HAWAII STATE DEPARTMENT OF HEALTH
DISEASE OUTBREAK CONTROL DIVISION

Influenza Surveillance Report

Morbidity and Mortality Weekly Report (MMWR)[1]

December 30, 2012–January 5, 2013: Week 1

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2012)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- ILI outpatient visits (1.7%) in Hawaii was comparable (i.e., within 95% confidence intervals) to week 52 (2.1%).
- 145 (10.0%) of laboratory specimens have tested positive for influenza
- There were no ILI clusters reported during week 1 to HDOH.
- There were no influenza-associated deaths reported to HDOH this week.
- Two influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 1.
- No new human infections with a novel influenza virus were reported to CDC during week 1.
- Worldwide there have been no additional reported avian influenza cases since December 17, 2012.

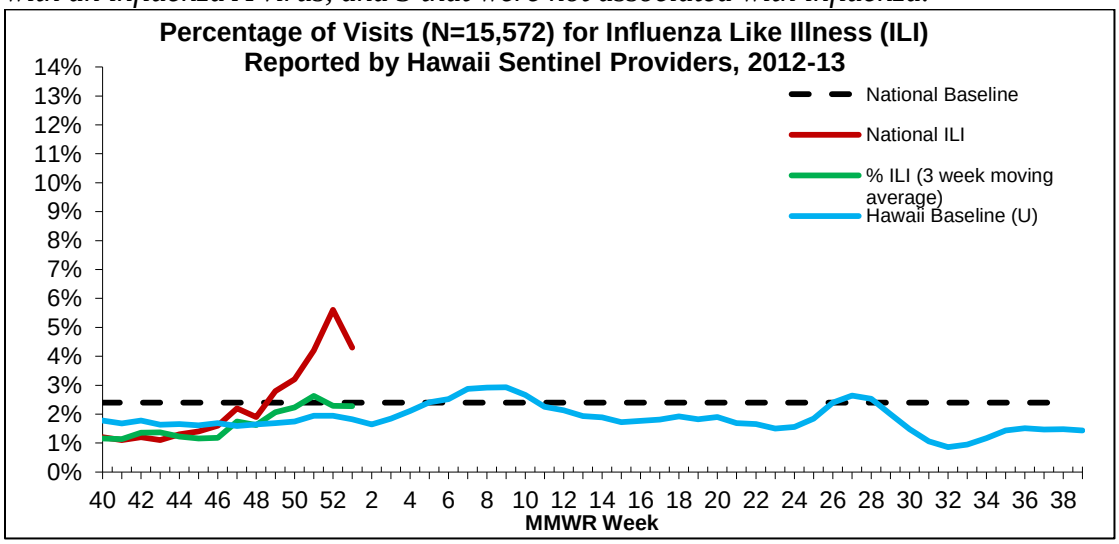
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 greater than 100˚F AND a cough and/or sore throat. 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 from sentinel providers. Nevertheless, 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% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were lower than the historical baseline in Hawaii[2,3] ($p<0.05$)*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] but lower than the national ILI (4.3%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 1. For the 2012–13 influenza season there have been five influenza-like clusters reported to HDOH. Two were associated with an influenza A virus, and 3 that were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

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

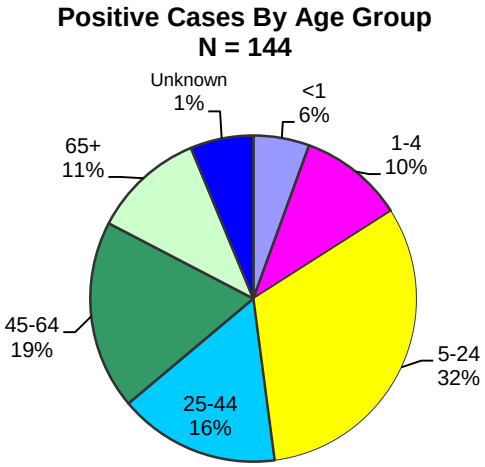
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

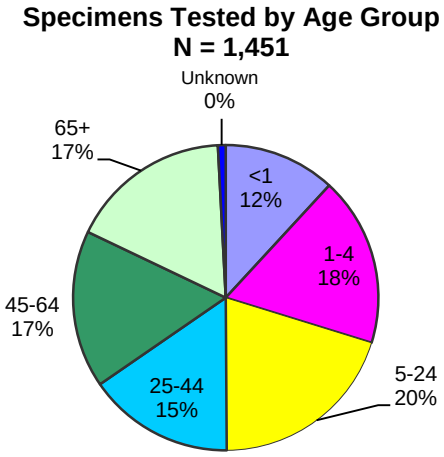
***HDOH DOCD is currently switching laboratory data transfer applications so the following data do not reflect the current specimen volumes. Final completion of the project should be no later than January 31, 2013.*

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

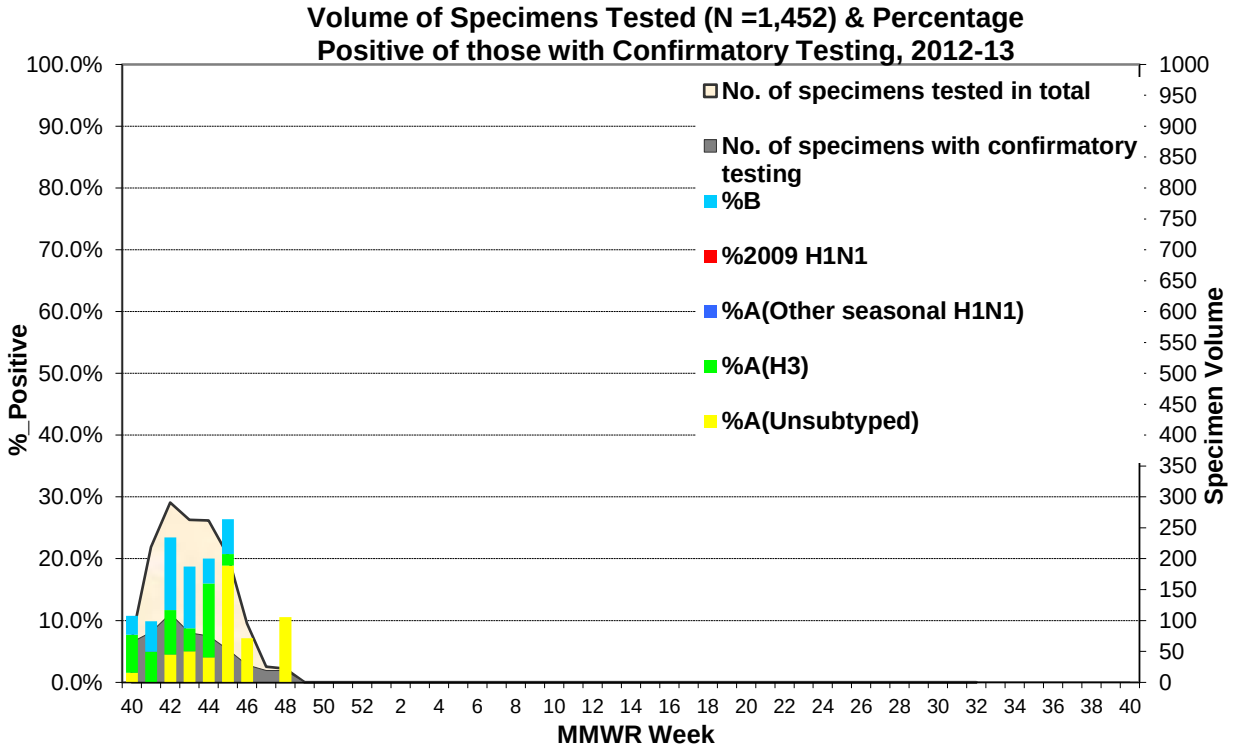
- *A total of 1,452 specimens have been tested statewide for influenza viruses*
  - *921 (63.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *531 (36.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *105 (7.2%) cases of influenza A and 40 (2.8%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *0 (0.0%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *29 (27.6%) were influenza A (H3),*
    - *and the remaining (n = 76, 72.4%) were influenza A of undetermined subtype.*

The pie charts on the next page indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *9.9% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

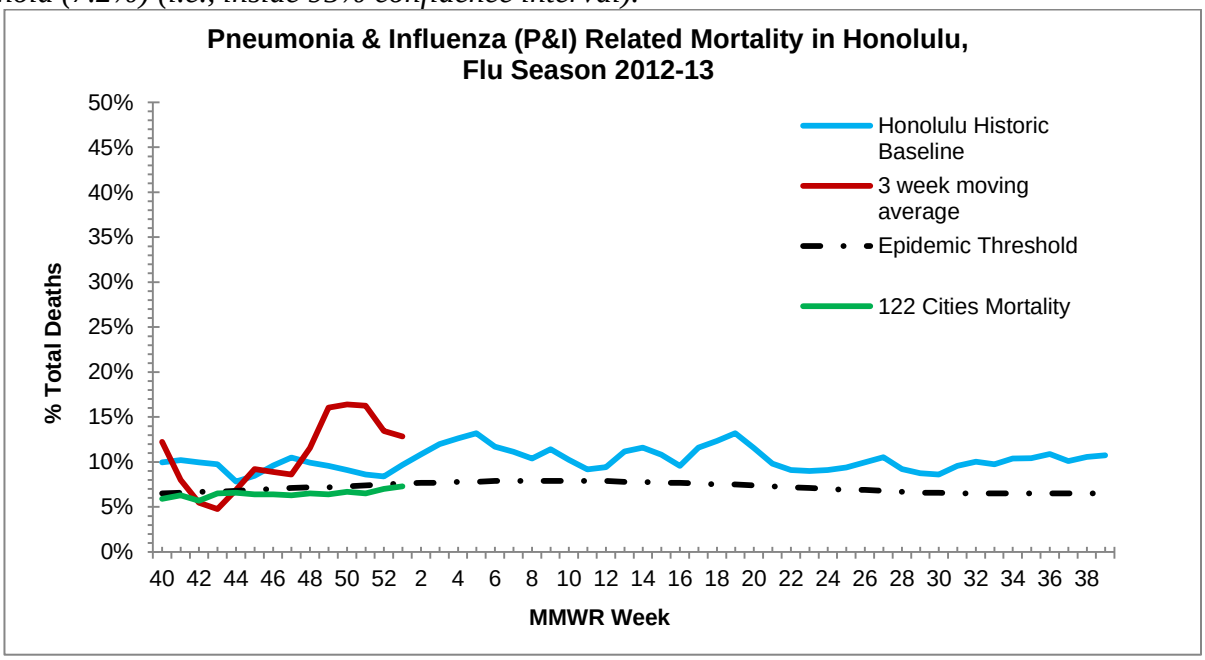
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus			X		X																																																
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X																																													
Rhinovirus	X	X	X	X	X	X																																															
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
Influenza A (H3)				X	X	X	X	X																																													
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)				X	X	X	X	X																																													
Influenza B																																																					

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 Honolulu specific data 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:

- *10.0% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was lower than the historical baseline in Hawaii ($p<0.05$)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (7.3%) and epidemic threshold (7.2%) (i.e., inside 95% confidence interval).*



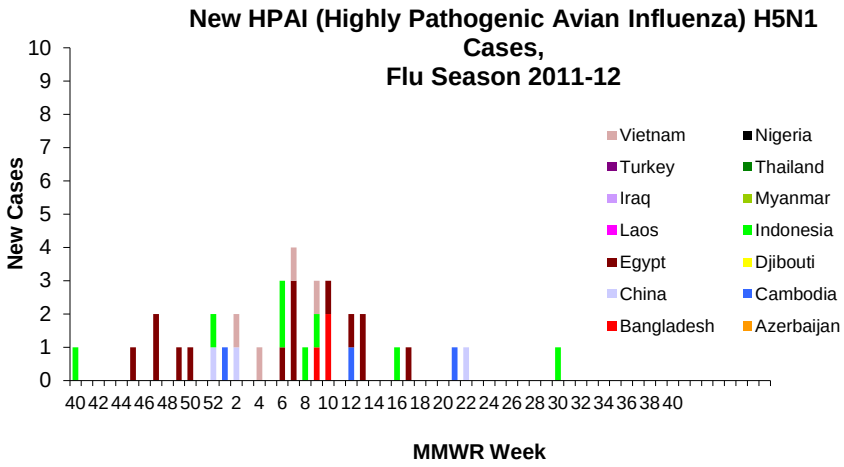
- *Influenza-Associated Pediatric Deaths:*
  - Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
  - Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
  - All pediatric influenza-associated deaths are laboratory confirmed.
  - *Nationally, there were two influenza-associated pediatric deaths reported to CDC during week 1. One death was associated with an influenza A (H3) virus and the other was associated with and influenza A virus for which the subtype was not determined. The deaths occurred during week 52 (week ending December 29, 2012) and week 1 (week ending January 5, 2013). Total influenza-associated pediatric deaths for the 2012–13 season is currently 20.*
  - *No flu-related pediatric deaths have been reported in Hawaii during the 2012–13 season.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

No human infections with a variant influenza virus were reported nationally during week 1. A total of 2 H3N2v infections have been reported for 2012-13 flu season.

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on December 17, 2012.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	21	19
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	43	28
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	169	60
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	30	19	**610**	**360**

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: http://www.cdc.gov/flu/about/season/vaccine-selection.htm
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

January 20–26, 2013: Week 4

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    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's ILI outpatient visits (5.0%) for week 4 were higher (i.e., outside 95% confidence intervals) than week 3 (2.3%).
- 1,073 (10.8%) of laboratory specimens have tested positive for influenza
- Two ILI clusters were reported during week 4 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Eight influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 4.
- No new human infections with a novel influenza virus were reported to CDC during week 4.
- Worldwide there have been no additional updates to avian influenza cases since February 1, 2013.

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For week 4 of the current influenza season:

- *5.0% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were higher than the historical baseline in Hawaii[2,3] ($p<0.05$)*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] but comparable to the national ILI (4.2%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were two ILI clusters reported to HDOH during week 4. Bothe occurred in the county of Honolulu. One occurred in a long-term healthcare facility and was not associated with an influenza virus, and one occurred in a school which was also not associated with an influenza virus. For the 2012–13 influenza season there have been 8 ILI clusters reported to HDOH. Four were associated with an influenza A virus, one was a probable influenza B case, and 5 were not associated with influenza.*

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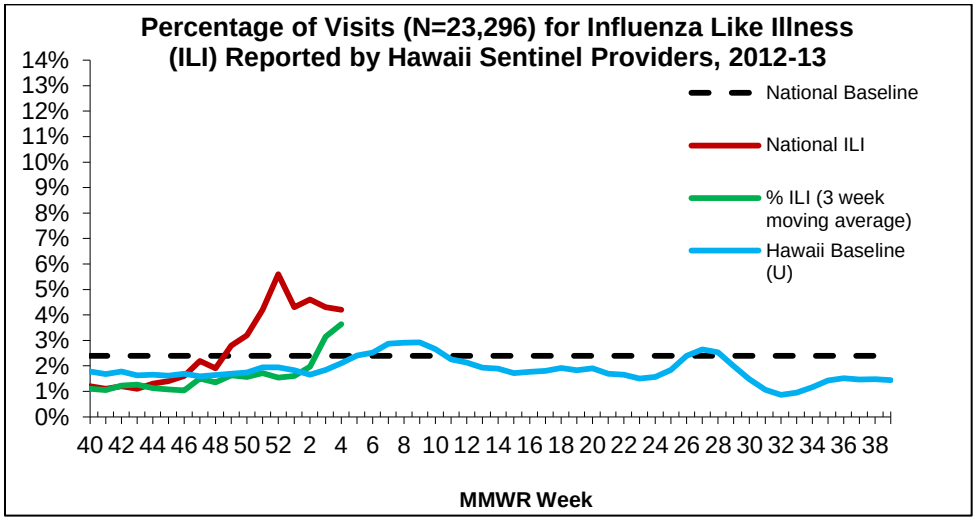
[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

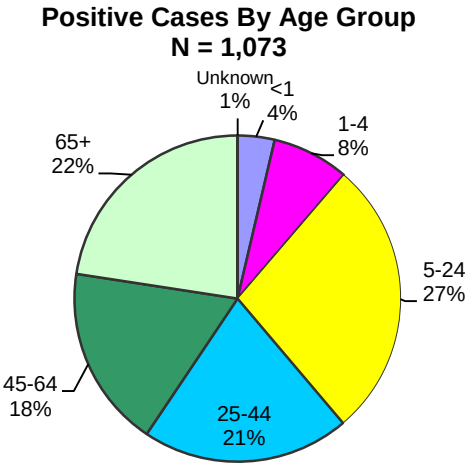


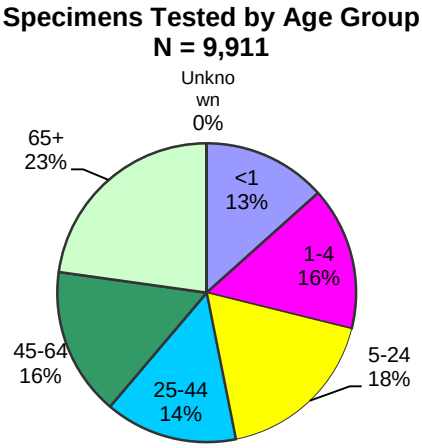
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

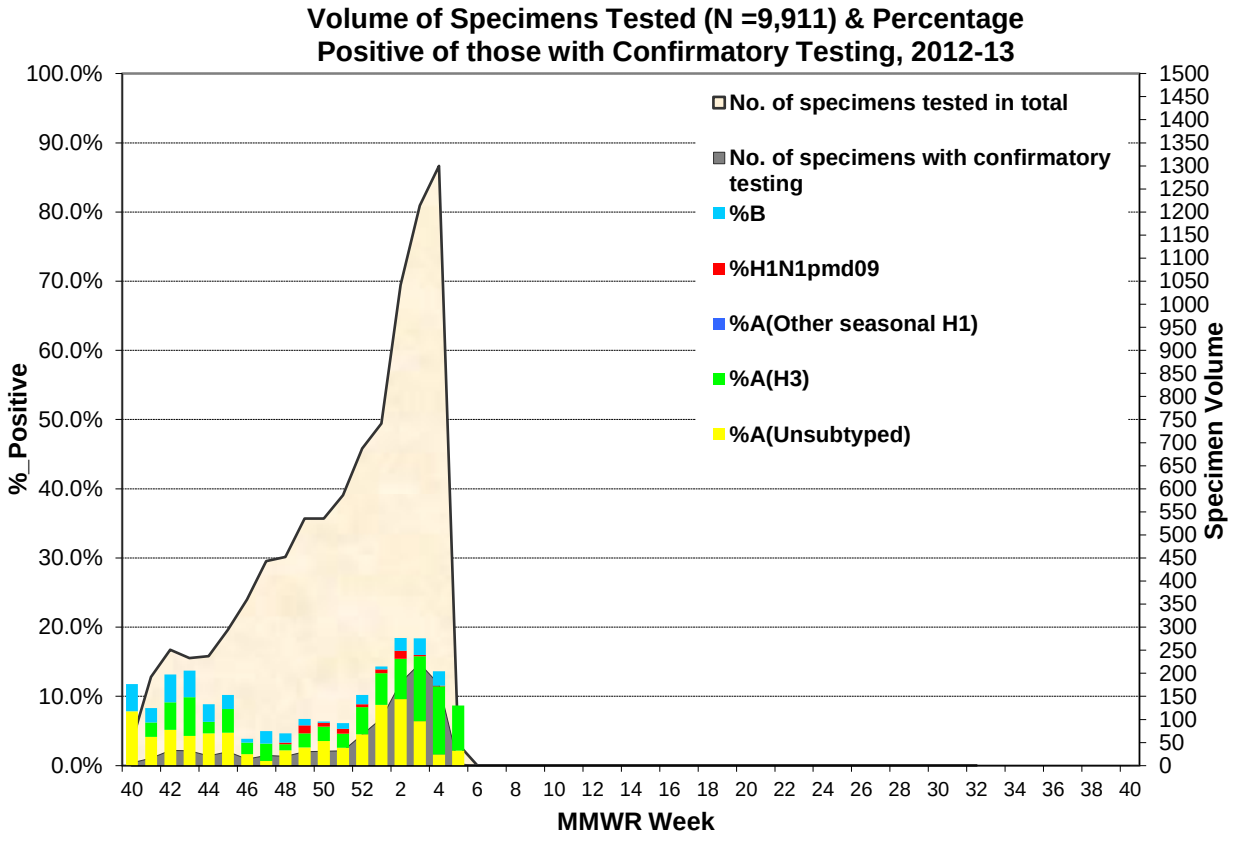
- *A total of 9,199 specimens have been tested statewide for influenza viruses*
  - *7,277 (79.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *1,922 (20.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *922 (10.0%) cases of influenza A and 151 (1.6%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *36 (3.9%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *463 (50.2%) were influenza A (H3),*
    - *and the remaining (n = 423, 45.9%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *9.9% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

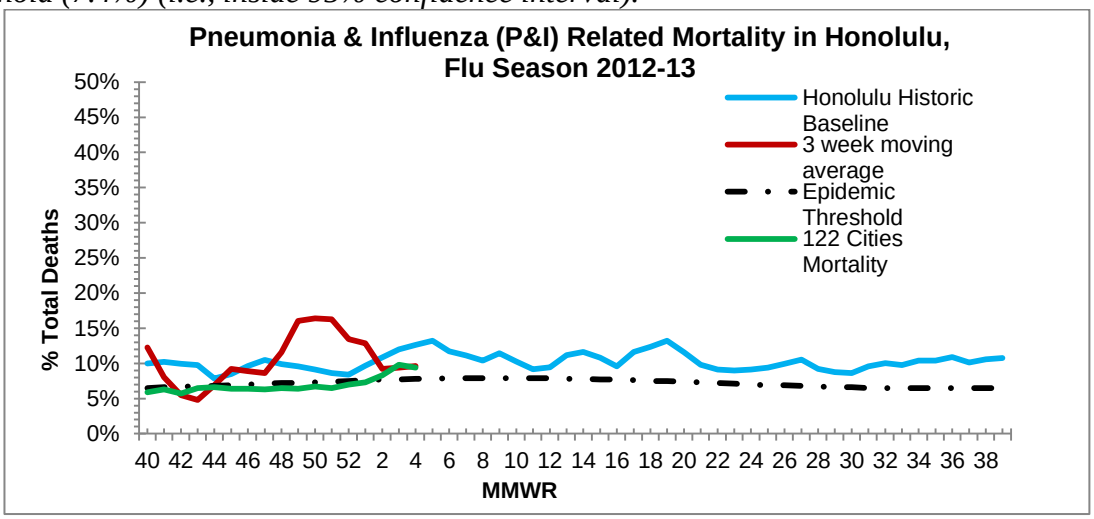
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X		X	X																																							
Parainfluenza Virus			X		X	X	X		X			X		X																																							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																				
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																						
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
Influenza A (H3)				X	X	X	X	X																																													
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)				X	X	X	X	X																																													
Influenza B																																																					

