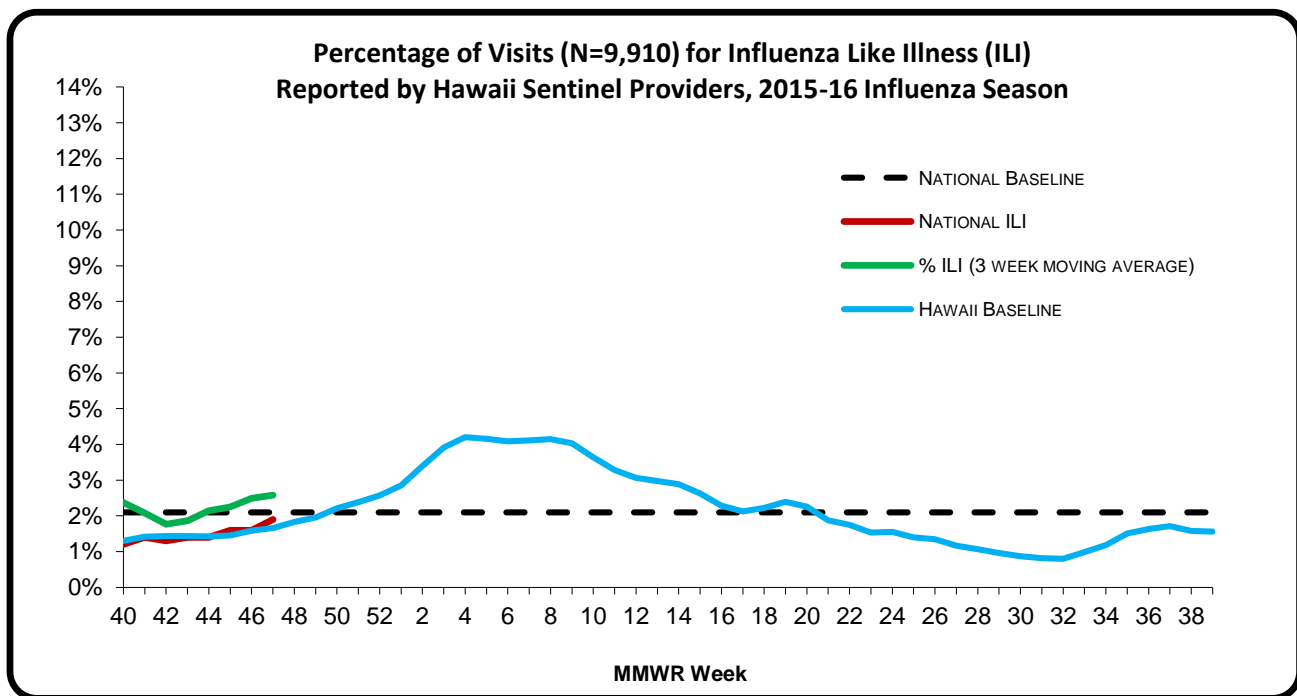


## INFLUENZA SURVEILLANCE

**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:

- **3.3%** (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<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval, but higher than the national ILI rate (1.9%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** No ILI clusters were reported to HDOH during week 47.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

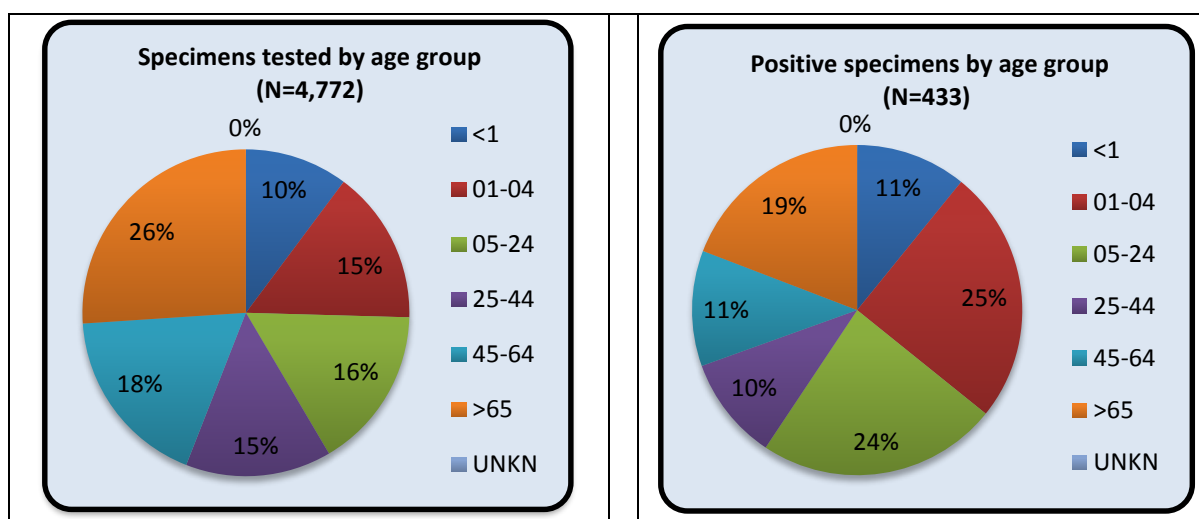
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **466** specimens have been tested statewide for influenza viruses (positive: **28** [6.0%]). (Season to date: **4,772** tested [9.1% positive])
    - 254 (54.5%) were screened only by rapid antigen tests with no confirmatory testing
    - 212 (45.5%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 438 (94.0%) were negative.
  - The 28 total positive cases included 27 (5.8%) cases of influenza A and 1 (0.2%) cases of influenza B (detected using any method). (Season to date: 8.2% influenza A and 0.9% influenza B)
    - Breakdown of influenza A cases:
      - 28 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

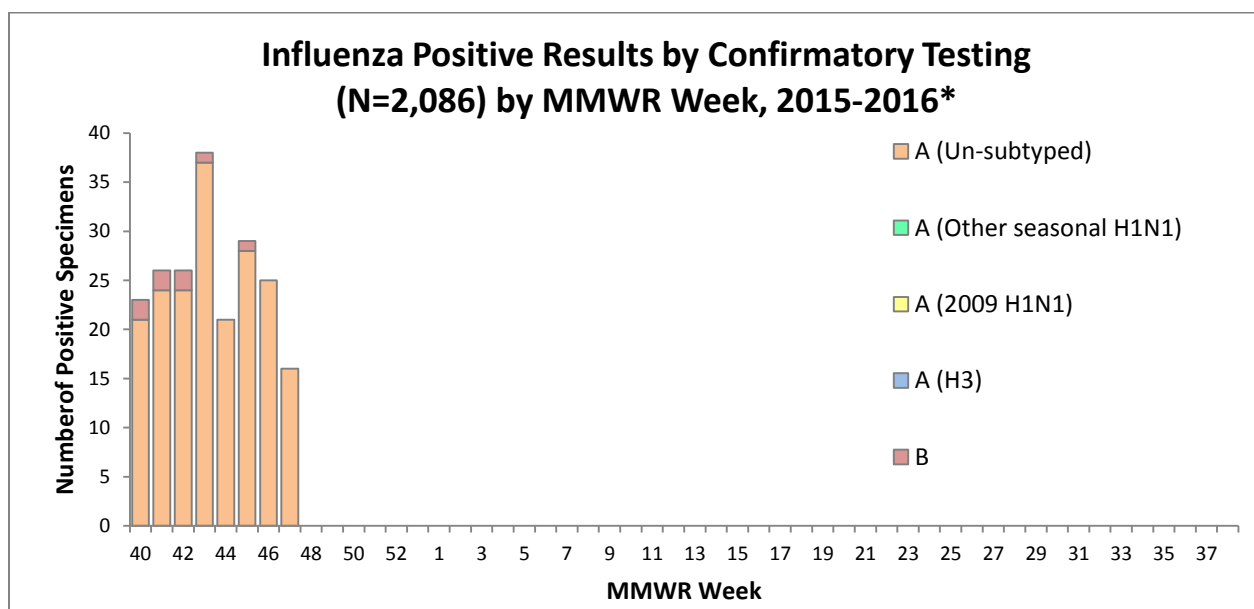
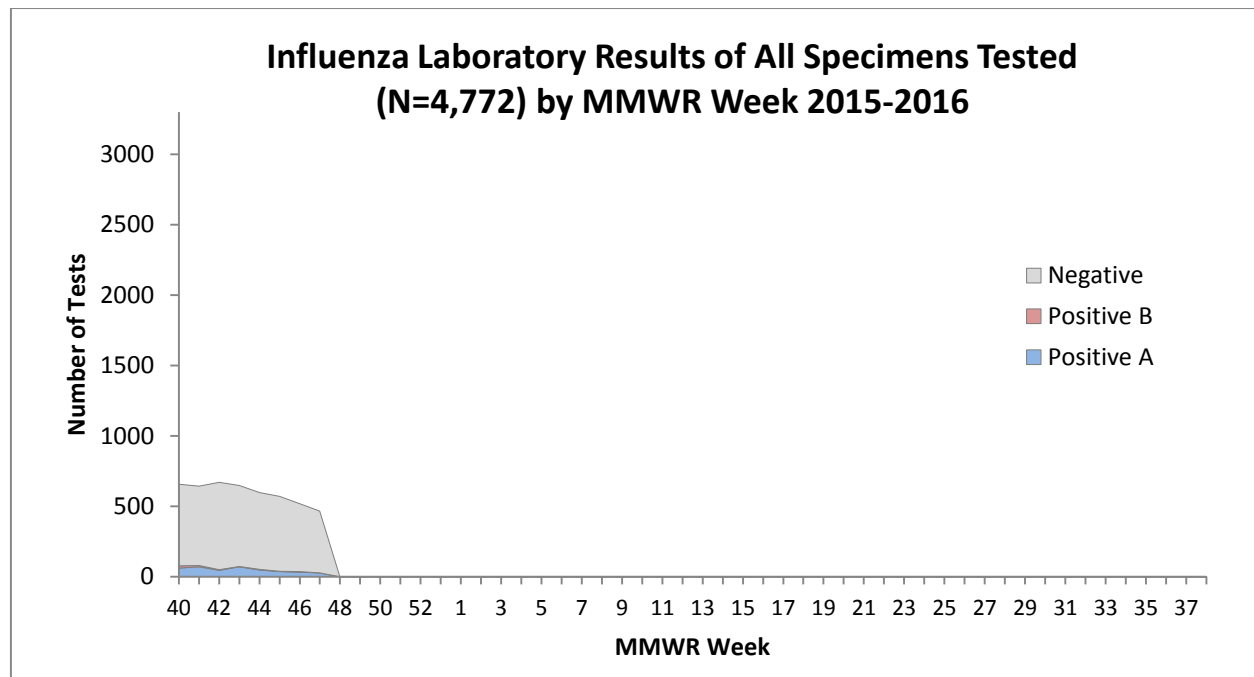
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

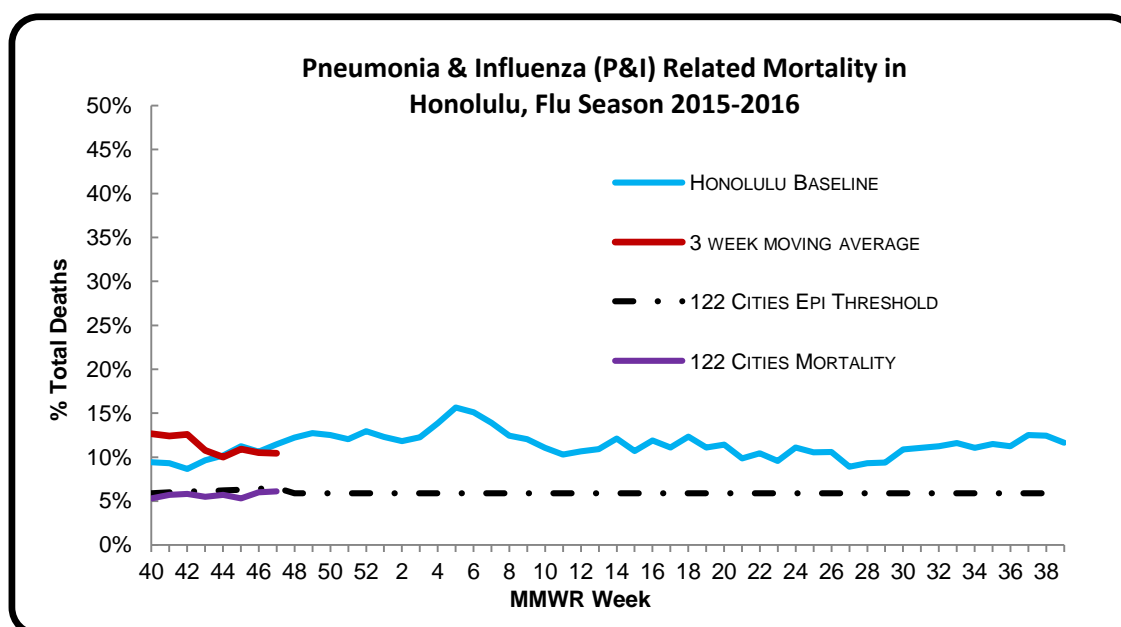
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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:

- **7.9%** of all deaths that occurred in Honolulu during week 47 were related to pneumonia or influenza. For the current season (season to date: **11.3%**), there have been 631 deaths from any cause, 71 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.1%) (i.e., inside the 95% confidence interval and the epidemic threshold (6.5%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 47 (Season total: 2).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 13, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		





# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 48: NOVEMBER 29, 2015 – DECEMBER 5, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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; comparable to Hawaii's historical baseline and the national baseline; higher than the national ILI rate.
Number of ILI clusters reported to HDOH	0	There has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.9%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	7.8%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	9.0%	

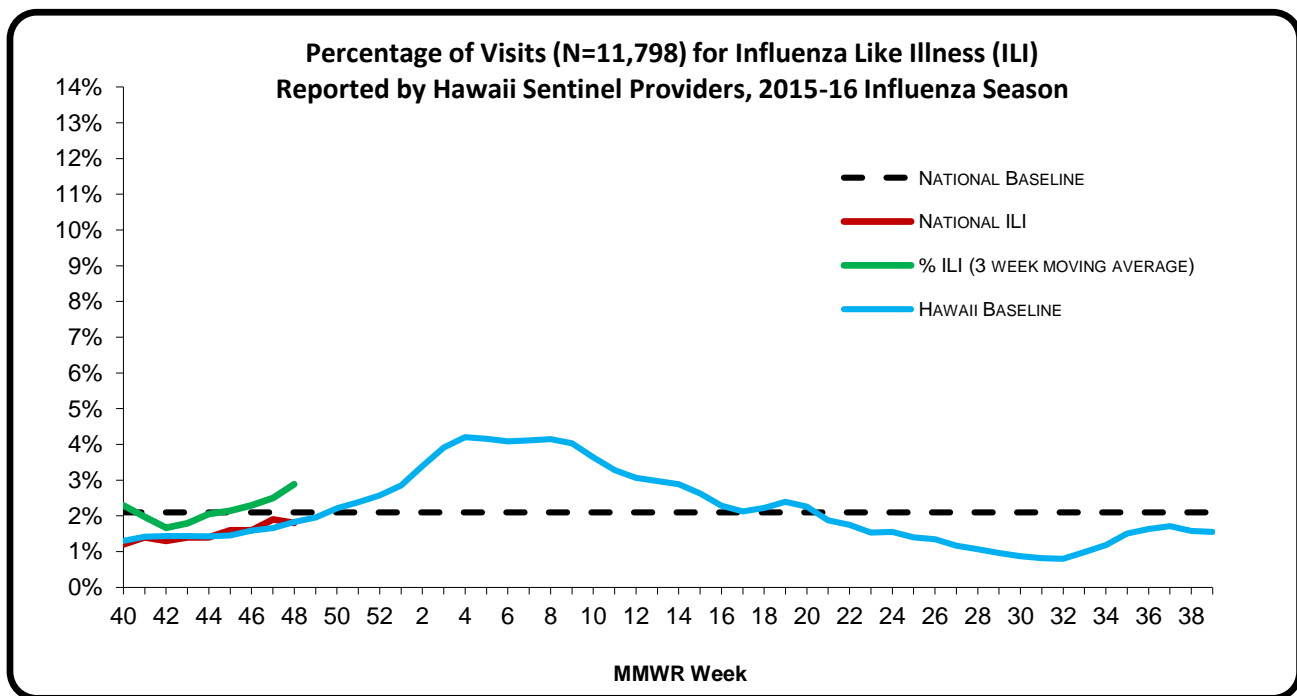
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **2.8%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval, but higher than the national ILI rate (1.8%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** No ILI clusters were reported to HDOH during week 48.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

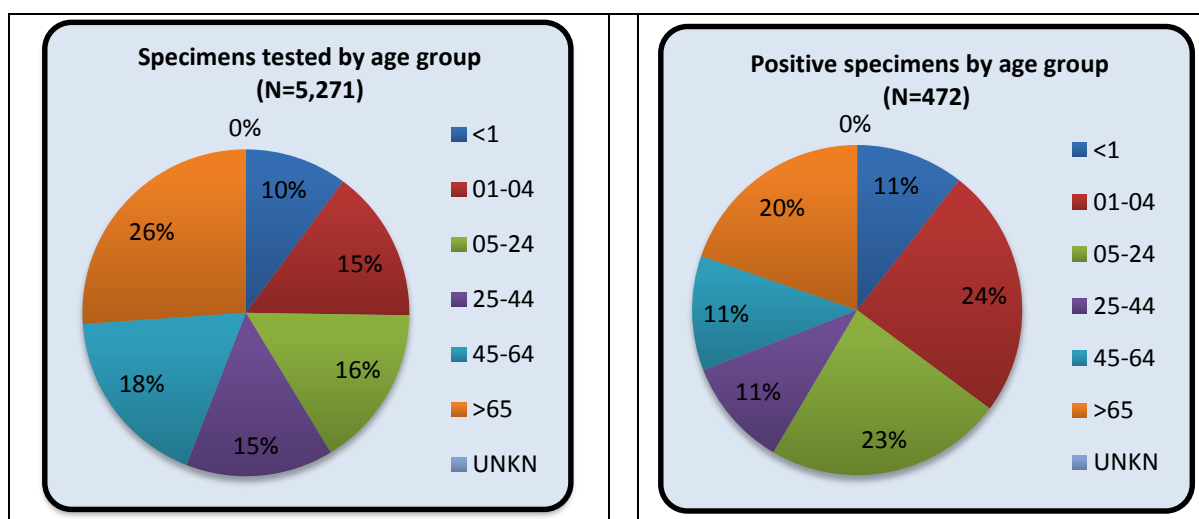
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **497** specimens have been tested statewide for influenza viruses (positive: **39** [7.8%]). (Season to date: **5,271** tested [9.0% positive])
    - 266 (53.5%) were screened only by rapid antigen tests with no confirmatory testing
    - 231 (46.5%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 458 (92.2%) were negative.
  - The 39 total positive cases included 39 (7.8%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 8.9% influenza A and 0.9% influenza B)
    - Breakdown of influenza A cases:
      - 39 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

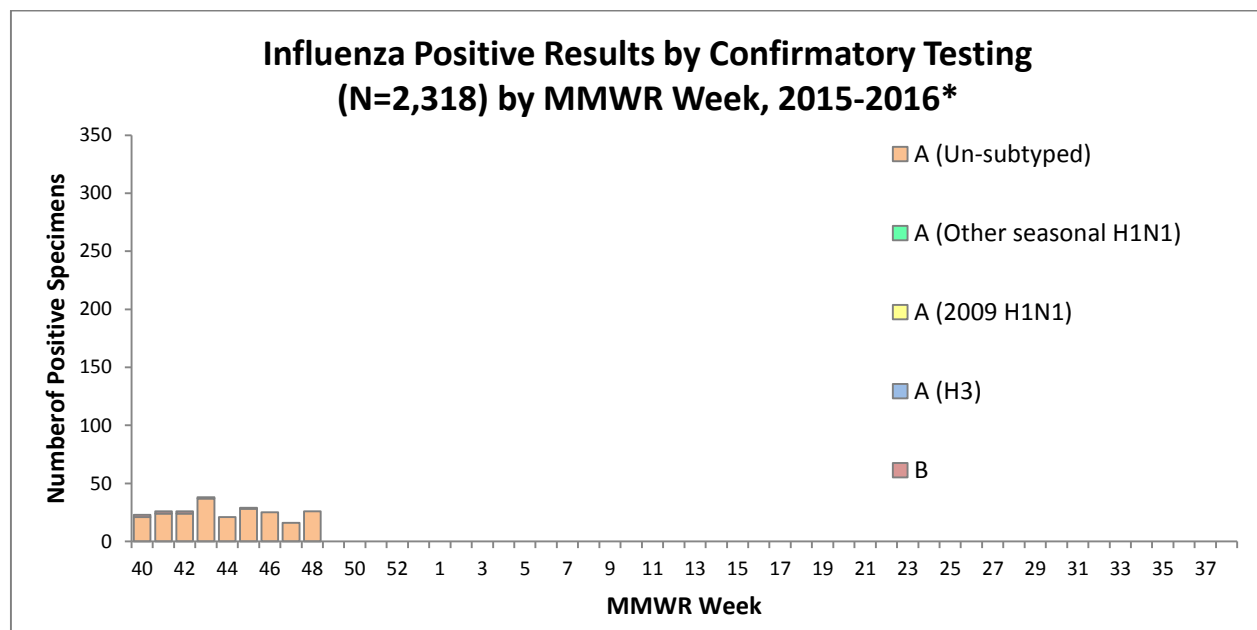
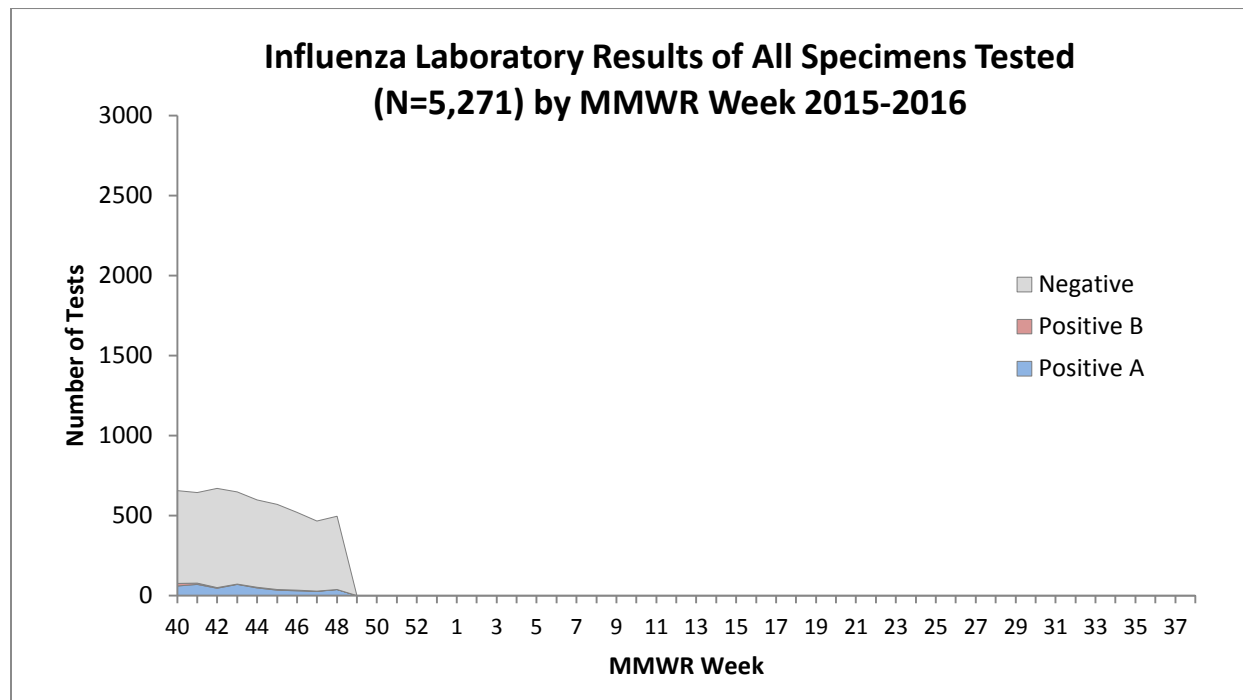
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

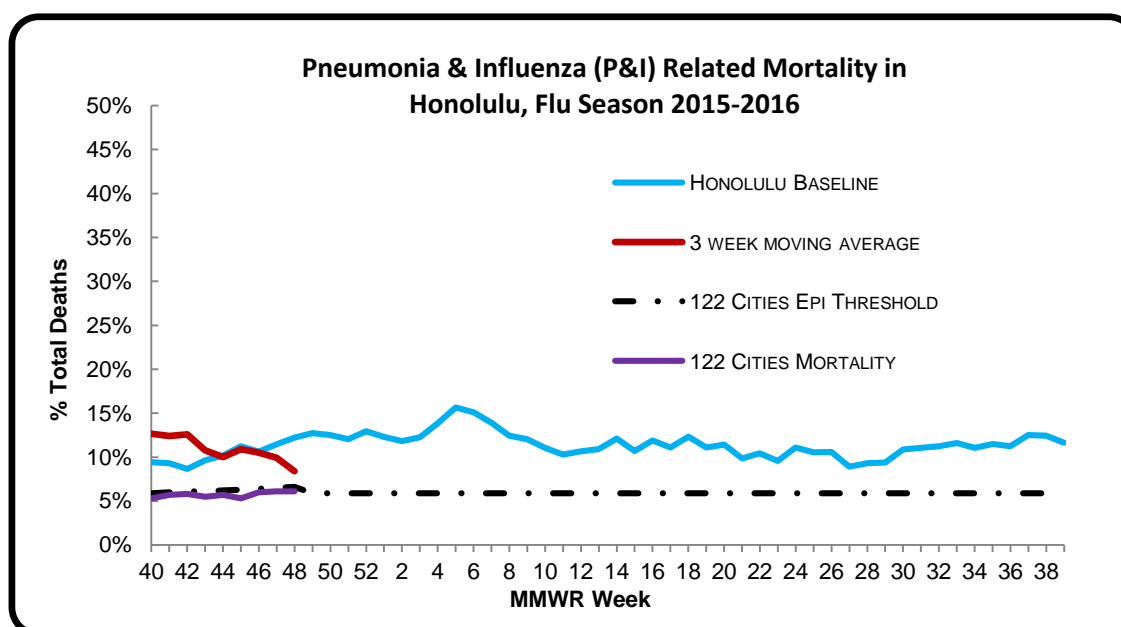
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 48** of the current influenza season:

- **8.9%** of all deaths that occurred in Honolulu during week 48 were related to pneumonia or influenza. For the current season (season to date: **11.0%**), there have been 721 deaths from any cause, 79 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.1%) (i.e., inside the 95% confidence interval and the epidemic threshold (6.6%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 48. One death was associated with an influenza B virus and occurred during week 48 and one death was associated with an influenza B virus and occurred during the 2014-2015 season (Season total: 2).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *0 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 13, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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



**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 49: DECEMBER 6, 2015 – DECEMBER 12, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.3%	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 has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.3%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	2.6%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	7.5%	

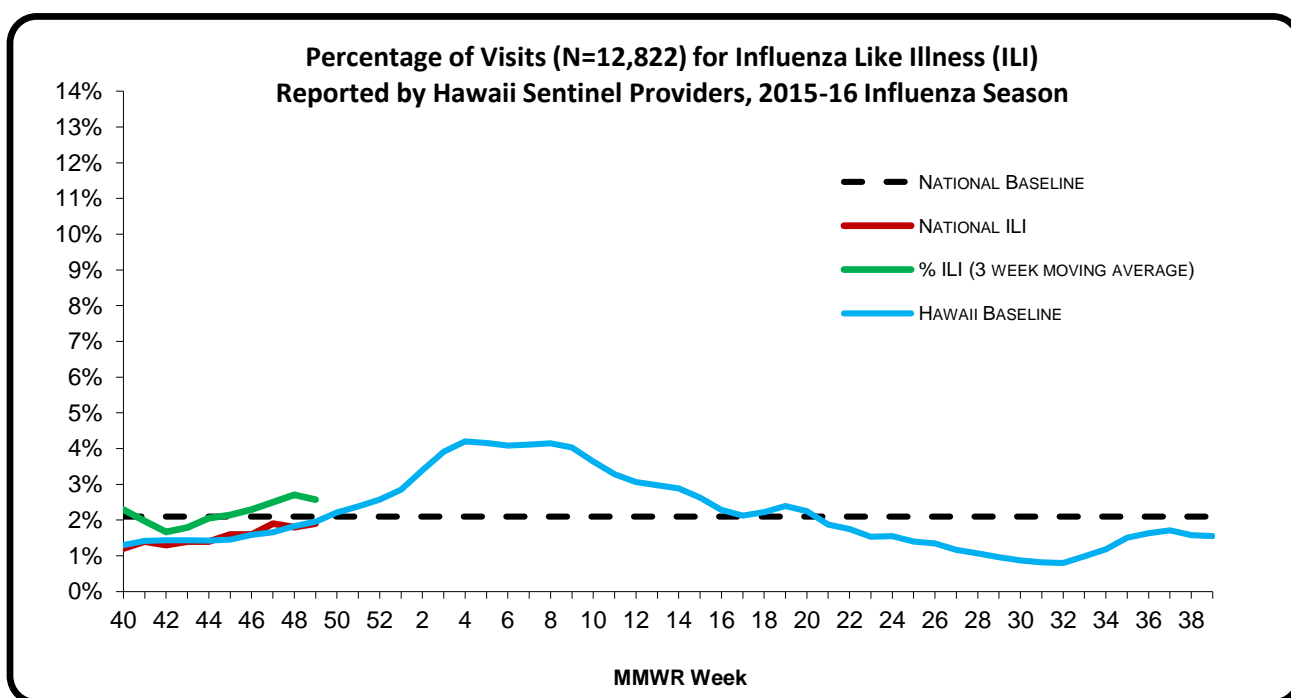
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **2.3%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval and the national ILI rate (1.9%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 49.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

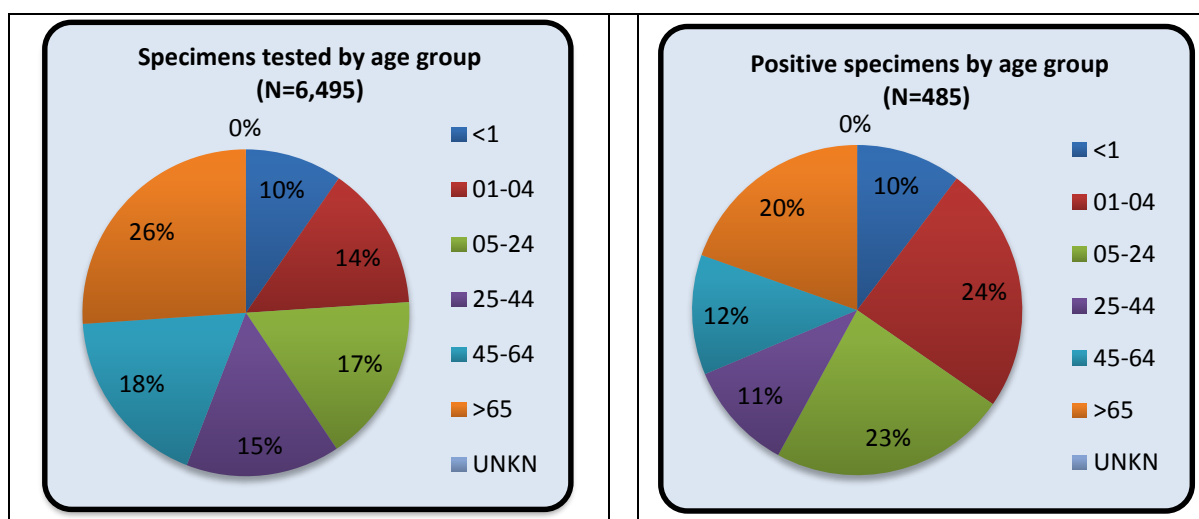
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **544** specimens have been tested statewide for influenza viruses (positive: **14** [2.6%]). (Season to date: **6,495** tested [7.5% positive])
    - 247 (45.4%) were screened only by rapid antigen tests with no confirmatory testing
    - 297 (54.6%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 530 (97.4%) were negative.
  - The 14 total positive cases included 14 (2.6%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 6.8% influenza A and 0.7% influenza B)
    - Breakdown of influenza A cases:
      - 14 (100.0%) influenza A (un-subtyped). (Season to date: 100.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 0.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

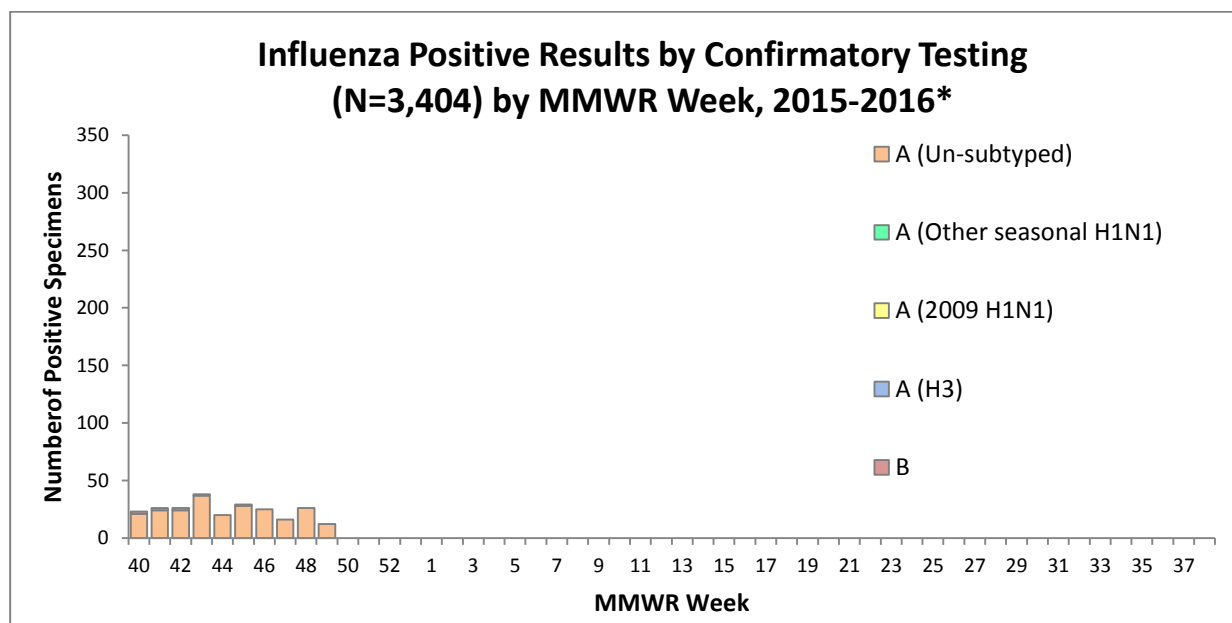
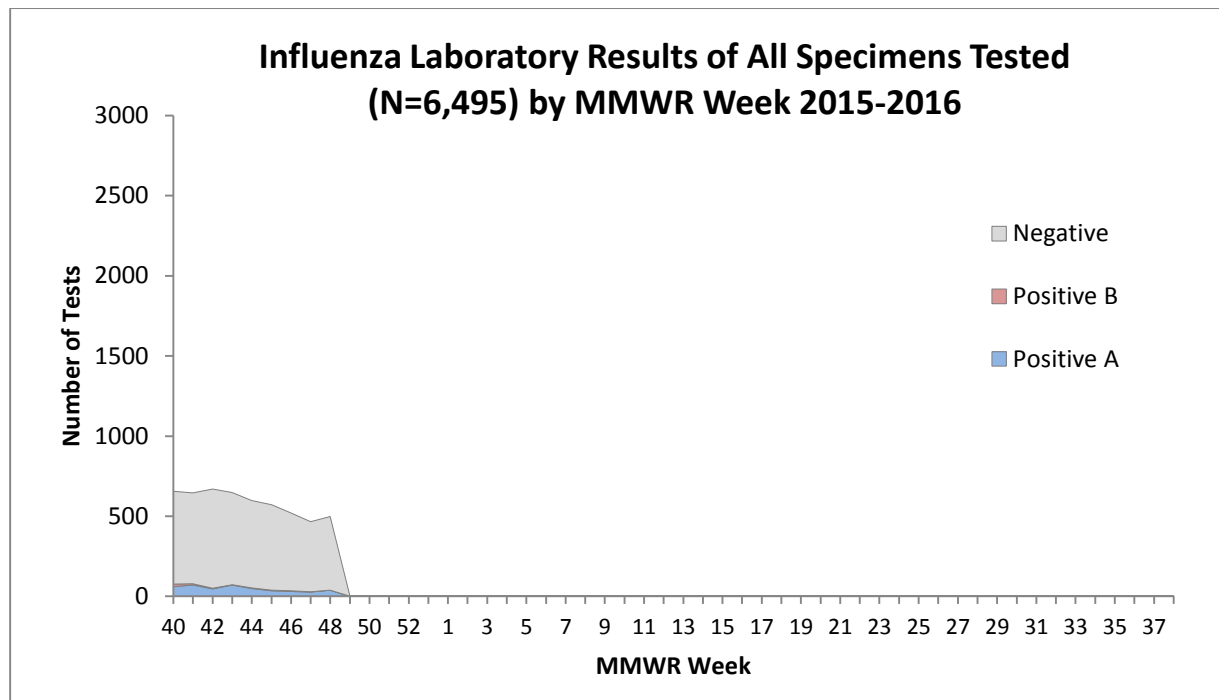
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

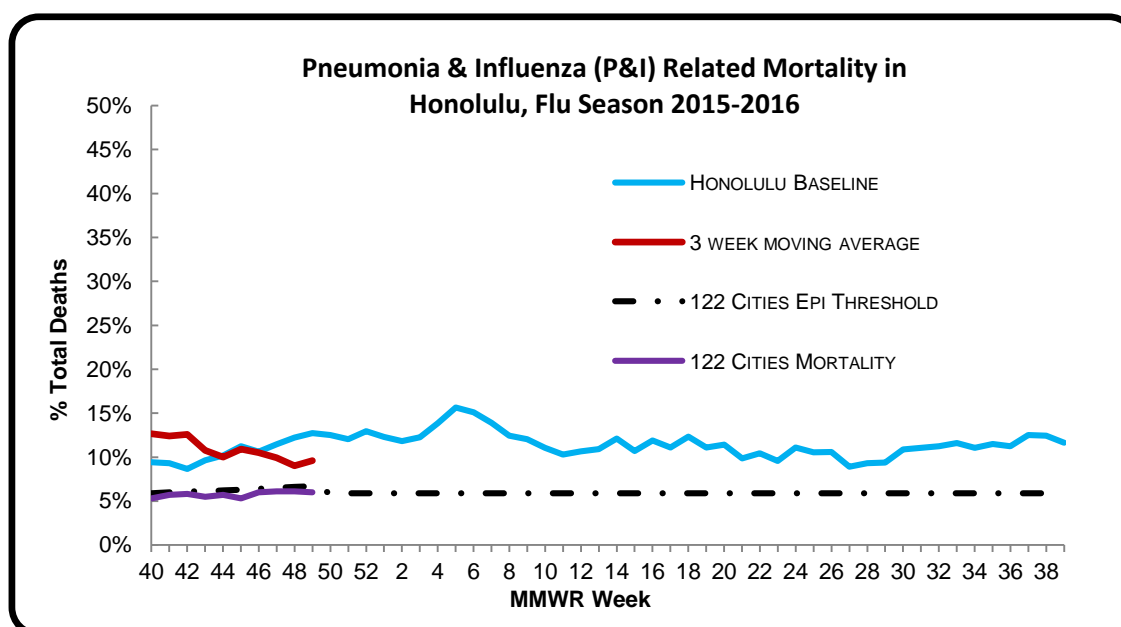
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																					
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Adenovirus								X																																													
Coronavirus																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus								X																																													
Parainfluenza Virus	X		X		X	X	X	X		X																																											
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X																																											
Rhinovirus				X																																																	
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
Influenza A (H3)																																																					
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X																																											
Influenza B	X	X	X	X	X	X	X	X																																													

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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:

- **10.3%** of all deaths that occurred in Honolulu during week 49 were related to pneumonia or influenza. For the current season (season to date: **10.9%**), there have been 789 deaths from any cause, 86 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.0%) (i.e., inside the 95% confidence interval and the epidemic threshold (6.7%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 49 (Season total: 3).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *1 human infection with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 14, 2015**. Since the last update, there have been no new cases of H5N1 reported to WHO, but there have been two new reported cases of H7N9. Both cases had exposure to domestic poultry.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 50: DECEMBER 13, 2015 – DECEMBER 19, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.3%	Same as 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 has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	14.1%	Comparable to the historical baseline for Hawaii; higher than the national epidemic threshold and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	1.7%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	7.9%	

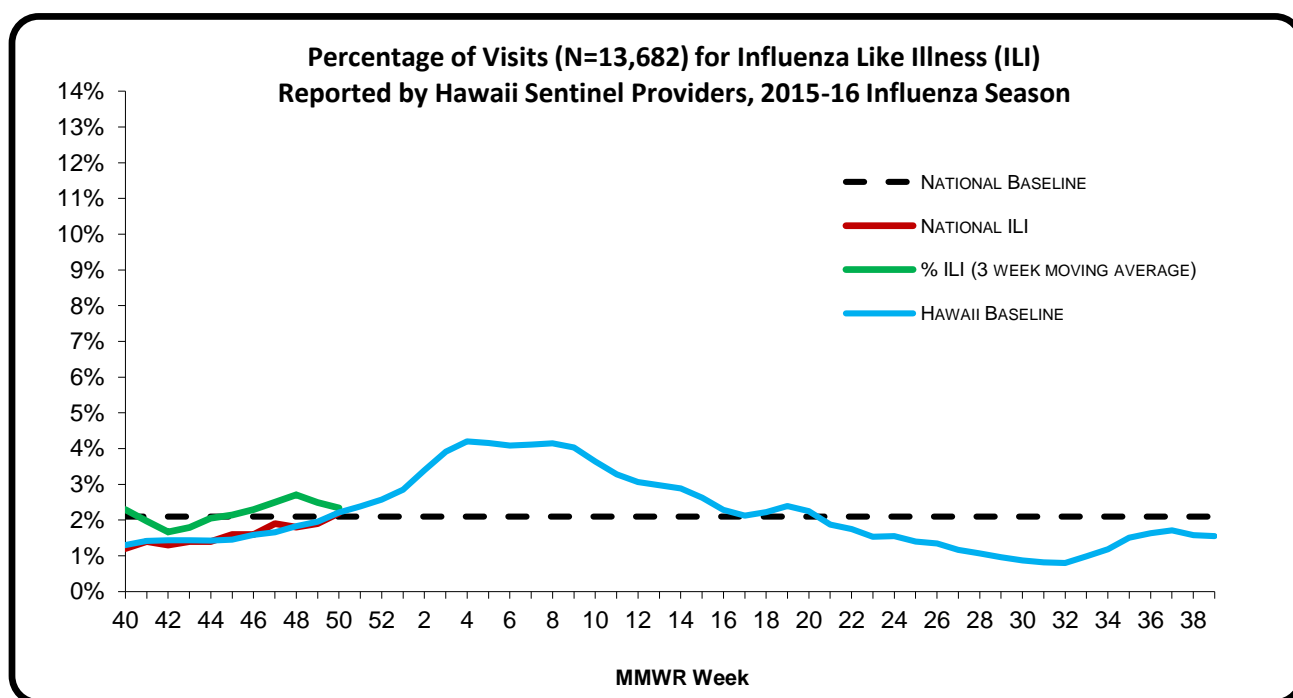
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- 2.3% (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval and the national ILI rate (2.2%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 50.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

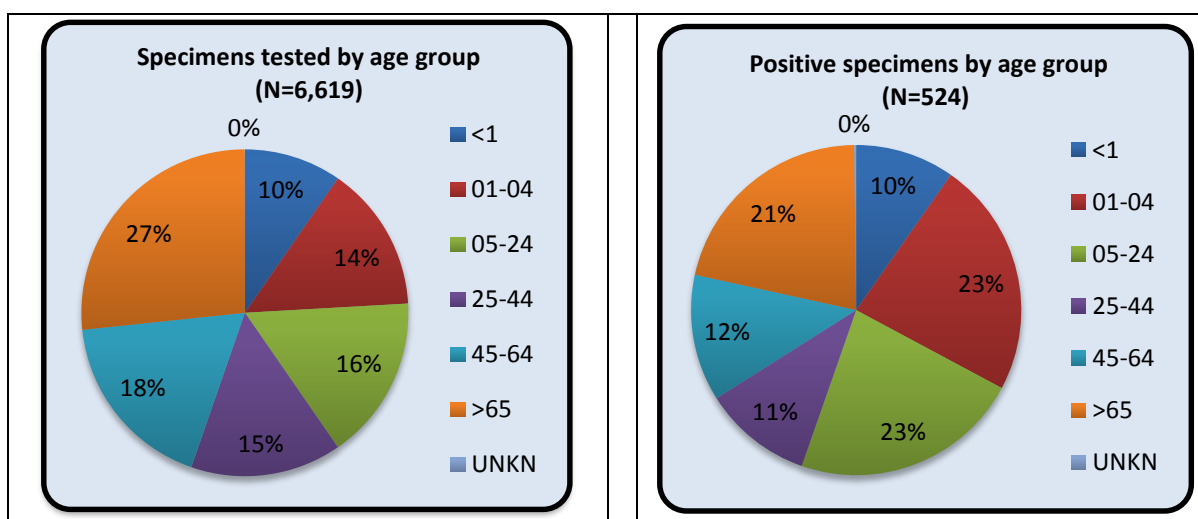
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **463** specimens have been tested statewide for influenza viruses (positive: **8 [1.7%]**). (Season to date: **6,619** tested [**7.9%** positive])
    - 206 (44.5%) were screened only by rapid antigen tests with no confirmatory testing
    - 257 (55.5%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 455 (98.3%) were negative.
  - The 8 total positive cases included 8 (1.7%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 7.3% influenza A and 0.7% influenza B)
    - Breakdown of influenza A cases:
      - 8 (100.0%) influenza A (un-subtyped). (Season to date: 92.5%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 7.5%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

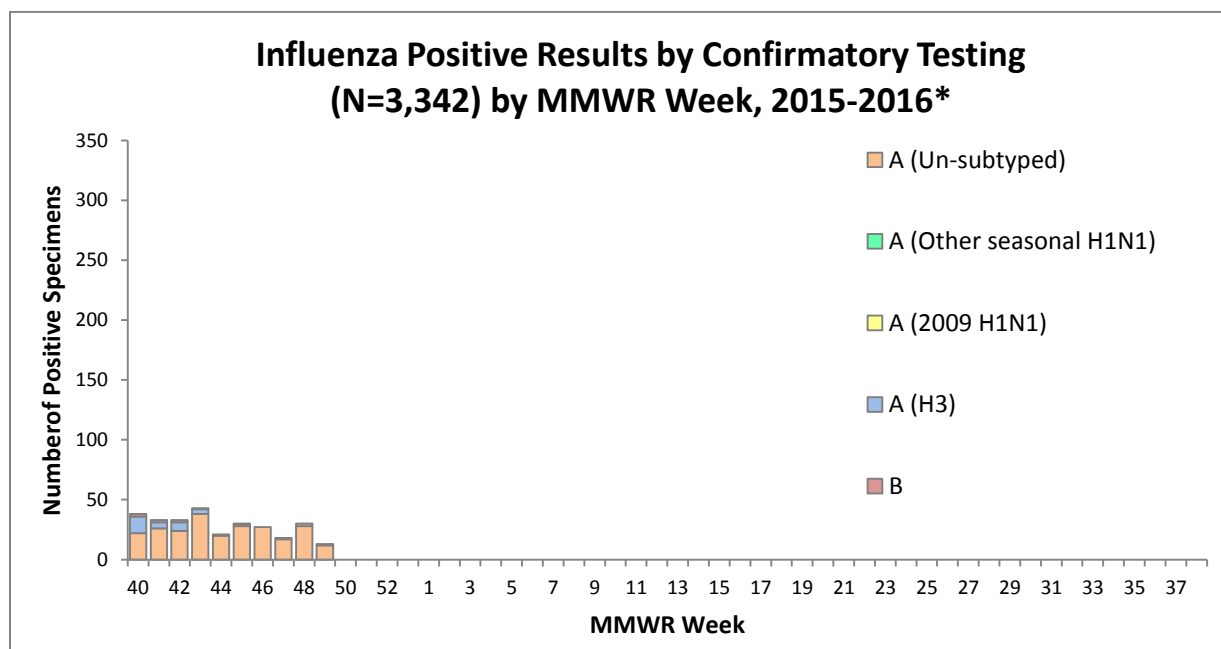
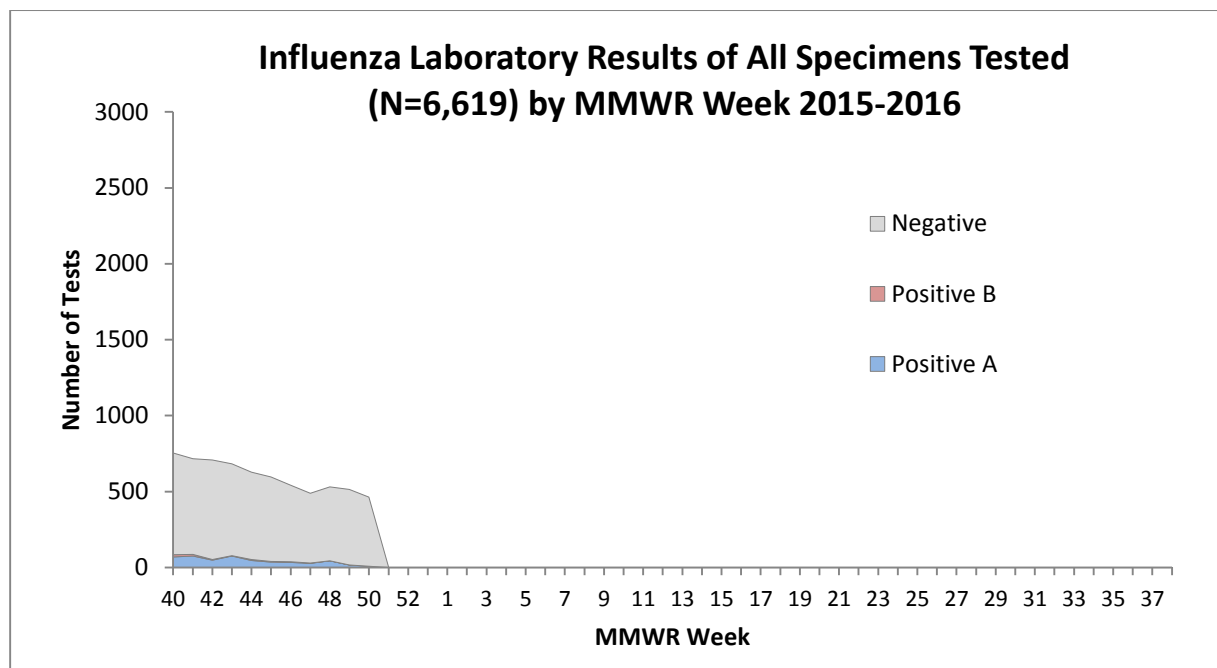
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

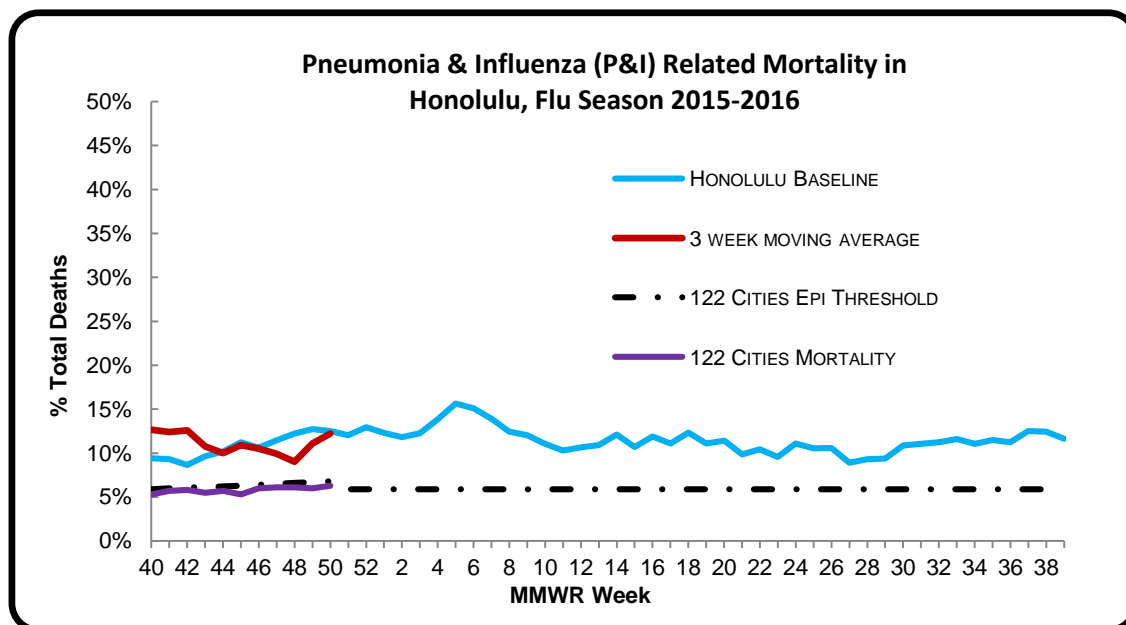
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																								
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40			
Adenovirus							X																																																	
Coronavirus																																																								
Coxsackie Virus																																																								
Cytomegalovirus																																																								
Echovirus																																																								
Enterovirus																																																								
Herpes Simplex Virus, Type 1																																																								
Metapneumovirus							X																																																	
Parainfluenza Virus	X		X		X	X	X	X		X	X																																													
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X																																														
Rhinovirus			X																																																					
Varicella Zoster Virus																																																								
Influenza 2009 H1N1																																																								
Influenza A (H3)	X	X	X	X	X	X		X	X	X																																														
Influenza A (Other seasonal H1N1)																																																								
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X																																													
Influenza B	X	X	X	X	X	X	X	X																																																

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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:

- **14.1%** of all deaths that occurred in Honolulu during week 50 were related to pneumonia or influenza. For the current season (season to date: **11.2%**), there have been 881 deaths from any cause, 99 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (6.3%) (i.e., outside the 95% confidence interval) and the epidemic threshold (6.8%) (i.e., outside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 50. This death was associated with an influenza A virus for which no subtyping was performed and occurred during week 50 (Season total: 4).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *1 human infection with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 14, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 51: DECEMBER 20, 2015 – DECEMBER 26, 2015

**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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.3%	Same as 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 has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.1%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	0.6%	Lower than the previous week.
Percent of all specimens positive for influenza this season to date	7.4%	

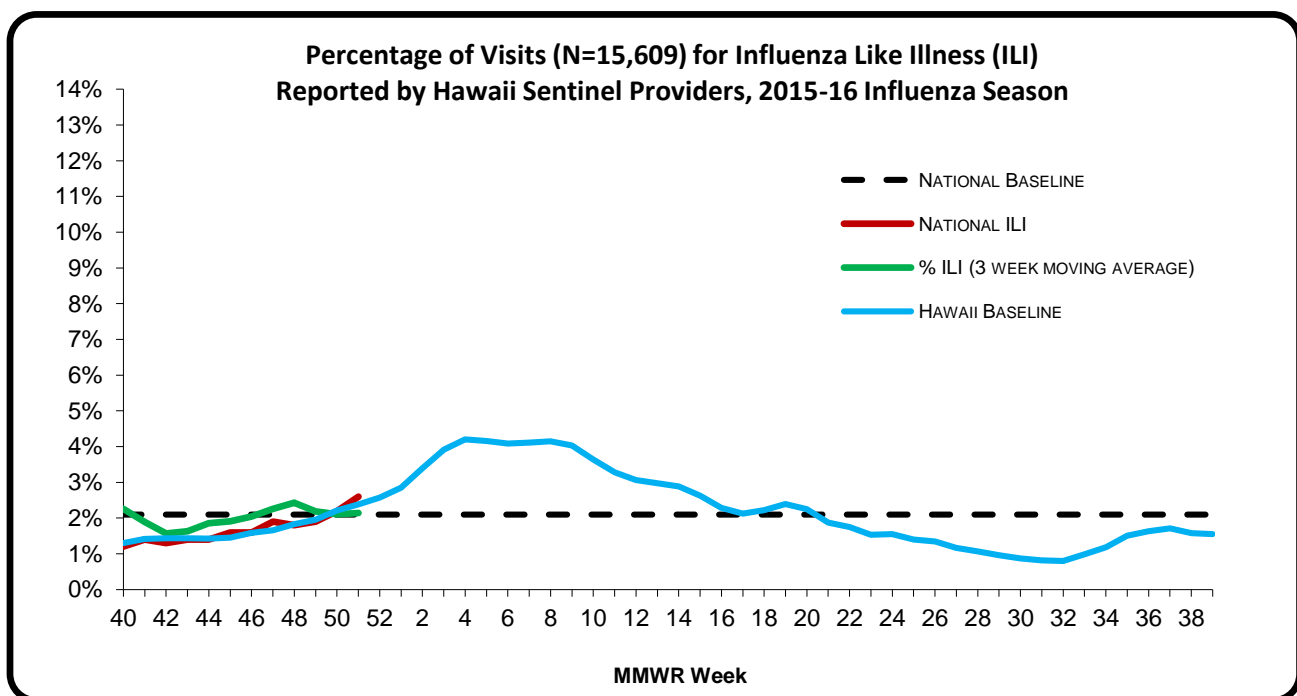
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **2.3%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (2.6%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 51.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

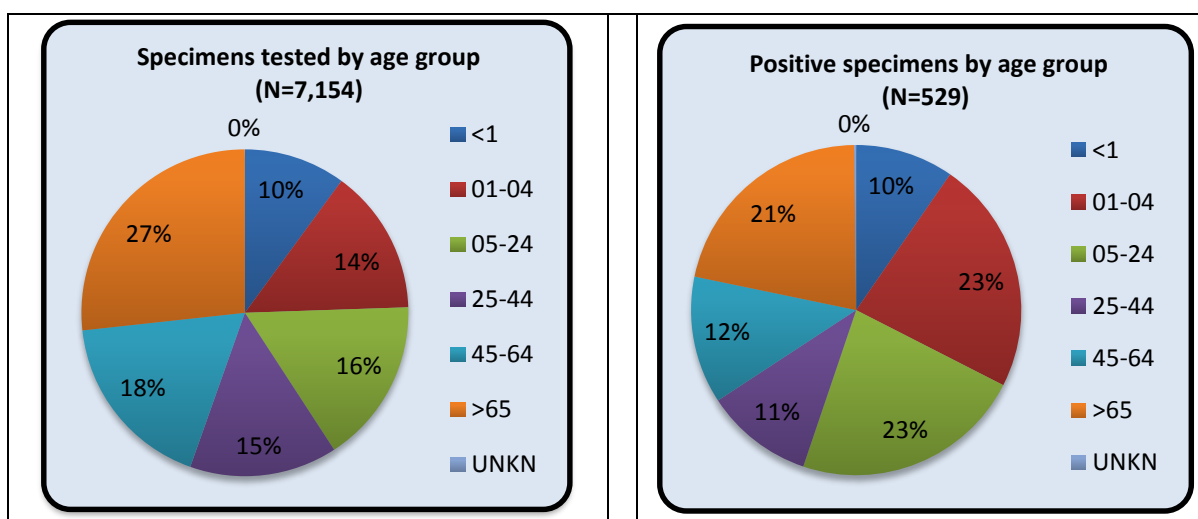
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **504** specimens have been tested statewide for influenza viruses (positive: **3 [0.6%]**). (Season to date: **7,154** tested [**7.4%** positive])
    - 225 (44.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 279 (55.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 501 (99.4%) were negative.
  - The 3 total positive cases included 3 (0.6%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 6.8% influenza A and 0.6% influenza B)
    - Breakdown of influenza A cases:
      - 3 (100.0%) influenza A (un-subtyped). (Season to date: 92.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 8.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

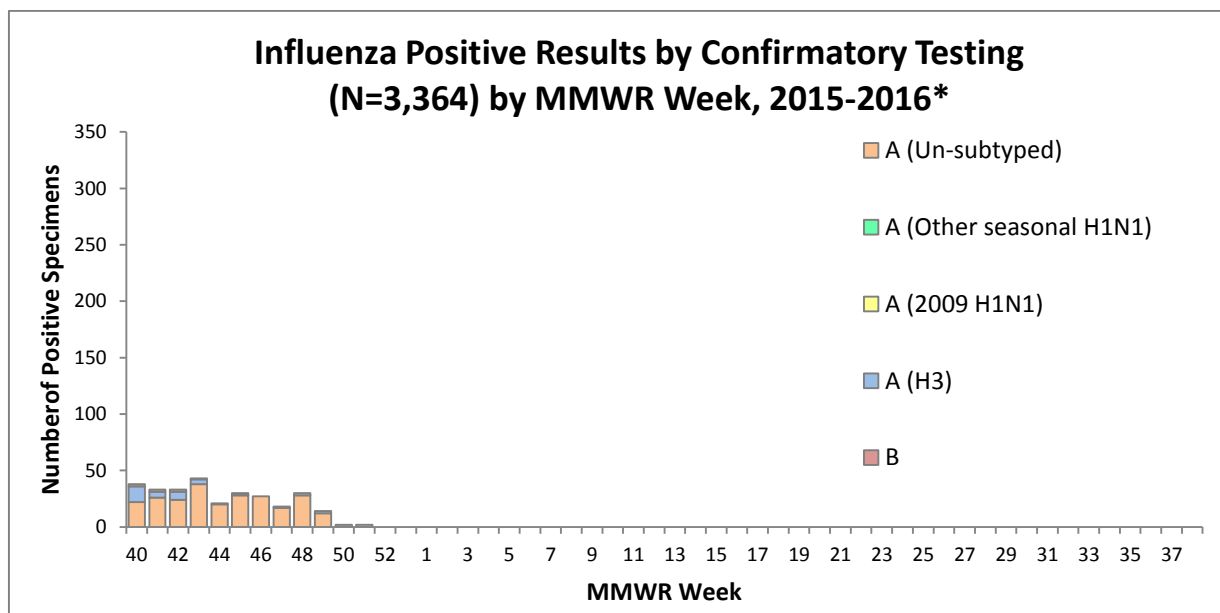
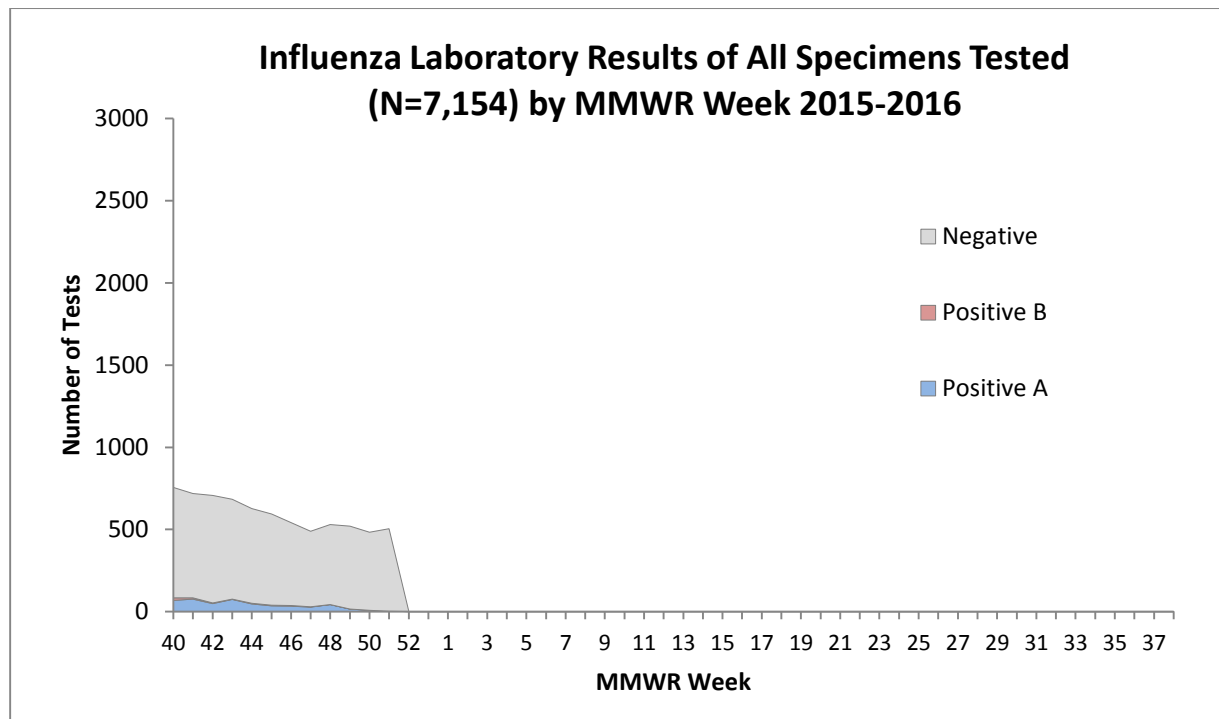
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

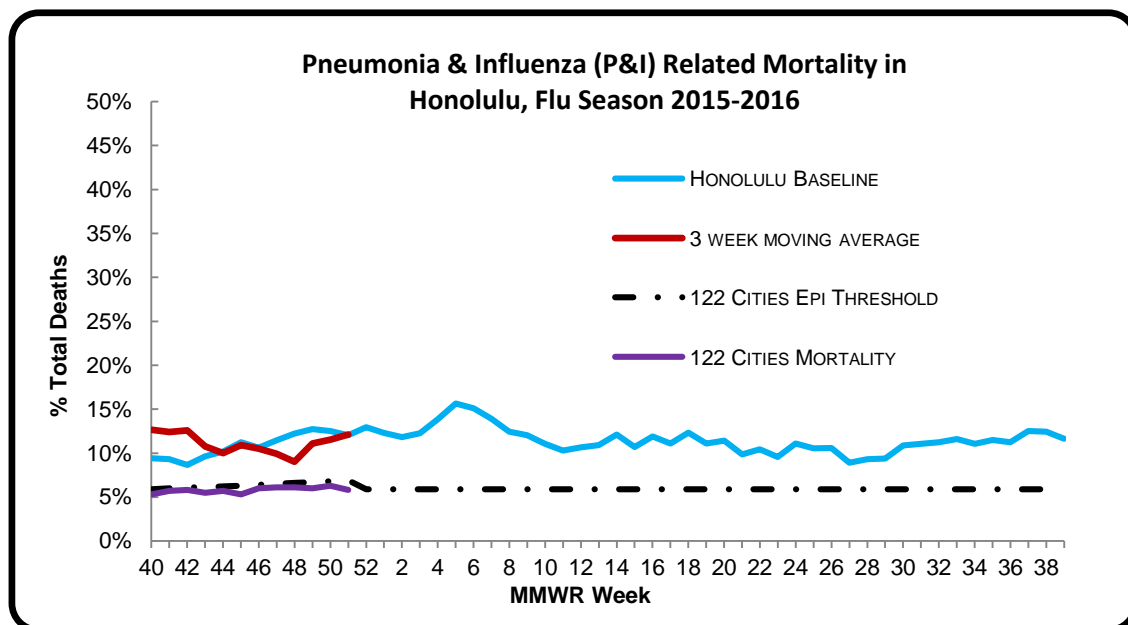
MMWR Week (2015-2016)																																																							
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Adenovirus								X																																															
Coronavirus																																																							
Coxsackie Virus																																																							
Cytomegalovirus																																																							
Echovirus																																																							
Enterovirus																																																							
Herpes Simplex Virus, Type 1																																																							
Metapneumovirus							X																																																
Parainfluenza Virus	X		X		X	X	X	X		X	X	X																																											
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X																																													
Rhinovirus				X																																																			
Varicella Zoster Virus																																																							
Influenza 2009 H1N1																																																							
Influenza A (H3)	X	X	X	X	X	X		X	X	X																																													
Influenza A (Other seasonal H1N1)																																																							
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X																																											
Influenza B	X	X	X	X	X	X	X	X																																															



**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 51** of the current influenza season:

- **10.1%** of all deaths that occurred in Honolulu during week 51 were related to pneumonia or influenza. For the current season (season to date: **11.1%**), there have been 960 deaths from any cause, 107 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (5.8%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.9%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 51. (Season total: 4).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *1 human infection with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 14, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 52: DECEMBER 27, 2015 – JANUARY 2, 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 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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; comparable to Hawaii's historical baseline, the national baseline, and the national ILI rate.
Number of ILI clusters reported to HDOH	0	There has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.7%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	2.4%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	7.1%	

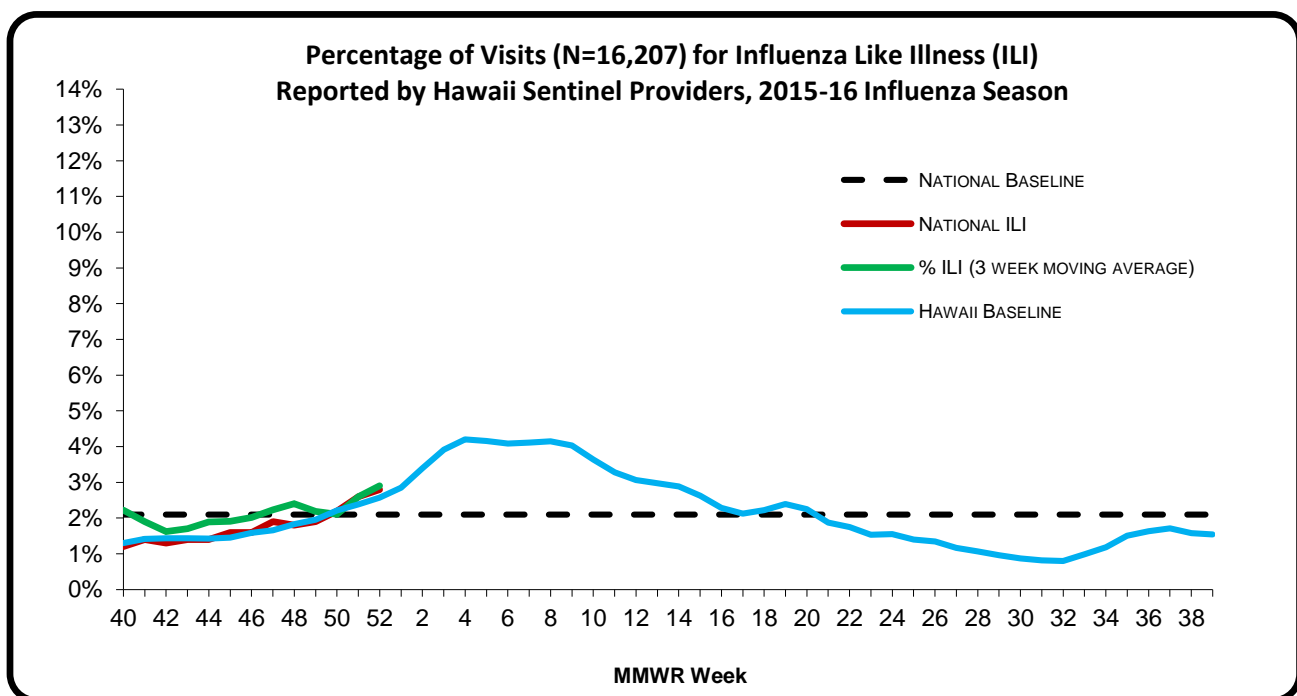
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- 3.5% (season to date: 2.0%) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (2.8%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 52.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

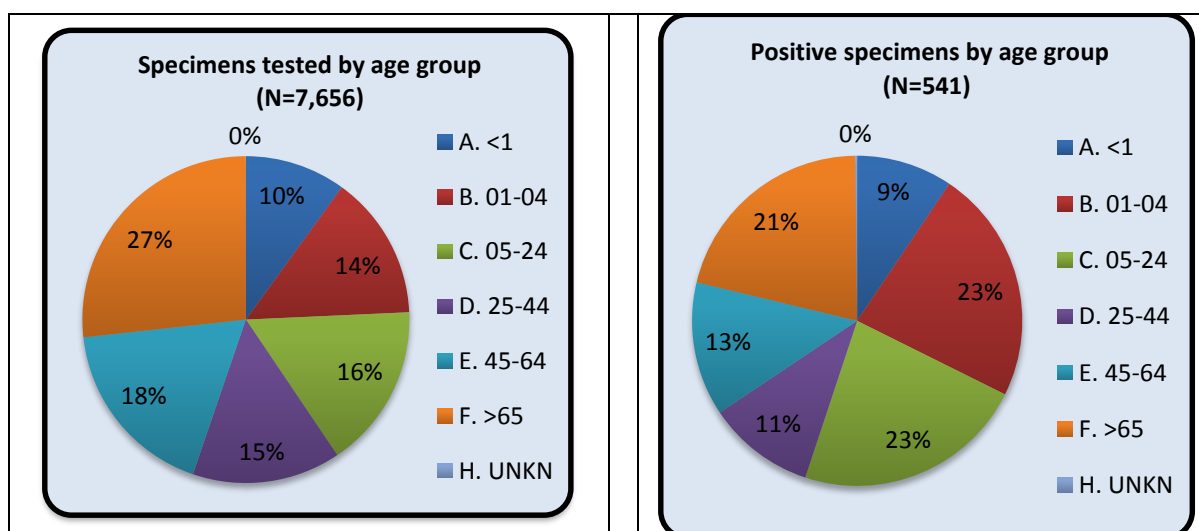
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of **502** specimens have been tested statewide for influenza viruses (positive: **12 [2.39%]**). (Season to date: **7,656** tested [**7.07%** positive])
    - 219 (43.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 283 (56.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 490 (97.6%) were negative.
  - The 12 total positive cases included 12 (2.4%) cases of influenza A and 0 (0%) cases of influenza B (detected using any method). (Season to date: 6.5% influenza A and 0.6% influenza B)
    - Breakdown of influenza A cases:
      - 12 (100.0%) influenza A (un-subtyped). (Season to date: 92.2%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date 7.9%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

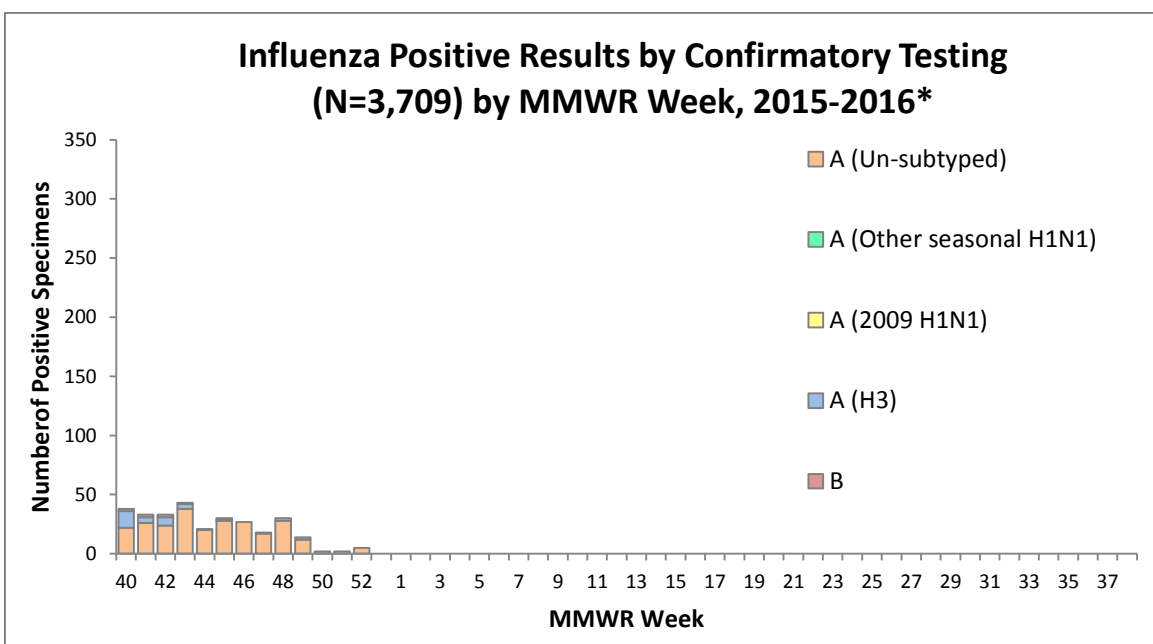
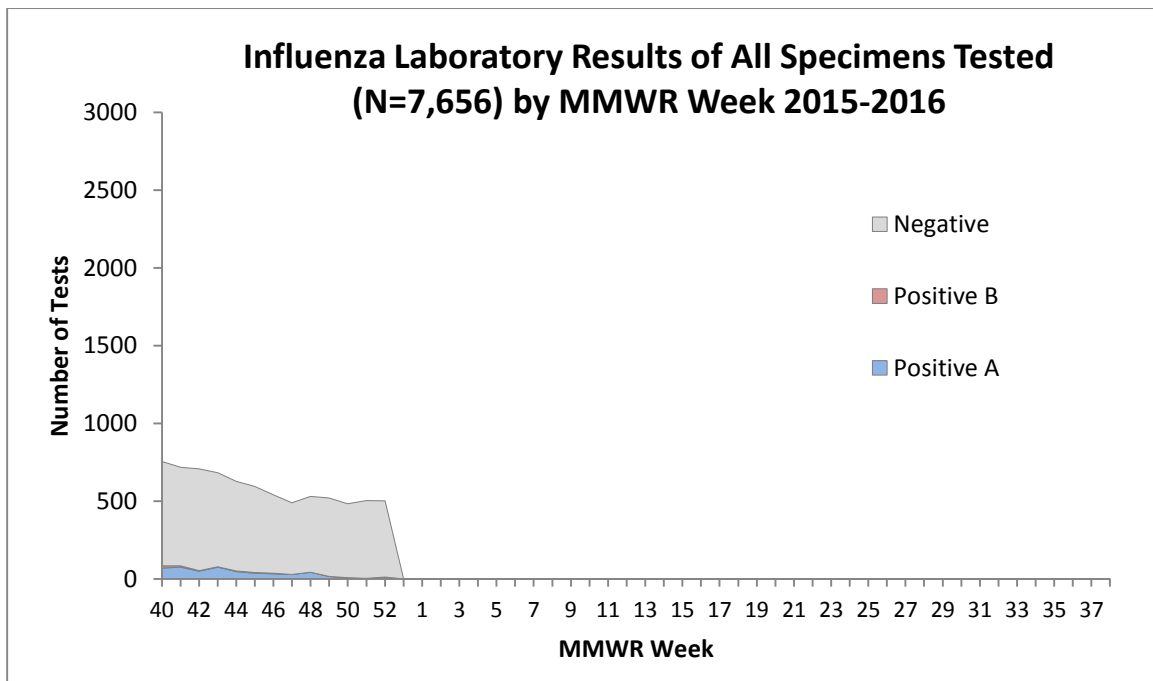
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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



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

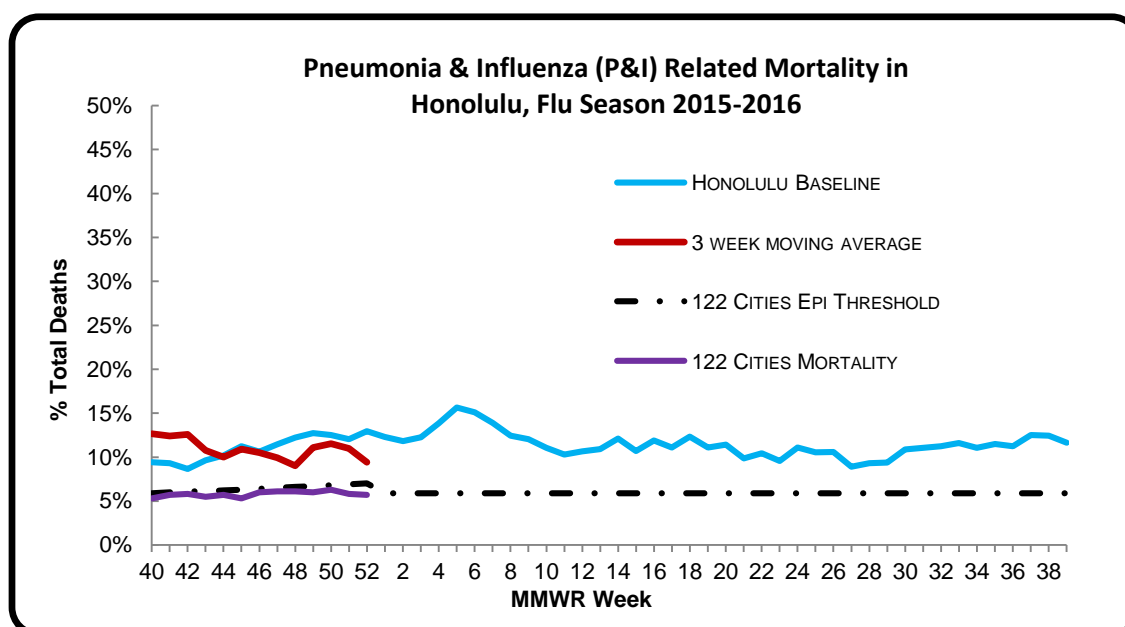
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																																
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40											
Adenovirus								X																																																								
Coronavirus																																																																
Coxsackie Virus																																																																
Cytomegalovirus																																																																
Echovirus																																																																
Enterovirus																																																																
Herpes Simplex Virus, Type 1																																																																
Metapneumovirus							X																																																									
Parainfluenza Virus	X		X		X	X	X	X		X	X	X																																																				
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X																																																						
Rhinovirus				X																																																												
Varicella Zoster Virus																																																																
Influenza 2009 H1N1																																																																
Influenza A (H3)	X	X	X	X	X	X	X		X	X	X																																																					
Influenza A (Other seasonal H1N1)																																																																
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																		
Influenza B	X	X	X	X	X	X	X	X																																																								

**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:

- *8.7% of all deaths that occurred in Honolulu during week 52 were related to pneumonia or influenza. For the current season (season to date: **11.0%**), there have been 1,006 deaths from any cause, 111 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup>(5.7%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.0%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 52. One death was associated with an influenza A (H3) virus and occurred during week 51 (the week ending December

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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.