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 Honolulu specific data 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:

- *10.6% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was lower than the historical baseline in Hawaii ($p<0.05$)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (9.4%) and epidemic threshold (7.4%) (i.e., inside 95% confidence interval).*



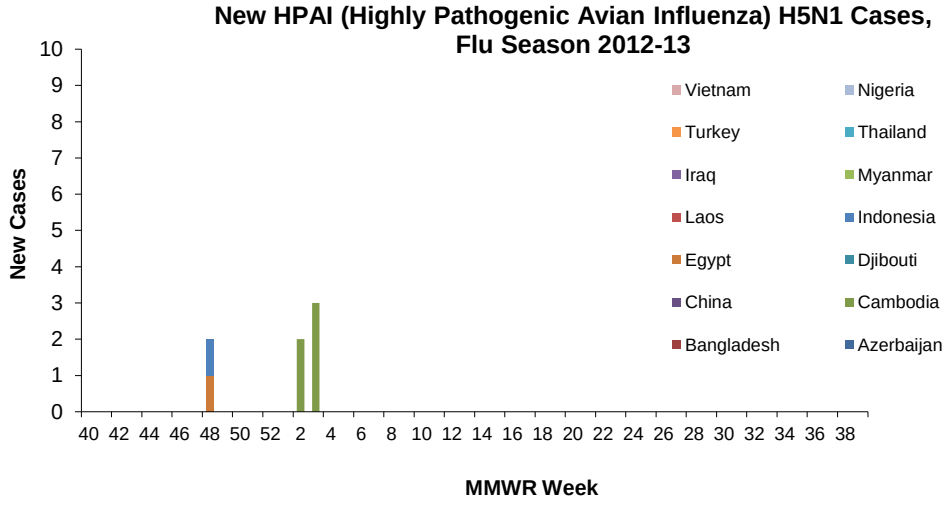
- *Influenza-Associated Pediatric Deaths:*
  - Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
  - Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
  - All pediatric influenza-associated deaths are laboratory confirmed.
  - *Nationally, there were 8 influenza-associated pediatric deaths reported to CDC during week 4. Five were associated with influenza A(H3) viruses that occurred during weeks 3 and 4 (weeks ending January 19 and 26, 2013), one was associated with an influenza A virus for which the subtype was not determined and occurred during week 4 (week ending January 26, 2013), and 2 were associated with influenza B viruses and occurred during week 1 (week ending January 5, 2013). As of week 4, there have been a total of 45 influenza-associated pediatric deaths for the 2012–13 season.*
  - *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) in the county of Honolulu and was associated with an influenza A (H3) virus. The child was vaccinated and had no underlying medical conditions.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 4. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on February 1, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	5	4	21	19
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	0	0	43	28
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	0	0	169	60
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	5	4	615	364

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: http://www.cdc.gov/flu/about/season/vaccine-selection.htm
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

January 27– February 2, 2013: Week 5

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's ILI outpatient visits (4.7%) for week 5 (i.e., outside 95% confidence intervals) were higher than week 4 (4.5%).
- 1,398 (11.5%) of all laboratory specimens have tested positive for influenza.
- Two ILI clusters were reported during week 5 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Fourteen influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 5.
- No new human infections with a novel influenza virus were reported to CDC during week 5.
- Worldwide there have been no additional updates to avian influenza cases since February 1, 2013.

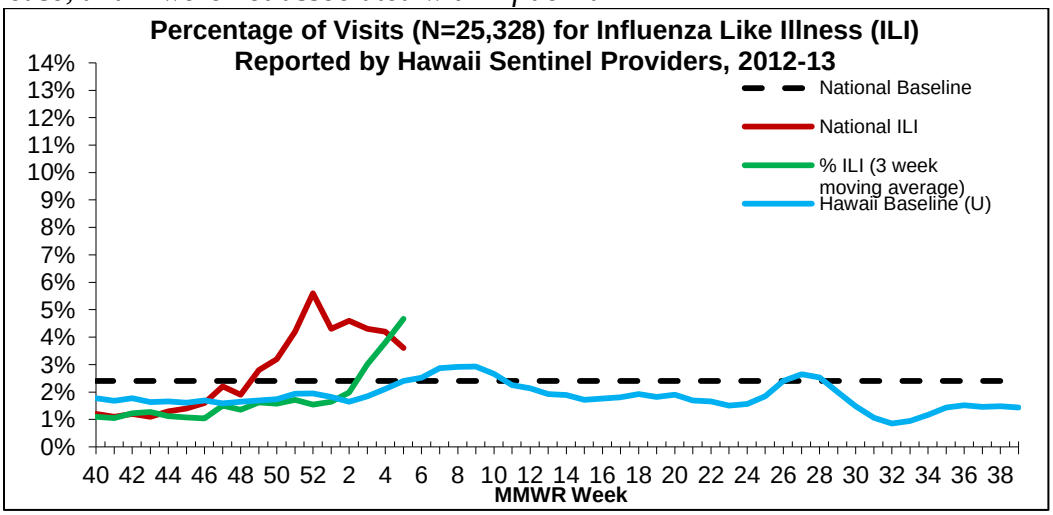
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 greater than 100˚F AND a cough and/or sore throat. 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 from sentinel providers. Nevertheless, 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:

- *4.7% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were higher than the historical baseline in Hawaii[2,3] ($p<0.05$)*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] but comparable to the national ILI (3.6%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were two ILI clusters reported to HDOH during week 5. Both occurred in schools and were not laboratory confirmed. For the 2012–13 influenza season there have been 12 ILI clusters reported to HDOH. Four were associated with an influenza A virus, one was a probable influenza B case, and 7 were not associated with influenza*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

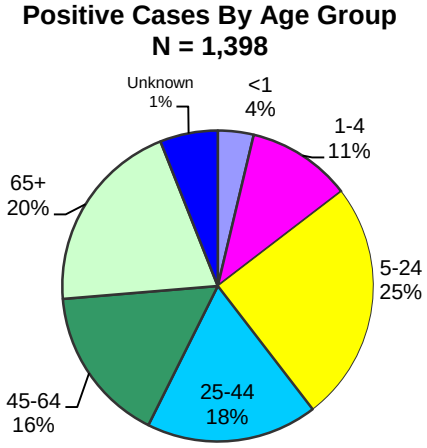
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

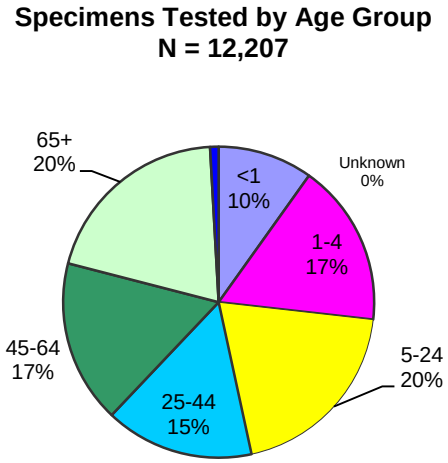
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

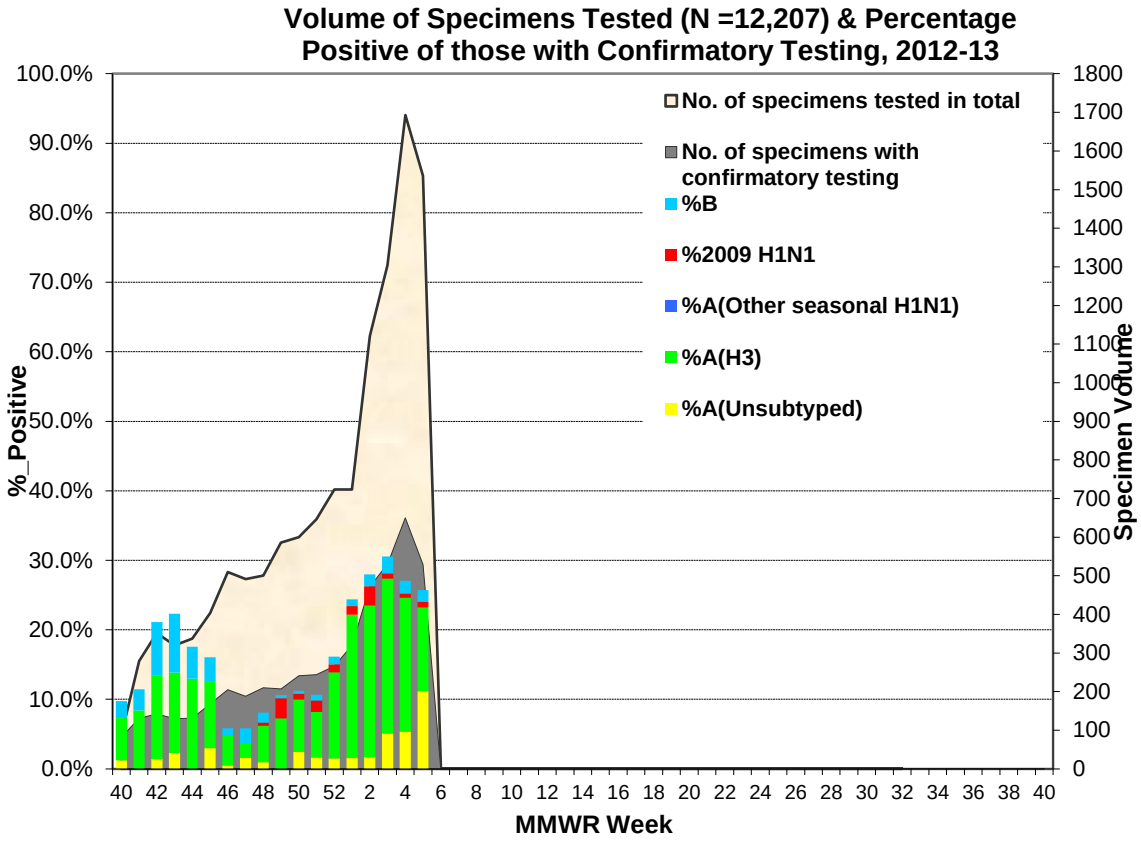
- *A total of 12,207 specimens have been tested statewide for influenza viruses*
  - *7,361 (60.3%) were screened only by rapid antigen tests with no confirmatory testing*
  - *4,846 (39.7%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *1,241 (10.2%) cases of influenza A and 157 (1.3%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *45 (3.6%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *663 (53.4%) were influenza A (H3),*
    - *and the remaining (n = 533, 43.0%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *11.5% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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 2012–13 Flu Season

	MMWR Week																	
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5
Adenovirus										X	X		X			X		
Coxsackie Virus																		
Cytomegalovirus																		X
Echovirus																		
Enterovirus							X			X	X	X			X		X	
Herpes Simplex Virus, Type 1																		
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Varicella Zoster Virus																		
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X
Influenza A (H3)	X	X	X	X	X	X	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
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	MMWR Week																																		
Isolates	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																																			
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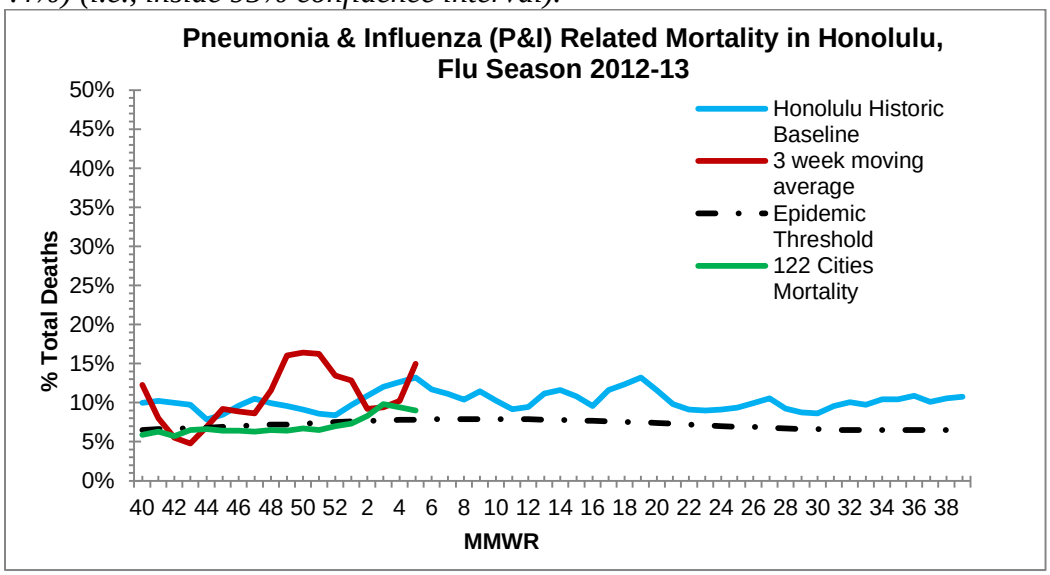
Influenza A (unsubtyped)																																			
Influenza B																																			

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 Honolulu specific data 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:

- *11.5% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was lower than the historical baseline in Hawaii ($p<0.05$)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (9.0%) and epidemic threshold (7.4%) (i.e., inside 95% confidence interval).*



- *Influenza-Associated Pediatric Deaths:*
  - Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
  - Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
  - All pediatric influenza-associated deaths are laboratory confirmed.
  - *Nationally, there were 14 influenza-associated pediatric deaths reported to CDC during week 5. Three were associated with influenza A(H3) viruses that occurred during weeks 4 and 5 (weeks ending January 26 and February 2, 2013), four were associated with an influenza A virus for which the subtype was not determined and occurred during weeks 51, 1, 2, and 4 (weeks ending December 22, 2012, January 5, January 12, and January 26, 2013), and seven were associated with influenza B viruses and occurred during weeks 52, 2, 3, 4, and 5 (weeks ending December 29, 2012, January 12, January 19, January 26, and February 2, 2013).As of week 5, there have been a total of 59 influenza-associated pediatric deaths for the 2012–13 season.*

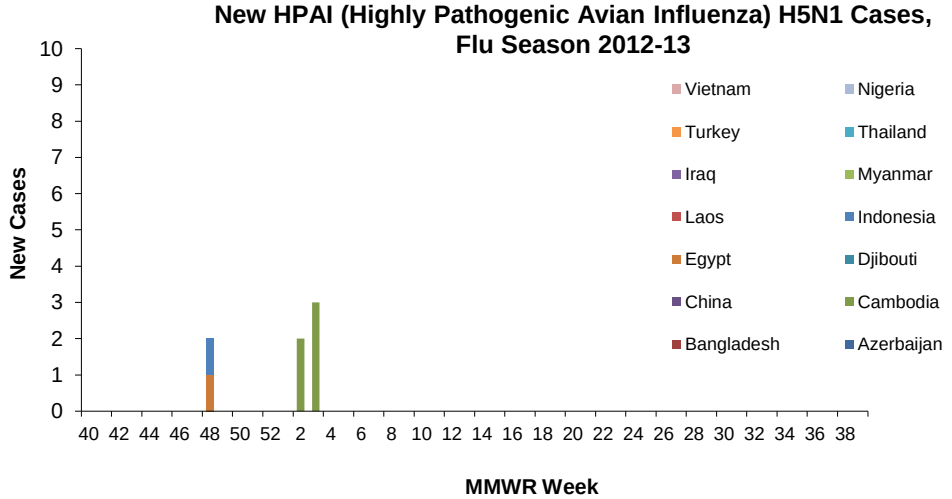
- *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) and was associated with an influenza A (H3) virus.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 5. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on February 1, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	5	4	21	19
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	0	0	43	28
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	0	0	169	60
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	5	4	615	364

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: http://www.cdc.gov/flu/about/season/vaccine-selection.htm
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

February 3 – February 9, 2013: Week 6

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's ILI outpatient visits (4.3%) for week 6 were lower but comparable to week 5 (4.7%) *(i.e., inside the 95% confidence interval).*
- 1,682 (12.3%) of all laboratory specimens have tested positive for influenza.
- No ILI cluster was reported during week 6 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Five influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 6.
- No new human infections with a novel influenza virus were reported to CDC during week 6.
- Worldwide there have been three additional avian influenza cases since February 1, 2013.

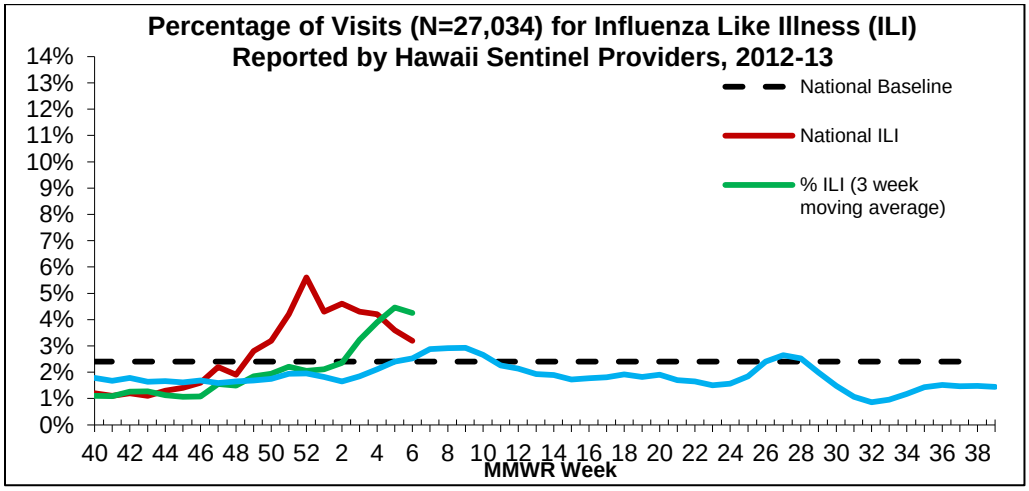
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 greater than 100˚F AND a cough and/or sore throat. 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 from sentinel providers. Nevertheless, 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:

- *4.3% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (p>0.05)*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] but comparable to the national ILI (3.2%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 6. For the 2012–13 influenza season there have been 12 ILI clusters reported to HDOH. Four were associated with an influenza A virus, one was a probable influenza B case, and 7 were not associated with influenza*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

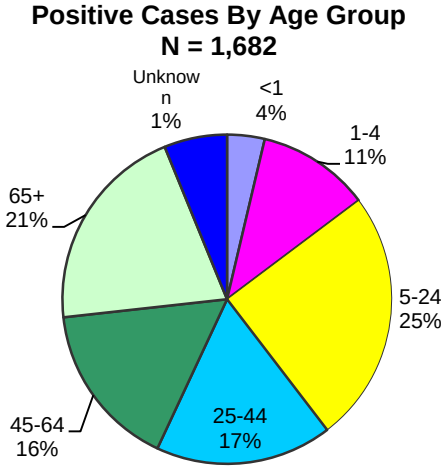
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

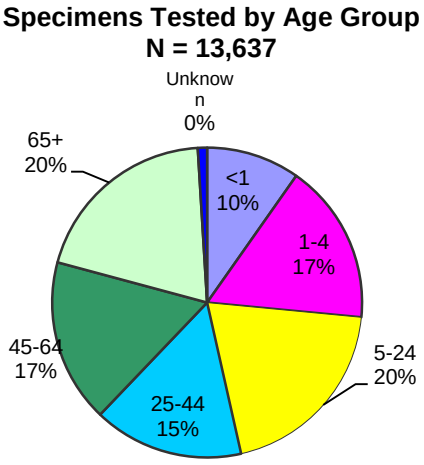
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

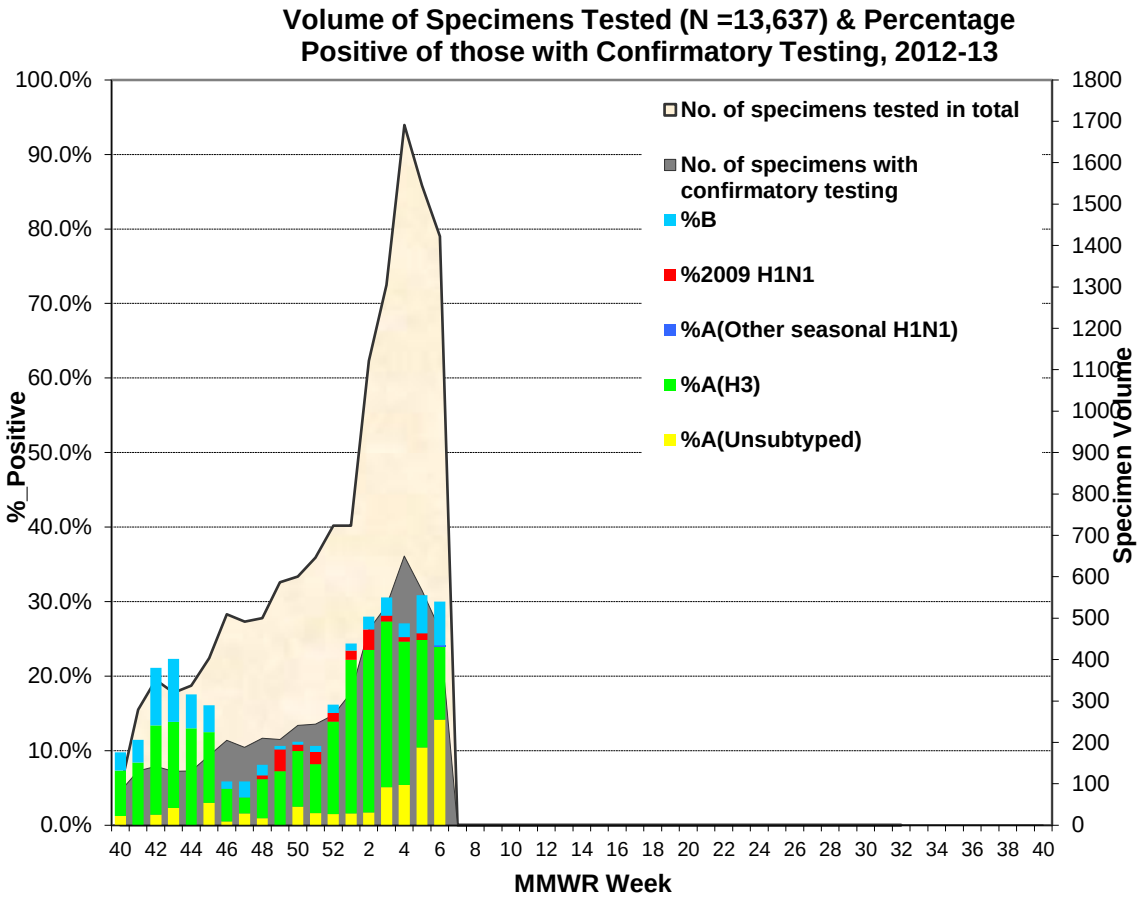
- *A total of 13,637 specimens have been tested statewide for influenza viruses*
  - *8,280 (60.7%) were screened only by rapid antigen tests with no confirmatory testing*
  - *5,357 (39.3%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *14,63 (10.7%) cases of influenza A and 219 (1.6%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *46 (3.1%) were 2009 H1N1,*
    - *1 (0.1%) were other seasonal influenza A (H1),*
    - *727 (49.7%) were influenza A (H3),*
    - *and the remaining (n = 689, 47.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *12.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

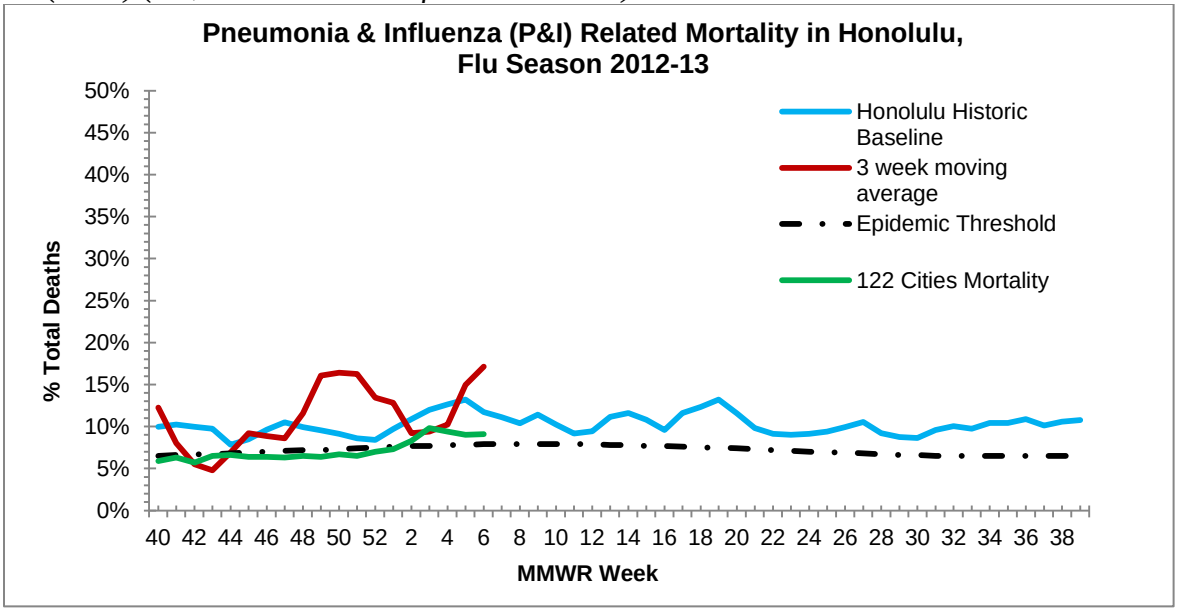
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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																																		
Coxsackie Virus																																																					
Cytomegalovirus																		X																																			
Echovirus																																																					
Enterovirus							X			X	X	X			X		X																																				
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X																																			
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X																																		
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																		
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																						
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X																																			
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 H1N1)																			X																																		
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X																																		
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																		

III. Pneumonia and Influenza (P&I) Related Mortality: P&I mortality surveillance is collected by CDC using two methods–122 cities and pediatric mortality. Each week the HDOH OHSM reports Honolulu specific data 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:

- *22.8% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was higher than the historical baseline in Hawaii (i.e., outside 95% confidence interval)*
- *The Honolulu P&I was also higher than both the national 122 city P&I mortality (9.1%) and epidemic threshold (7.5%) (i.e., outside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- *Nationally, there were 5 influenza-associated pediatric deaths reported to CDC during week 6. One was associated with an influenza A virus for which the subtype was not determined and occurred during week 4 (week ending January 26, 2013), and four were associated with influenza B viruses and occurred during weeks 52, 2, and 3 (weeks ending December 29, 2012, January 12, and January 19, 2013). As of week 6, there have been a total of 64 influenza-associated pediatric deaths for the 2012–13 season.*

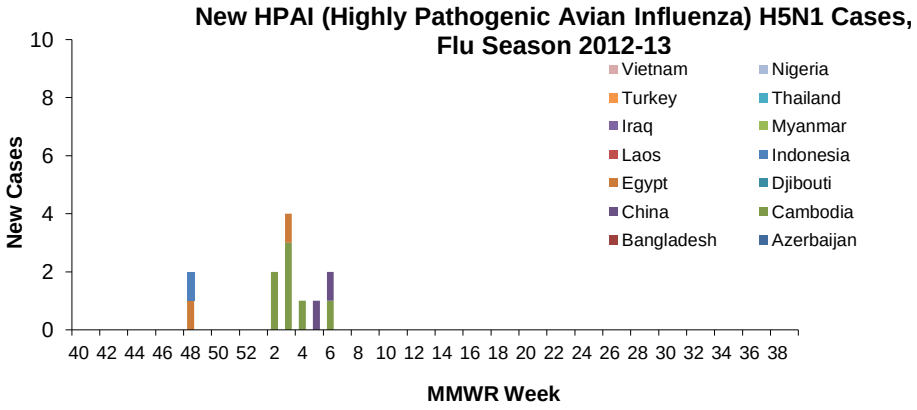
- *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) and was associated with an influenza A (H3) virus.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 6. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on February 15, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	7	6	28	25
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	0	45	28
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	10	7	620	367

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: http://www.cdc.gov/flu/about/season/vaccine-selection.htm
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

February 10 – February 16, 2013: Week 7

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's ILI outpatient visits (3.7%) for week 7 were lower but comparable to week 6 (4.2%) *(i.e., inside the 95% confidence interval).*
- 1,912 (12.8%) of all laboratory specimens have tested positive for influenza.
- No ILI cluster was reported during week 7 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Fourteen influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 7.
- No new human infections with a novel influenza virus were reported to CDC during week 7.
- Worldwide there have been three additional avian influenza cases since February 1, 2013.

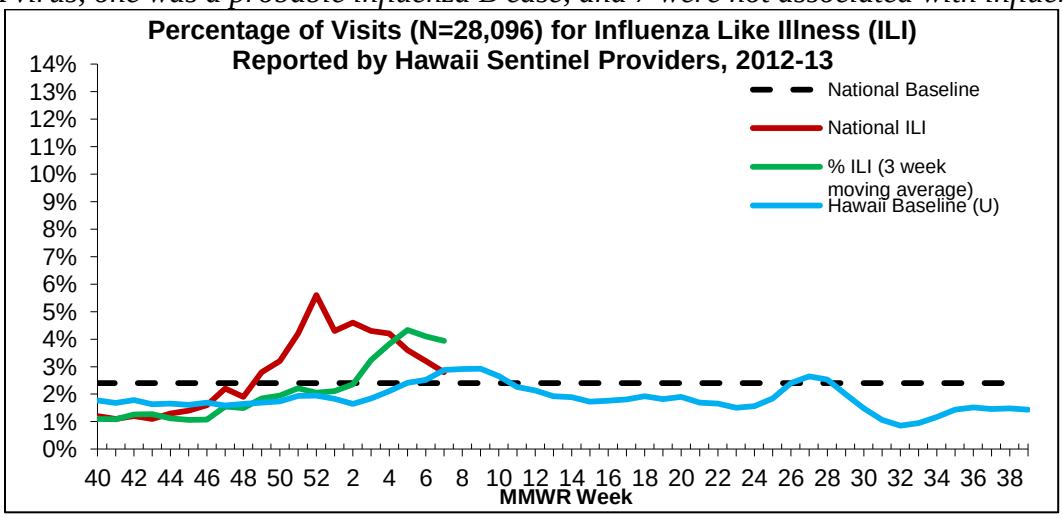
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 greater than 100°F AND a cough and/or sore throat. 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 from sentinel providers. Nevertheless, 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:

- *3.7% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (p>0.05)*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] but comparable to the national ILI (2.8%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 7. For the 2012–13 influenza season there have been 12 ILI clusters reported to HDOH. Four were associated with an influenza A virus, one was a probable influenza B case, and 7 were not associated with influenza*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

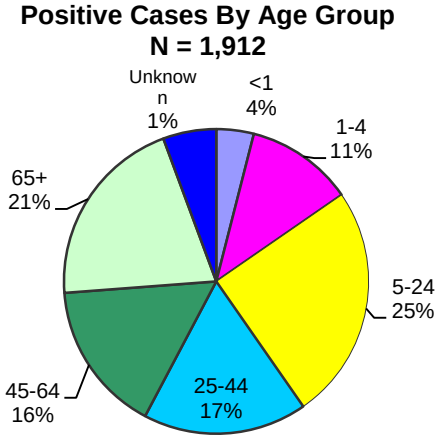
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

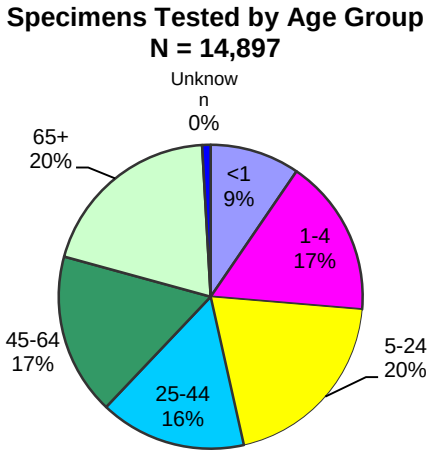
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

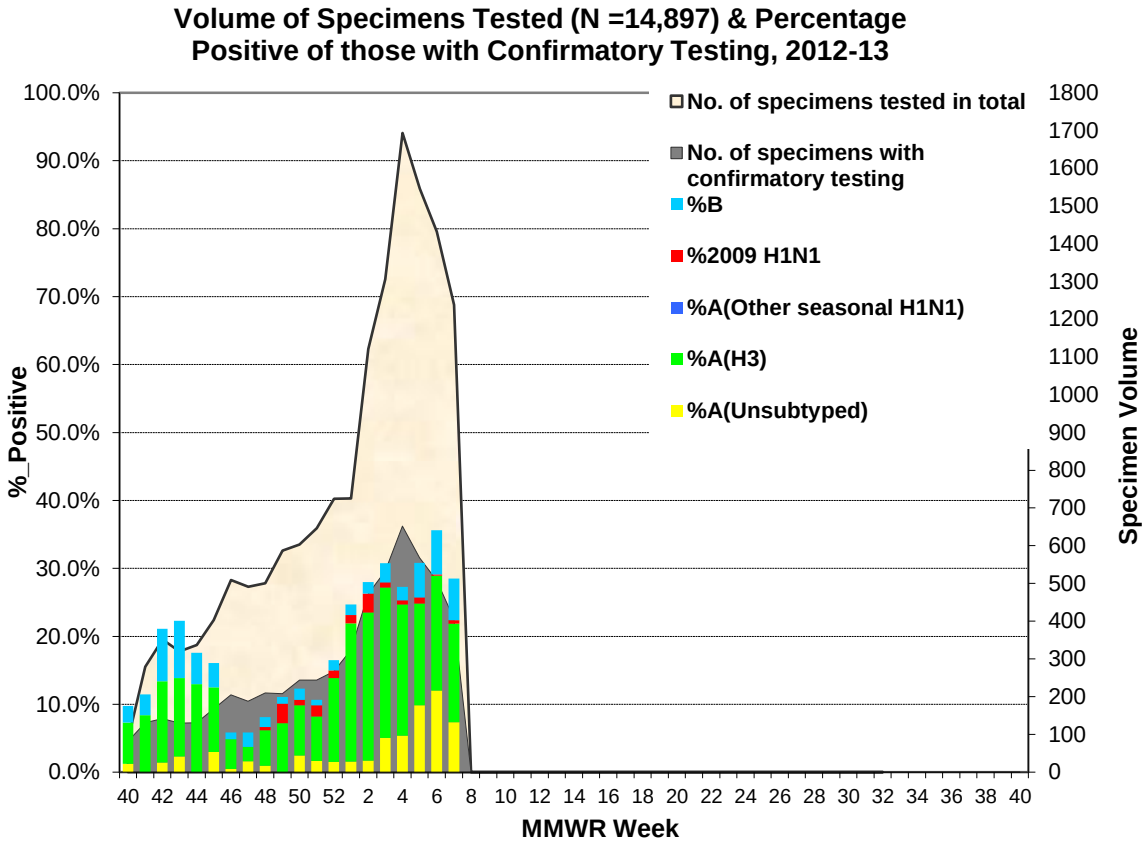
- *A total of 14,897 specimens have been tested statewide for influenza viruses*
  - *9,083 (61.0%) were screened only by rapid antigen tests with no confirmatory testing*
  - *5,814 (39.0%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *1,645 (11.0%) cases of influenza A and 267 (1.8%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *49 (3.0%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *830 (50.5%) were influenza A (H3),*
    - *and the remaining (n = 766, 46.6%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *12.8% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

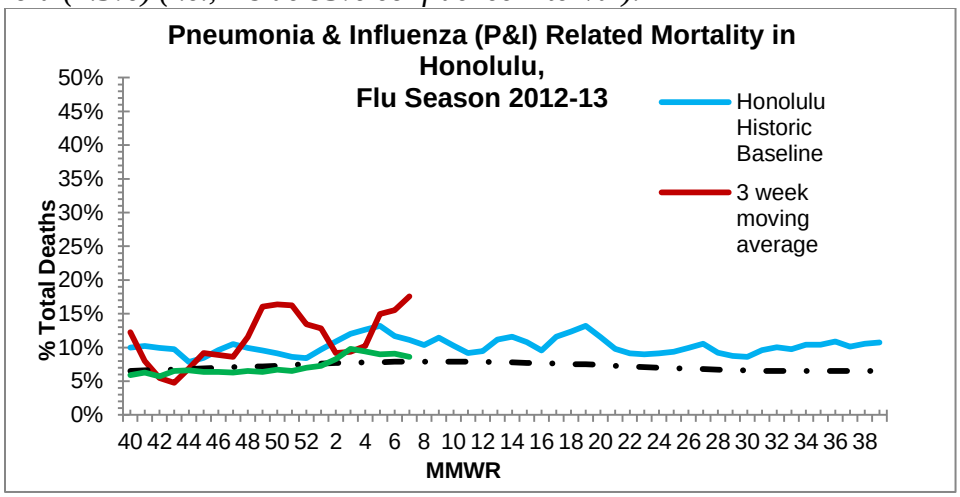
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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																																	
Coxsackie Virus																																																					
Cytomegalovirus																		X																																			
Echovirus																																																					
Enterovirus							X			X	X	X			X		X																																				
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X																																			
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X																																	
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																	
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																						
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X																																	
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 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	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 Honolulu specific data 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:

- *12.3% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was also comparable to both the national 122 city P&I mortality (8.6%) and epidemic threshold (7.5%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- *Nationally, there were 14 influenza-associated pediatric deaths reported to CDC during week 7. Three were associated with influenza A (H3) viruses and occurred during weeks 3, 5, and 6 (weeks ending January 19, February 2, and 9, 2013), two were associated with 2009 H1N1 viruses and occurred during weeks 5 and 6 (weeks ending February 2 and 9, 2013), two were associated with an influenza A virus for which the subtype was not determined and occurred during weeks 4 and 6 (week ending January 26 and February 9, 2013), six were associated with influenza B viruses and occurred during weeks 51, 4, 5, 6, and 7 (weeks ending December 22, 2012, January 26, February 2, February 9, and February 16, 2013), and one was associated with both an influenza A and influenza B virus and occurred during week 1 (week ending January 5, 2013).As of week 7, there have been a total of 78 influenza-associated pediatric deaths for the 2012–13 season.*

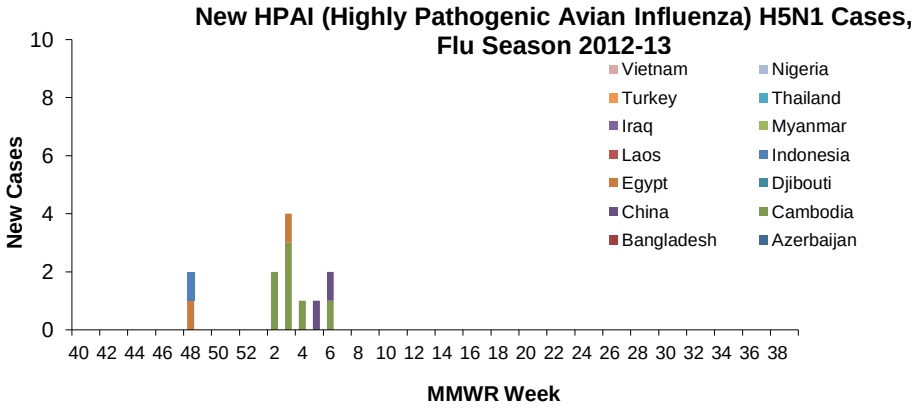
- *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) and was associated with an influenza A (H3) virus.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 7. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on February 15, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	7	6	28	25
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	0	45	28
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	10	7	620	367

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

February 17 – February 23, 2013: Week 8

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests that while flu disease activity remains elevated, it is no worse in Week 8 compared with Week 7 or with the national ILI level, and no worse than what has been observed on average in the previous 5 years during the same week.
- 2,116 (13.2%) of all laboratory specimens have tested positive for influenza.
- One ILI cluster in a school was reported during week 8 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Three influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 8.
- No new human infections with a novel influenza virus were reported to CDC during week 8.
- Worldwide there have been three additional avian influenza cases since February 1, 2013.

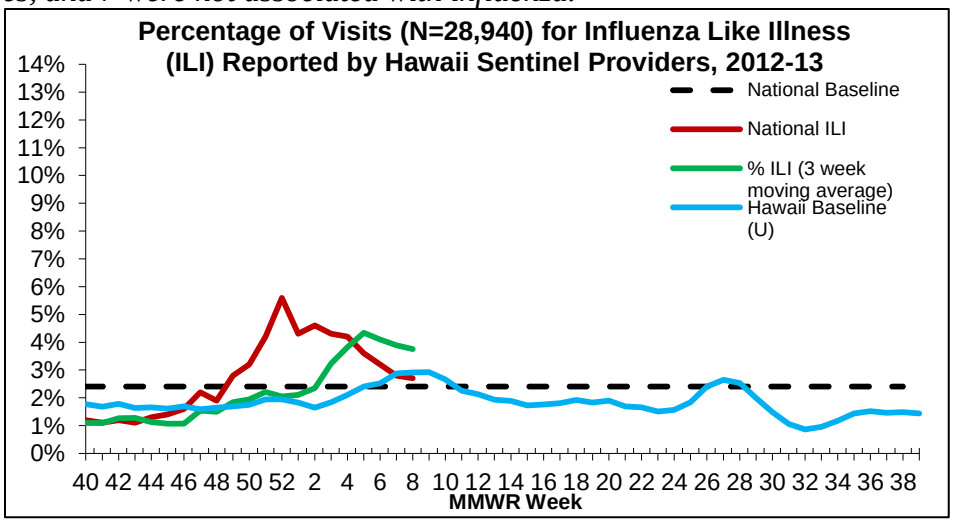
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.8% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (p>0.05)*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] but comparable to the national ILI (2.7%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was one ILI cluster reported to HDOH during week 8, which occurred in a school and was laboratory confirmed. . For the 2012–13 influenza season there have been 13 ILI clusters reported to HDOH. Four were associated with an influenza A virus, two were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

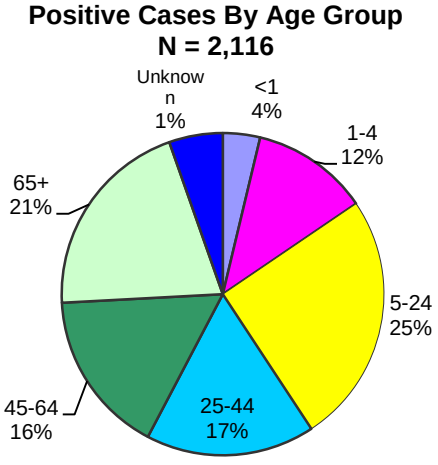
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

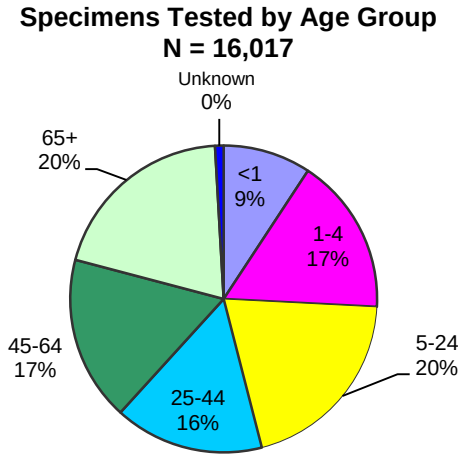
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