26, 2015) and one death was associated with an influenza A 2009 H1N1 virus and occurred during week 52 (the week ending January 2, 2016). (Season total: 6).

**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 2015–2016 influenza season.*
- *1 human infection with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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, H7N9, and H9N2. More information on HPAI H5Nx 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 14, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 1: JANUARY 3, 2016 – JANUARY 9, 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 1

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.7%	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 has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.9%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	3.8%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	6.9%	

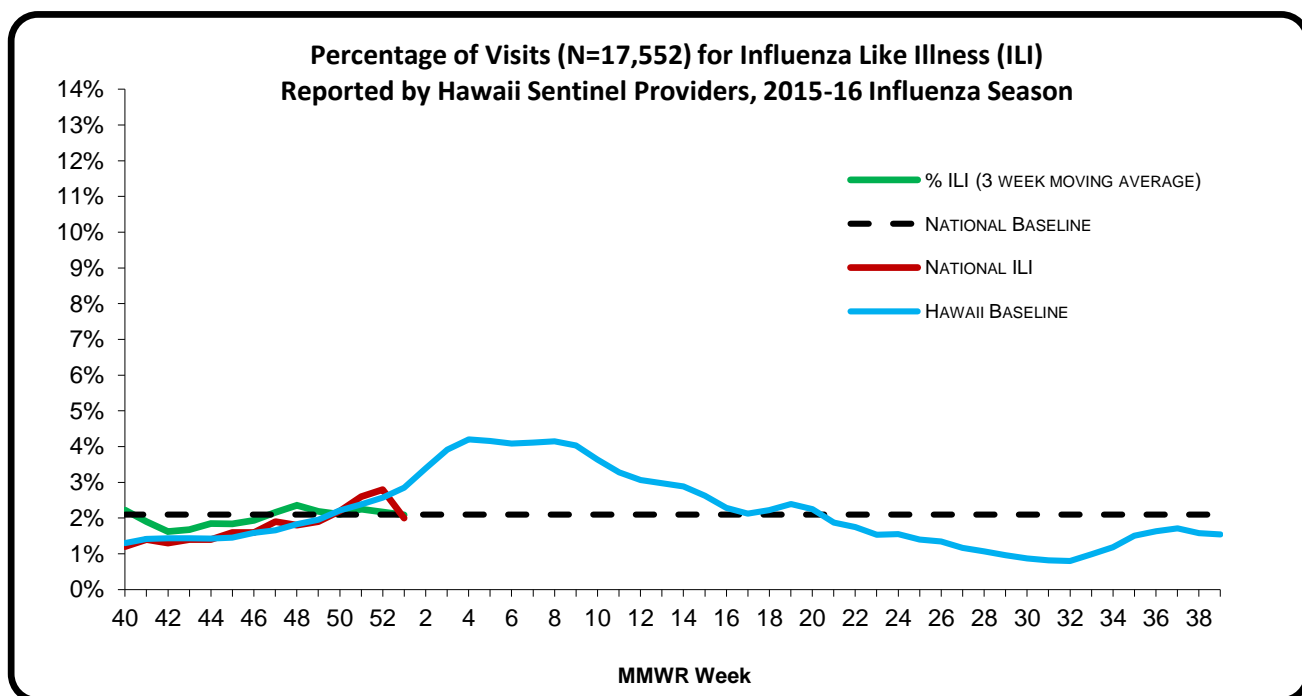
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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:

- **1.7%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (2.0%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 1.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



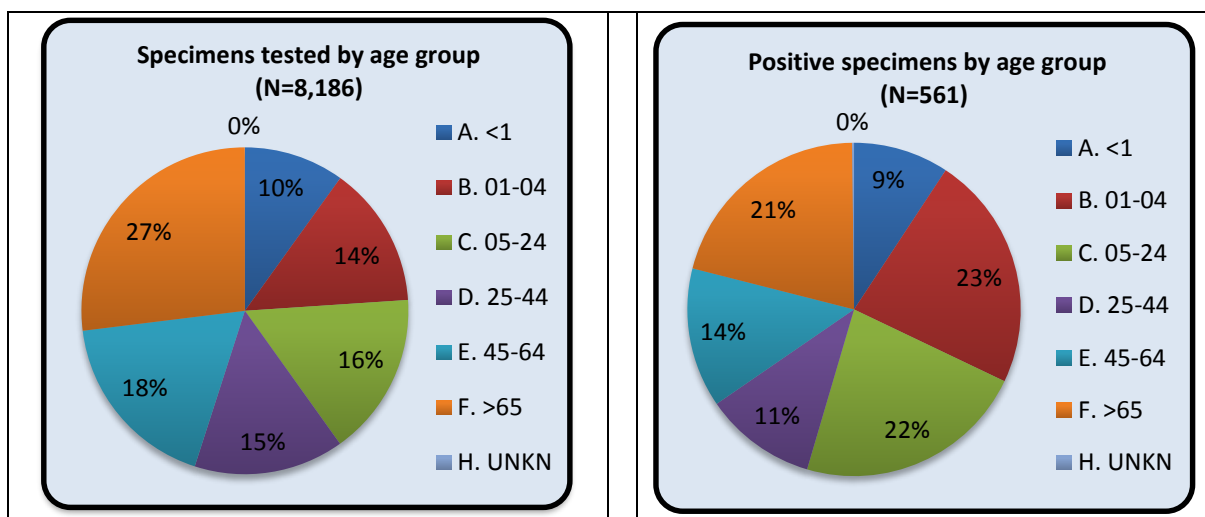
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> 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 2015-16 flu season:
  - A total of 530 specimens have been tested statewide for influenza viruses (positive: 20 [3.8%]). (Season to date: 8,186 tested [6.9% positive])
    - 228 (43.0%) were screened only by rapid antigen tests with no confirmatory testing
    - 302 (57.0%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 510 (96.2%) were negative.
  - The 20 total positive cases included 20 (3.8%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 6.3% influenza A and 0.5% influenza B)
    - Breakdown of influenza A cases:
      - 18 (90.0%) influenza A (un-subtyped). (Season to date: 91.9%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 2 (10.0%) influenza A (H3). (Season to date 8.1%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

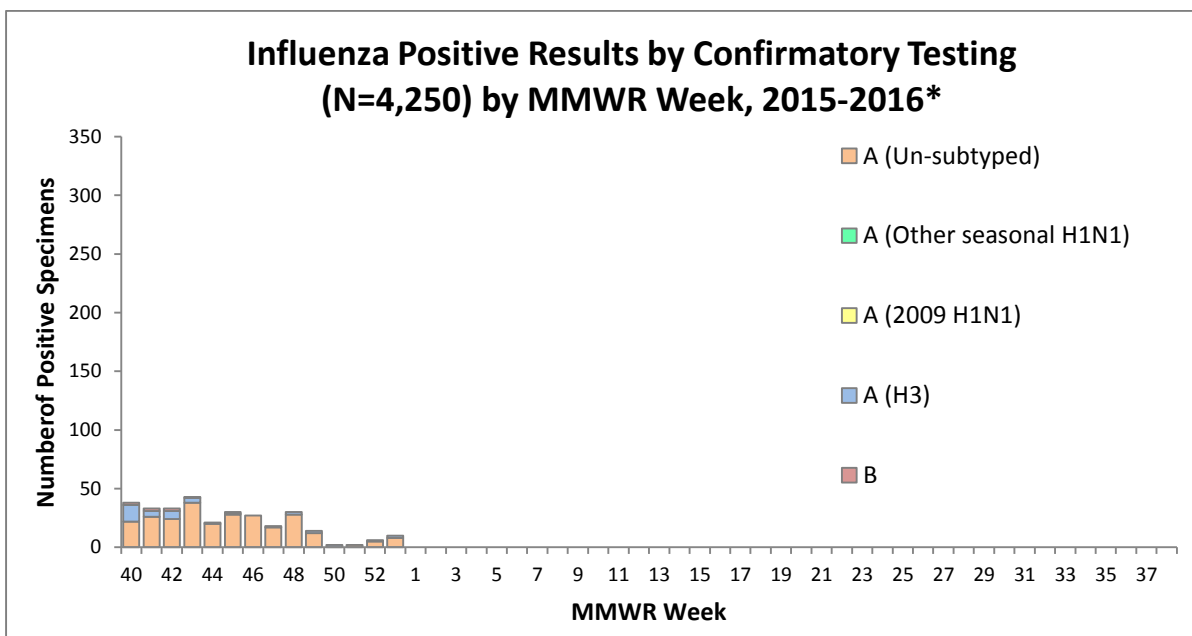
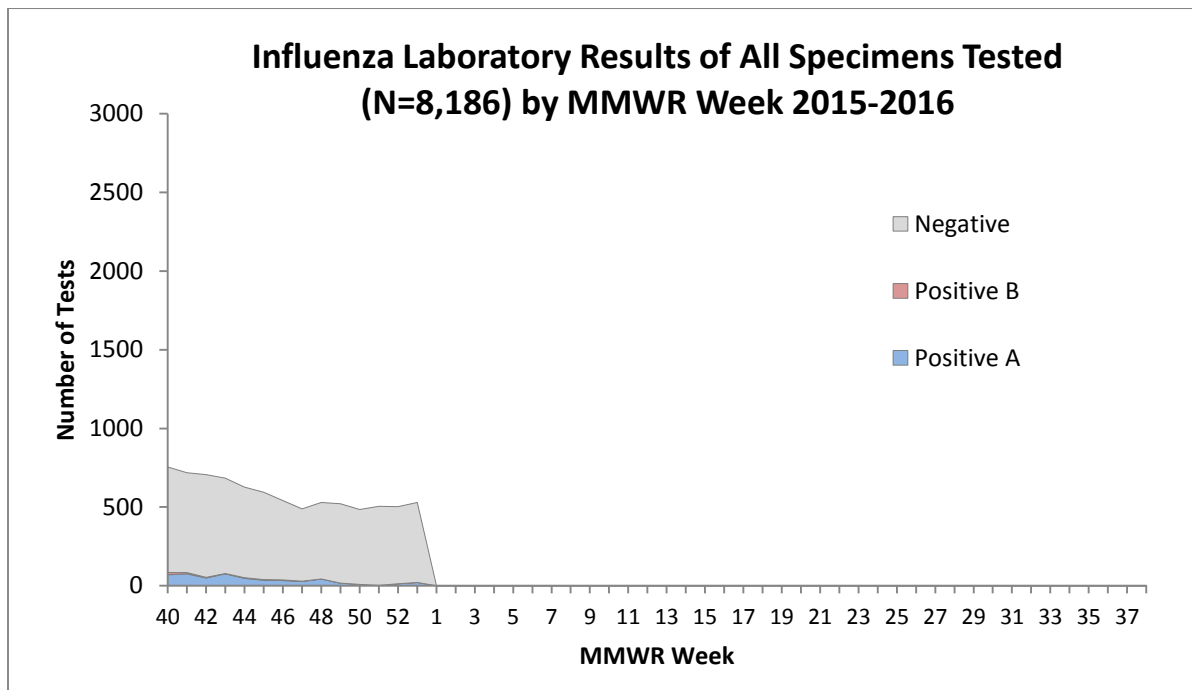


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 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.

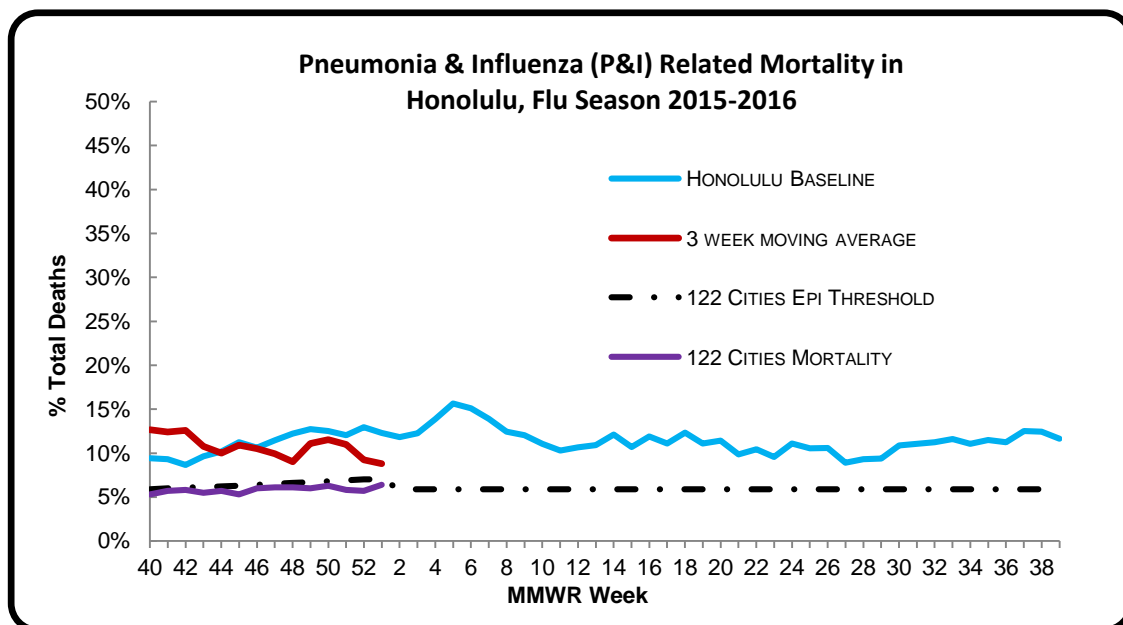
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015-16 FLU SEASON

[illegible]

**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:

- *8.9% of all deaths that occurred in Honolulu during week 1 were related to pneumonia or influenza. For the current season (season to date: **10.9%**), there have been 1,062 deaths from any cause, 116 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.4%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.0%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 1. This death was associated with an influenza B virus and occurred during week 49. (Season total: 7).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 14, 2015**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 2: JANUARY 10, 2016 – JANUARY 16, 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 2

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.9%	Higher 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 has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	22.2%	Higher than the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	6.7%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	6.8%	

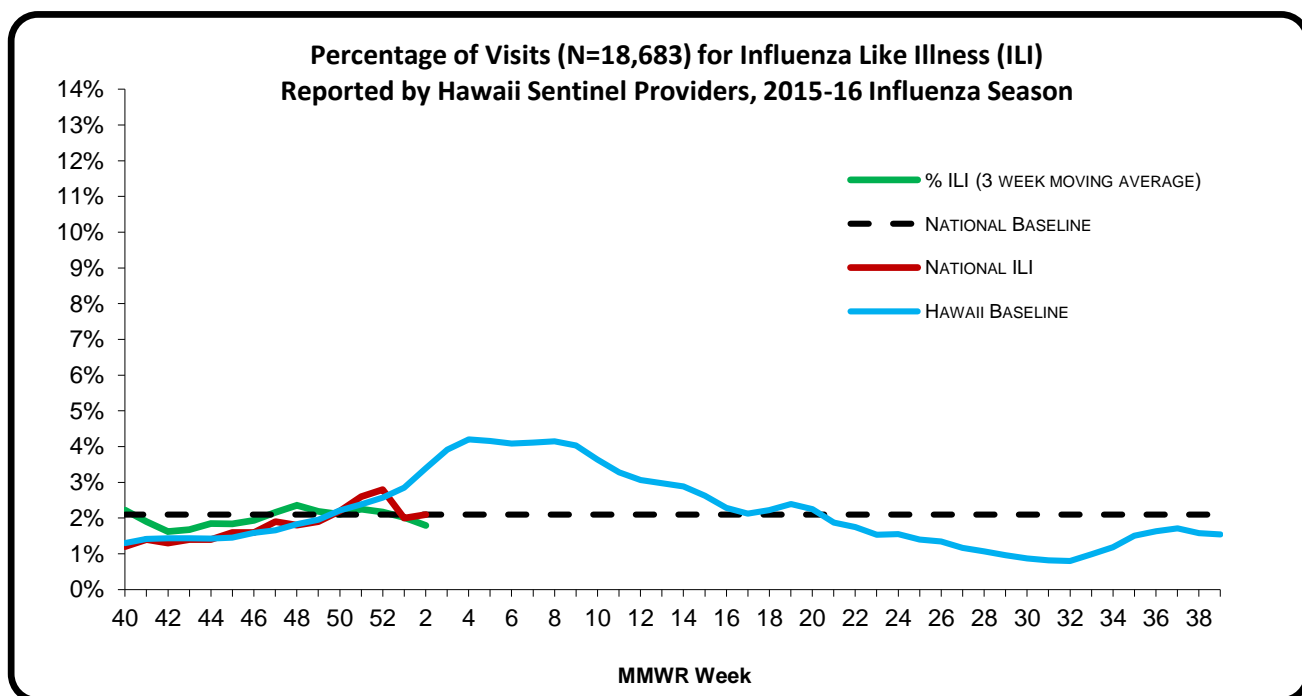
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 2** of the current influenza season:

- **1.9%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (2.1%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 2.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



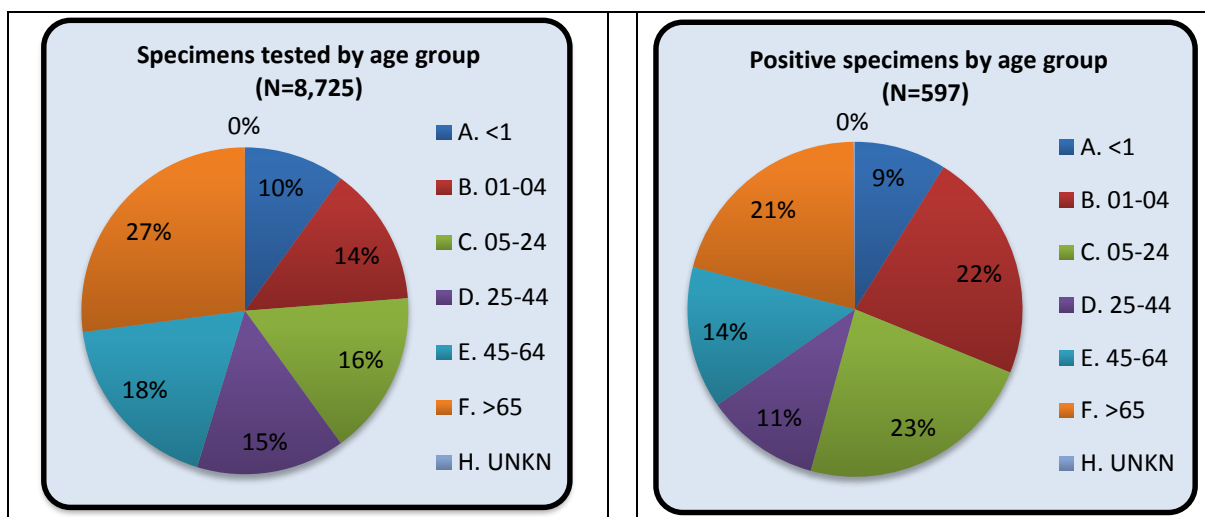
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 2 of the 2015-16 flu season:
  - A total of 537 specimens have been tested statewide for influenza viruses (positive: 36 [6.7%]). (Season to date: 8,725 tested [6.8% positive])
    - 262 (48.8%) were screened only by rapid antigen tests with no confirmatory testing
    - 275 (51.2%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 501 (93.3%) were negative.
  - The 36 total positive cases included 36 (6.7%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 6.3% influenza A and 0.5% influenza B)
    - Breakdown of influenza A cases:
      - 35 (97.2%) influenza A (un-subtyped). (Season to date: 91.9%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 1 (2.8%) influenza A (H3). (Season to date 8.1%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

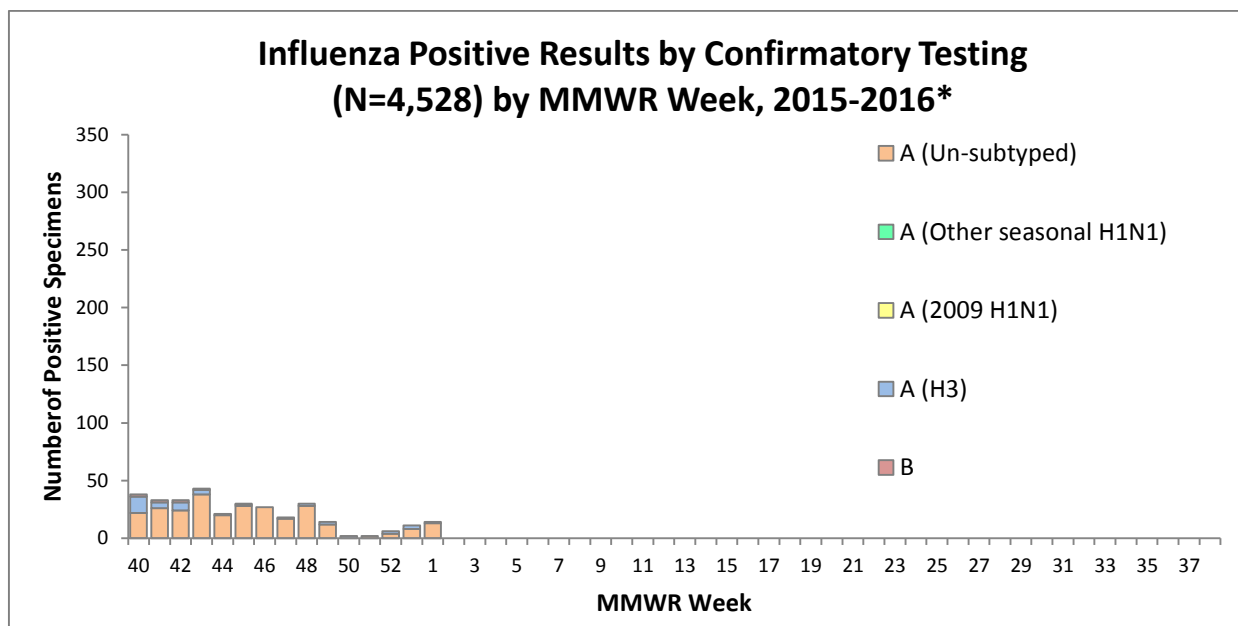
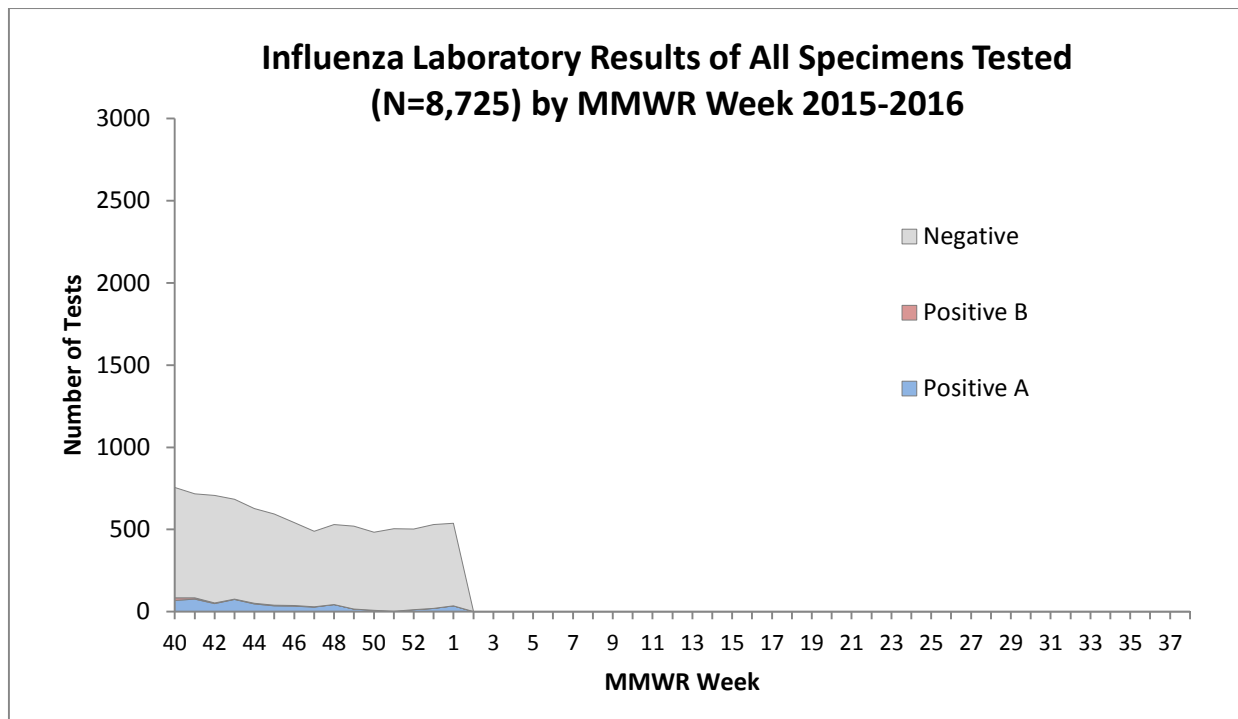
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 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.

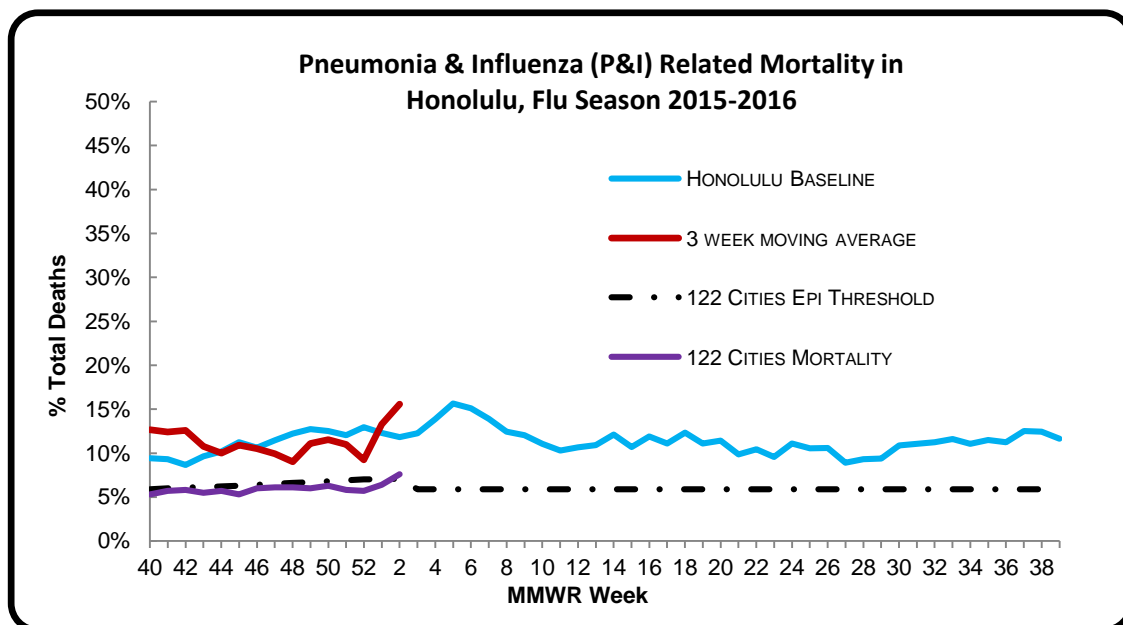
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015-16 FLU SEASON

[illegible]

**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 2** of the current influenza season:

- *22.2% of all deaths that occurred in Honolulu during week 2 were related to pneumonia or influenza. For the current season (season to date: 11.8%), there have been 1,152 deaths from any cause, 136 of which were due to P&I.*
- *The P&I rate was higher than the historical baseline in Hawaii<sup>6</sup> (i.e., outside the 95% confidence interval).*
- *The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (7.6%) (i.e., outside the 95% confidence interval) and the epidemic threshold (7.4%) (i.e., outside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 2. (Season total: 7).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2016**. Since the update in December 2015, two new confirmed human cases of H5N1 were reported to WHO. The first case was from Bangladesh and had exposure to backyard poultry before onset. He was hospitalized, but has now fully recovered. The second case was from China and has a history of exposure to poultry. He was also hospitalized, but is in critical condition. Additionally, ten confirmed human cases of H7N9 have been reported; all cases were from China and had exposure to live or slaughtered poultry. Also, one confirmed human case of H9N2 was reported from Bangladesh. The case reported handling sick poultry and has fully recovered. Lastly, five confirmed human cases of H5N6 were reported from China. The cases were considered sporadic with no human-to-human transmission among contacts.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 3: JANUARY 17, 2016 – JANUARY 23, 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 3

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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, the national baseline, and the national ILI rate.
Number of ILI clusters reported to HDOH	0	There has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.0%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	7.3%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	6.9%	

<sup>1</sup> 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.

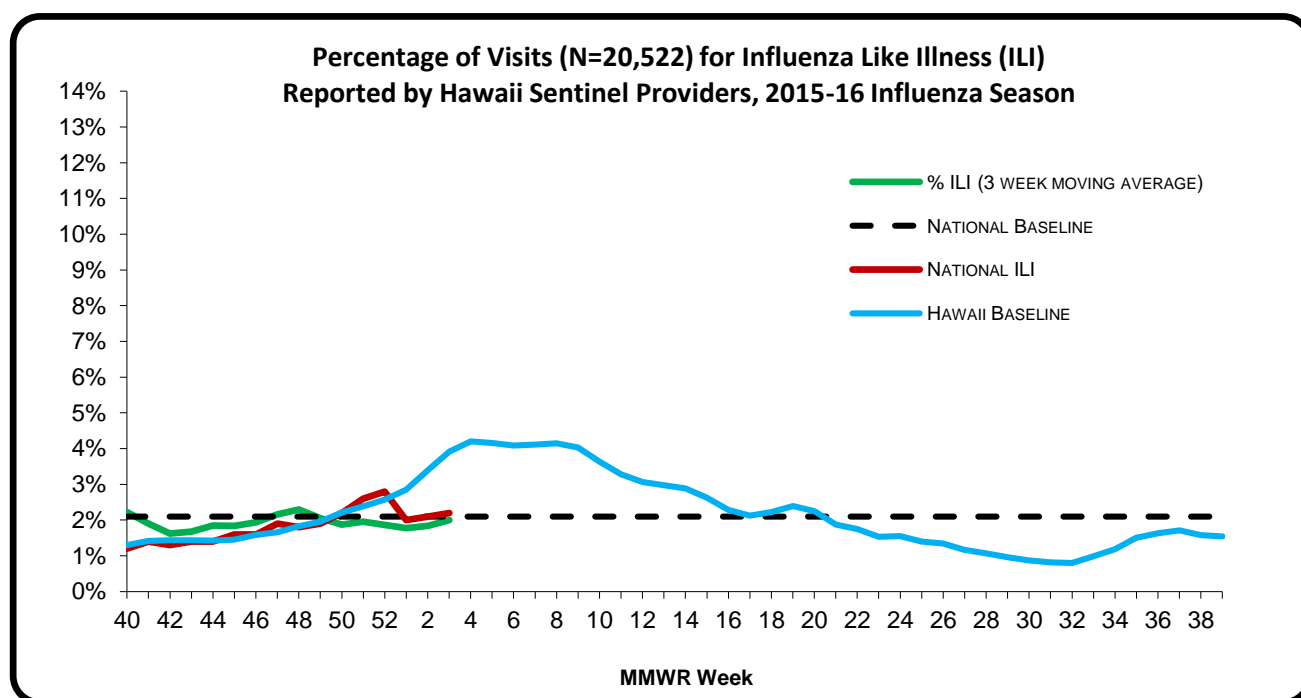


## INFLUENZA SURVEILLANCE

**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 3** of the current influenza season:

- **2.3%** (season to date: **1.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (2.2%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 3.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

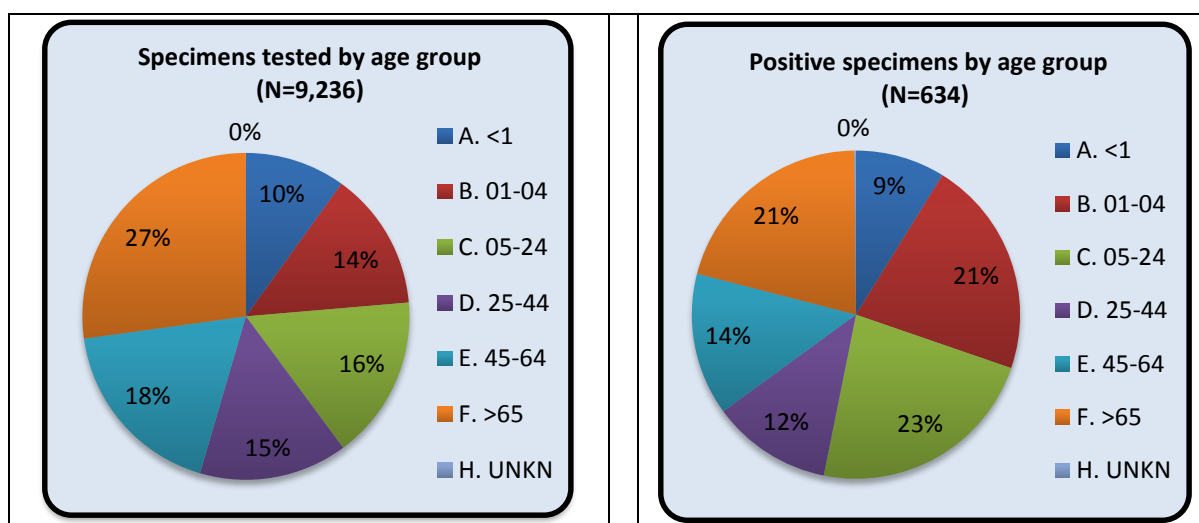
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 3 of the 2015-16 flu season:
  - A total of **510** specimens have been tested statewide for influenza viruses (positive: **37 [7.3%]**). (Season to date: **9,236** tested [**6.9%** positive])
    - 250 (49.0%) were screened only by rapid antigen tests with no confirmatory testing
    - 260 (51.0%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 473 (92.7%) were negative.
  - The 37 total positive cases included 37 (7.3%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 6.4% influenza A and 0.5% influenza B)
    - Breakdown of influenza A cases:
      - 37 (100%) influenza A (un-subtyped). (Season to date: 92.4%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date: 7.6%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

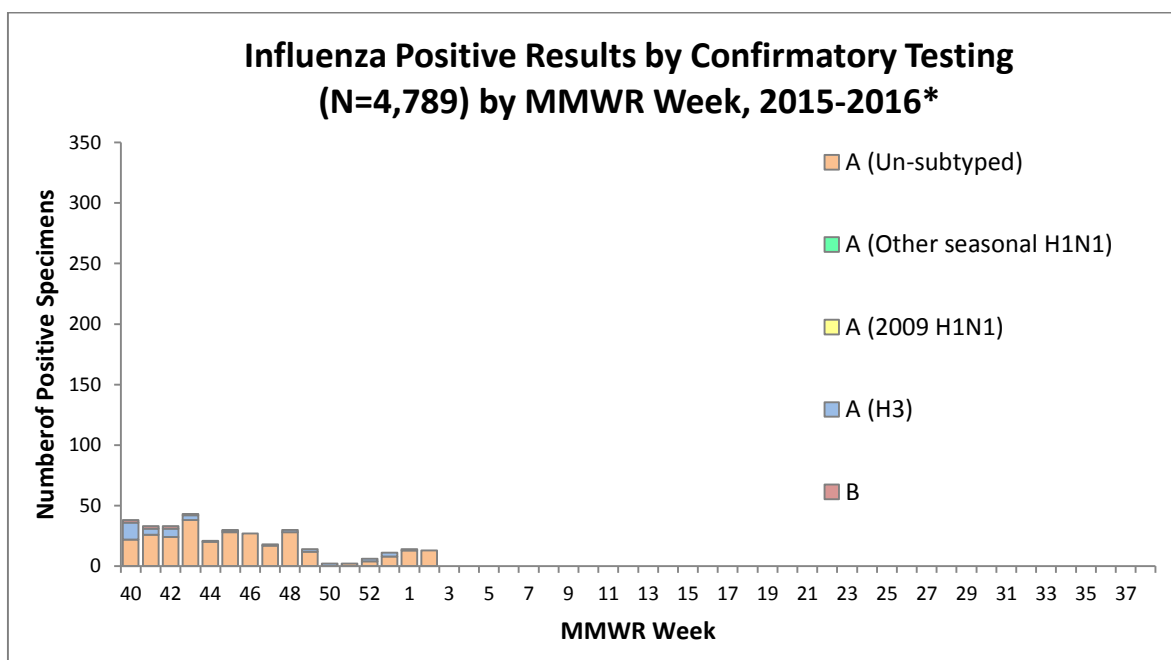
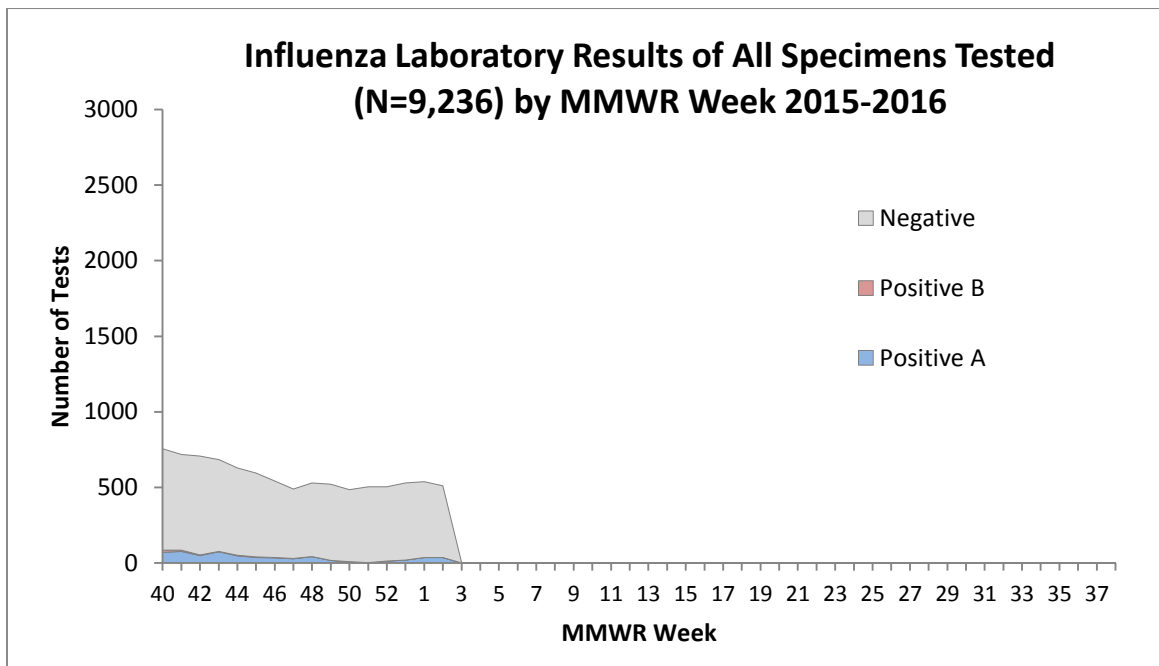
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 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.

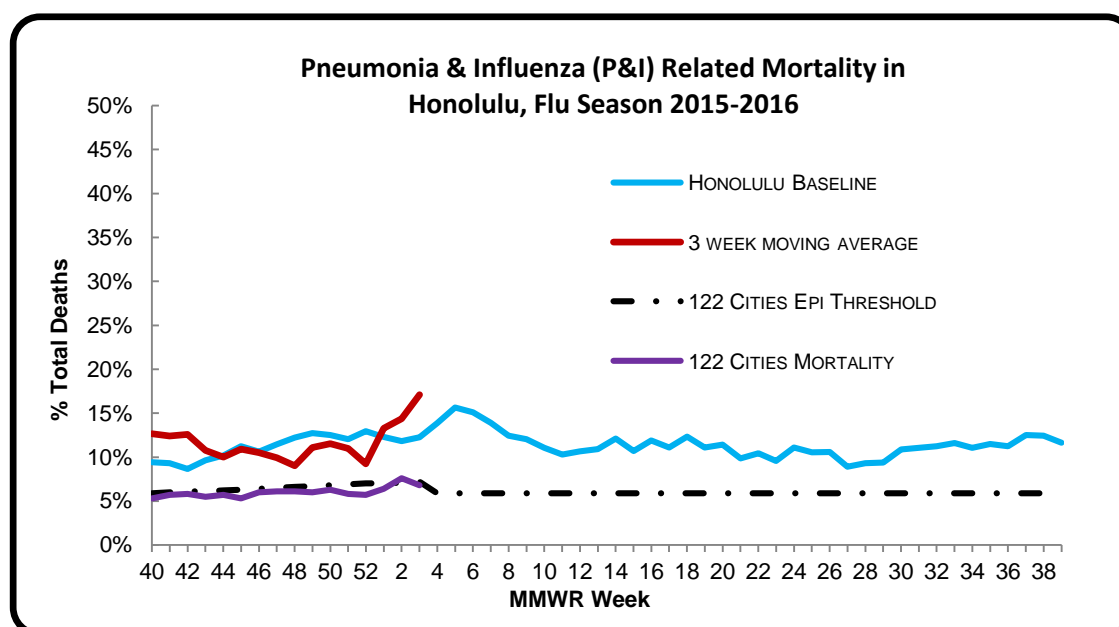
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 3** of the current influenza season:

- **12.0%** of all deaths that occurred in Honolulu during week 3 were related to pneumonia or influenza. For the current season (season to date: **11.8%**), there have been 1,244 deaths from any cause, 147 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.8%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.5%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 3. (Season total: 7).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		





# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 4: JANUARY 24, 2016 – JANUARY 30, 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 4

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.2%	Higher than the previous week, the national baseline, and the national ILI rate; comparable to Hawaii's historical baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 3 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.1%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	7.3%	Same as the previous week.
Percent of all specimens positive for influenza this season to date	6.9%	

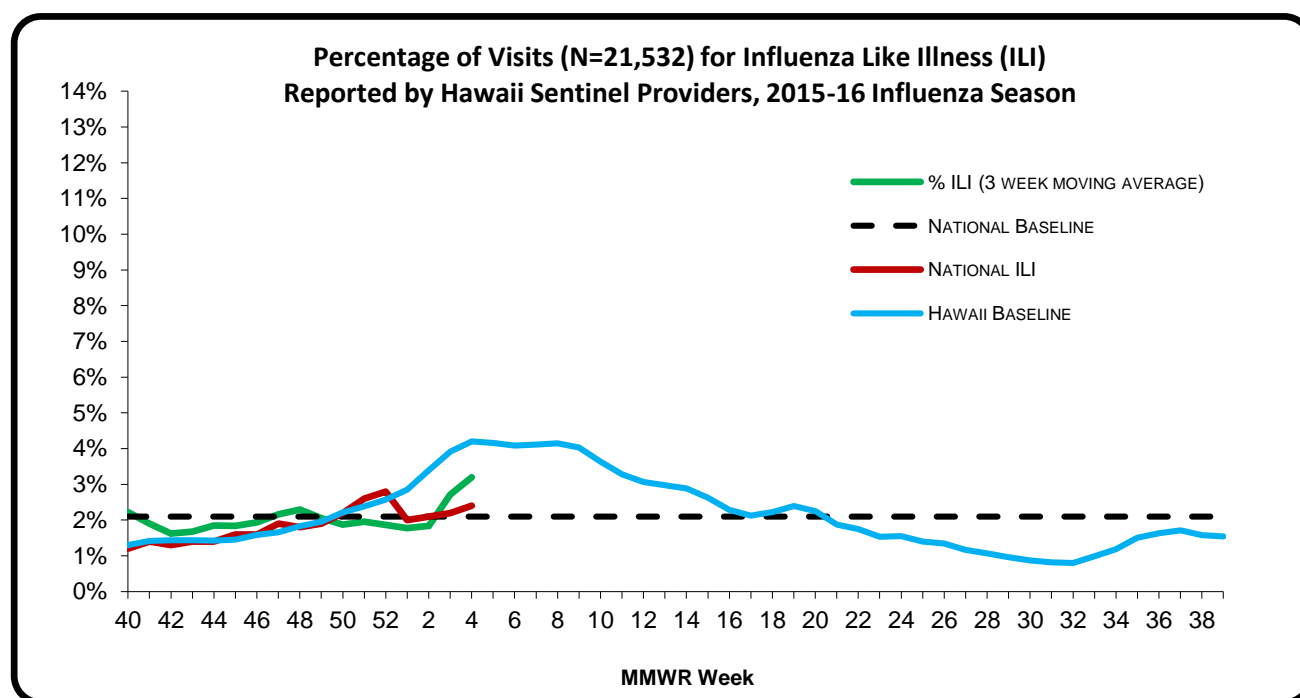
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 4** of the current influenza season:

- **4.2%** (season to date: **2.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (2.4%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No ILI clusters were reported to HDOH during week 4.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

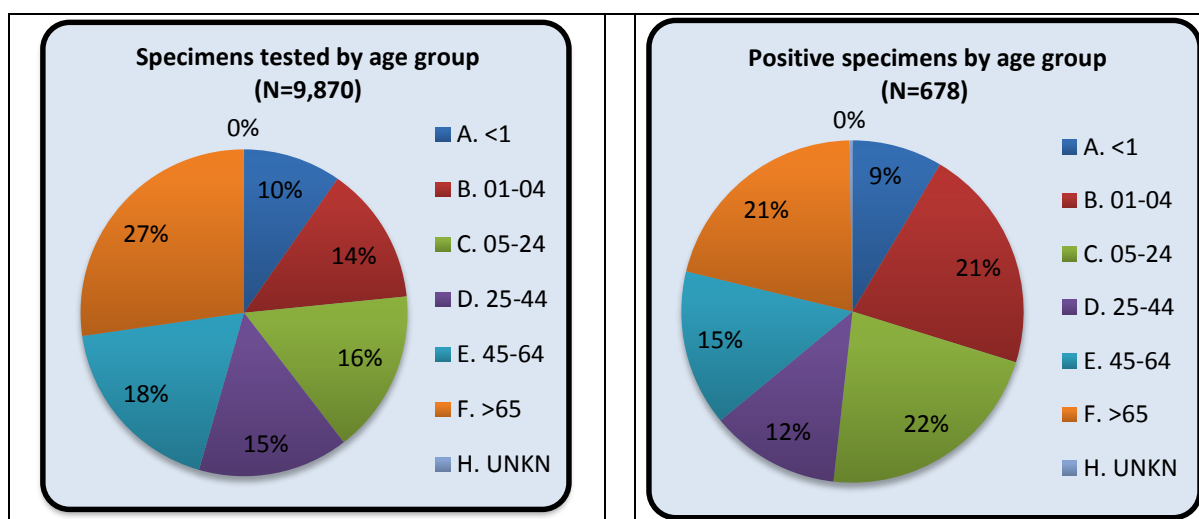
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 4 of the 2015-16 flu season:
  - A total of **632** specimens have been tested statewide for influenza viruses (positive: **46 [7.3%]**). (Season to date: **9,870** tested [**6.9%** positive])
    - 274 (43.4%) were screened only by rapid antigen tests with no confirmatory testing
    - 356 (56.3%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 586 (92.7%) were negative.
  - The 46 total positive cases included 44 (7.0%) cases of influenza A and 2 (0.3%) cases of influenza B (detected using any method). (Season to date: 6.4% influenza A and 0.5% influenza B)
    - Breakdown of influenza A cases:
      - 42 (95.5%) influenza A (un-subtyped). (Season to date: 92.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 2 (4.5%) influenza A (H3). (Season to date: 8.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

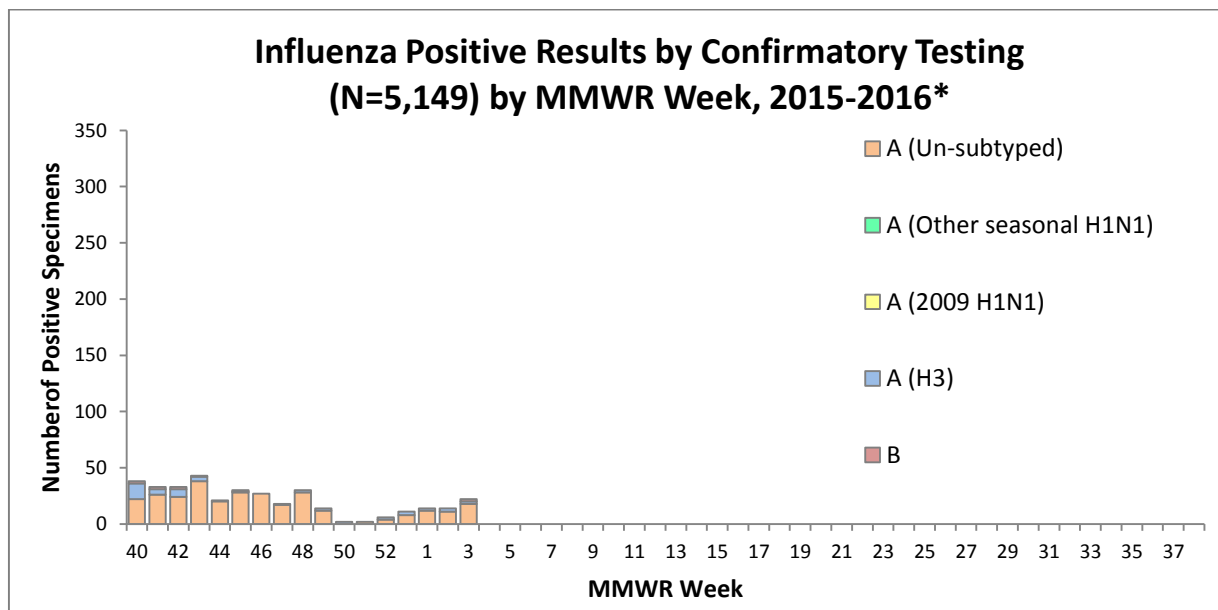
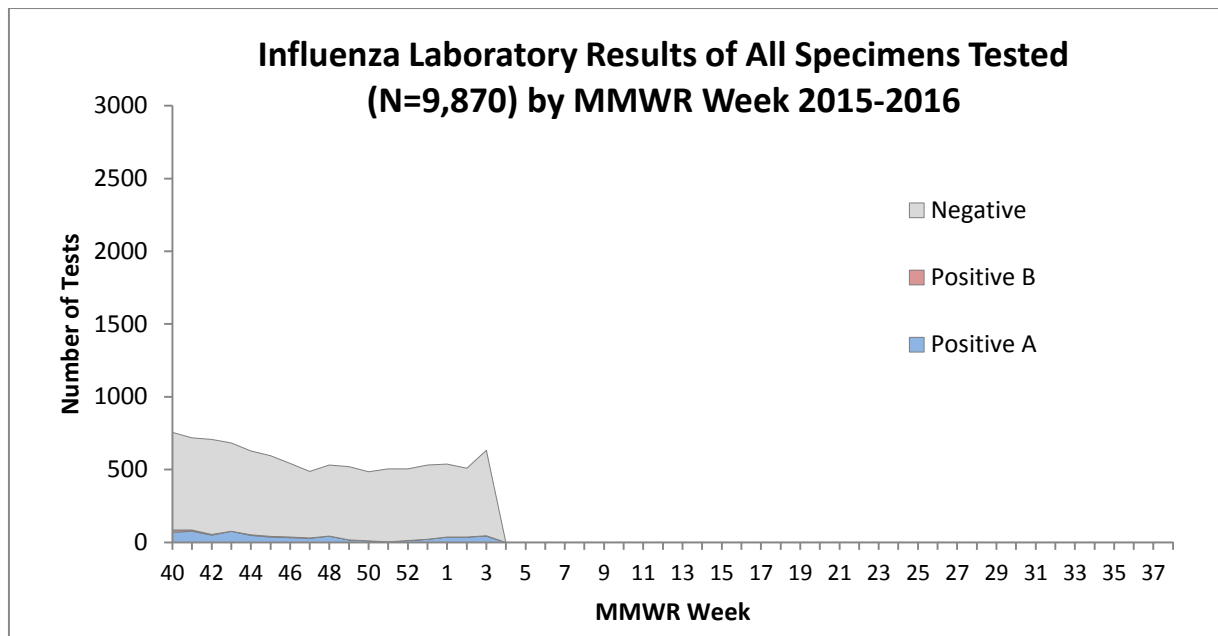
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

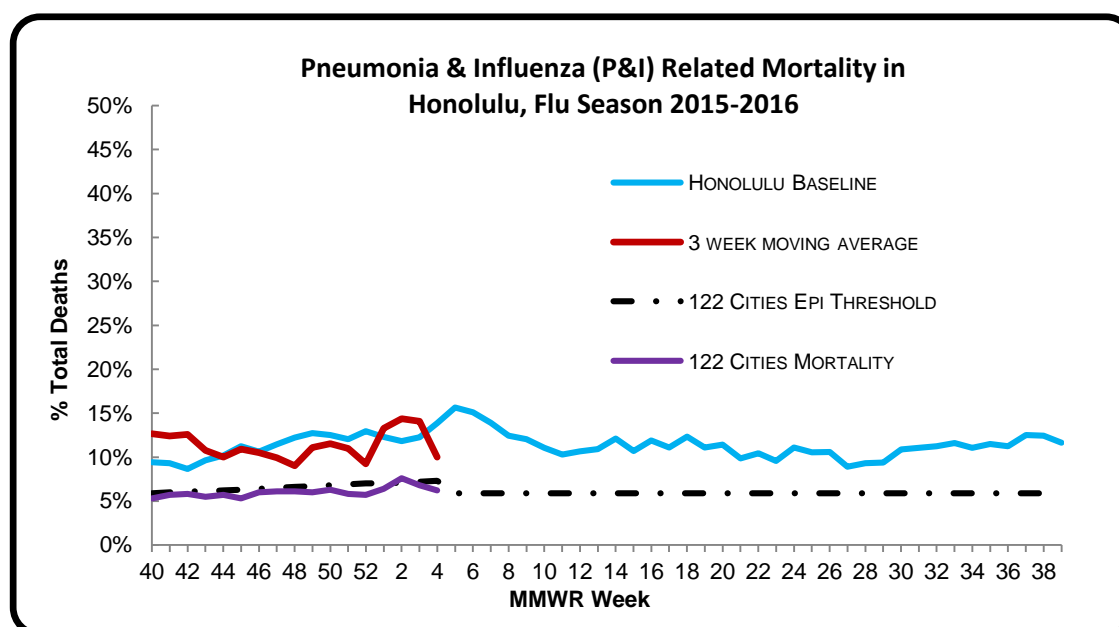
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																							
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Adenovirus								X																																															
Coronavirus																	X																																						
Coxsackie Virus																																																							
Cytomegalovirus																																																							
Echovirus																																																							
Enterovirus																X																																							
Herpes Simplex Virus, Type 1																																																							
Metapneumovirus							X										X																																						
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X																																									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X								X																																					
Rhinovirus				X													X	X																																					
Varicella Zoster Virus																																																							
Influenza 2009 H1N1																																																							
Influenza A (H3)	X	X	X	X	X	X		X	X	X				X	X		X																																						
Influenza A (Other seasonal H1N1)																																																							
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																						
Influenza B	X	X	X	X	X	X	X	X									X																																						

**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 4** of the current influenza season:

- **8.1%** of all deaths that occurred in Honolulu during week 4 were related to pneumonia or influenza. For the current season (season to date: **11.5%**), there have been 1,343 deaths from any cause, 155 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.2%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.3%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 4. One death was associated with an influenza A (H1N1)pdm09 virus and occurred during week 2 and one death was associated with an influenza B virus and occurred during week 4. (Season total: 9).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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



**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 5: JANUARY 31, 2016 – FEBRUARY 6, 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 5

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.3%	Lower than the previous week; comparable to Hawaii's historical baseline and the national ILI rate; higher than the national baseline.
Number of ILI clusters reported to HDOH	1	There has been a total of 4 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.3%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	12.1%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	7.8%	

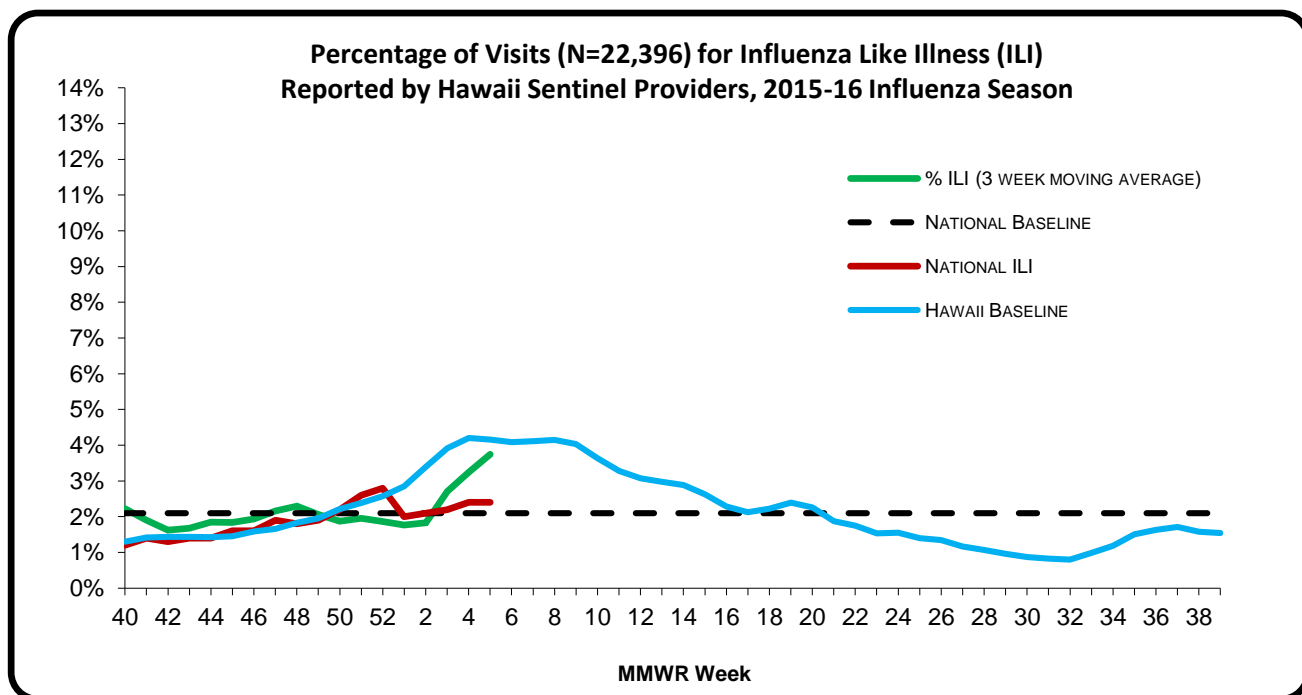
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 5** of the current influenza season:

- **3.3%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval), but comparable to the national ILI rate (2.4%) (i.e., inside the 95% confidence interval).
- **ILI Cluster Activity:** One cluster was reported to HDOH during week 5. The cluster occurred at a nursing home on Oahu and had confirmed cases of influenza A.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

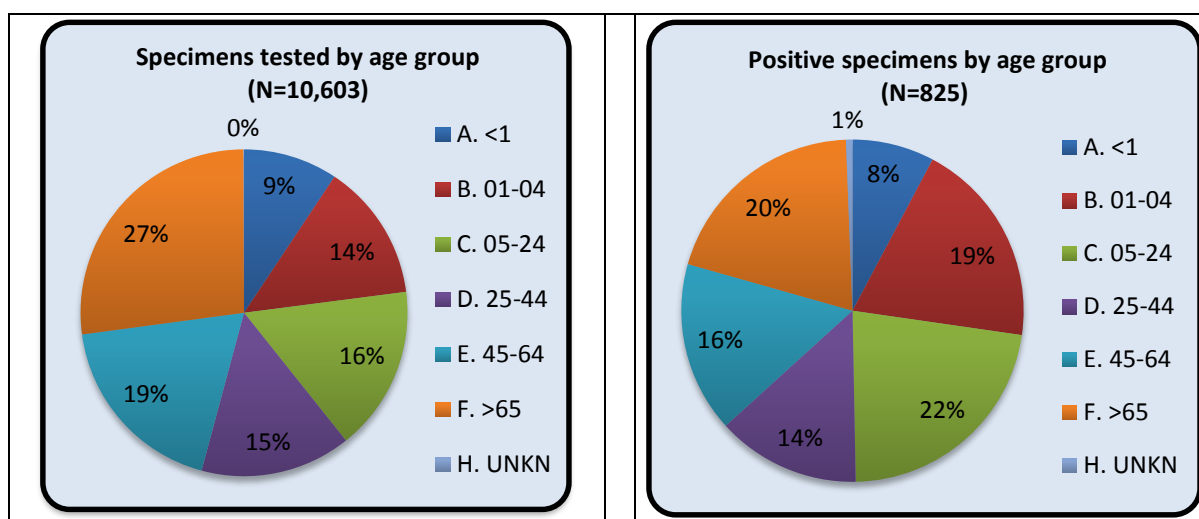
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 5 of the 2015-16 flu season:
  - A total of **679** specimens have been tested statewide for influenza viruses (positive: **82 [12.1%]**). (Season to date: **10,603** tested [7.8% positive])
    - 311 (45.8%) were screened only by rapid antigen tests with no confirmatory testing
    - 368 (54.2%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 597 (87.9%) were negative.
  - The 82 total positive cases included 63 (9.3%) cases of influenza A and 19 (2.8%) cases of influenza B (detected using any method). (Season to date: 6.6% influenza A and 1.2% influenza B)
    - Breakdown of influenza A cases:
      - 63 (100.0%) influenza A (un-subtyped). (Season to date: 92.7%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date: 7.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

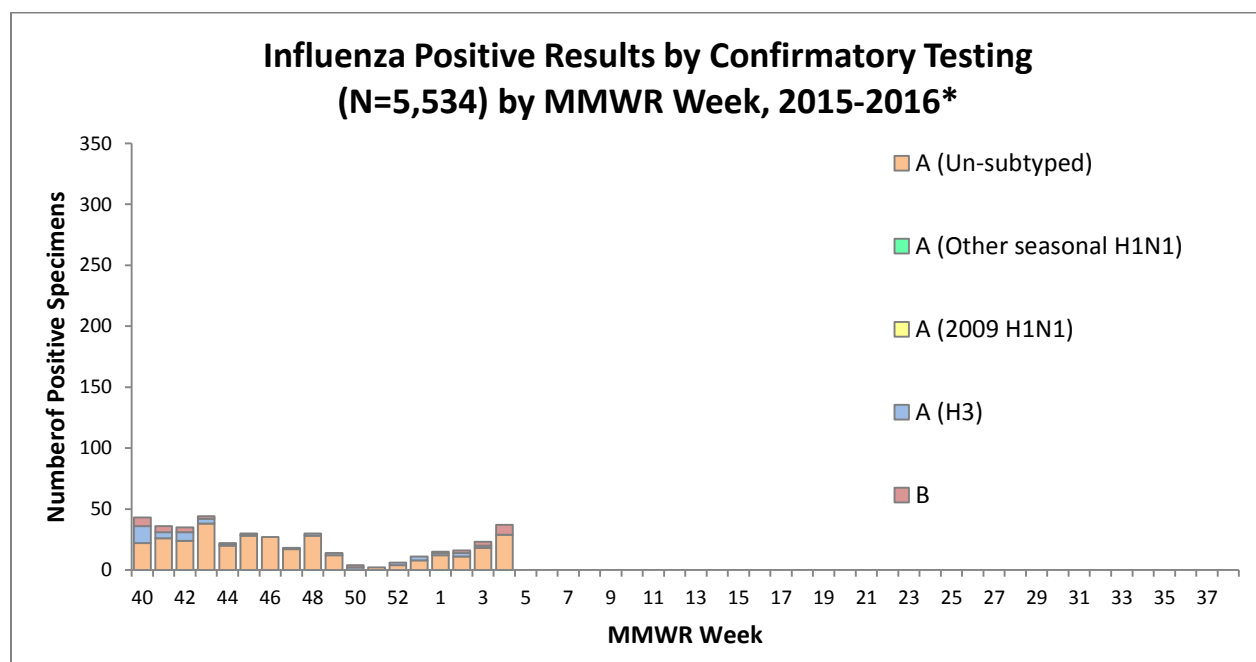
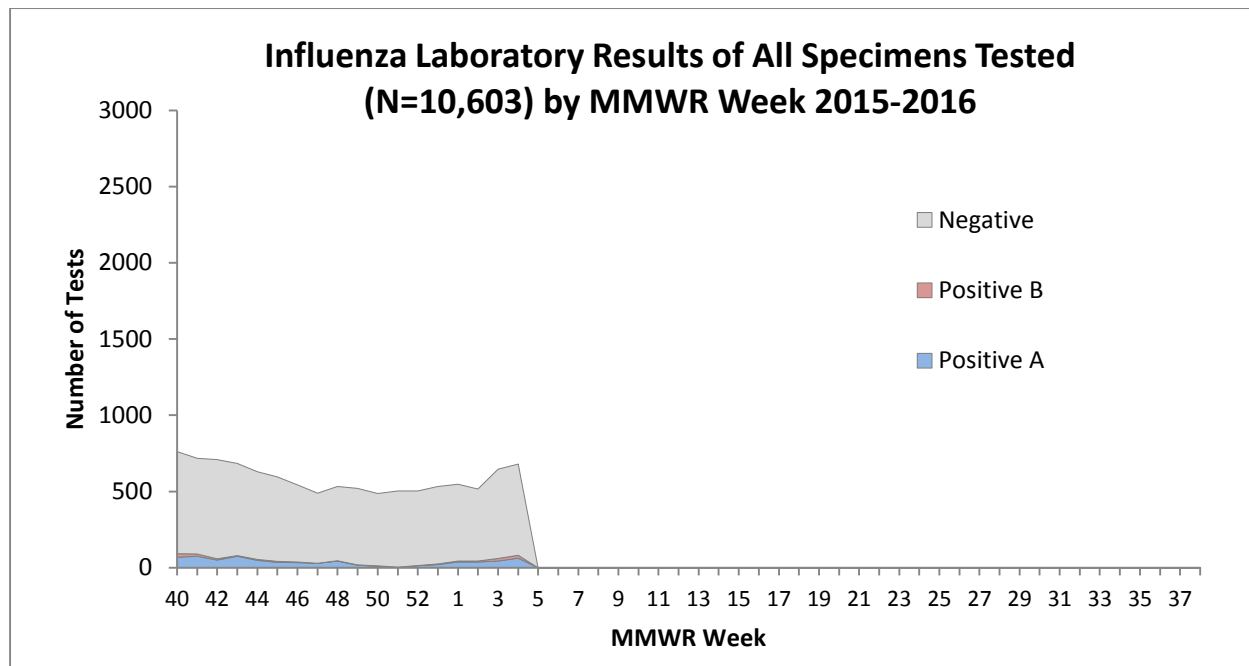
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

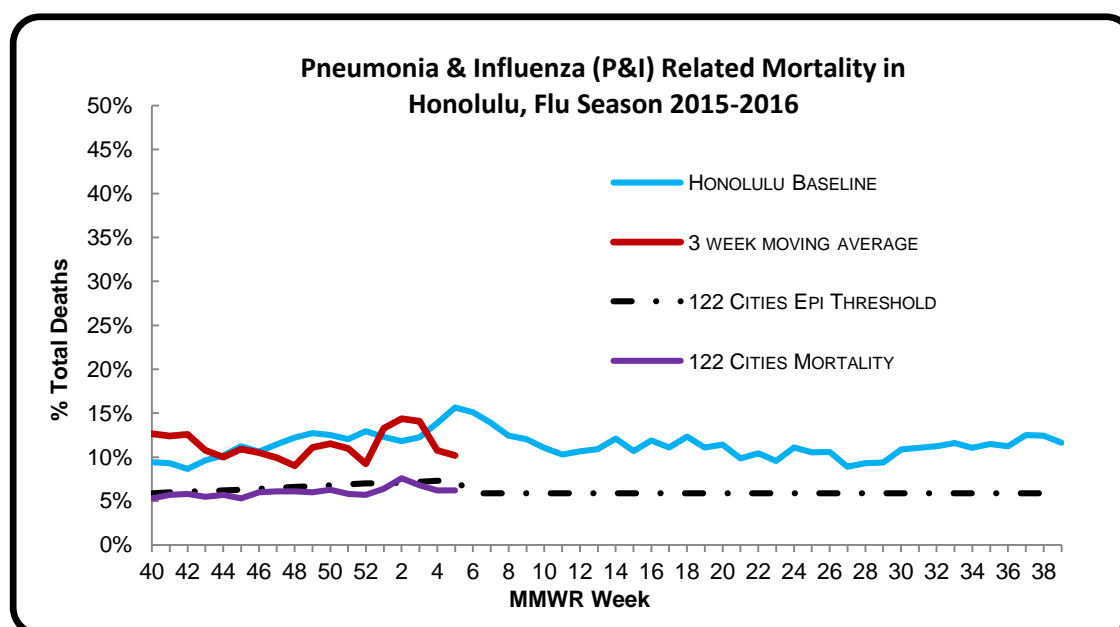
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																										
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40					
Adenovirus							X																																																			
Coronavirus																	X																																									
Coxsackie Virus																																																										
Cytomegalovirus																																																										
Echovirus																																																										
Enterovirus																X																																										
Herpes Simplex Virus, Type 1																																																										
Metapneumovirus						X										X																																										
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X																																												
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X																																									
Rhinovirus			X													X	X																																									
Varicella Zoster Virus																																																										
Influenza 2009 H1N1																																																										
Influenza A (H3)	X	X	X	X	X	X		X	X	X				X	X	X																																										
Influenza A (Other seasonal H1N1)																																																										
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																								
Influenza B	X	X	X	X	X	X	X	X									X	X																																								

**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 5** of the current influenza season:

- *12.3% of all deaths that occurred in Honolulu during week 5 were related to pneumonia or influenza. For the current season (season to date: 11.6%), there have been 1,449 deaths from any cause, 168 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.2%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.3%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 5. One death was associated with an influenza A (H1N1)pdm09 virus and one death was associated with an influenza A virus for which no subtyping was performed. Both deaths occurred during week 4. (Season total: 11).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2016**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 6: FEBRUARY 7, 2016 – FEBRUARY 13, 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 6

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.5%	Higher than the previous week, the national ILI rate, and the national baseline; comparable to Hawaii's historical baseline.
Number of ILI clusters reported to HDOH	2	There has been a total of 6 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.7%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	12.1%	Similar to the previous week.
Percent of all specimens positive for influenza this season to date	8.1%	

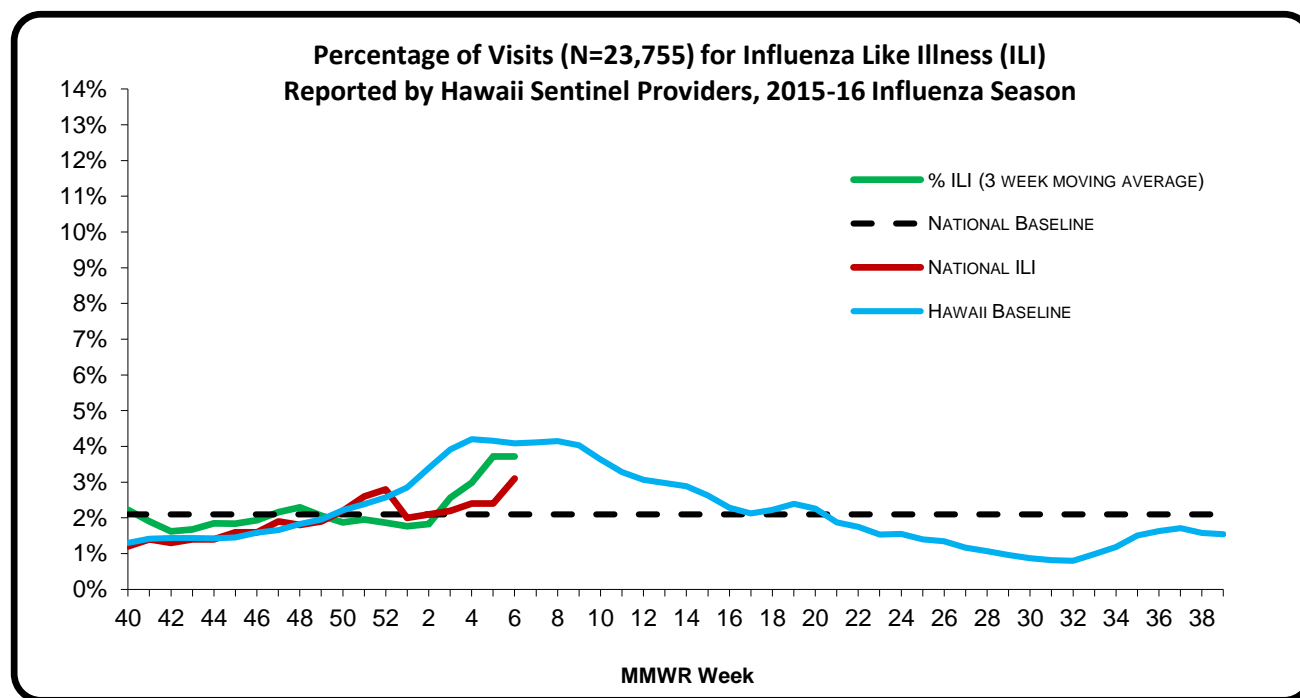
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 6** of the current influenza season:

- **4.5%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (3.1%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: Two clusters were reported to HDOH during week 6. One cluster occurred at a nursing home on Oahu and the other occurred at a school on Maui. Both had cases of influenza B.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

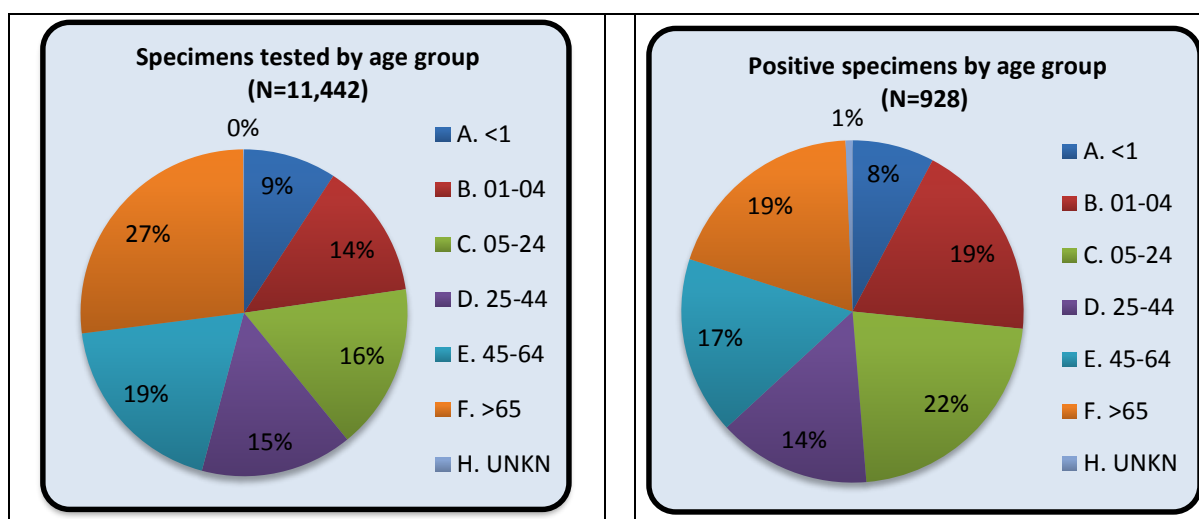
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 6 of the 2015-16 flu season:
  - A total of 838 specimens have been tested statewide for influenza viruses (positive: 101 [12.1%]). (Season to date: 10,603 tested [8.1% positive])
    - 390 (46.5%) were screened only by rapid antigen tests with no confirmatory testing
    - 448 (53.5%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 734 (87.6%) were negative.
  - The 101 total positive cases included 79 (9.4%) cases of influenza A and 25 (3.0%) cases of influenza B (detected using any method). (Season to date: 6.8% influenza A and 1.3% influenza B)
    - Breakdown of influenza A cases:
      - 79 (100.0%) influenza A (un-subtyped). (Season to date: 93.2%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 0.0%)
      - 0 (0.0%) influenza A (H3). (Season to date: 6.8%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

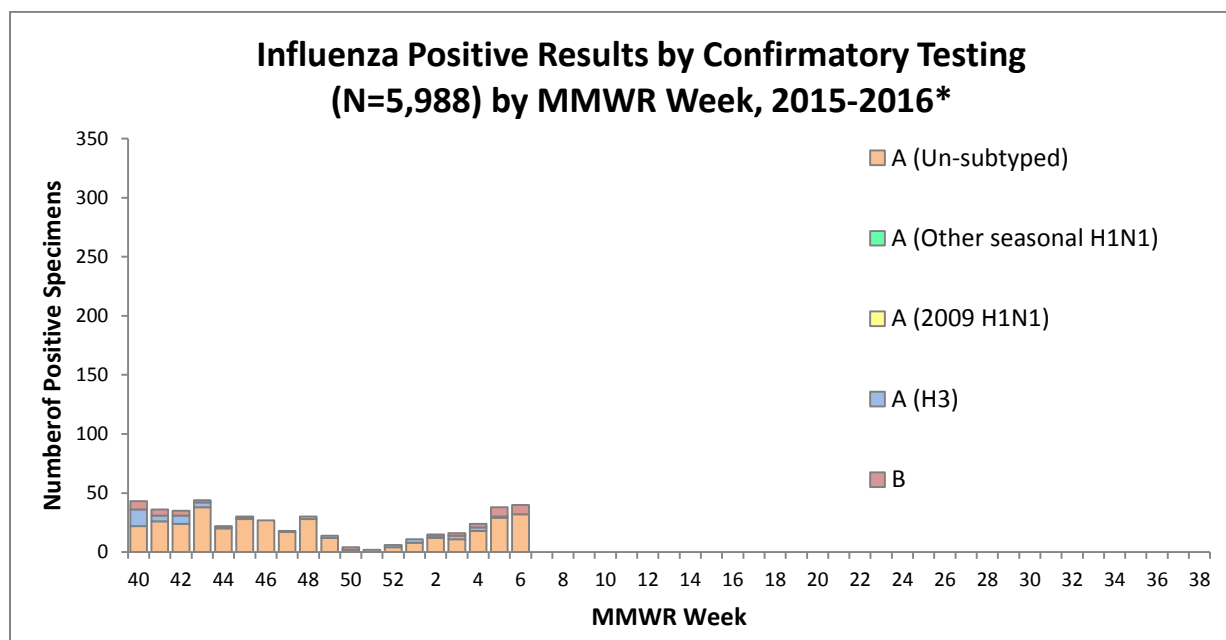
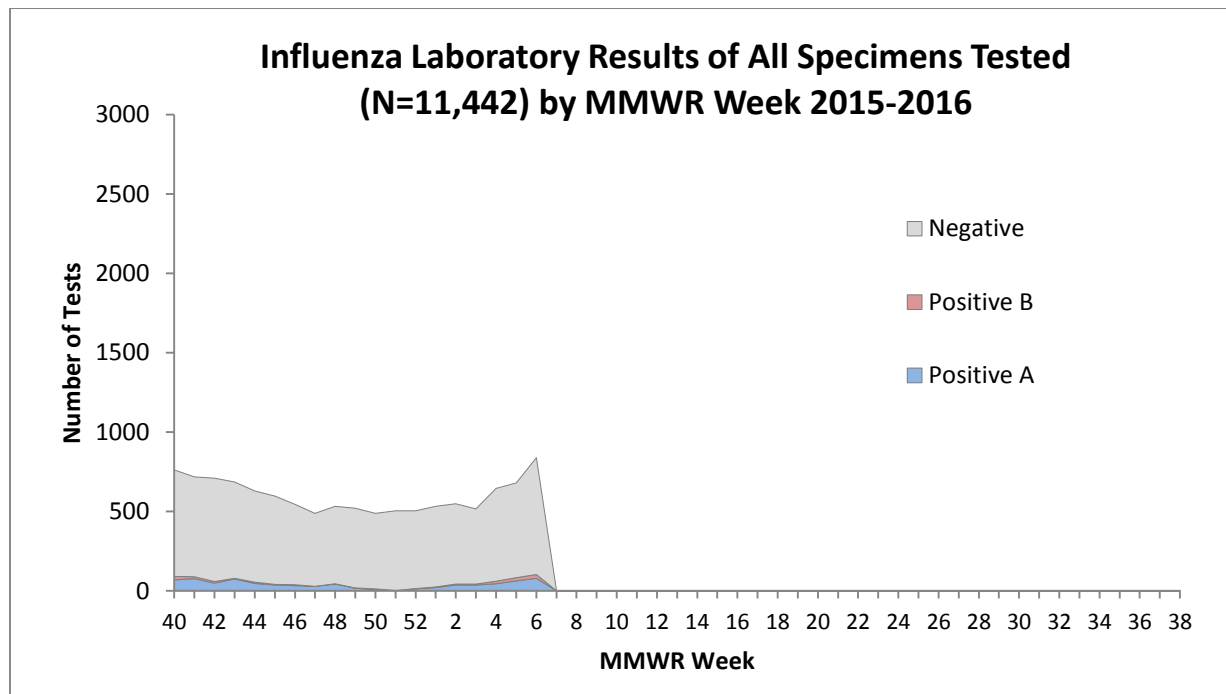
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

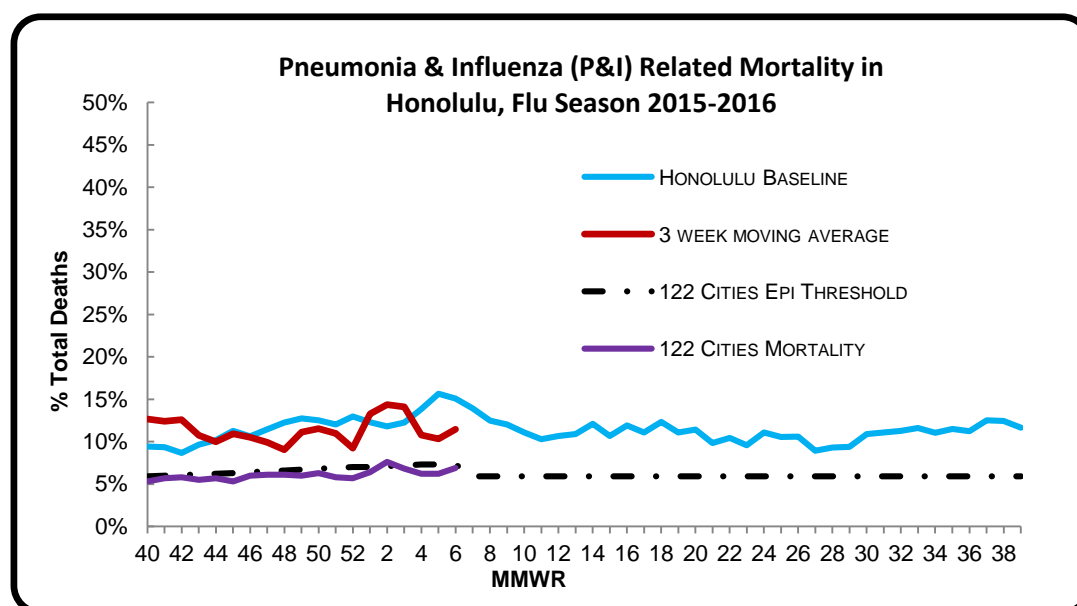
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

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

**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 6** of the current influenza season:

- **10.7%** of all deaths that occurred in Honolulu during week 6 were related to pneumonia or influenza. For the current season (season to date: **11.5%**), there have been 1,524 deaths from any cause, 176 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.9%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.3%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 6. One death was associated with an influenza A (H1N1)pdm09 virus and occurred during week 2. One death was associated with an influenza virus for which the type was not determined and occurred during week 6. (Season total: 13).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 7: FEBRUARY 14, 2016 – FEBRUARY 20, 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 7

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.4%	Lower than the previous week; comparable to Hawaii's historical baseline and the national ILI rate; higher than the national baseline.
Number of ILI clusters reported to HDOH	2	There has been a total of 8 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.3%	Lower than the historical baseline for Hawaii; comparable to the national epidemic threshold and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	16.2%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	8.8%	

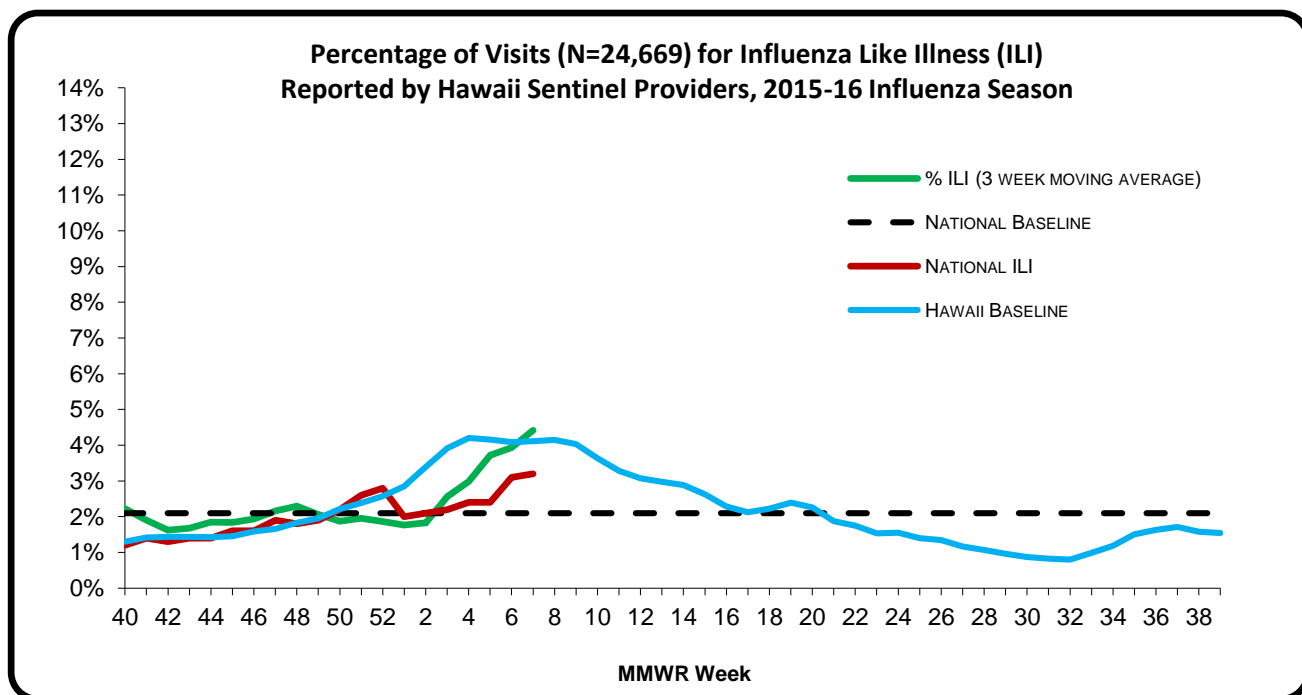
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 7 of the current influenza season:

- **4.4%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval), but 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 7. Both clusters occurred at elementary schools on Oahu and had cases of influenza B.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

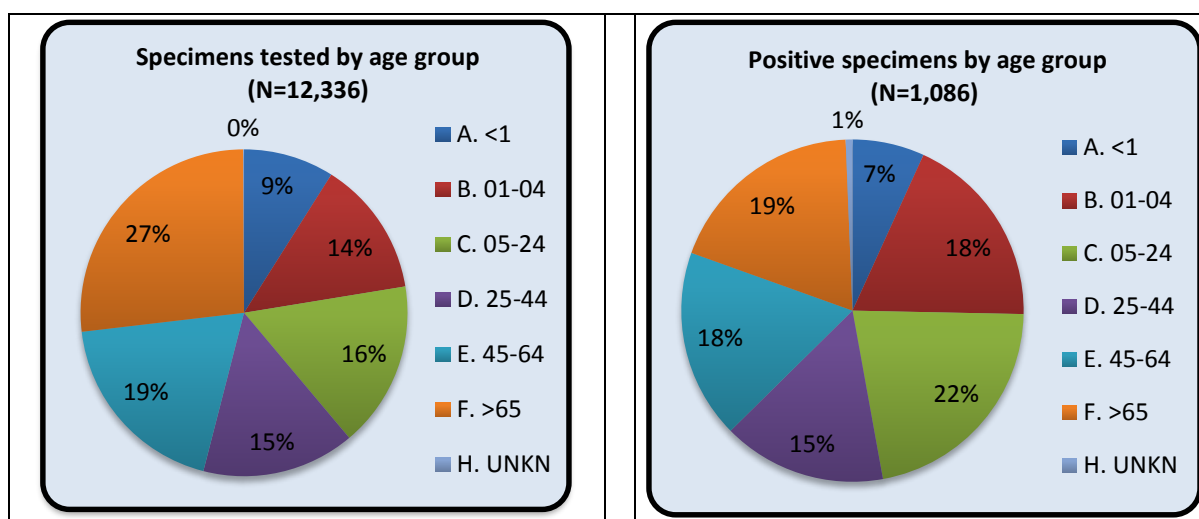
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 7 of the 2015-16 flu season:
  - A total of **879** specimens have been tested statewide for influenza viruses (positive: **142 [16.2%]**). (Season to date: **12,366** tested [8.8% positive])
    - 404 (46.0%) were screened only by rapid antigen tests with no confirmatory testing
    - 475 (54.0%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 737 (83.8%) were negative.
  - The 142 total positive cases included 108 (12.3%) cases of influenza A and 34 (3.9%) cases of influenza B (detected using any method). (Season to date: 7.3% influenza A and 1.5% influenza B)
    - Breakdown of influenza A cases:
      - 103 (95.4%) influenza A (un-subtyped). (Season to date: 88.7%)
      - 5 (4.6%) 2009 H1N1. (Season to date: 5.4%)
      - 0 (0.0%) influenza A (H3). (Season to date: 5.9%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

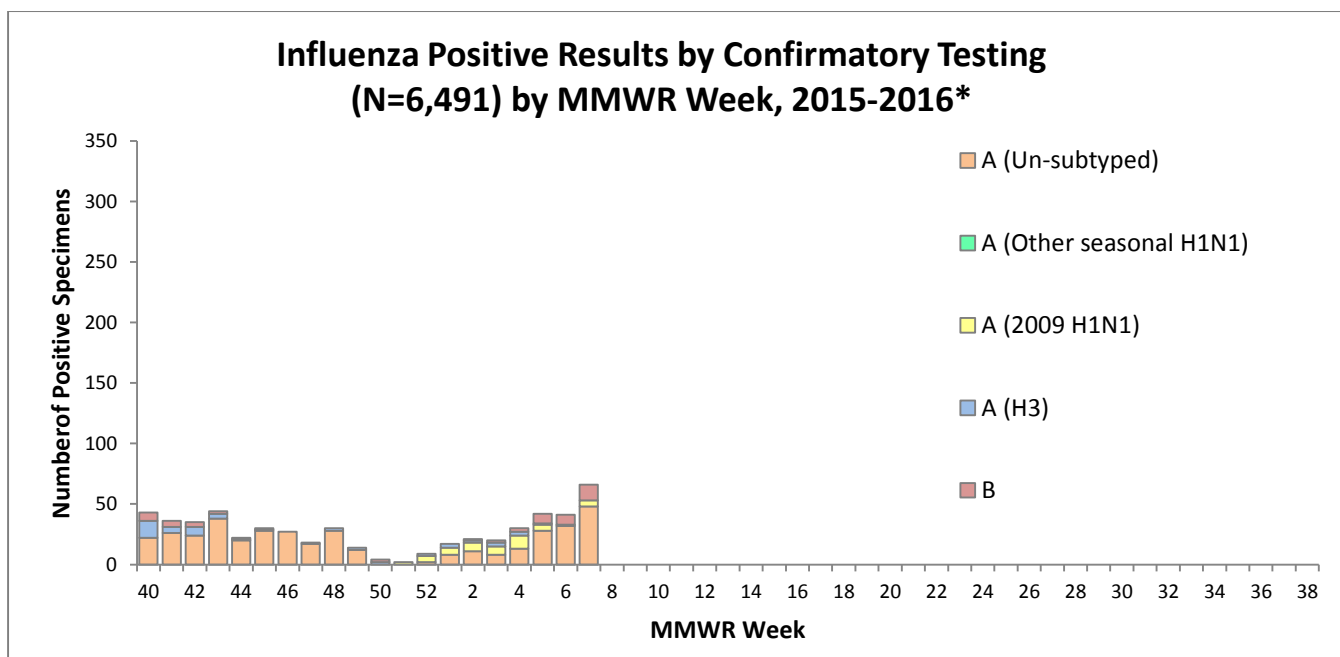
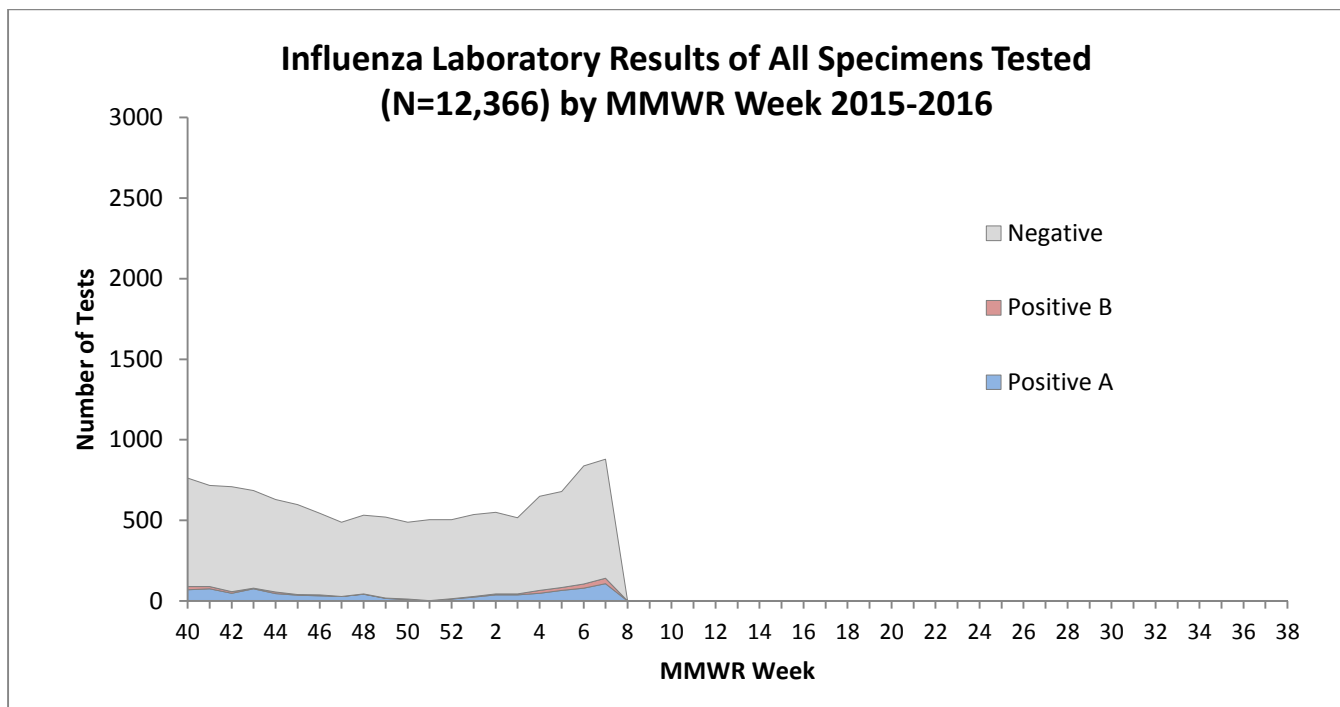
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

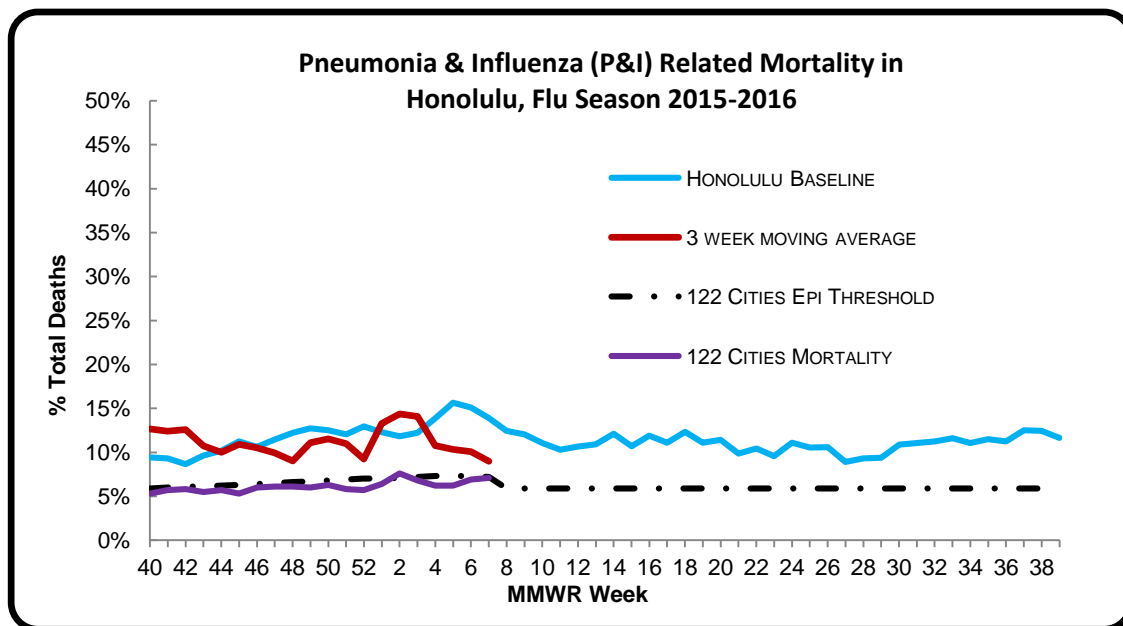
MMWR Week (2015-2016)																																																												
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40							
Adenovirus							X											X																																										
Coronavirus																	X	X																																										
Coxsackie Virus																																																												
Cytomegalovirus																																																												
Echovirus																																																												
Enterovirus																X																																												
Herpes Simplex Virus, Type 1																																																												
Metapneumovirus						X										X		X																																										
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X																																									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X																																											
Rhinovirus				X												X	X																																											
Varicella Zoster Virus																																																												
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X																																								
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X																																										
Influenza A (Other seasonal H1)																																																												
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																							
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X																																							



**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 7** of the current influenza season:

- *7.3% of all deaths that occurred in Honolulu during week 7 were related to pneumonia or influenza. For the current season (season to date: 11.3%), there have been 1,606 deaths from any cause, 182 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii<sup>6</sup> (i.e., outside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (7.1%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.2%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 7. This death was associated with an influenza B virus and occurred during week 7. (Season total: 14).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 8: FEBRUARY 21, 2016 – FEBRUARY 27, 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 8

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	5.9%	Higher than the previous week, the national ILI rate, and the national baseline; comparable to Hawaii's historical baseline
Number of ILI clusters reported to HDOH	2	There has been a total of 10 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	11.3%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	4	

Laboratory Surveillance		
Percent of all specimens positive for influenza this week	17.8%	Higher than the previous week.
Percent of all specimens positive for influenza this season to date	9.6%	

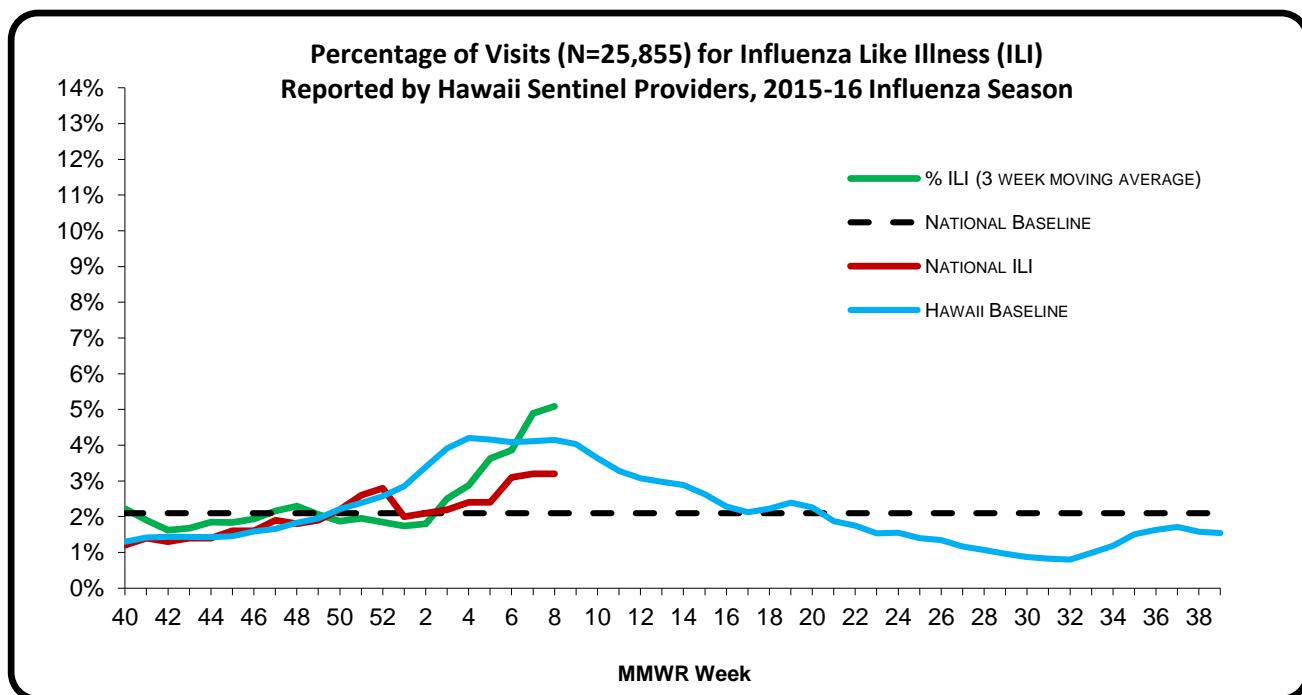
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 8** of the current influenza season:

- **5.9%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (3.2%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** Two clusters were reported to HDOH during week 8. Both clusters occurred at long-term care facilities on Oahu. One cluster had cases of influenza A and the other had cases of influenza A and B.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

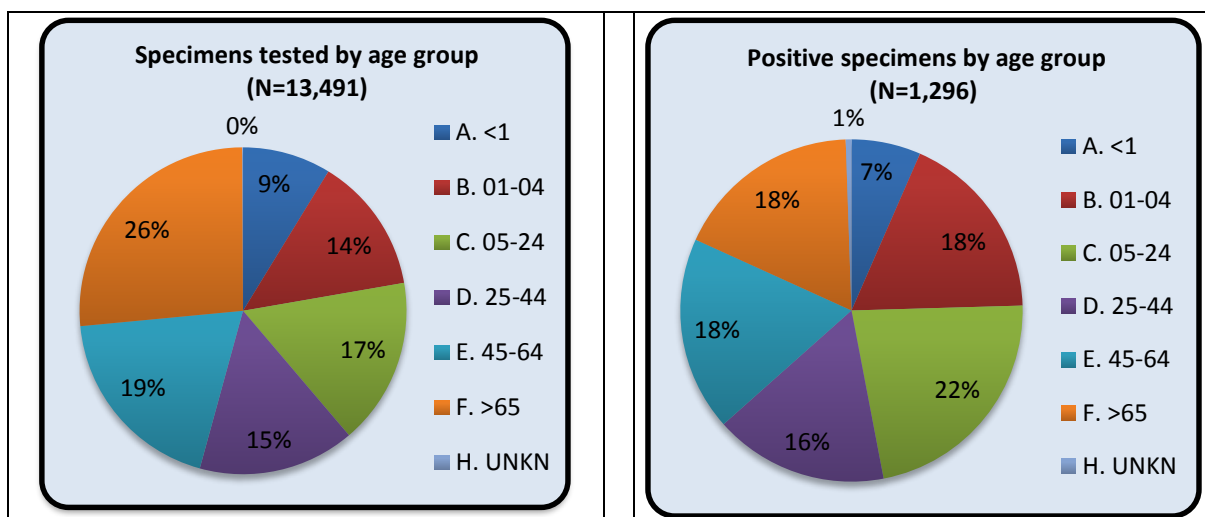
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 8 of the 2015-16 flu season:
  - A total of **1,142** specimens have been tested statewide for influenza viruses (positive: **203 [17.8%]**). (Season to date: **13,491** tested [**9.6%** positive])
    - 502 (44.0%) were screened only by rapid antigen tests with no confirmatory testing
    - 640 (56.0%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 939 (82.2%) were negative.
  - The 203 total positive cases included 153 (13.4%) cases of influenza A and 50 (4.4%) cases of influenza B (detected using any method). (Season to date: 7.8% influenza A and 1.7% influenza B)
    - Breakdown of influenza A cases:
      - 150 (98.0%) influenza A (un-subtyped). (Season to date: 87.7%)
      - 3 (2.0%) 2009 H1N1. (Season to date: 6.8%)
      - 0 (0.0%) influenza A (H3). (Season to date: 5.6%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

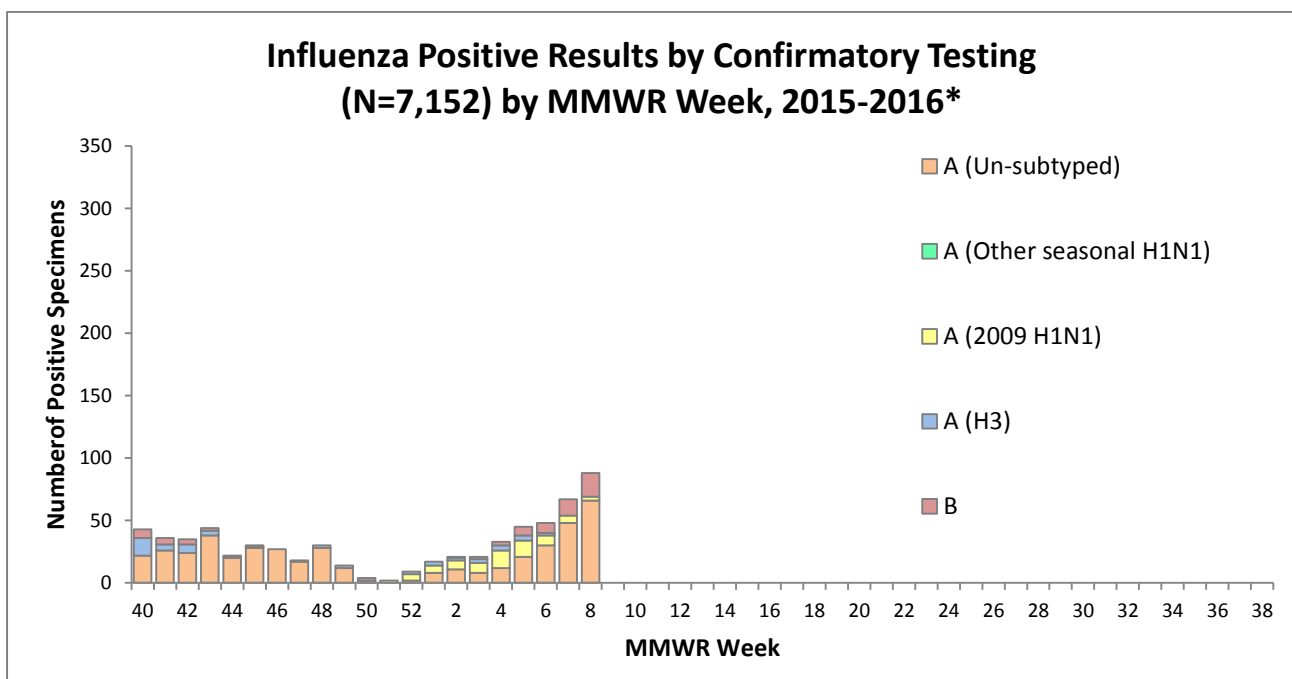
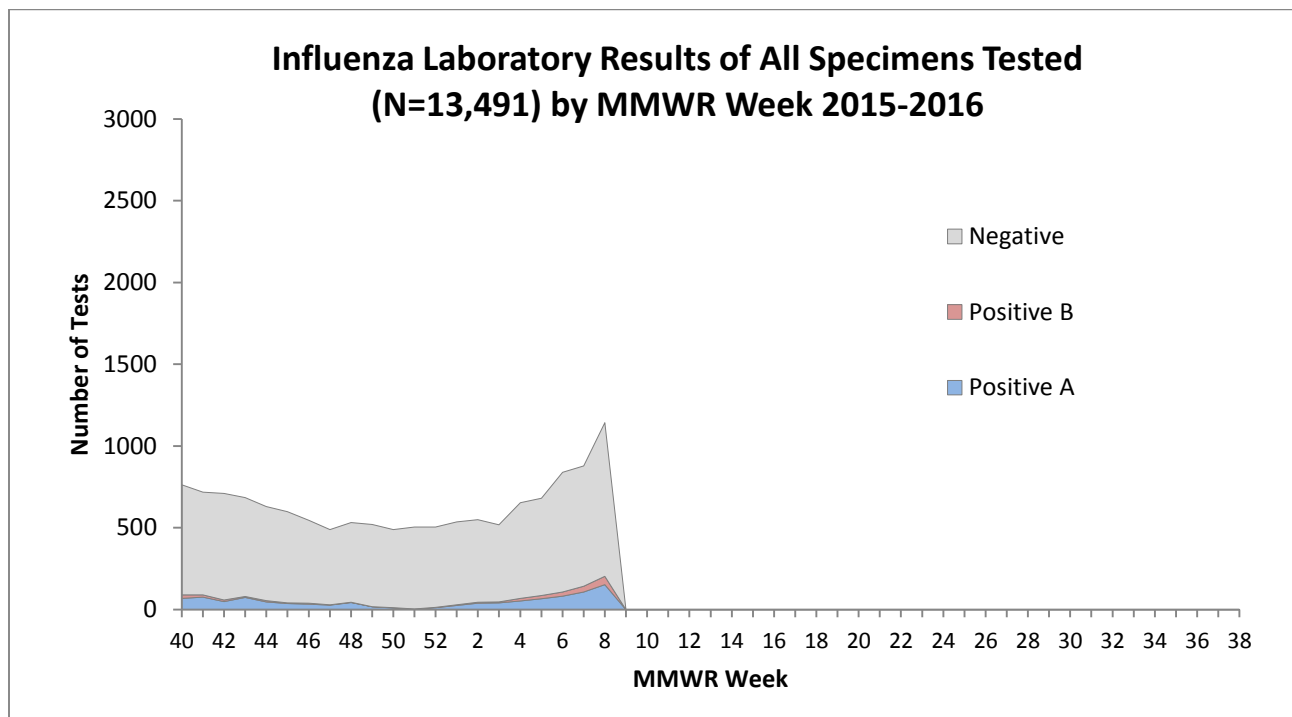


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 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.



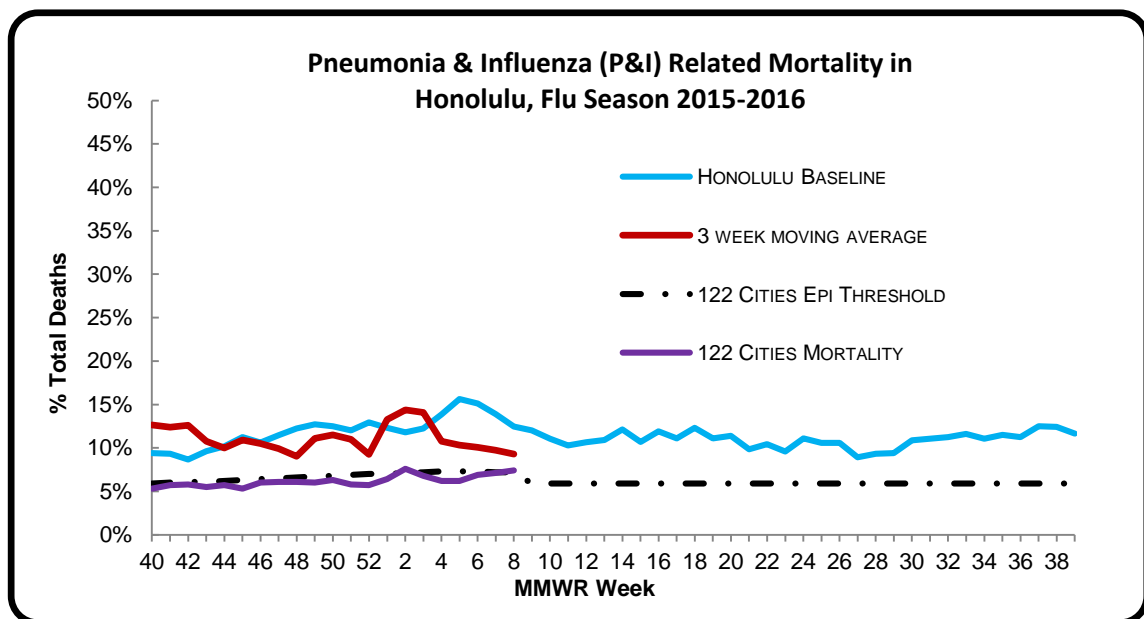
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 8** of the current influenza season:

- **11.3%** of all deaths that occurred in Honolulu during week 8 were related to pneumonia or influenza. For the current season (season to date: **11.3%**), there have been 1,686 deaths from any cause, 191 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (7.4%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.2%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, four influenza-associated pediatric deaths were reported to CDC during week 8. Two deaths were associated with an influenza A (H1N1)pdm09 virus and occurred during week 7. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 8 and one death was associated with an influenza B virus and occurred during week 7 (Season total: 18).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 20, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 9: FEBRUARY 28, 2016 – MARCH 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 9

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	6.3%	Higher than the previous week, 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 11 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.8%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	18.4%	Higher than the previous week. This indicates that 81.6% of the specimens have an unknown respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	10.3%	

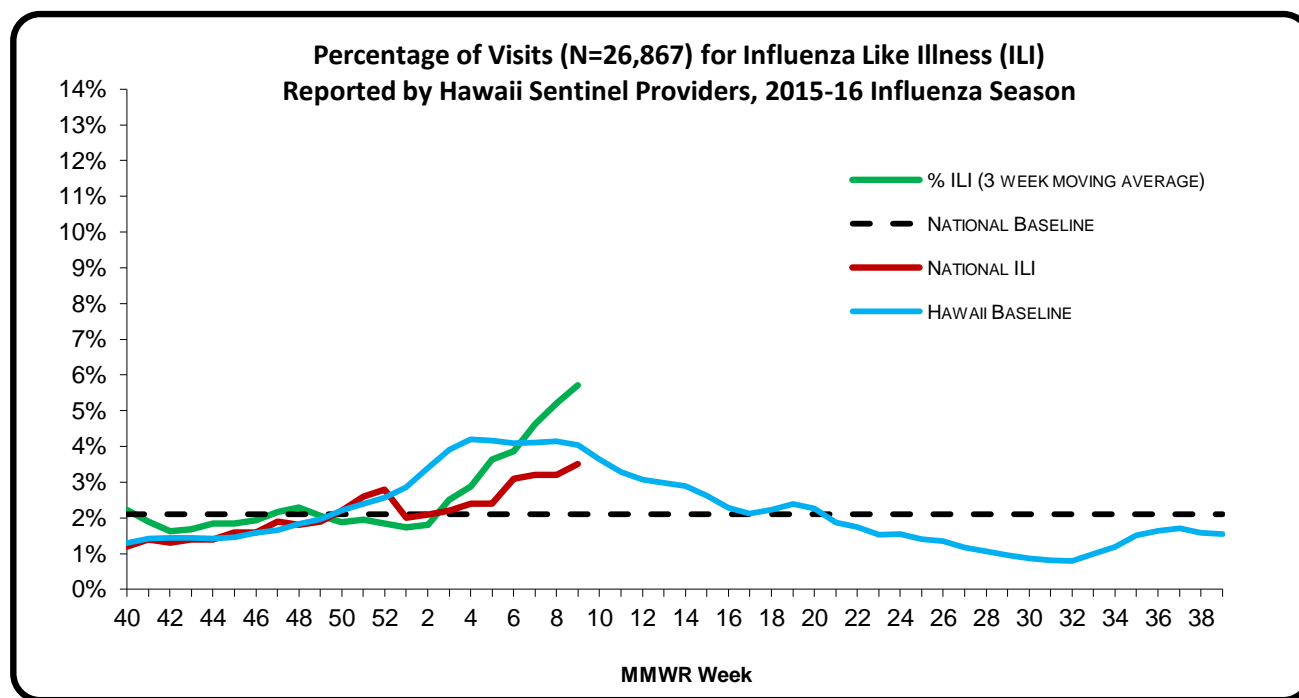
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 9** of the current influenza season:

- **6.3%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (3.5%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: One cluster was reported to HDOH during week 9. The cluster occurred at a long-term care facility and had cases of influenza A and B.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



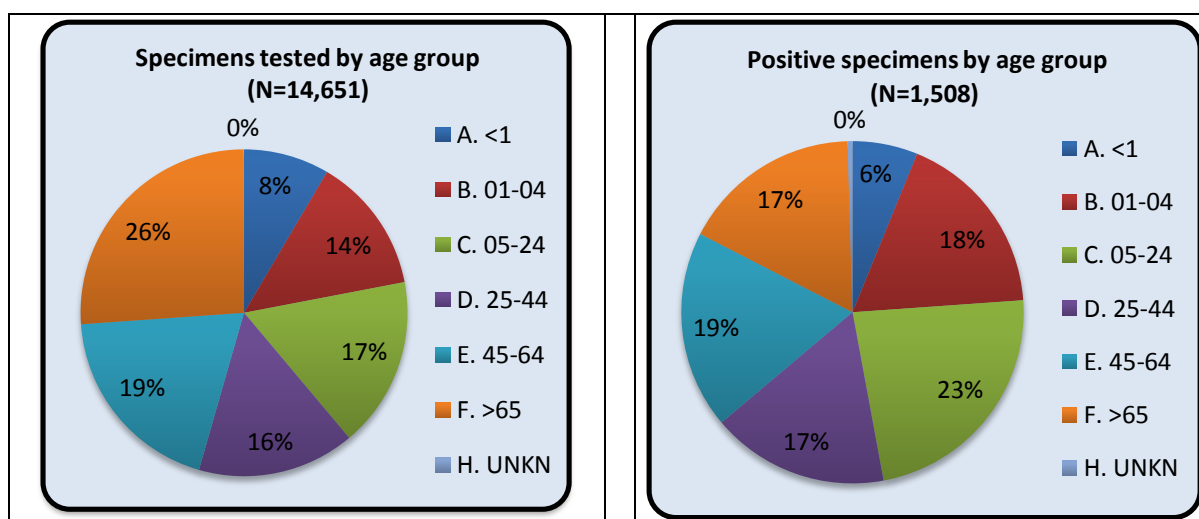
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 9 of the 2015-16 flu season:
  - A total of **1,152** specimens have been tested statewide for influenza viruses (positive: **212 [18.4%]**). (Season to date: **14,651** tested [**10.3%** positive])
    - 465 (40.4%) were screened only by rapid antigen tests with no confirmatory testing
    - 687 (59.6%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 940 (81.6%) were negative.
  - The 212 total positive cases included 159 (13.8%) cases of influenza A and 53 (4.6%) cases of influenza B (detected using any method). (Season to date: 8.3% influenza A and 2.0% influenza B)
    - Breakdown of influenza A cases:
      - 157 (98.7%) influenza A (un-subtyped). (Season to date: 88.6%)
      - 2 (1.3%) 2009 H1N1. (Season to date: 6.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 4.9%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

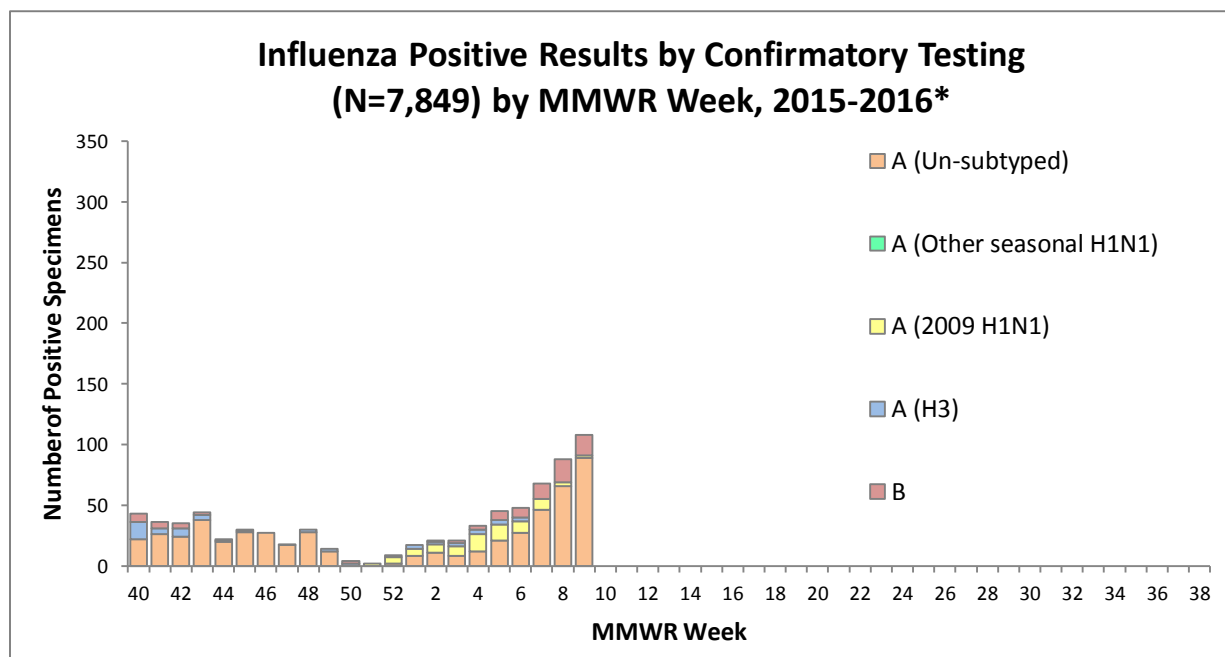
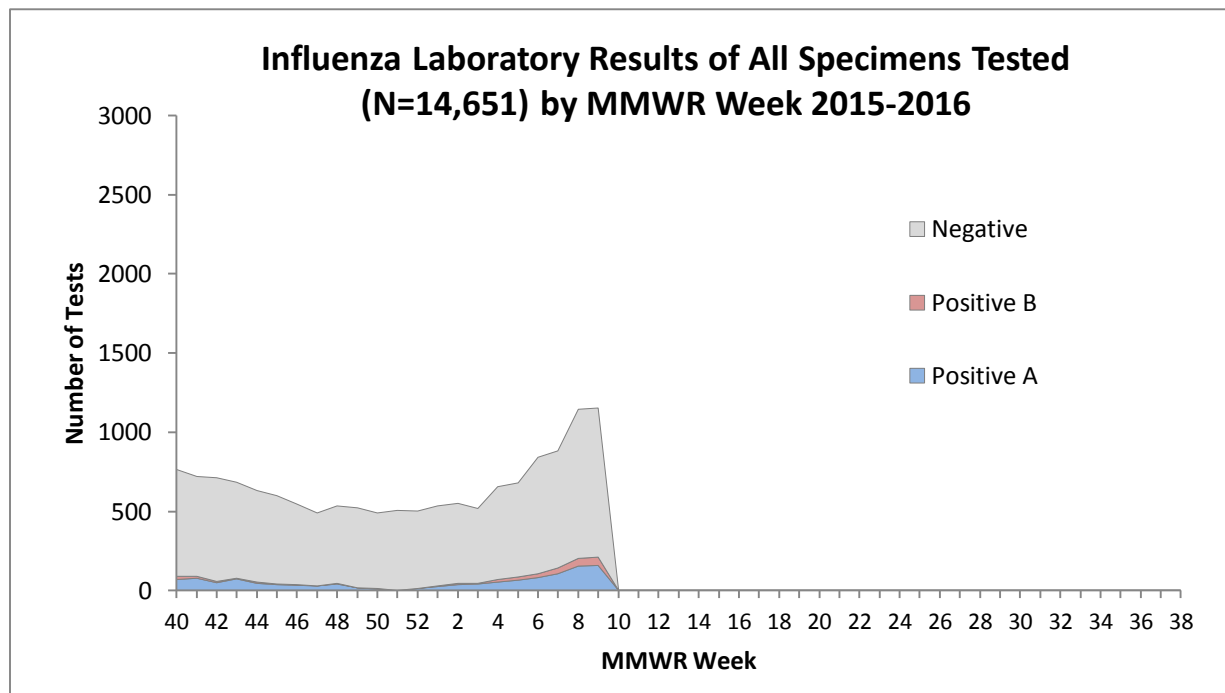


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

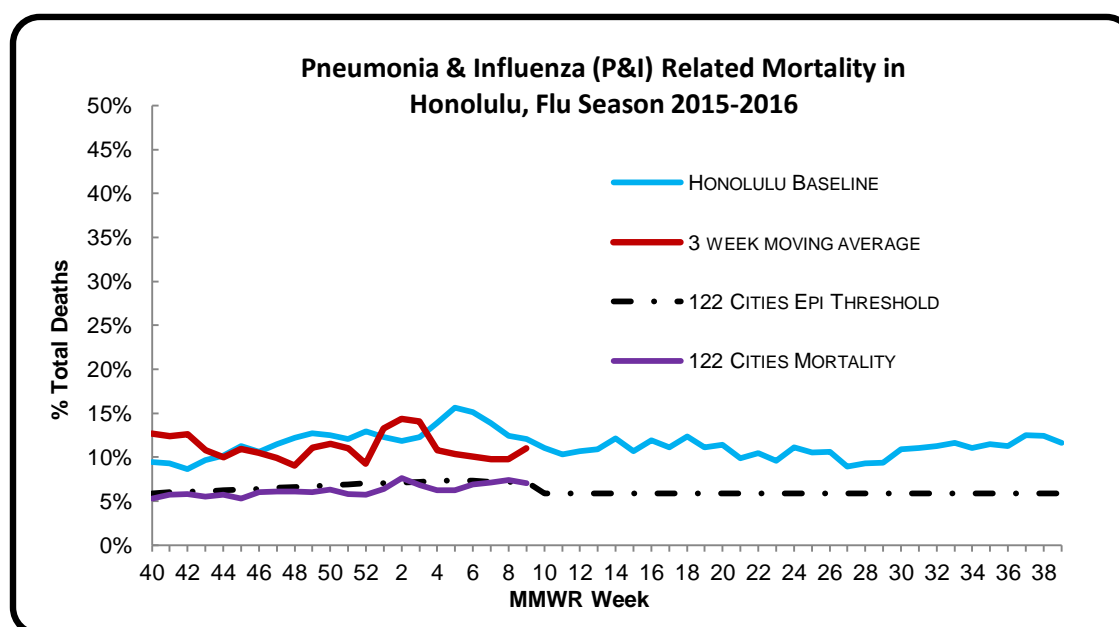
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																											
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40						
Adenovirus								X												X																																							
Coronavirus																	X	X																																									
Coxsackie Virus																																																											
Cytomegalovirus																																																											
Echovirus																																																											
Enterovirus																X					X																																						
Herpes Simplex Virus, Type 1																																																											
Metapneumovirus							X										X		X	X																																							
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X					X	X	X																																						
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X								X			X																																						
Rhinovirus				X												X	X				X																																						
Varicella Zoster Virus																																																											
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X																																					
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X																																									
Influenza A (Other seasonal H1)																																																											
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																					
Influenza B	X	X	X	X	X	X					X				X	X	X	X	X	X	X	X																																					

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 9** of the current influenza season:

- *10.8% of all deaths that occurred in Honolulu during week 9 were related to pneumonia or influenza. For the current season (season to date: 11.3%), there have been 1,788 deaths from any cause, 202 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (7.0%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.2%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 9. One death was associated with an influenza A (H1N1)pdm09 virus and occurred during week 6 and one death was associated with an influenza B virus and occurred during week 8 (Season total: 20).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 25, 2016**. Since the last update, China has reported 28 laboratory confirmed cases of H7N9. The onsets range from December 21, 2015 to January 25, 2016. The majority of cases reported exposure to live poultry or live poultry markets. Hong Kong also reported a laboratory confirmed case of H7N9 whose onset was on February 8, 2016 and had known exposure to a live poultry market. The case was admitted to the hospital, discharged after 4 days, then readmitted for isolation after a specimen, previously identified as negative, was re-tested and found to be positive for A(H7N9) virus. The case is currently in stable condition. China also reported one case of H9N2. His onset is unknown, but he was admitted to a hospital on February 9, 2016 for chronic underlying conditions. He remains hospitalized and epidemiological investigations are ongoing.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 10: MARCH 6, 2016 – MARCH 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 10

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	9.0%	Higher than the previous week, 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 12 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.7%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	8	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	25.1%	Higher than the previous week. This indicates that 74.9% of the specimens have another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	11.7%	

<sup>1</sup> 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.

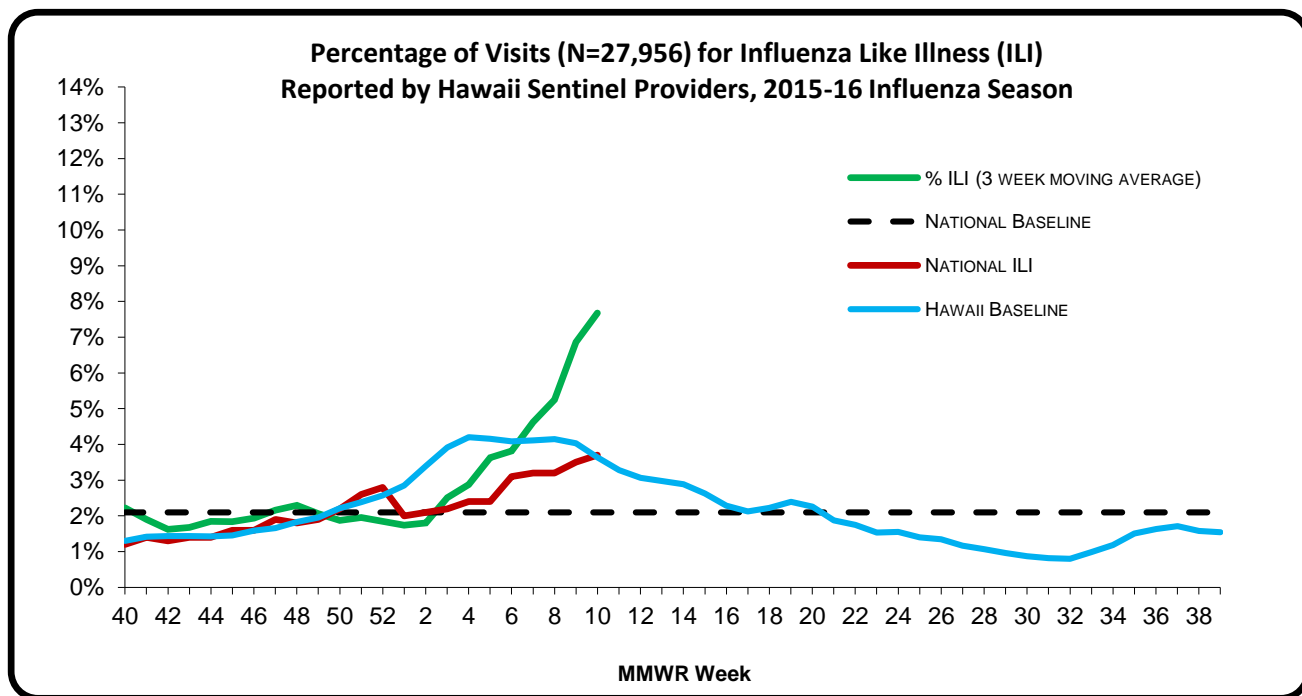


## INFLUENZA SURVEILLANCE

**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 10** of the current influenza season:

- **9.0%** (season to date: **2.7%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (3.7%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: One cluster was reported to HDOH during week 10. The cluster occurred at a long-term care facility on Big Island and had cases of influenza A.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



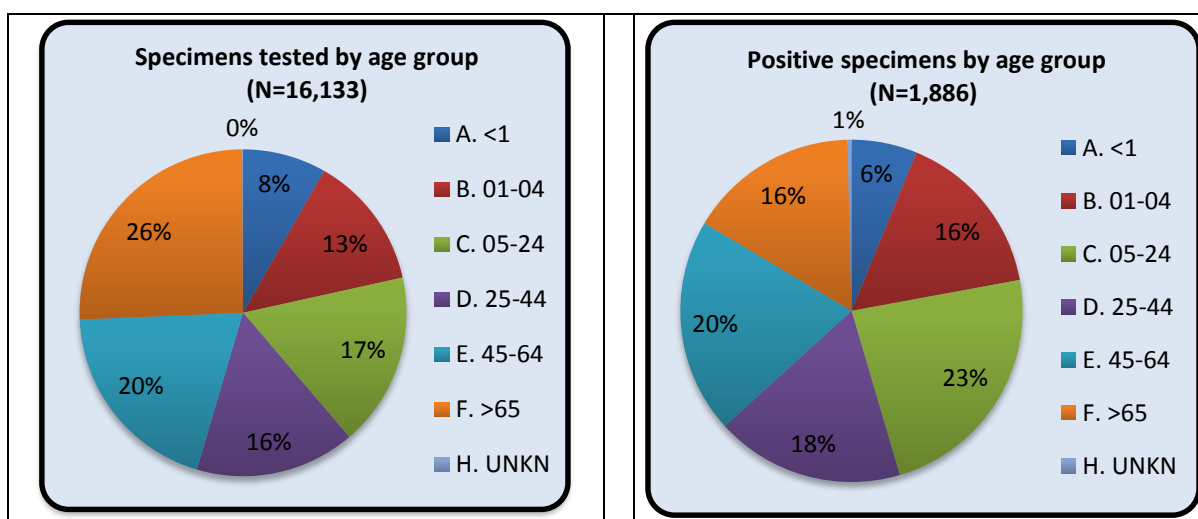
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 10 of the 2015-16 flu season:
  - A total of **1,472** specimens have been tested statewide for influenza viruses (positive: **369 [25.1%]**). (Season to date: **16,133** tested [**11.7%** positive])
    - 651 (44.2%) were screened only by rapid antigen tests with no confirmatory testing
    - 821 (55.8%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 1,103 (74.9%) were negative.
  - The 369 total positive cases included 291 (19.8%) cases of influenza A and 78 (5.3%) cases of influenza B (detected using any method). (Season to date: 9.4% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 286 (98.3%) influenza A (un-subtyped). (Season to date: 87.8%)
      - 5 (1.7%) 2009 H1N1. (Season to date: 7.7%)
      - 0 (0.0%) influenza A (H3). (Season to date: 4.5%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

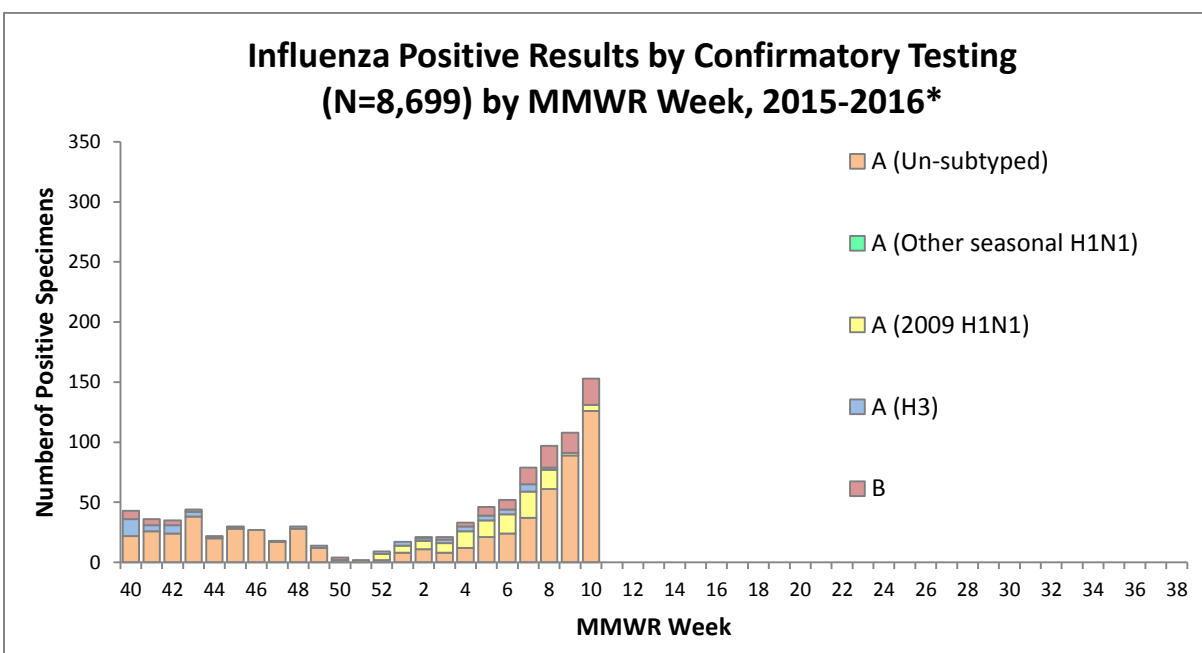
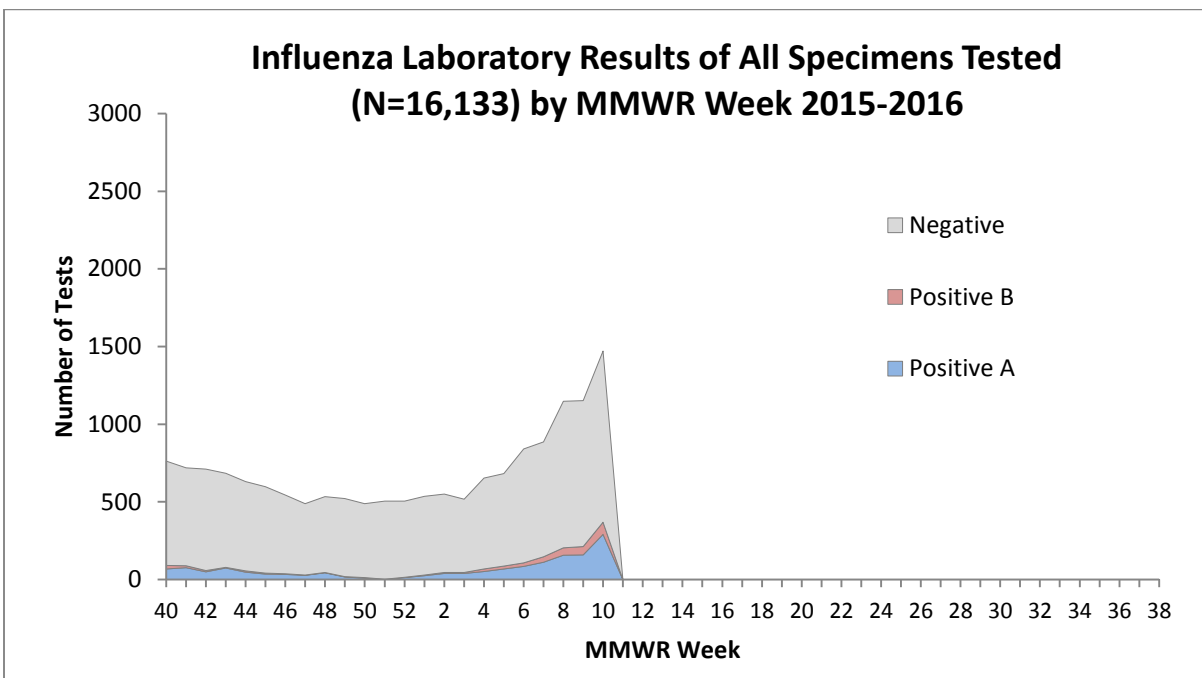
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

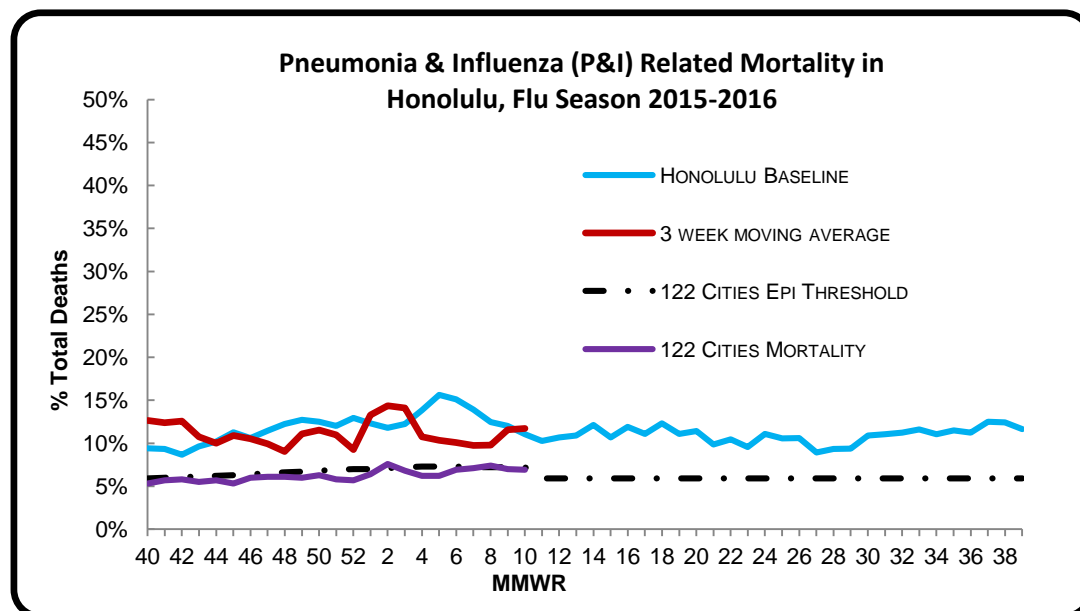
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																											
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40						
Adenovirus								X												X			X																																				
Coronavirus																		X		X																																							
Coxsackie Virus																																																											
Cytomegalovirus																																																											
Echovirus																																																											
Enterovirus																	X					X																																					
Herpes Simplex Virus, Type 1																																																											
Metapneumovirus							X										X		X		X																																						
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X					X	X	X		X																																				
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X								X			X																																						
Rhinovirus				X													X	X			X																																						
Varicella Zoster Virus																																																											
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X																																			
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X																																									
Influenza A (Other seasonal H1)																																																											
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																			
Influenza B	X	X	X	X	X	X					X						X	X	X	X	X	X	X	X																																			

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 10** of the current influenza season:

- *12.7% of all deaths that occurred in Honolulu during week 10 were related to pneumonia or influenza. For the current season (season to date: 11.4%), there have been 1,859 deaths from any cause, 211 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.9%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.2%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, eight influenza-associated pediatric deaths were reported to CDC during week 10. Five deaths were associated with an influenza A (2009 H1N1) virus and occurred during weeks 8 and 9 and three deaths were associated with an influenza A virus for which no subtyping was performed and occurred during weeks 8, 9, and 10. (Season total: 28).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 25, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 11: MARCH 13, 2016 – MARCH 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 11

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	7.0%	Lower than the previous week; Higher than 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 12 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	17.2%	Comparable to the historical baseline for Hawaii; Higher than the 122-cities average and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	21.3%	Lower than the previous week. This indicates that 78.7% of the specimens have another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	12.5%	

<sup>1</sup> 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.

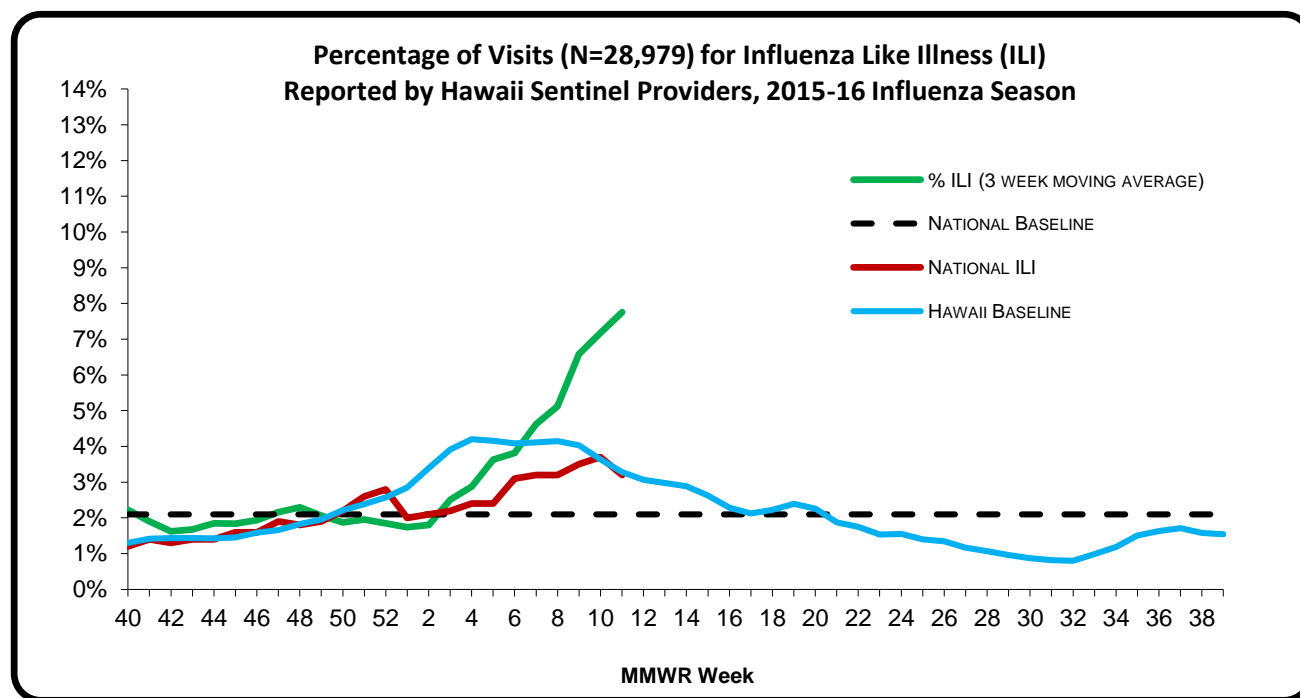


## INFLUENZA SURVEILLANCE

**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 11** of the current influenza season:

- **7.0%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (3.2%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 11.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

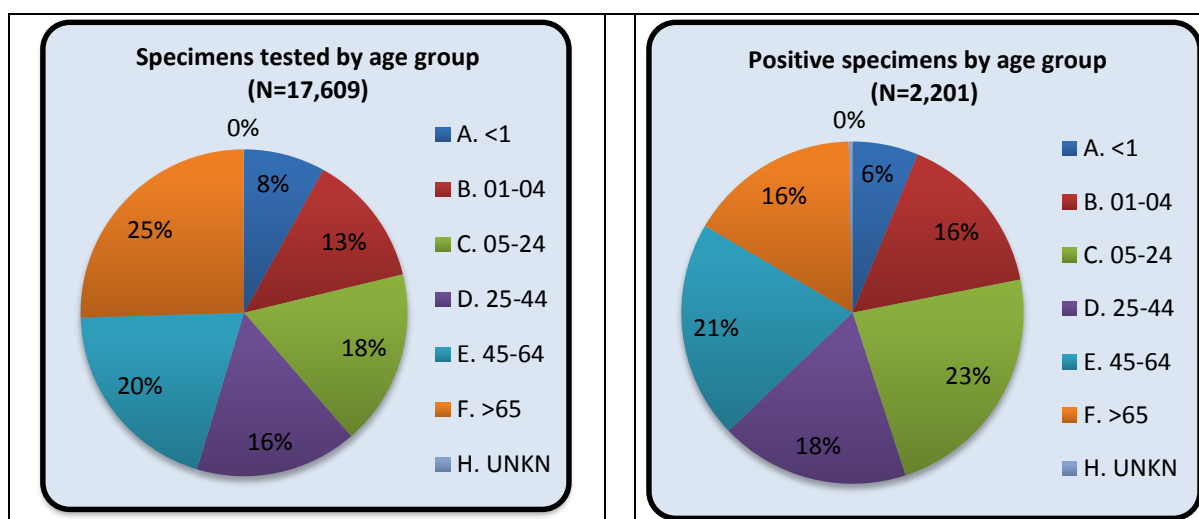
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 11 of the 2015-16 flu season:
  - A total of **1,471** specimens have been tested statewide for influenza viruses (positive: **313 [21.3%]**). (Season to date: **17,609** tested [**12.5%** positive])
    - 540 (36.7%) were screened only by rapid antigen tests with no confirmatory testing
    - 931 (63.3%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 1,158 (78.7%) were negative.
  - The 313 total positive cases included 241 (16.4%) cases of influenza A and 72 (4.9%) cases of influenza B (detected using any method). (Season to date: 10.0% influenza A and 2.5% influenza B)
    - Breakdown of influenza A cases:
      - 235 (97.5%) influenza A (un-subtyped). (Season to date: 88.7%)
      - 6 (2.5%) 2009 H1N1. (Season to date: 7.4%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.9%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

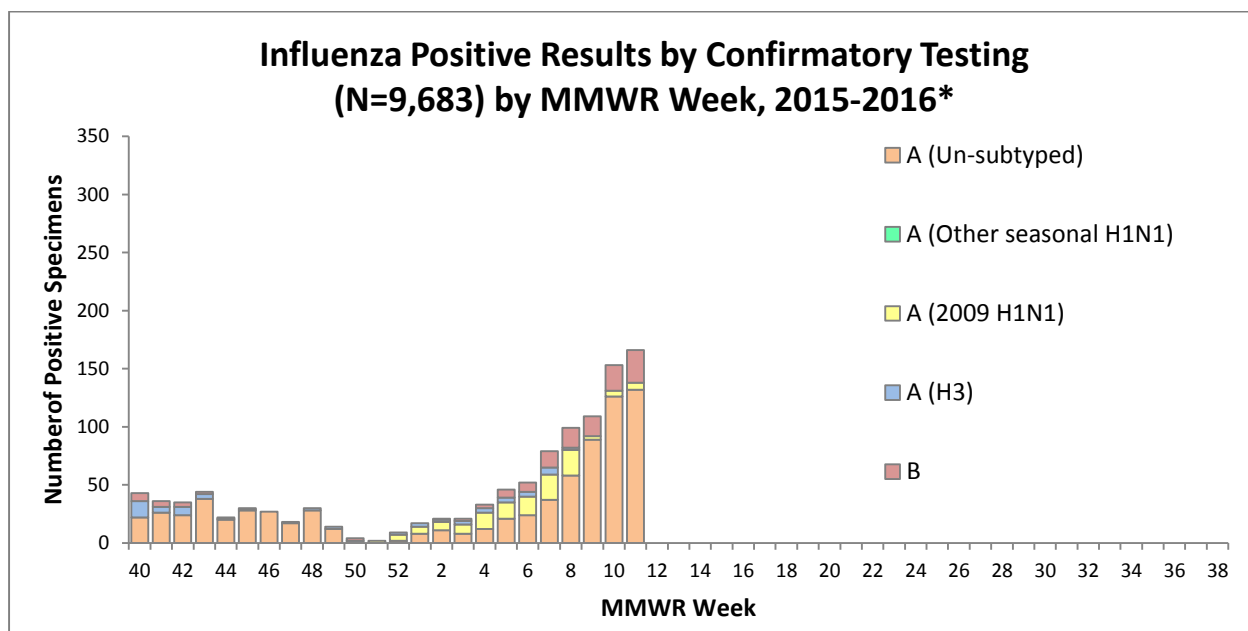
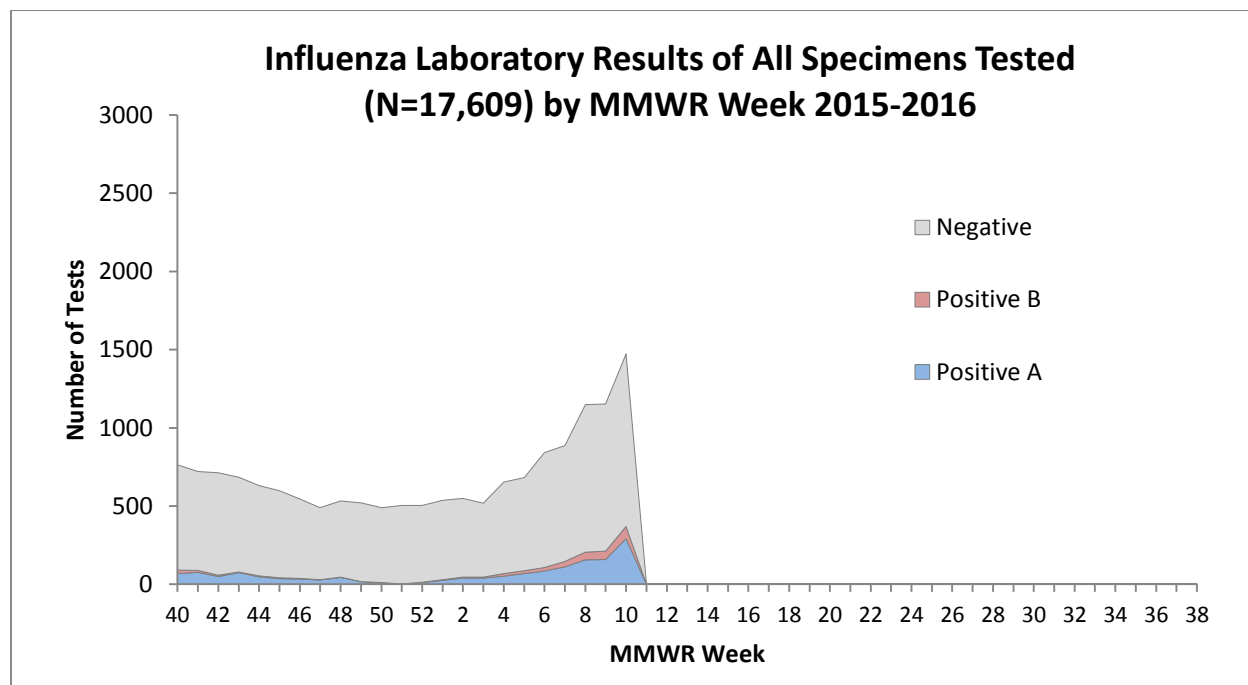
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

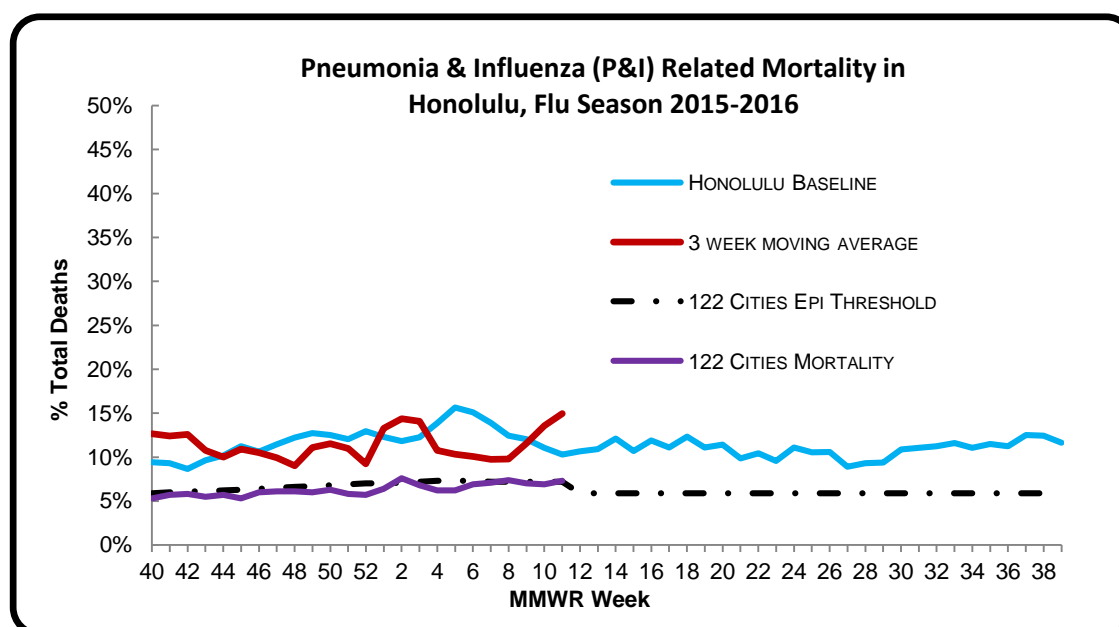
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																							
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Adenovirus								X												X			X																																
Coronavirus																	X	X																																					
Coxsackie Virus																																																							
Cytomegalovirus																																																							
Echovirus																																																							
Enterovirus																X					X																																		
Herpes Simplex Virus, Type 1																																																							
Metapneumovirus							X										X		X	X																																			
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X	X		X	X																																
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X																																			
Rhinovirus				X													X	X		X																																			
Varicella Zoster Virus																																																							
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X																															
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X																																					
Influenza A (Other seasonal H1)																																																							
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																														
Influenza B	X	X	X	X	X	X					X				X	X	X	X	X	X	X	X	X	X	X																														

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 11** of the current influenza season:

- *17.2% of all deaths that occurred in Honolulu during week 11 were related to pneumonia or influenza. For the current season (season to date: 11.6%), there have been 1,946 deaths from any cause, 226 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (7.3%) (i.e., outside the 95% confidence interval) and the epidemic threshold (7.2%) (i.e., outside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 11. One death was associated with an influenza A (H3) virus and occurred during week 11 and one death was associated with an influenza A 2009 H1N1 virus and occurred during week 9. (Season total: 30).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 25, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		





# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 12: MARCH 20, 2016 – MARCH 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 12

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	5.6%	Lower than the previous week; Higher than 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 13 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.6%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	3	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	20.3%	Lower than the previous week. This indicates that 79.7% of the specimens have another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.1%	

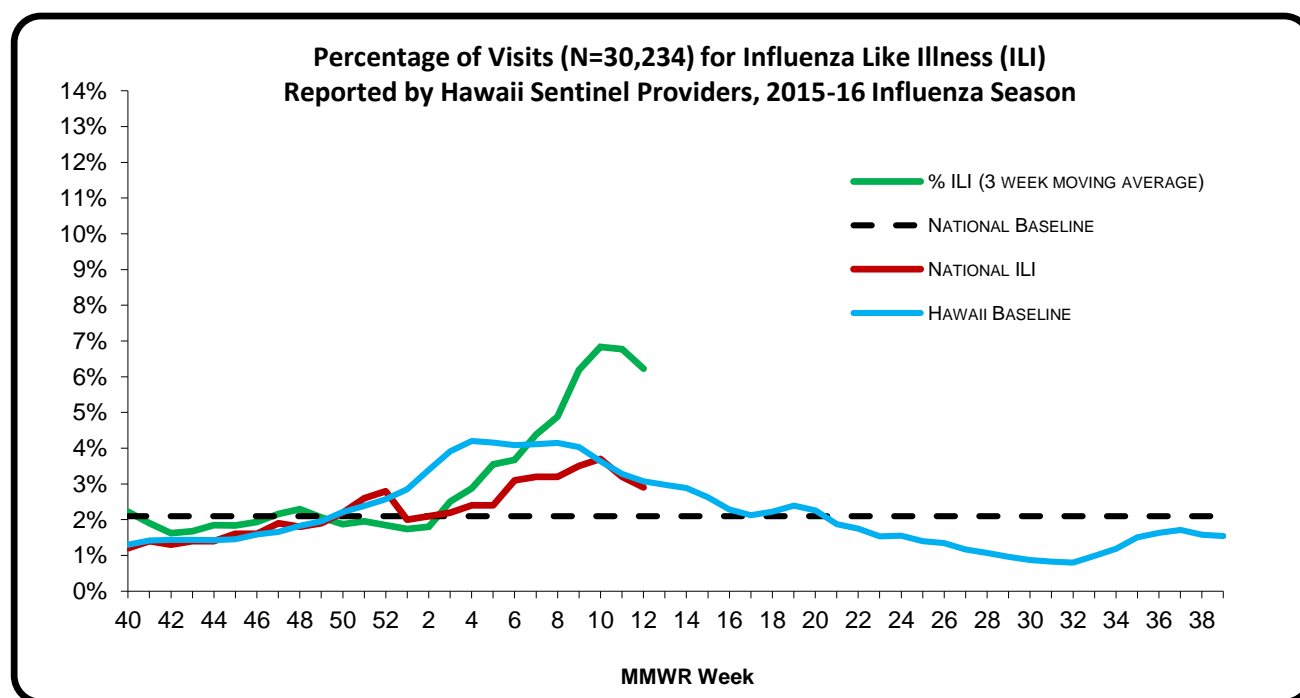
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 12** of the current influenza season:

- **5.6%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (2.9%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: One cluster was reported to HDOH during week 12. The cluster occurred at a nursing home on Oahu and had confirmed cases of influenza A.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