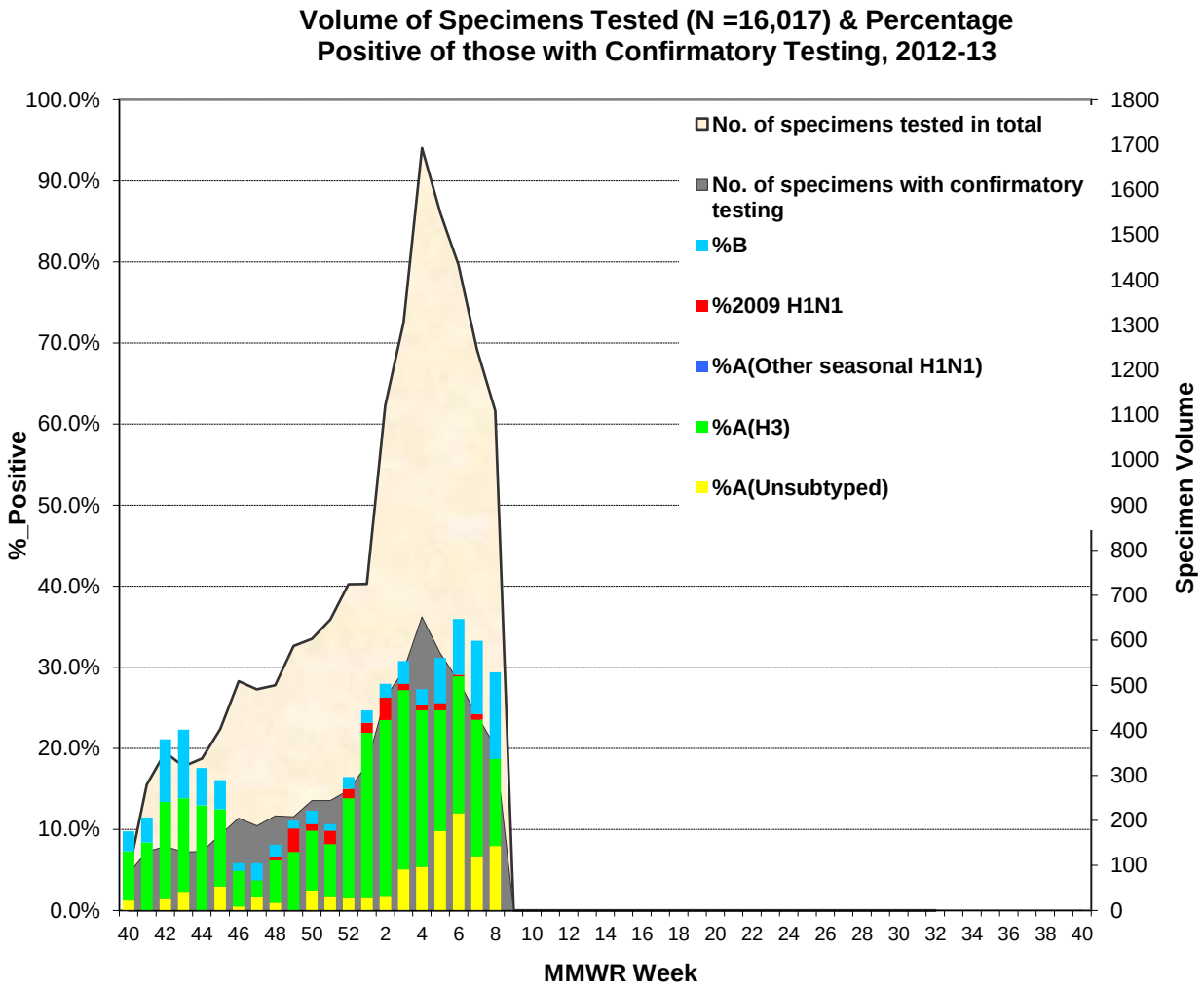
- *A total of 16,017 specimens have been tested statewide for influenza viruses*
  - *9,809 (61.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *6,208 (38.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *1,780 (11.1%) cases of influenza A and 336 (2.1%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *50 (2.8%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *883 (49.6%) were influenza A (H3),*
    - *and the remaining (n = 847, 47.6%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *13.2% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

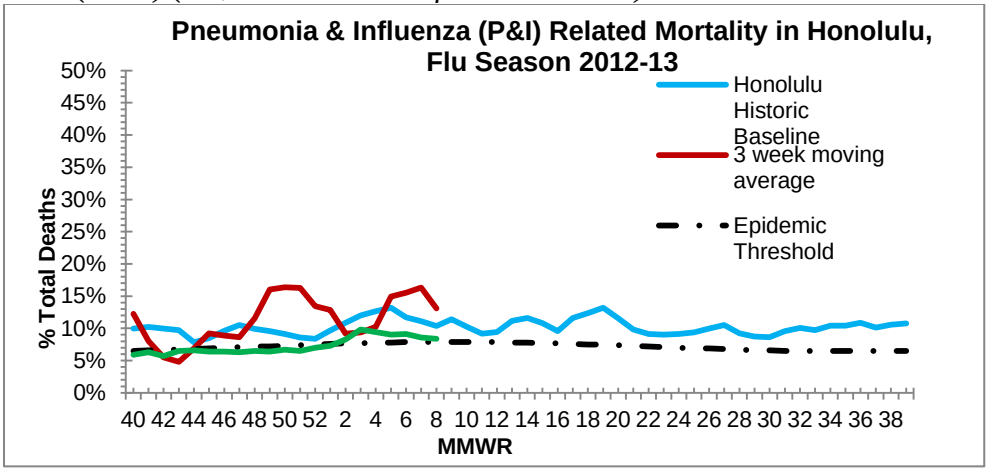
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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																																
Coxsackie Virus																																																					
Cytomegalovirus																		X																																			
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X																																
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X																																
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X																																
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X																																
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X																																	
Influenza A (H3)	X	X	X	X	X	X	X	X	X	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	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 Honolulu specific data 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:

- *13.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was also comparable to both the national 122 city P&I mortality (8.4%) and epidemic threshold (7.5%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

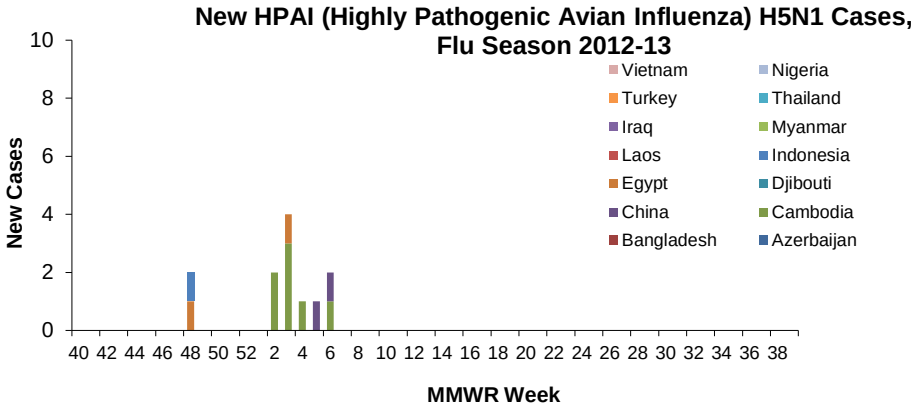
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- *Nationally, there were 3 influenza-associated pediatric deaths reported to CDC during week 8. One death was associated with an influenza A (H3) virus and occurred during week 8 (week ending February 23, 2013). One death was associated with an influenza A virus for which the subtype was not determined and occurred during week 7 (week ending February 16, 2013), and one was associated with an influenza B virus and occurred during week 8 (week ending February 23, 2013). As of week 8, there have been a total of 81 influenza-associated pediatric deaths for the 2012–13 season.*
- *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) and was associated with an influenza A (H3) virus.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 8. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on February 15, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	7	6	28	25
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	0	45	28
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	10	7	620	367

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

February 24 – March 2, 2013: Week 9

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests that ILI visits were higher in Week 9 than Week 8 and the national ILI level but comparable to what has been observed on average in the previous 5 years during the same week.
- 2,251 (13.2%) of all laboratory specimens have tested positive for influenza.
- No ILI cluster in a school was reported during week 9 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Six influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 9.
- No new human infections with a novel influenza virus were reported to CDC during week 9.
- Worldwide there have been three additional avian influenza cases since February 1, 2013.

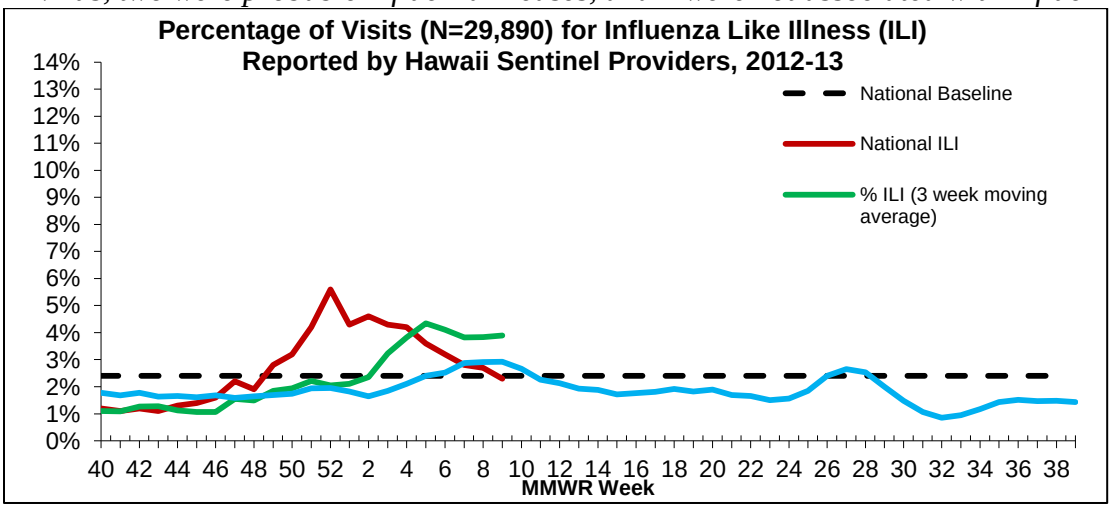
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *4.2% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (p>0.05)*
- *Hawaii's ILI outpatient visits were higher than both the national baseline (2.2%)[4] and the national ILI (2.3%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 9. For the 2012–13 influenza season there have been 13 ILI clusters reported to HDOH. Four were associated with an influenza A virus, two were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

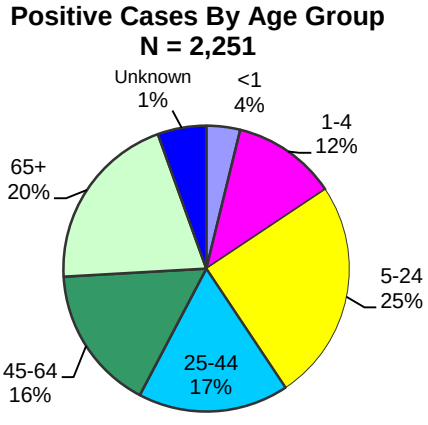
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

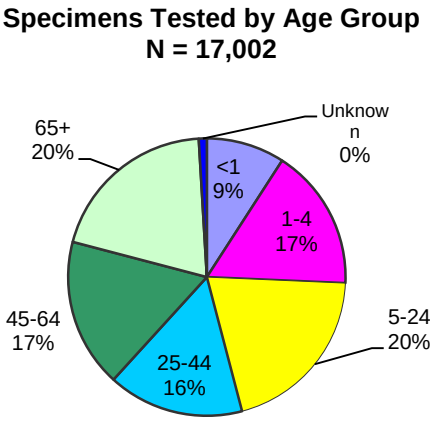
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

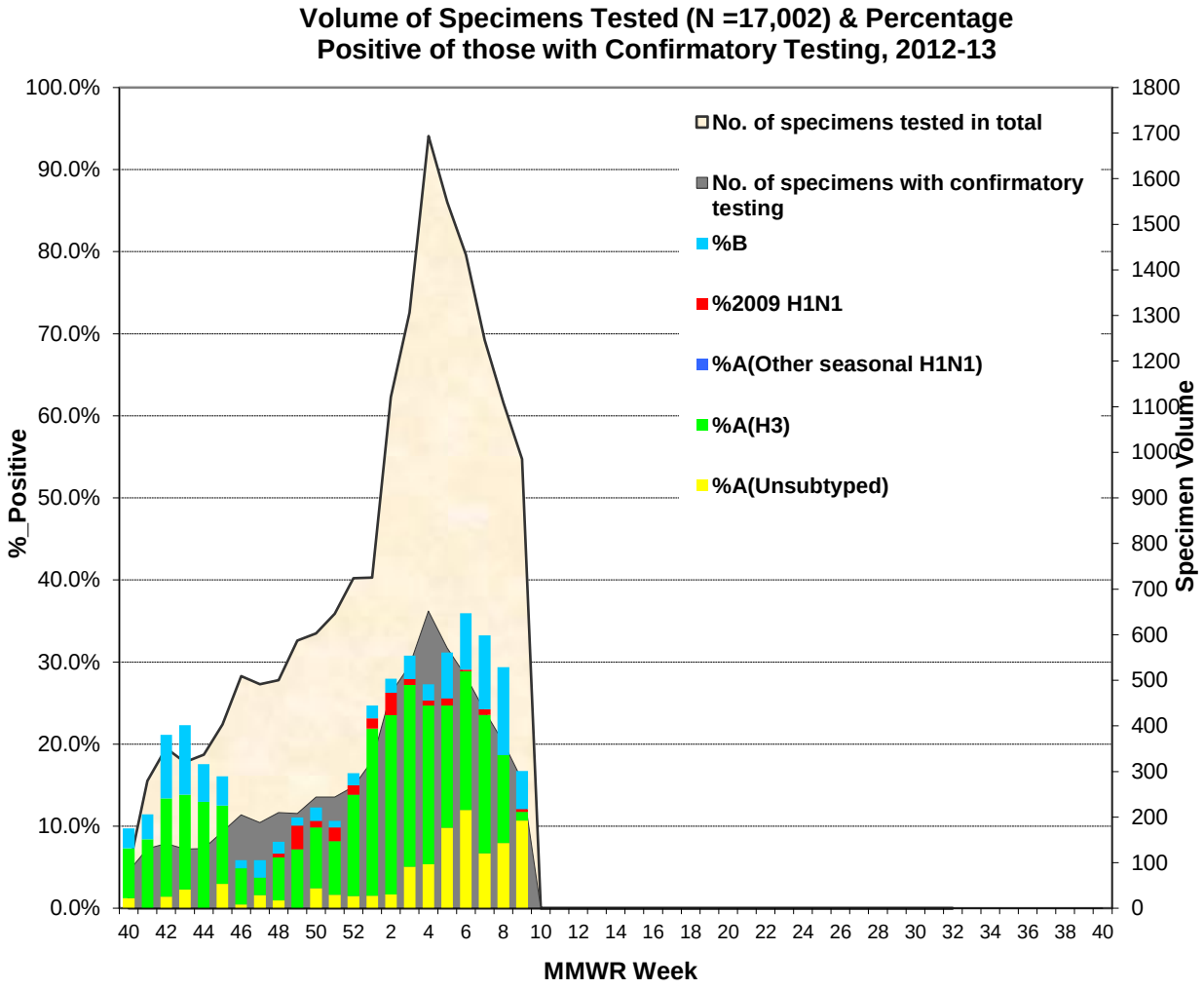
- *A total of 17,002 specimens have been tested statewide for influenza viruses*
  - *10,513 (61.8%) were screened only by rapid antigen tests with no confirmatory testing*
  - *6,489 (38.2%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *1,874 (11.0%) cases of influenza A and 377 (2.2%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *51 (2.7%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *886 (47.3%) were influenza A (H3),*
    - *and the remaining (n = 937, 50.0%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *13.2% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

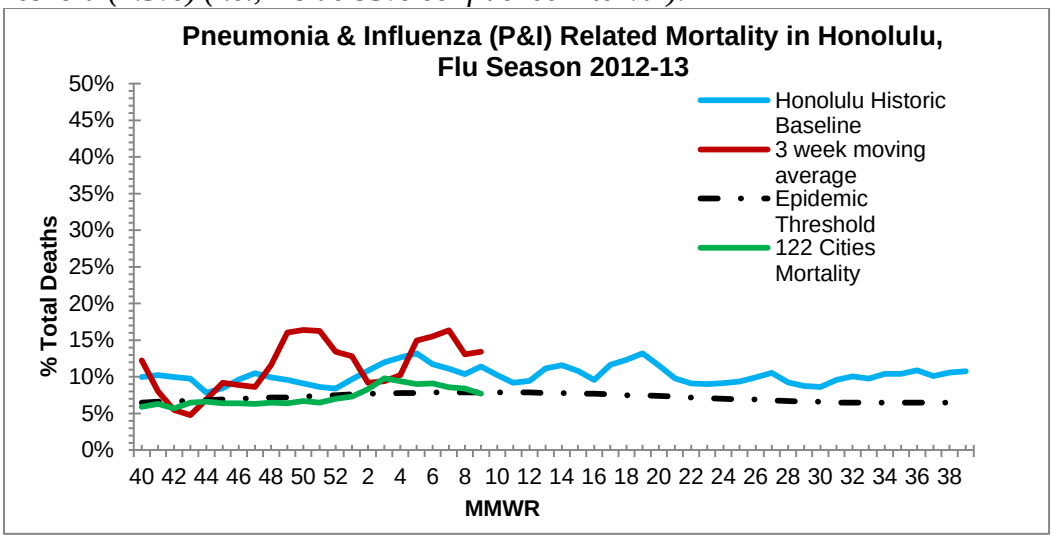
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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																															
Coxsackie Virus																																																					
Cytomegalovirus																		X				X																															
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X																																
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X																															
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X																															
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																															
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X																															
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X																															
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	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	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																															

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 Honolulu specific data 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:

- *13.0% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was also comparable to both the national 122 city P&I mortality (7.7%) and epidemic threshold (7.5%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- *Nationally, there were 6 influenza-associated pediatric deaths reported to CDC during week 9. Three deaths were associated with influenza A (H3) viruses and occurred during weeks 43, 4, and 9 (weeks ending October 27, 2012, January 26, and March 2, 2013). One death was associated with an influenza A virus for which the subtype was not determined and occurred during week 5 (week ending February 2, 2013), and two were associated with influenza B viruses and occurred during weeks 7 and 8 (weeks ending February 16 and February 23, 2013). As of week 9, there have been a total of 87 influenza-associated pediatric deaths for the 2012–13 season.*

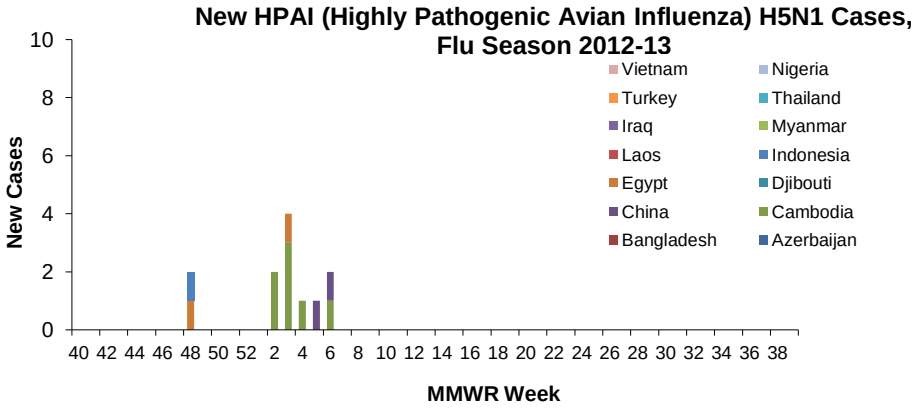
- *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) and was associated with an influenza A (H3) virus.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 9. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on February 15, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	7	6	28	25
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	0	45	28
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	10	7	620	367

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

March 3 – March 9, 2013: Week 10

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests that although ILI visits during week 10 (4.4%) were higher than the national ILI level, they were the same level as week 9 and comparable to what has been observed on average in the previous 5 years during the same week.
- 2,592 (14.3%) of all laboratory specimens have tested positive for influenza.
- No ILI cluster in a school was reported during week 10 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Twelve influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 10.
- No new human infections with a novel influenza virus were reported to CDC during week 10.
- Worldwide there have been three additional avian influenza cases since February 1, 2013.