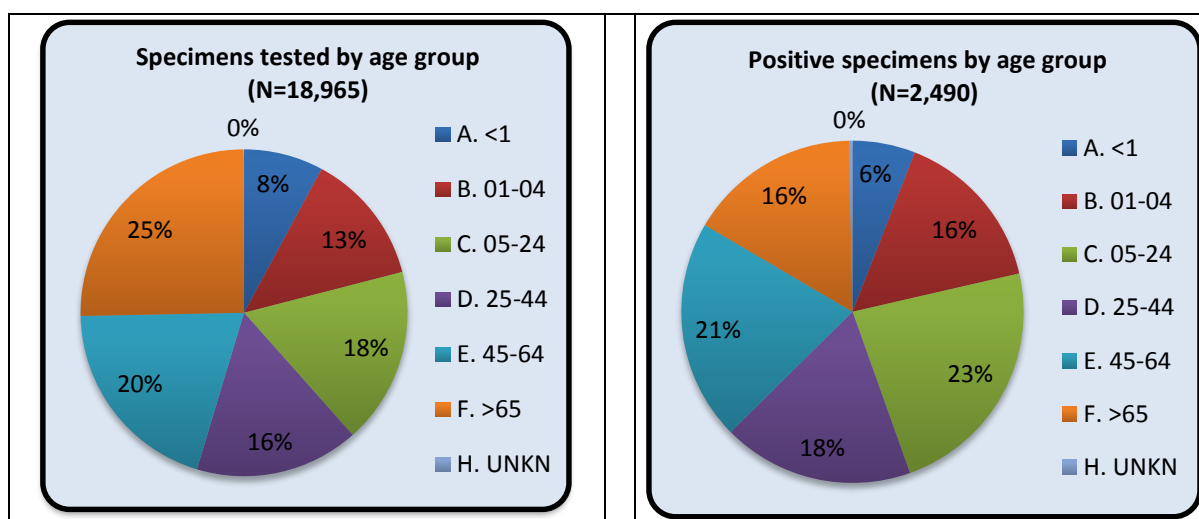
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 12 of the 2015-16 flu season:
  - A total of **1,347** specimens have been tested statewide for influenza viruses (positive: **274 [20.3%]**). (Season to date: **18,965** tested [**13.1%** positive])
    - 572 (42.5%) were screened only by rapid antigen tests with no confirmatory testing
    - 775 (57.5%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 1,073 (79.7%) were negative.
  - The 274 total positive cases included 210 (15.6%) cases of influenza A and 64 (4.8%) cases of influenza B (detected using any method). (Season to date: 10.5% influenza A and 2.6% influenza B)
    - Breakdown of influenza A cases:
      - 208 (99.0%) influenza A (un-subtyped). (Season to date: 88.4%)
      - 2 (1.0%) 2009 H1N1. (Season to date: 7.9%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.7%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

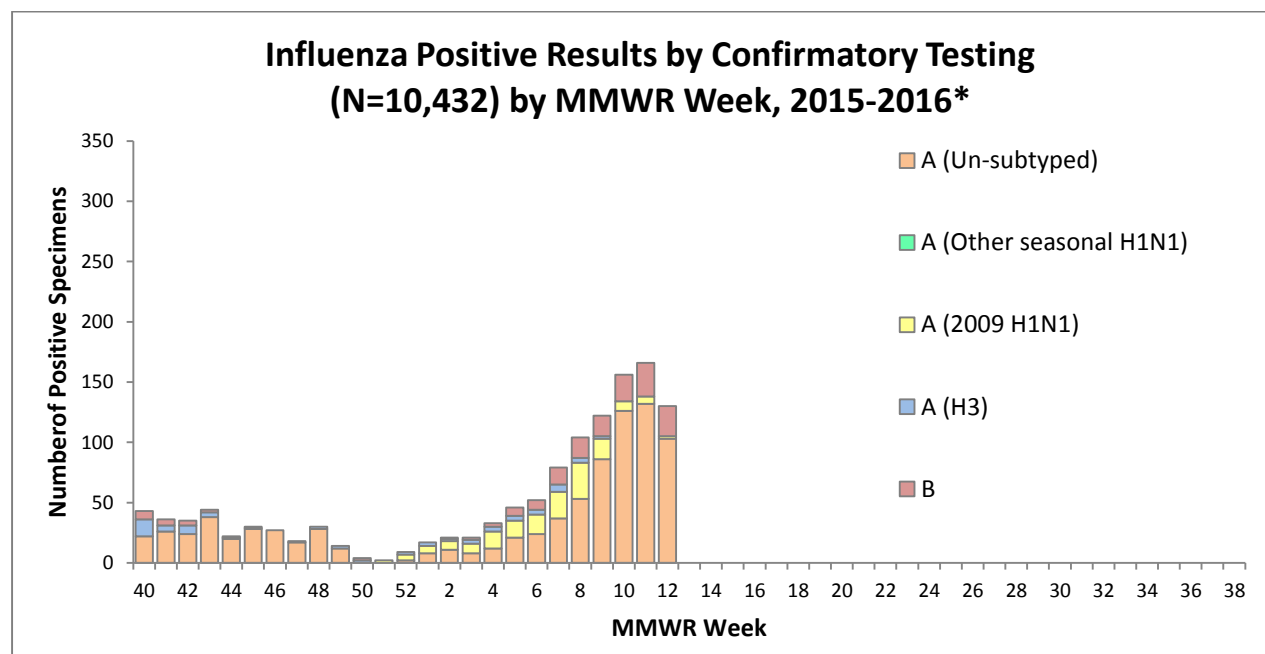
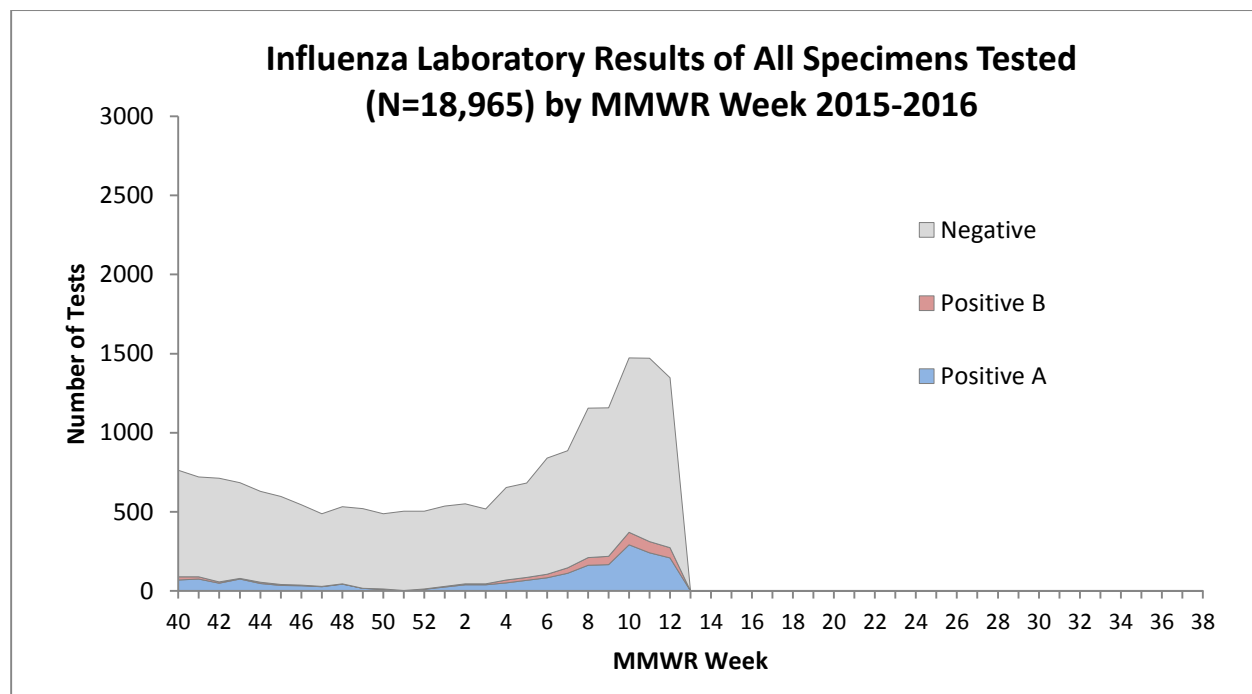
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

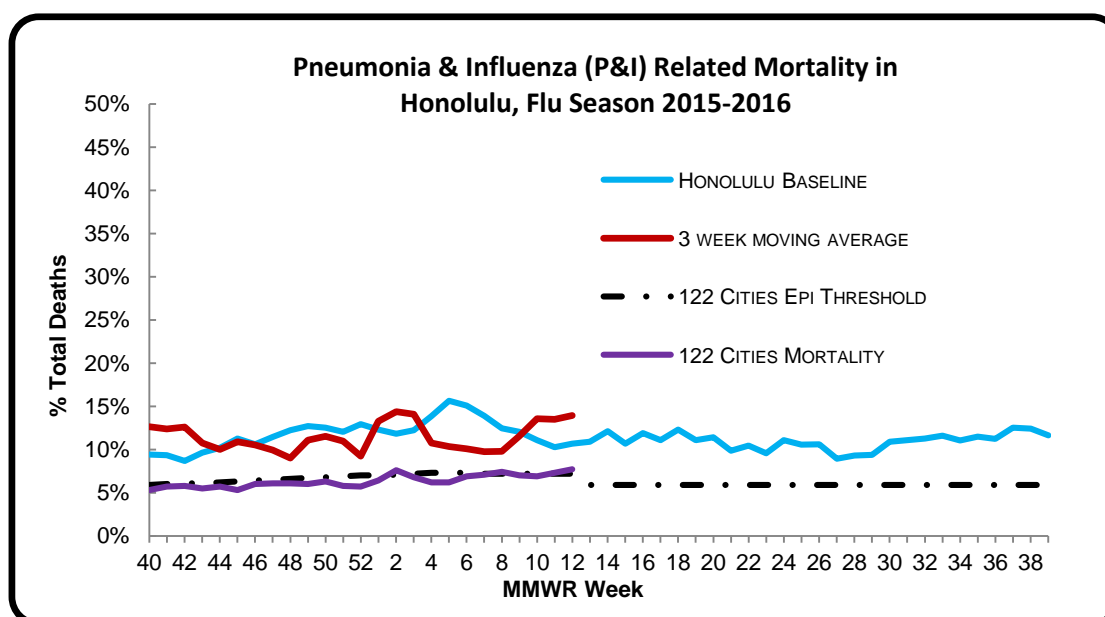
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																											
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40						
Adenovirus							X												X		X																																						
Coronavirus																X	X																																										
Coxsackie Virus																																																											
Cytomegalovirus																																																											
Echovirus																																																											
Enterovirus															X				X																																								
Herpes Simplex Virus, Type 1																																																											
Metapneumovirus							X									X		X	X																																								
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X	X		X	X																																				
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X																																							
Rhinovirus				X												X	X		X																																								
Varicella Zoster Virus																																																											
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X																																		
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X																																										
Influenza A (Other seasonal H1)																																																											
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																	
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X																																		

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 12** of the current influenza season:

- **10.6%** of all deaths that occurred in Honolulu during week 12 were related to pneumonia or influenza. For the current season (season to date: **11.6%**), there have been 2,059 deaths from any cause, 238 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (7.7%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.2%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, three influenza-associated pediatric deaths were reported to CDC during week 12. One death was associated with an influenza A 2009 H1N1 virus and occurred during week 11 and one death was associated with an influenza A virus for which no subtyping was performed and occurred during week 11. One death was associated with an influenza B virus and occurred during week 8. (Season total: 33).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **February 25, 2016**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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



**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 13: MARCH 27, 2016 – APRIL 2, 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 13

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	4.3%	Lower than the previous week; Comparable to Hawaii's historical baseline; Higher than the national ILI rate and the national baseline.
Number of ILI clusters reported to HDOH	1	There has been a total of 14 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	11.8%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	7	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	21.6%	Lower than the previous week. This indicates that many, if not all, of the 78.4% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.7%	

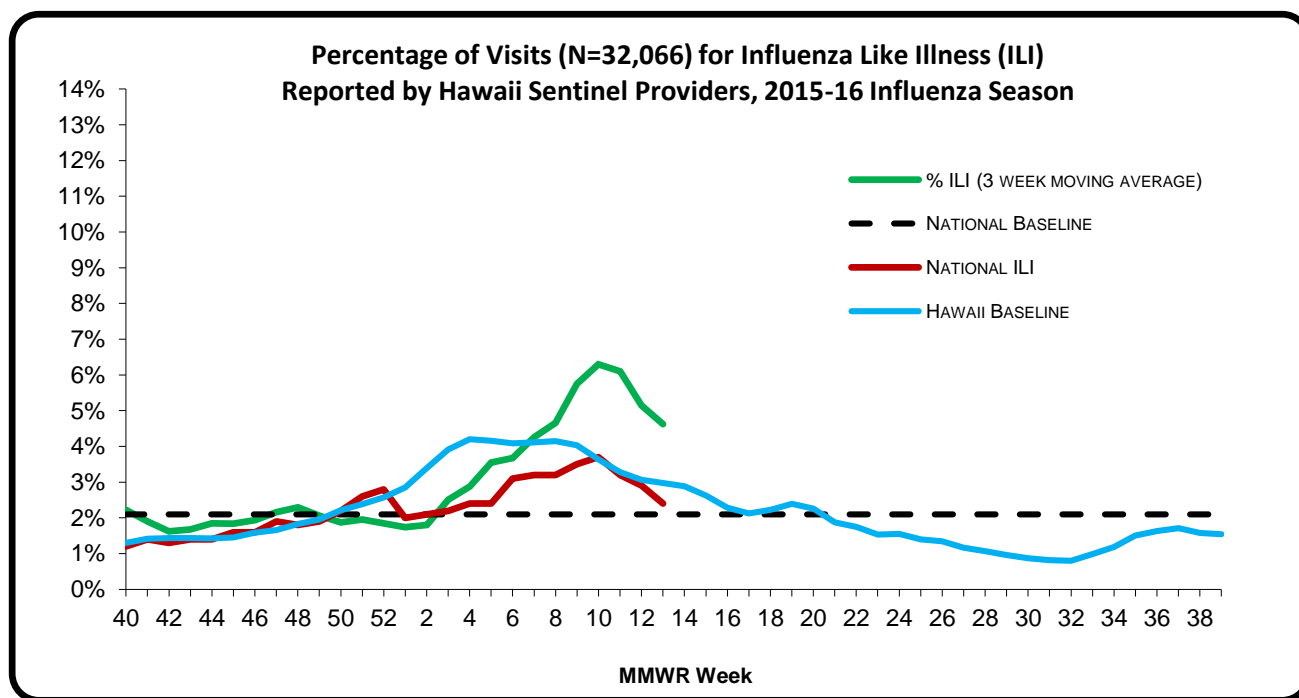
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 13** of the current influenza season:

- **4.3%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (2.4%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: One cluster was reported to HDOH during week 13. The cluster occurred at a school on Oahu and had an unknown etiology.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

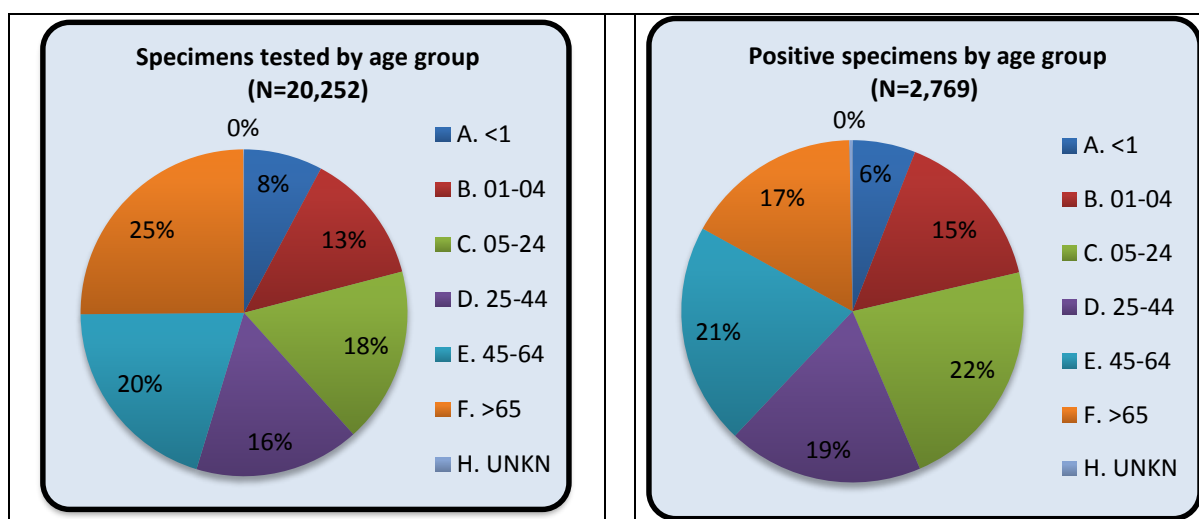
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 13 of the 2015-16 flu season:
  - A total of 1,283 specimens have been tested statewide for influenza viruses (positive: 277 [21.6%]). (Season to date: 20,252 tested [13.7% positive])
    - 497 (38.7%) were screened only by rapid antigen tests with no confirmatory testing
    - 786 (61.3%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 1,006 (78.4%) were negative.
  - The 277 total positive cases included 213 (16.6%) cases of influenza A and 64 (5.0%) cases of influenza B (detected using any method). (Season to date: 10.9% influenza A and 2.8% influenza B)
    - Breakdown of influenza A cases:
      - 212 (99.5%) influenza A (un-subtyped). (Season to date: 89.3%)
      - 1 (0.5%) 2009 H1N1. (Season to date: 7.4%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

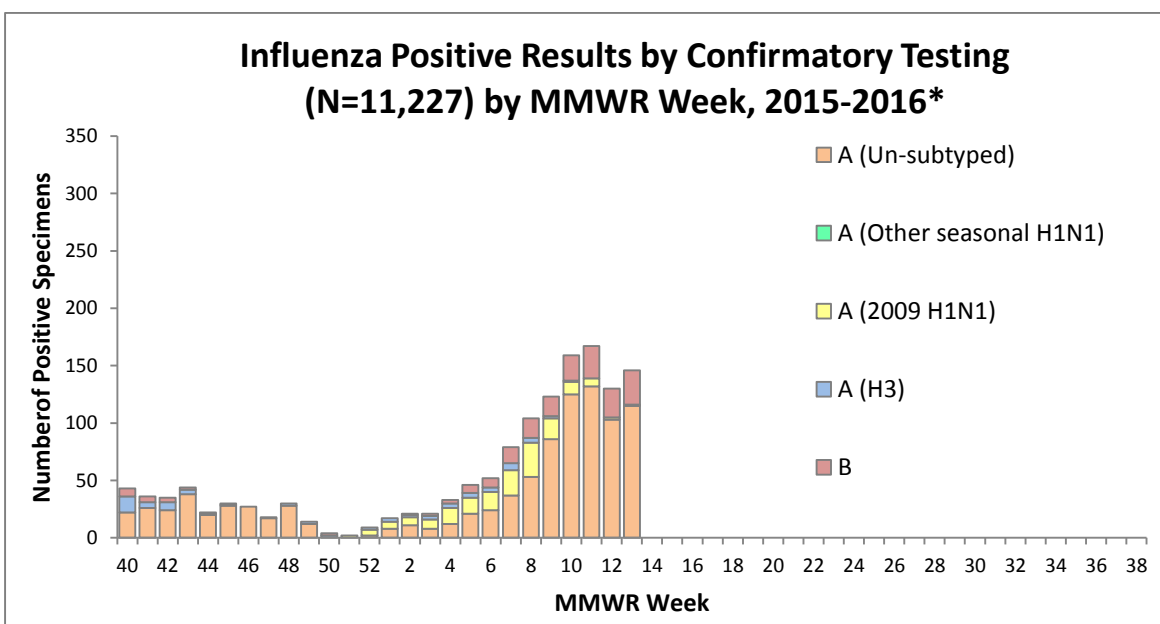
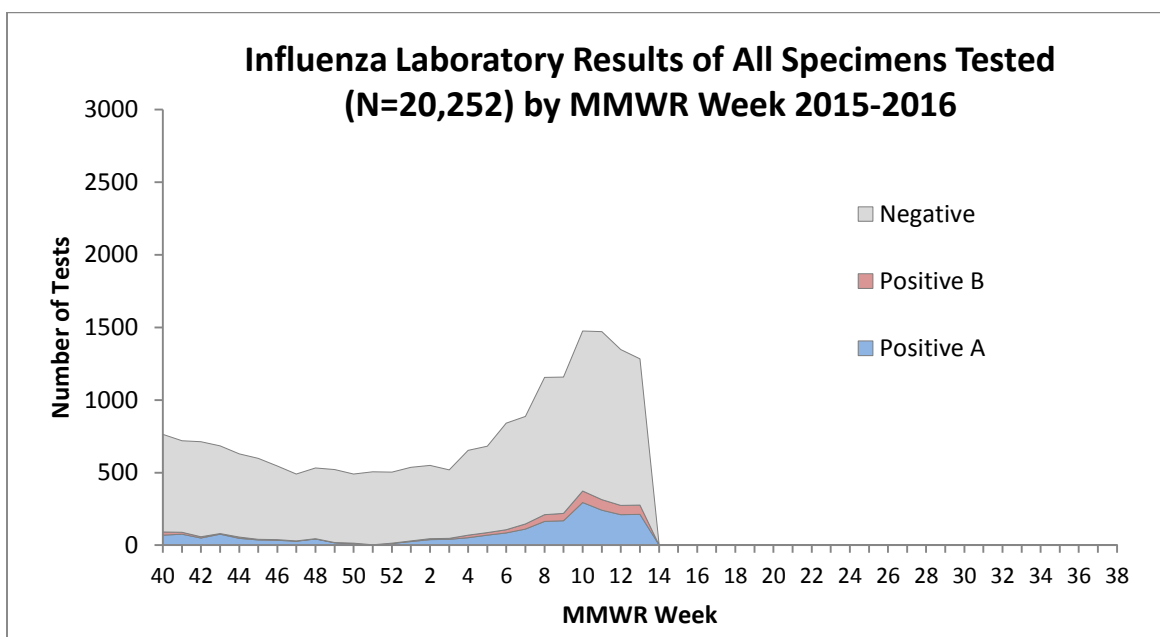
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

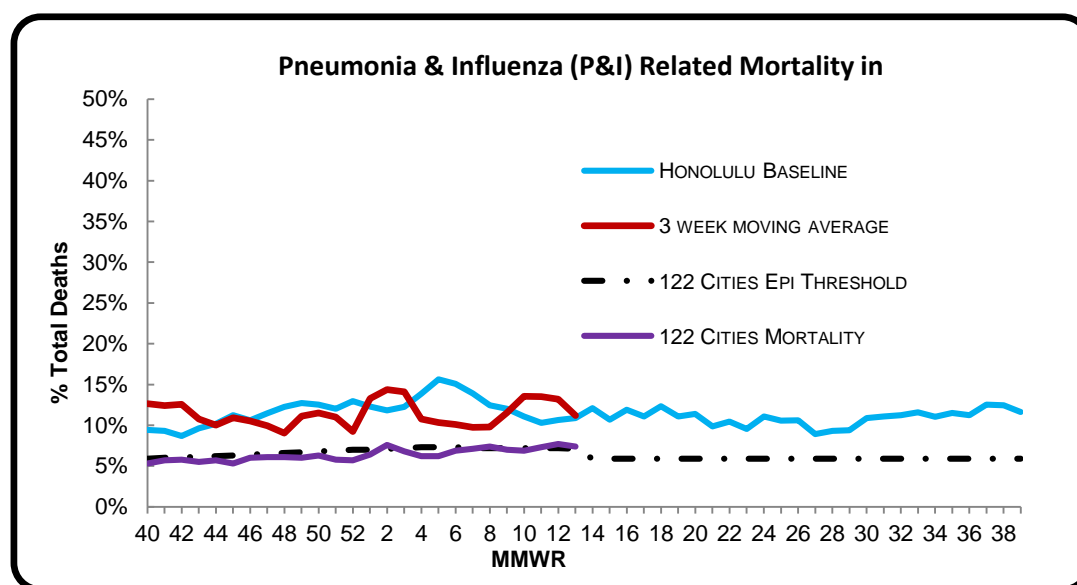
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																										
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40					
Adenovirus							X												X			X																																				
Coronavirus																	X	X							X																																	
Coxsackie Virus																																																										
Cytomegalovirus																																																										
Echovirus																																																										
Enterovirus																X				X						x																																
Herpes Simplex Virus, Type 1																																																										
Metapneumovirus						X										X		X	X						X																																	
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X	X		X	X	X																																		
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X						X																																
Rhinovirus				X												X	X			X						X																																
Varicella Zoster Virus																																																										
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X																																								
Influenza A (Other seasonal H1)																																																										
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X																																

**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 13** of the current influenza season:

- **11.8%** of all deaths that occurred in Honolulu during week 13 were related to pneumonia or influenza. For the current season (season to date: **11.6%**), there have been 2,144 deaths from any cause, 248 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (7.4%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.1%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, seven influenza-associated pediatric deaths were reported to CDC during week 13. Two deaths were associated with 2009 H1N1 influenza A virus and occurred during weeks 11 and 12. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 11. Four deaths were associated with an influenza B virus and occurred during weeks 5, 11, and 12. (Season total: 40).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 **April 4, 2016**. Five new human H5 influenza cases were reported to WHO since the last update: 4 cases of H5N1 in Egypt and 1 case of H5N6 in China. Additionally, 30 new laboratory confirmed cases of H7 influenza were reported to WHO since the last update. China reported 29 laboratory confirmed cases of H7N9; the majority of the cases (83%) reported exposure to poultry, while the rest had unknown exposure history. Hong Kong reported the remaining case of H7N9. The case had exposure history of slaughtered poultry in a live poultry market; she was hospitalized, but is now in stable condition.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 14: APRIL 3, 2016 – APRIL 9, 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 14

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	5.0%	Higher than the previous week, 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 14 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.1%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	10	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	16.6%	Lower than the previous week. This indicates that many, if not all, of the 83.4% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.6%	

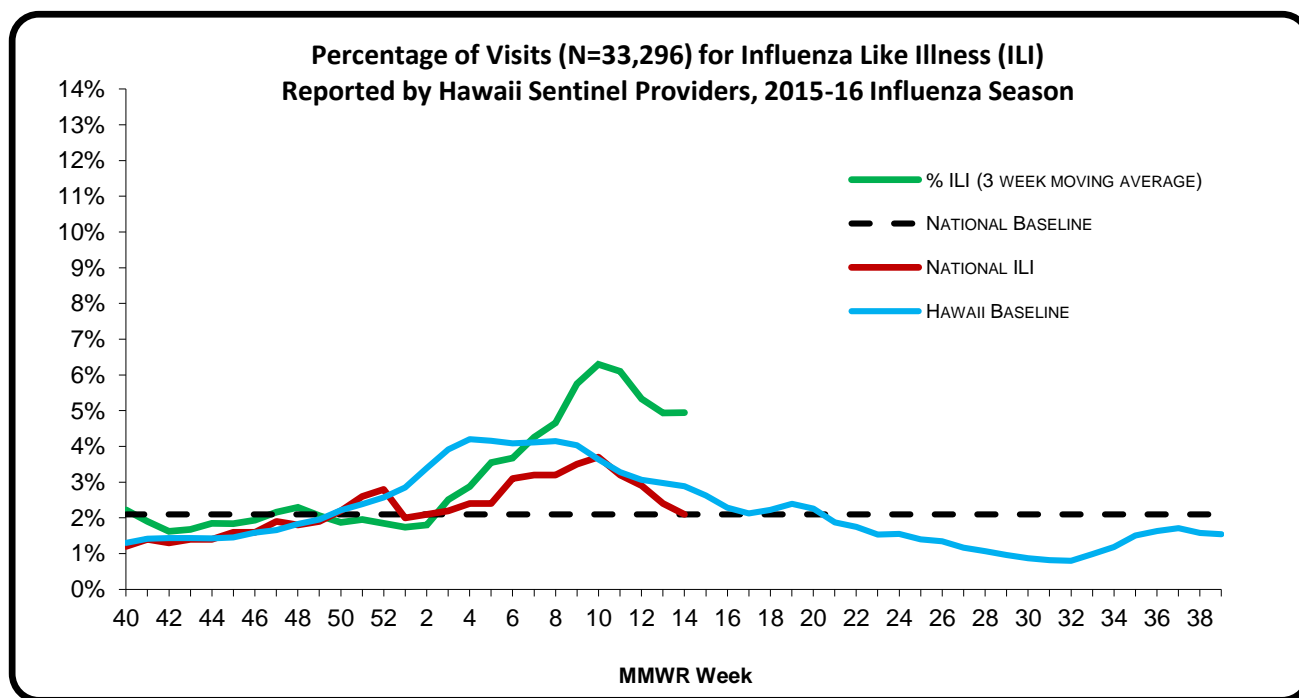
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 14** of the current influenza season:

- **5.0%** (season to date: **3.0%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii<sup>2-3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and the national ILI rate (2.1%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters was reported to HDOH during week 14.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

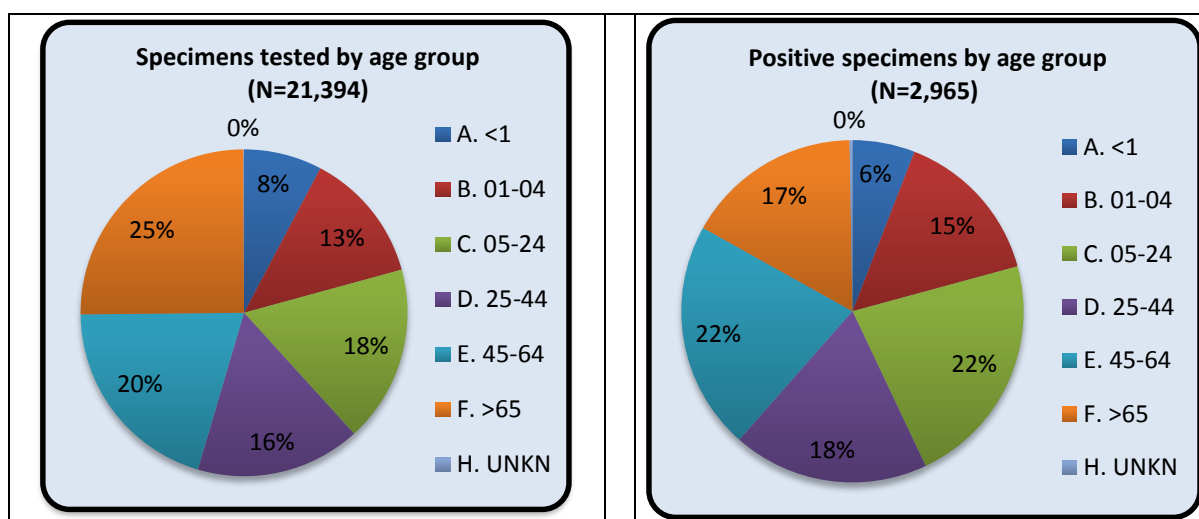
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 14 of the 2015-16 flu season:
  - A total of **1,135** specimens have been tested statewide for influenza viruses (positive: **188 [16.6%]**). (Season to date: **21,394** tested [**13.6%** positive])
    - 417 (36.7%) were screened only by rapid antigen tests with no confirmatory testing
    - 718 (63.3%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 947 (83.4%) were negative.
  - The 188 total positive cases included 136 (12.0%) cases of influenza A and 52 (4.6%) cases of influenza B (detected using any method). (Season to date: 11.0% influenza A and 2.9% influenza B)
    - Breakdown of influenza A cases:
      - 133 (97.8%) influenza A (un-subtyped). (Season to date: 88.5%)
      - 3 (2.2%) 2009 H1N1. (Season to date: 8.2%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

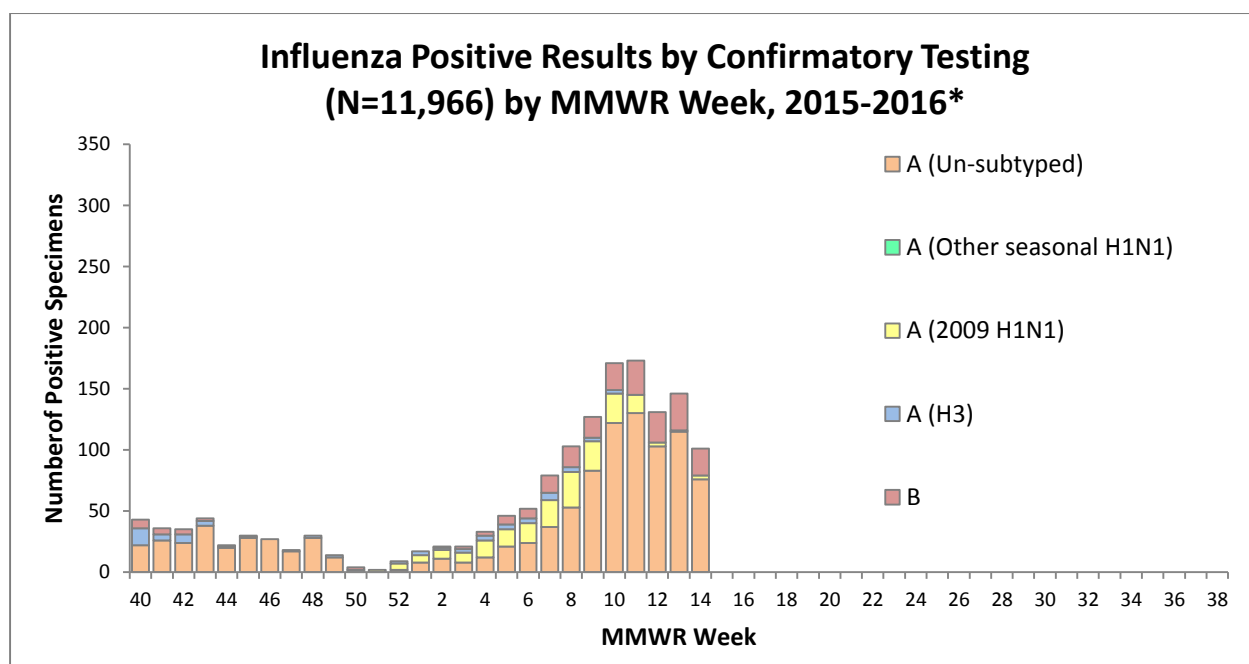
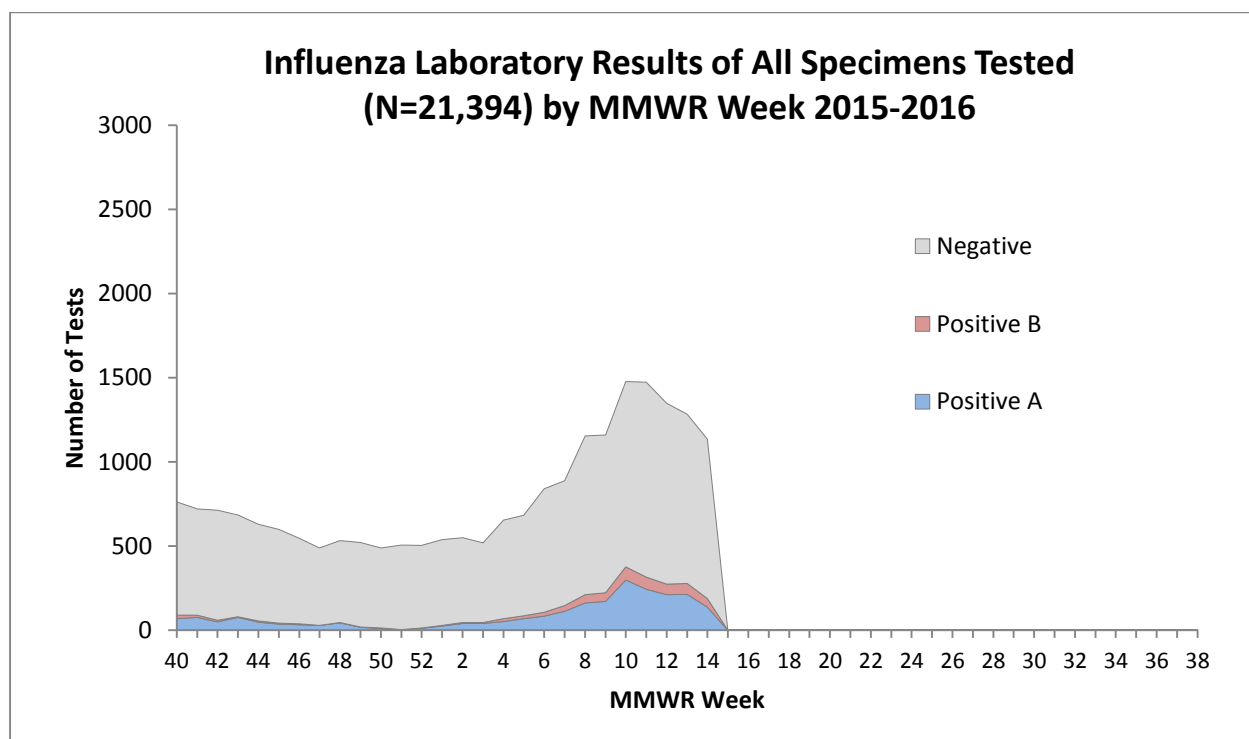
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

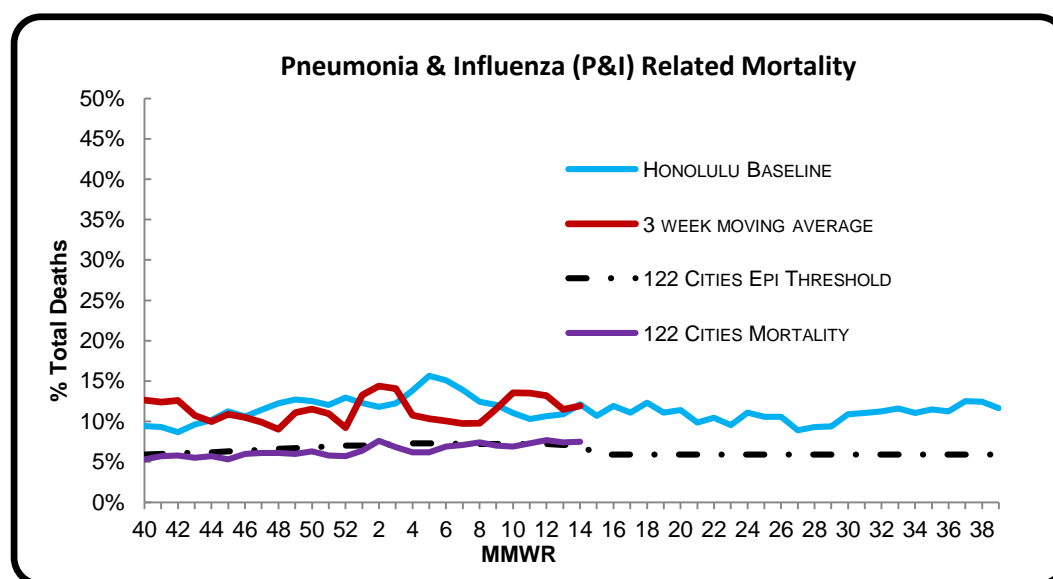
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																														
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40									
Adenovirus							X												X			X				X																																				
Coronavirus																	X	X							X																																					
Coxsackie Virus																																																														
Cytomegalovirus																																																														
Echovirus																																																														
Enterovirus																X				X						X																																				
Herpes Simplex Virus, Type 1																																																														
Metapneumovirus							X									X		X	X							X																																				
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X					X	X	X		X	X	X																																					
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X						X																																				
Rhinovirus				X												X	X			X						X																																				
Varicella Zoster Virus																																																														
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																		
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X																																												
Influenza A (Other seasonal H1)																																																														
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																		
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X	X	X																																		

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 14** of the current influenza season:

- **12.1%** of all deaths that occurred in Honolulu during week 14 were related to pneumonia or influenza. For the current season (season to date: **11.6%**), there have been 2,243 deaths from any cause, 260 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (7.5%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.1%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, ten influenza-associated pediatric deaths were reported to CDC during week 14. Two deaths were associated with an influenza A 2009 H1N1 virus and occurred during weeks 11 and 13 and one death was associated with an influenza A H3 virus and occurred during week 13. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 14. Six deaths were associated with an influenza B virus and occurred during weeks 12 and 13. (Season total: 50).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 **April 4, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 15: APRIL 10, 2016 – APRIL 16, 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 15

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	3.1%	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	1	There has been a total of 15 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.3%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	6	

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

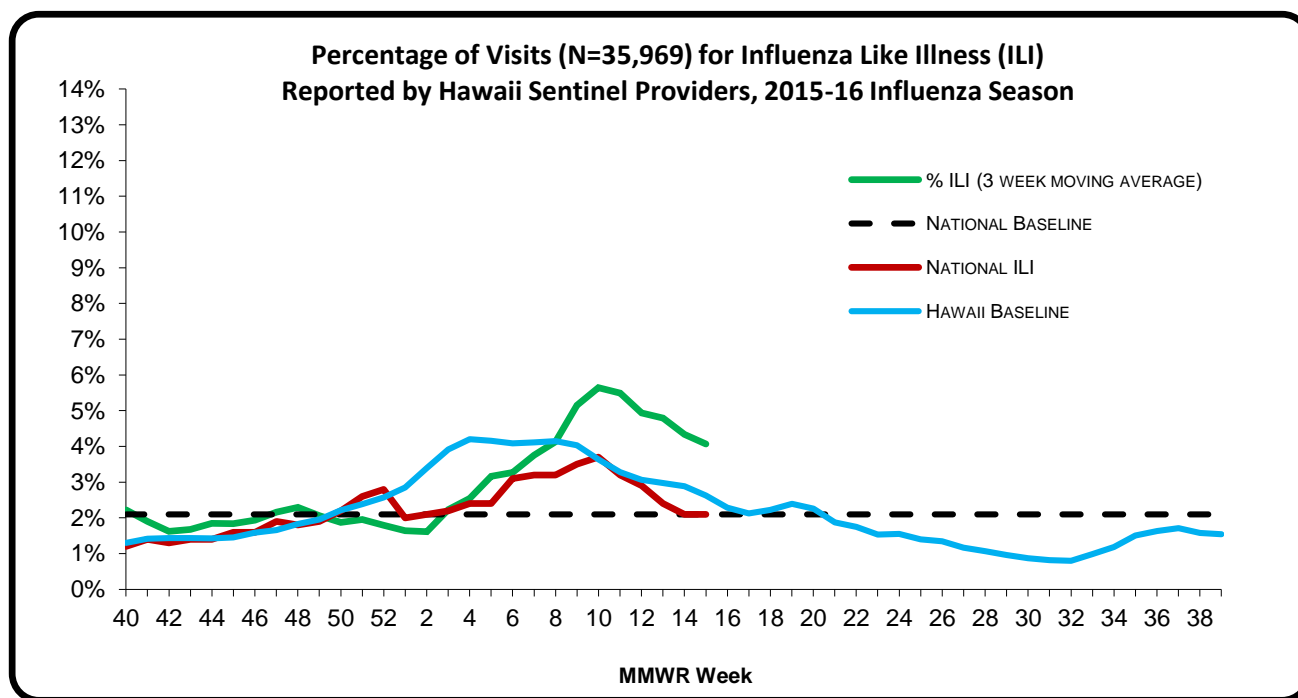
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 15** of the current influenza season:

- **3.1%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (2.1%) (i.e., inside the 95% confidence interval).
- **ILI Cluster Activity:** One cluster was reported to HDOH during week 15. The cluster occurred at an elementary school on Maui and had cases of an unknown etiology.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

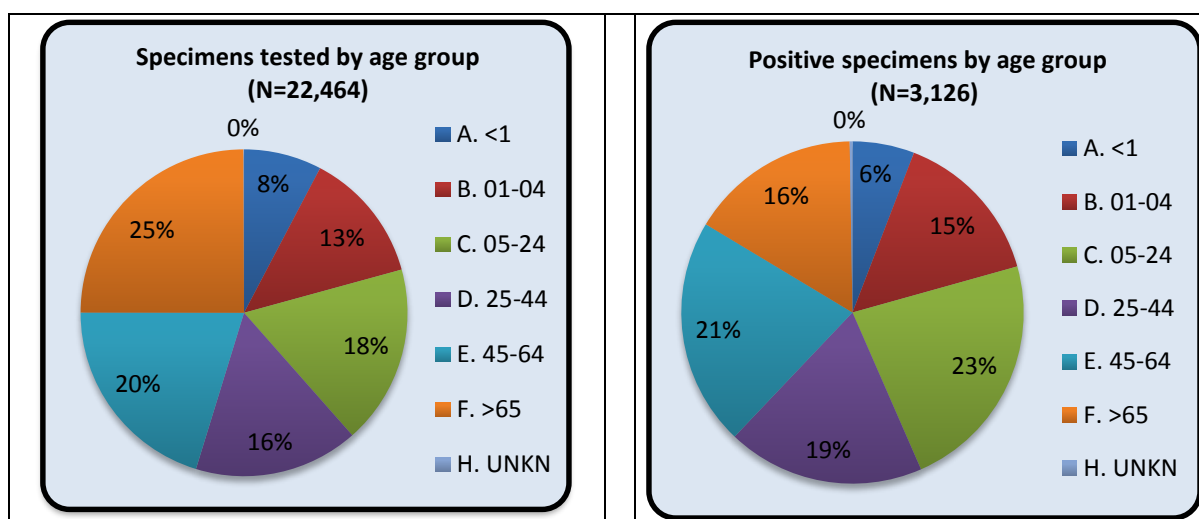
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 15 of the 2015-16 flu season:
  - A total of **1,070** specimens have been tested statewide for influenza viruses (positive: **162 [15.1%]**). (Season to date: **22,464** tested [**13.9%** positive])
    - 466 (43.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 604 (56.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 908 (84.9%) were negative.
  - The 162 total positive cases included 103 (9.6%) cases of influenza A and 59 (5.5%) cases of influenza B (detected using any method). (Season to date: 10.8% influenza A and 3.1% influenza B)
    - Breakdown of influenza A cases:
      - 103 (100.0%) influenza A (un-subtyped). (Season to date: 89.0%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 7.9%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.1%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

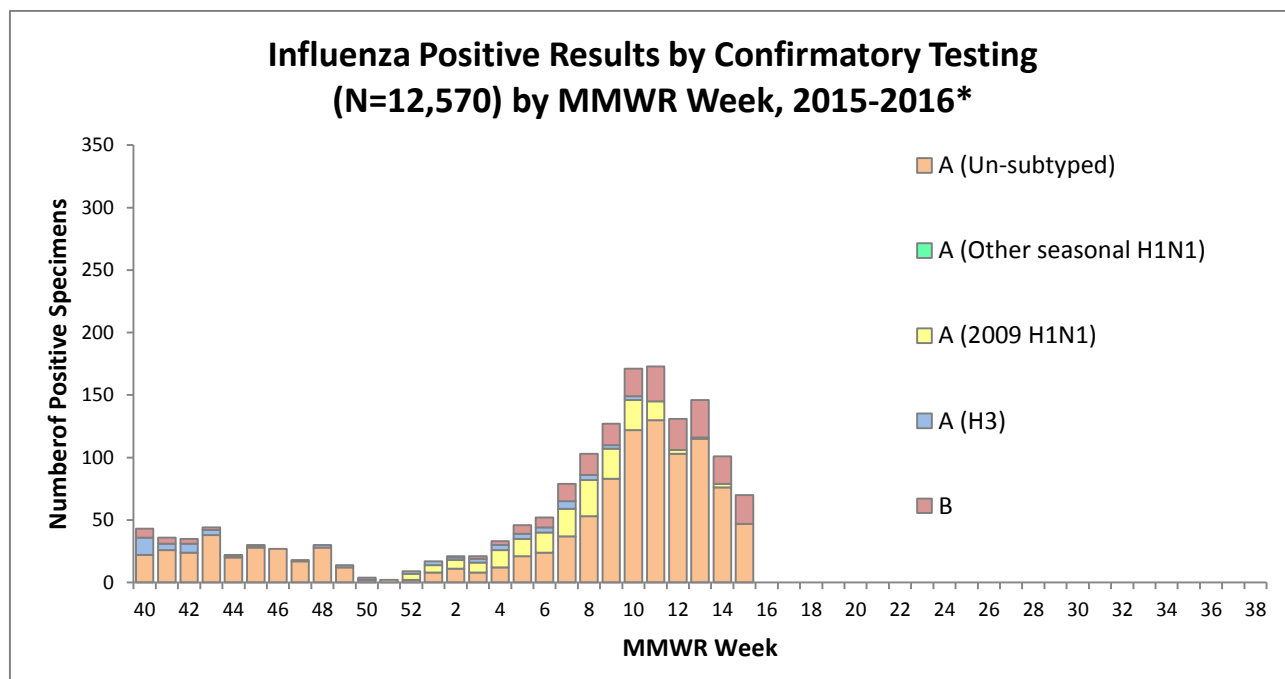
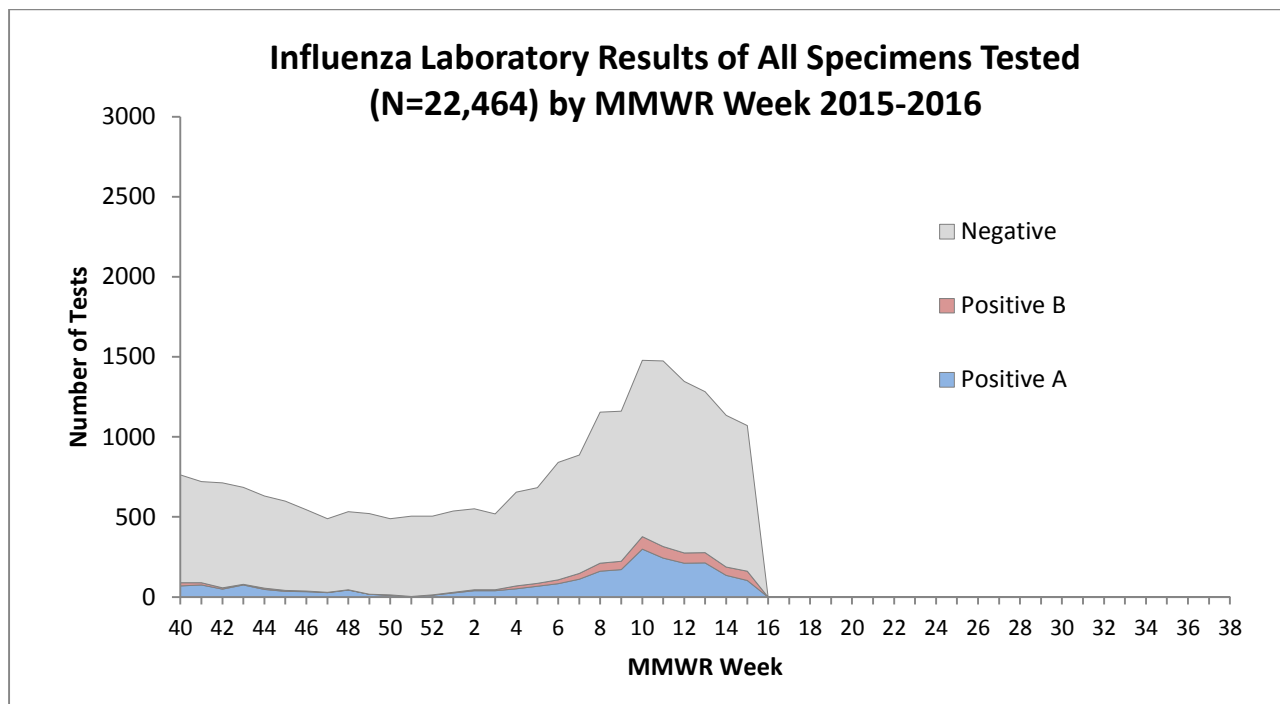
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

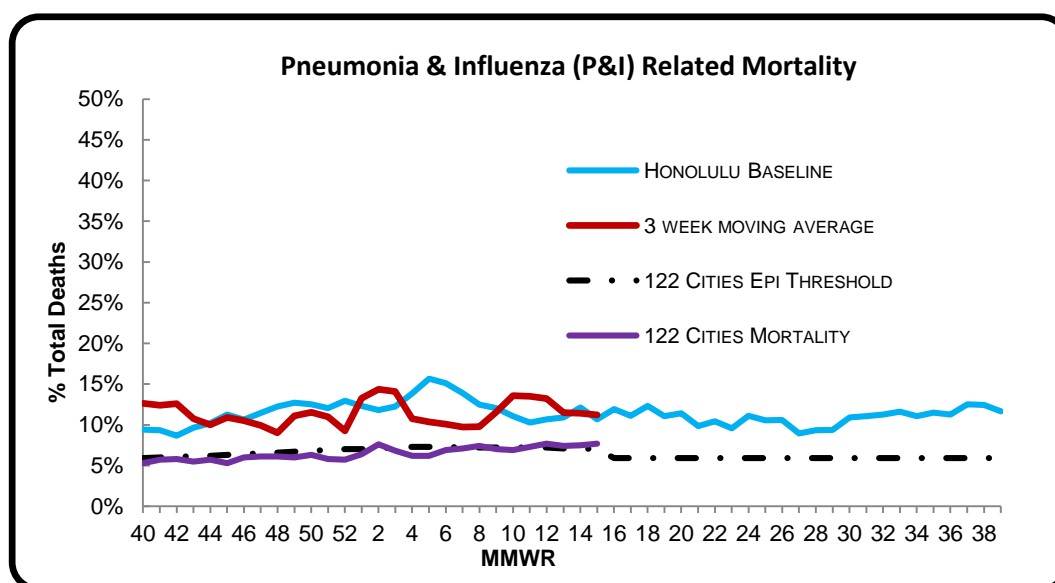
MMWR Week (2015-2016)																																																									
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
Adenovirus							X												X			X				x																															
Coronavirus																	X		X						X																																
Coxsackie Virus																																																									
Cytomegalovirus																																																									
Echovirus																																																									
Enterovirus																X				X						x																															
Herpes Simplex Virus, Type 1																																																									
Metapneumovirus							X										X		X	X					X																																
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X					X	X	X		X	X	X	X		X		X																											
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X						X																															
Rhinovirus				X													X	X		X						X																															
Varicella Zoster Virus																																																									
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																													
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X																																							
Influenza A (Other seasonal H1)																																																									
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																												
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X	X	X	X																												



**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 15** of the current influenza season:

- *10.3% of all deaths that occurred in Honolulu during week 15 were related to pneumonia or influenza. For the current season (season to date: 11.5%), there have been 2,340 deaths from any cause, 270 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (7.7%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.0%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, six influenza-associated pediatric deaths were reported to CDC during week 15. Three deaths were associated with an influenza A 2009 H1N1 virus and occurred during weeks 13 and 14 and two deaths were associated with an influenza A virus for which no subtyping was performed and occurred during week 14. One death was associated with an influenza B virus and occurred during week 12. (Season total: 56).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 **April 4, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 16: APRIL 17, 2016 – APRIL 23, 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 16

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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 and the national ILI rate; comparable to Hawaii's historical baseline and the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 15 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.9%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	4	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	14.2%	Lower than the previous week. This indicates that many, if not all, of the 85.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.9%	

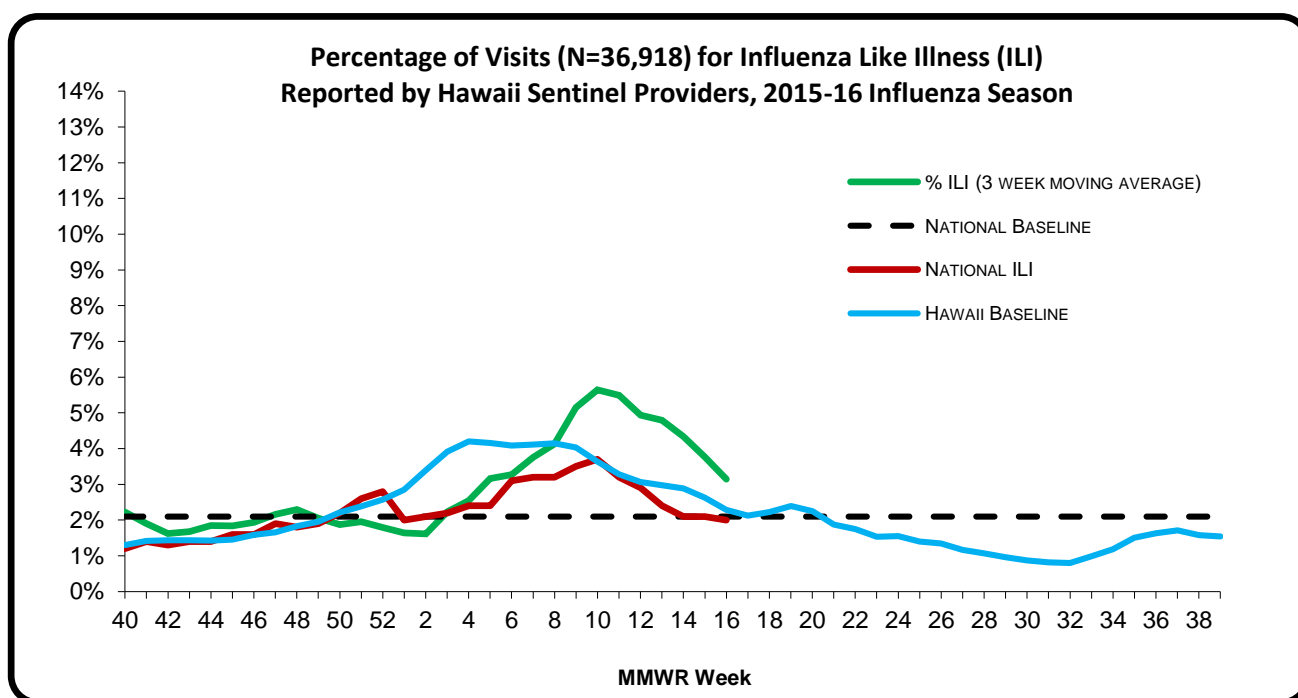
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 16** of the current influenza season:

- **3.2%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (2.0%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** No clusters were reported to HDOH during week 16.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

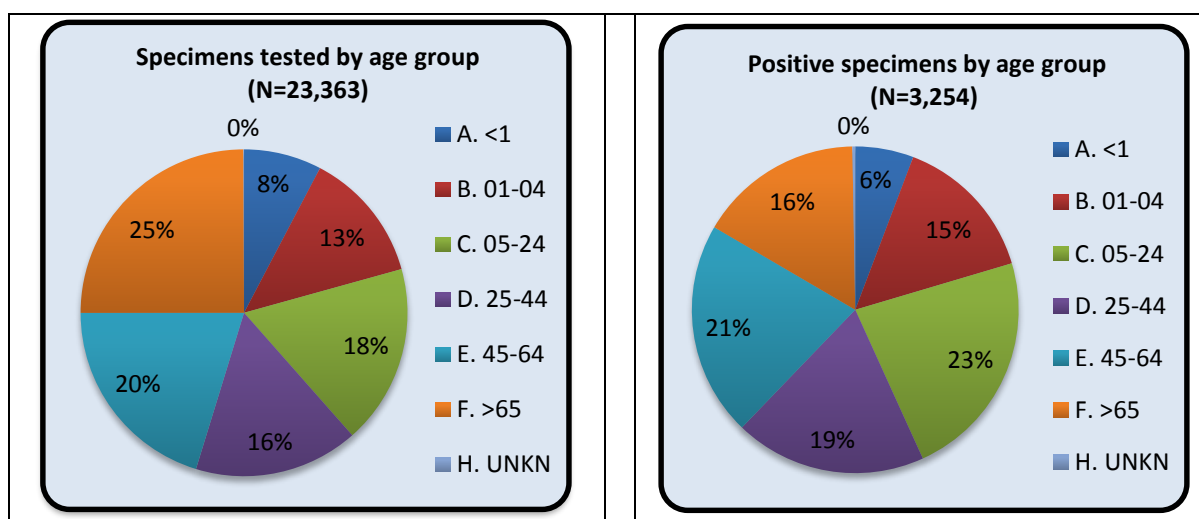
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 16 of the 2015-16 flu season:
  - A total of 888 specimens have been tested statewide for influenza viruses (positive: 126 [14.2%]). (Season to date: 23,363 tested [13.9% positive])
    - 358 (40.3%) were screened only by rapid antigen tests with no confirmatory testing
    - 530 (59.7%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 762 (85.8%) were negative.
  - The 126 total positive cases included 78 (8.8%) cases of influenza A and 48 (5.4%) cases of influenza B (detected using any method). (Season to date: 10.8% influenza A and 3.1% influenza B)
    - Breakdown of influenza A cases:
      - 75 (96.2%) influenza A (un-subtyped). (Season to date: 88.6%)
      - 3 (3.8%) 2009 H1N1. (Season to date: 8.2%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.2%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

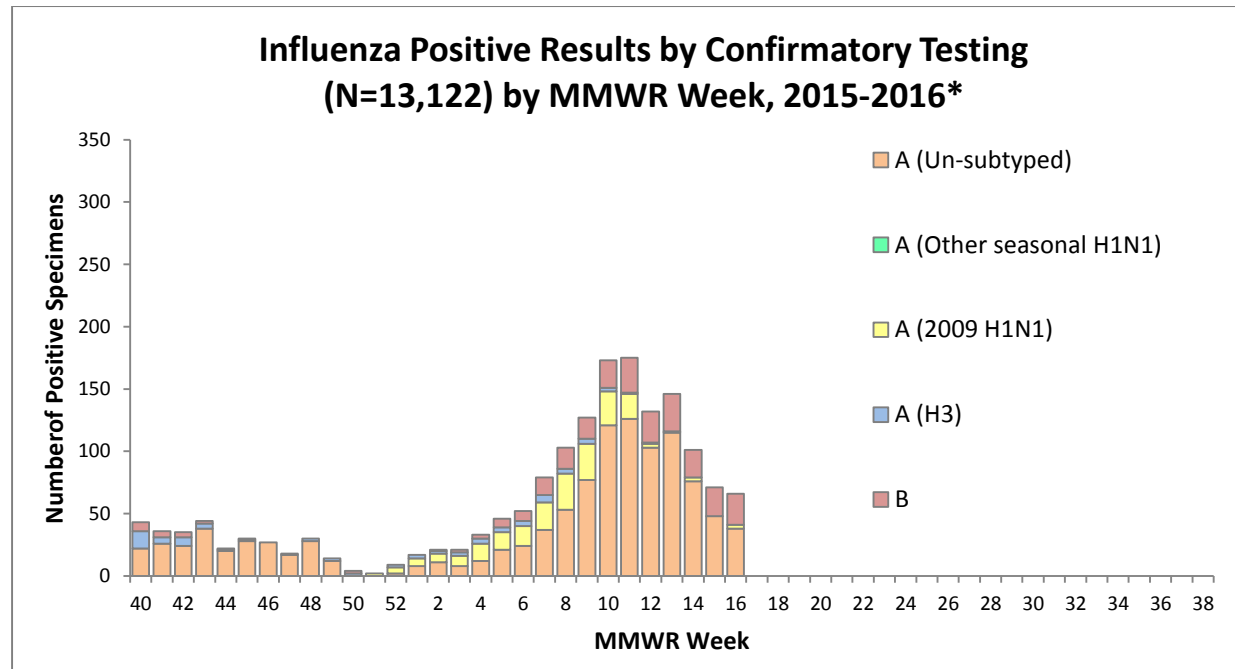
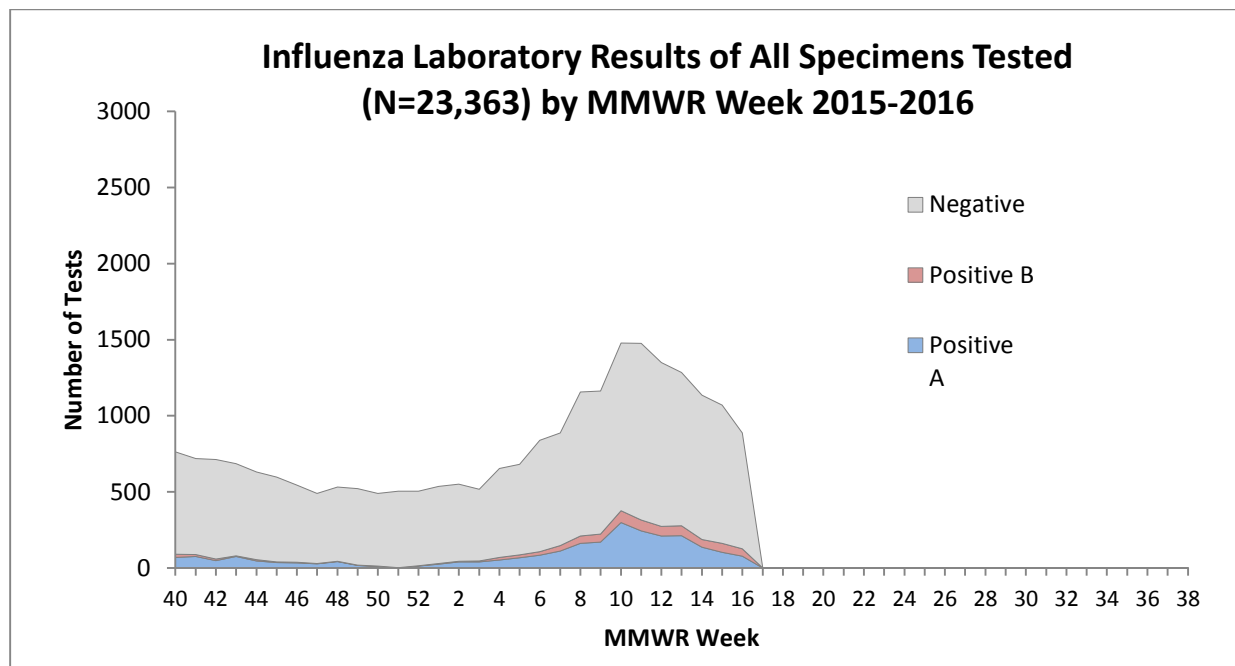


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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



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

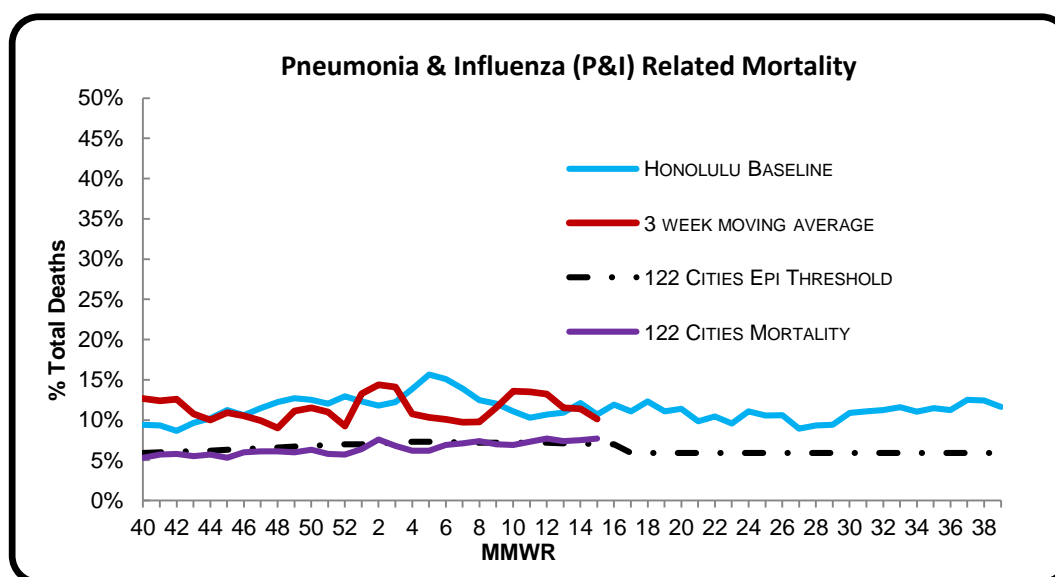
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 16** of the current influenza season:

- **7.9%** of all deaths that occurred in Honolulu during week 16 were related to pneumonia or influenza. For the current season (season to date: **11.4%**), there have been 2,403 deaths from any cause, 275 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.7%) (i.e., inside the 95% confidence interval) and the epidemic threshold (7.0%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, four influenza-associated pediatric deaths were reported to CDC during week 16. Two deaths were associated with an influenza A virus for which no subtyping was performed and occurred during weeks 15 and 16. One death was associated with an influenza B virus and occurred during week 15. One death was associated with an influenza virus for which the type was not determined and occurred during week 13. (Season total: 60).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 **April 4, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 17: APRIL 24, 2016 – APRIL 30, 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 17

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.9%	Lower than the previous week; 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 15 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.7%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	4	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	10.8%	Lower than the previous week. This indicates that many, if not all, of the 89.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.9%	

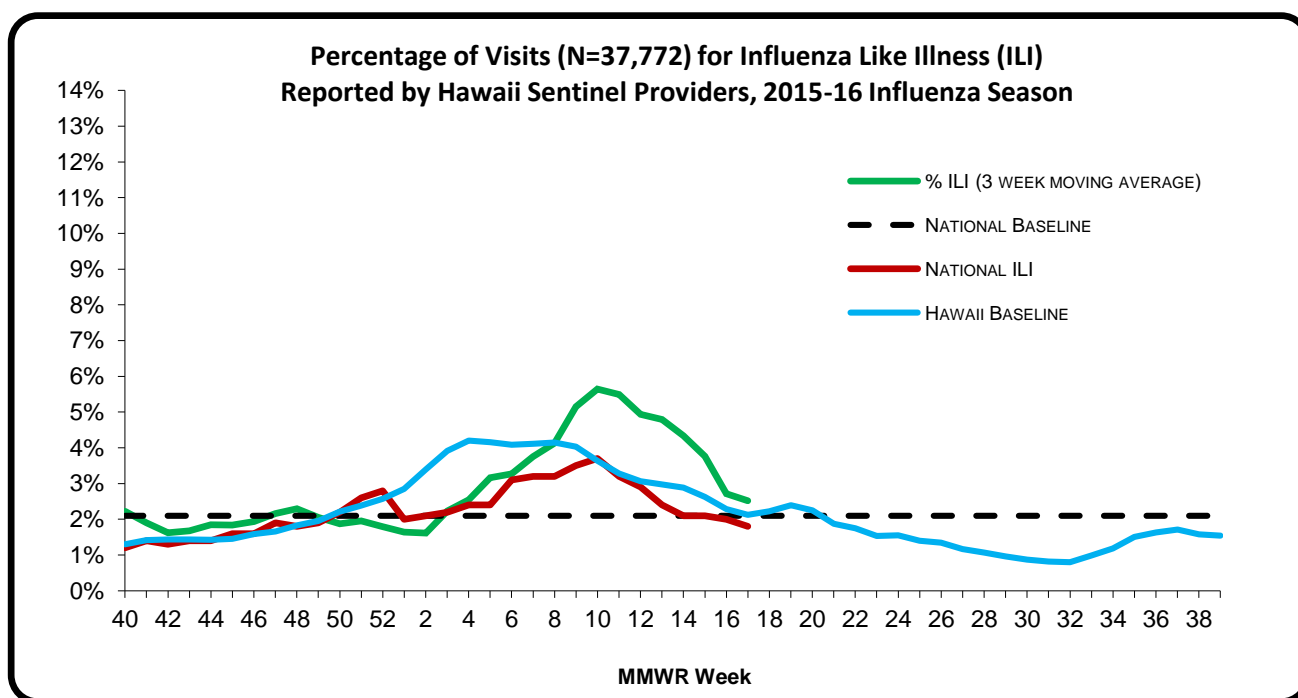
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 17** of the current influenza season:

- **1.9%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (1.8%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 17.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



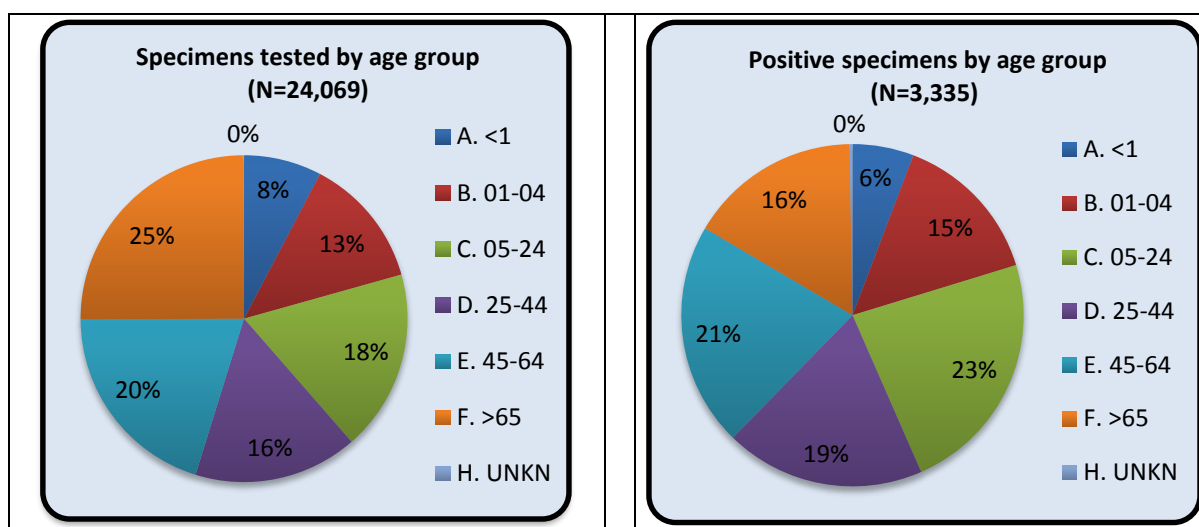
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 17 of the 2015-16 flu season:
  - A total of **701** specimens have been tested statewide for influenza viruses (positive: **76 [10.8%]**). (Season to date: **24,069** tested [**13.9%** positive])
    - 317 (45.2%) were screened only by rapid antigen tests with no confirmatory testing
    - 384 (54.8%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 625 (89.2%) were negative.
  - The 76 total positive cases included 42 (6.0%) cases of influenza A and 34 (4.9%) cases of influenza B (detected using any method). (Season to date: 10.7% influenza A and 3.1% influenza B)
    - Breakdown of influenza A cases:
      - 40 (95.2%) influenza A (un-subtyped). (Season to date: 88.3%)
      - 2 (4.8%) 2009 H1N1. (Season to date: 8.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.1%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

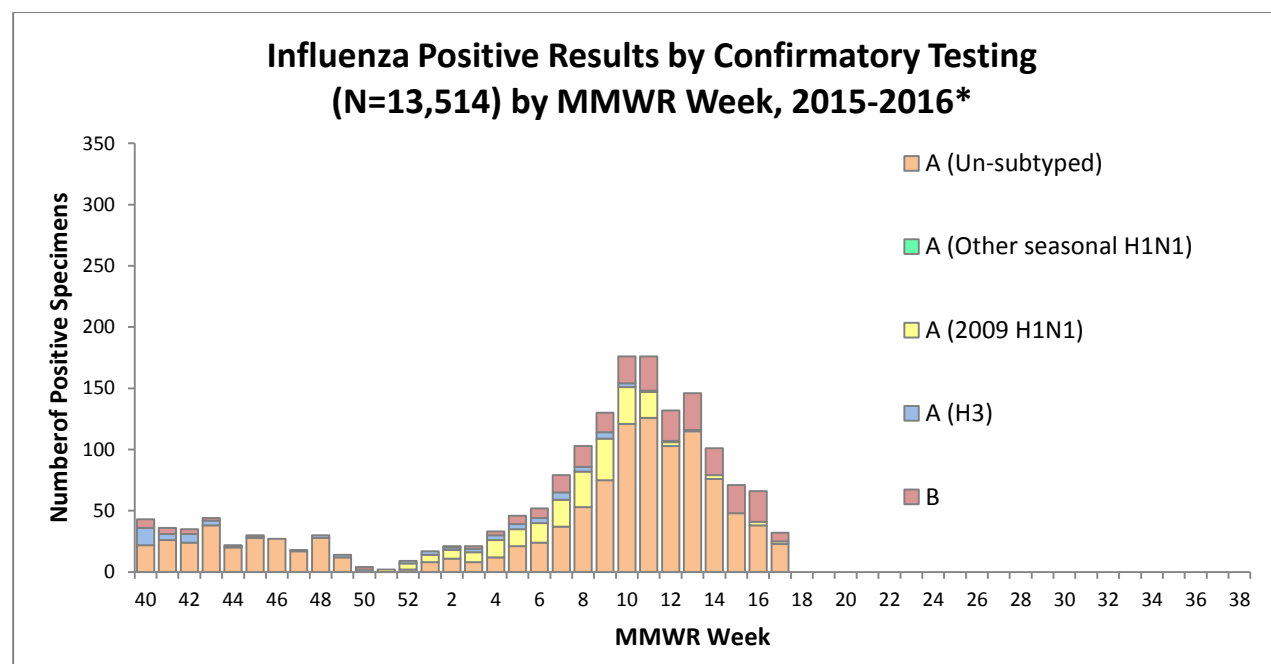
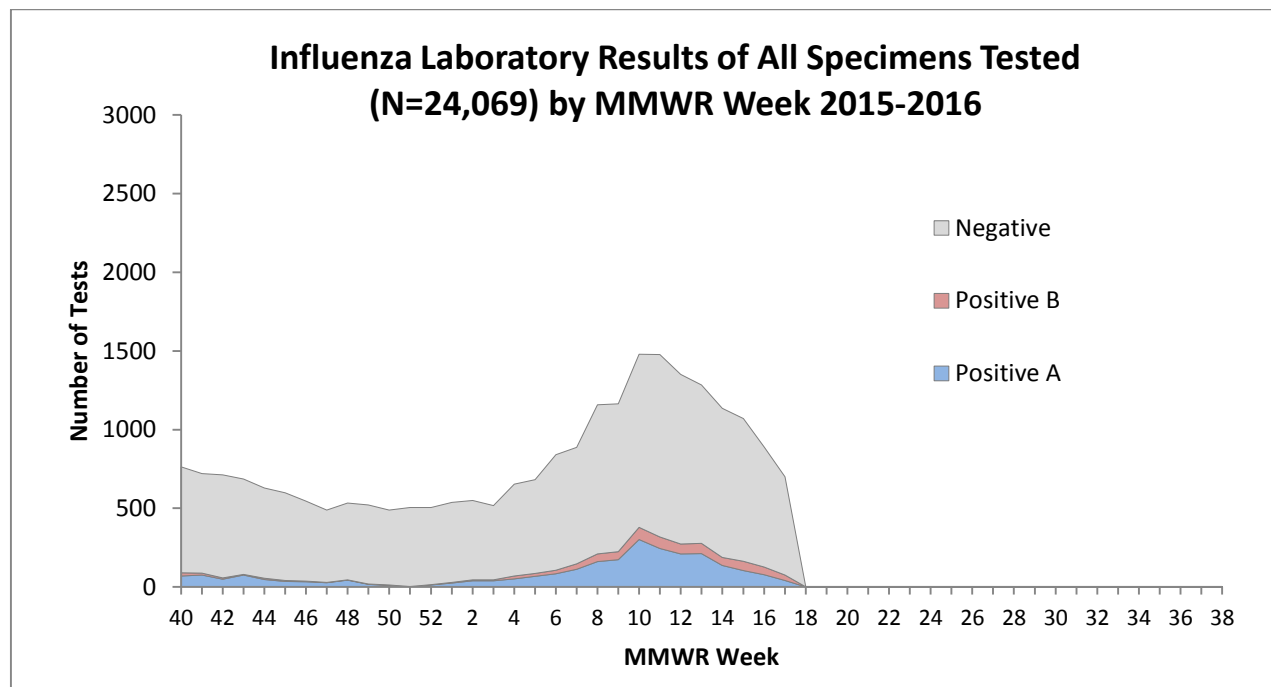


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

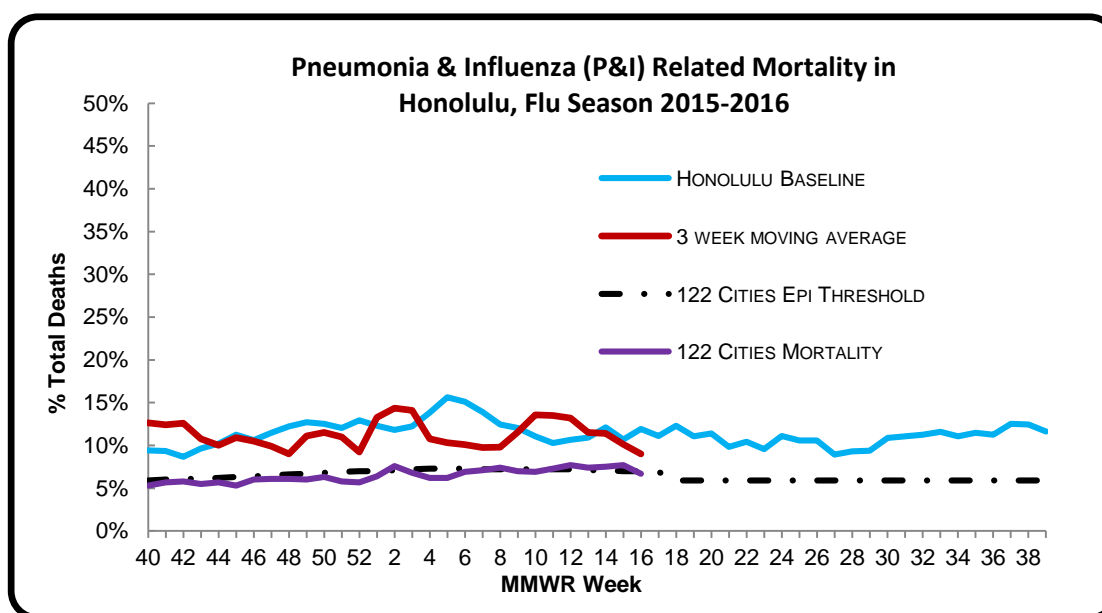
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 17** of the current influenza season:

- *8.7% of all deaths that occurred in Honolulu during week 17 were related to pneumonia or influenza. For the current season (season to date: 11.3%), there have been 2,506 deaths from any cause, 284 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.8%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.9%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, four influenza-associated pediatric deaths were reported to CDC during week 17. Two deaths were associated with an influenza A 2009 H1N1 virus and occurred during weeks 14 and 15. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 13. One death was associated with an influenza B virus and occurred during week 12. (Season total: 64).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *2 human infections with novel influenza A viruses, H1N1v and H3N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 **April 4, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 18: MAY 1, 2016 – MAY 7, 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 18

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.5%	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 16 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.2%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	3	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	12.7%	Higher than the previous week. This indicates that many, if not all, of the 87.3% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.8%	

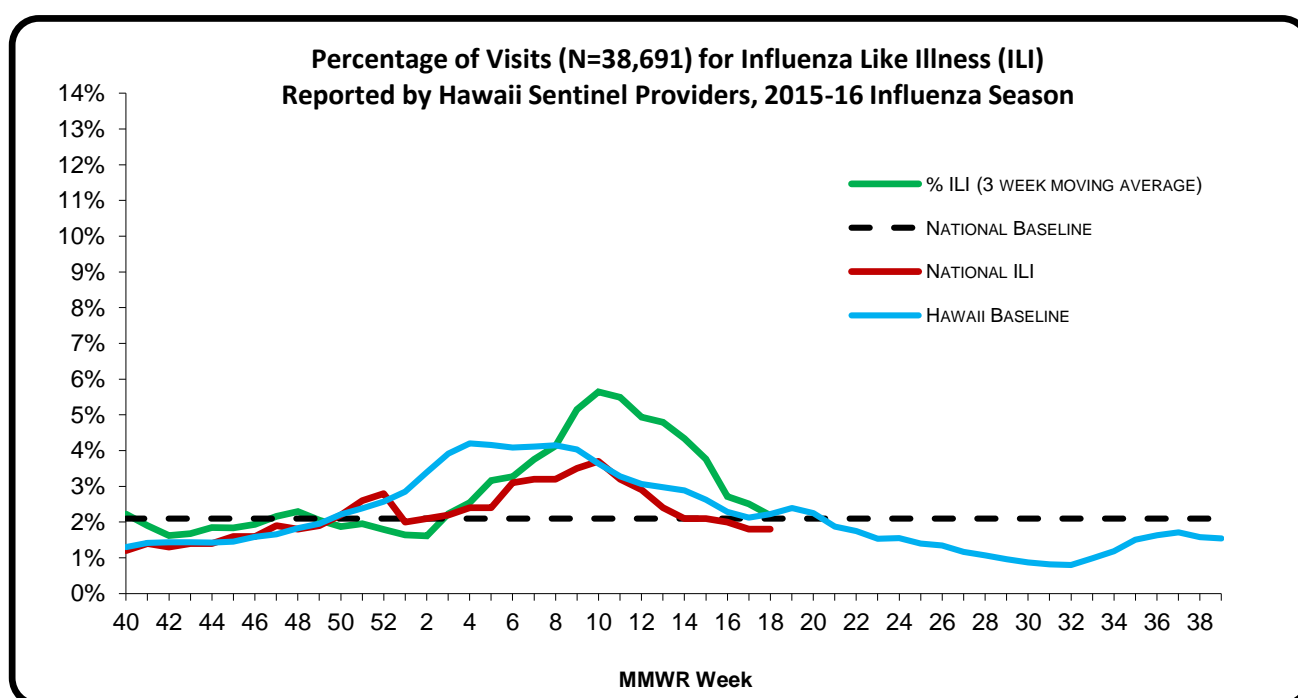
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 18** of the current influenza season:

- **2.5%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (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 18. The cluster occurred at a nursing home on Oahu and had confirmed cases of influenza A.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



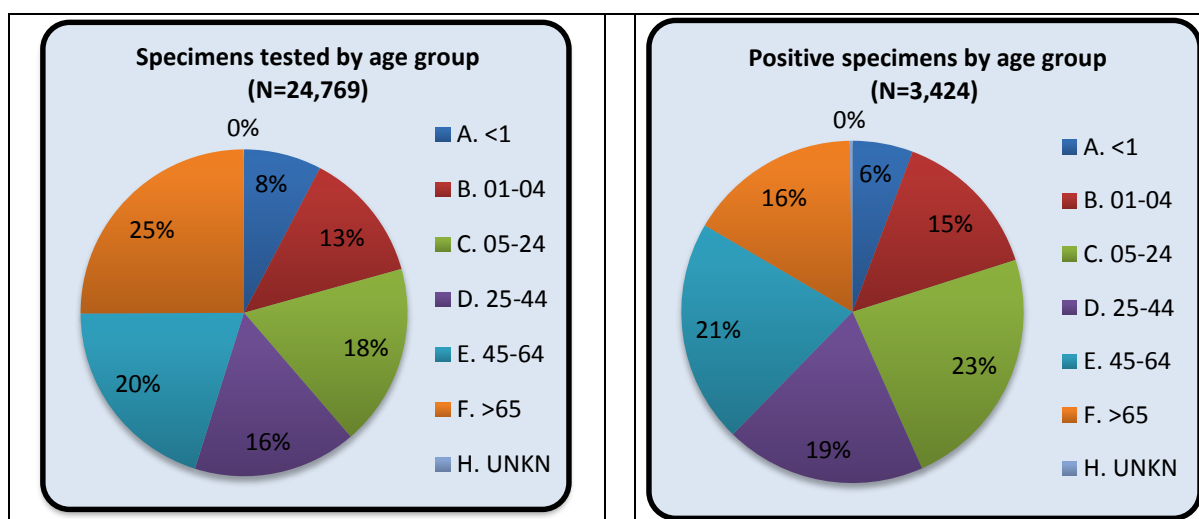
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 18 of the 2015-16 flu season:
  - A total of **692** specimens have been tested statewide for influenza viruses (positive: **88 [12.7%]**). (Season to date: **24,769** tested [**13.8%** positive])
    - 333 (48.1%) were screened only by rapid antigen tests with no confirmatory testing
    - 359 (51.9%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 604 (87.3%) were negative.
  - The 88 total positive cases included 51 (7.4%) cases of influenza A and 37 (5.3%) cases of influenza B (detected using any method). (Season to date: 10.6% influenza A and 3.2% influenza B)
    - Breakdown of influenza A cases:
      - 49 (96.1%) influenza A (un-subtyped). (Season to date: 88.4%)
      - 2 (3.9%) 2009 H1N1. (Season to date: 8.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.1%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

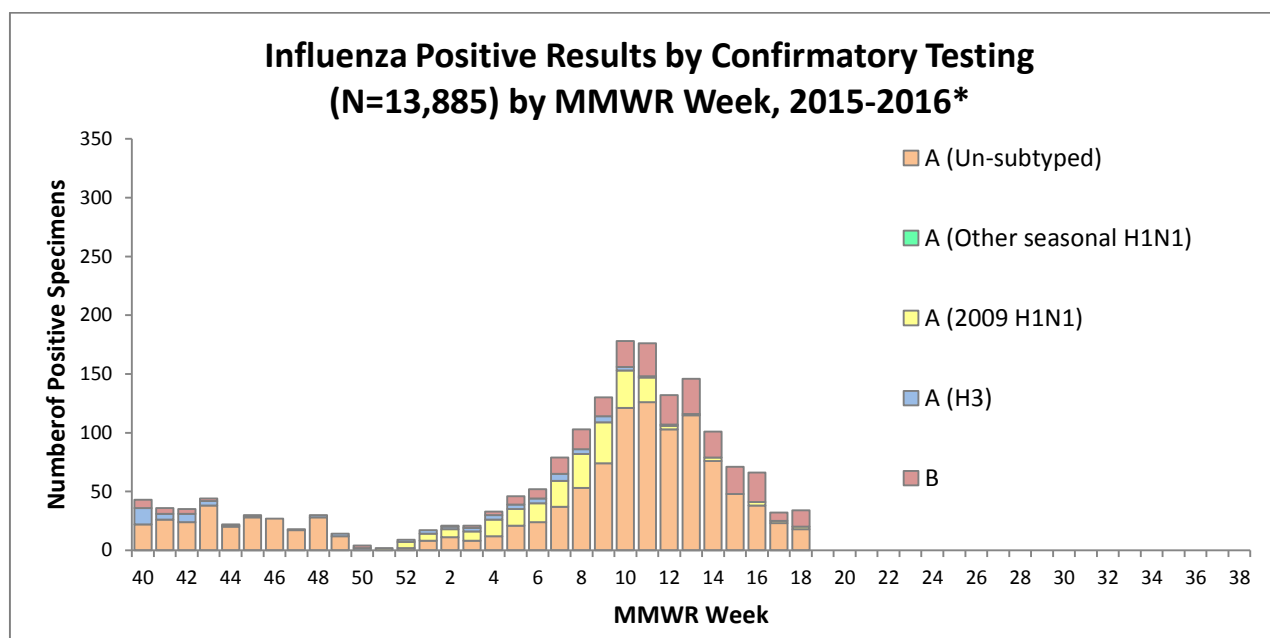
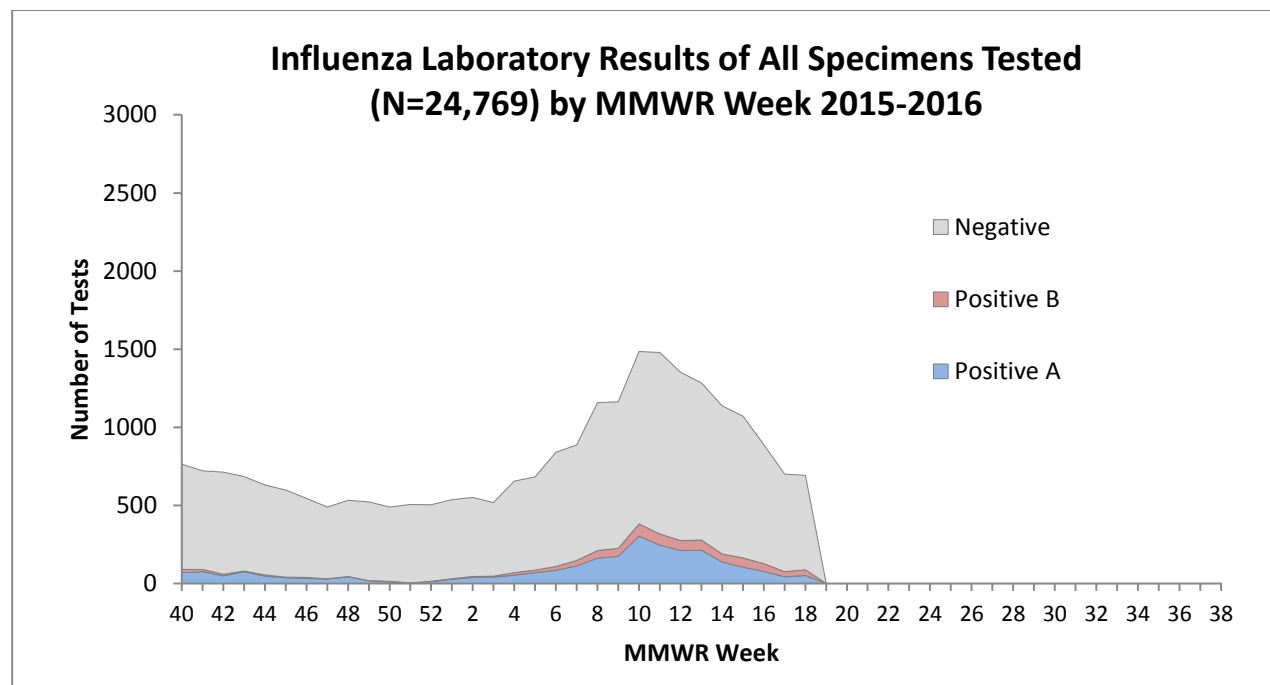
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

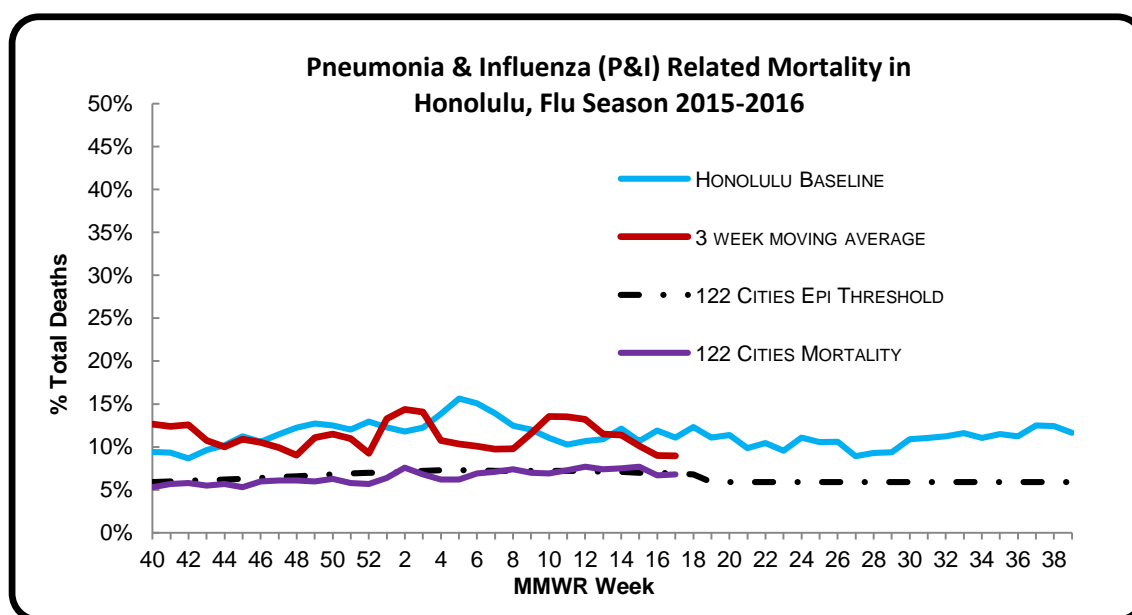
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 18** of the current influenza season:

- *10.2% of all deaths that occurred in Honolulu during week 18 were related to pneumonia or influenza. For the current season (season to date: 11.3%), there have been 2,604 deaths from any cause, 294 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.7%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.8%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, three influenza-associated pediatric deaths were reported to CDC during week 18. Two deaths were associated with an influenza A 2009 H1N1 virus and occurred during weeks 9 and 13. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 48. (Season total: 67).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *3 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. 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 **April 4, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 19: MAY 8, 2016 – MAY 14, 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 19

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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 and the national baseline; higher than the national ILI rate.
Number of ILI clusters reported to HDOH	1	There has been a total of 17 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	4.6%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	9.6%	Lower than the previous week. This indicates that many, if not all, of the 90.4% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.7%	

<sup>1</sup> 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.

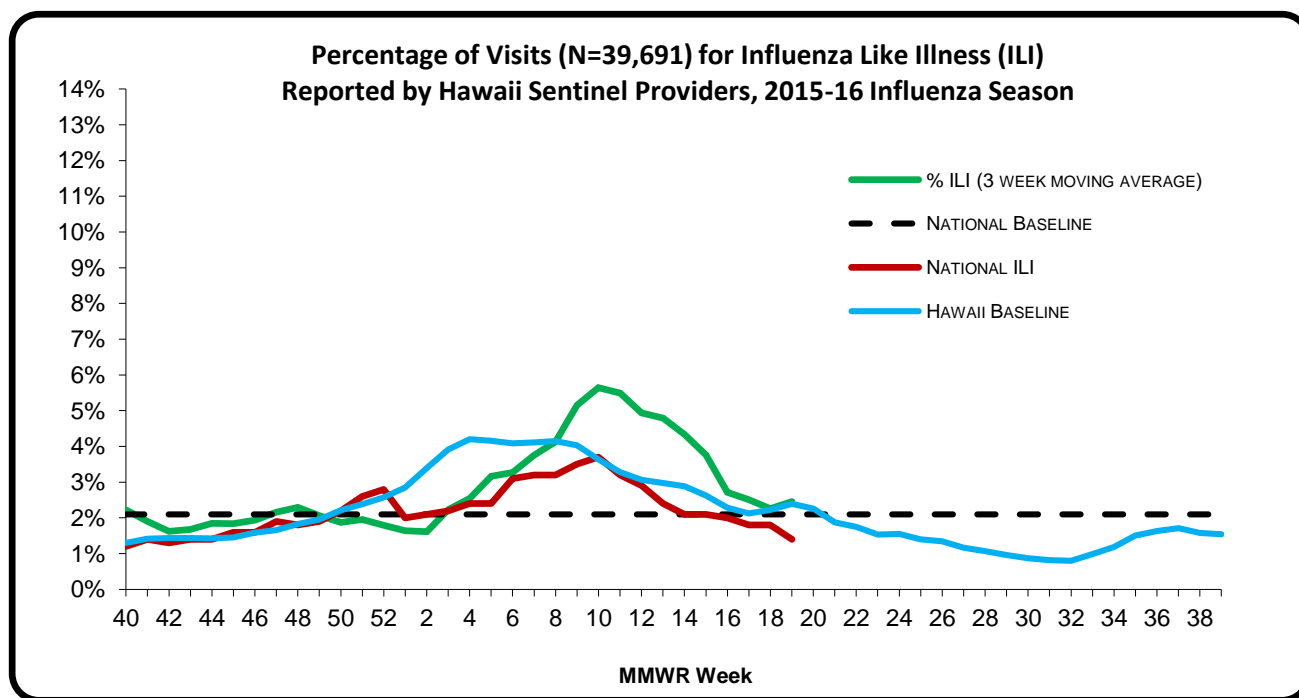


## INFLUENZA SURVEILLANCE

**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 19** of the current influenza season:

- **2.4%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.4%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** One cluster was reported to HDOH during week 19. The cluster occurred at a nursing home on Maui and had cases of influenza A.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

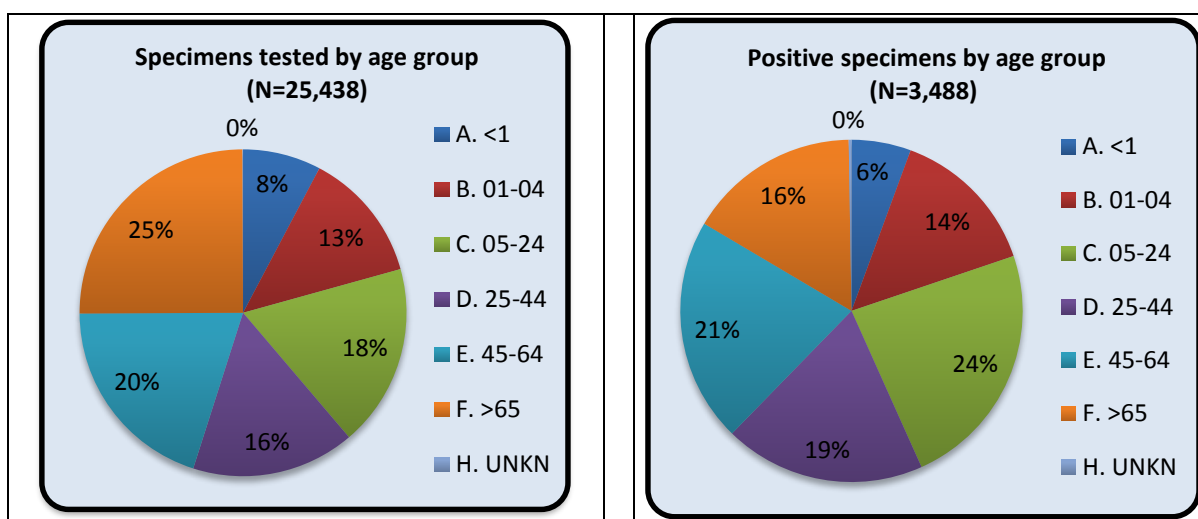
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 19 of the 2015-16 flu season:
  - A total of **669** specimens have been tested statewide for influenza viruses (positive: **64 [9.6%]**). (Season to date: **25,438** tested [**13.7%** positive])
    - 308 (46.0%) were screened only by rapid antigen tests with no confirmatory testing
    - 361 (54.0%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 605 (90.4%) were negative.
  - The 64 total positive cases included 20 (3.0%) cases of influenza A and 44 (6.6%) cases of influenza B (detected using any method). (Season to date: 10.4% influenza A and 3.3% influenza B)
    - Breakdown of influenza A cases:
      - 20 (100%) influenza A (un-subtyped). (Season to date: 88.5%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 8.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

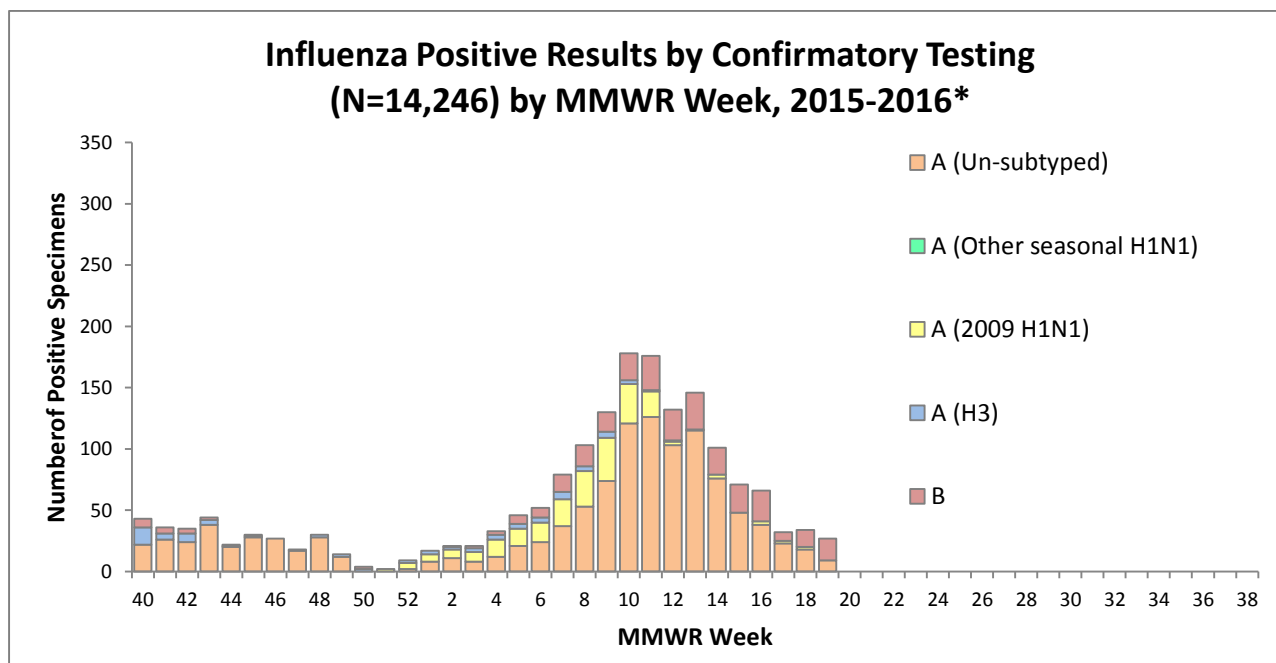
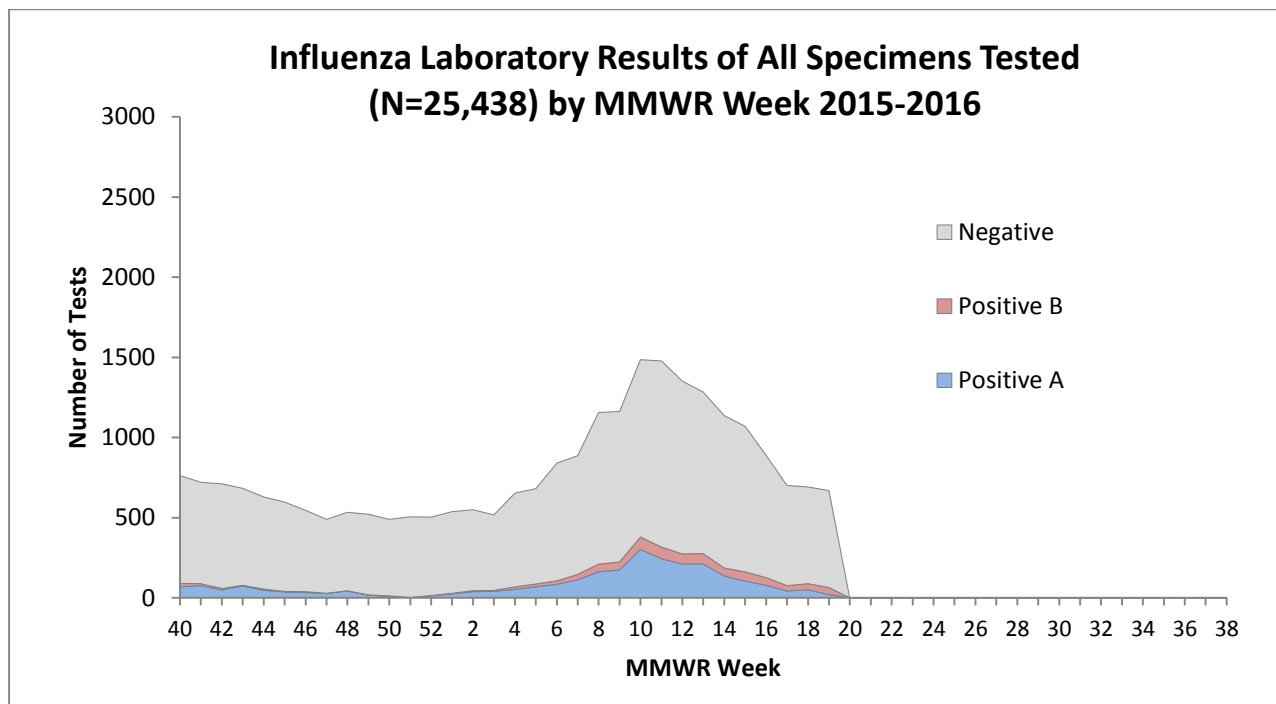
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

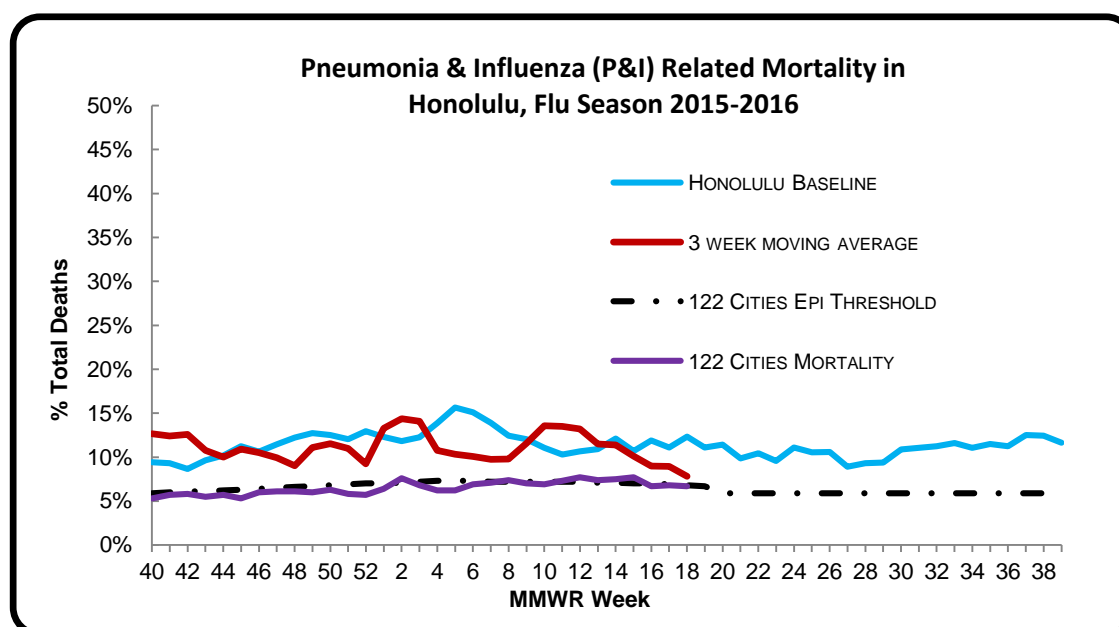
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Adenovirus							X												X			X				x					X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</

**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 19** of the current influenza season:

- **4.6%** of all deaths that occurred in Honolulu during week 19 were related to pneumonia or influenza. For the current season (season to date: **11.1%**), there have been 2,692 deaths from any cause, 298 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.7%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.7%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 19. This death was associated with an influenza B virus and occurred during week 14. (Season total: 68).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *3 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 9, 2016**. Since the last update, new human infections of influenza A H5N6, H7N9, and H9N2 were reported. Three confirmed cases of H5N6 were reported from China, all of which had exposure to live poultry. Ongoing evolution of H5N6 viruses is occurring, but no changes in transmissibility in humans have been detected. A total of 18 cases of H7N9 were reported from China and Hong Kong with 5 deaths reported from China. Only one of the H7N9 cases reported from China did not have exposure to poultry, but was exposed to a confirmed case who was admitted to the same ward as her when hospitalized. WHO states that human to human transmission is likely considering the virological information obtained. Lastly, one case of H9N2 was reported from Egypt. The case was exposed to live poultry and is now in stable condition.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		





# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 20: MAY 15, 2016 – MAY 21, 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 20

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.9%	Higher than the previous week; comparable to Hawaii's historical baseline and the national baseline; higher than the national ILI rate.
Number of ILI clusters reported to HDOH	1	There has been a total of 18 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	9.2%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	9.1%	Lower than the previous week. This indicates that many, if not all, of the 90.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.7%	

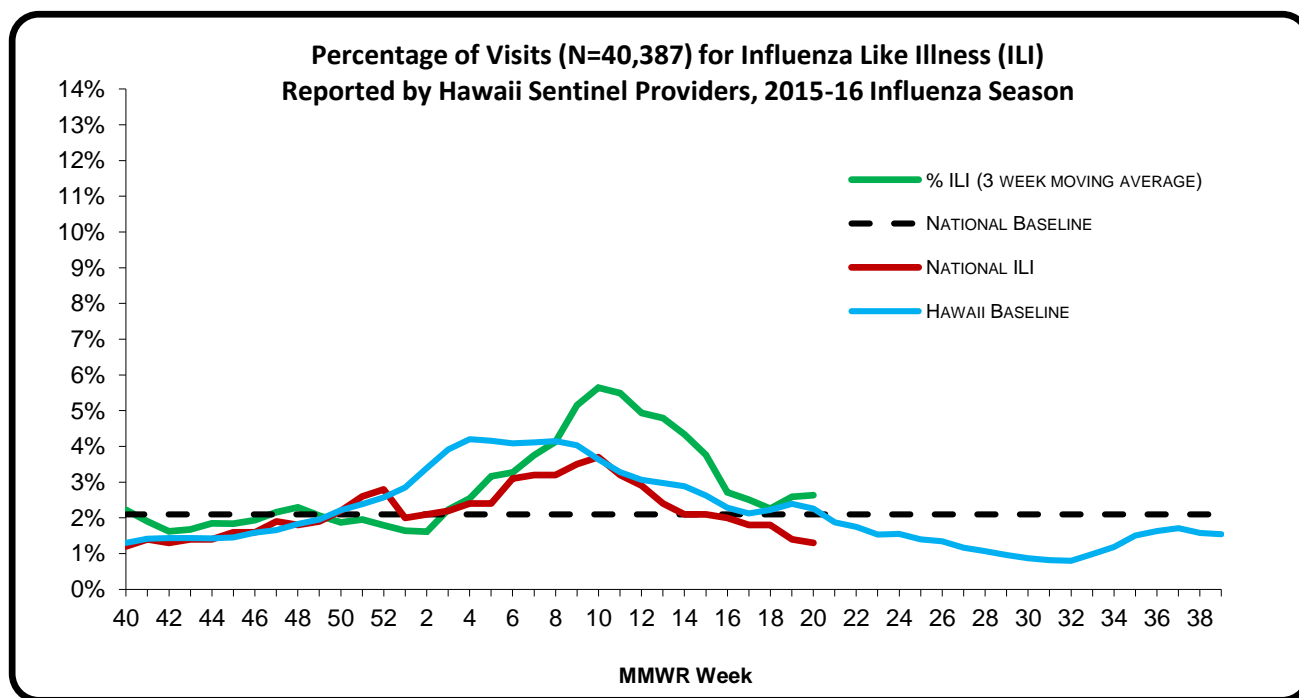
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 20** of the current influenza season:

- **2.9%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.3%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** One cluster was reported to HDOH during week 20. The cluster occurred at a nursing home on Oahu and had confirmed cases of influenza B.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

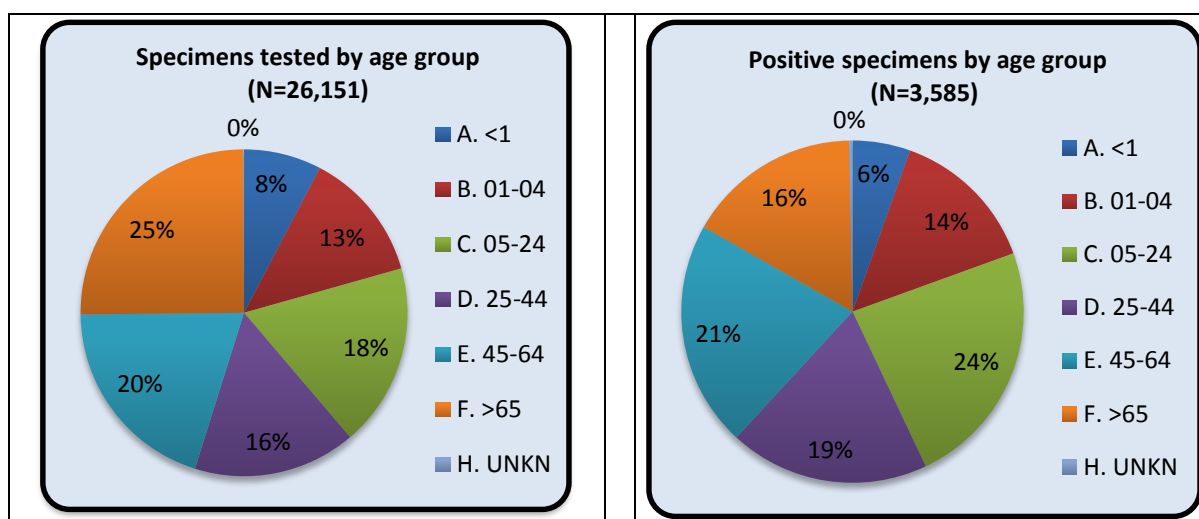
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 20 of the 2015-16 flu season:
  - A total of **689** specimens have been tested statewide for influenza viruses (positive: **63 [9.1%]**). (Season to date: **26,151** tested [**13.7%** positive])
    - 304 (44.1%) were screened only by rapid antigen tests with no confirmatory testing
    - 385 (55.9%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 626 (90.9%) were negative.
  - The 63 total positive cases included 31 (4.5%) cases of influenza A and 32 (4.6%) cases of influenza B (detected using any method). (Season to date: 10.4% influenza A and 3.3% influenza B)
    - Breakdown of influenza A cases:
      - 31 (100%) influenza A (un-subtyped). (Season to date: 84.4%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 12.3%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

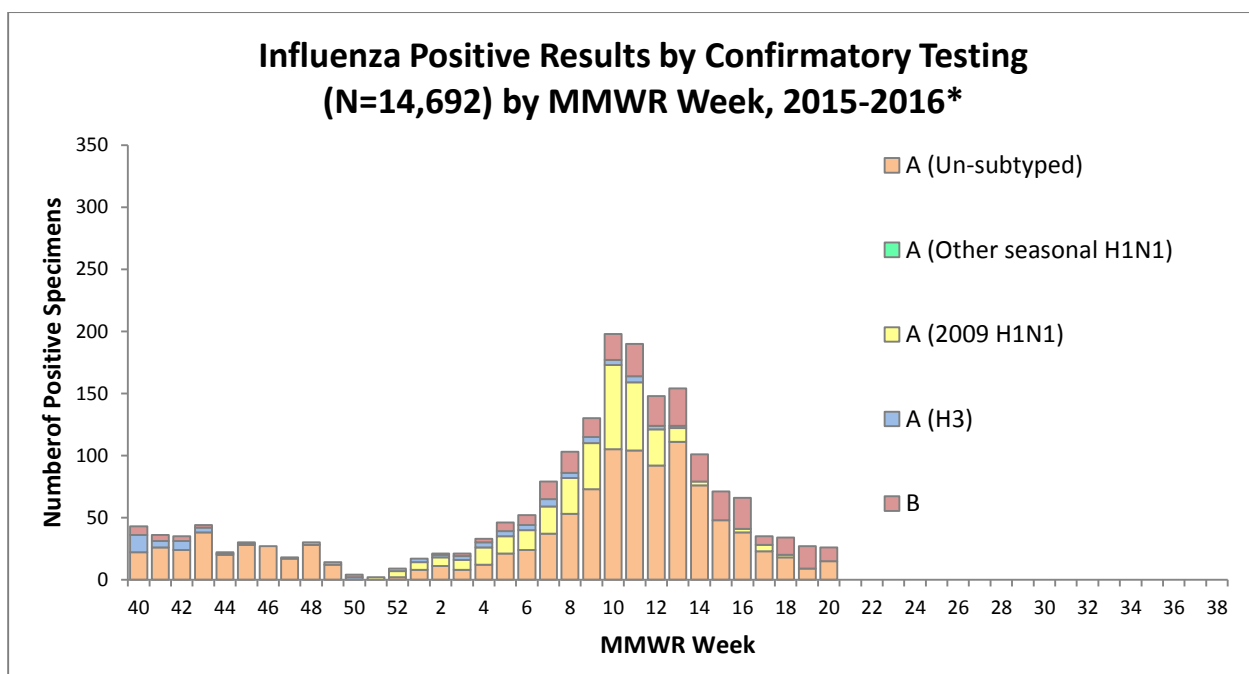
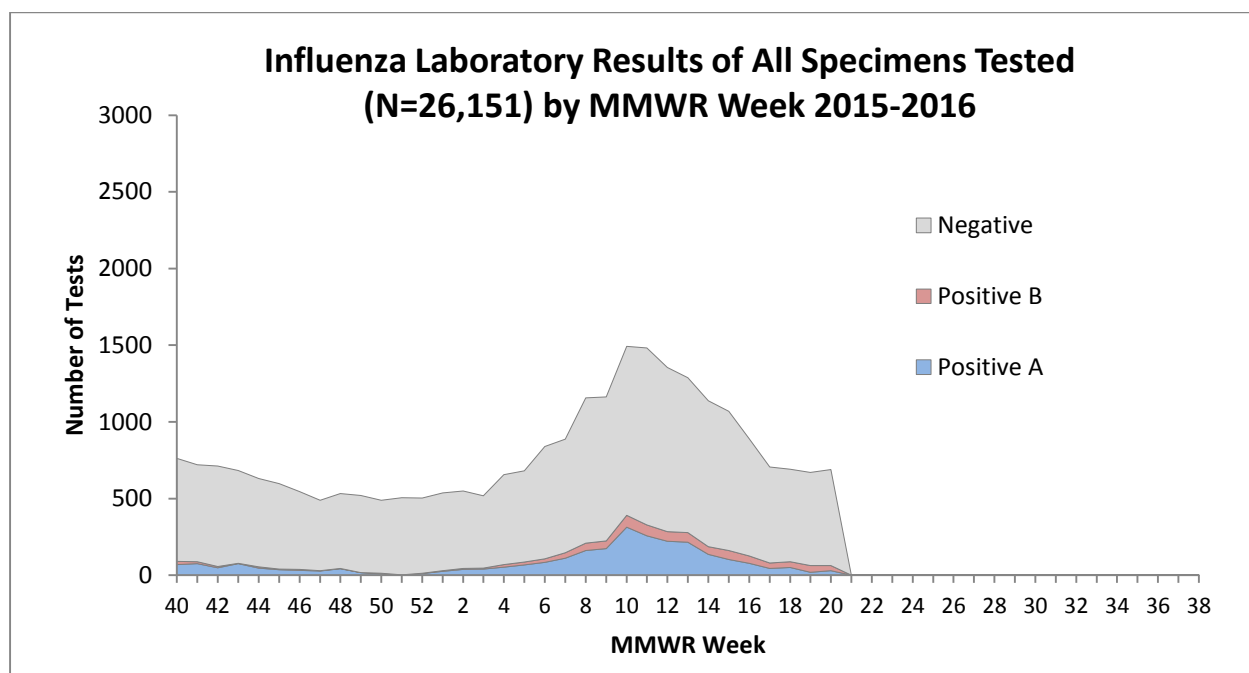
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

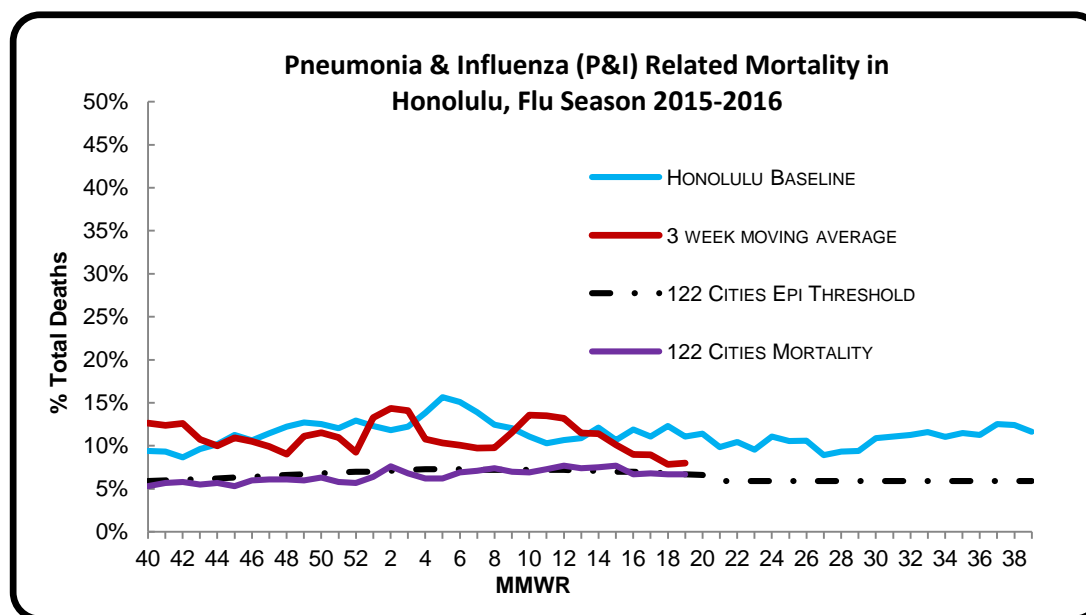
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																												
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40							
Adenovirus							X												X			X				x						X	X																											
Coronavirus																	X	X							X						X	X																												
Coxsackie Virus																																																												
Cytomegalovirus																																																												
Echovirus																																																												
Enterovirus																X				X						X																																		
Herpes Simplex Virus, Type 1																																																												
Metapneumovirus							X										X		X	X					X			X						X																										
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X	X		X	X		X		X	X	X	X	X		X																											
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X					X									X																										
Rhinovirus				X												X	X			X					X																																			
Varicella Zoster Virus																																																												
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																													
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X																X																											
Influenza A (Other seasonal H1)																																																												
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																									
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																									

**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 20** of the current influenza season:

- **9.2%** of all deaths that occurred in Honolulu during week 20 were related to pneumonia or influenza. For the current season (season to date: **11.0%**), there have been 2,790 deaths from any cause, 307 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.0%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.6%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 20. One death was associated with an influenza A 2009 H1N1 virus and occurred during week 8. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 19. (Season total: 70).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *3 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 9, 2016**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 21: MAY 22, 2016 – MAY 28, 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 21

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.0%	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	1	There has been a total of 19 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.1%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	4	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	8.2%	Lower than the previous week. This indicates that many, if not all, of the 91.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.6%	

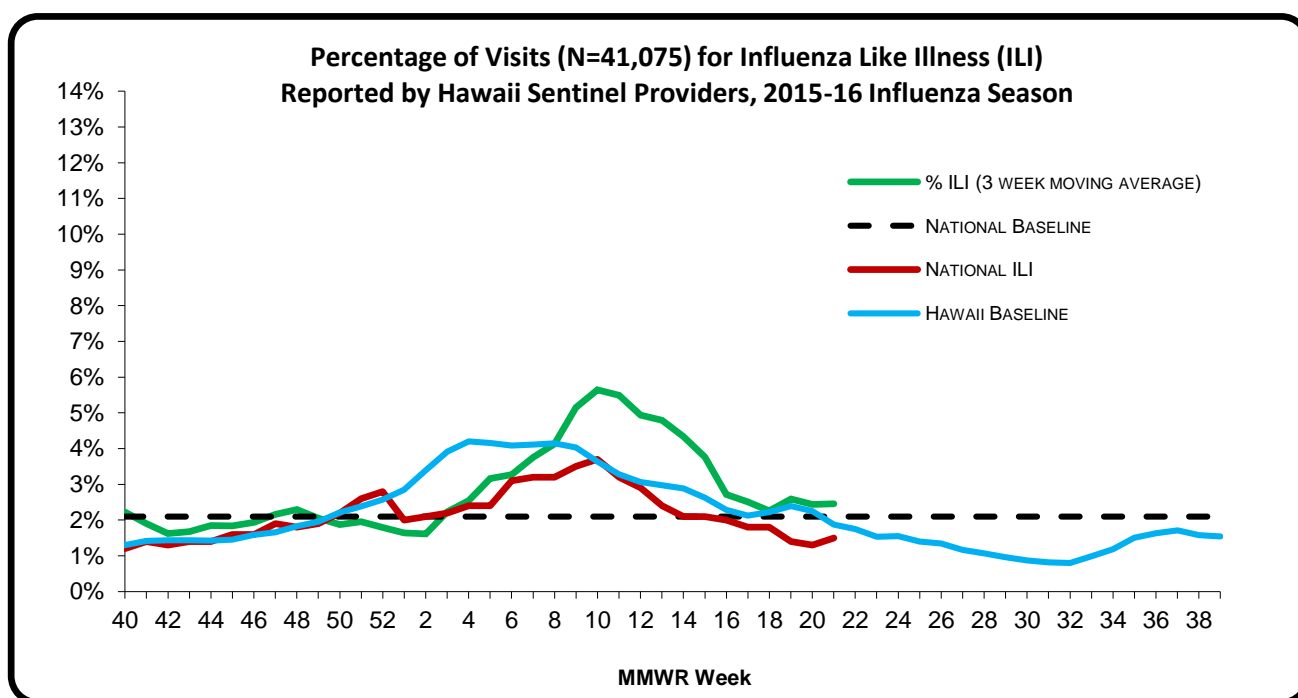
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 21** of the current influenza season:

- **2.0%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (1.5%) (i.e., inside the 95% confidence interval).
- **ILI Cluster Activity:** One cluster was reported to HDOH during week 21. The cluster occurred at a nursing home on Oahu and had cases of influenza B.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

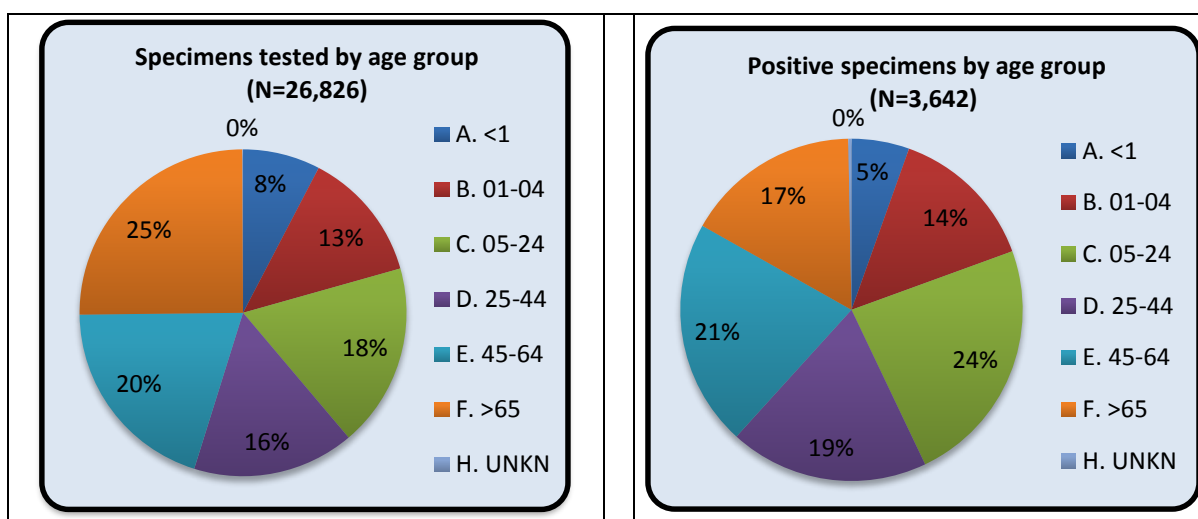
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 21 of the 2015-16 flu season:
  - A total of **667** specimens have been tested statewide for influenza viruses (positive: **55 [8.2%]**). (Season to date: **26,826** tested [**13.6%** positive])
    - 323 (48.4%) were screened only by rapid antigen tests with no confirmatory testing
    - 344 (51.6%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 612 (91.8%) were negative.
  - The 55 total positive cases included 17 (2.5%) cases of influenza A and 38 (5.7%) cases of influenza B (detected using any method). (Season to date: 10.2% influenza A and 3.3% influenza B)
    - Breakdown of influenza A cases:
      - 17 (100%) influenza A (un-subtyped). (Season to date: 84.2%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 12.4%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

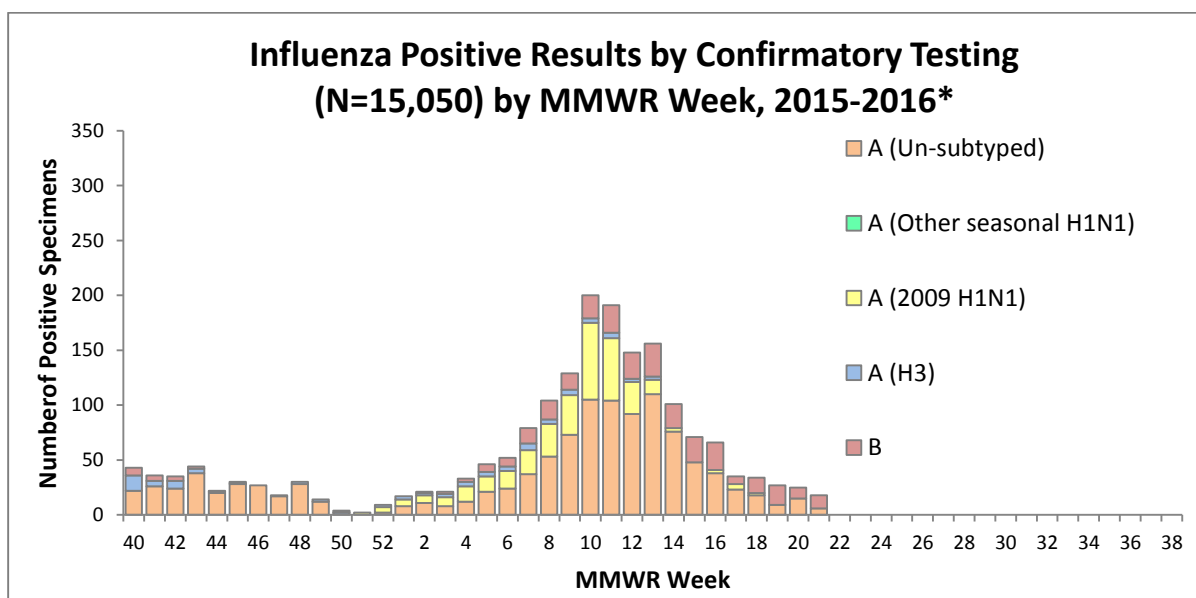
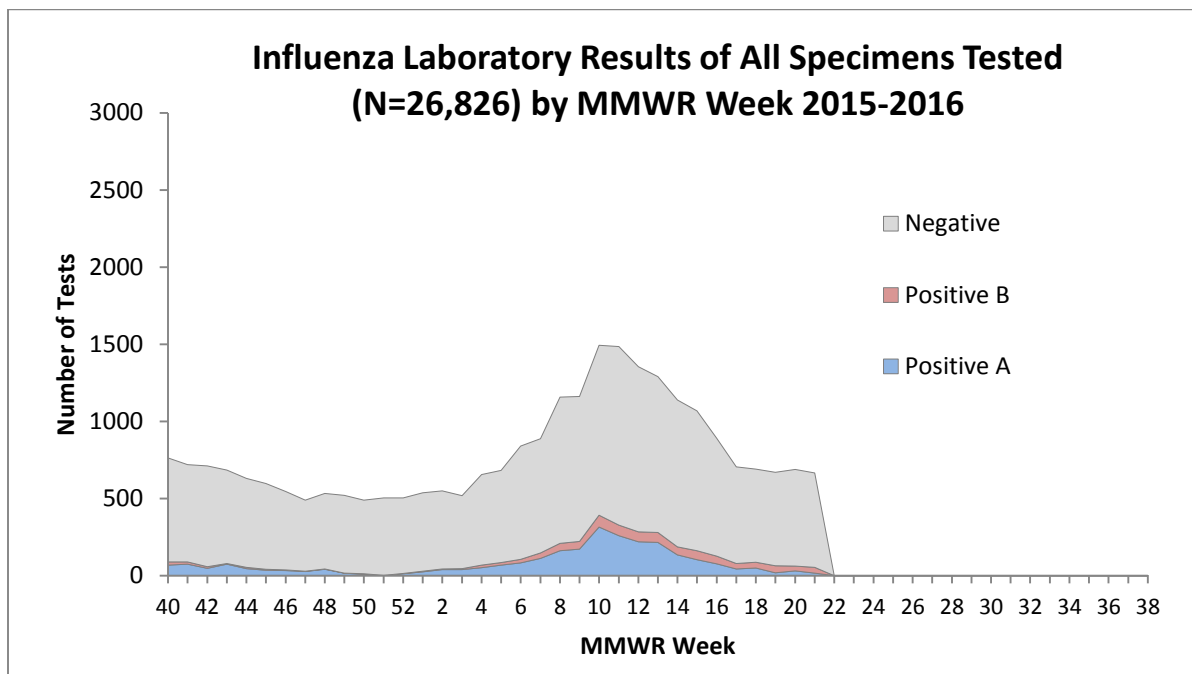
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

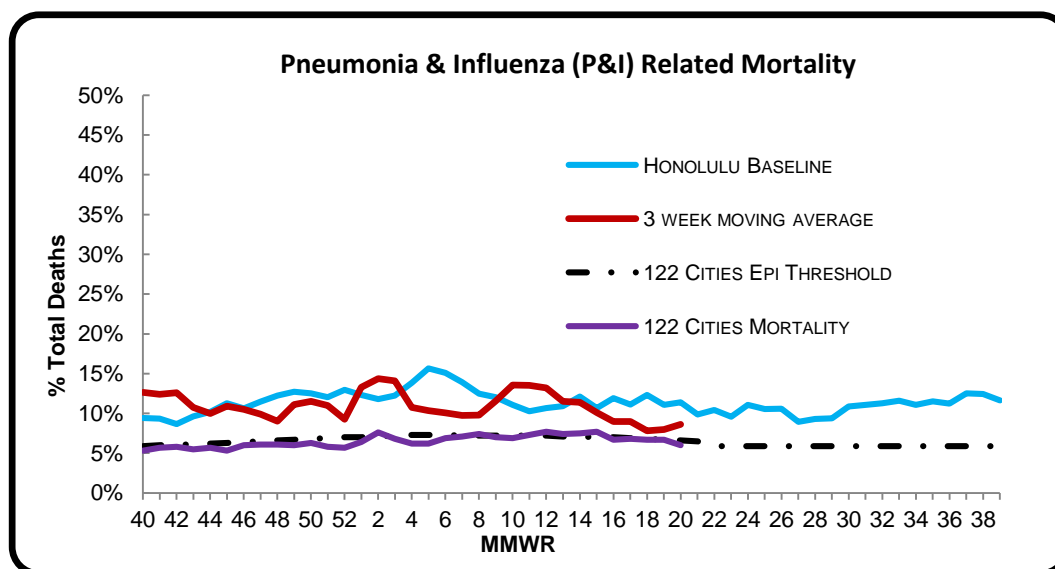
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Adenovirus								X											X			X				X						X	X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Coronavirus																	X	X							X							X	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Coxsackie Virus																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

**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 21** of the current influenza season:

- **12.1%** of all deaths that occurred in Honolulu during week 21 were related to pneumonia or influenza. For the current season (season to date: **11.0%**), there have been 2,906 deaths from any cause, 321 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.3%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.5%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, four influenza-associated pediatric deaths were reported to CDC during week 21. Two deaths were associated with an influenza A 2009 H1N1 virus and occurred during weeks 17 and 19. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 12 and one death was associated with an influenza B virus and occurred during week 13. (Season total: 74).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *3 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 9, 2016**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 22: MAY 29, 2016 – JUNE 4, 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 22

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.8%	Higher than the previous week; comparable to Hawaii's historical baseline, the national baseline; higher than the national ILI rate.
Number of ILI clusters reported to HDOH	0	There has been a total of 19 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	11.9%	Comparable to the historical baseline for Hawaii, the 122-cities average, and the national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	10.6%	Higher than the previous week. This indicates that many, if not all, of the 89.4% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.5%	

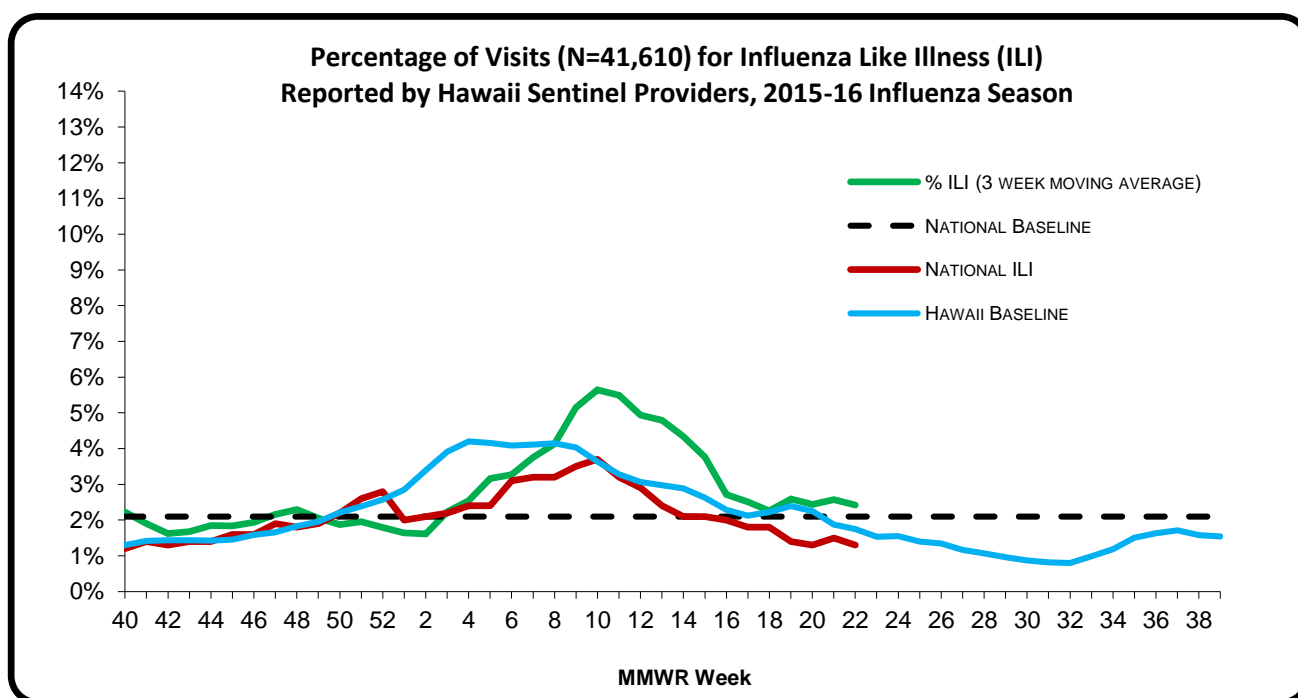
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 22** of the current influenza season:

- **2.8%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (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:** No clusters were reported to HDOH during week 22.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

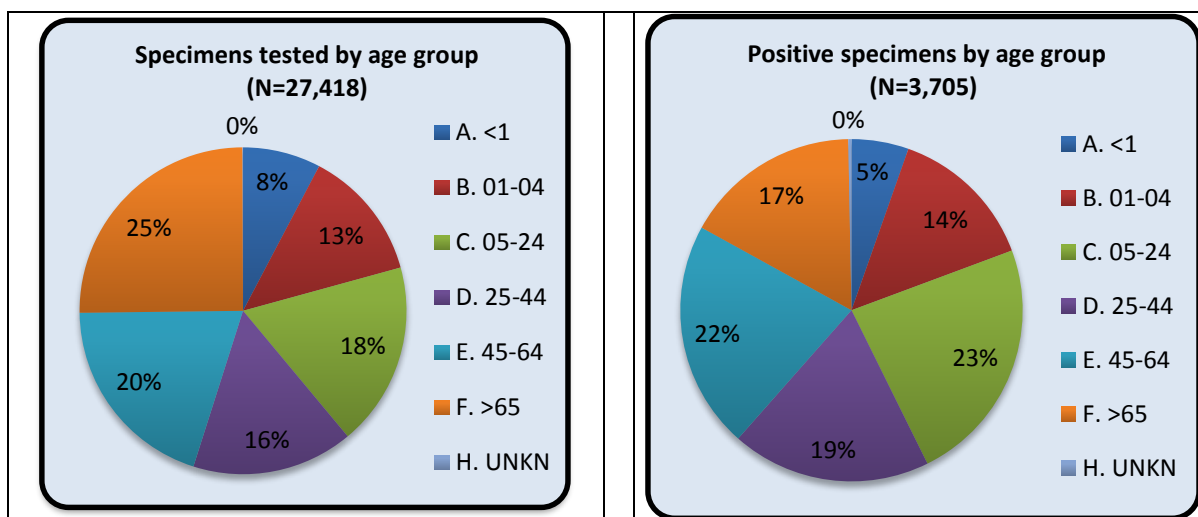
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 22 of the 2015-16 flu season:
  - A total of **596** specimens have been tested statewide for influenza viruses (positive: **63 [10.6%]**). (Season to date: **27,418** tested [**13.5%** positive])
    - 311 (52.2%) were screened only by rapid antigen tests with no confirmatory testing
    - 285 (47.8%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 533 (89.4%) were negative.
  - The 63 total positive cases included 23 (3.9%) cases of influenza A and 40 (6.7%) cases of influenza B (detected using any method). (Season to date: 10.1% influenza A and 3.4% influenza B)
    - Breakdown of influenza A cases:
      - 19 (82.6%) influenza A (un-subtyped). (Season to date: 84.2%)
      - 4 (17.4%) 2009 H1N1. (Season to date: 12.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

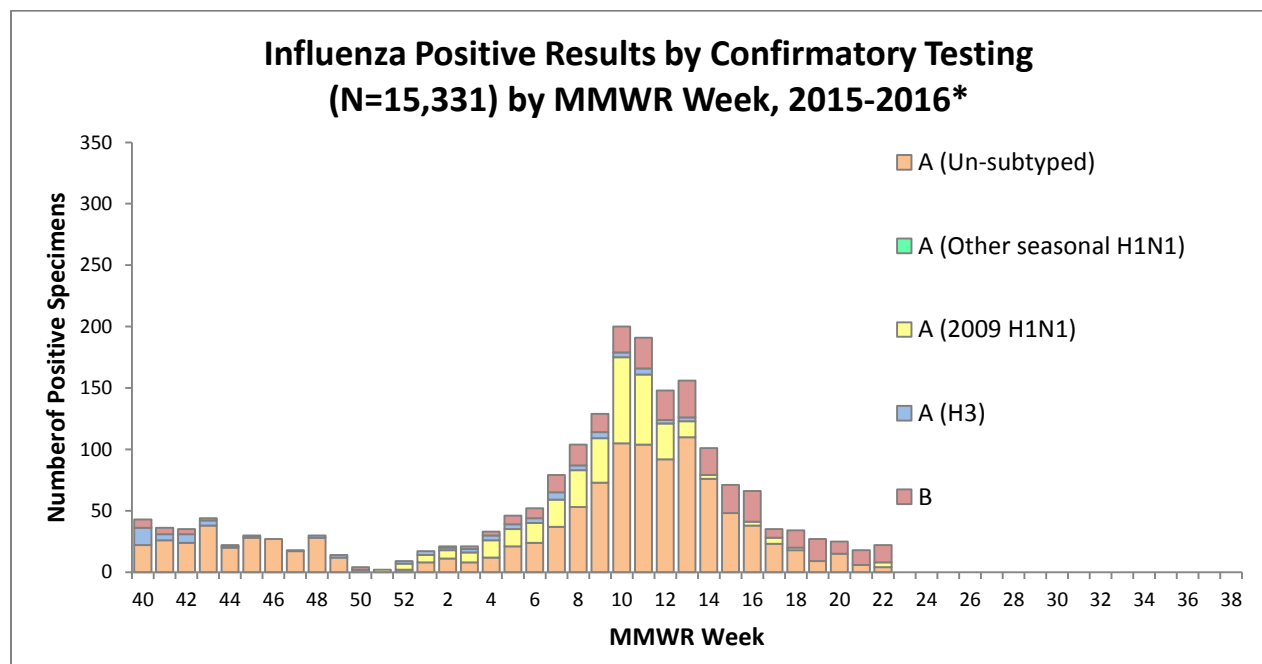
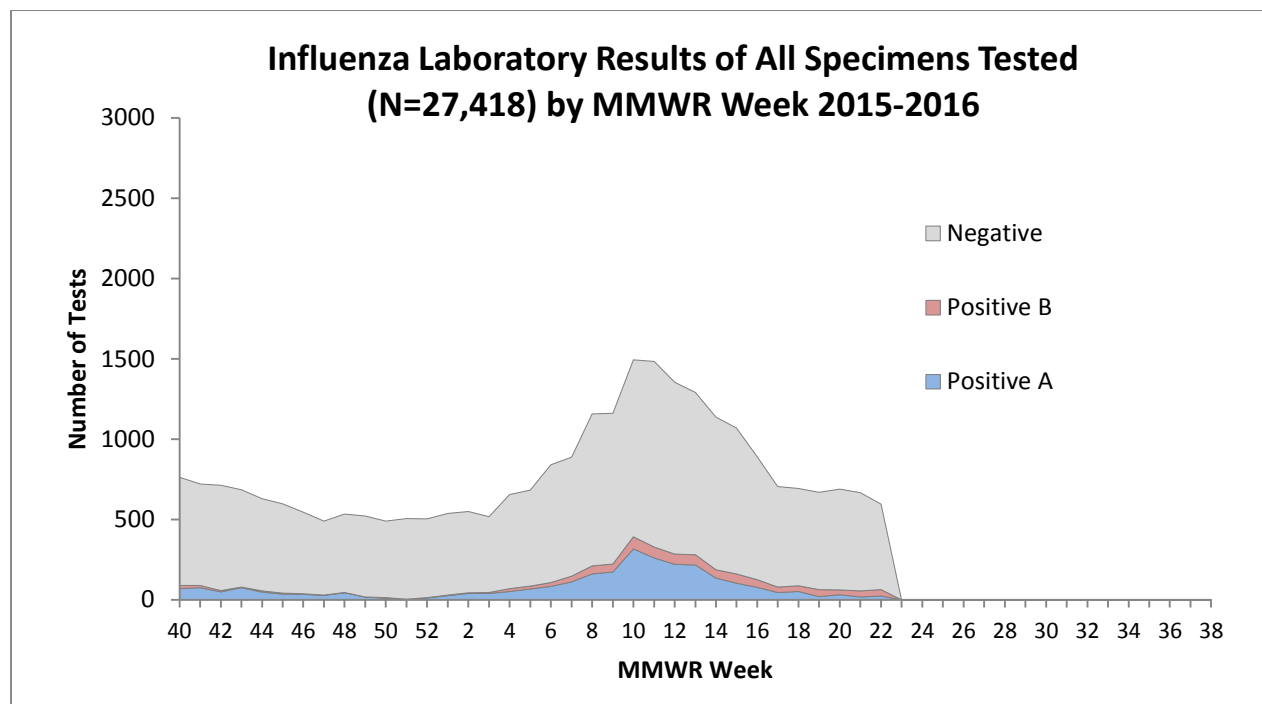
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

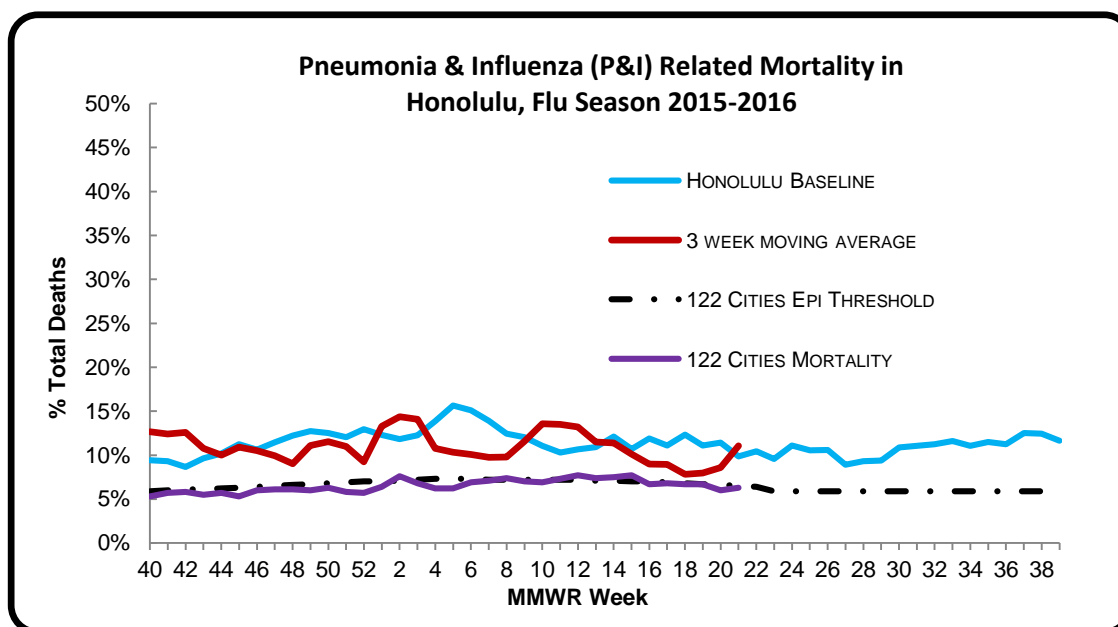
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																										
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40					
Adenovirus							X												X			X				x					X	X	X																									
Coronavirus																	X	X							X						X		X																									
Coxsackie Virus																																																										
Cytomegalovirus																																																										
Echovirus																																																										
Enterovirus																X				X						X																																
Herpes Simplex Virus, Type 1																																																										
Metapneumovirus							X									X		X	X						X			X					X																									
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X	X		X	X	X	X	X	X	X	X	X	X		X		X																							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X					X								X																									
Rhinovirus				X												X	X			X					X																																	
Varicella Zoster Virus																																																										
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X																							
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X															X																										
Influenza A (Other seasonal H1)																																																										
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																						
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																						

**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 22** of the current influenza season:

- **11.9%** of all deaths that occurred in Honolulu during week 22 were related to pneumonia or influenza. For the current season (season to date: **11.1%**), there have been 2,973 deaths from any cause, 329 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (6.2%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.4%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 22. Both deaths were associated with an influenza B virus and occurred during weeks 17 and 21. (Season total: 76).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *3 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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. For information specific to H7N9, refer to the CDC ([here](#)) or the WHO ([here](#)) websites. The most recent WHO risk assessment on H7N9 was released on **February 23, 2015** ([here](#)); the public health risk from H7N9 has not changed since the assessment published in October 2014. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **May 9, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 23: JUNE 5, 2016 – JUNE 11, 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 23

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.3%	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 has been a total of 19 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	13.7%	Comparable to the historical baseline for Hawaii. Higher than the 122-cities average and national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	7.2%	Lower than the previous week. This indicates that many, if not all, of the 92.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.4%	

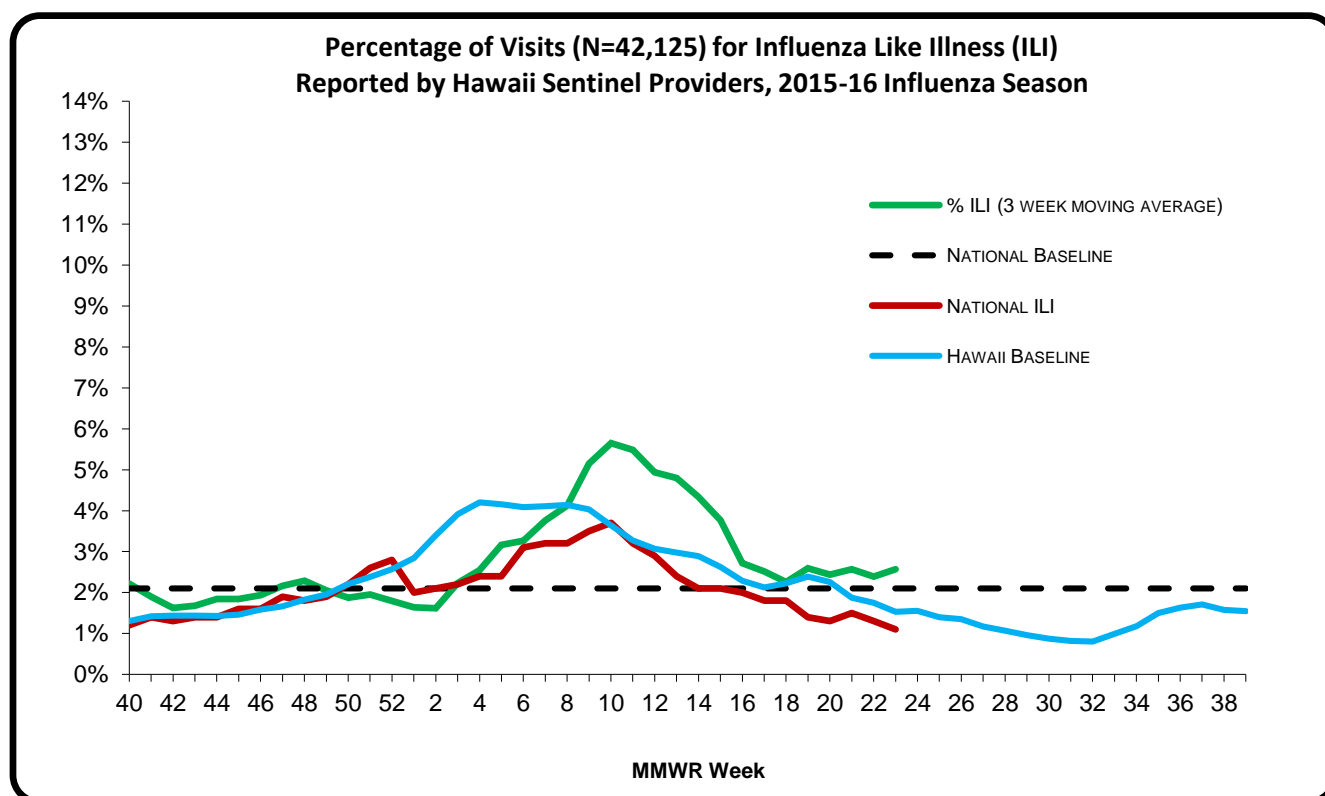
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 23** of the current influenza season:

- **2.3%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and to the national ILI rate (1.1%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 23.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

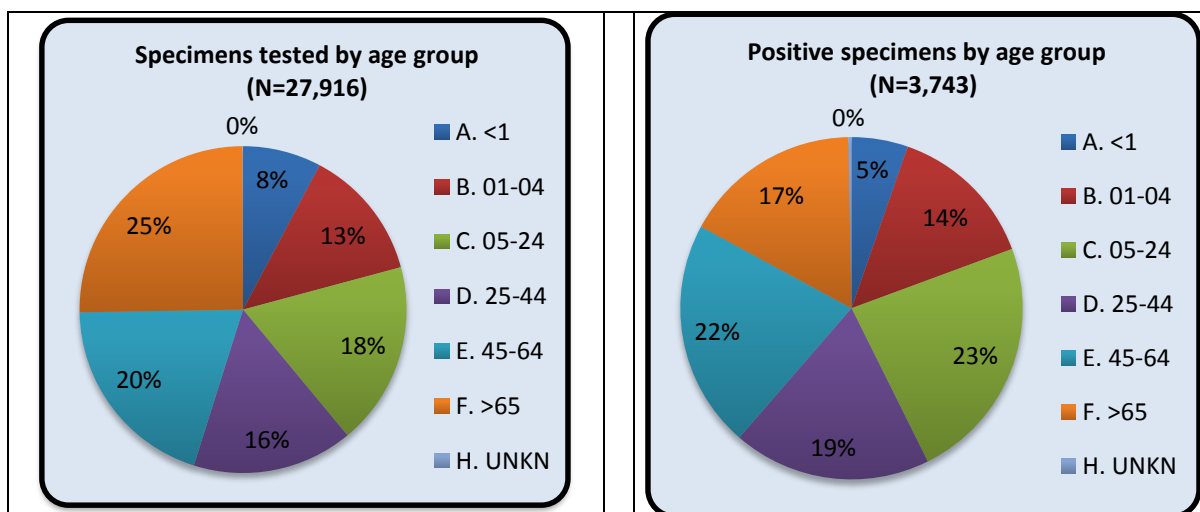
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 23 of the 2015-16 flu season:
  - A total of 553 specimens have been tested statewide for influenza viruses (positive: 40 [7.23%]). (Season to date: 27,916 tested [13.41% positive])
    - 300 (54.3%) were screened only by rapid antigen tests with no confirmatory testing
    - 253 (45.7%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 513 (92.8%) were negative.
  - The 40 total positive cases included 14 (2.5%) cases of influenza A and 26 (4.7%) cases of influenza B (detected using any method). (Season to date: 10.0% influenza A and 3.4% influenza B)
    - Breakdown of influenza A cases:
      - 14 (100.0%) influenza A (un-subtyped). (Season to date: 84.3%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 12.4%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.2%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

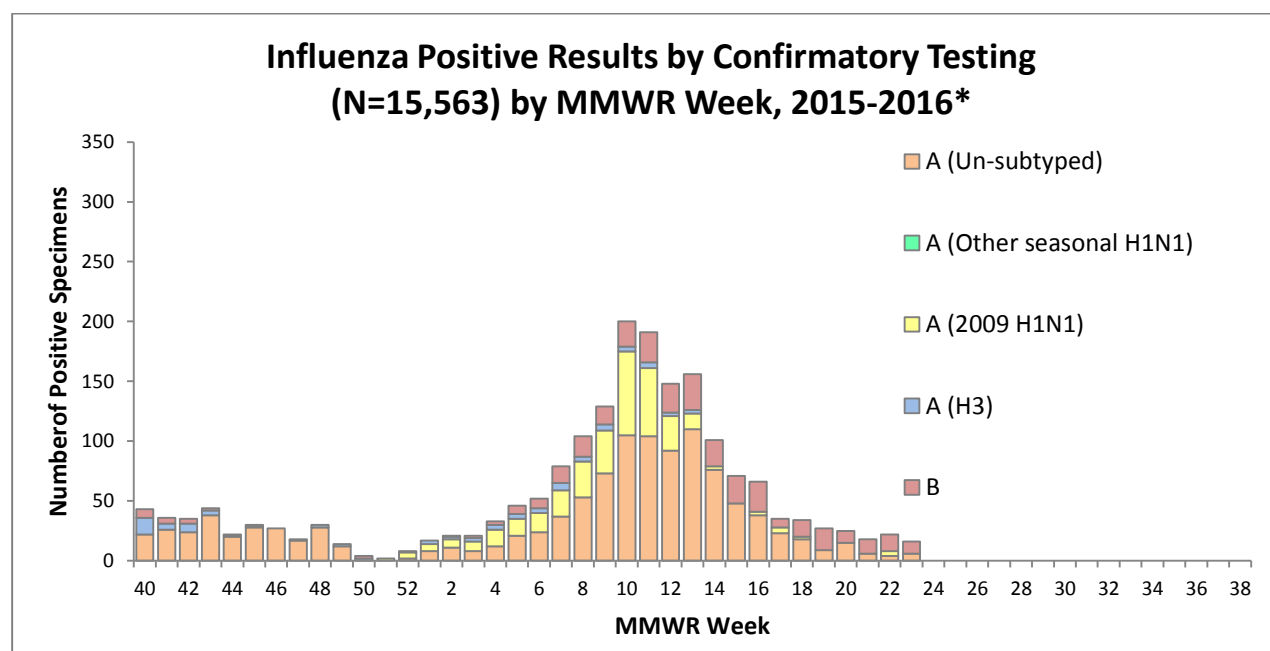
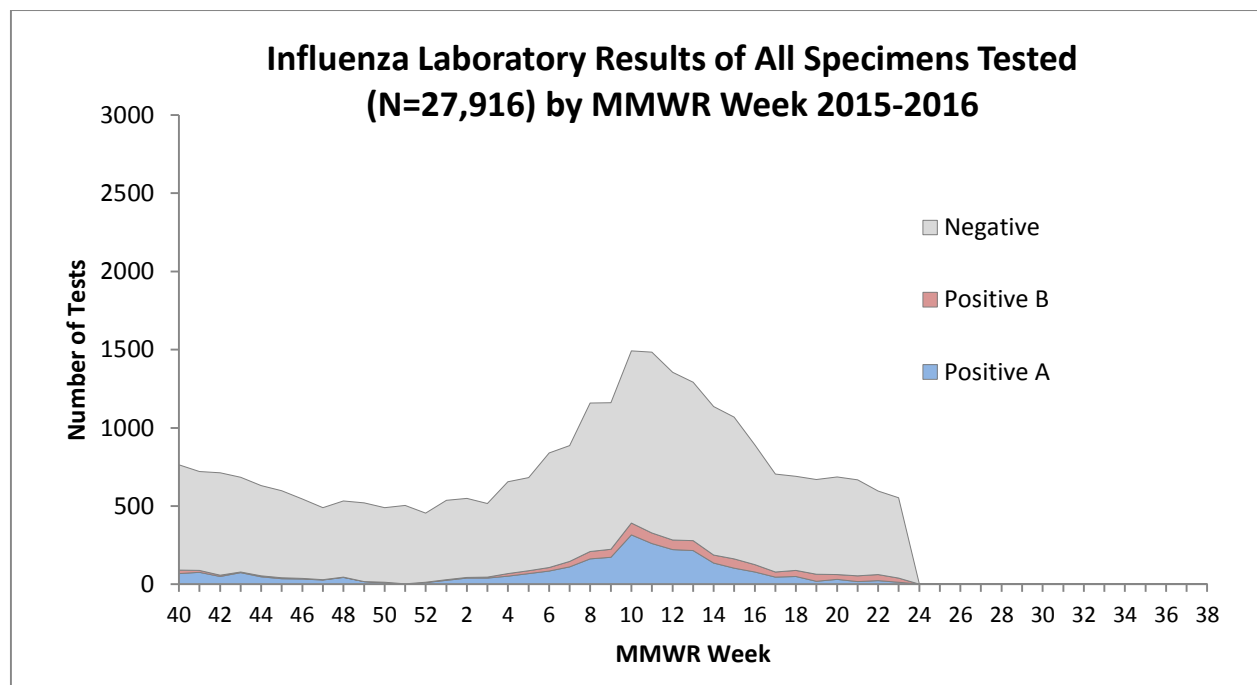
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 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.

## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

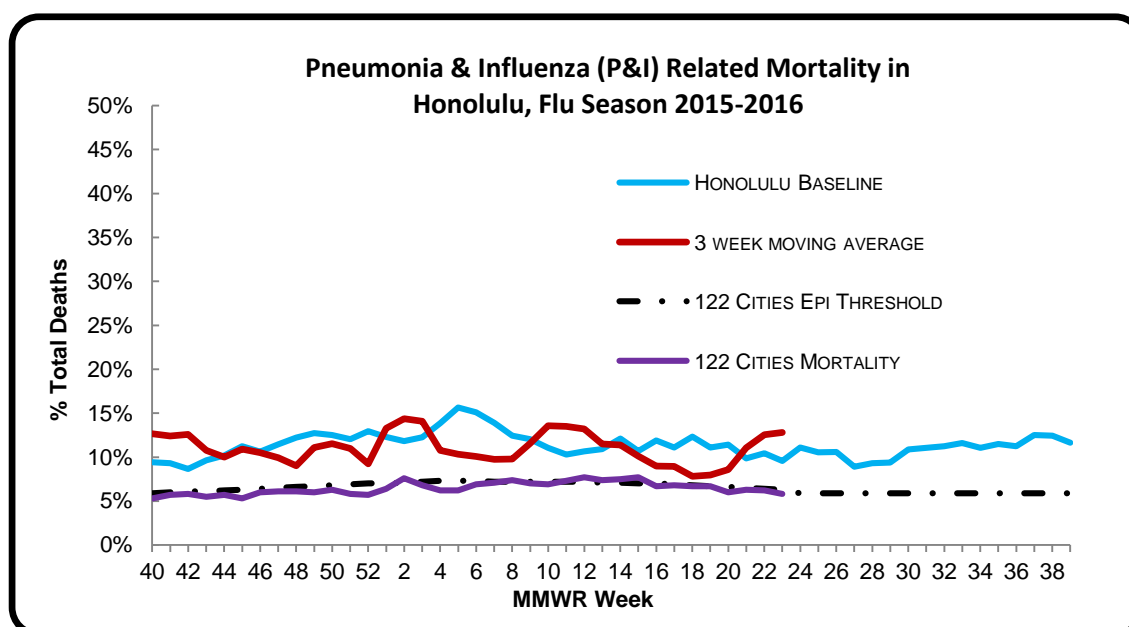
[illegible]



**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 23** of the current influenza season:

- *13.7% of all deaths that occurred in Honolulu during week 23 were related to pneumonia or influenza. For the current season (season to date: 11.1%), there have been 3,068 deaths from any cause, 342 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.8%) (i.e., outside the 95% confidence interval) and the epidemic threshold (6.3%) (i.e., outside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 23. This death was associated with an influenza B virus and occurred during week 21. (Season total: 77).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *3 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **June 13, 2016**. Since the last update in May 2016, one fatal laboratory-confirmed case of H5N1 was reported from Egypt in an individual with exposure to domestic birds and poultry excreta. Additionally, one new laboratory-confirmed case of H5N6 was reported from China; the source of exposure is still being investigated. Lastly, eleven laboratory-confirmed cases of H7N9, including 4 deaths, were reported from China. The majority (91%) of cases reported exposure to live poultry, slaughtered poultry, or live poultry markets. The public health risk assessment for H5 and H7N9 viruses has not changed since the last report.

**APPENDIX 1: ADDITIONAL INFORMATION**

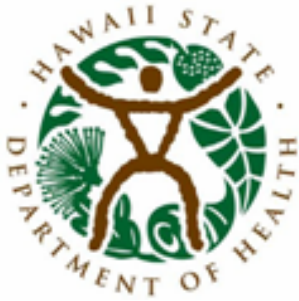
For more information regarding local and national influenza surveillance programs, visit the following sites.

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 24: JUNE 12, 2016 – JUNE 18, 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 24

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.4%	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 has been a total of 19 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	9.8%	Comparable to the historical baseline for Hawaii, the 122-cities average and national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	5.0%	Lower than the previous week. This indicates that many, if not all, of the 95.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.3%	

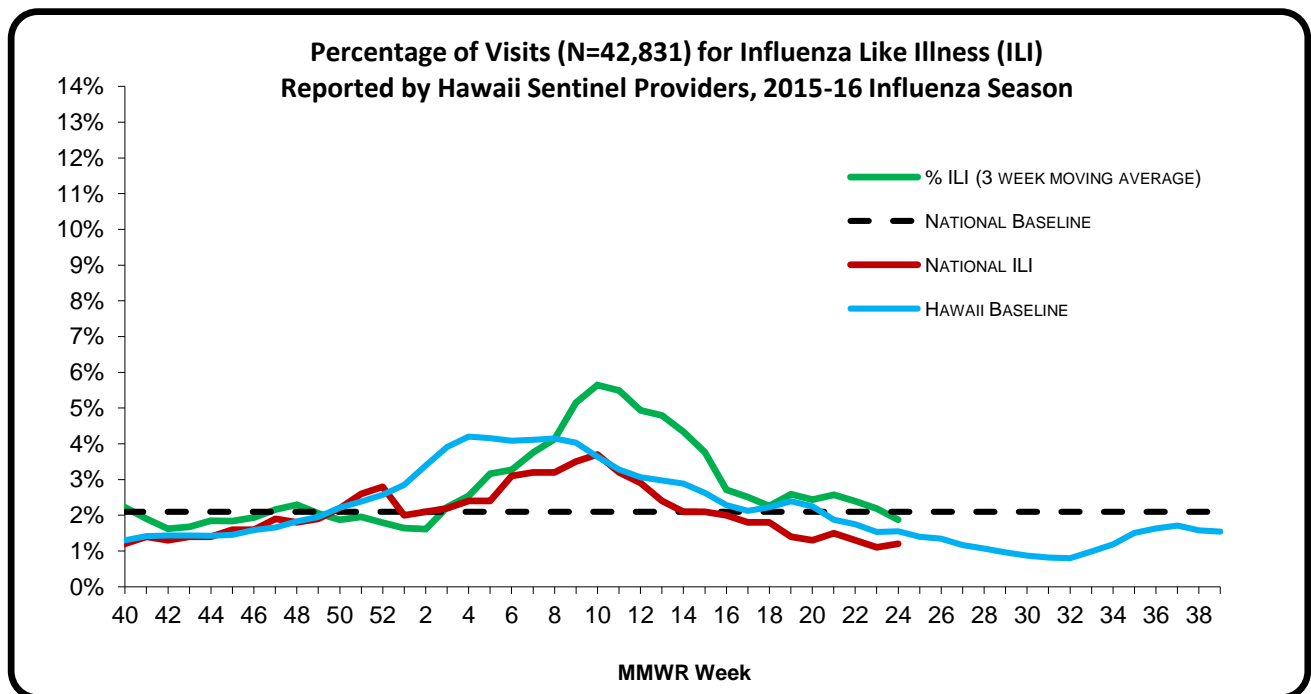
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 24** of the current influenza season:

- **1.4%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and to the national ILI rate (1.2%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 24.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

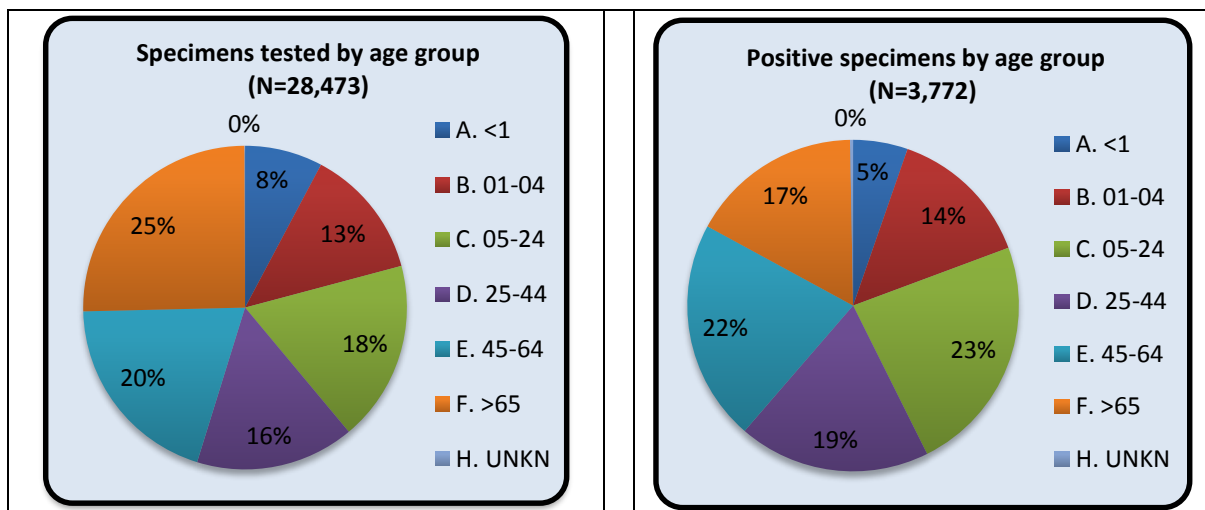
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 24 of the 2015-16 flu season:
  - A total of **501** specimens have been tested statewide for influenza viruses (positive: **25 [5.0%]**). (Season to date: **28, 473** tested [**13.3%** positive])
    - 241 (48.1%) were screened only by rapid antigen tests with no confirmatory testing
    - 260 (51.9%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 476 (95.0%) were negative.
  - The 25 total positive cases included 8 (1.6%) cases of influenza A and 17 (3.4%) cases of influenza B (detected using any method). (Season to date: 9.8% influenza A and 3.4% influenza B)
    - Breakdown of influenza A cases:
      - 8 (100.0%) influenza A (un-subtyped). (Season to date: 84.3%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 12.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.2%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

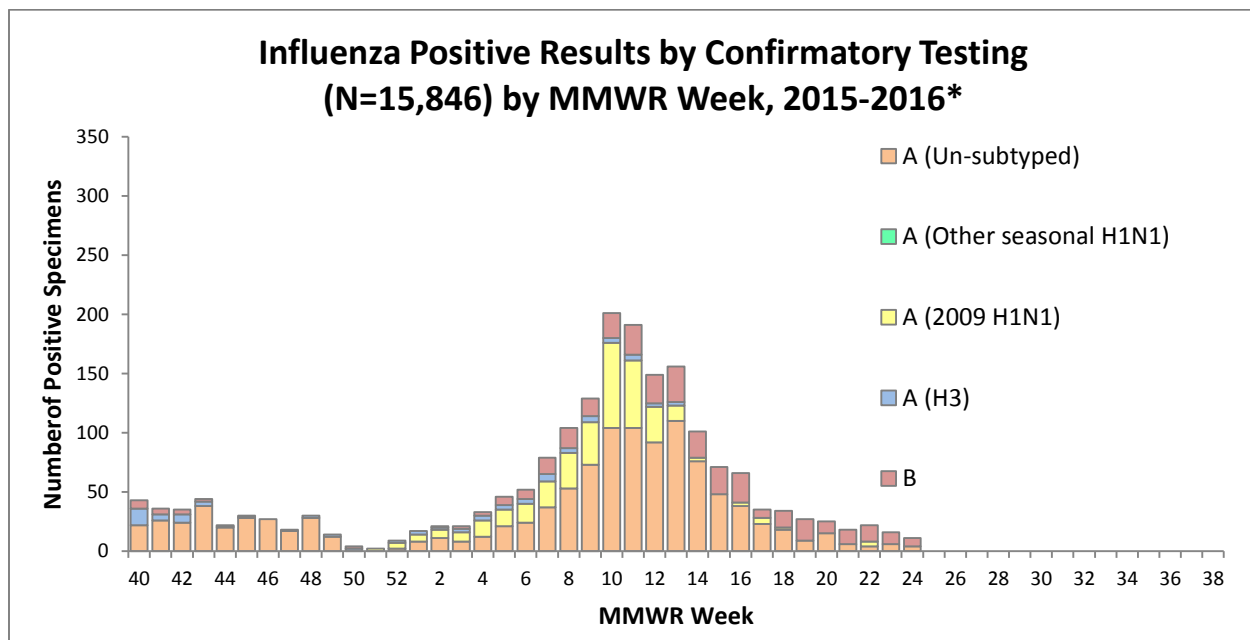
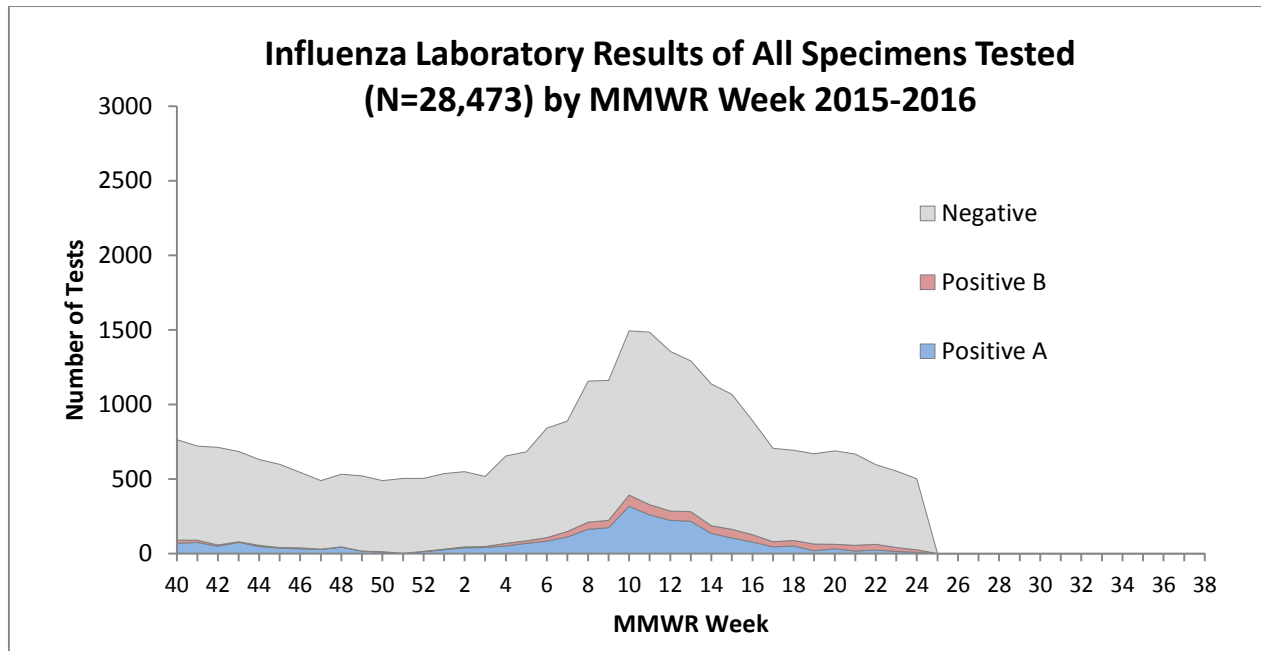


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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



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

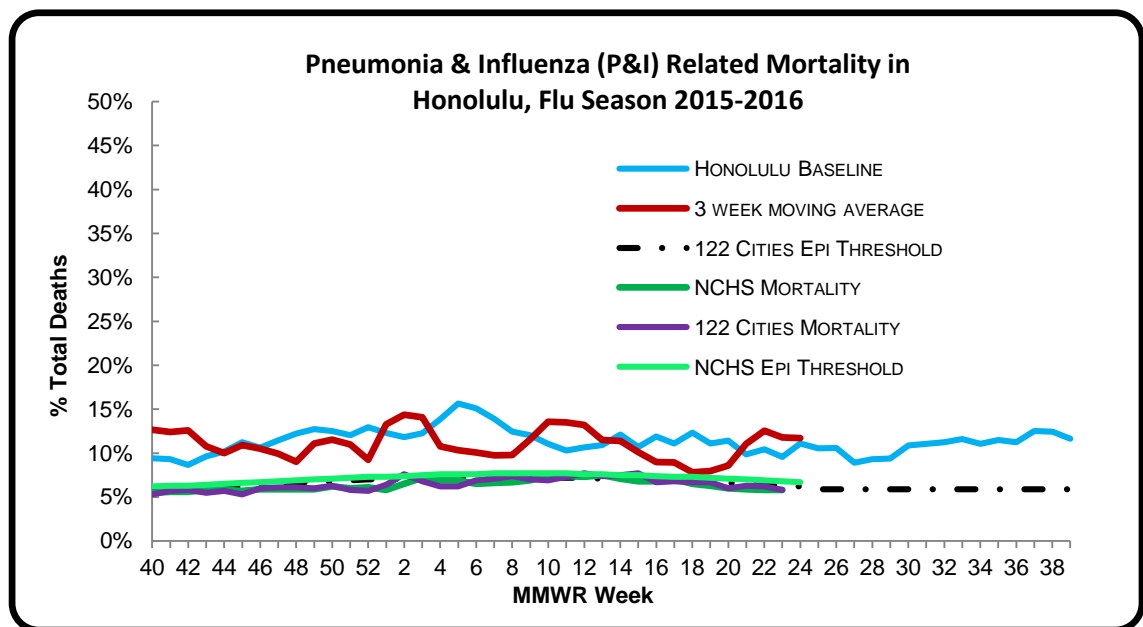
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 24** of the current influenza season:

- **9.8%** of all deaths that occurred in Honolulu during week 24 were related to pneumonia or influenza. For the current season (season to date: **11.1%**), there have been 3,150 deaths from any cause, 350 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (5.3%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.2%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 24. (Season total: 77).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *3 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **June 13, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 25: JUNE 19, 2016 – JUNE 25, 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 25

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.8%	Higher 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	2	There has been a total of 21 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	7.4%	Comparable to the historical baseline for Hawaii, the 122-cities average and national epidemic threshold.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	5.2%	Higher than the previous week. This indicates 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	13.1%	

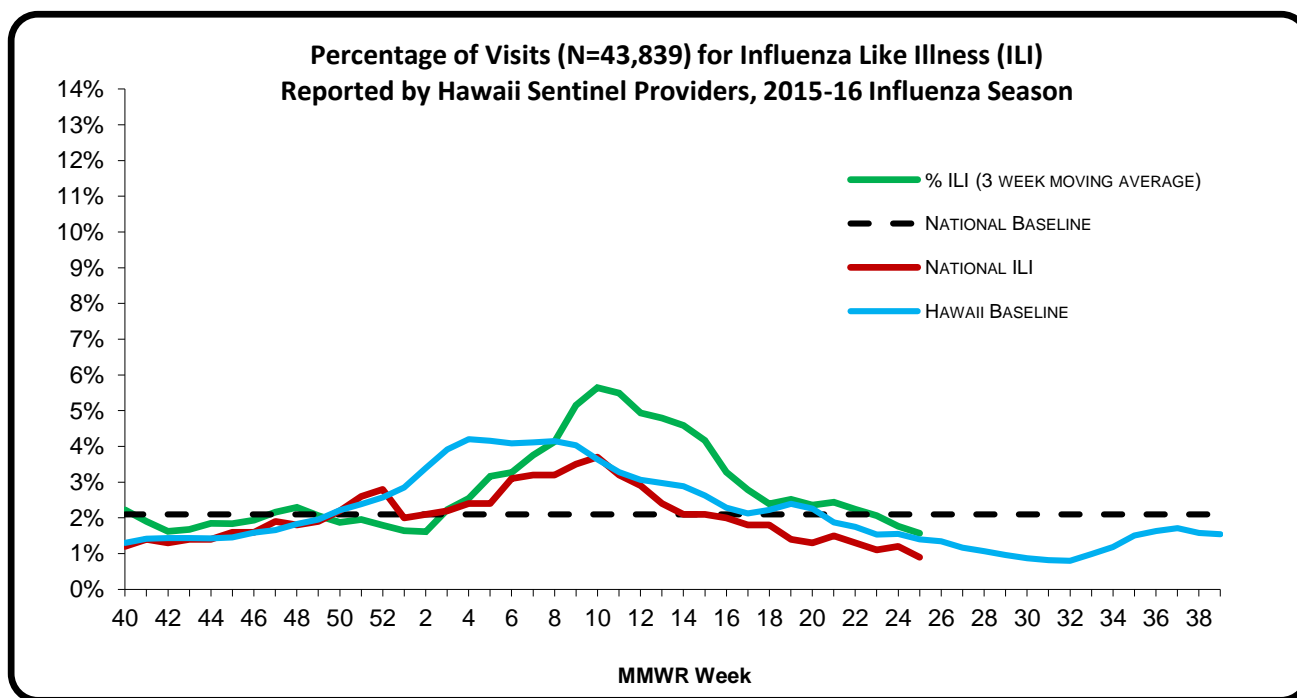
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 25** of the current influenza season:

- **1.8%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and to the national ILI rate (0.9%) (i.e., inside the 95% confidence interval).
- **ILI Cluster Activity:** Two clusters were reported to HDOH during week 25. One occurred at a nursing home on Oahu and has cases of influenza A. The second one occurred at a nursing home on Kauai and has confirmed cases of influenza A H3.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



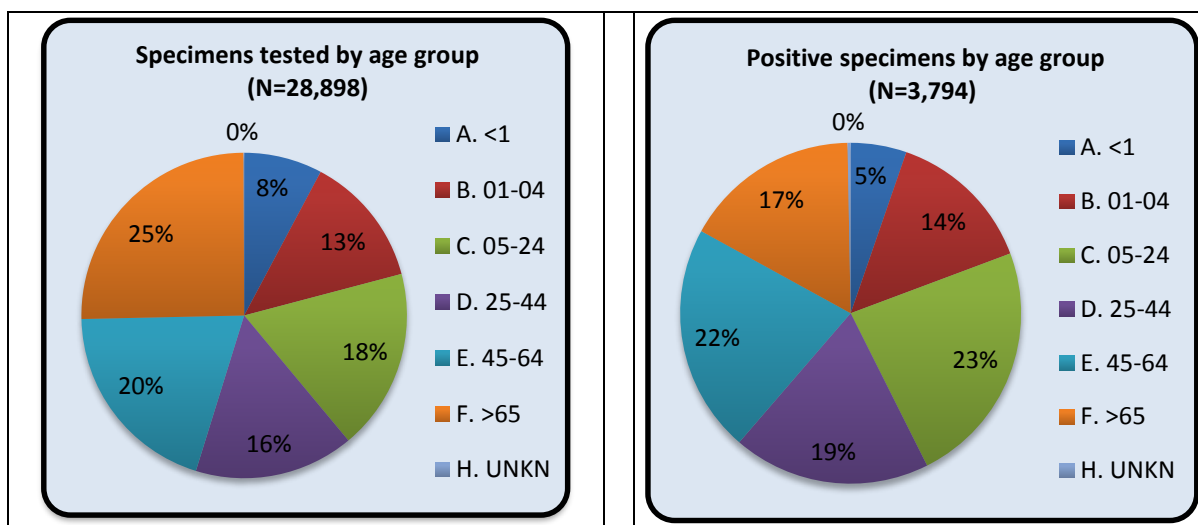
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 25 of the 2015-16 flu season:
  - A total of **427** specimens have been tested statewide for influenza viruses (positive: **22 [5.2%]**). (Season to date: **28, 898** tested [**13.1%** positive])
    - 211 (49.4%) were screened only by rapid antigen tests with no confirmatory testing
    - 216 (50.6%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 405 (94.8%) were negative.
  - The 22 total positive cases included 8 (1.9%) cases of influenza A and 14 (3.3%) cases of influenza B (detected using any method). (Season to date: 9.7% influenza A and 3.4% influenza B)
    - Breakdown of influenza A cases:
      - 8 (100.0%) influenza A (un-subtyped). (Season to date: 84.3%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 12.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.2%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

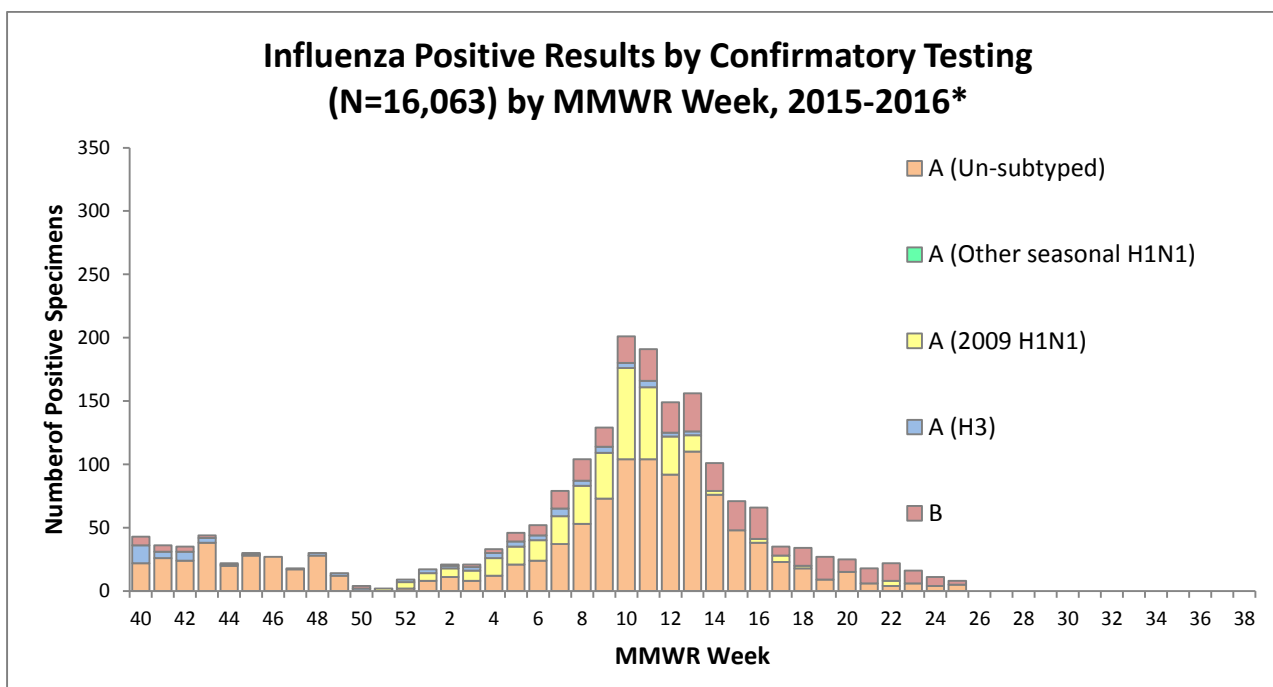
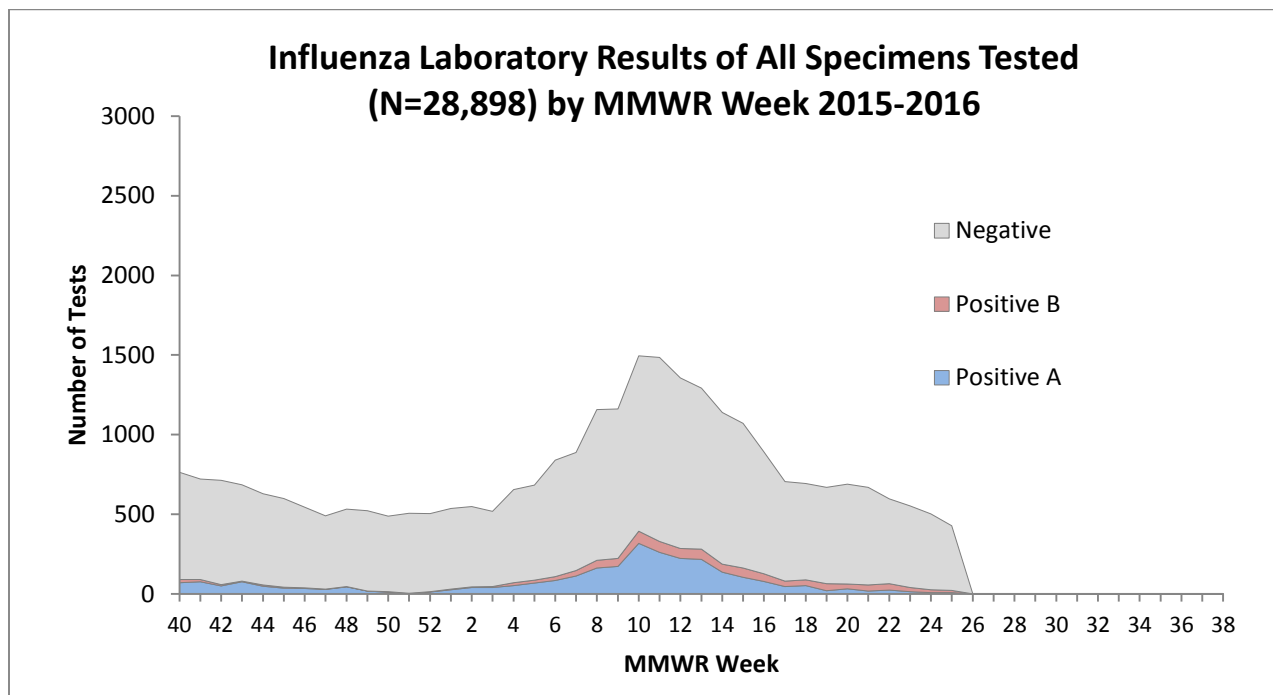


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

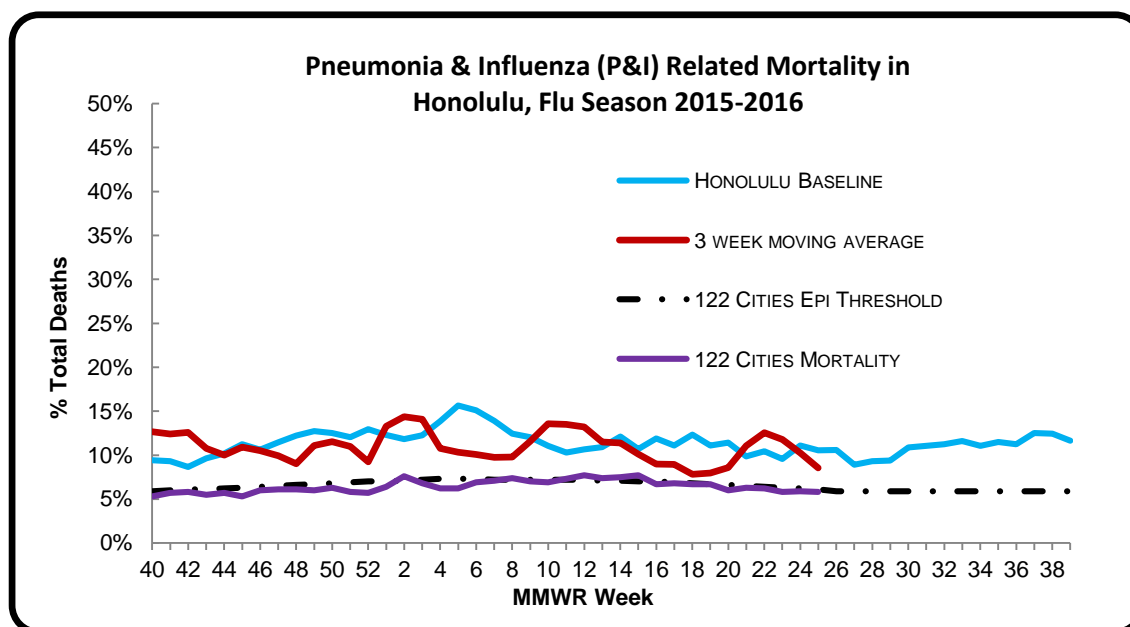
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 25** of the current influenza season:

- **7.4%** of all deaths that occurred in Honolulu during week 25 were related to pneumonia or influenza. For the current season (season to date: **11.0%**), there have been 3,245 deaths from any cause, 357 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (5.8%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.1%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 25. (Season total: 77).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *5 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **June 13, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 26: JUNE 26, 2016 – JULY 2, 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 26

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.7%	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 has been a total of 21 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	12.5%	Comparable to the historical baseline for Hawaii and national epidemic threshold; Higher than the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	6.9%	Higher than the previous week. This indicates that many, if not all, of the 93.1% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	13.0%	

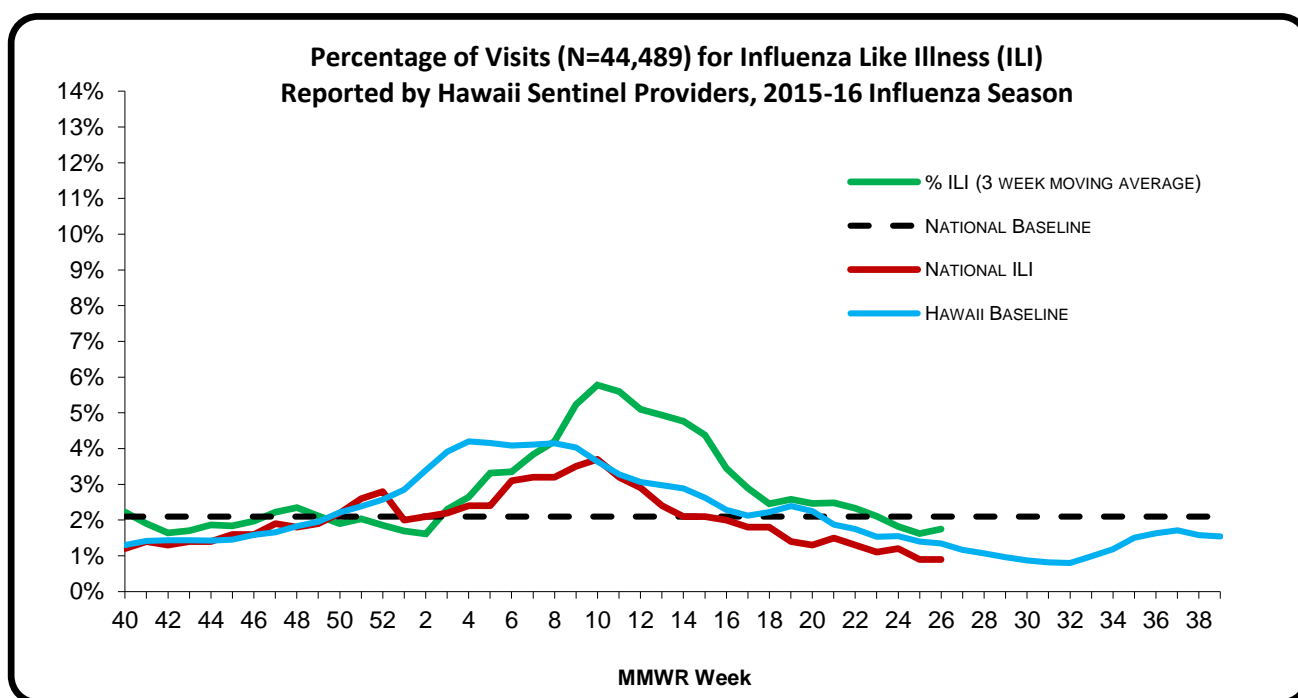
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 26** of the current influenza season:

- **1.7%** (season to date: **2.9%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and to the national ILI rate (0.9%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 26.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



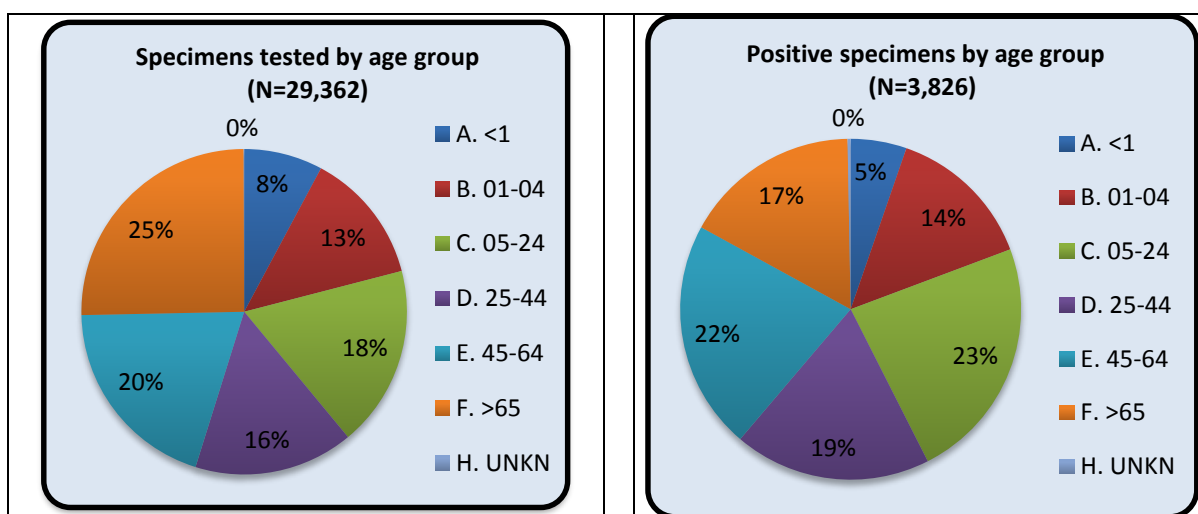
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 26 of the 2015-16 flu season:
  - A total of **464** specimens have been tested statewide for influenza viruses (positive: **32 [6.9%]**). (Season to date: **29,362** tested [**13.0%** positive])
    - 217 (46.8%) were screened only by rapid antigen tests with no confirmatory testing
    - 247 (53.2%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 432 (93.1%) were negative.
  - The 32 total positive cases included 18 (3.9%) cases of influenza A and 14 (3.0%) cases of influenza B (detected using any method). (Season to date: 9.6% influenza A and 3.4% influenza B)
    - Breakdown of influenza A cases:
      - 17 (94.4%) influenza A (un-subtyped). (Season to date: 84.4%)
      - 1 (5.6%) 2009 H1N1. (Season to date: 12.4%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.2%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

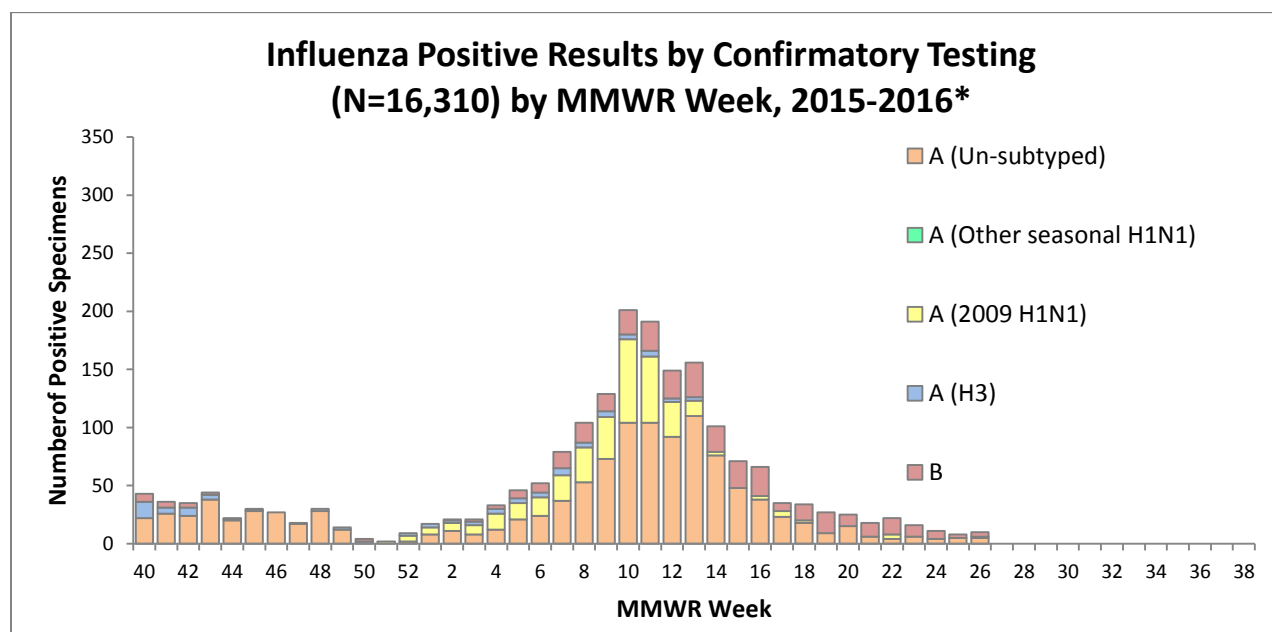
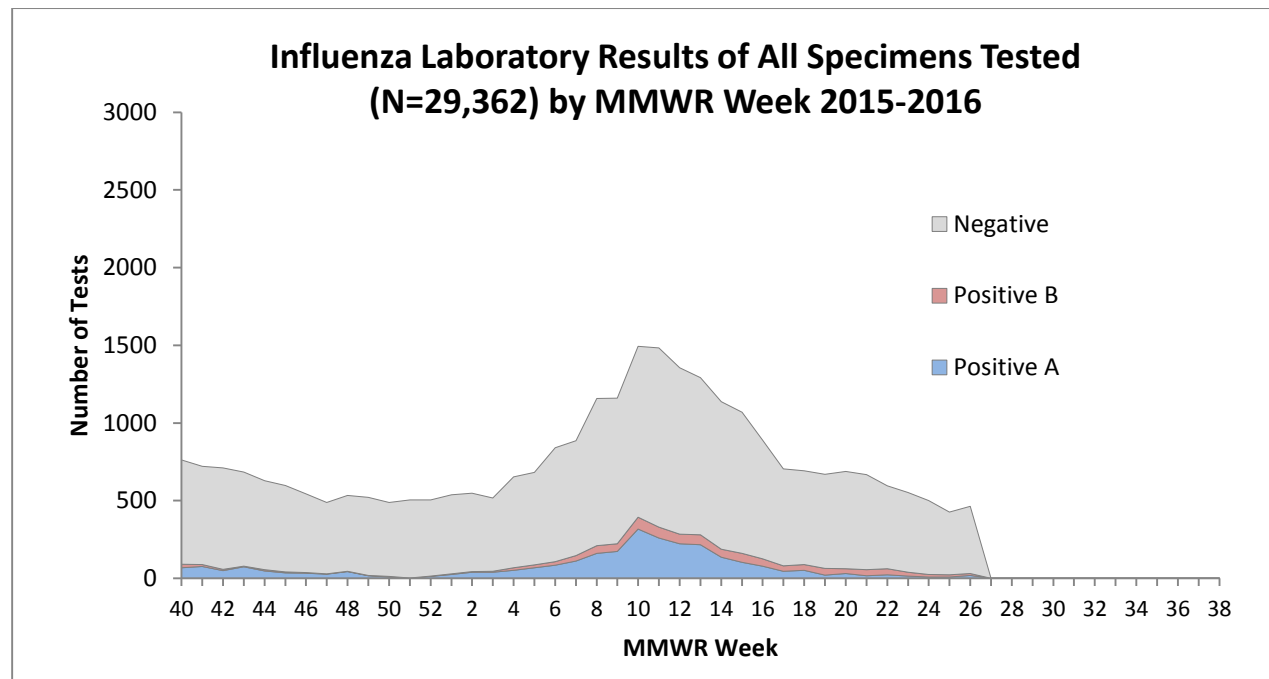
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

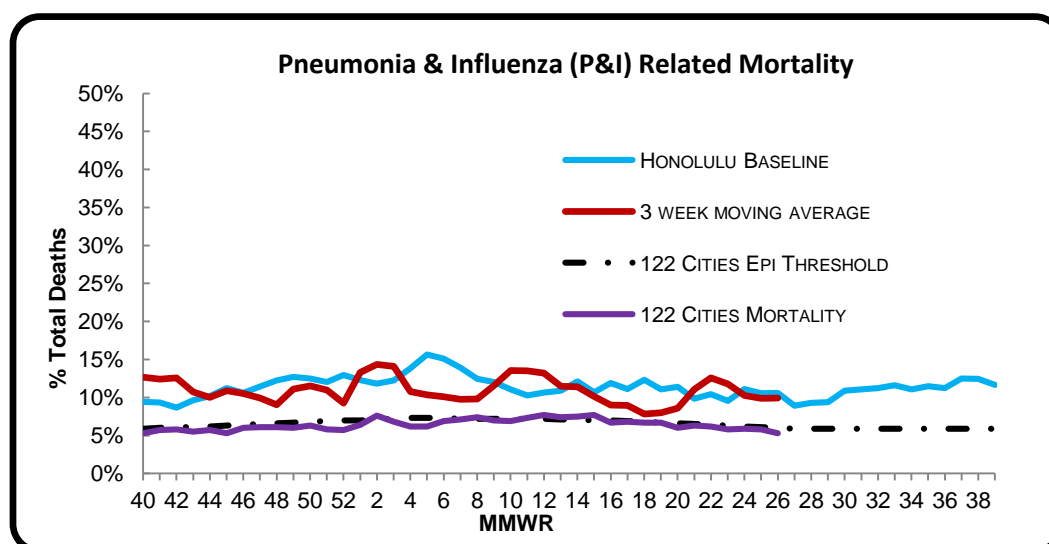
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Adenovirus							X												X		X					x						X	X	X			x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Coronavirus																	X	X							X						X	X					x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Coxsackie Virus																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

**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 26** of the current influenza season:

- *12.5% of all deaths that occurred in Honolulu during week 26 were related to pneumonia or influenza. For the current season (season to date: **11.0%**), there have been 3,333 deaths from any cause, 368 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was greater than the national 122-city P&I mortality<sup>7</sup>(5.3%) (i.e., outside the 95% confidence interval) and comparable to the epidemic threshold (6.0%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, three influenza-associated pediatric deaths were reported to CDC during week 26. One death was associated with an influenza A 2009 H1N1 virus and occurred during week 7. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 18 and one death was associated with an influenza B virus and occurred during week 22. (Season total: 80).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *5 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **June 13, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 27: JULY 3, 2016 – JULY 9, 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 27

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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 ILI rate; comparable to the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 21 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	6.4%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	5.7%	Higher than the previous week. This indicates 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	12.9%	

<sup>1</sup> 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.

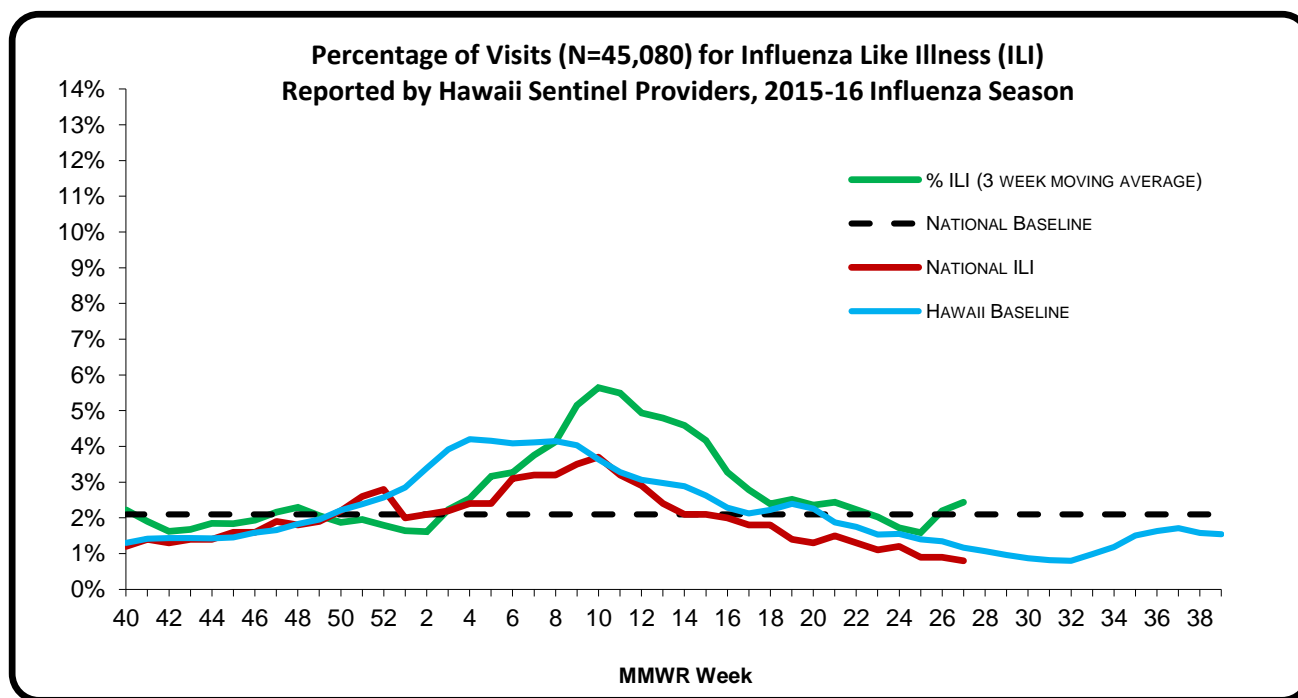


## INFLUENZA SURVEILLANCE

**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 27** of the current influenza season:

- **3.2%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (0.8%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 27.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

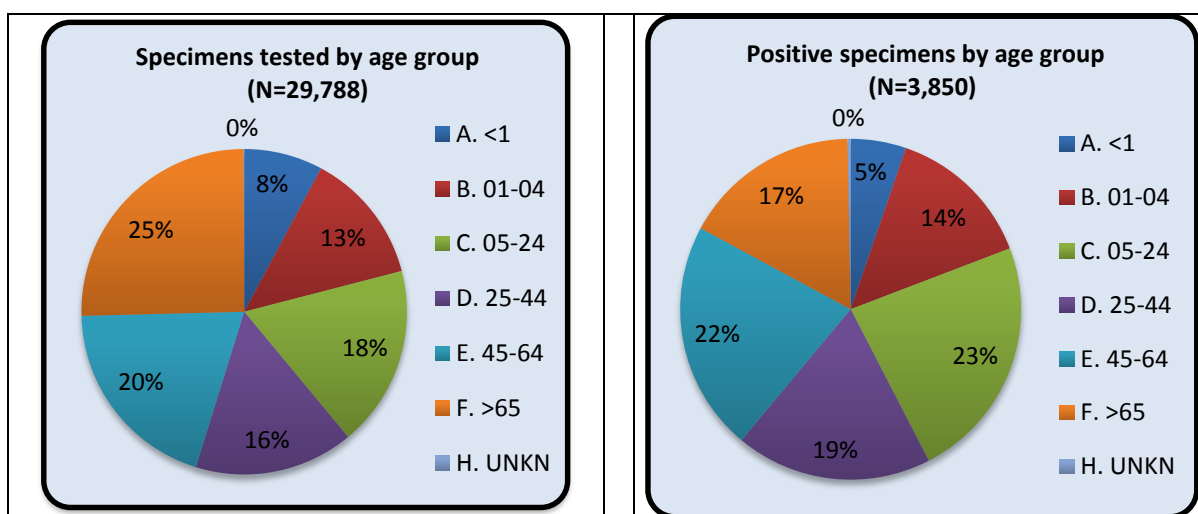
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 27 of the 2015-16 flu season:
  - A total of **424** specimens have been tested statewide for influenza viruses (positive: **24** [5.7%]). (Season to date: **29,788** tested [12.9% positive])
    - 223 (52.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 201 (47.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 400 (94.3%) were negative.
  - The 24 total positive cases included 17 (4.0%) cases of influenza A and 7 (1.7%) cases of influenza B (detected using any method). (Season to date: 9.5% influenza A and 3.4% influenza B)
    - Breakdown of influenza A cases:
      - 17 (100%) influenza A (un-subtyped). (Season to date: 84.5%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 12.3%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.2%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

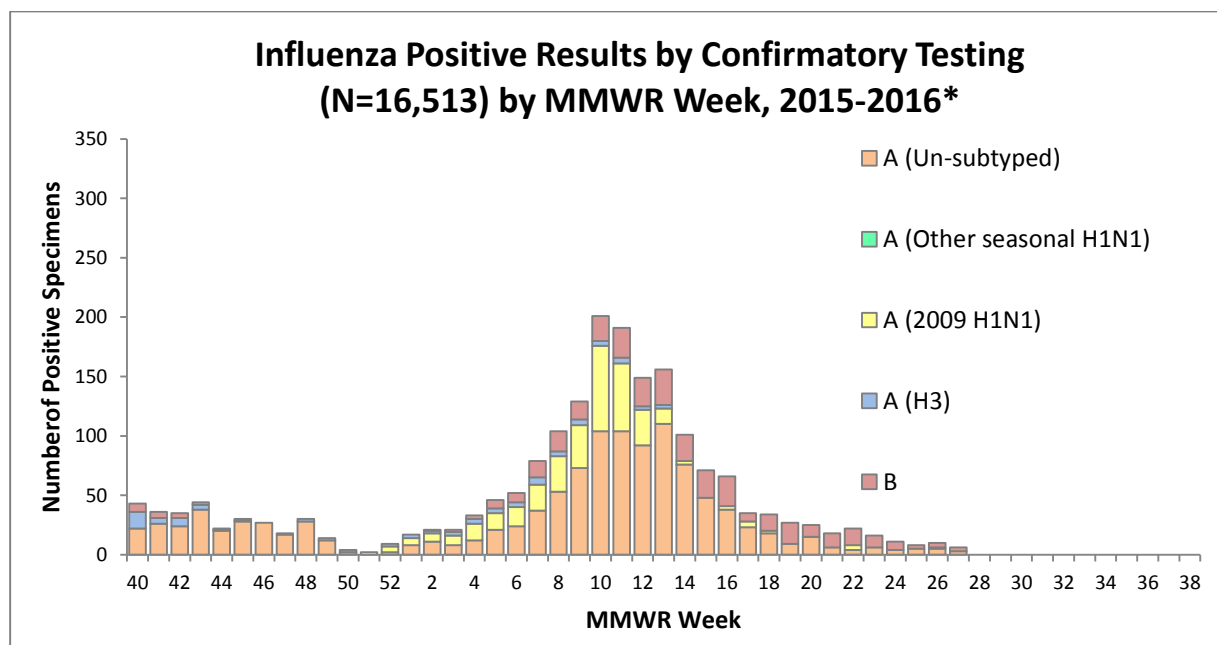
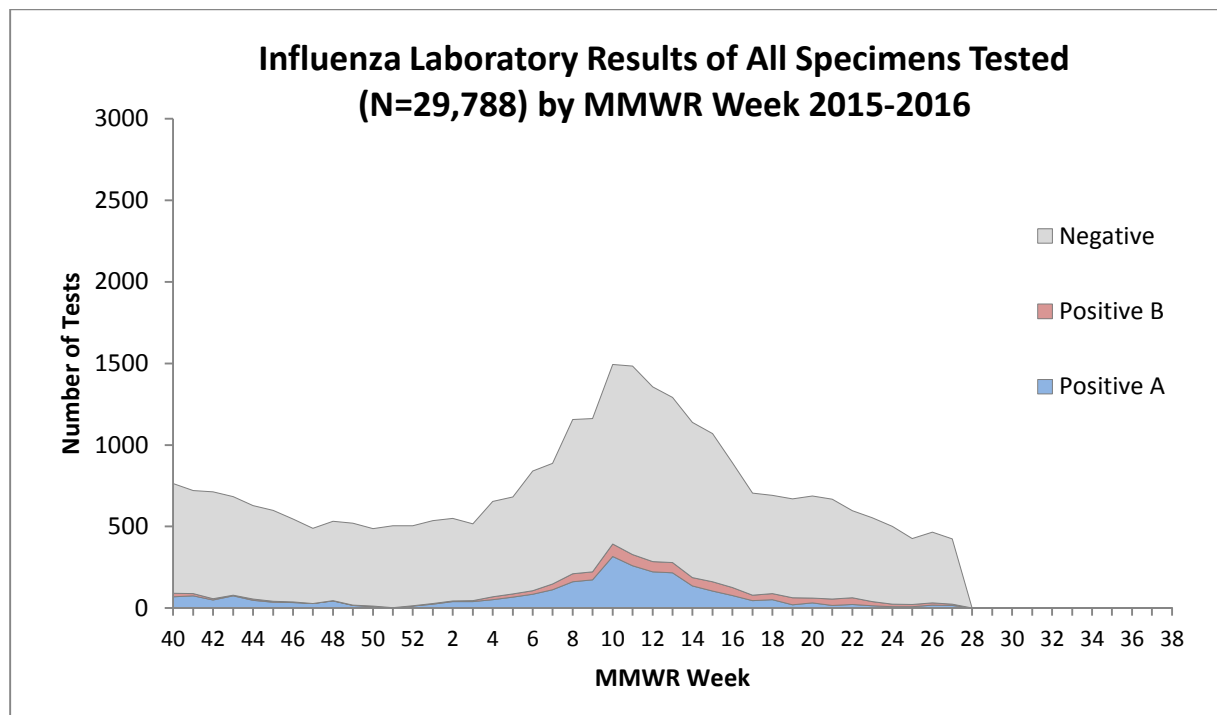
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

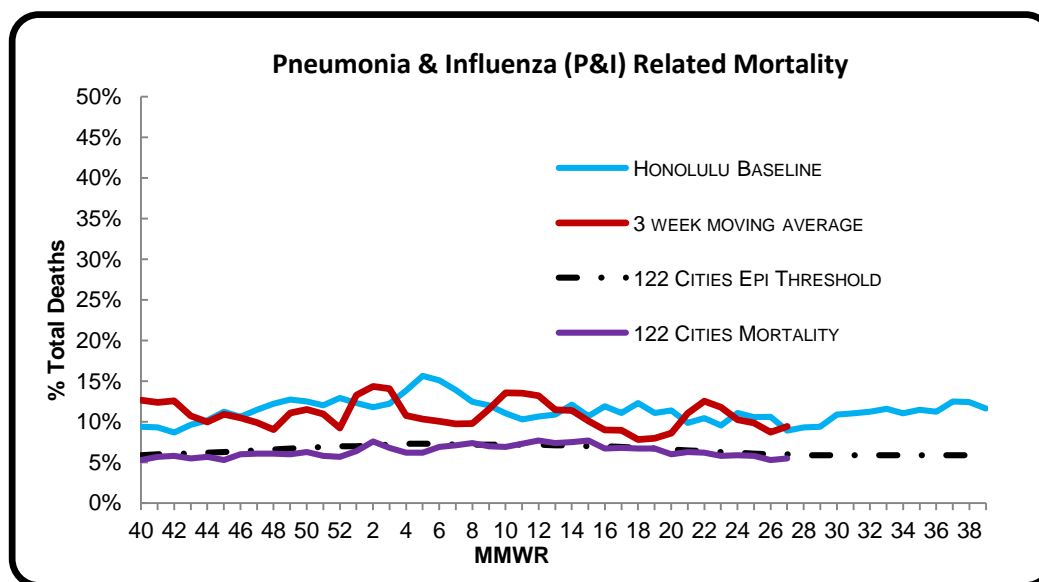
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Adenovirus							X												X			X				x						X	X	X			x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Coronavirus																	X	X							X						X	X					x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Coxsackie Virus																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

**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 27** of the current influenza season:

- **6.4%** of all deaths that occurred in Honolulu during week 27 were related to pneumonia or influenza. For the current season (season to date: **11.0%**), there have been 3,396 deaths from any cause, 372 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (5.5%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.0%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 27. One death was associated with an influenza virus for which the type was not determined and occurred during week 10 and one death was associated with an influenza A virus for which no subtyping was performed and occurred during week 23. (Season total: 82).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *5 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **June 13, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		





# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 28: JULY 10, 2016 – JULY 16, 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 28

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.1%	Lower than the previous week and the national baseline; comparable to Hawaii's historical baseline and the national ILI rate.
Number of ILI clusters reported to HDOH	0	There has been a total of 21 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.0%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	7.2%	Higher than the previous week. This indicates that many, if not all, of the 92.8% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	12.9%	

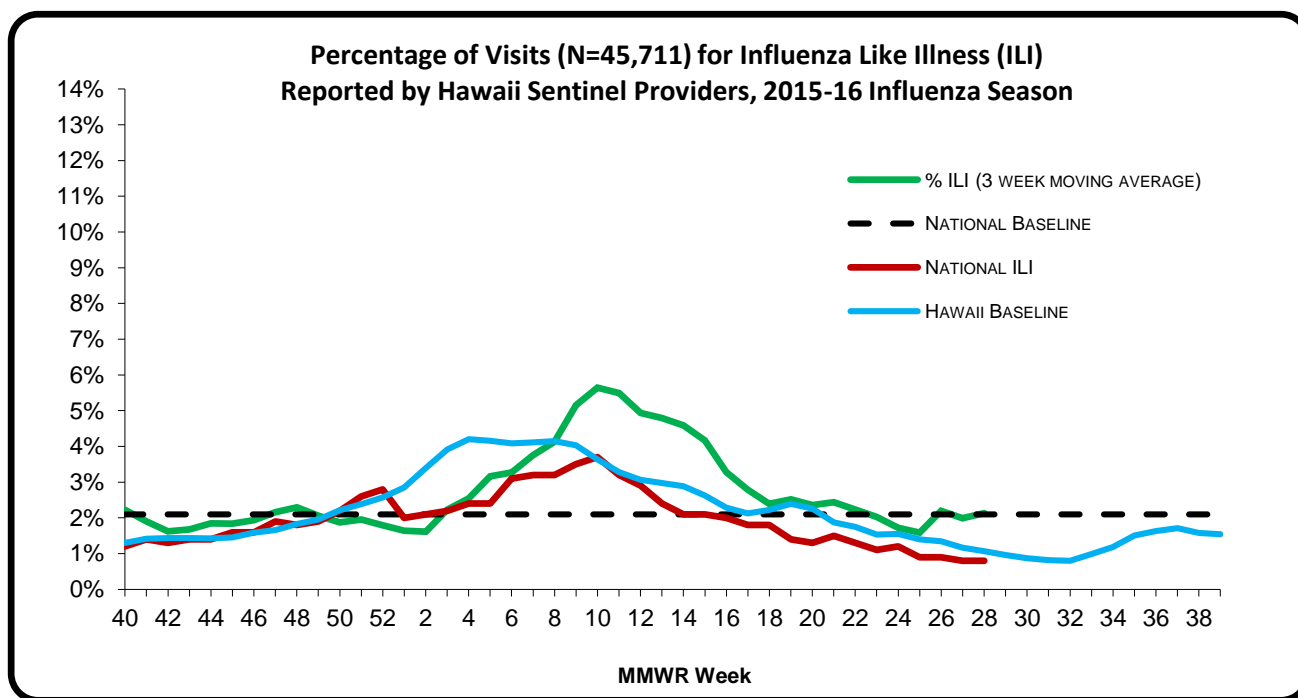
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 28** of the current influenza season:

- **1.1%** (season to date: **2.8%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (0.8%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 28.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

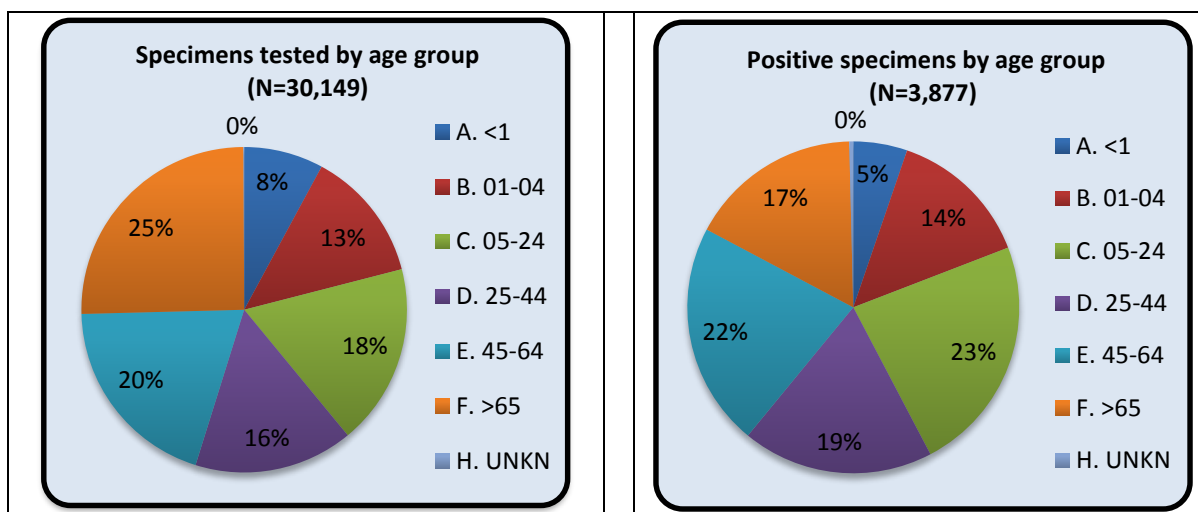
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 28 of the 2015-16 flu season:
  - A total of **348** specimens have been tested statewide for influenza viruses (positive: **25 [7.2%]**). (Season to date: **30,149** tested [**12.9%** positive])
    - 158 (45.4%) were screened only by rapid antigen tests with no confirmatory testing
    - 190 (54.6%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 323 (92.8%) were negative.
  - The 25 total positive cases included 11 (3.2%) cases of influenza A and 14 (4.0%) cases of influenza B (detected using any method). (Season to date: 9.5% influenza A and 3.4% influenza B)
    - Breakdown of influenza A cases:
      - 10 (90.9%) influenza A (un-subtyped). (Season to date: 84.4%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 12.3%)
      - 1 (9.1%) influenza A (H3). (Season to date: 3.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

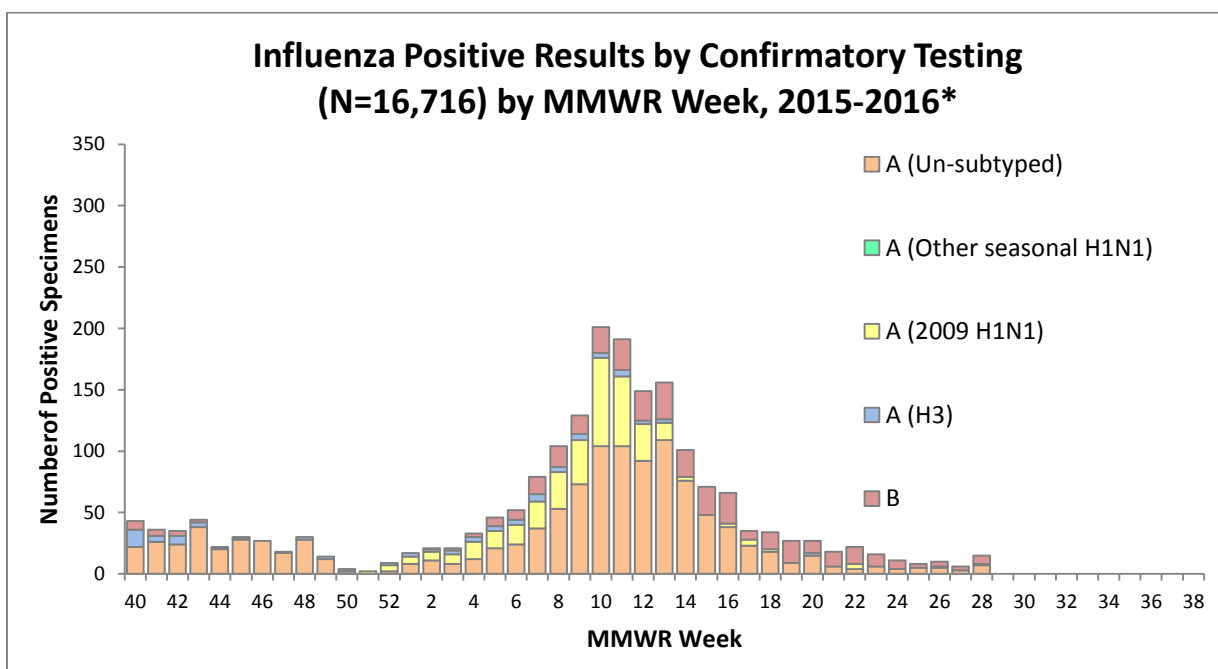
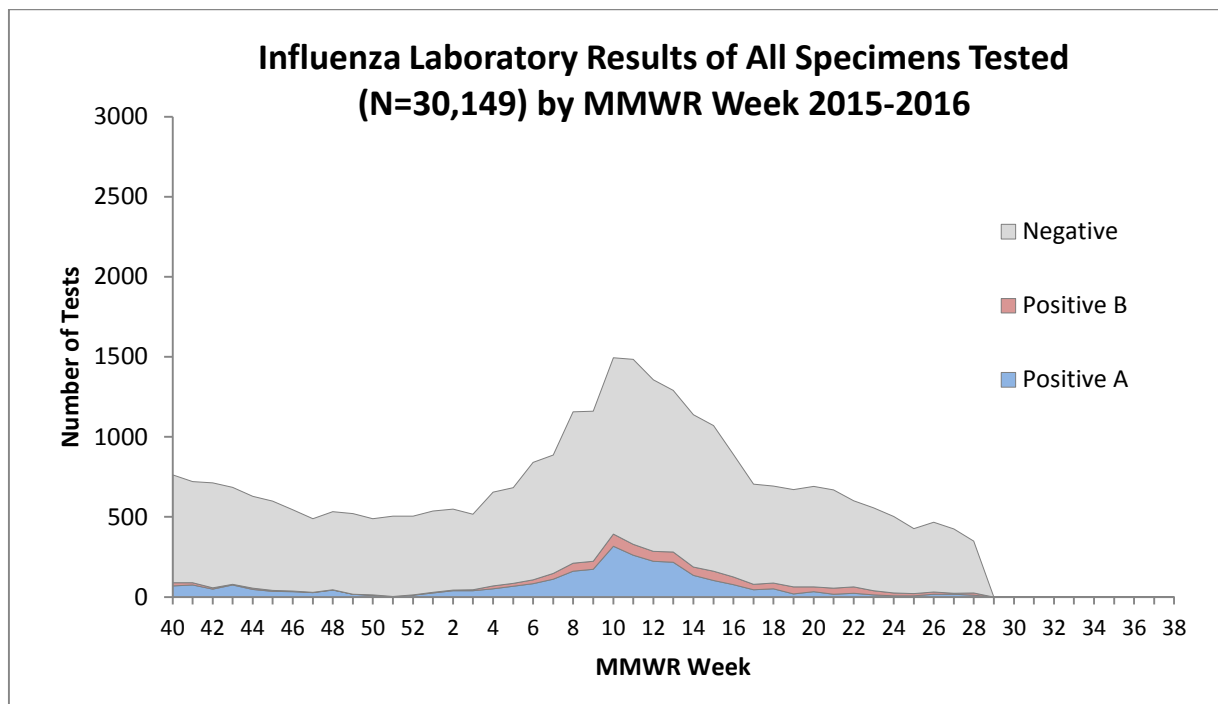
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

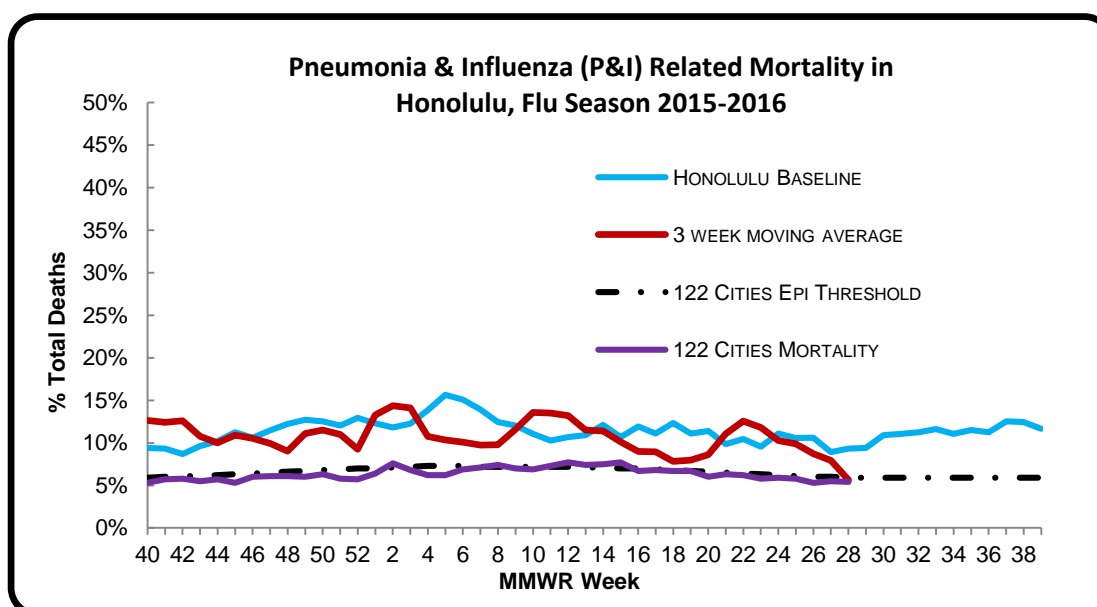
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 28** of the current influenza season:

- **5.0%** of all deaths that occurred in Honolulu during week 28 were related to pneumonia or influenza. For the current season (season to date: **10.8%**), there have been 3,495 deaths from any cause, 377 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (5.4%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (5.9%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric deaths was reported to CDC during week 28. This death was associated with an influenza A virus for which no subtyping was performed and occurred during week 25. (Season total: 83).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *5 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**. Since the last update, three new cases of H5N1 were reported to WHO by Egypt. All three cases had been exposed to poultry or poultry related environments, were hospitalized with pneumonia, treated with antivirals, and have fully recovered. Since the last update, China has reported 12 new cases of H7N9 to WHO. Of those cases, 5 did not recover and died. Lastly, one new case of H9N2 has been reported to WHO by China since the last update. The case had exposure to live poultry, was hospitalized, treated, and has recovered.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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



**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 29: JULY 17, 2016 – JULY 23, 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 29

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.8%	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 has been a total of 22 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.6%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	2.4%	Higher than the previous week. This indicates that many, if not all, of the 97.6% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	10.1%	

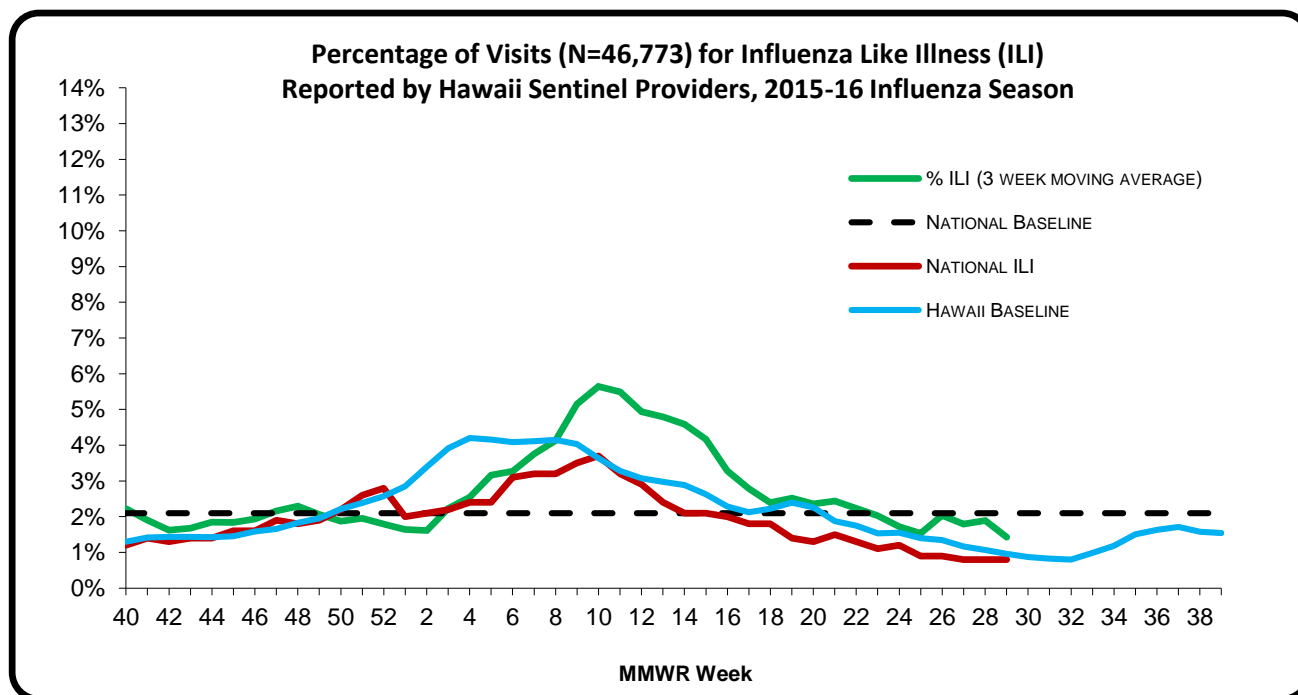
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 29** of the current influenza season:

- **1.8%** (season to date: **2.7%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were higher than the historical baseline in Hawaii<sup>2,3</sup> (i.e., outside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (0.8%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** One ILI cluster was reported to HDOH during week 29. The cluster occurred at a nursing home on the Big Island and has cases of unknown etiology.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