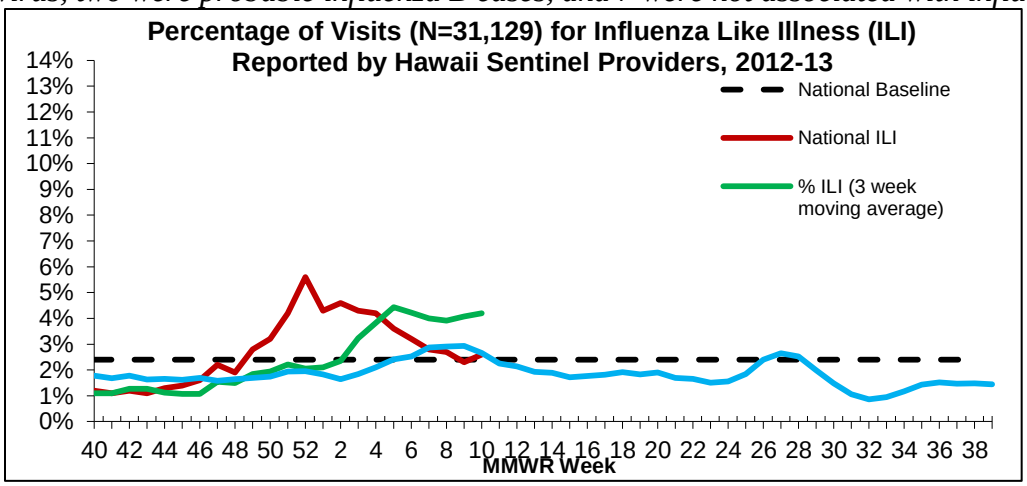
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *4.2% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval)*
- *Hawaii's ILI outpatient visits were higher than both the national baseline (2.2%)[4] and the national ILI (2.6%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 10. For the 2012–13 influenza season there have been 13 ILI clusters reported to HDOH. Four were associated with an influenza A virus, two were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

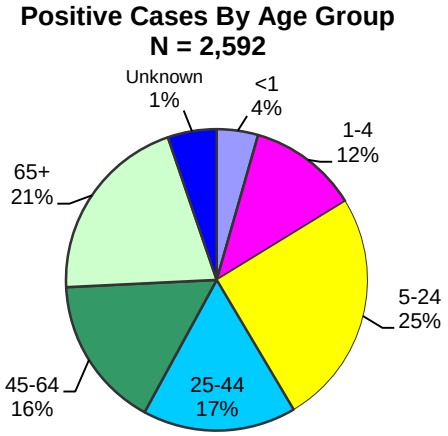
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

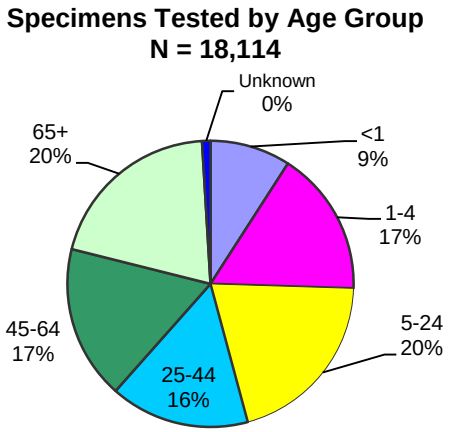
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

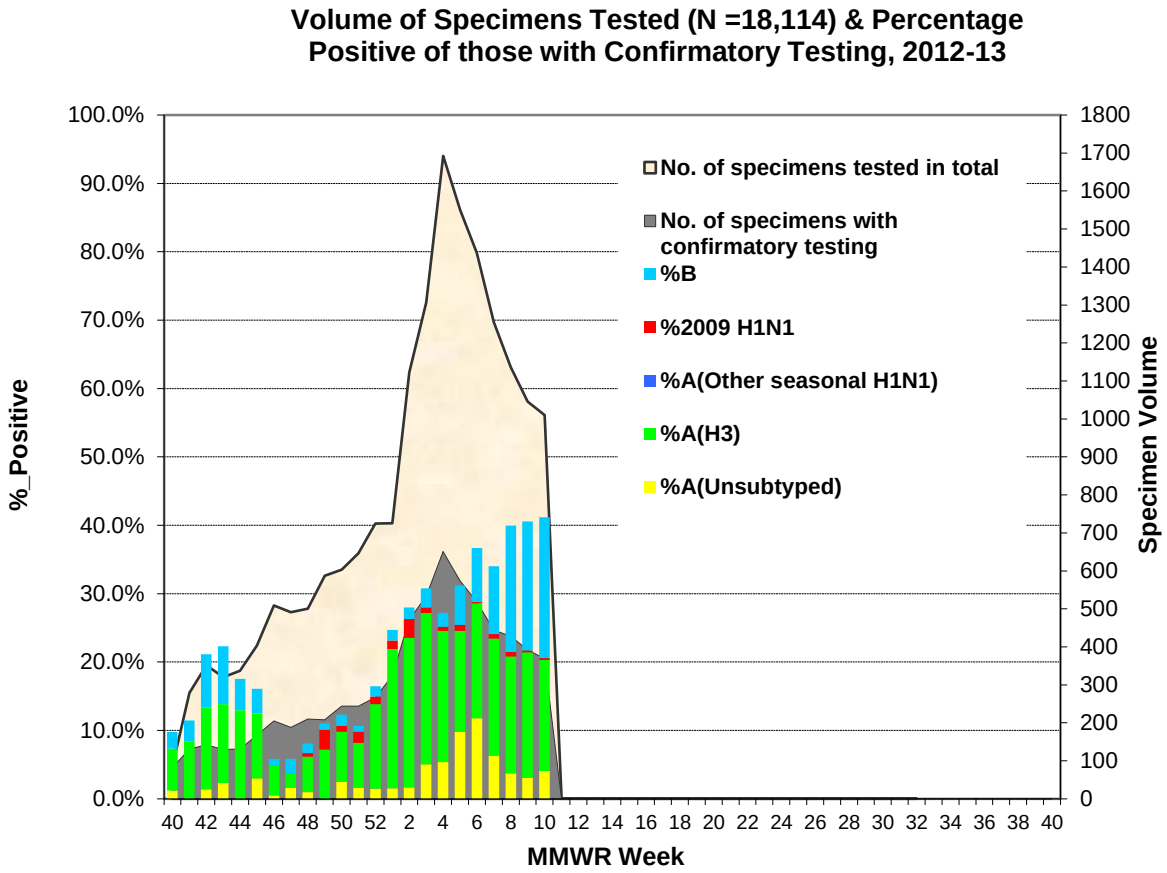
- *A total of 18,114 specimens have been tested statewide for influenza viruses*
  - *11,059 (61.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *7,055 (38.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,029 (11.2%) cases of influenza A and 563 (3.1%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *55 (2.7%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,052 (51.8%) were influenza A (H3),*
    - *and the remaining (n = 922, 45.5%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *14.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

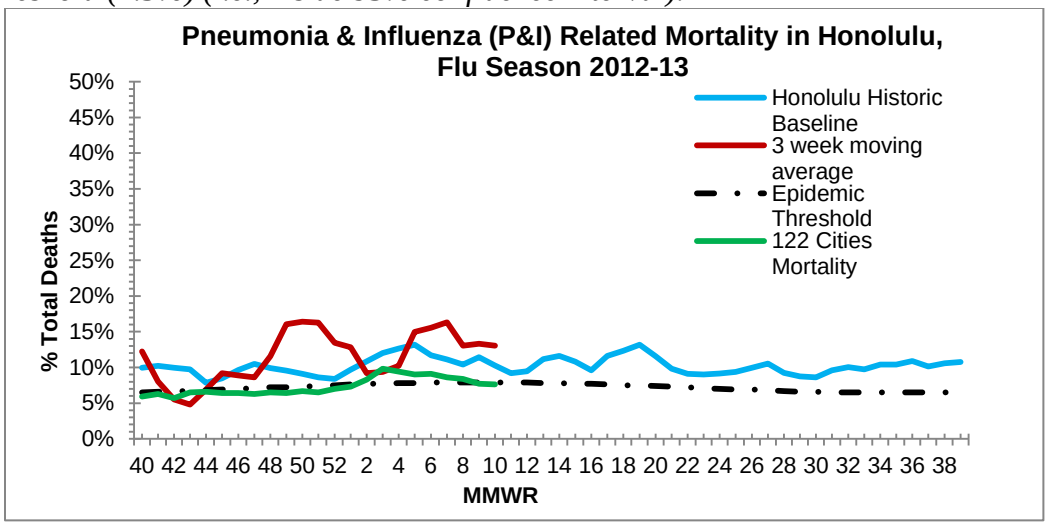
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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																													
Coxsackie Virus																																																				
Cytomegalovirus																		X				X	X																													
Echovirus																																																				
Enterovirus							X			X	X	X			X		X				X		X																													
Herpes Simplex Virus, Type 1																																																				
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X																													
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X																													
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																													
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X																													
Varicella Zoster Virus																																																				
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X																													
Influenza A (H3)	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 (Other seasonal H1N1)																																																				
Influenza A (unsubtyped)	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																													

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 Honolulu specific data 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:

- *13.1% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was also comparable to both the national 122 city P&I mortality (7.6%) and epidemic threshold (7.5%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- *Nationally, there were 12 influenza-associated pediatric deaths reported to CDC during week 10. One death was associated with an influenza A (H3) virus and occurred during week 6 (week ending February 9, 2013). Two deaths were associated with influenza A viruses for which the subtype was not determined and occurred during weeks 5 and 8 (weeks ending February 2 and February 23, 2013), and nine were associated with influenza B viruses and occurred during weeks 47, 7, 8, 9, and 10 (weeks ending November 24, 2012, February 16, February 23, March 2, and March 9, 2013). As of week 10, there have been a total of 99 influenza-associated pediatric deaths for the 2012–13 season.*

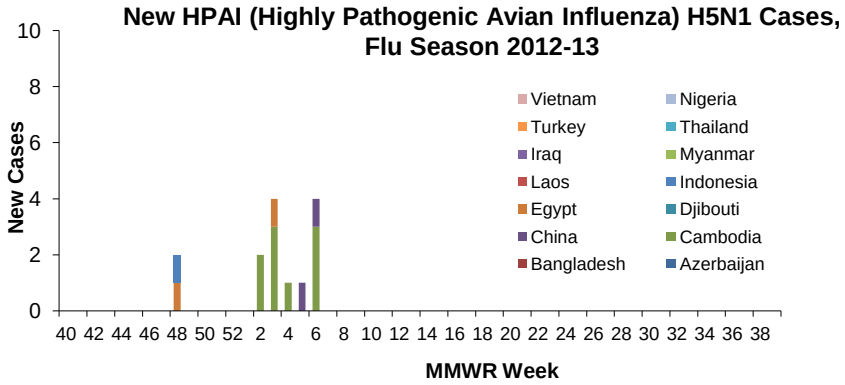
- *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) and was associated with an influenza A (H3) virus.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 10. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on March 12, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	9	8	30	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	12	11	622	371

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

March 10 – March 16, 2013: Week 11

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests that although ILI visits during week 11 (3.6%) were higher than the national ILI level, they were lower than the level in week 10 and comparable to what has been observed on average in the previous 5 years during the same week.
- 2,716 (14.3%) of all laboratory specimens have tested positive for influenza.
- No ILI cluster in a school was reported during week 11 to HDOH.
- One influenza-associated pediatric death was reported to HDOH during week 4.
- Six influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 11.
- No new human infections with a novel influenza virus were reported to CDC during week 11.
- Worldwide there have been five additional avian influenza cases since February 1, 2013.

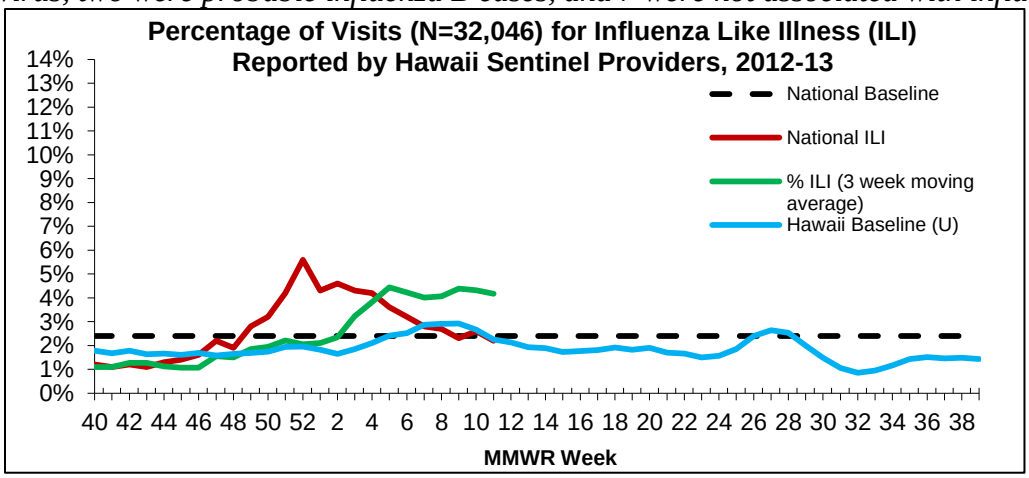
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.6% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval)*
- *Hawaii's ILI outpatient visits were higher than both the national baseline (2.2%)[4] and the national ILI (2.2%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 11. For the 2012–13 influenza season there have been 13 ILI clusters reported to HDOH. Four were associated with an influenza A virus, two were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

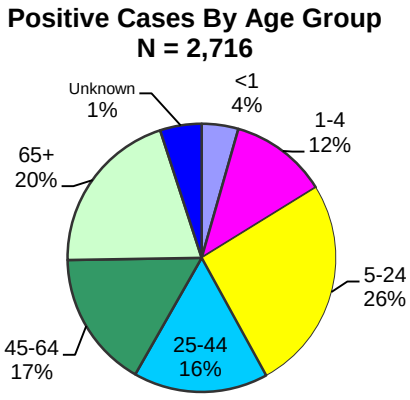
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

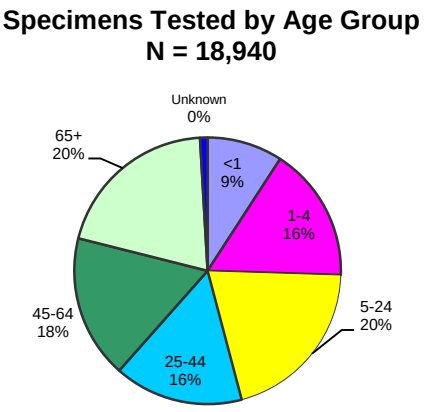
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

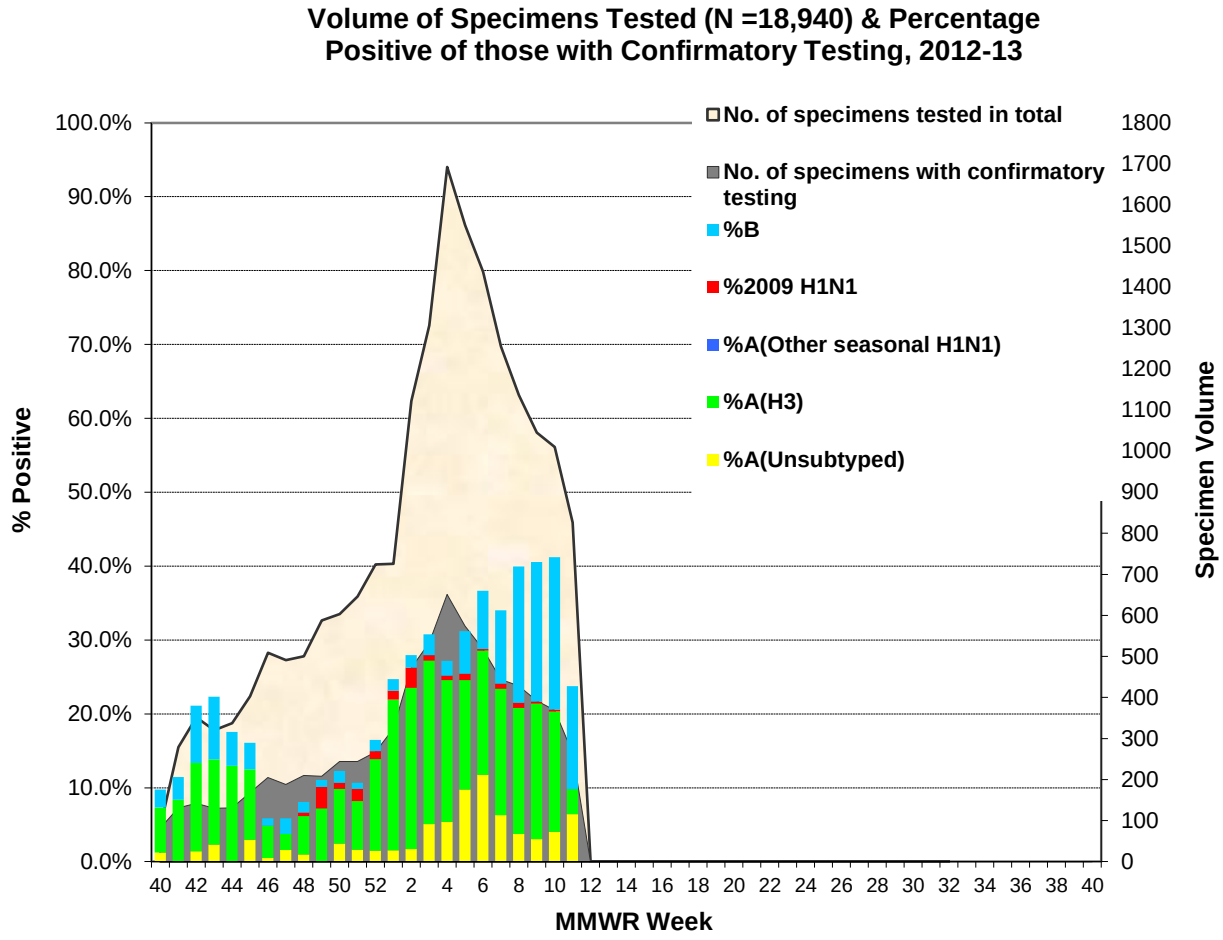
- *A total of 18,940 specimens have been tested statewide for influenza viruses*
  - *11,620 (61.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *7,320 (38.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,093 (11.1%) cases of influenza A and 623 (3.3%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *55 (2.7%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,061 (50.7%) were influenza A (H3),*
    - *and the remaining (n = 977, 46.7%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *14.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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 2012–13 Flu Season

MMWR Week

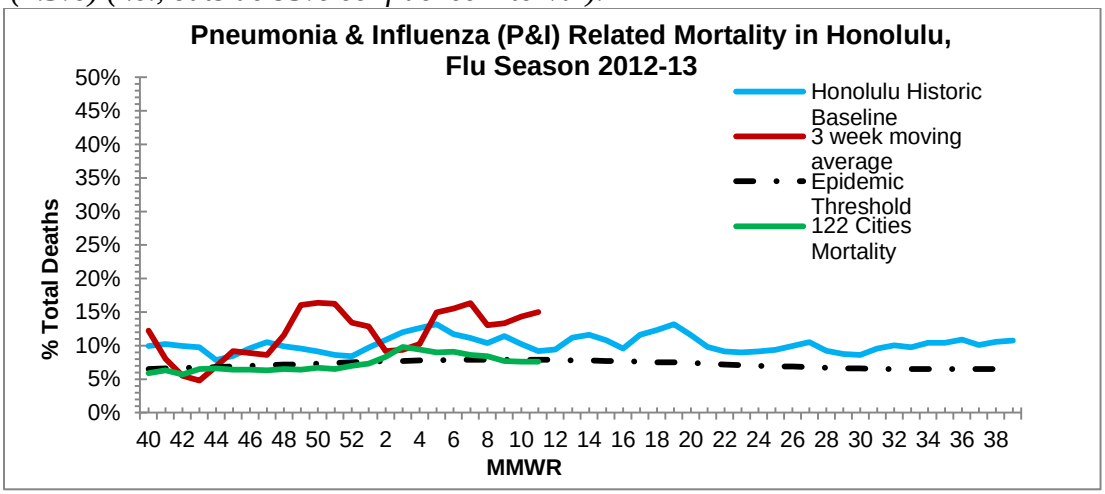
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11
Adenovirus										X	X		X			X			X	X	X	X	X	
Coxsackie Virus																								
Cytomegalovirus																		X				X	X	
Echovirus																								
Enterovirus							X			X	X	X			X		X				X		X	
Herpes Simplex Virus, Type 1																								
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X
Varicella Zoster Virus																								
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X	
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																								
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	X	X	X	X	X	X	X	X	X	X	X

Isolates	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																													
Coxsackie Virus																													
Cytomegalovirus																													
Echovirus																													
Enterovirus																													
Herpes Simplex Virus, Type 1																													
Metapneumovirus																													
Parainfluenza Virus																													
Respiratory Syncytial Virus																													
Rhinovirus																													
Varicella Zoster Virus																													
Influenza 2009 H1N1																													
Influenza A (H3)																													
Influenza A (Other seasonal H1N1)																													
Influenza A (unsubtyped)																													
Influenza B																													

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 Honolulu specific data 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:

- *16.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was high than both the national 122 city P&I mortality (7.6%) and epidemic threshold (7.5%) (i.e., outside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

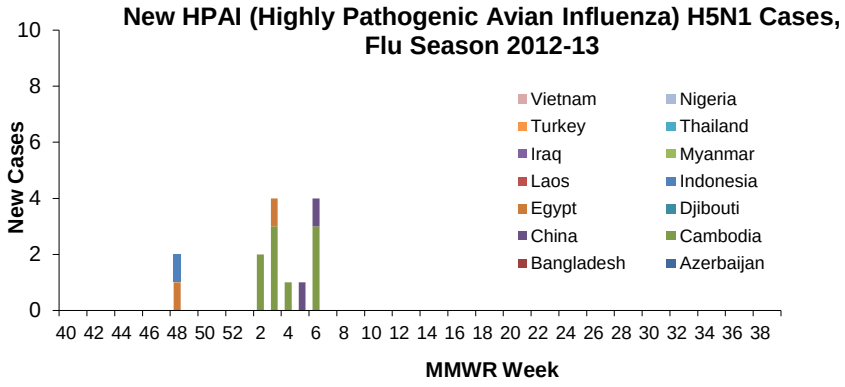
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- *Nationally, there were 6 influenza-associated pediatric deaths reported to CDC during week 11. One death was associated with a 2009 H1N1 virus and occurred during week 9 (week ending March 2, 2013) and five were associated with influenza B viruses and occurred during weeks 48, 52, 6, 10, and 11 (weeks ending December 1, December 29, 2012, February 9, March 9, and March 16, 2013). As of week 11, there have been a total of 105 influenza-associated pediatric deaths for the 2012–13 season.*
- *One flu-related pediatric death was reported in Hawaii during the 2012–13 season. The death occurred during week 4 (week ending January 26, 2013) and was associated with an influenza A (H3) virus.*

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 11. A total of 2 H3N2v infections have been reported for 2012-13 flu season.*

B. H5N1: Avian (or bird) influenza is one zoonotic disease of public health concern and is therefore monitored globally by the World Health Organization (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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. 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. **WHO avian influenza case data were last updated on March 12, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	9	8	30	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	12	11	622	371

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

Appendix 2: MMWR Week Dates

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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)[1]

March 17 – March 23, 2013: Week 12

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of April 5, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was sixteen, including six deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests that although ILI visits during week 12 (3.2%) were higher than the national ILI level, they were lower than the level in week 11 and comparable to what has been observed on average in the previous 5 years during the same week.
- 2,945 (14.9%) of all laboratory specimens have tested positive for influenza.
- No ILI cluster in a school was reported during week 12 to HDOH.
- Five influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 12 with four having occurred in the preceding weeks.
- No new human infections with a novel influenza virus in the United States were reported to CDC during week 12.