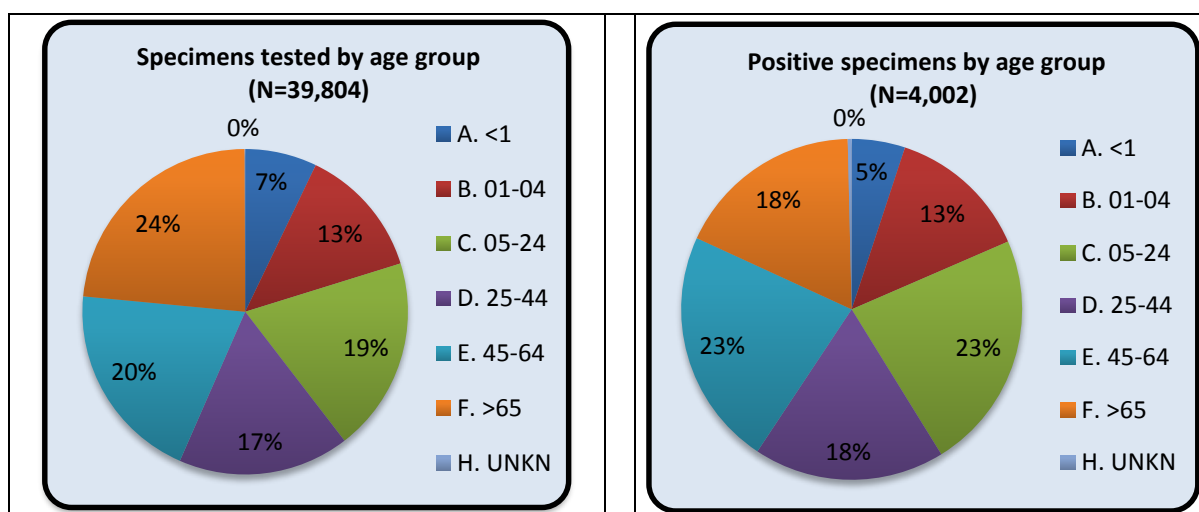
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 29 of the 2015-16 flu season:
  - A total of **419** specimens have been tested statewide for influenza viruses (positive: **10 [2.4%]**). (Season to date: **39,804** tested [**10.1%** positive])
    - 252 (60.1%) were screened only by rapid antigen tests with no confirmatory testing
    - 167 (39.9%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 409 (97.6%) were negative.
  - The 10 total positive cases included 9 (2.1%) cases of influenza A and 1 (0.2%) cases of influenza B (detected using any method). (Season to date: 7.7% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 9 (100%) influenza A (un-subtyped). (Season to date: 85.4%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.2%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

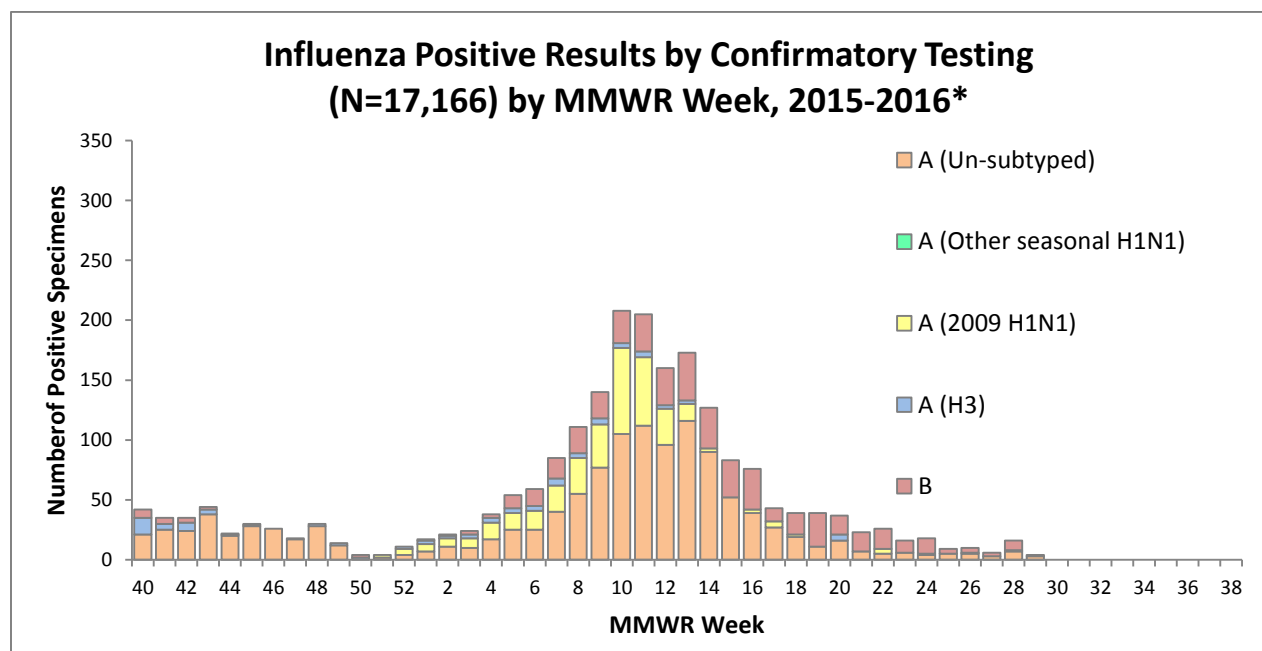
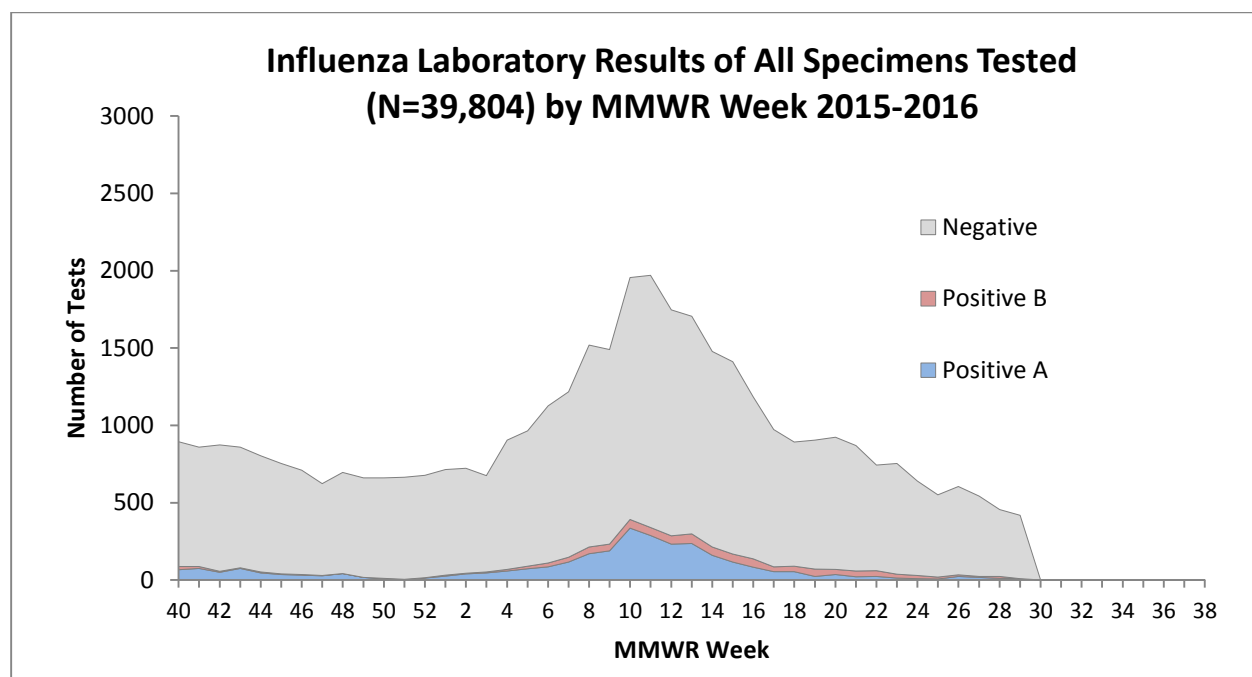
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

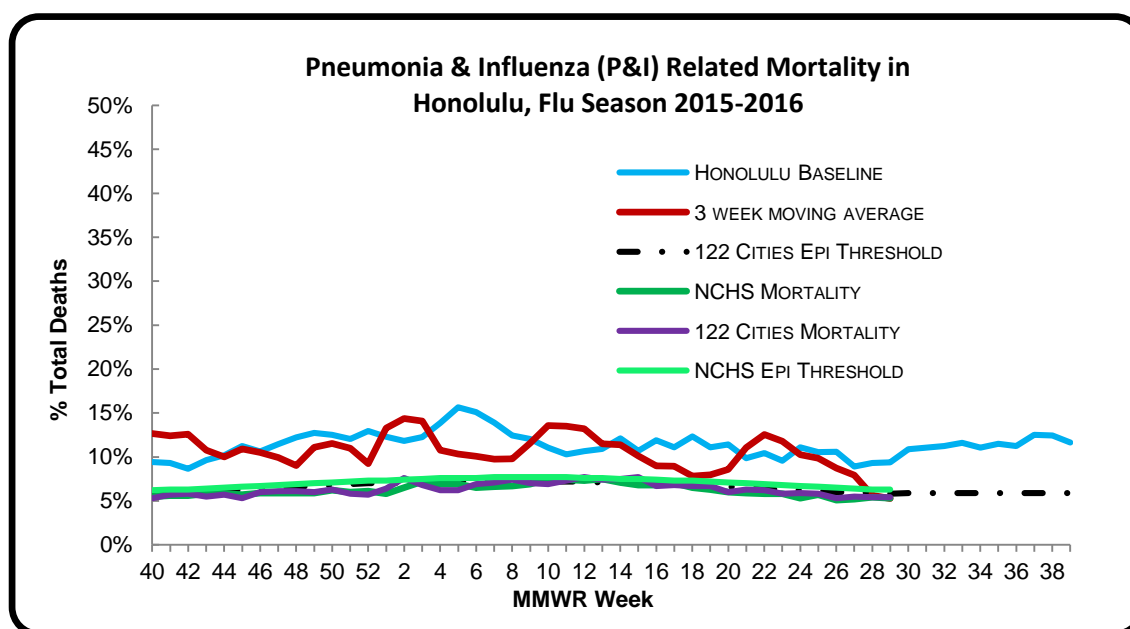
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																																		
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40													
Adenovirus							X												X			X				x					X	X	X			x		X																												
Coronavirus																	X	X							X						X	X				x																														
Coxsackie Virus																																																																		
Cytomegalovirus																																																																		
Echovirus																																																																		
Enterovirus																X				X						X																																								
Herpes Simplex Virus, Type 1																																																																		
Metapneumovirus							X									X		X	X						X			X					X				X			X																										
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X										
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X					X								X																																	
Rhinovirus				X												X	X			X						X											X			X																										
Varicella Zoster Virus																																																																		
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			X																													
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X															X								X																										
Influenza A (Other seasonal H1)																																																																		
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 29** of the current influenza season:

- **5.6%** of all deaths that occurred in Honolulu during week 29 were related to pneumonia or influenza. For the current season (season to date: **10.6%**), there have been 3,587 deaths from any cause, 382 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup>(5.4%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (5.8%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 29. This death was associated with an influenza B virus and occurred during week 19. (Season total: 84).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *5 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 30: JULY 24, 2016 – JULY 30, 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 30

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.7%	Lower than the previous week, the national baseline, and the national ILI rate; comparable to Hawaii's historical baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 22 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	10.3%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	1	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	1.9%	Higher than the previous week. This indicates that many, if not all, of the 98.1% 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%	

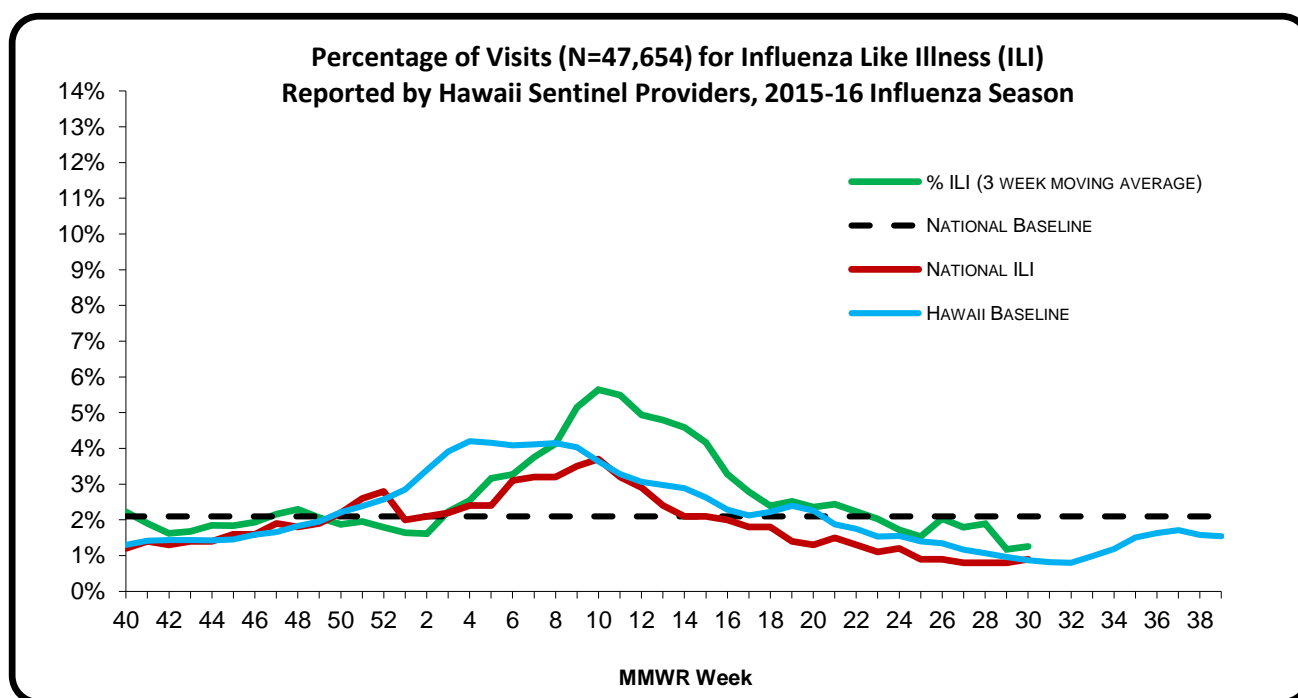
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 30** of the current influenza season:

- **0.7%** (season to date: **2.7%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (0.9%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 30.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

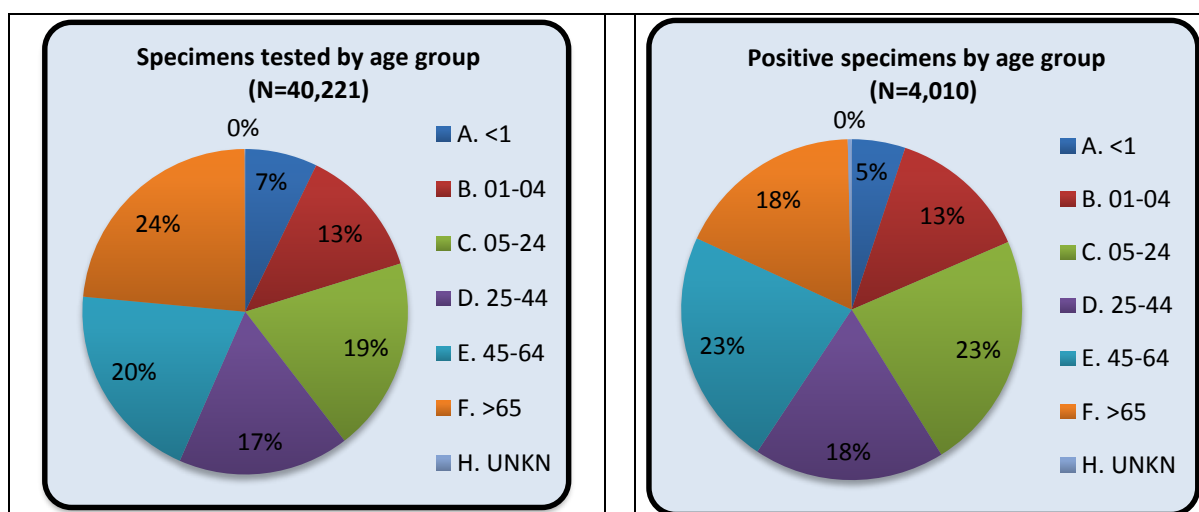
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 30 of the 2015-16 flu season:
  - A total of **412** specimens have been tested statewide for influenza viruses (positive: **8 [1.9%]**). (Season to date: **40,221** tested [**10.0% positive**])
    - 243 (59.0%) were screened only by rapid antigen tests with no confirmatory testing
    - 169 (41.0%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 404 (98.1%) were negative.
  - The 8 total positive cases included 5 (1.2%) cases of influenza A and 3 (0.7%) cases of influenza B (detected using any method). (Season to date: 7.6% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 5 (100%) influenza A (un-subtyped). (Season to date: 85.3%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.3%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

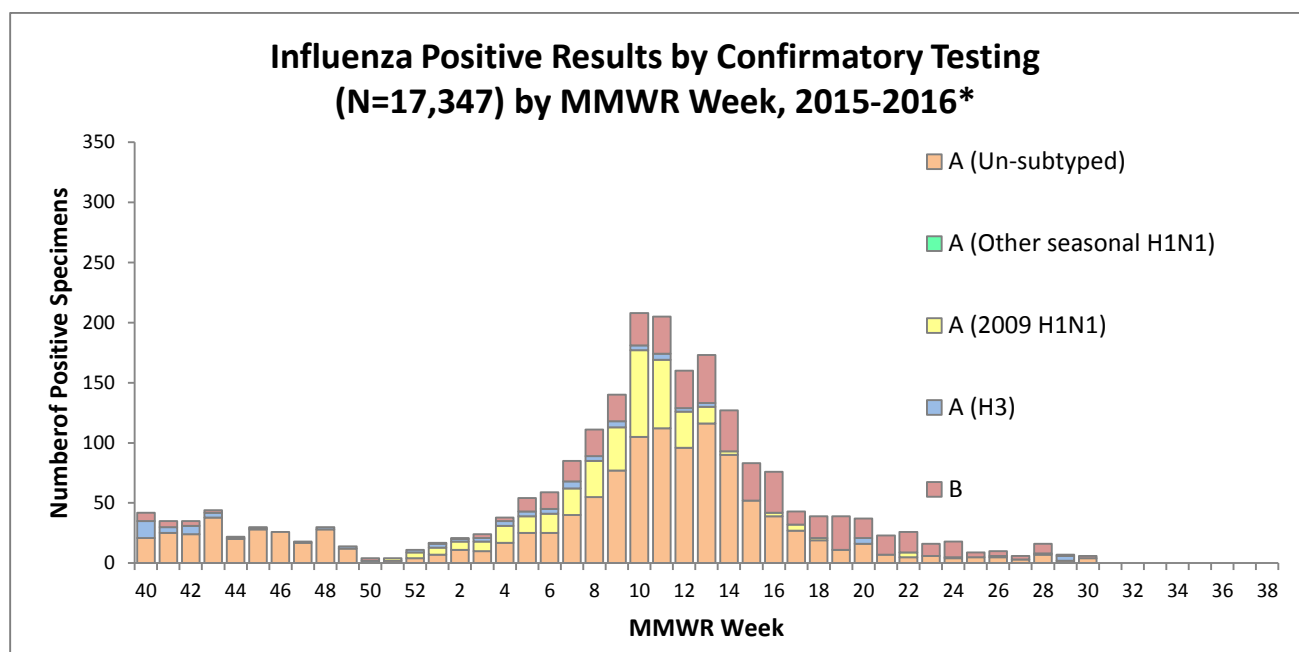
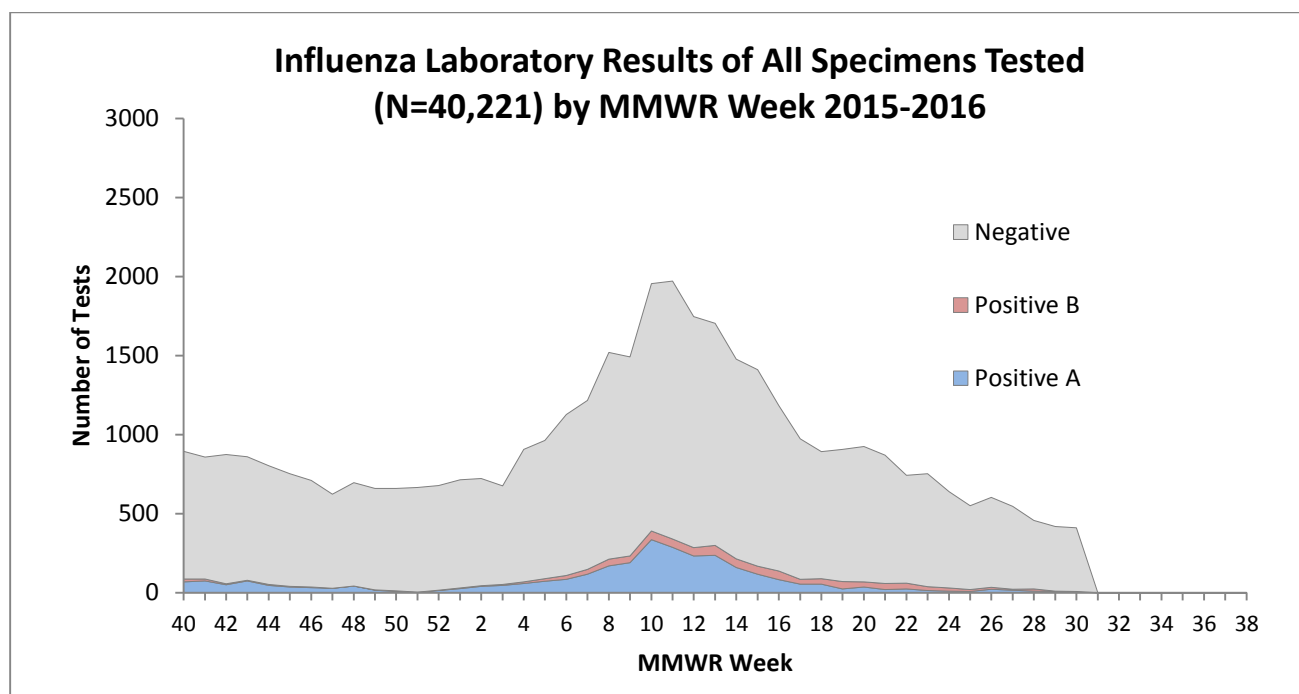
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 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.

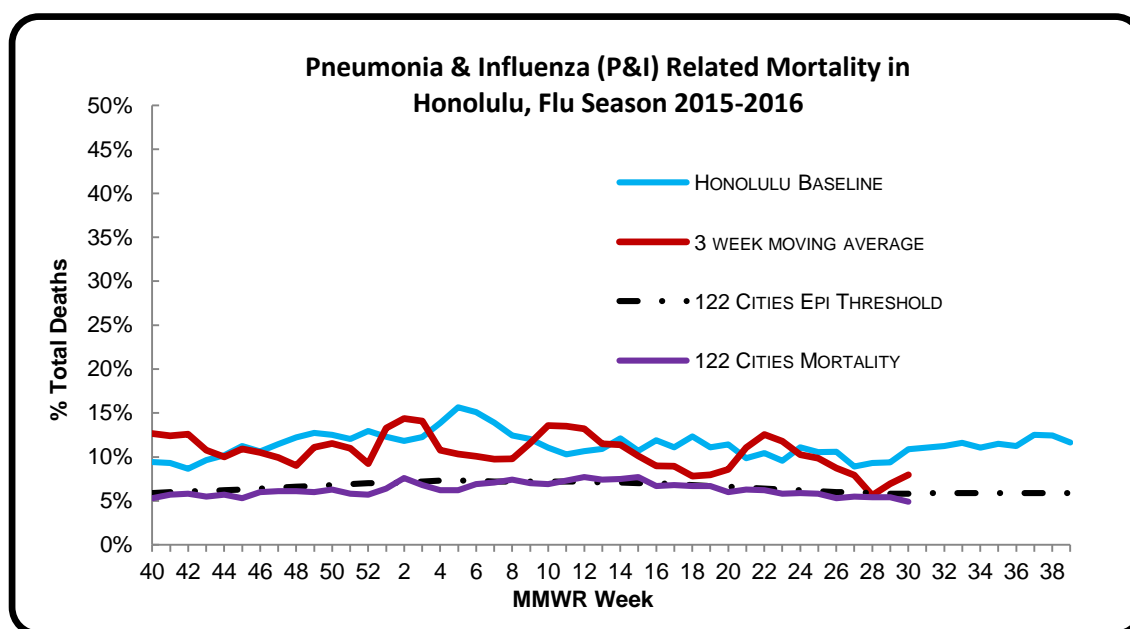
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 30** of the current influenza season:

- **10.3%** of all deaths that occurred in Honolulu during week 30 were related to pneumonia or influenza. For the current season (season to date: **10.6%**), there have been 3,674 deaths from any cause, 391 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (4.9%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (5.8%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, one influenza-associated pediatric death was reported to CDC during week 30. This death was associated with an influenza B virus and occurred during week 11. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *5 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 31: JULY 31, 2016 – AUGUST 6, 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 31

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.7%	Comparable to the previous week, Hawaii's historical baseline, and the national ILI rate; higher than the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 22 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	1.8%	Lower than the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	2.5%	Higher than the previous week. This indicates that many, if not all, of the 97.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.9%	

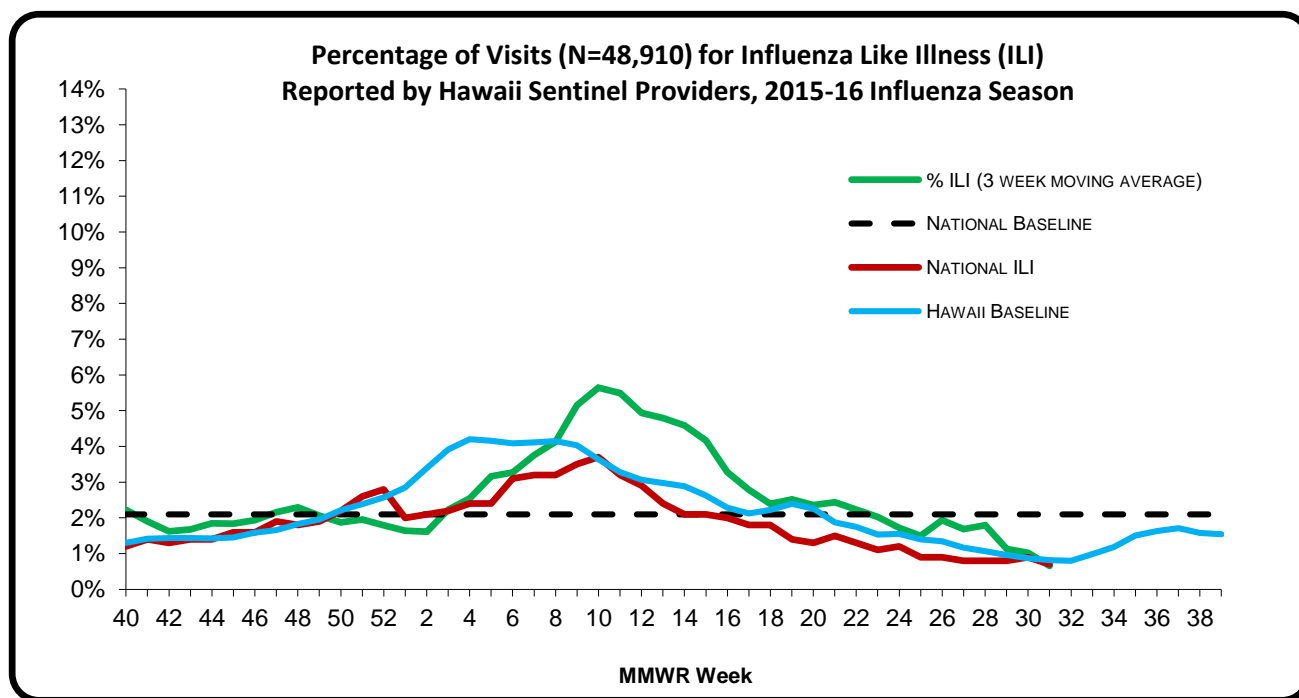
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 31** of the current influenza season:

- **0.7%** (season to date: **2.7%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (0.7%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 31.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

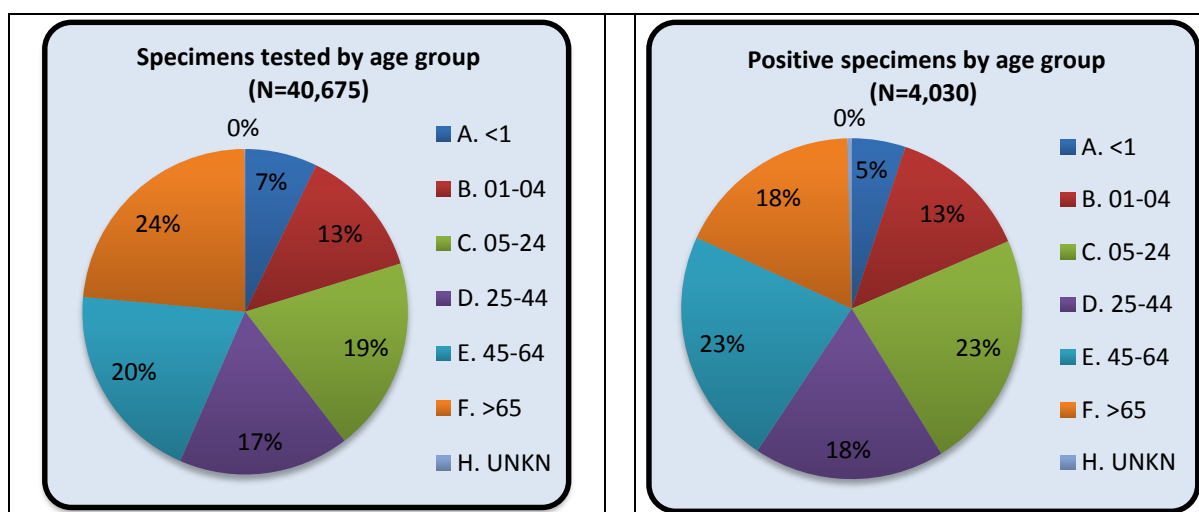
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 31 of the 2015-16 flu season:
  - A total of **432** specimens have been tested statewide for influenza viruses (positive: **11** [2.5%]). (Season to date: **40,675** tested [9.9% positive])
    - 262 (60.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 170 (39.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 421 (97.5%) were negative.
  - The 11 total positive cases included 8 (1.9%) cases of influenza A and 3 (0.7%) cases of influenza B (detected using any method). (Season to date: 7.6% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 8 (100%) influenza A (un-subtyped). (Season to date: 84.9%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.7%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.4%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

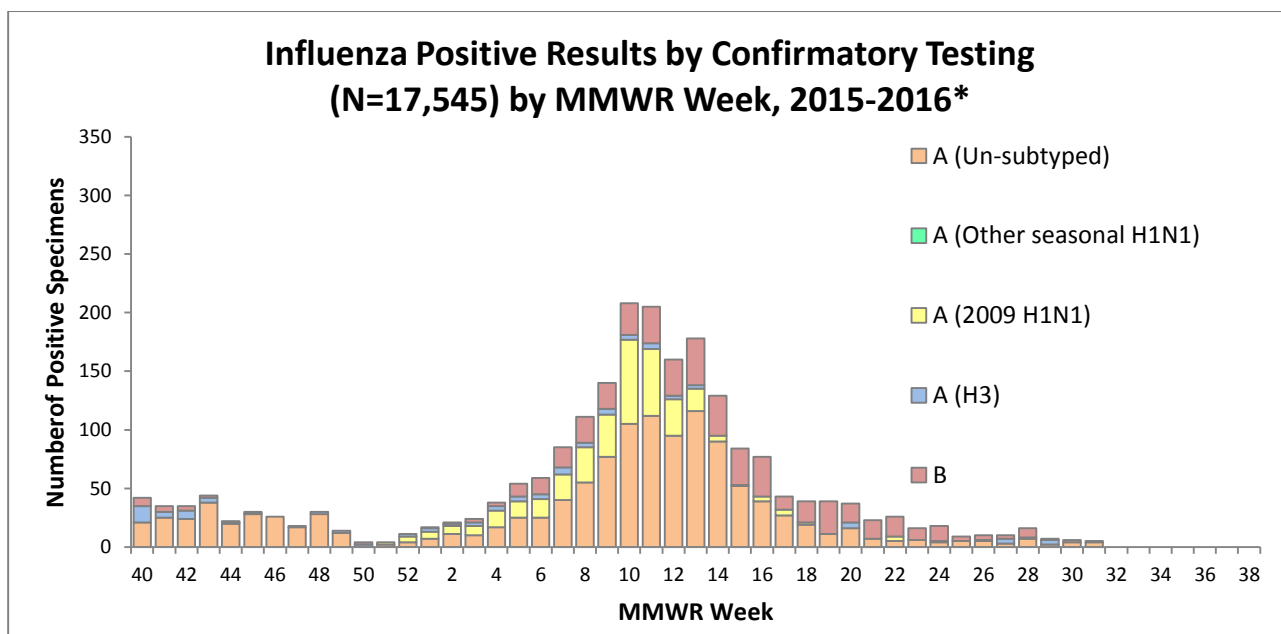
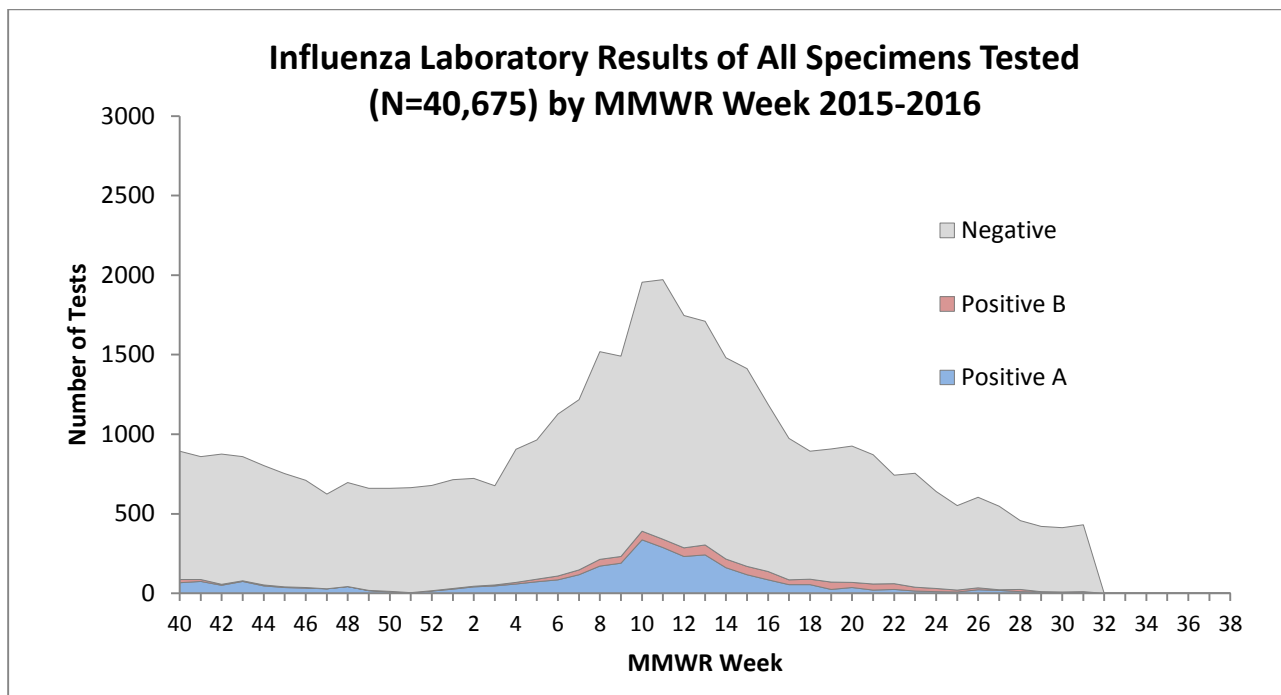
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

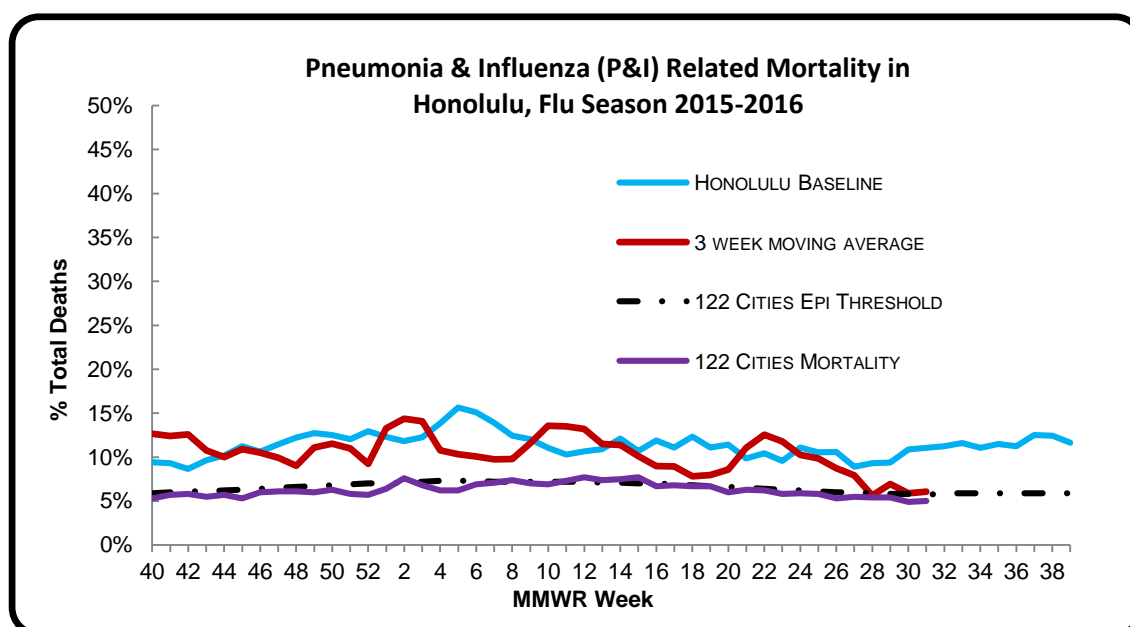
MMWR Week (2015-2016)																																																											
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40						
Adenovirus							X												X			X				X					X	X	X			X		X																					
Coronavirus																	X	X							X						X	X				X																							
Coxsackie Virus																																																											
Cytomegalovirus																																																											
Echovirus																																																											
Enterovirus																X				X					X																																		
Herpes Simplex Virus, Type 1																																																											
Metapneumovirus							X										X		X	X				X			X					X				X			X																				
Parainfluenza Virus	X		X		X	X	X	X		X	X	X	X					X	X	X		X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X				X									X																										
Rhinovirus				X													X	X		X				X												X			X																				
Varicella Zoster Virus																																																											
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			X																						
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X															X																										
Influenza A (Other seasonal H1)																																																											
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 31** of the current influenza season:

- *1.8% of all deaths that occurred in Honolulu during week 31 were related to pneumonia or influenza. For the current season (season to date: **10.4%**), there have been 3,784 deaths from any cause, 393 of which were due to P&I.*
- *The P&I rate was lower than the historical baseline in Hawaii<sup>6</sup> (i.e., outside the 95% confidence interval).*
- *The Honolulu P&I rate was lower than the national 122-city P&I mortality<sup>7</sup> (5.0%) (i.e., outside the 95% confidence interval) and lower than the epidemic threshold (5.7%) (i.e., outside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 31. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *9 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 32: AUGUST 7, 2016 – AUGUST 13, 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 32

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	0.9%	Higher than the previous week; comparable to Hawaii's historical baseline and the national ILI rate; lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 22 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	16.3%	Comparable to the historical baseline for Hawaii; higher than the national epidemic threshold and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	3.1%	Higher than the previous week. This indicates that many, if not all, of the 96.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.8%	

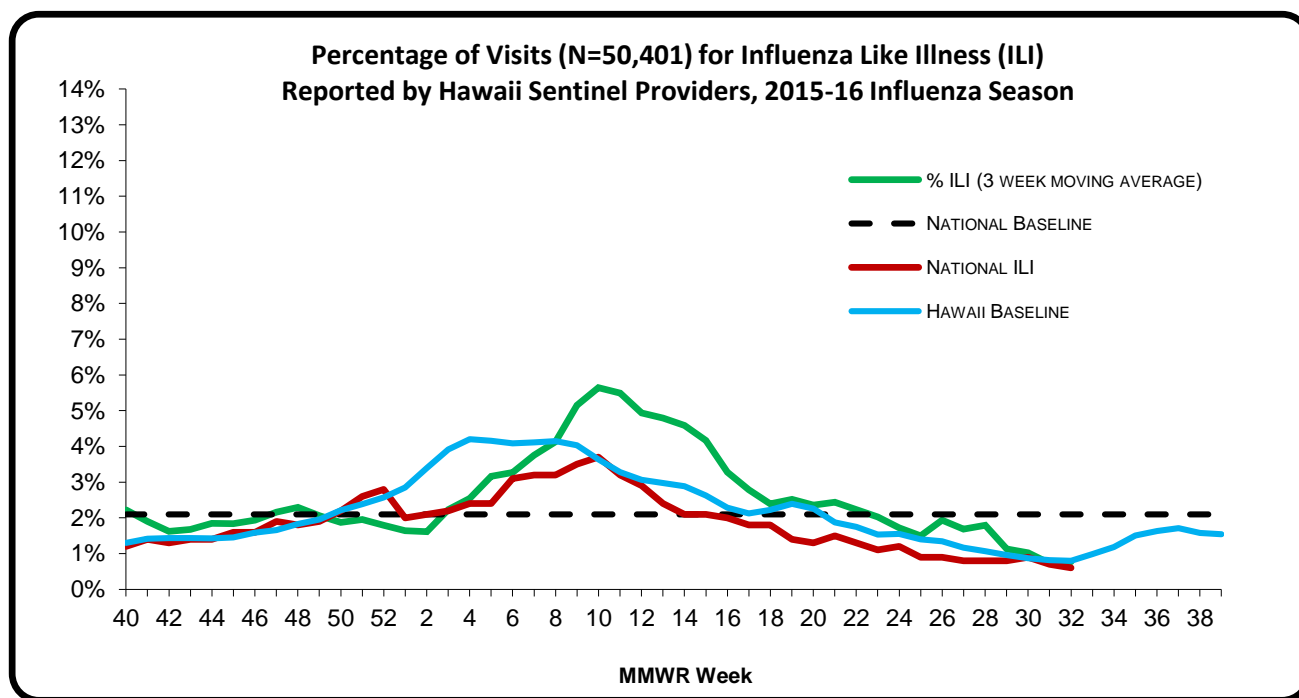
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 32** of the current influenza season:

- **0.9%** (season to date: **2.6%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and comparable to the national ILI rate (0.6%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 32.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

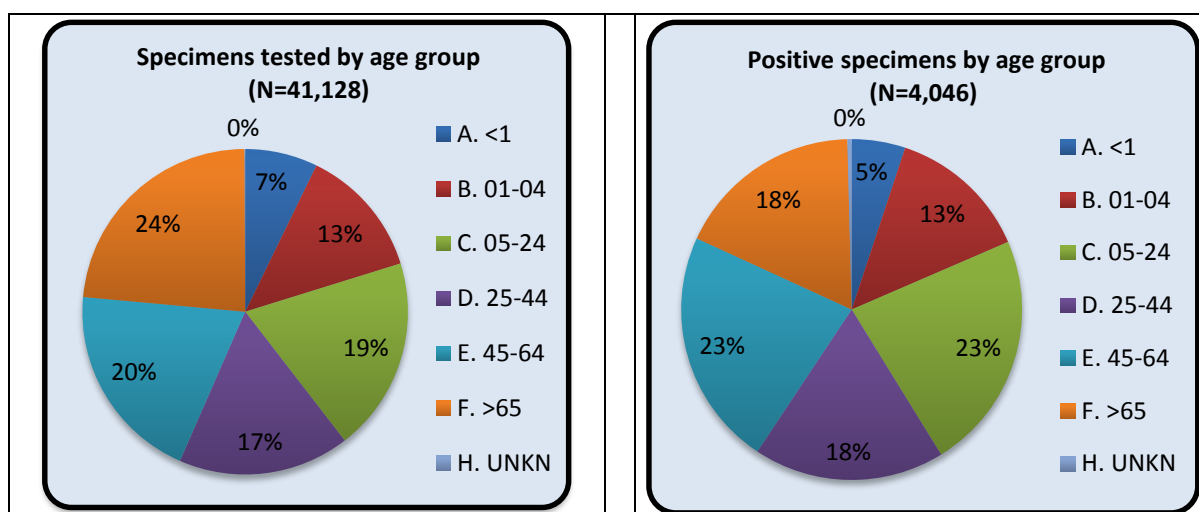
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 32 of the 2015-16 flu season:
  - A total of **448** specimens have been tested statewide for influenza viruses (positive: **14** [3.1%]). (Season to date: **41,128** tested [9.8% positive])
    - 286 (63.8%) were screened only by rapid antigen tests with no confirmatory testing
    - 162 (36.2%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 434 (96.9%) were negative.
  - The 14 total positive cases included 3 (0.7%) cases of influenza A and 11 (2.5%) cases of influenza B (detected using any method). (Season to date: 7.5% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 2 (66.7%) influenza A (un-subtyped). (Season to date: 84.8%)
      - 1 (33.3%) 2009 H1N1. (Season to date: 11.7%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.5%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

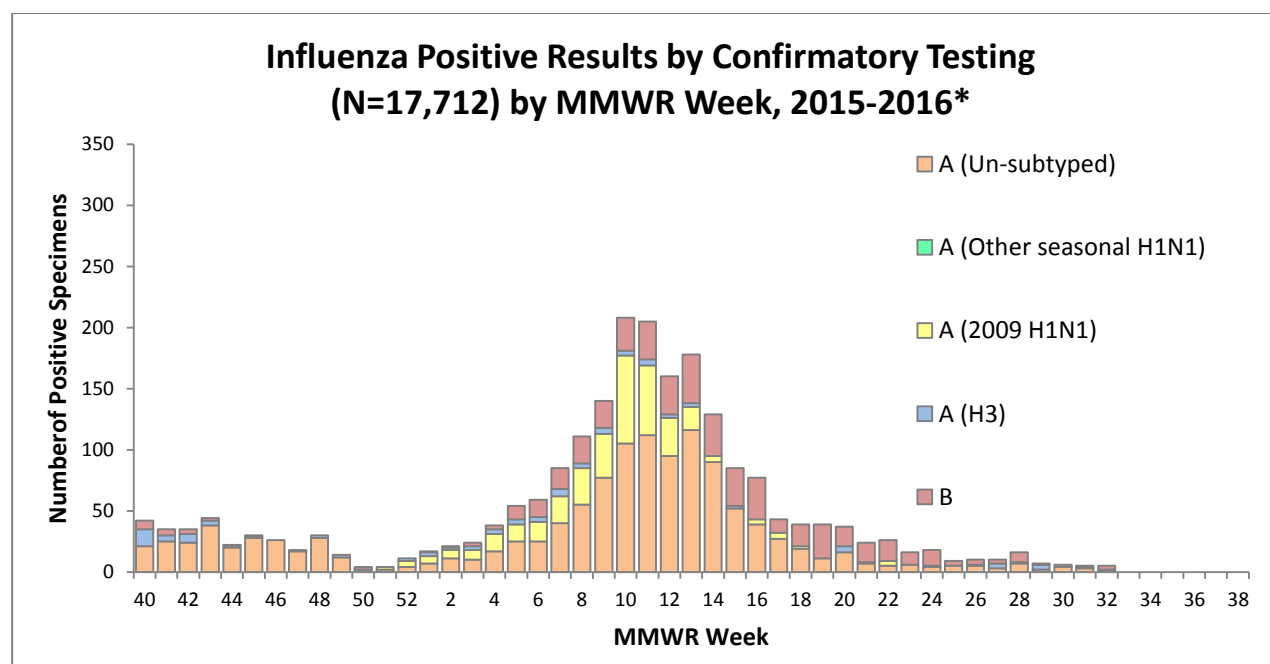
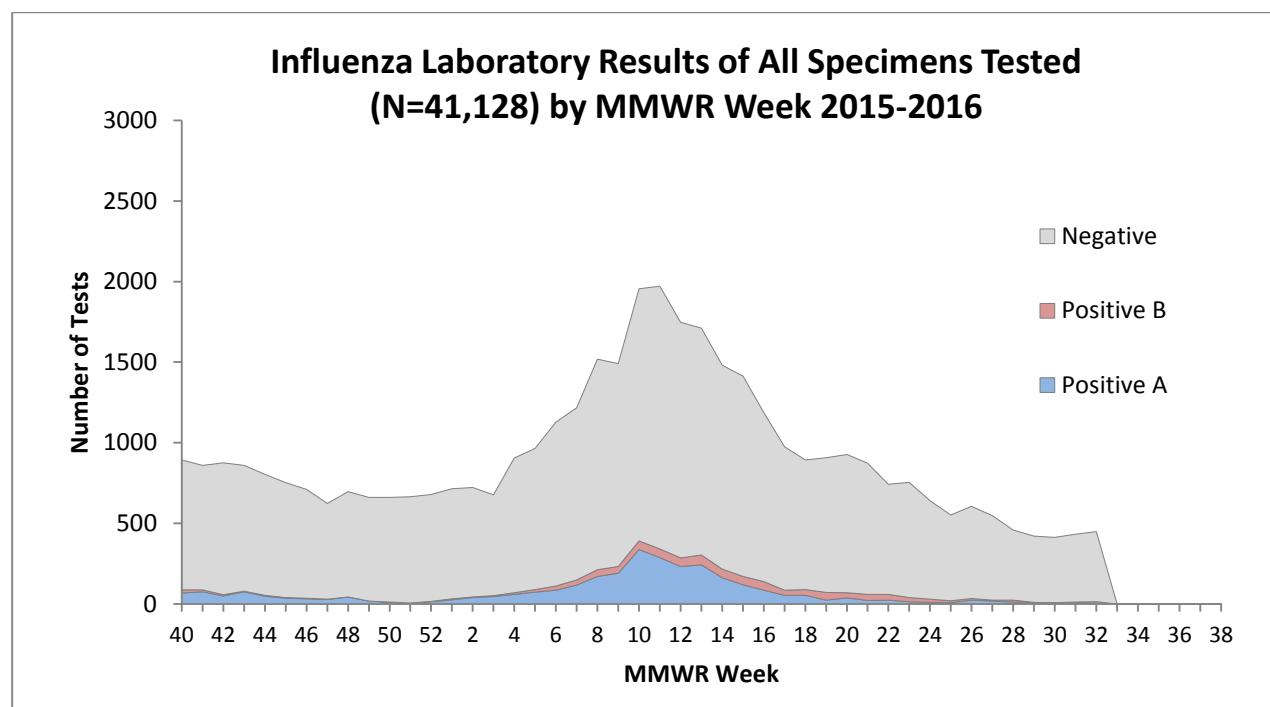


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 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.



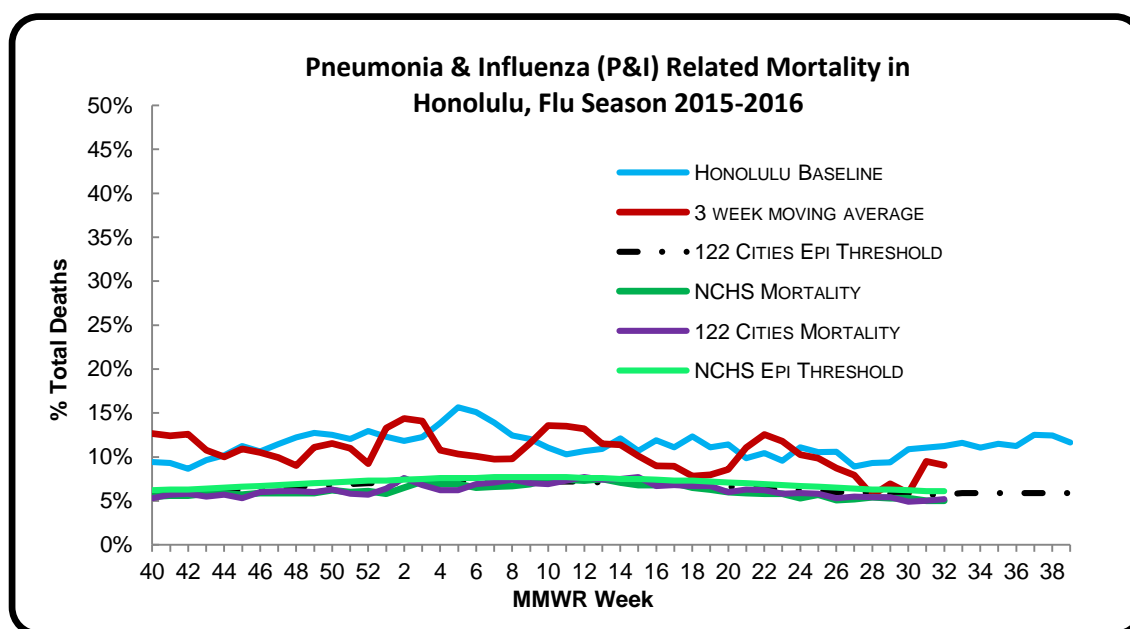
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 32** of the current influenza season:

- **16.3%** of all deaths that occurred in Honolulu during week 32 were related to pneumonia or influenza. For the current season (season to date: **10.5%**), there have been 3,870 deaths from any cause, 407 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.2%) (i.e., outside the 95% confidence interval) and higher than the epidemic threshold (5.7%) (i.e., outside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 32. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *16 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 33: AUGUST 14, 2016 – AUGUST 20, 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 33

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.2%	Higher than the previous week and the national ILI rate; comparable to Hawaii's historical baseline; lower than the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 22 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	14.1%	Comparable to the historical baseline for Hawaii; higher than the national epidemic threshold and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	2.8%	Higher than the previous week. This indicates that many, if not all, of the 97.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.8%	

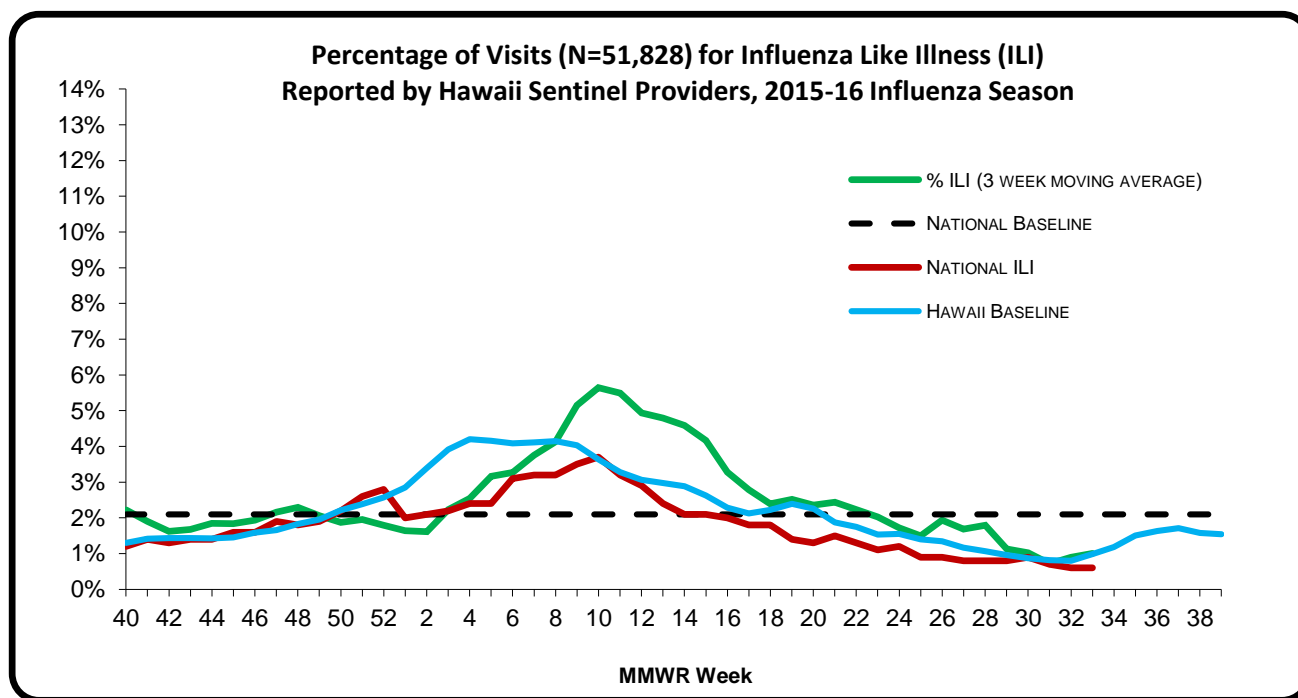
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 33** of the current influenza season:

- **1.2%** (season to date: **2.6%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were lower than the national baseline (2.1%)<sup>4</sup> (i.e., outside the 95% confidence interval) and higher than the national ILI rate (0.6%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 33.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



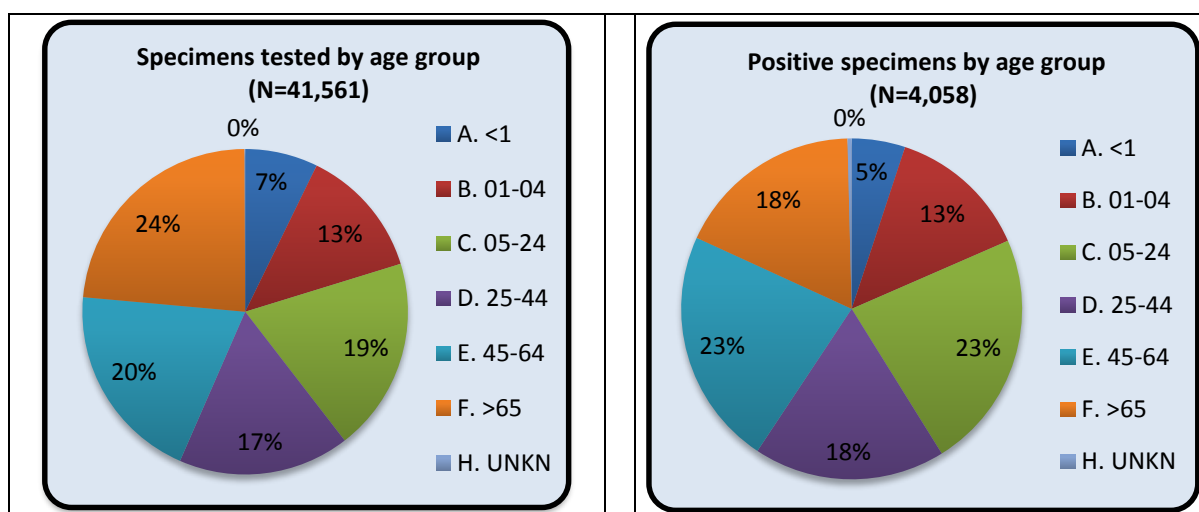
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 33 of the 2015-16 flu season:
  - A total of **432** specimens have been tested statewide for influenza viruses (positive: **12 [2.8%]**). (Season to date: **41,561** tested [**9.8% positive**])
    - 253 (58.6%) were screened only by rapid antigen tests with no confirmatory testing
    - 179 (41.4%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 420 (97.2%) were negative.
  - The 12 total positive cases included 5 (1.2%) cases of influenza A and 7 (1.6%) cases of influenza B (detected using any method). (Season to date: 7.5% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 5 (100%) influenza A (un-subtyped). (Season to date: 84.8%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.7%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.5%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.

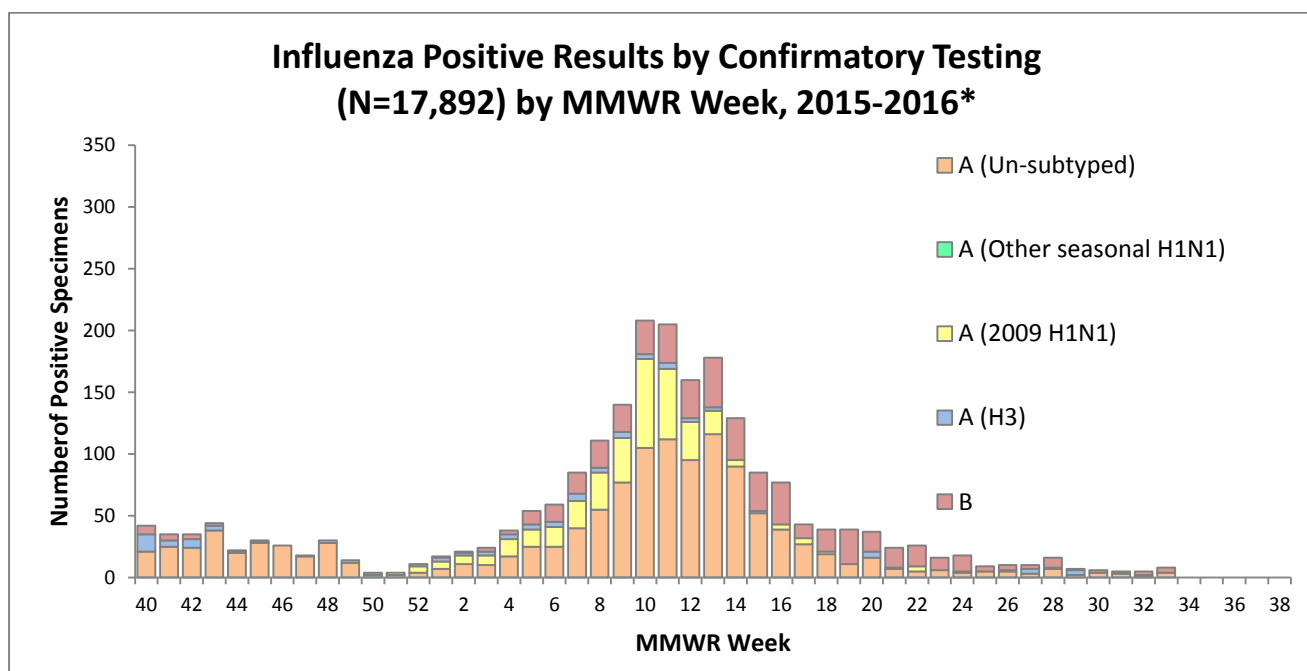
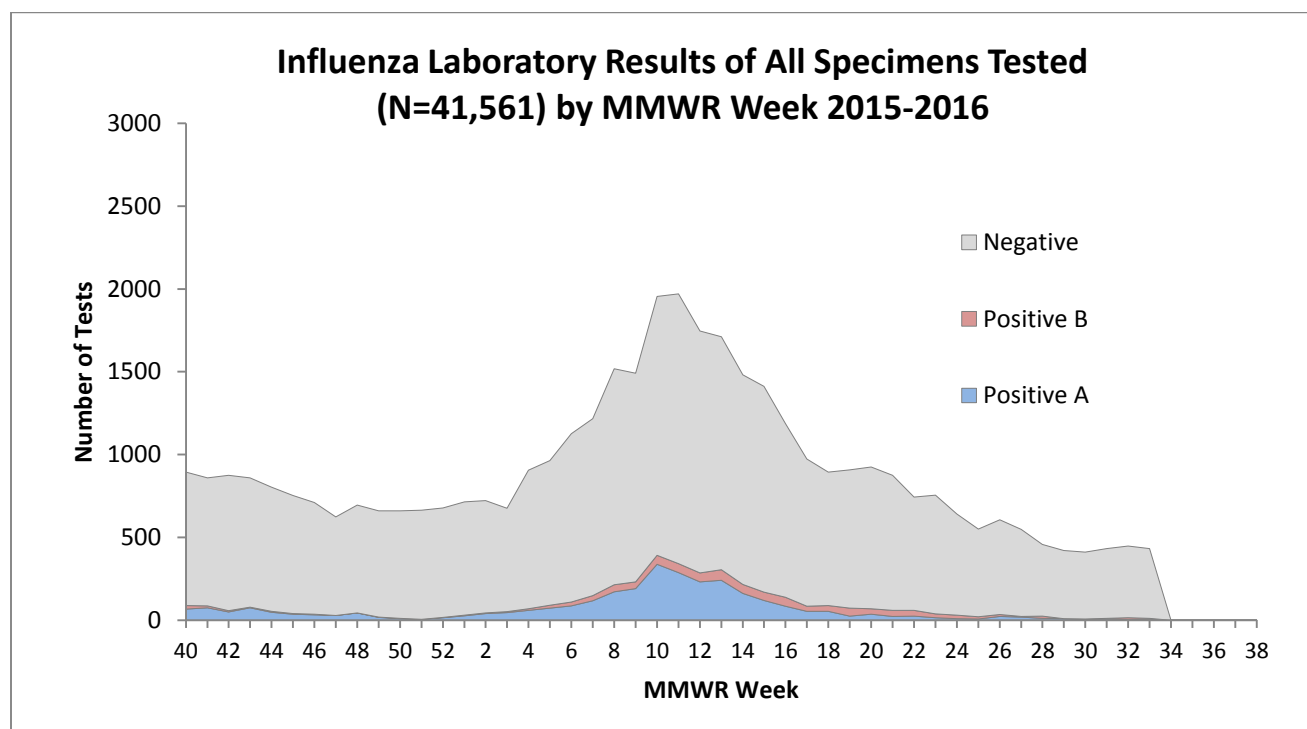


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

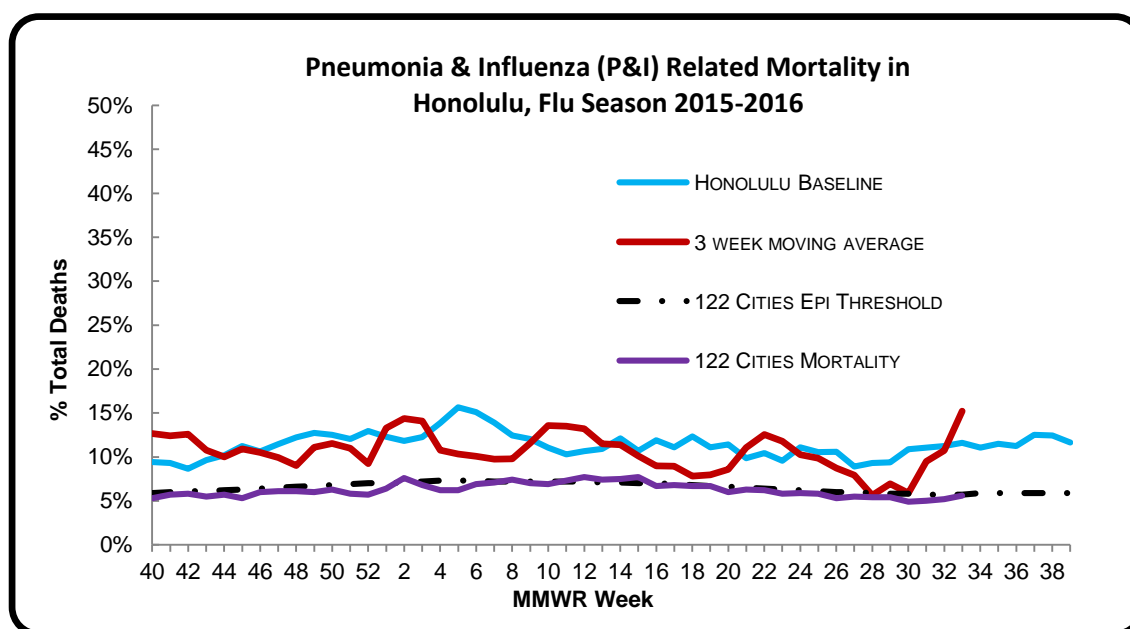
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 33** of the current influenza season:

- **14.1%** of all deaths that occurred in Honolulu during week 33 were related to pneumonia or influenza. For the current season (season to date: **10.6%**), there have been 3,955 deaths from any cause, 419 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.6%) (i.e., outside the 95% confidence interval) and higher than the epidemic threshold (5.7%) (i.e., outside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 33. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *23 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 34: AUGUST 21, 2016 – AUGUST 27, 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 34

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.1%	Higher than the previous week and the national ILI rate; comparable to Hawaii's historical baseline and the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 22 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 the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	1.8%	Higher than the previous week. This indicates that many, if not all, of the 98.2% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.7%	

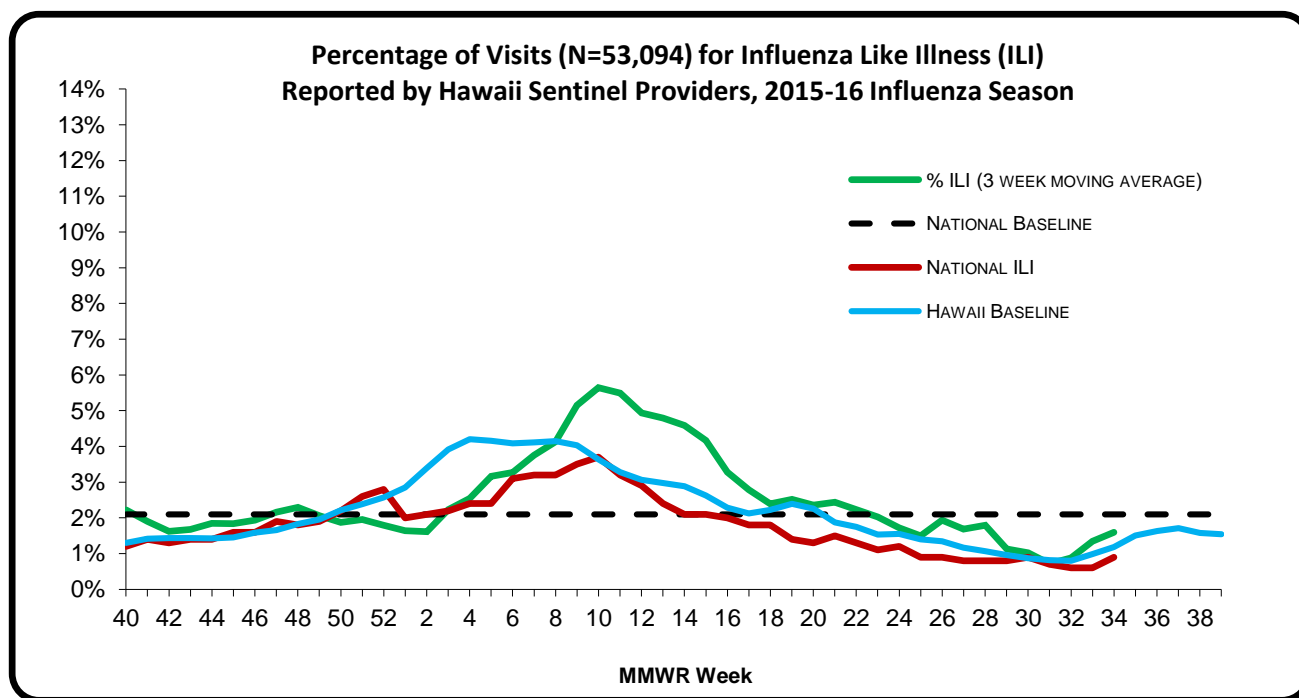
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

# 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 34** of the current influenza season:

- **2.1%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (0.9%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 34.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.



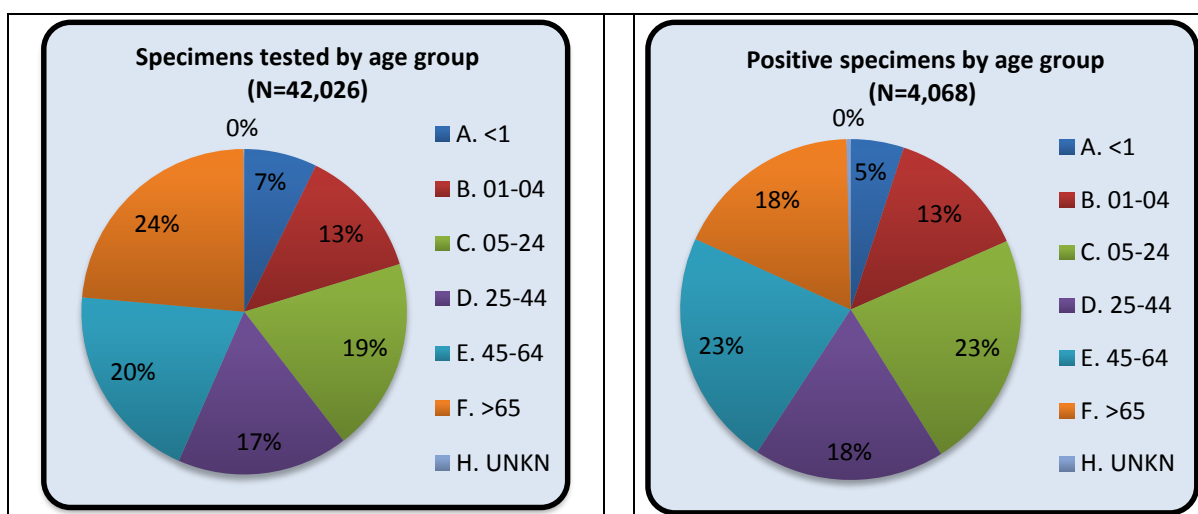
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 34 of the 2015-16 flu season:
  - A total of **454** specimens have been tested statewide for influenza viruses (positive: **8 [1.8%]**). (Season to date: **42,026** tested [**9.7%** positive])
    - 288 (63.4%) were screened only by rapid antigen tests with no confirmatory testing
    - 166 (36.6%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 446 (98.2%) were negative.
  - The 8 total positive cases included 8 (1.8%) cases of influenza A and 0 (0.0%) cases of influenza B (detected using any method). (Season to date: 7.4% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 8 (100%) influenza A (un-subtyped). (Season to date: 84.7%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.7%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.6%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

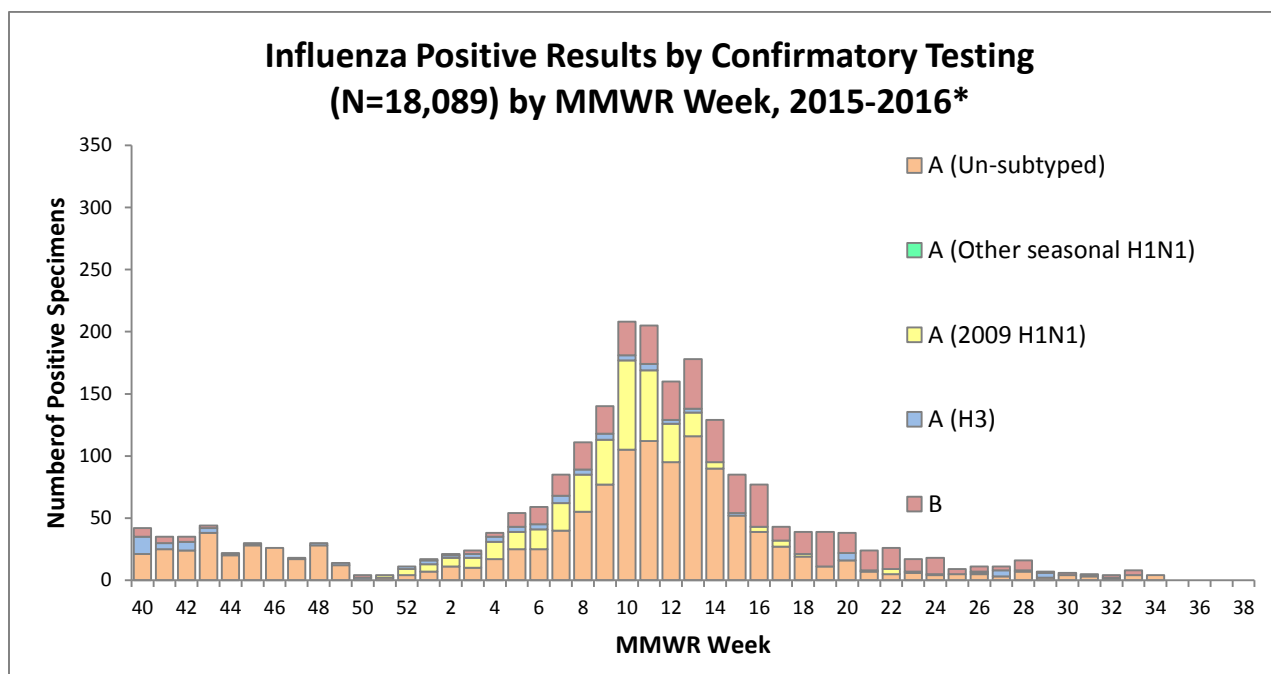
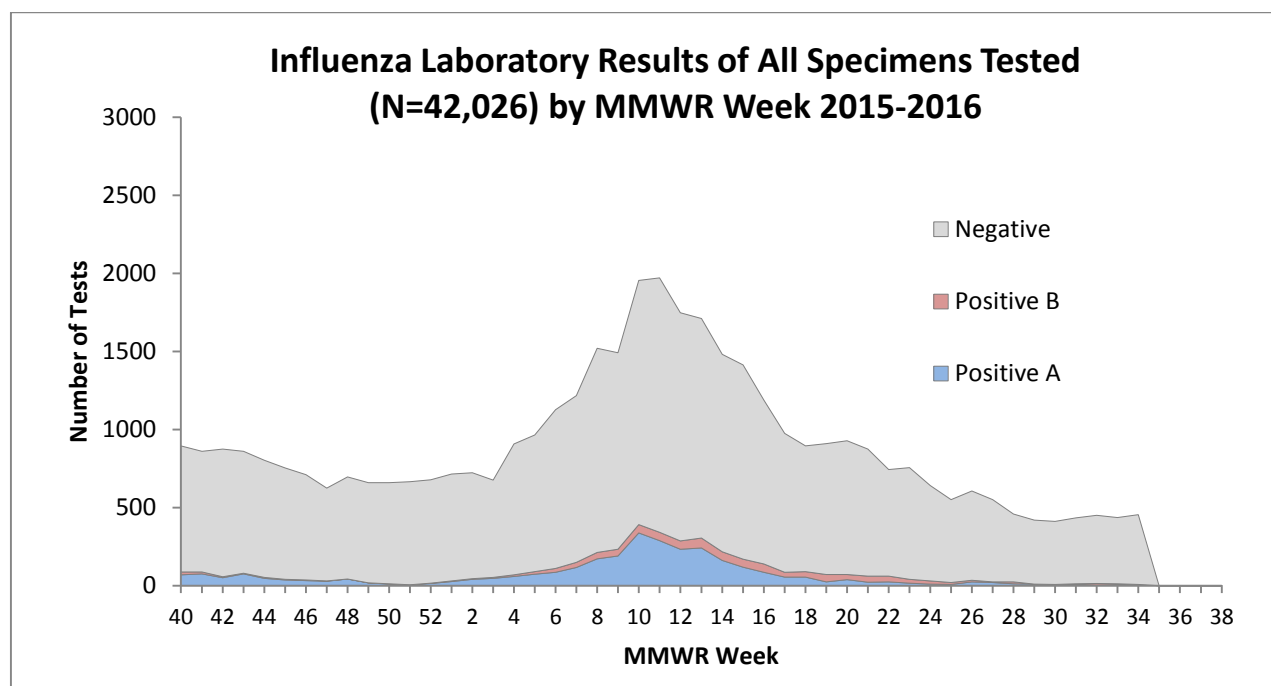
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

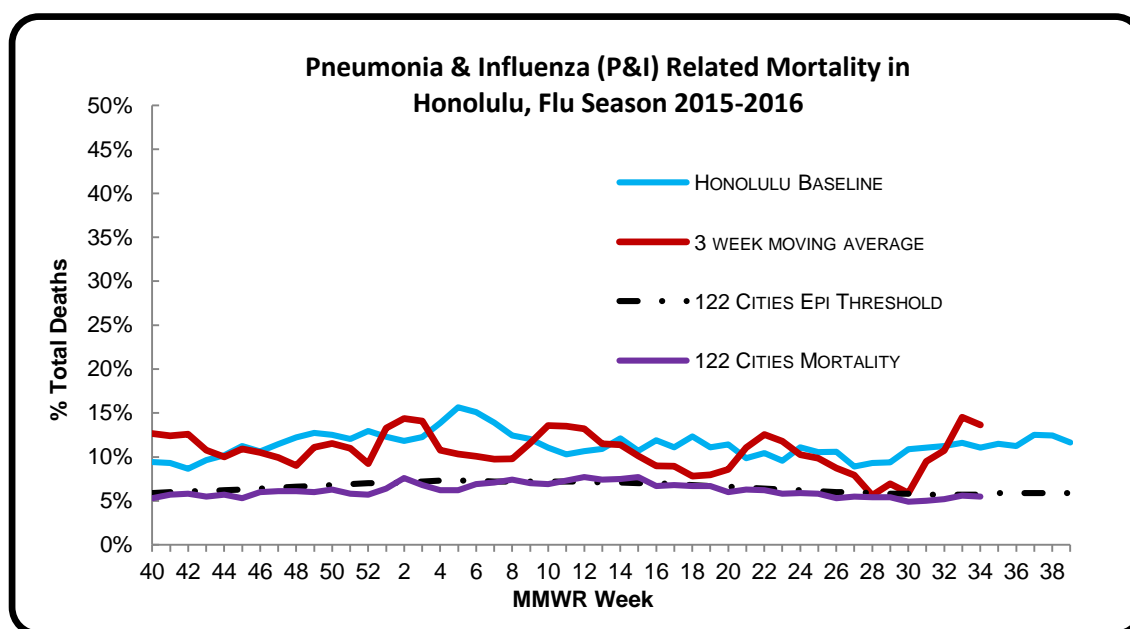
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 34** of the current influenza season:

- *13.2% of all deaths that occurred in Honolulu during week 34 were related to pneumonia or influenza. For the current season (season to date: 10.6%), there have been 4,031 deaths from any cause, 429 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.5%) (i.e., outside the 95% confidence interval) and comparable to the epidemic threshold (5.7%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 34. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *23 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 35: AUGUST 28, 2016 – SEPTEMBER 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 35

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.1%	Comparable to the previous week, Hawaii's historical baseline, and the national baseline; higher than the national ILI rate.
Number of ILI clusters reported to HDOH	1	There has been a total of 23 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.8%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	3.5%	Higher than the previous week. This number means that many, if not all, of the 96.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.6%	

<sup>1</sup> 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.