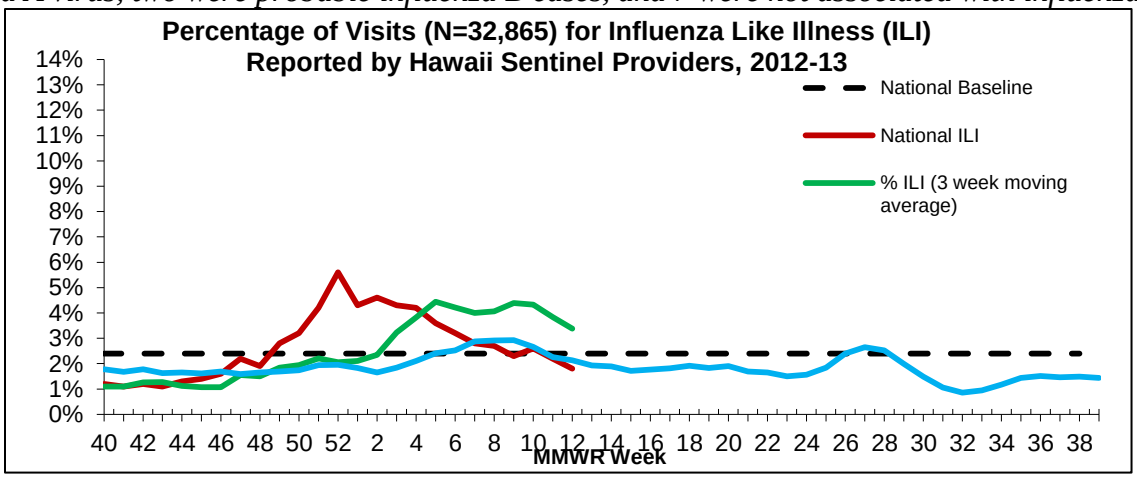
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.2% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval)*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) but higher than the national ILI (1.8%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 12. For the 2012–13 influenza season there have been 13 ILI clusters reported to HDOH. Four were associated with an influenza A virus, two were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

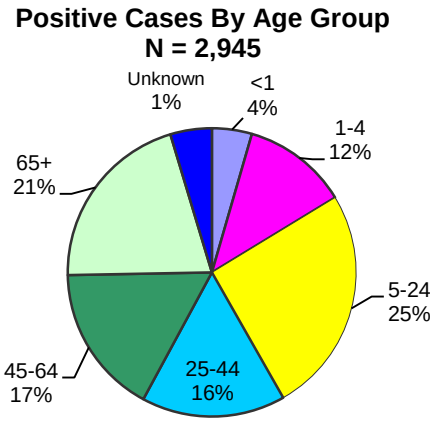
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

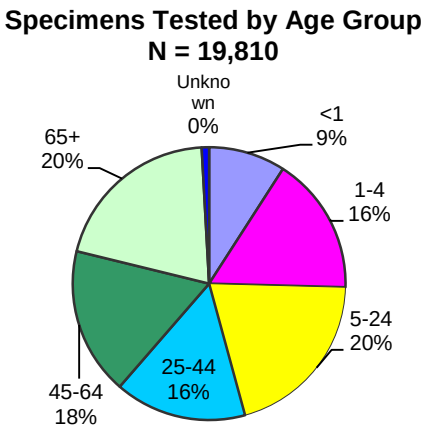
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

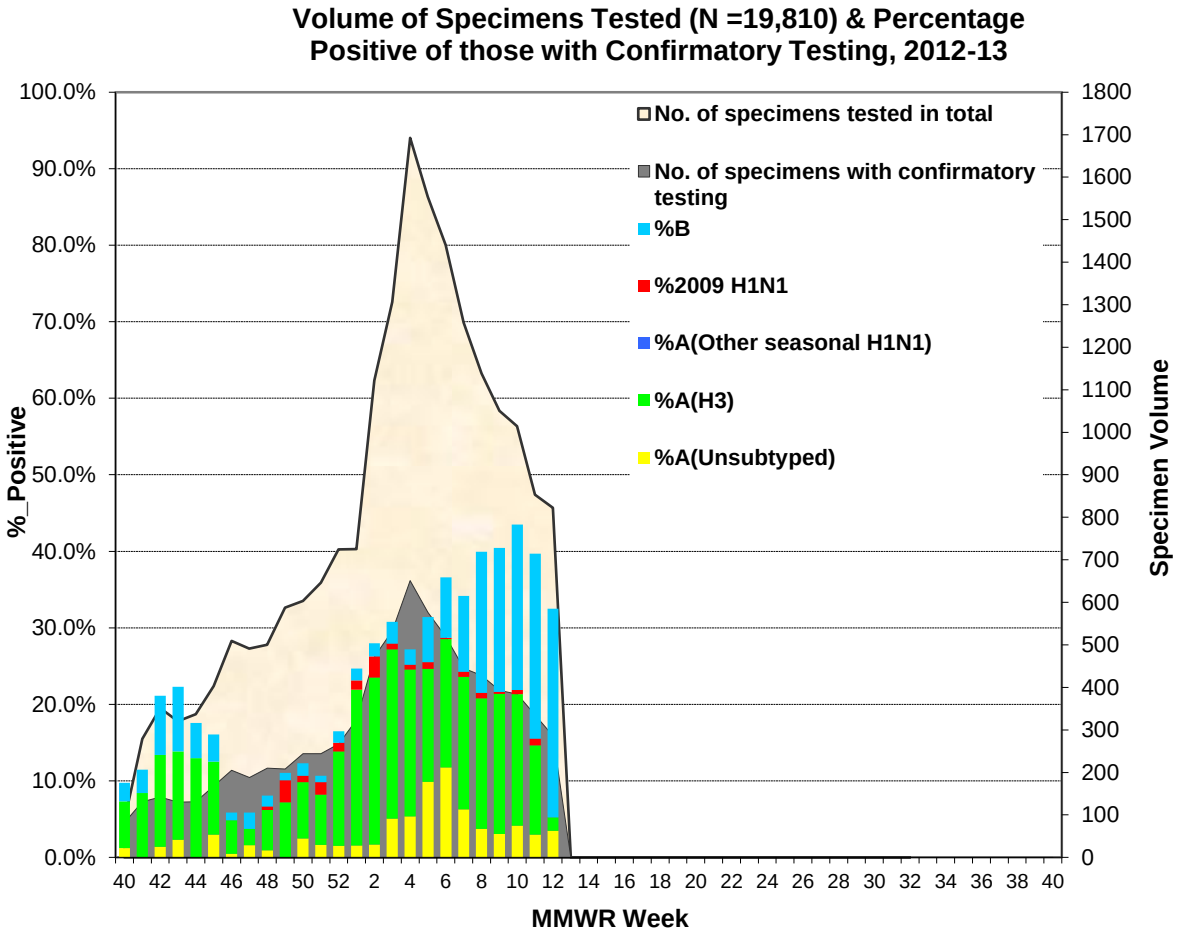
- *A total of 19,810 specimens have been tested statewide for influenza viruses*
  - *12,114 (61.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *7,696 (38.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,172 (11.0%) cases of influenza A and 773 (3.9%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *59 (2.7%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,103 (50.8%) were influenza A (H3),*
    - *and the remaining (n = 1,010, 46.5%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *14.9% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

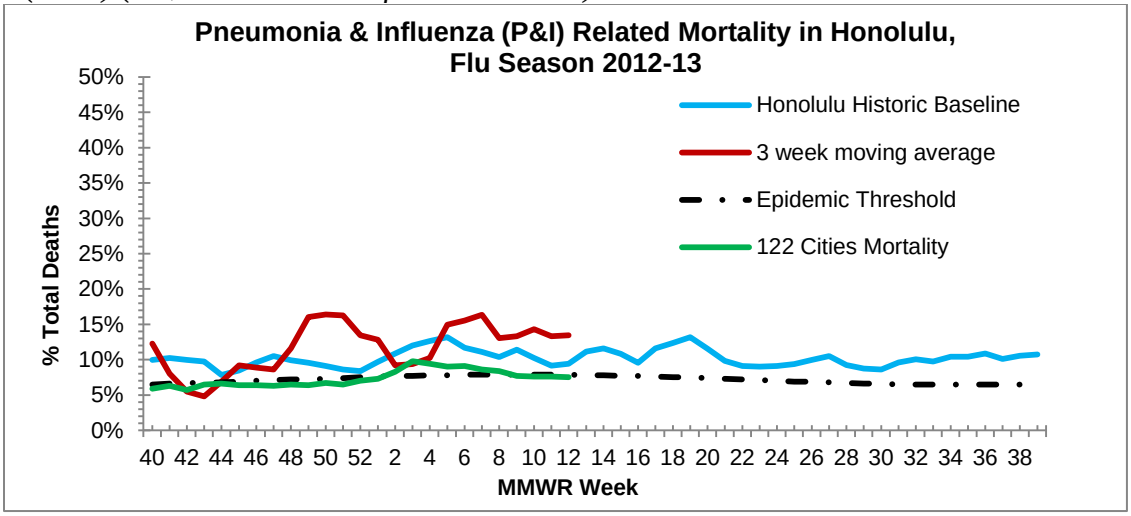
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X																												
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X																														
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X																														
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X																													
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																												
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																												
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X																												
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X																														
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																												
Influenza A (Other seasonal H1N1)																																																					
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	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 Honolulu specific data 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:

- *10.0% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (7.5%) and epidemic threshold (7.5%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

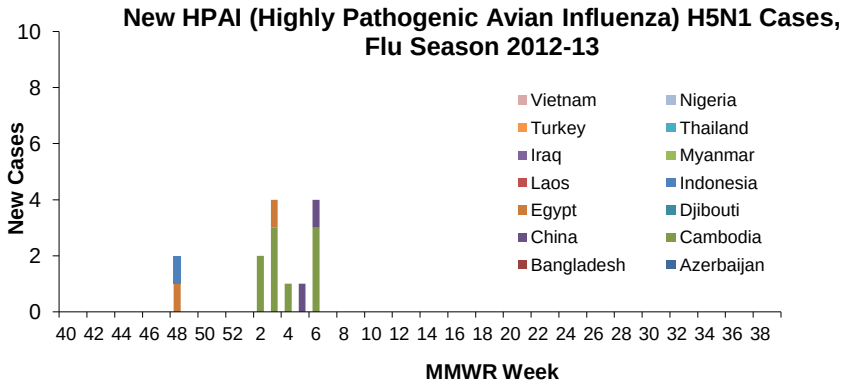
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- Five influenza-associated pediatric deaths were reported to CDC during week 12 with four having occurred in the preceding weeks. One death was associated with an influenza A (H3) virus and occurred during week 3 (week ending January 19, 2013) and two were associated with influenza A viruses for which the subtype was not determined and occurred during weeks 50 and 1 (weeks ending December 15, 2012, and January 5, 2013). Two were associated with influenza B viruses and occurred during weeks 11 and 12 (weeks ending March 16 and March 23, 2013). A total of 110 influenza-associated pediatric deaths have been reported during the 2012-2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 12. A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza. **WHO avian influenza case data were last updated on March 12, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	9	8	30	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	12	11	622	371

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

March 24 – March 30, 2013: Week 13

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of April 10, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was twenty eight, including nine deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests that although ILI visits during week 12 (3.2%) were higher than the national ILI level, they were the same level as in week 12 and comparable to what has been observed on average in the previous 5 years during the same week.
- 3,053 (14.9%) of all laboratory specimens have tested positive for influenza.
- No ILI cluster in a school was reported during week 13 to HDOH.
- One influenza-associated pediatric death was reported to CDC during week 13. This death was associated with an influenza A virus for which the subtype was not determined and occurred during week 12 (week ending March 23, 2013).
- No new human infections with a novel influenza virus in the United States were reported to CDC during week 13.

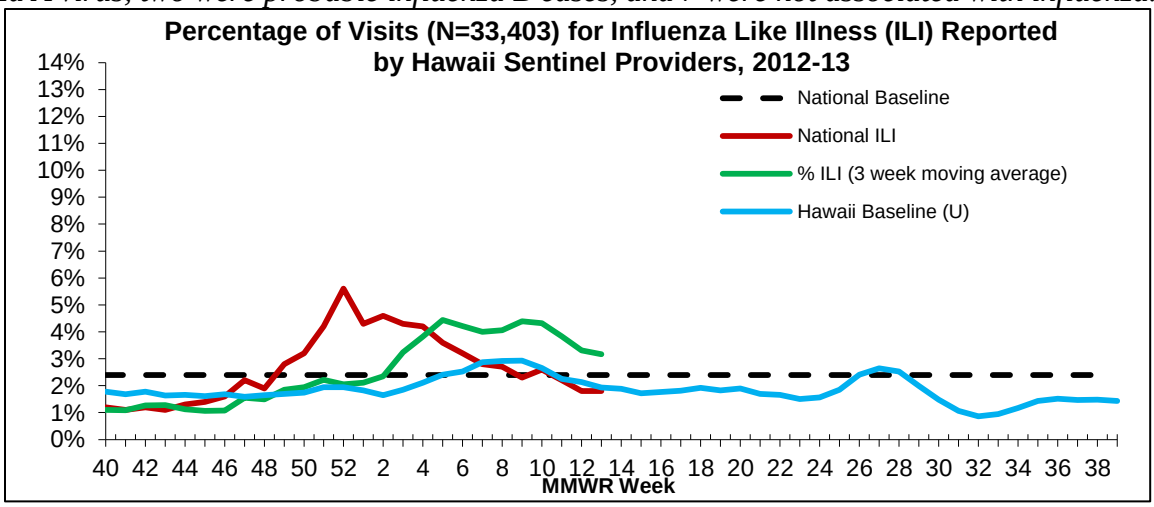
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.2% of outpatient visits to Hawaii sentinel providers were attributable to ILI*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval)*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) and the national ILI (1.8%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 13. For the 2012–13 influenza season there have been 13 ILI clusters reported to HDOH. Four were associated with an influenza A virus, two were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

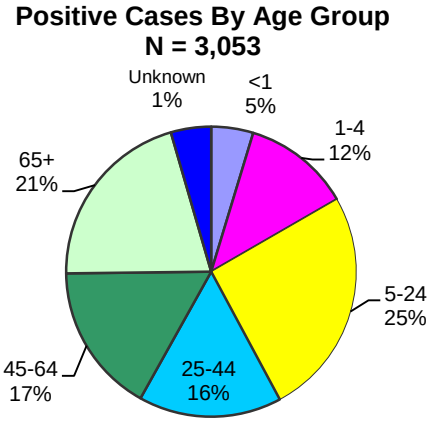
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

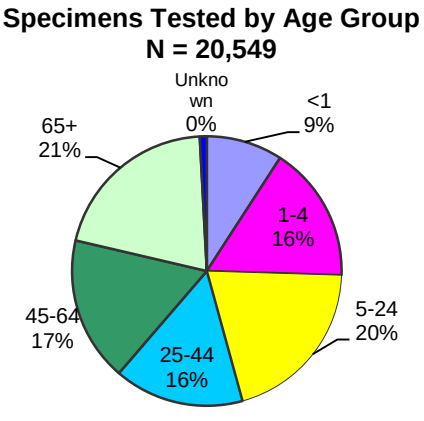
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

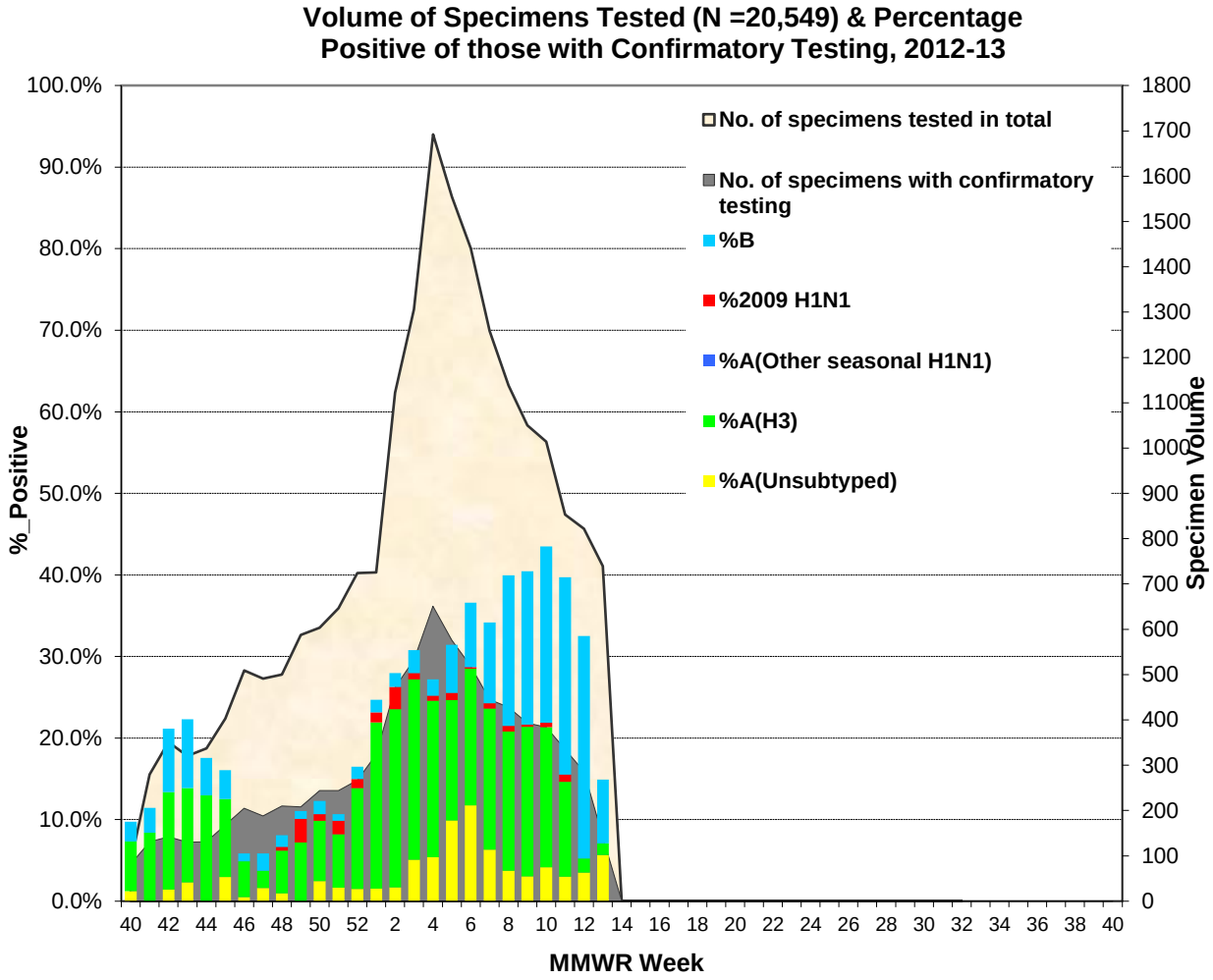
- *A total of 20,549 specimens have been tested statewide for influenza viruses*
  - *12,712 (61.9%) were screened only by rapid antigen tests with no confirmatory testing*
  - *7,837 (38.1%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,220 (10.8%) cases of influenza A and 833 (4.1%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *59 (2.7%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,105 (49.8%) were influenza A (H3),*
    - *and the remaining (n = 1,056, 47.6%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *14.9% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

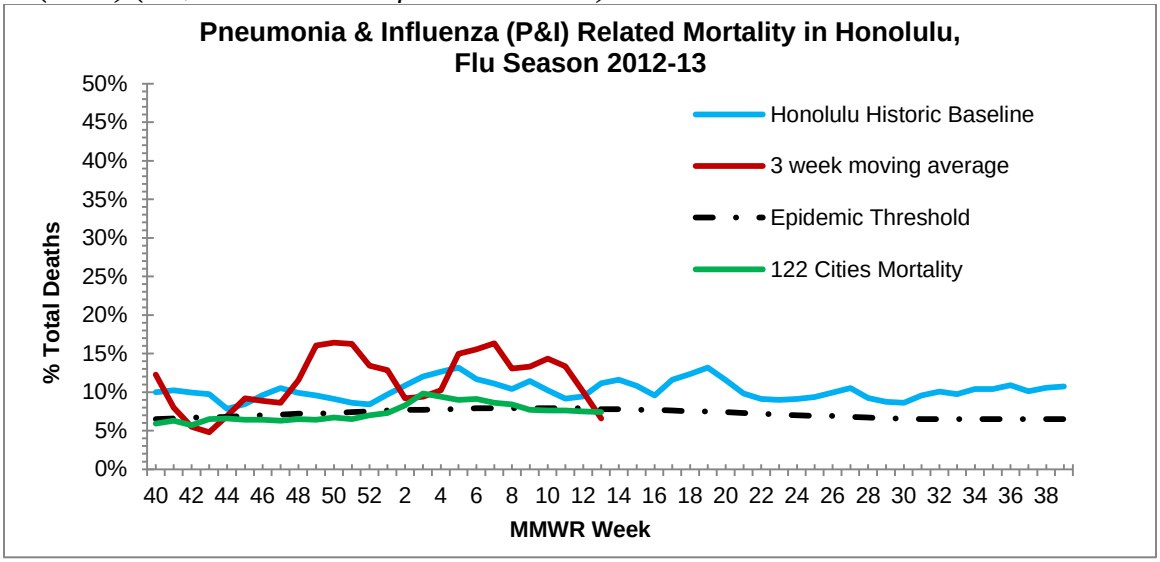
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X																												
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X																														
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X																														
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X																													
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																											
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																											
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X																											
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X																														
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																											
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																											
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	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 Honolulu specific data 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:

- *3.1% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (7.4%) and epidemic threshold (7.5%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

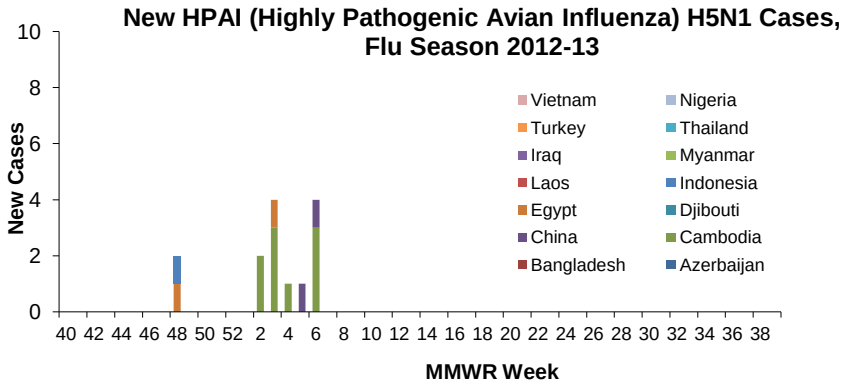
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- One influenza-associated pediatric death was reported to CDC during week 13. This death was associated with an influenza A virus for which the subtype was not determined and occurred during week 12 (week ending March 23, 2013).A total of 111 influenza-associated pediatric deaths have been reported during the 2012-2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 13. A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza. **WHO avian influenza case data were last updated on March 12, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	9	8	30	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	12	11	622	371

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

March 31 – April 06, 2013: Week 14

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of April 16, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was sixty three, including fourteen deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests that although ILI visits during week 14 (2.0%) were higher than the national ILI level, they were lower than the level in week 13 and comparable to what has been observed on average in the previous 5 years during the same week.
- 3,282 (15.3%) of all laboratory specimens have tested positive for influenza.
- There was one ILI cluster reported to HDOH during week 14, which occurred in a school and has not been laboratory confirmed.
- Five influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 14 with four having occurred in the preceding weeks.

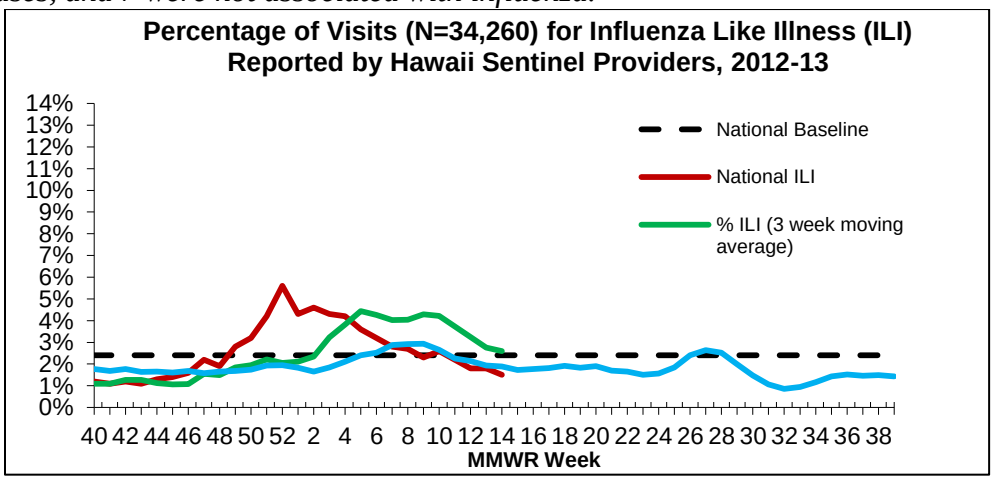
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *2.0% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) and the national ILI (1.5%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was one ILI cluster reported to HDOH during week 14, which occurred in a school and has not been laboratory confirmed. For the 2012–13 influenza season there have been 14 ILI clusters reported to HDOH. Four were associated with an influenza A virus, three were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

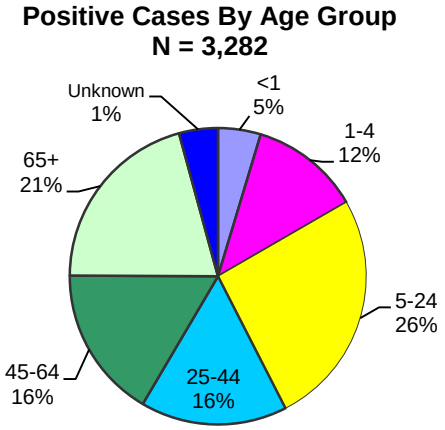
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

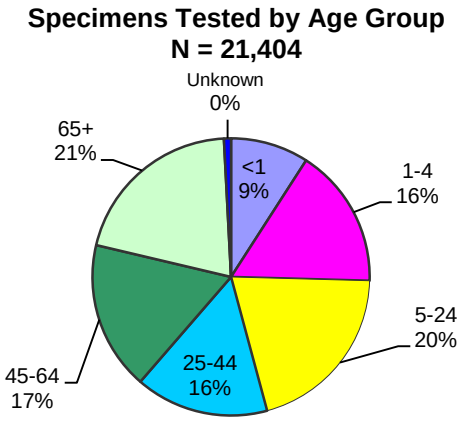
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

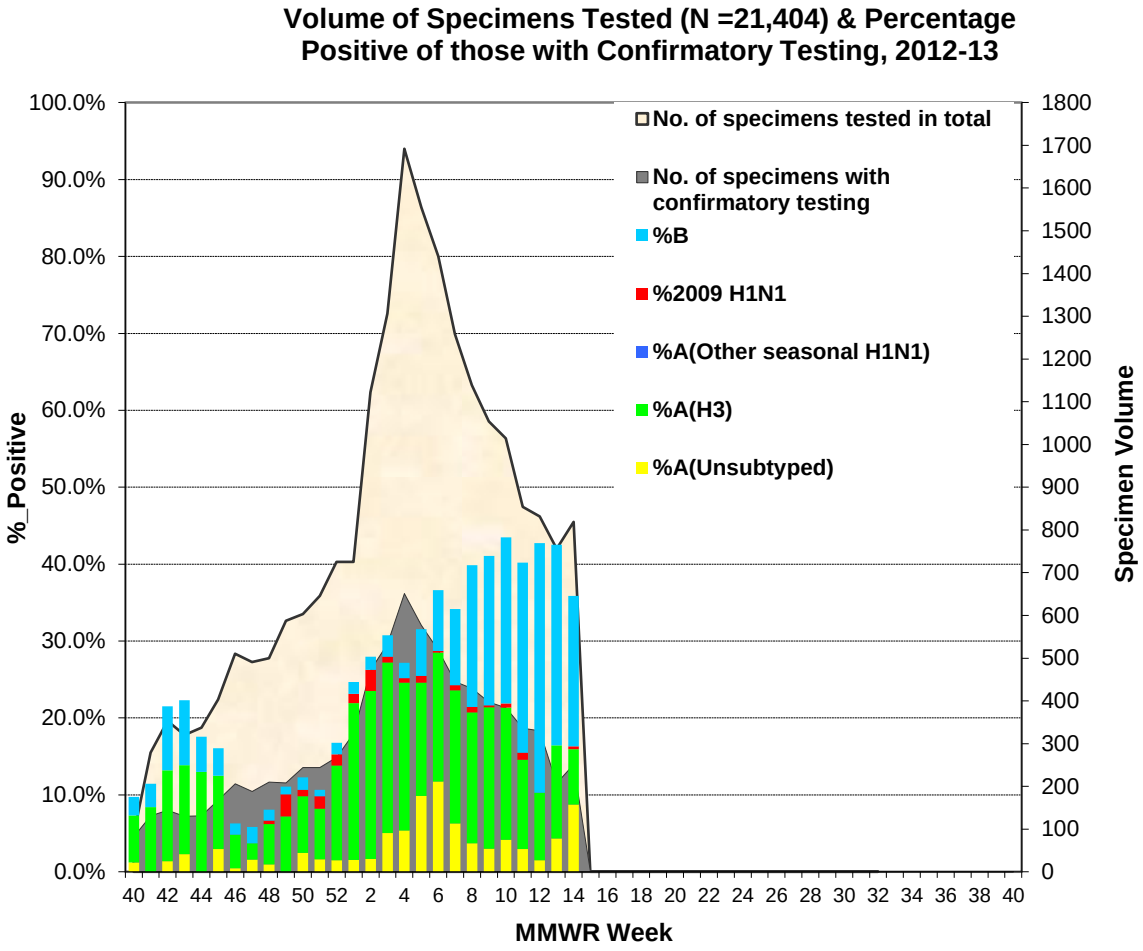
- *A total of 21,404 specimens have been tested statewide for influenza viruses*
  - *13,195 (61.6%) were screened only by rapid antigen tests with no confirmatory testing*
  - *8,8209 (38.4%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,302 (10.8%) cases of influenza A and 980 (4.6%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *61 (2.6%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,171 (50.9.8%) were influenza A (H3),*
    - *and the remaining (n = 1,070, 46.5%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

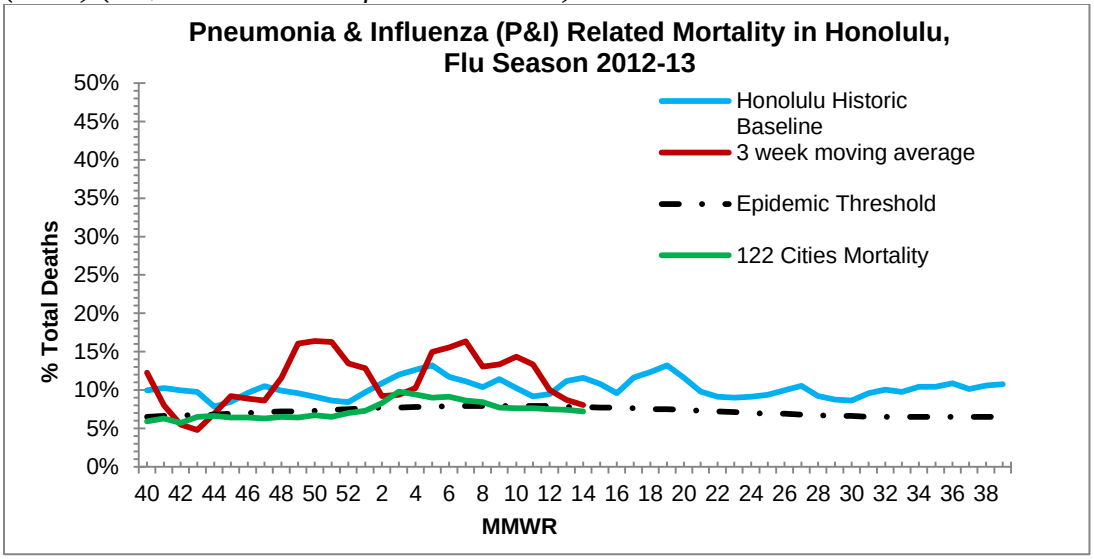
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X																												
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X																														
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X																														
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X																										
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																										
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																										
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X																										
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X																										
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																										
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																										
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	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 Honolulu specific data 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:

- *12.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (7.2%) and epidemic threshold (7.4%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

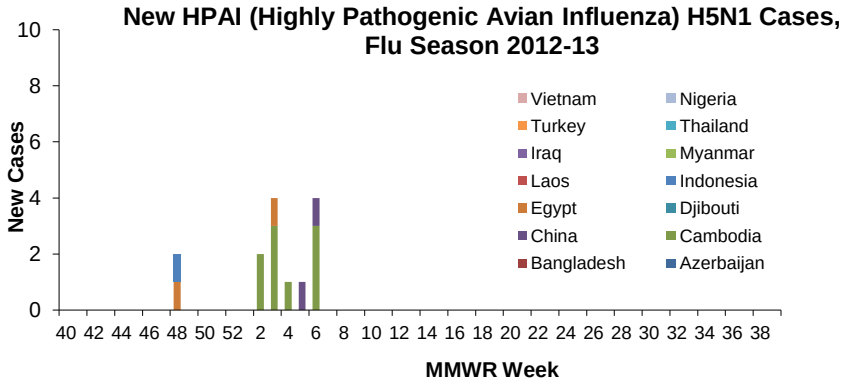
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- Five influenza-associated pediatric deaths were reported to CDC during week 14. One death was associated with an influenza A (H3) virus and occurred during week 51 (week ending December 22, 2012) and four deaths were associated with influenza B viruses and occurred during week 4, 6, 11, and 14 (weeks ending January 26, February 9, March 16, and April 6, 2013). A total of 116 influenza-associated pediatric deaths have been reported during the 2012-2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 14.*
- *A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza. **WHO avian influenza case data were last updated on March 12, 2013.**



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	9	8	30	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	12	11	622	371

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

April 07 – April 13, 2013: Week 15

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of April 23, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 108, including 22 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests that ILI visits during week 15 (4.1%) were not only higher than the level in week 14 but also higher than the national ILI level and what has been observed on average in the previous 5 years during the same week.
- 3,410 (15.4%) of all laboratory specimens have tested positive for influenza.
- There was no ILI cluster reported to HDOH during week 15.
- One influenza-associated pediatric death associated with an influenza B virus was reported to HDOH during week 15.
- Ten influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 15 with seven to nine cases having occurred in the preceding weeks.

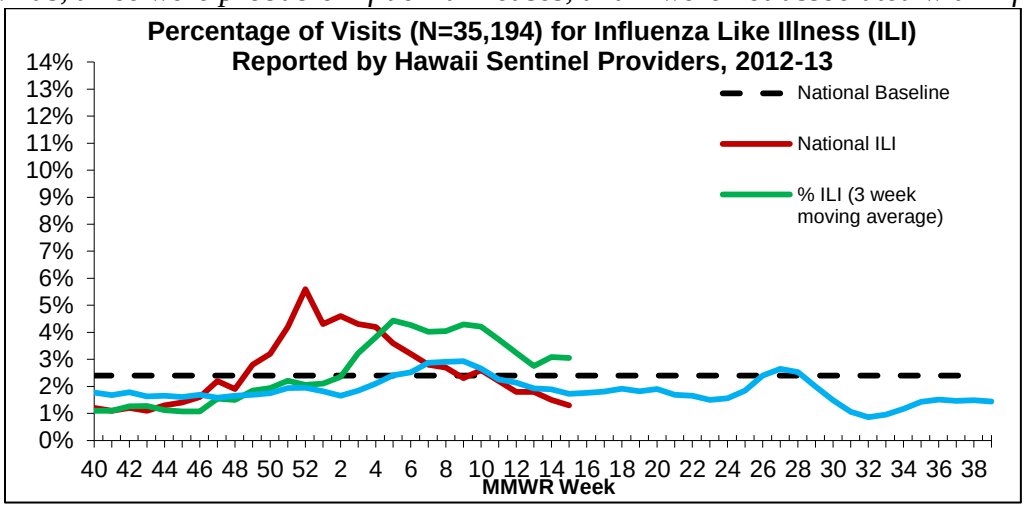
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *4.1% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were higher than the historical baseline in Hawaii[2,3] (i.e., outside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and the national ILI (1.3%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 15. For the 2012–13 influenza season there have been 14 ILI clusters reported to HDOH. Four were associated with an influenza A virus, three were probable influenza B cases, and 7 were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

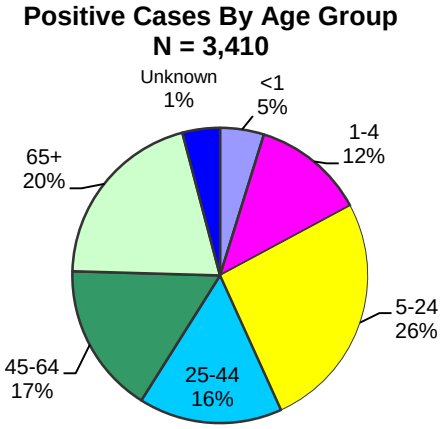
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

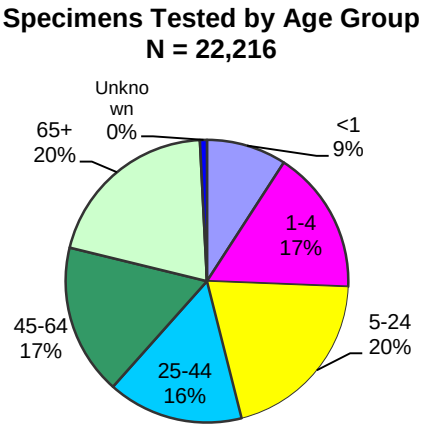
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

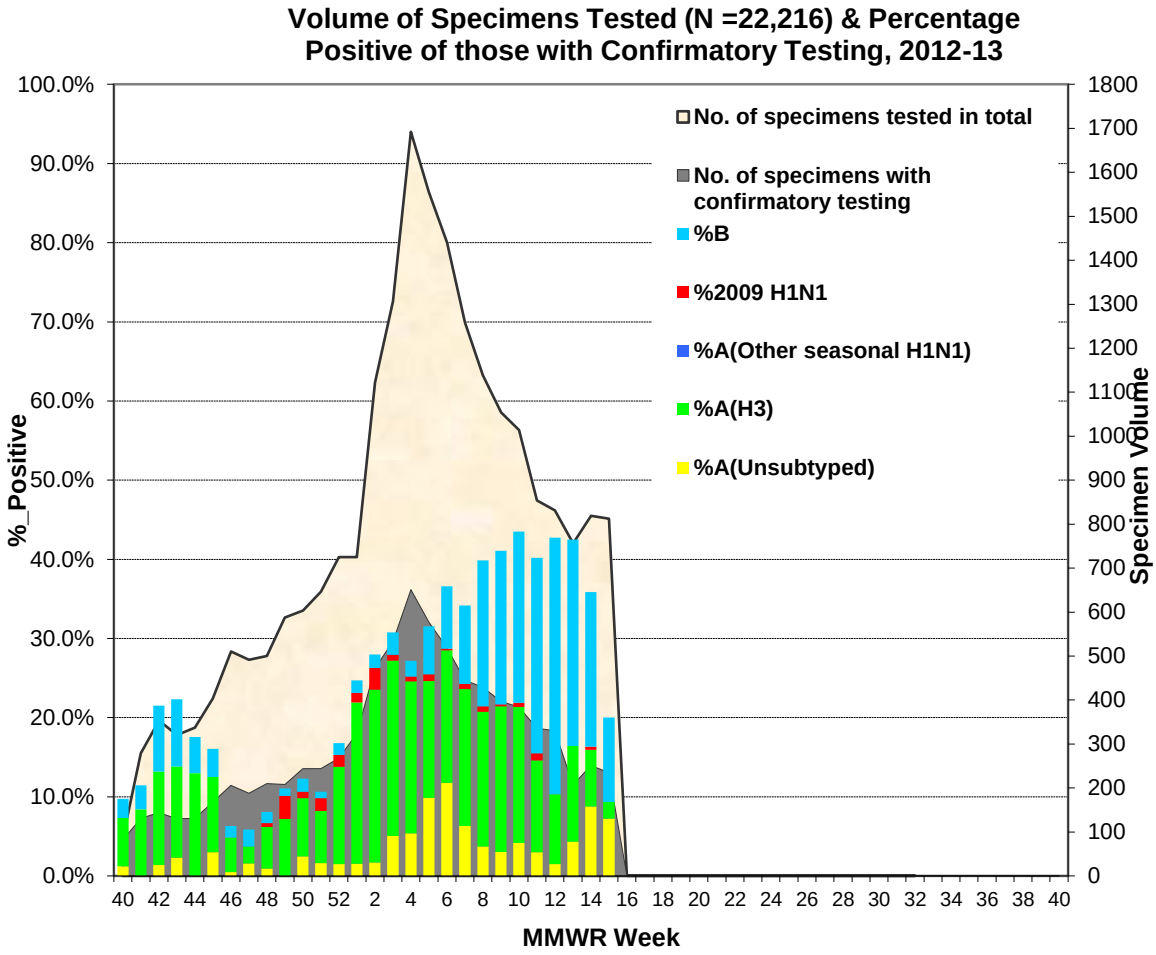
- *A total of 22,216 specimens have been tested statewide for influenza viruses*
  - *13,772 (62.0%) were screened only by rapid antigen tests with no confirmatory testing*
  - *8,444 (38.0%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,337 (10.5%) cases of influenza A and 1,073 (4.8%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *61 (2.6%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,176 (50.3%) were influenza A (H3),*
    - *and the remaining (n = 1,100, 47.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.4% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

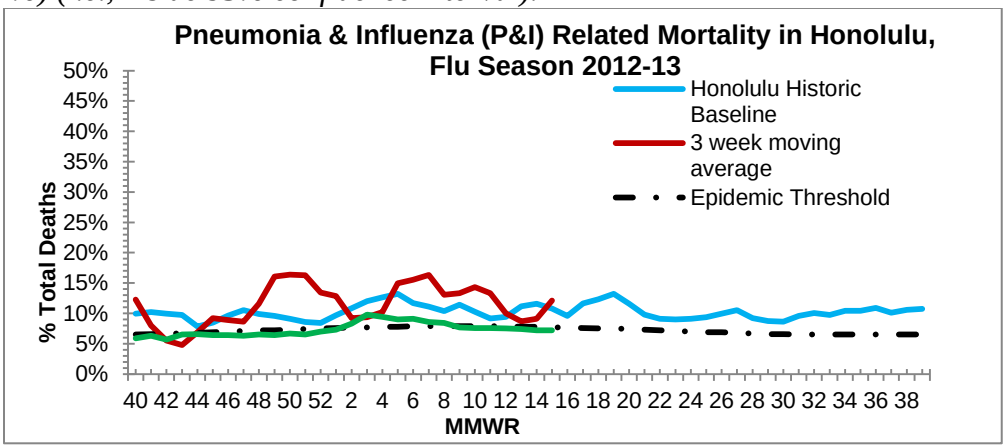
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X																												
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X																														
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X																														
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X																									
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																									
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X																									
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X																										
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																									
Influenza A (Other seasonal H1N1)																																																					
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	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 Honolulu specific data 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:

- *11.2% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (7.2%) and epidemic threshold (7.4%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

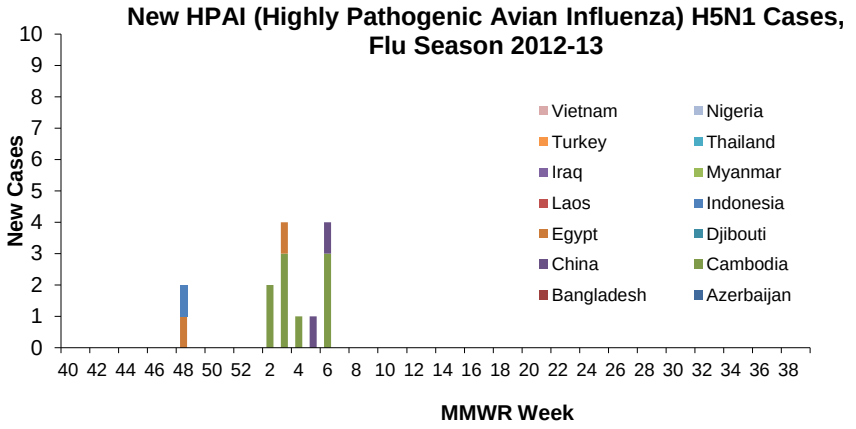
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- One influenza-associated pediatric death associated with an influenza B virus was reported to HDOH during week 15 (week ending April 13, 2013). A total of 2 influenza-associated pediatric deaths have been reported during the 2012–2013 season.
- Ten influenza-associated pediatric deaths were reported to CDC during week 15. One death was associated with an influenza A (H3) virus and occurred during week 11 (week ending March 16, 2013), one death was associated with 2009 H1N1 virus and occurred during week 13 (week ending March 30, 2013), and one death was associated with an influenza A virus for which the subtype was not determined and occurred during week 12 (week ending March 23, 2013). Seven deaths were associated with influenza B viruses and occurred during weeks 8, 11, 12, 14, and 15 (weeks ending February 23, March 16, March 23, April 6, and April 13, 2013). A total of 126 influenza-associated pediatric deaths have been reported during the 2012–2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 15.*
- *A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on March 12, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	6	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	9	8	30	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	1	1	170	61
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	0	0	123	61
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	12	11	622	371

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

April 14 – April 20, 2013: Week 16

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of April 29, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 126, including 24 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests although ILI visits during week 16 (3.5%) were lower than the level in week 15, they were higher than the national ILI level but comparable to what has been observed on average in the previous 5 years during the same week.
- 3,630 (15.7%) of all laboratory specimens have tested positive for influenza.
- There was one ILI cluster reported to HDOH during week 16, which occurred in a long term care facility and was laboratory confirmed.
- Five influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 16 with four cases having occurred in the preceding weeks.