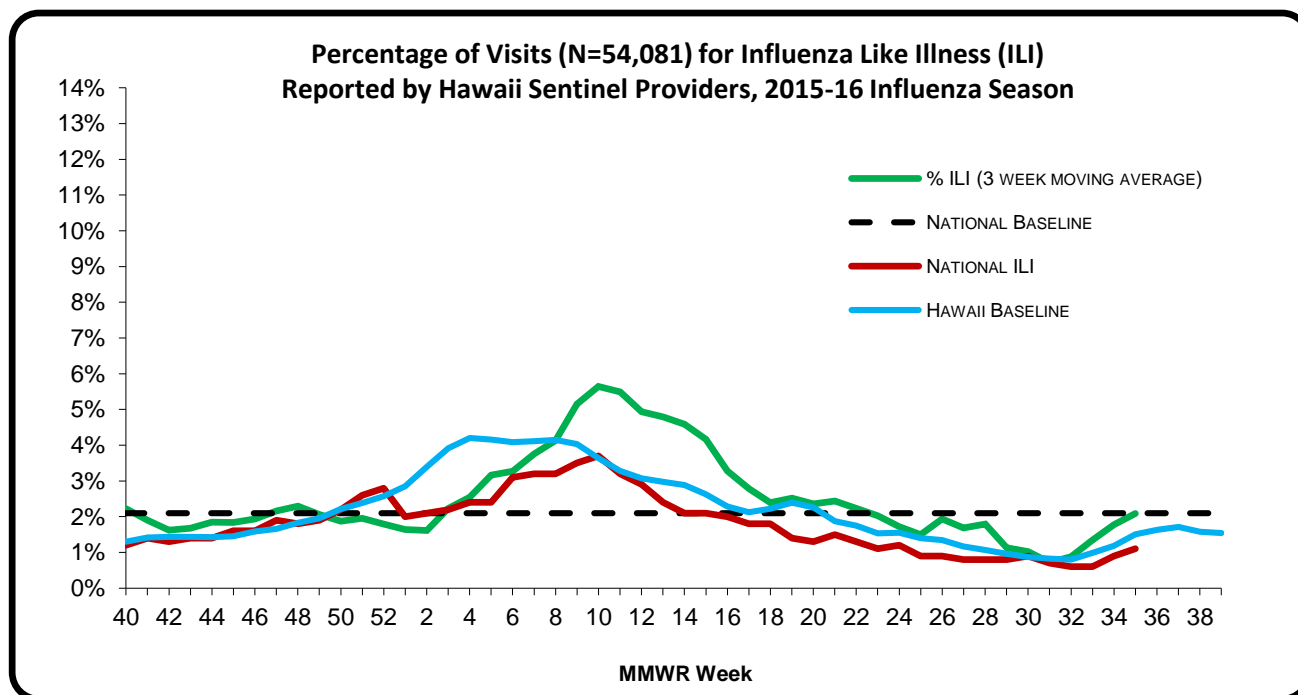


## INFLUENZA SURVEILLANCE

**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 35** of the current influenza season:

- **2.1%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (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:** One cluster was reported to HDOH during week 35. The cluster occurred at an elementary school on Oahu and included cases of influenza B.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

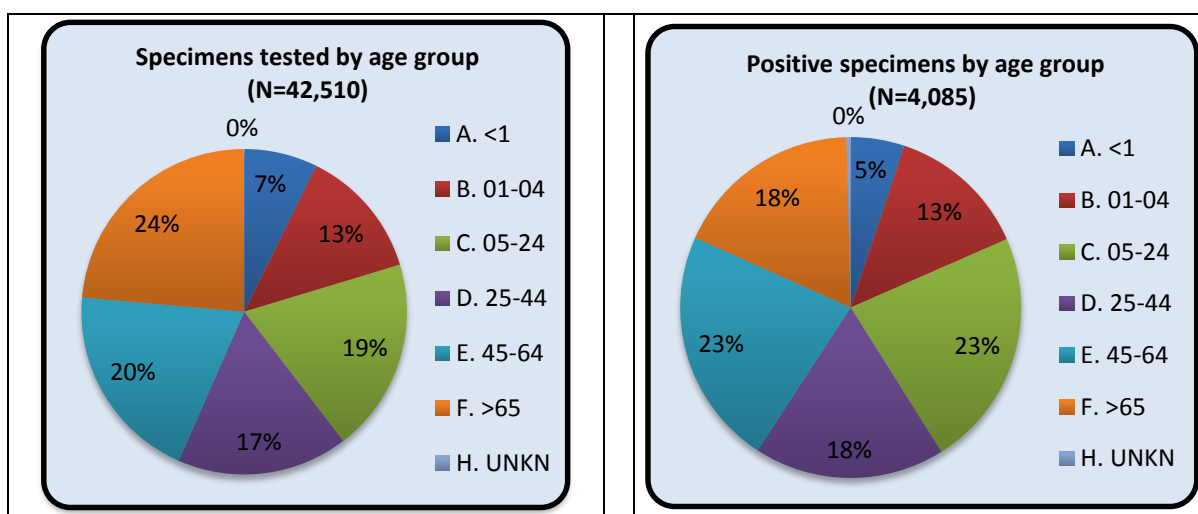
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 35 of the 2015-16 flu season:
  - A total of **484** specimens have been tested statewide for influenza viruses (positive: **17 [3.5%]**). (Season to date: **42,510** tested [**9.6%** positive])
    - 289 (59.7%) were screened only by rapid antigen tests with no confirmatory testing
    - 195 (40.3%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 467 (96.5%) were negative.
  - The 17 total positive cases included 16 (3.3%) cases of influenza A and 1 (0.2%) cases of influenza B (detected using any method). (Season to date: 7.4% influenza A and 2.3% influenza B)
    - Breakdown of influenza A cases:
      - 14 (87.5%) influenza A (un-subtyped). (Season to date: 84.7%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.6%)
      - 2 (12.5%) influenza A (H3). (Season to date: 3.7%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

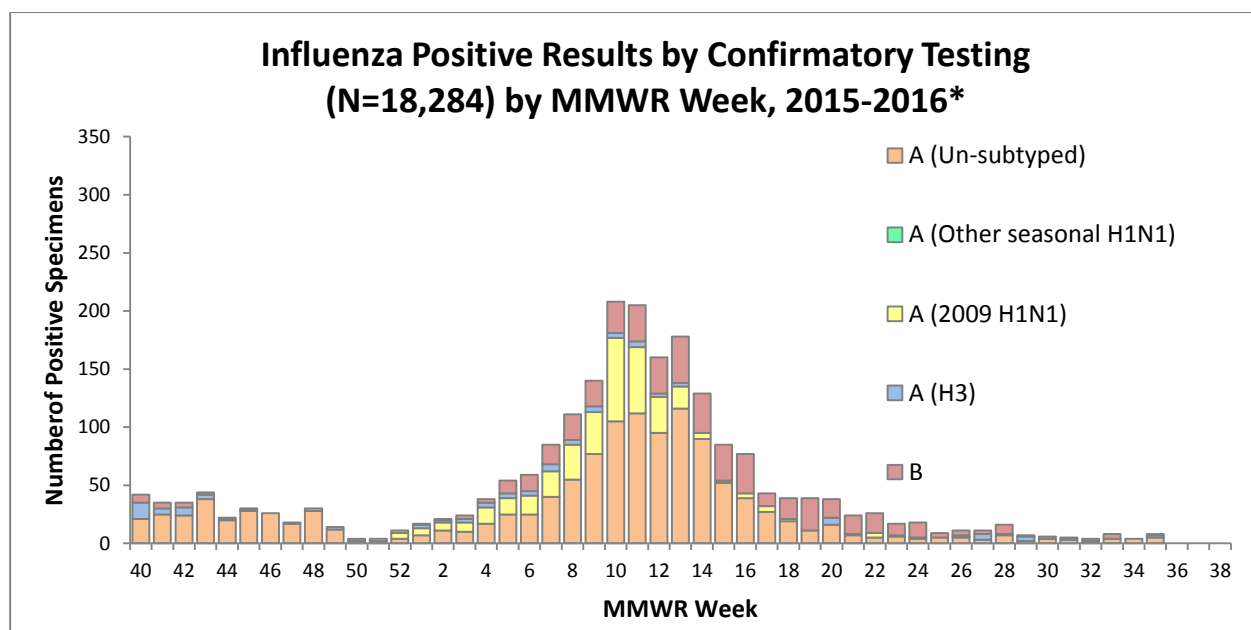
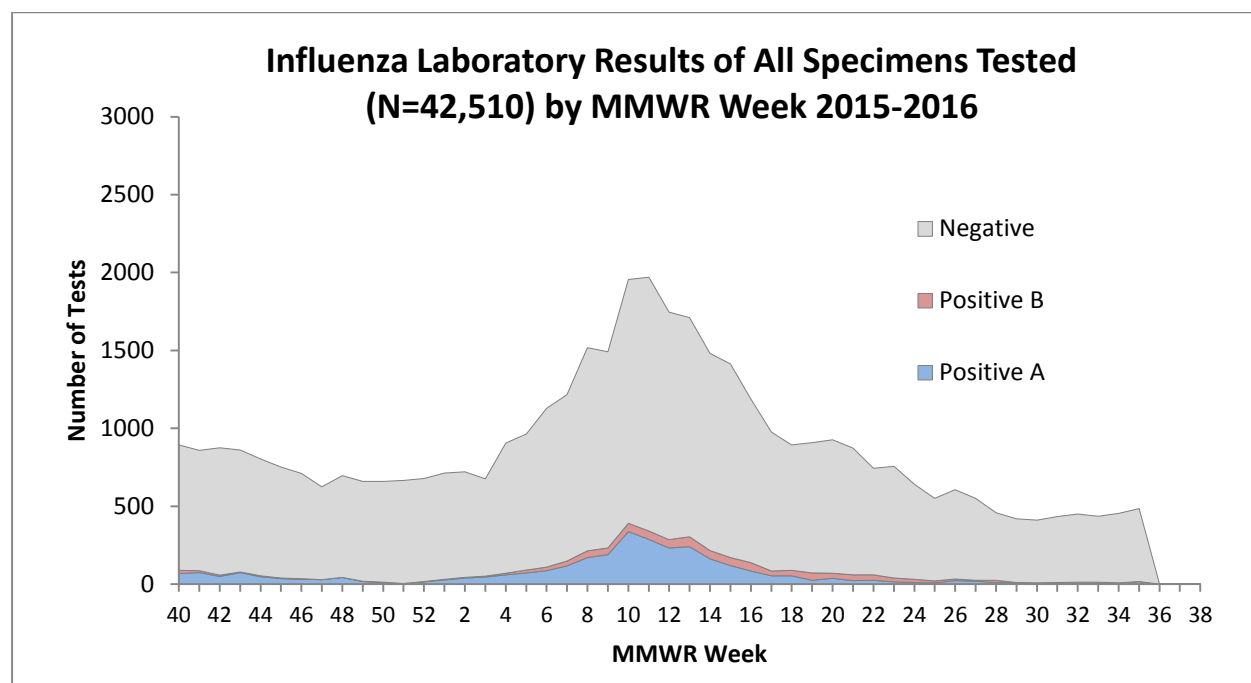
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

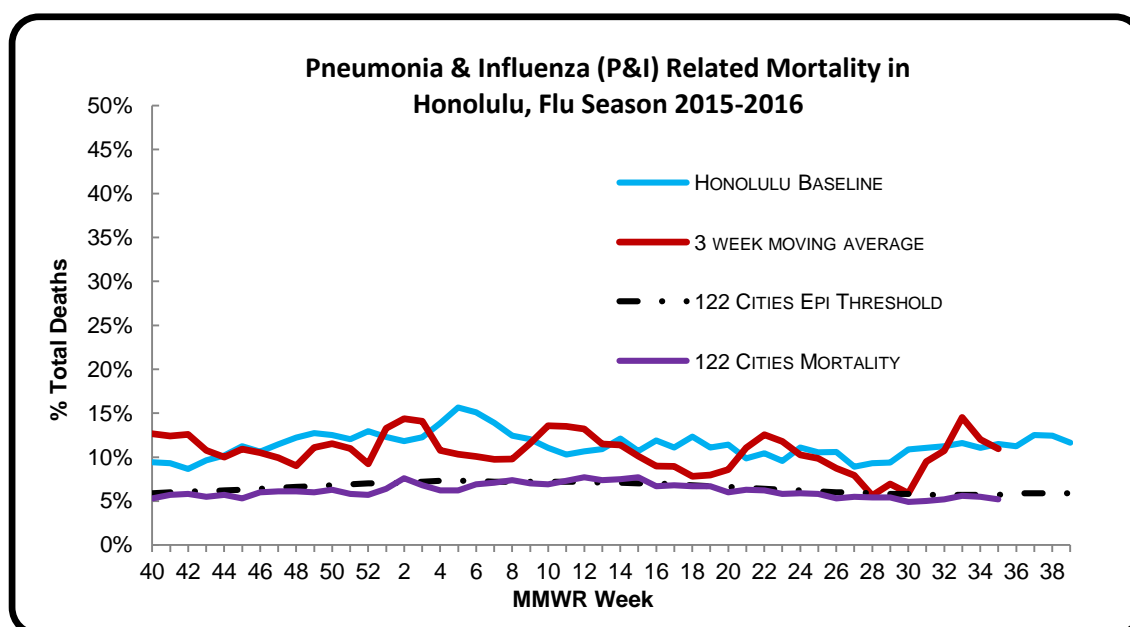
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 35** of the current influenza season:

- **8.8%** of all deaths that occurred in Honolulu during week 35 were related to pneumonia or influenza. For the current season (season to date: **10.6%**), there have been 4,111 deaths from any cause, 436 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup>(5.2%) (i.e., inside the 95% confidence interval) and the epidemic threshold (5.7%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 35. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *23 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		





# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 36: SEPTEMBER 4, 2016 – SEPTEMBER 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 36

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	2.4%	Higher than the previous week and the national ILI rate; comparable to Hawaii's historical baseline and the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 23 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	14.1%	Comparable to the historical baseline for Hawaii; higher than the national epidemic threshold and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	3.0%	Higher than the previous week. This number means that many, if not all, of the 97.0% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.5%	

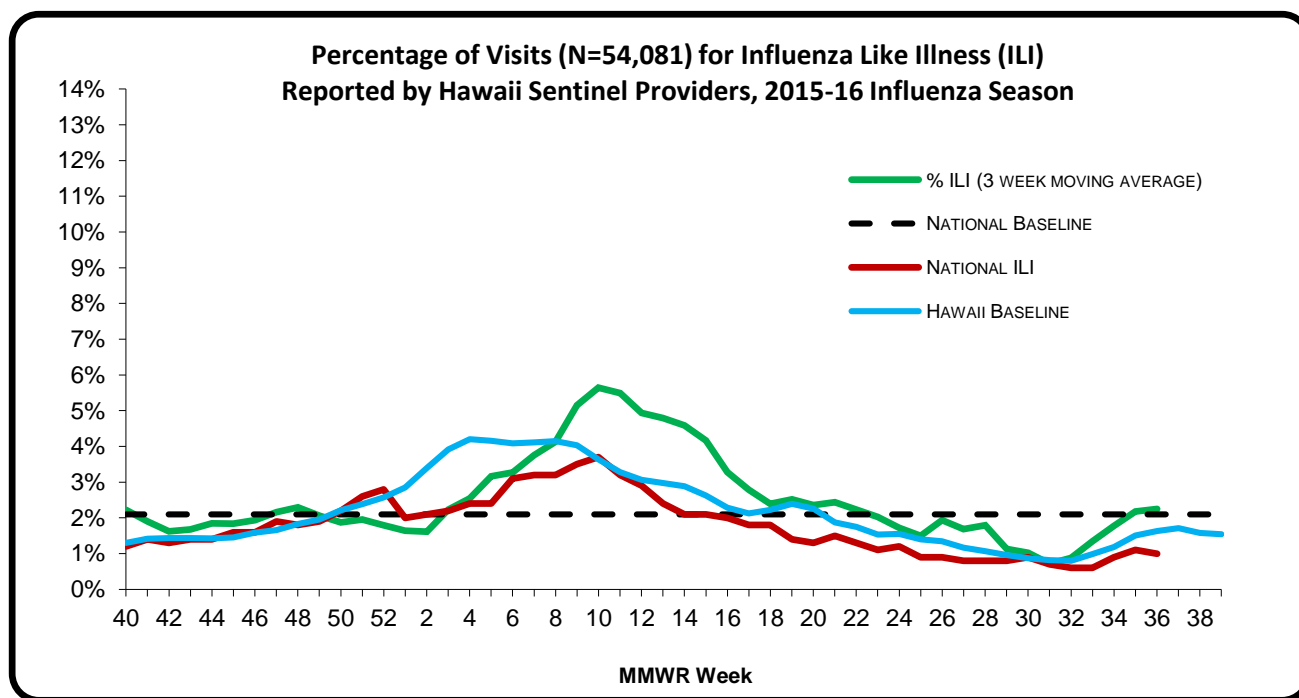
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 36** of the current influenza season:

- **2.4%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.0%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 36.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

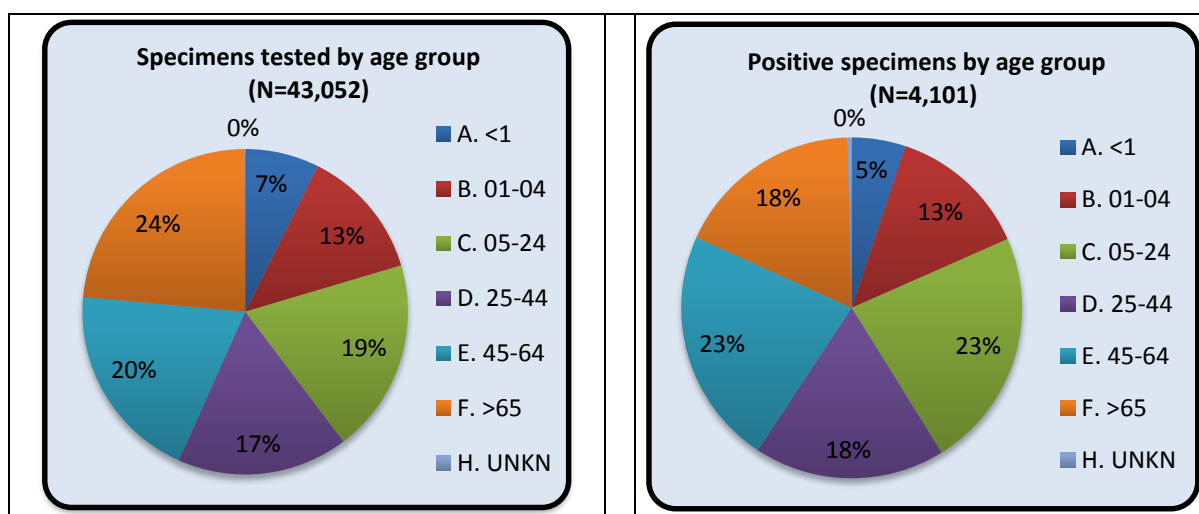
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 36 of the 2015-16 flu season:
  - A total of **541** specimens have been tested statewide for influenza viruses (positive: **16 [3.0%]**). (Season to date: **43,052** tested [**9.5%** positive])
    - 315 (58.2%) were screened only by rapid antigen tests with no confirmatory testing
    - 226 (41.8%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 525 (97.0%) were negative.
  - The 16 total positive cases included 13 (2.4%) cases of influenza A and 3 (0.6%) cases of influenza B (detected using any method). (Season to date: 7.3% influenza A and 2.2% influenza B)
    - Breakdown of influenza A cases:
      - 13 (100%) influenza A (un-subtyped). (Season to date: 84.8%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.6%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.6%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

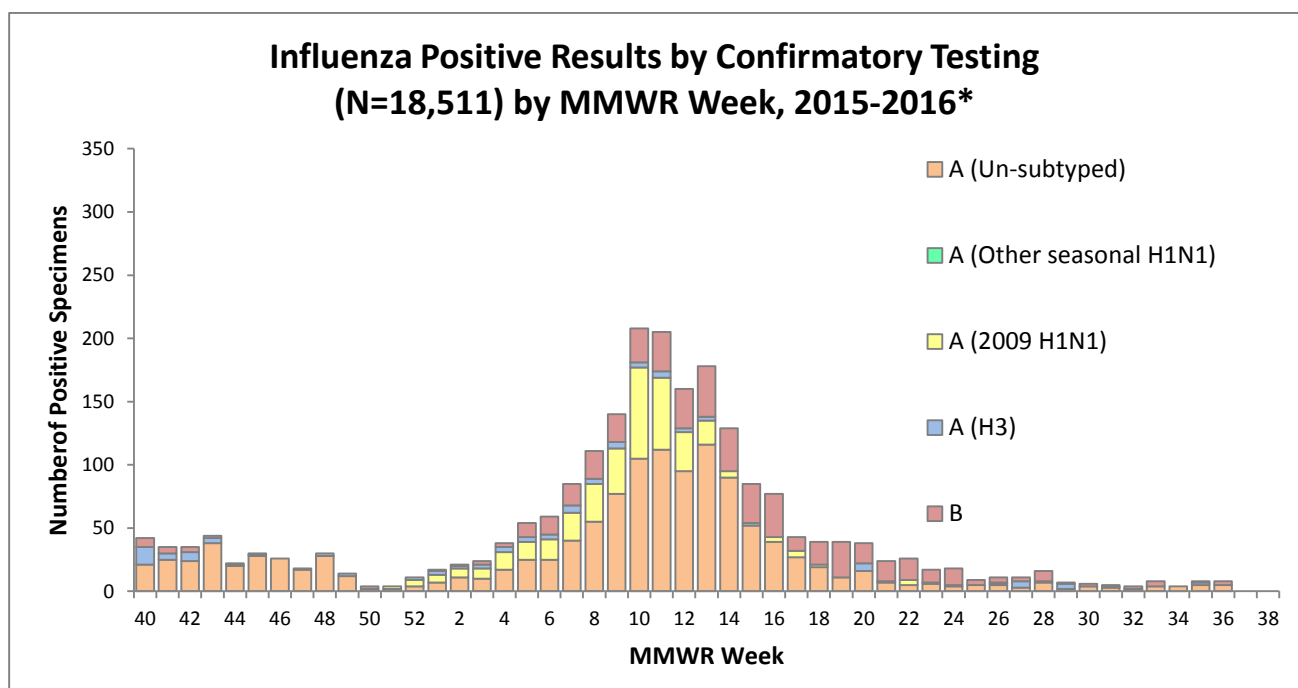
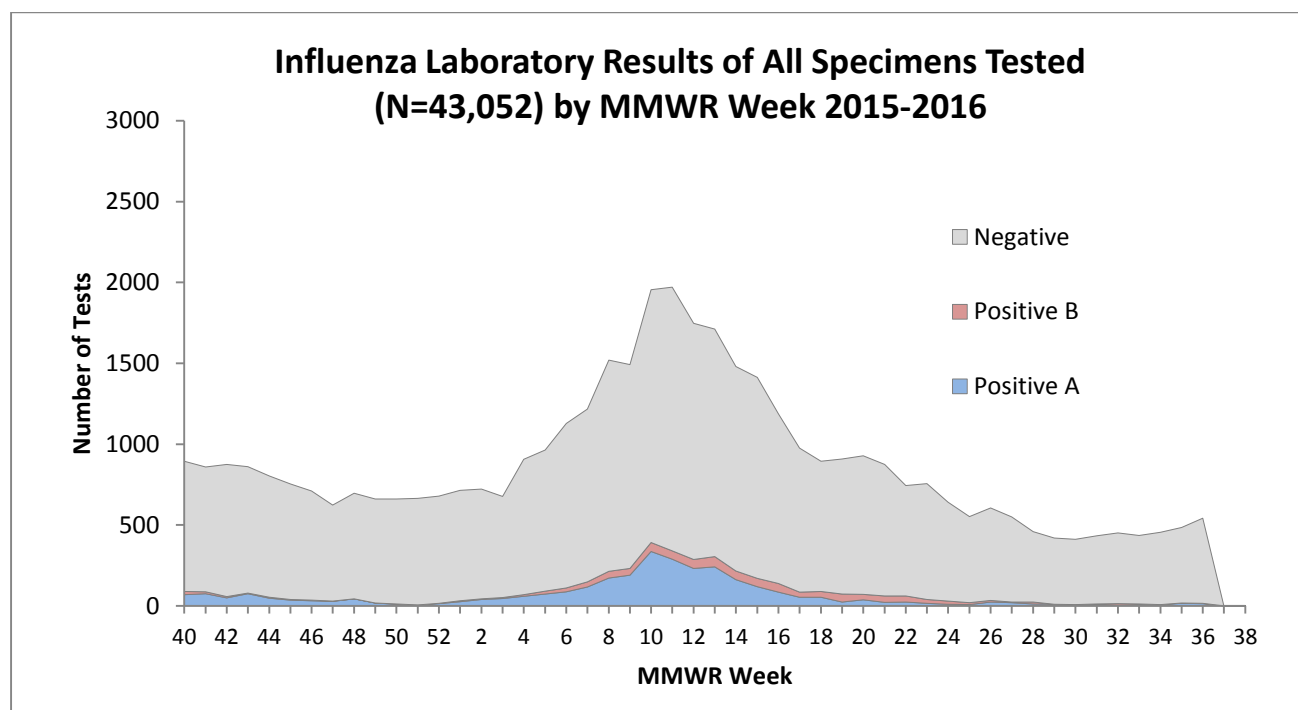
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

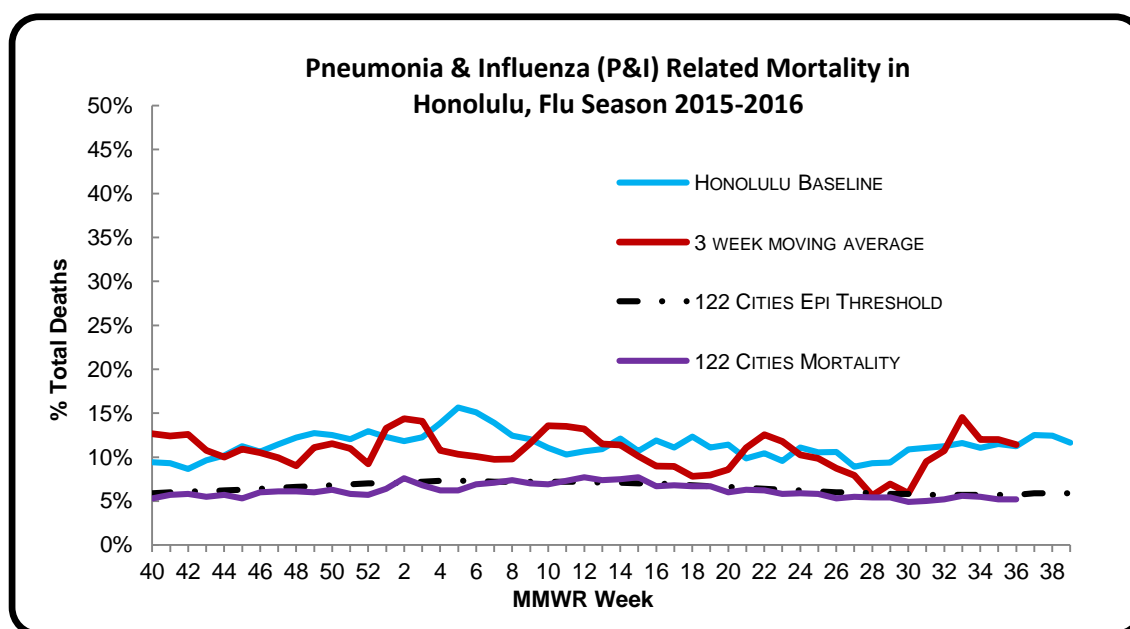
### ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

MMWR Week (2015-2016)																																																											
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40						
Adenovirus							X												X			X				X						X	X	X			X		X																				
Coronavirus																	X	X							X						X	X				X																							
Coxsackie Virus																																																											
Cytomegalovirus																																																											
Echovirus																																																											
Enterovirus																X				X					X																																		
Herpes Simplex Virus, Type 1																																																											
Metapneumovirus						X										X		X	X					X			X					X				X		X																					
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X			X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X										
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X				X								X																											
Rhinovirus			X													X	X			X				X												X		X						X	X														
Varicella Zoster Virus																																																											
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			X						X																
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X														X									X	X					X												
Influenza A (Other seasonal H1)																																																											
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Influenza B	X	X	X	X	X	X					X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 36** of the current influenza season:

- **14.2%** of all deaths that occurred in Honolulu during week 36 were related to pneumonia or influenza. For the current season (season to date: **10.7%**), there have been 4,196 deaths from any cause, 448 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.2%) (i.e., outside the 95% confidence interval) and the epidemic threshold (5.7%) (i.e., outside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 36. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *23 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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



## 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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 37: SEPTEMBER 11, 2016 – SEPTEMBER 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 37

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.9%	Lower than the previous week; comparable to Hawaii's historical baseline, national ILI rate, and the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 23 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 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	4.9%	Higher than the previous week. This number means that many, if not all, of the 95.1% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.5%	

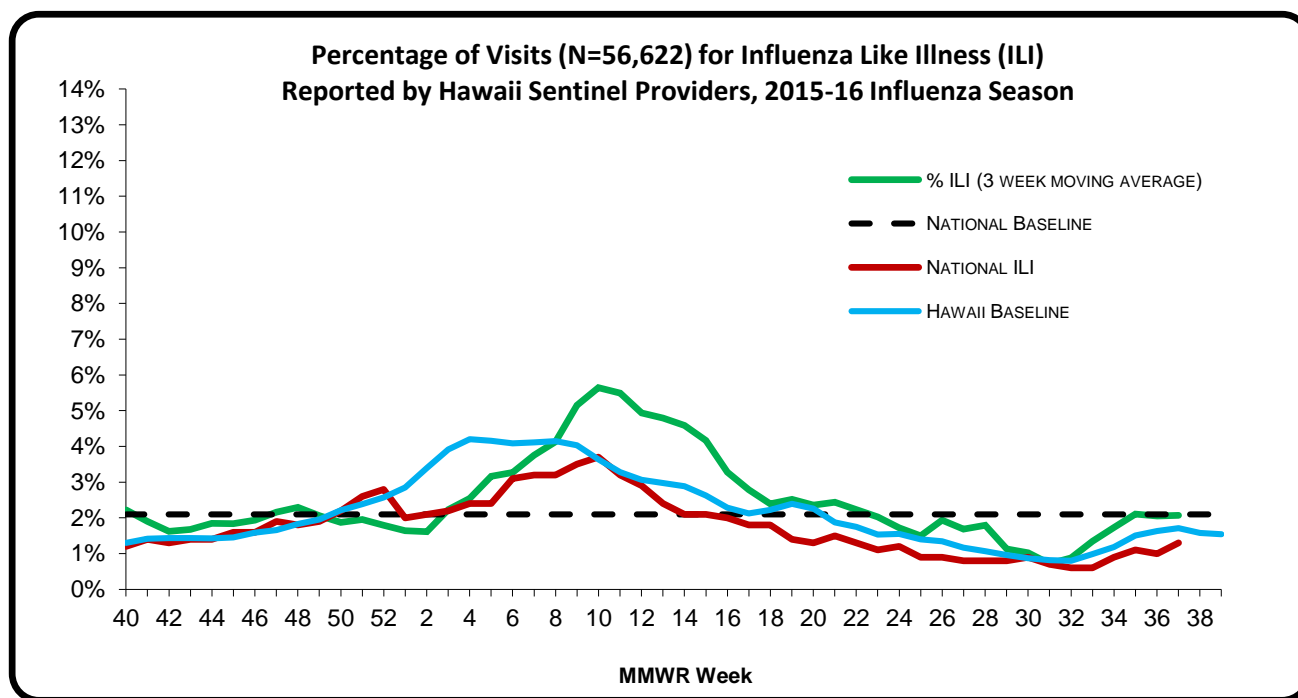
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 37** of the current influenza season:

- **1.9%** (season to date: **2.5%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and higher than the national ILI rate (1.3%) (i.e., outside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 37.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

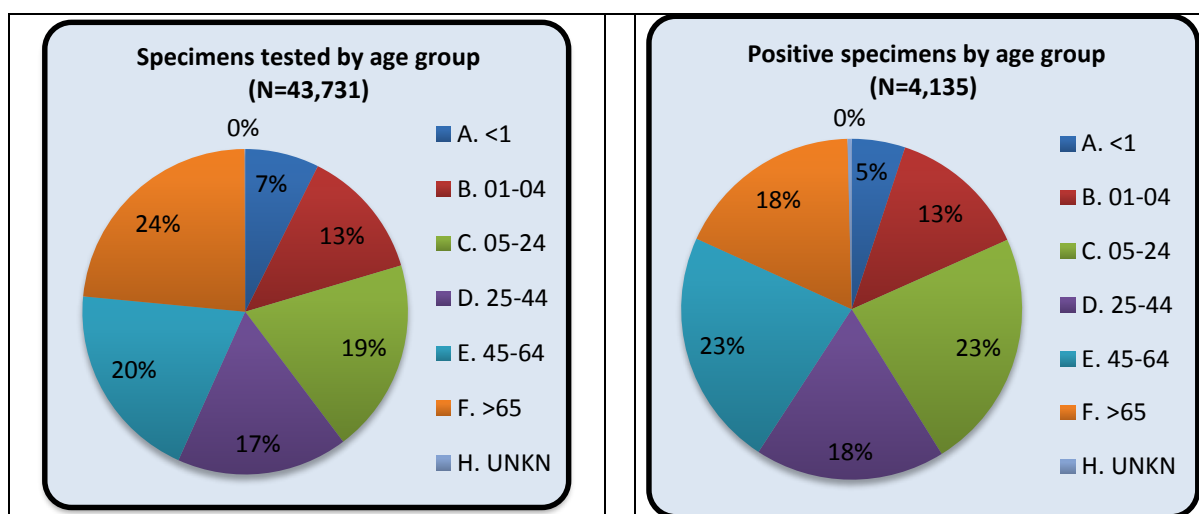
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 37 of the 2015-16 flu season:
  - A total of **669** specimens have been tested statewide for influenza viruses (positive: **33 [4.9%]**). (Season to date: **43,731** tested [**9.5%** positive])
    - 380 (56.8%) were screened only by rapid antigen tests with no confirmatory testing
    - 289 (43.2%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 636 (95.1%) were negative.
  - The 33 total positive cases included 28 (4.2%) cases of influenza A and 5 (0.7%) cases of influenza B (detected using any method). (Season to date: 7.2% influenza A and 2.2% influenza B)
    - Breakdown of influenza A cases:
      - 22 (78.6%) influenza A (un-subtyped). (Season to date: 84.4%)
      - 3 (10.7%) 2009 H1N1. (Season to date: 11.6%)
      - 3 (10.7%) influenza A (H3). (Season to date: 3.9%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

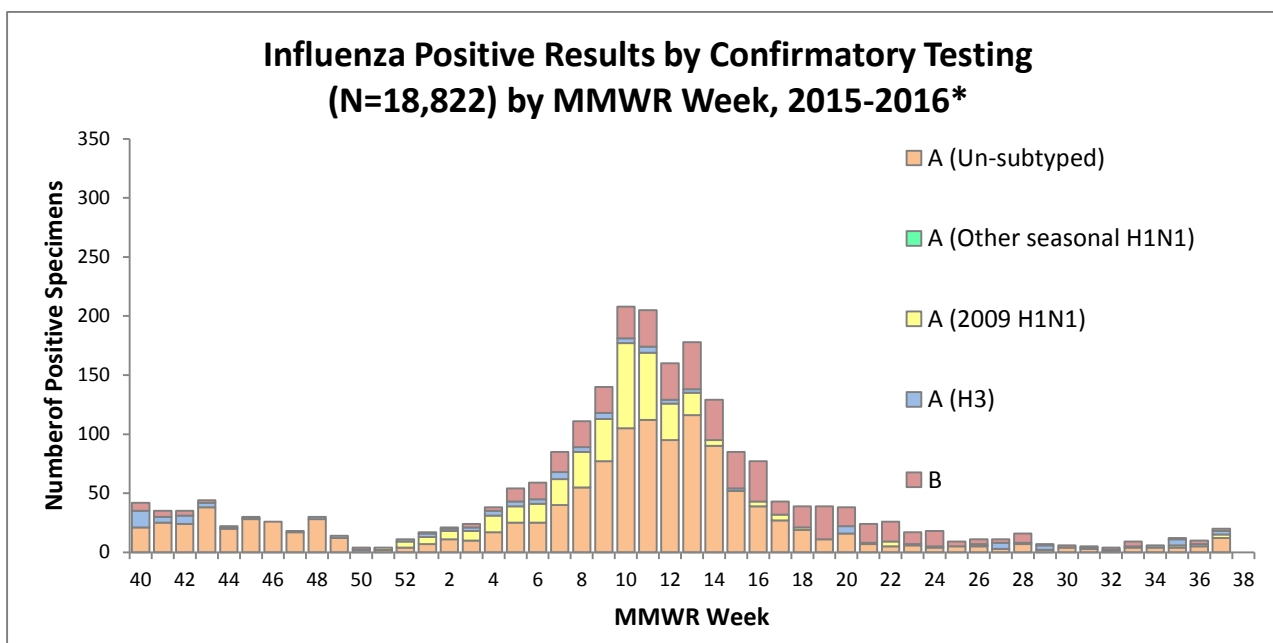
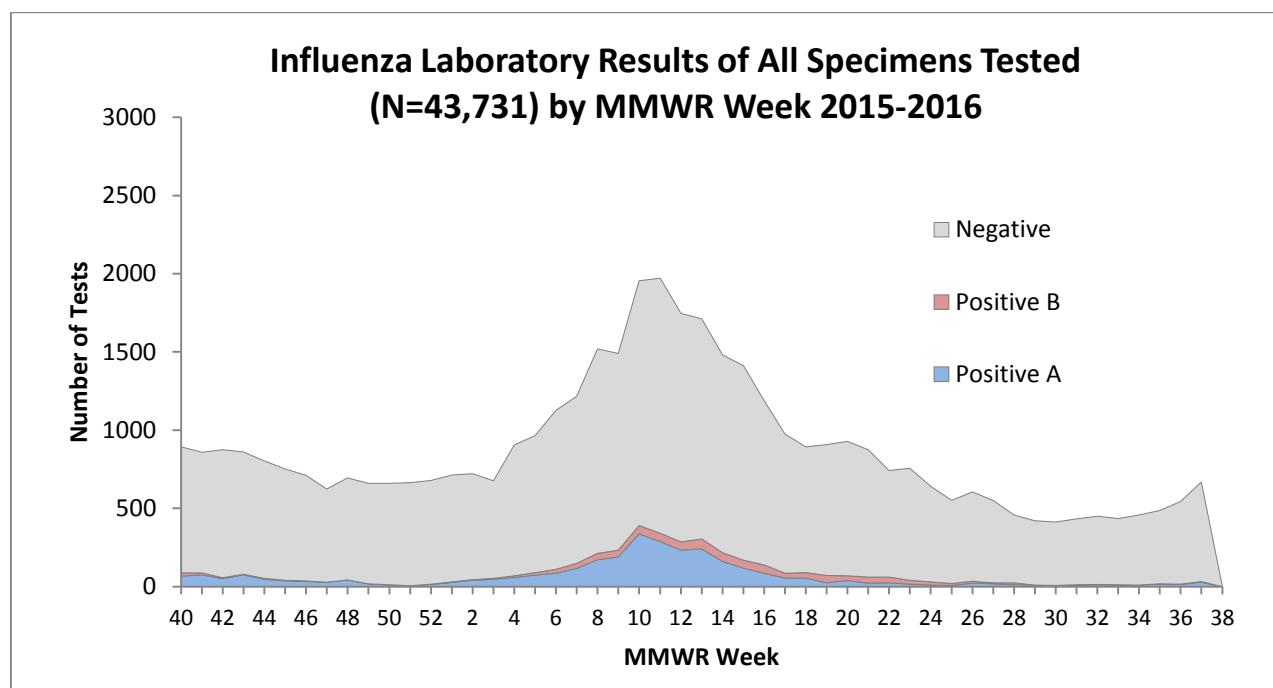
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

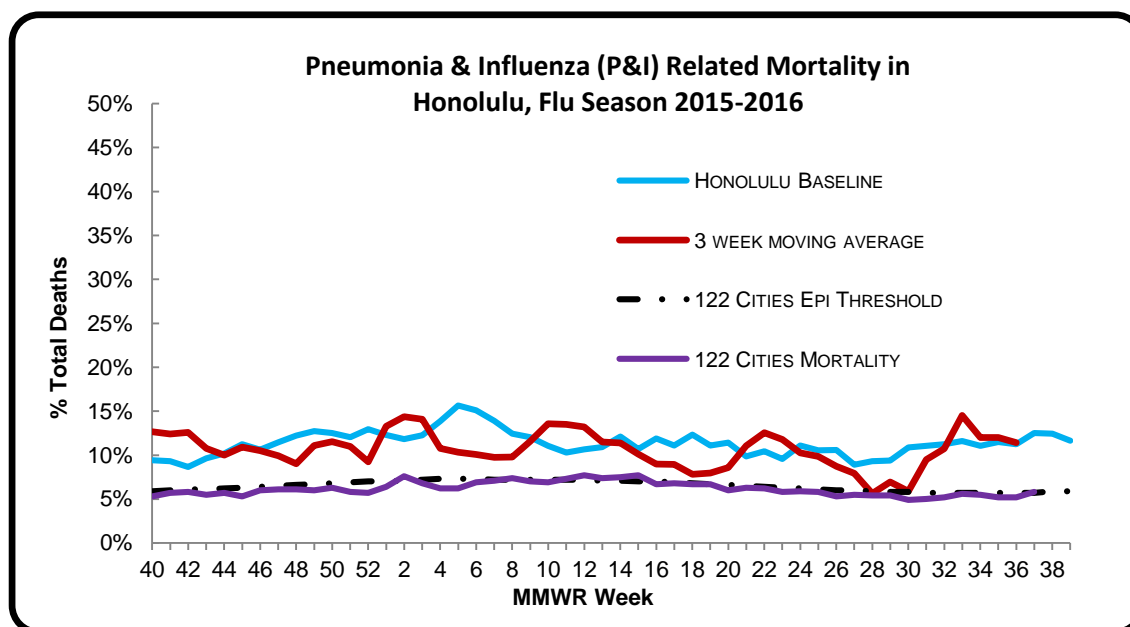
## ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON

[illegible]

**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 37** of the current influenza season:

- *11.4% of all deaths that occurred in Honolulu during week 37 were related to pneumonia or influenza. For the current season (season to date: 10.7%), there have been 4,284 deaths from any cause, 458 of which were due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup>(5.8%) (i.e., inside the 95% confidence interval) and the epidemic threshold (5.7%) (i.e., inside the 95% confidence interval).*



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 37. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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

<sup>8</sup> 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 2015–2016 influenza season.*
- *23 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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 **July 19, 2016**.



**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 38: SEPTEMBER 18, 2016 – SEPTEMBER 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 38

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	1.7%	Lower than the previous week; comparable to Hawaii's historical baseline, national ILI rate, and the national baseline.
Number of ILI clusters reported to HDOH	0	There has been a total of 23 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	5.8%	Comparable to the historical baseline for Hawaii, the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	5.4%	Higher than the previous week. This number means that many, if not all, of the 94.6% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.4%	

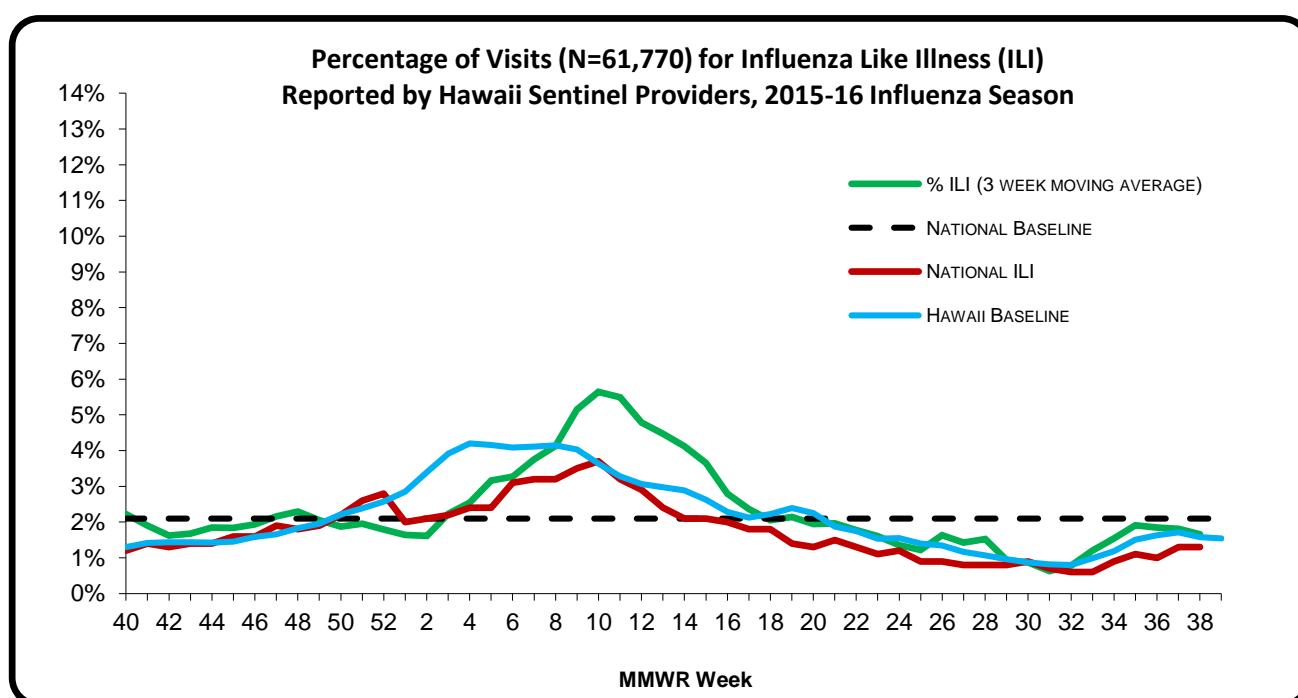
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 38** of the current influenza season:

- **1.7%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (i.e., inside the 95% confidence interval) and the national ILI rate (1.3%) (i.e., inside the 95% confidence interval).
- ILI Cluster Activity: No clusters were reported to HDOH during week 38.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

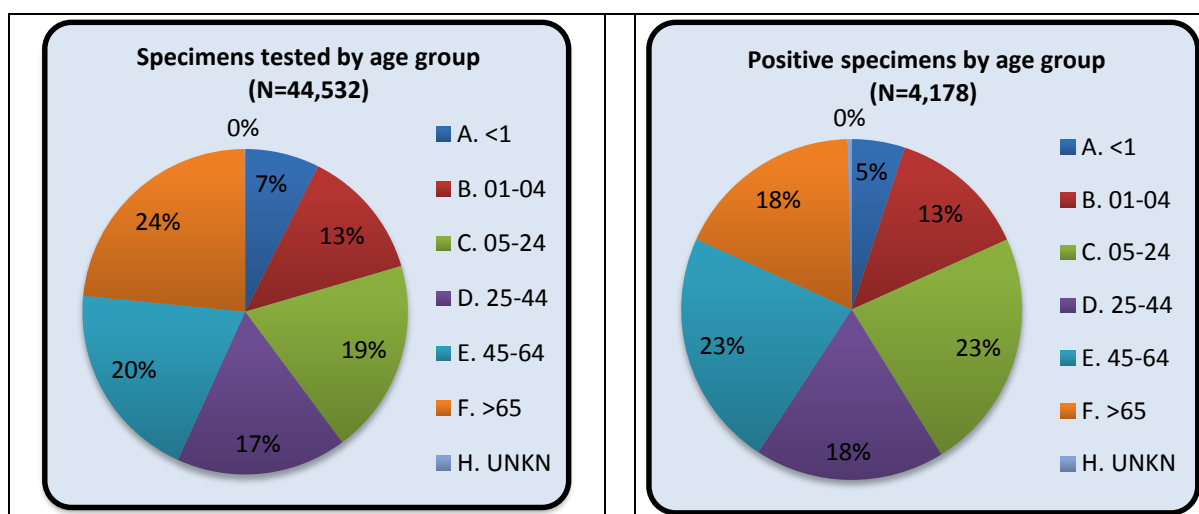
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 38 of the 2015-16 flu season:
  - A total of **800** specimens have been tested statewide for influenza viruses (positive: **43 [5.4%]**). (Season to date: **44,532** tested [**9.4%** positive])
    - 458 (57.3%) were screened only by rapid antigen tests with no confirmatory testing
    - 342 (42.8%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 757 (94.6%) were negative.
  - The 33 total positive cases included 35 (4.4%) cases of influenza A and 8 (1.0%) cases of influenza B (detected using any method). (Season to date: 7.2% influenza A and 2.2% influenza B)
    - Breakdown of influenza A cases:
      - 35 (100%) influenza A (un-subtyped). (Season to date: 84.6%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.5%)
      - 0 (0.0%) influenza A (H3). (Season to date: 3.9%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

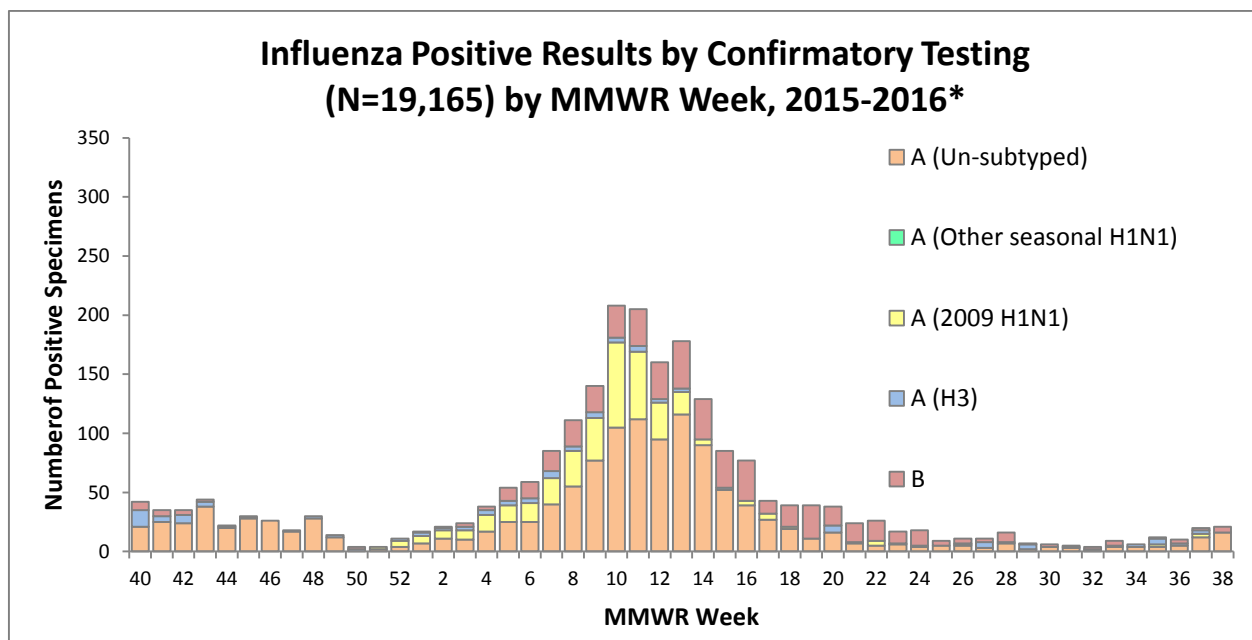
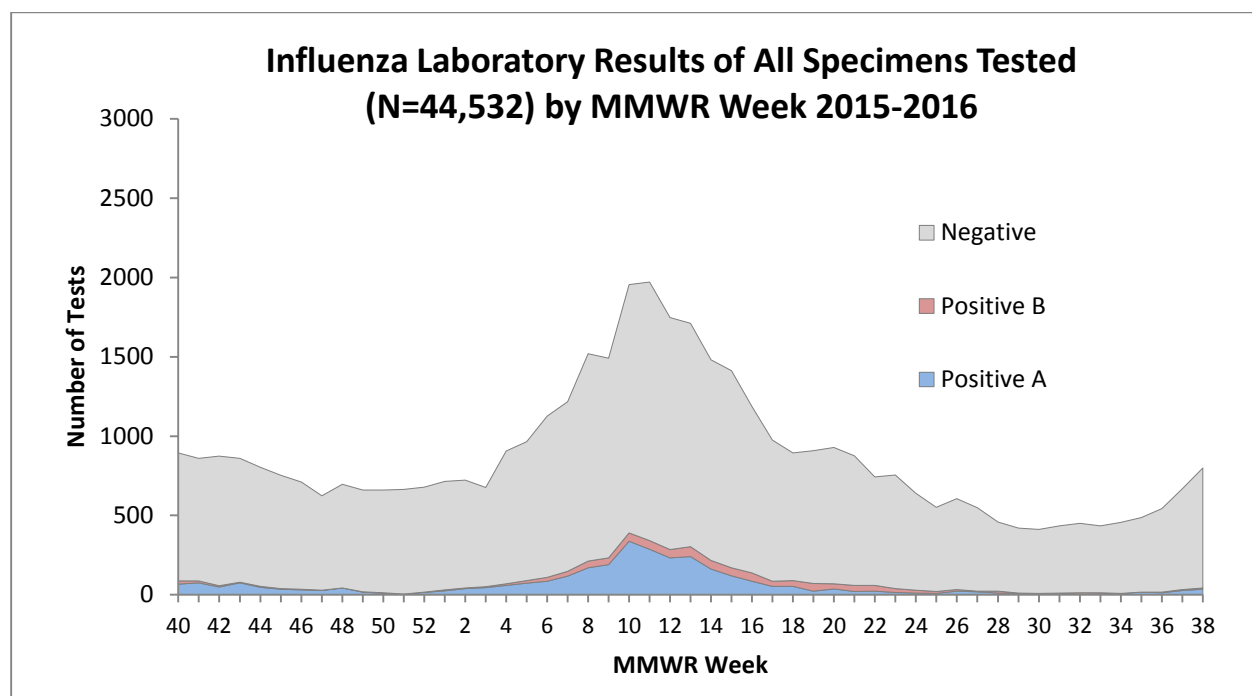
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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

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

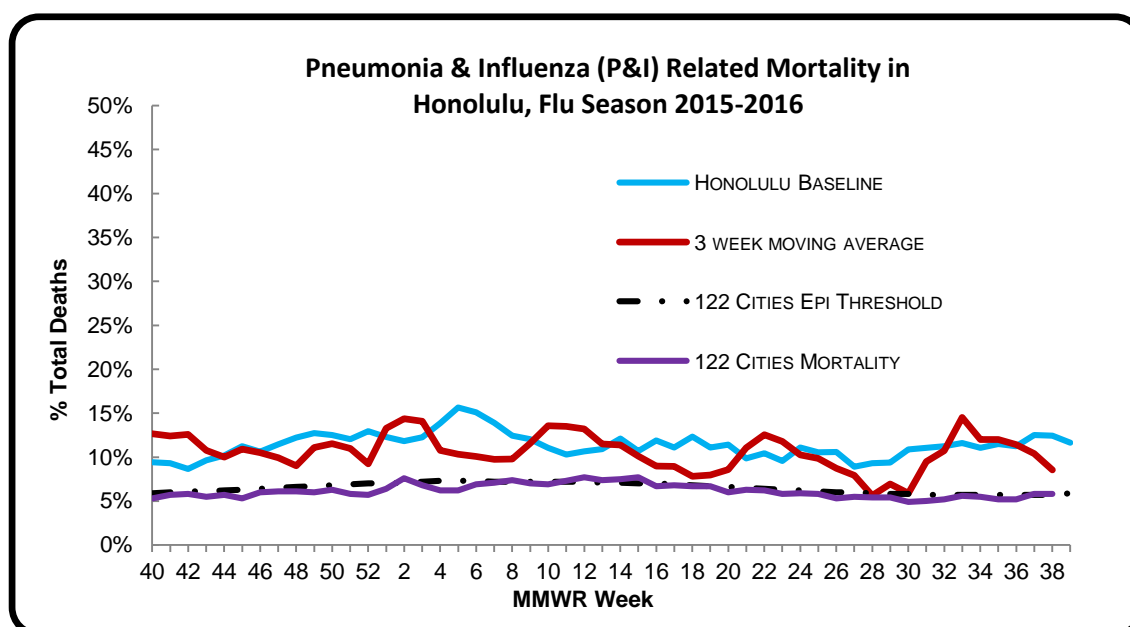
**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

MMWR Week (2015-2016)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Adenovirus							X												X		X					x					X	X	X			x		X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Coronavirus																	X	X							X						X	X				x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Coxsackie Virus																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</

**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 38** of the current influenza season:

- **5.8%** of all deaths that occurred in Honolulu during week 38 were related to pneumonia or influenza. For the current season (season to date: **10.6%**), there have been 4,371 deaths from any cause, 463 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was comparable to the national 122-city P&I mortality<sup>7</sup> (5.8%) (i.e., inside the 95% confidence interval) and the epidemic threshold (5.7%) (i.e., inside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 38. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *23 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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**. Since the last update, there have been two new human cases of H5N1 reported to WHO from Egypt. Both cases were exposed to domestic poultry before onset, were hospitalized, and resulted in death. Since the last update, there have been five new human cases of H7N9 reported from China, including one fatal case. Within the five cases, a cluster of three was reported for which the possibility of human-to-human transmission has not been ruled out. Two new human cases of H9N2 have been reported from China since the last update and updates to previous reports have included an additional four cases of H9N2 over the past six months. A previously reported case has been reported as fatal, making it the first fatality associated with a case of H9N2. Lastly, WHO has also received reports of variant flu cases since the last update: one new human case of H1N2v reported from Brazil and a cluster of 18 human H3N2v cases reported from Ohio and Michigan.

**APPENDIX 1: ADDITIONAL INFORMATION**

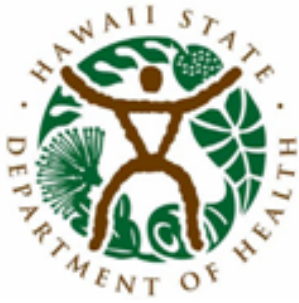
For more information regarding local and national influenza surveillance programs, visit the following sites.

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

## Influenza Surveillance Report Morbidity and Mortality Weekly Report (MMWR)<sup>1</sup>

WEEK 39: SEPTEMBER 25, 2016 – OCTOBER 01, 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 39

*The 2015–16 influenza season began during week 40<sup>1</sup> (2015) and will end on week 39 (2016)*

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, national ILI rate, and the national baseline.
Number of ILI clusters reported to HDOH	1	There has been a total of 24 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	16.9%	Comparable to the historical baseline for Hawaii, Higher than the national epidemic threshold, and the 122-cities average.
Number of influenza-associated pediatric deaths reported nationwide	0	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	7.5%	Higher than the previous week. This number means that many, if not all, of the 92.5% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	9.3%	

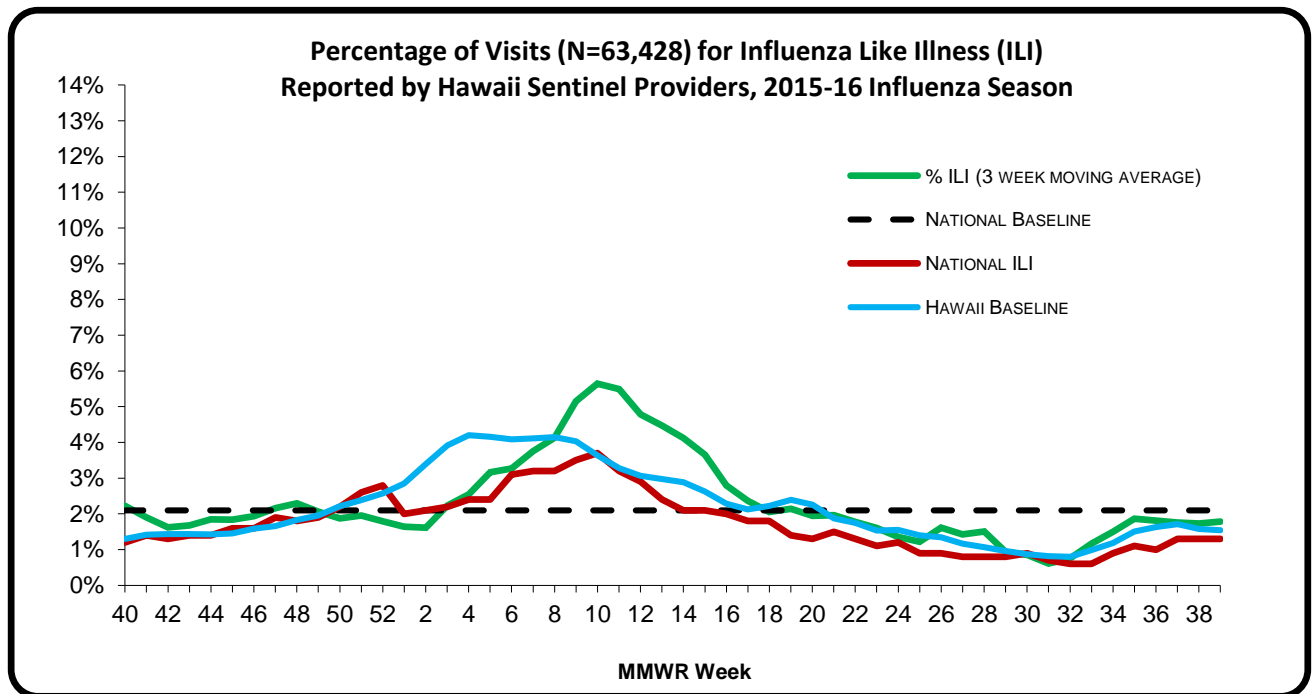
<sup>1</sup> MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

## 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 39** of the current influenza season:

- **2.0%** (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<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were comparable to the national baseline (2.1%)<sup>4</sup> (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 39. The cluster occurred at a long-term care facility on Oahu and included confirmed cases of influenza A.



<sup>2</sup> 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).

<sup>3</sup> 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.

<sup>4</sup> 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.

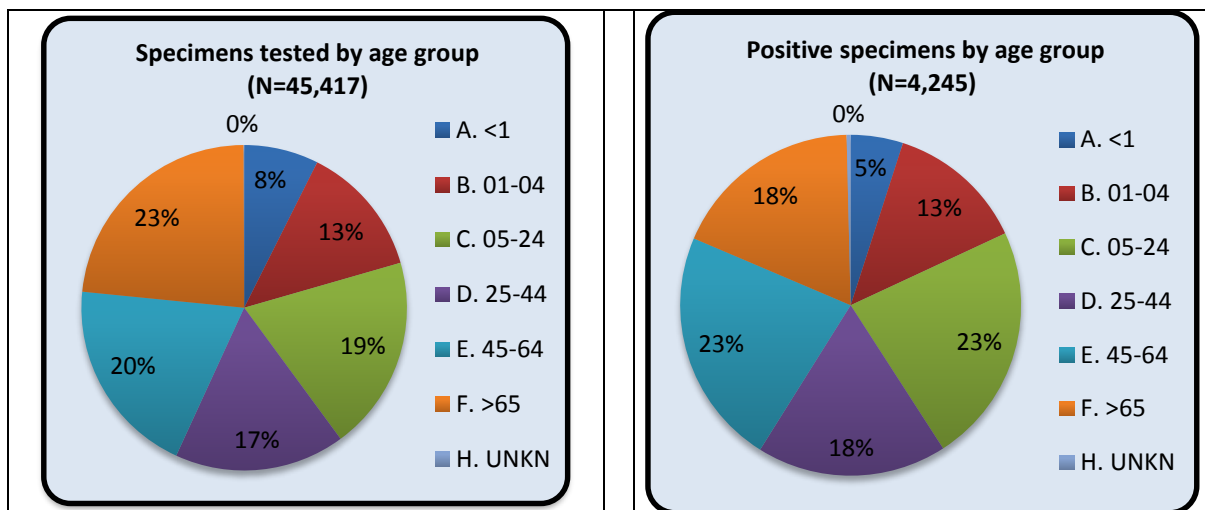
**II. LABORATORY SURVEILLANCE:** State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Specimens meeting priority criteria<sup>5</sup> are forwarded to SLD for sub-typing. Additionally, specimens meeting case definition from requesting sentinel providers are sent directly to SLD for sub-typing. Due to resource constraints, not all submitted specimens undergo sub-typing. Sub-typing at the commercial laboratories is only conducted on a case-by-case basis. The majority of specimens testing positive by rapid antigen testing or RT-PCR at the commercial laboratories do not meet criteria and are not subtyped. For more information on influenza tests and types, please visit the CDC website ([here](#)).

### A. INFLUENZA:

- The following reflects laboratory findings for week 39 of the 2015-16 flu season:
  - A total of 872 specimens have been tested statewide for influenza viruses (positive: 65 [7.5%]). (Season to date: 45,417 tested [9.3% positive])
    - 482 (55.3%) were screened only by rapid antigen tests with no confirmatory testing
    - 390 (44.7%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 807 (92.5%) were negative.
  - The 65 total positive cases included 59 (6.8%) cases of influenza A and 6 (0.7%) cases of influenza B (detected using any method). (Season to date: 7.2% influenza A and 2.2% influenza B)
    - Breakdown of influenza A cases:
      - 58 (98.3%) influenza A (un-subtyped). (Season to date: 84.7%)
      - 0 (0.0%) 2009 H1N1. (Season to date: 11.5%)
      - 1 (1.7%) influenza A (H3). (Season to date: 4.0%)
      - 0 (0.0%) other seasonal influenza A (H1)

### 1. AGE DISTRIBUTION

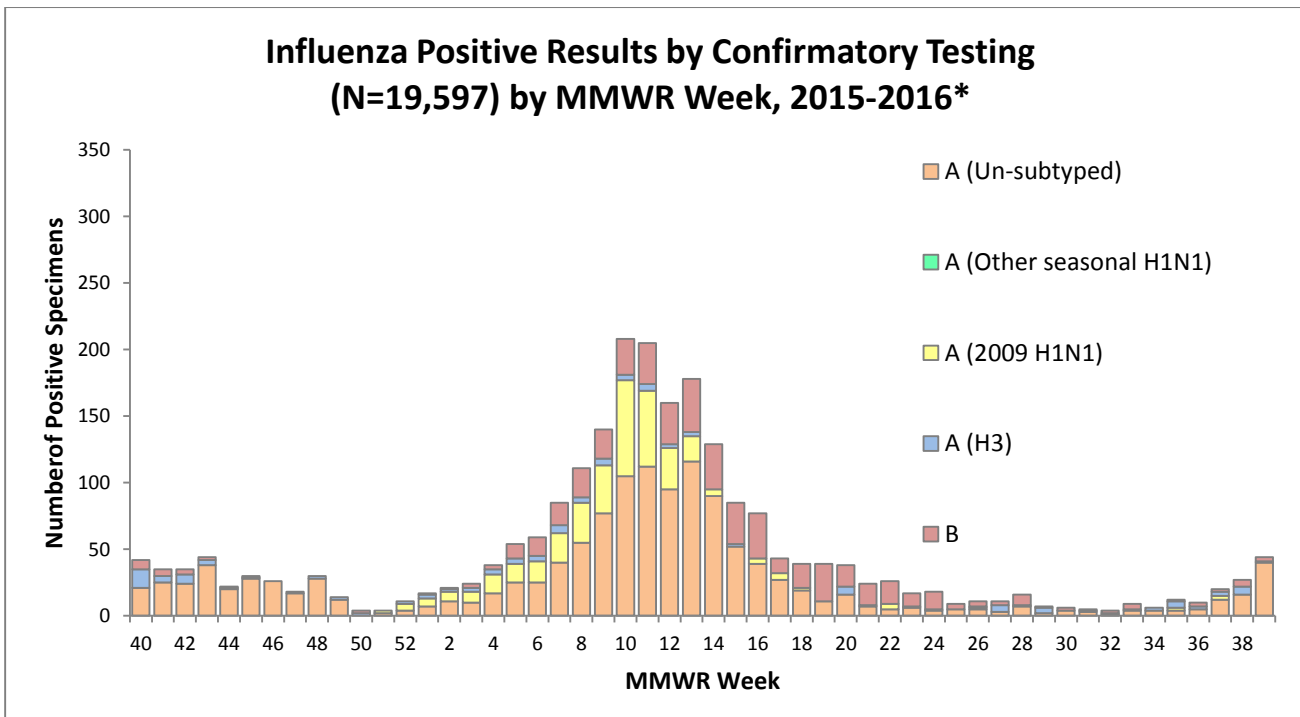
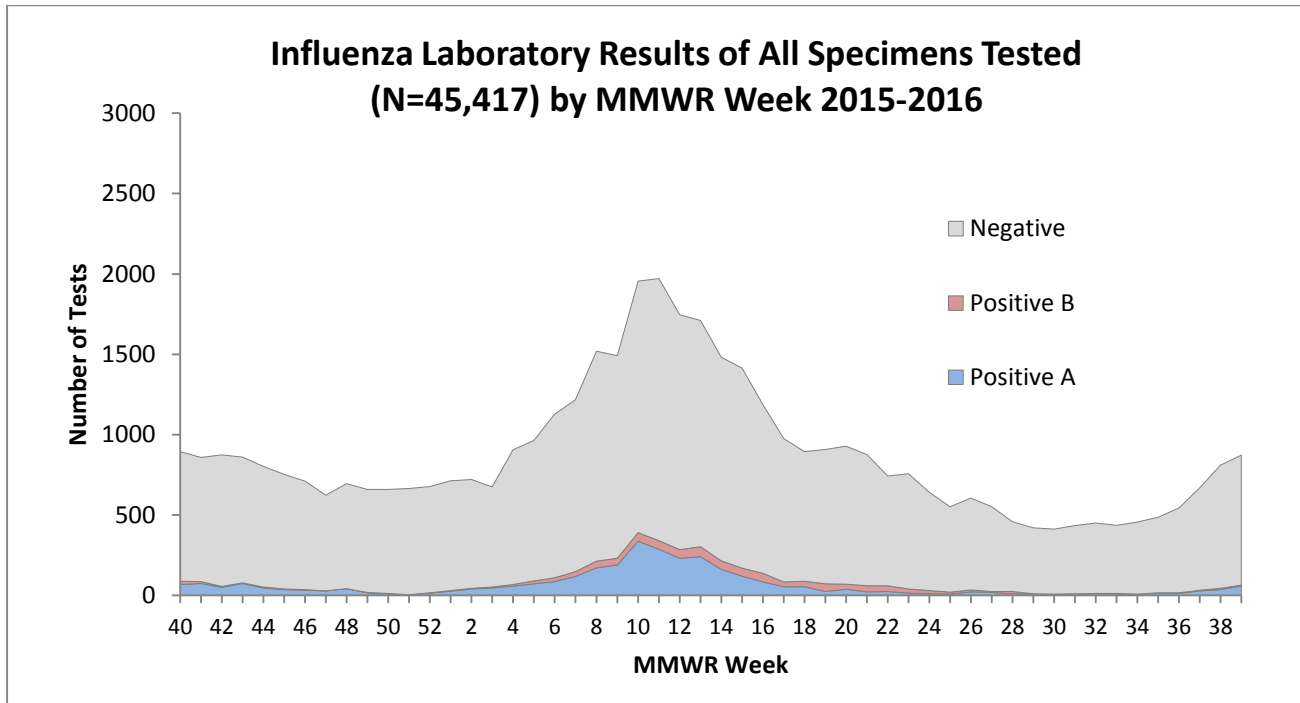
The pie charts below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2015–16 influenza season.



<sup>5</sup> 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 2015–2016 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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



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

**ALL RESPIRATORY ISOLATES IDENTIFIED DURING THE 2015–16 FLU SEASON**

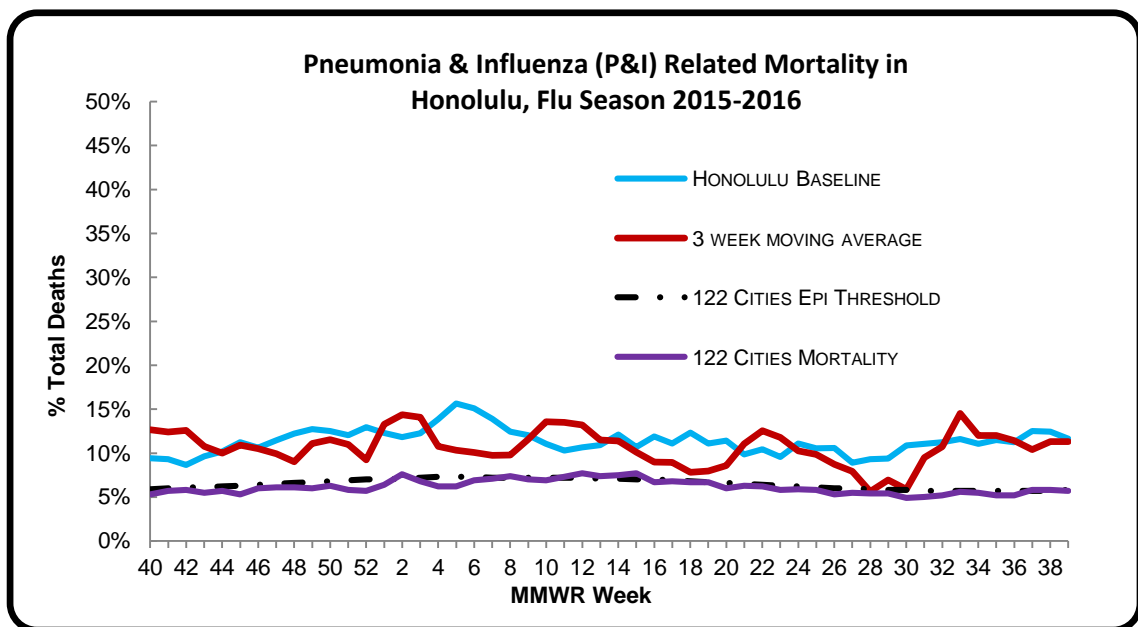
MMWR Week (2015-2016)																																																										
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40					
Adenovirus							X												X		X					X					X	X	X			X		X																				
Coronavirus																	X	X							X						X	X				X																						
Coxsackie Virus																																																										
Cytomegalovirus																																																										
Echovirus																																																										
Enterovirus																	X				X					X																																
Herpes Simplex Virus, Type 1																																																										
Metapneumovirus							X										X		X	X					X			X					X				X		X																			
Parainfluenza Virus	X		X		X	X	X	X		X	X	X		X				X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X		X											
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X							X			X					X								X																			X						
Rhinovirus				X													X	X			X					X											X		X														X					
Varicella Zoster Virus																																																										
Influenza 2009 H1N1												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X				X												X								
Influenza A (H3)	X	X	X	X	X	X		X	X	X	X		X	X	X	X	X																X																			X		X		X		
Influenza A (Other seasonal H1)																																																										
Influenza A (unsubtyped)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Influenza B	X	X	X	X	X	X					X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	



**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC 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 39** of the current influenza season:

- **16.9%** of all deaths that occurred in Honolulu during week 39 were related to pneumonia or influenza. For the current season (season to date: **10.7%**), there have been 4,460 deaths from any cause, 478 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>6</sup> (i.e., inside the 95% confidence interval).
- The Honolulu P&I rate was higher than the national 122-city P&I mortality<sup>7</sup> (5.7%) (i.e., outside the 95% confidence interval) and the epidemic threshold (5.8%) (i.e., outside the 95% confidence interval).



#### **INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>8</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2015–2016 season.
- Nationally, no influenza-associated pediatric deaths were reported to CDC during week 39. (Season total: 85).

<sup>6</sup> 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.).

<sup>7</sup> 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.

<sup>8</sup> 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 2015–2016 influenza season.*
- *23 human infections with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, have been reported to CDC during the 2015–2016 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 15<sup>th</sup>, 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.

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

**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	2012	2013	2014	2015	2016
1	1/7/2012	1/5/2013	1/4/2014	1/10/2015	1/9/2016
2	1/14/2012	1/12/2013	1/11/2014	1/17/2015	1/16/2016
3	1/21/2012	1/19/2013	1/18/2014	1/24/2015	1/23/2016
4	1/28/2012	1/26/2013	1/25/2014	1/31/2015	1/30/2016
5	2/4/2012	2/2/2013	2/1/2014	2/7/2015	2/6/2016
6	2/11/2012	2/9/2013	2/8/2014	2/14/2015	2/13/2016
7	2/18/2012	2/16/2013	2/15/2014	2/21/2015	2/20/2016
8	2/25/2012	2/23/2013	2/22/2014	2/28/2015	2/27/2016
9	3/3/2012	3/2/2013	3/1/2014	3/7/2015	3/5/2016
10	3/10/2012	3/9/2013	3/8/2014	3/14/2015	3/12/2016
11	3/17/2012	3/16/2013	3/15/2014	3/21/2015	3/19/2016
12	3/24/2012	3/23/2013	3/22/2014	3/28/2015	3/26/2016
13	3/31/2012	3/30/2013	3/29/2014	4/4/2015	4/2/2016
14	4/7/2012	4/6/2013	4/5/2014	4/11/2015	4/9/2016
15	4/14/2012	4/13/2013	4/12/2014	4/18/2015	4/16/2016
16	4/21/2012	4/20/2013	4/19/2014	4/25/2015	4/23/2016
17	4/28/2012	4/27/2013	4/26/2014	5/2/2015	4/30/2016
18	5/5/2012	5/4/2013	5/3/2014	5/9/2015	5/7/2016
19	5/12/2012	5/11/2013	5/10/2014	5/16/2015	5/14/2016
20	5/19/2012	5/18/2013	5/17/2014	5/23/2015	5/21/2016
21	5/26/2012	5/25/2013	5/24/2014	5/30/2015	5/28/2016
22	6/2/2012	6/1/2013	5/31/2014	6/6/2015	6/4/2016
23	6/9/2012	6/8/2013	6/7/2014	6/13/2015	6/11/2016
24	6/16/2012	6/15/2013	6/14/2014	6/20/2015	6/18/2016
25	6/23/2012	6/22/2013	6/21/2014	6/27/2015	6/25/2016
26	6/30/2012	6/29/2013	6/28/2014	7/4/2015	7/2/2016
27	7/7/2012	7/6/2013	7/5/2014	7/11/2015	7/9/2016
28	7/14/2012	7/13/2013	7/12/2014	7/18/2015	7/16/2016
29	7/21/2012	7/20/2013	7/19/2014	7/25/2015	7/23/2016
30	7/28/2012	7/27/2013	7/26/2014	8/1/2015	7/30/2016
31	8/4/2012	8/3/2013	8/2/2014	8/8/2015	8/6/2016
32	8/11/2012	8/10/2013	8/9/2014	8/15/2015	8/13/2016
33	8/18/2012	8/17/2013	8/16/2014	8/22/2015	8/20/2016
34	8/25/2012	8/24/2013	8/23/2014	8/29/2015	8/27/2016
35	9/1/2012	8/31/2013	8/30/2014	9/5/2015	9/3/2016
36	9/8/2012	9/7/2013	9/6/2014	9/12/2015	9/10/2016
37	9/15/2012	9/14/2013	9/13/2014	9/19/2015	9/17/2016
38	9/22/2012	9/21/2013	9/20/2014	9/26/2015	9/24/2016
39	9/29/2012	9/28/2013	9/27/2014	10/3/2015	10/1/2016
40	10/6/2012	10/5/2013	10/4/2014	10/10/2015	10/8/2016
41	10/13/2012	10/12/2013	10/11/2014	10/17/2015	10/15/2016
42	10/20/2012	10/19/2013	10/18/2014	10/24/2015	10/22/2016
43	10/27/2012	10/26/2013	10/25/2014	10/31/2015	10/29/2016
44	11/3/2012	11/2/2013	11/1/2014	11/7/2015	11/5/2016
45	11/10/2012	11/9/2013	11/8/2014	11/14/2015	11/12/2016
46	11/17/2012	11/16/2013	11/15/2014	11/21/2015	11/19/2016
47	11/24/2012	11/23/2013	11/22/2014	11/28/2015	11/26/2016
48	12/1/2012	11/30/2013	11/29/2014	12/5/2015	12/3/2016
49	12/8/2012	12/7/2013	12/6/2014	12/12/2015	12/10/2016
50	12/15/2012	12/14/2013	12/13/2014	12/19/2015	12/17/2016
51	12/22/2012	12/21/2013	12/20/2014	12/26/2015	12/24/2016
52	12/29/2012	12/28/2013	12/27/2014	1/2/2016	12/31/2016
53			1/3/2015		