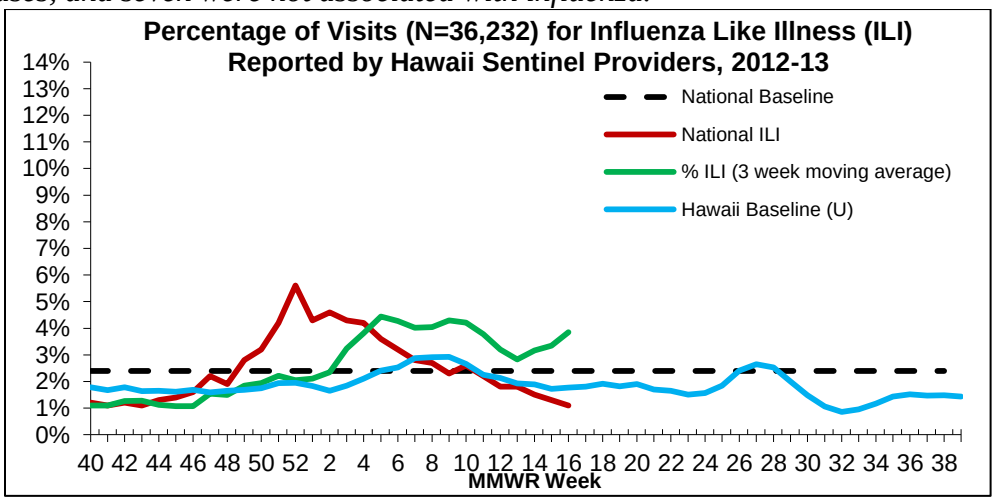
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.5% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and the national ILI (1.1%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was one ILI cluster reported to HDOH during week 16, which occurred in a long term care facility and was laboratory confirmed. For the 2012–13 influenza season there have been 15 ILI clusters reported to HDOH. Five were associated with an influenza A virus, three were probable influenza B cases, and seven were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

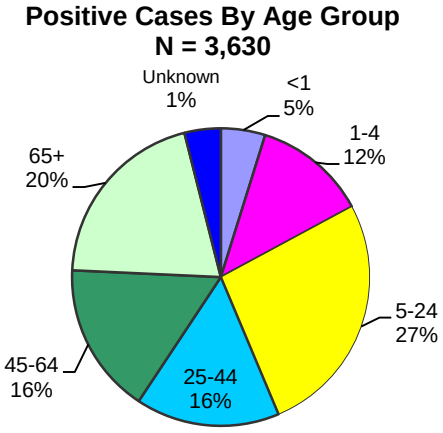
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

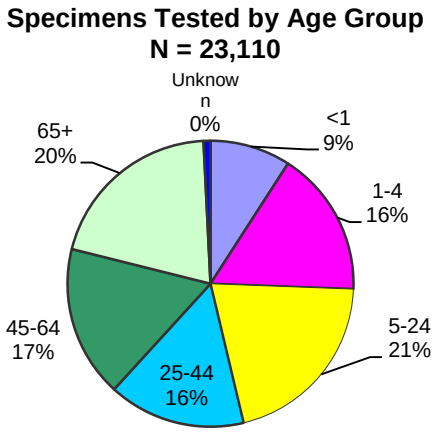
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

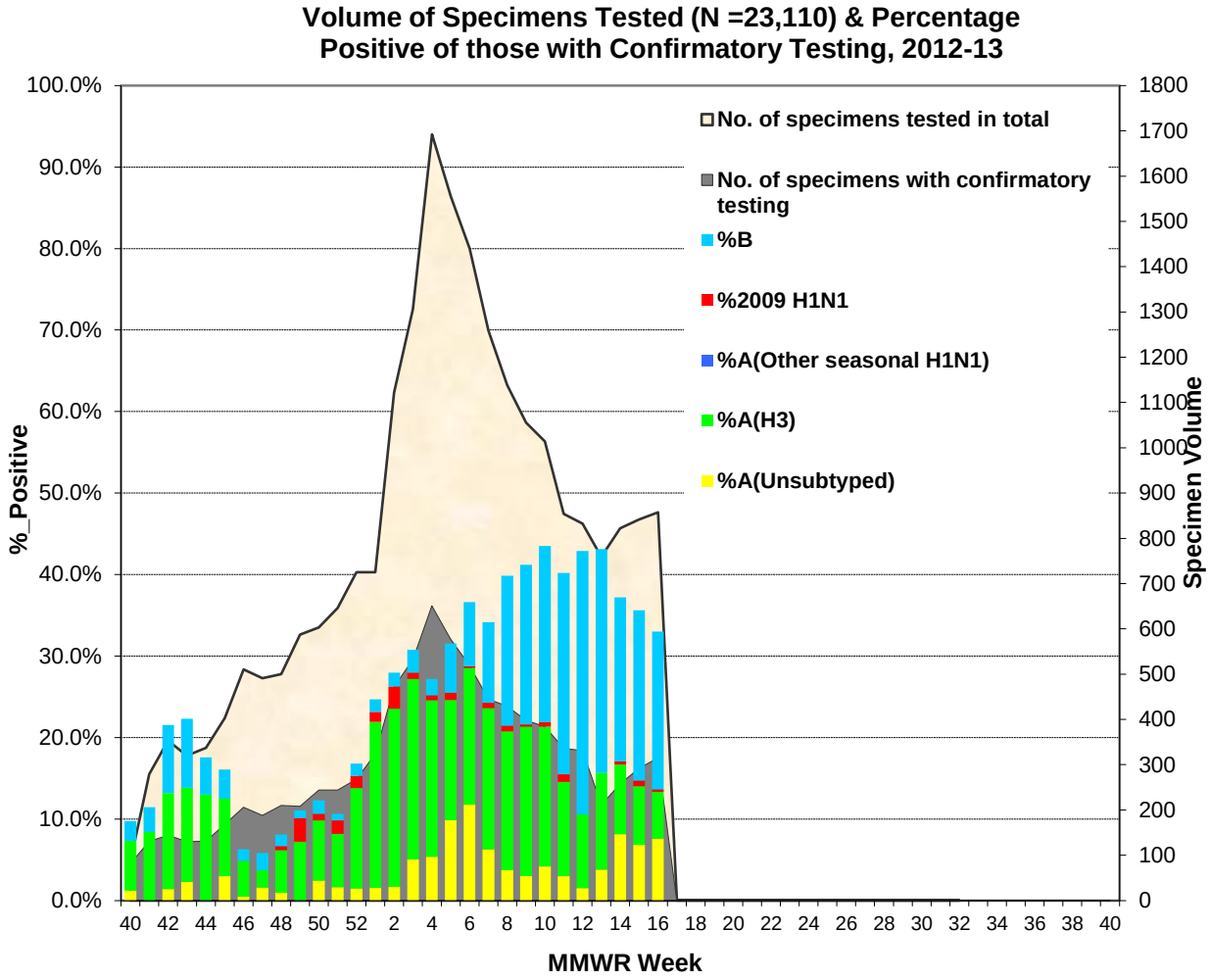
- *A total of 23,110 specimens have been tested statewide for influenza viruses*
  - *14,181 (61.8%) were screened only by rapid antigen tests with no confirmatory testing*
  - *8,829 (38.2%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,415 (10.5%) cases of influenza A and 1,215 (5.3%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *64 (2.7%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,215 (50.3%) were influenza A (H3),*
    - *and the remaining (n = 1,136, 47.0%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.7% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

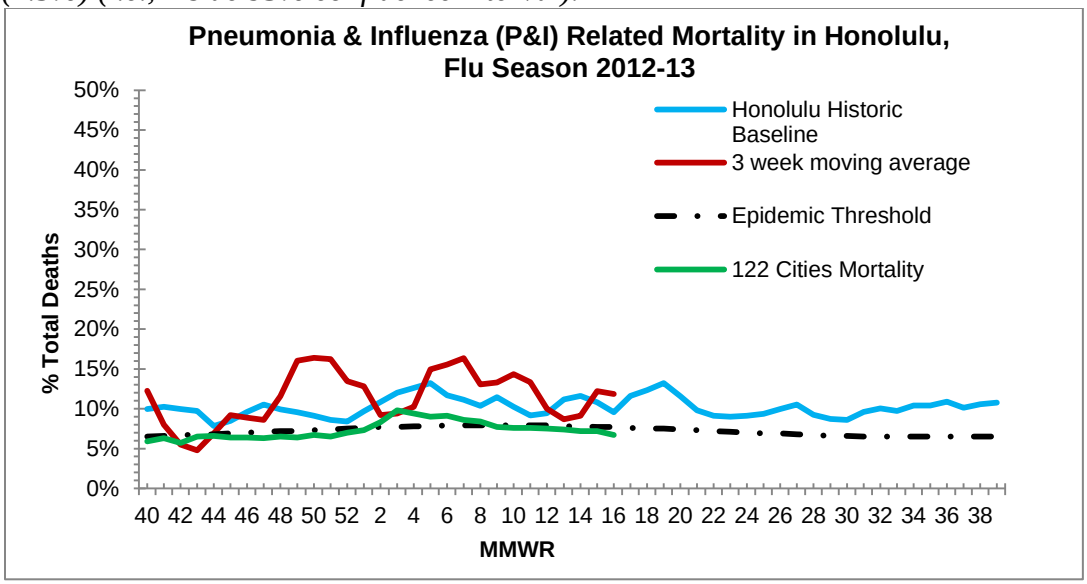
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X																								
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X																														
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X																									
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																								
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																								
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X		X																								
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																								
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																								
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	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 Honolulu specific data 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:

- *12.5% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (6.7%) and epidemic threshold (7.3%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

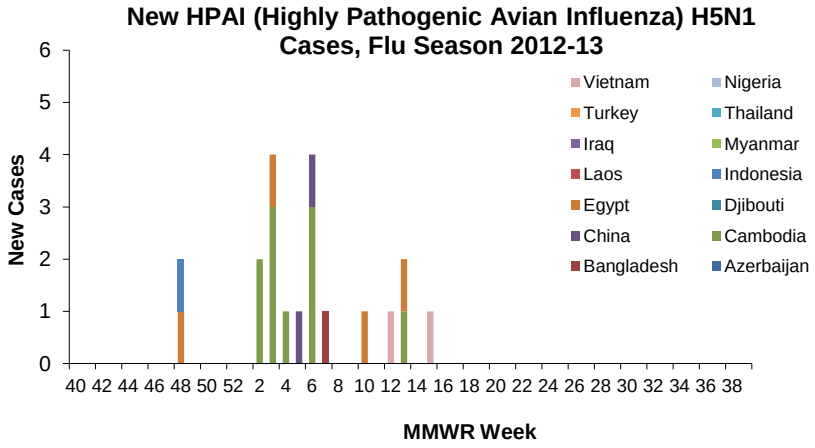
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths have been reported in Hawaii during the 2012–2013 season.
- Five influenza-associated pediatric deaths were reported to CDC during week 16. One death was associated with an influenza A virus for which the subtype was not determined and occurred during week 16 (week ending April 13, 2013) and four deaths were associated with influenza B viruses and occurred during weeks 3, 13, 14, and 15 (weeks ending January 19, March 30, April 6, and April 13, 2013). A total of 131 influenza-associated pediatric deaths have been reported during the 2012–2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 16.*
- *A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on April 26, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	31	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	172	62
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	628	374

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

April 21 – April 27, 2013: Week 17

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of May 8, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 131, including 32 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests although ILI visits during week 17 (4.3%) were higher than the level in week 16 and the national ILI level, they were comparable to what has been observed on average in the previous 5 years during the same week.
- 3,931 (16.0%) of all laboratory specimens have tested positive for influenza.
- There were three ILI clusters reported to HDOH during week 17, which occurred in schools. Two were laboratory confirmed and one was not laboratory confirmed.
- Six influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 17 with three or four cases having occurred in the preceding weeks.

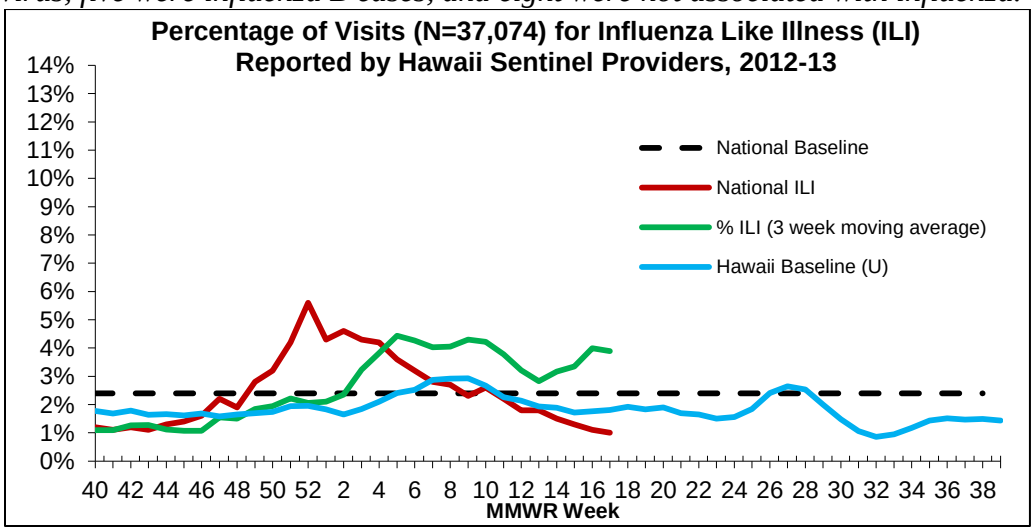
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *4.3% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and the national ILI (1.0%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There were three ILI clusters reported to HDOH during week 17, which occurred in schools. Two were laboratory confirmed and one was not laboratory confirmed. For the 2012–13 influenza season there have been 18 ILI clusters reported to HDOH. Five were associated with an influenza A virus, five were influenza B cases, and eight were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

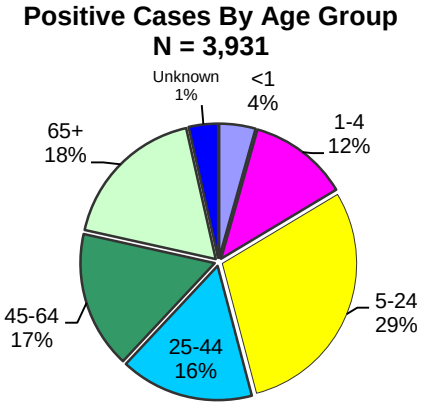
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

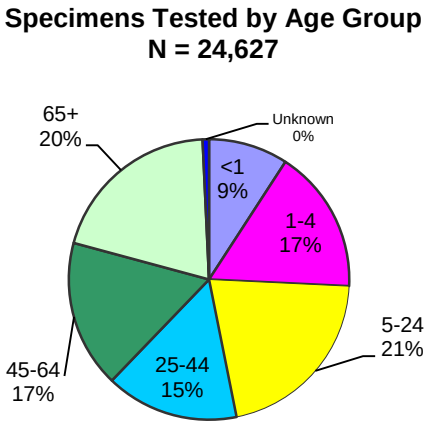
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

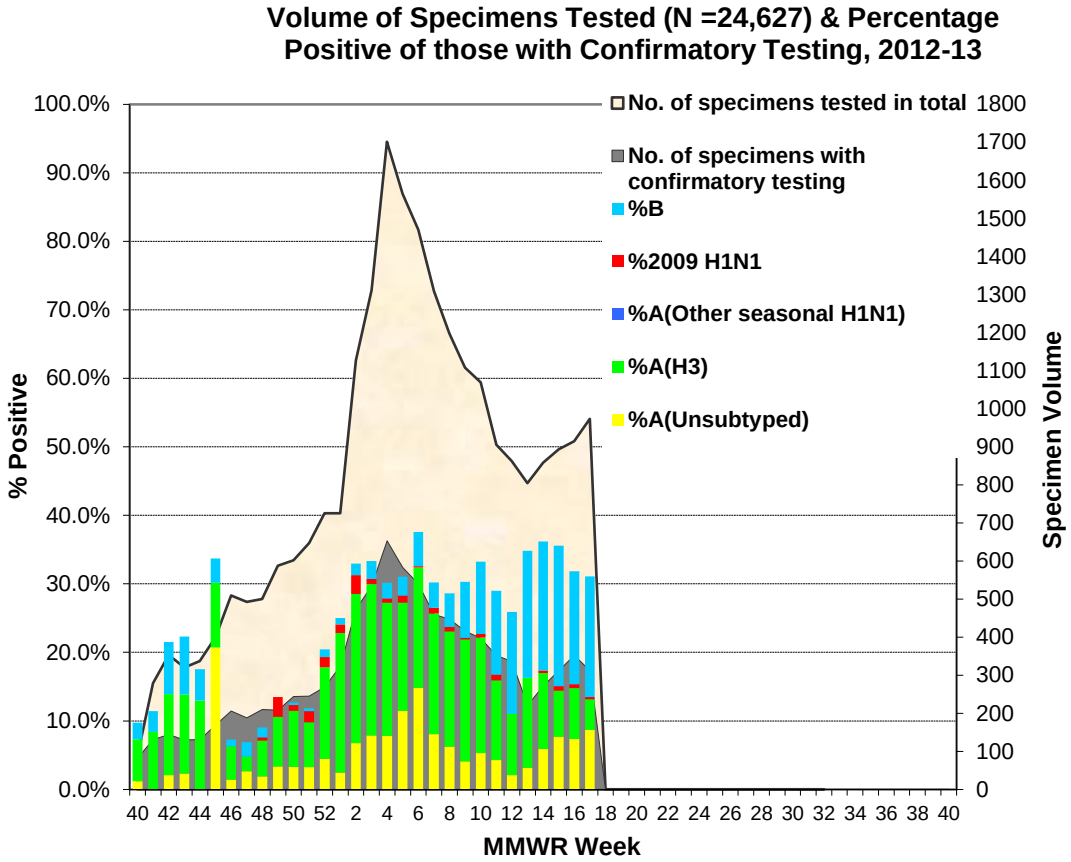
- *A total of 24,627 specimens have been tested statewide for influenza viruses*
  - *15,287 (62.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *9,340 (37.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,735 (11.1%) cases of influenza A and 1,196 (4.9%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *68 (2.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,282 (46.9%) were influenza A (H3),*
    - *and the remaining (n = 1,385, 50.6%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.0% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

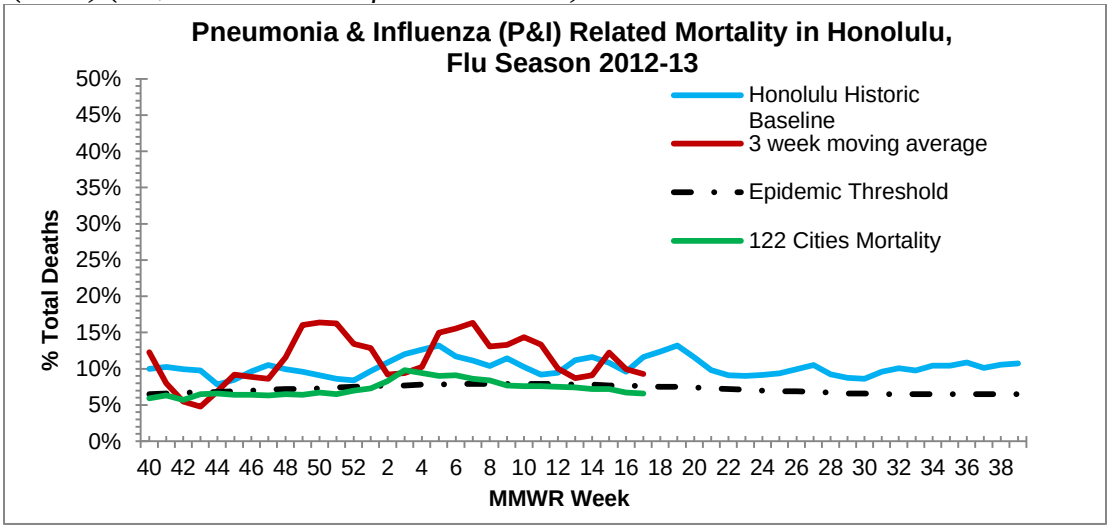
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X																								
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X																							
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X																									
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																							
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X		X	X																							
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																							
Influenza A (Other seasonal H1N1)																																																					
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																							
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																							

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 Honolulu specific data 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:

- *6.6% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (6.6%) and epidemic threshold (7.2%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

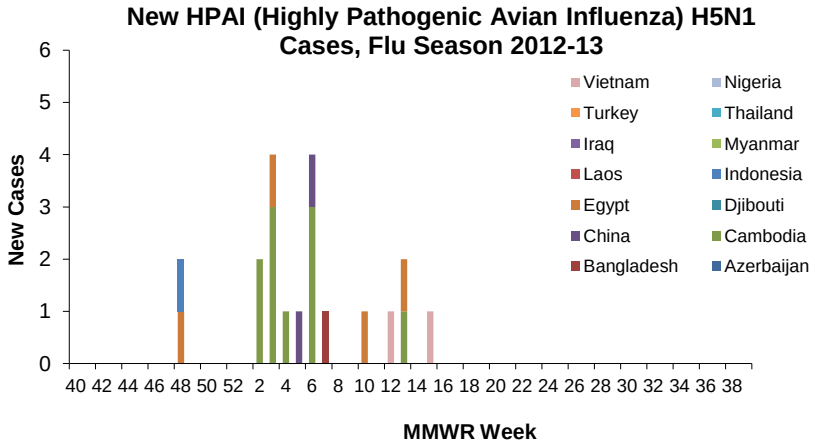
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths have been reported in Hawaii during the 2012–2013 season.
- Six influenza-associated pediatric deaths were reported to CDC during week 17. One death was associated with an influenza A (H3) virus and occurred during week 9 (week ending March 2, 2013) and five deaths were associated with influenza B viruses and occurred during weeks 7, 15, 16, and 17 (weeks ending February 16, April 13, April 20, and April 27, 2013). A total of 137 influenza-associated pediatric deaths have been reported during the 2012–2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 17.*
- *A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on April 26, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	31	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	172	62
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	628	374

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

April 28 – May 4, 2013: Week 18

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of May 8, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 131, including 32 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 18 (2.5%) were lower than the level in week 17 but higher than the national ILI level. They were comparable to what has been observed on average in the previous 5 years during the same week.
- 4,139 (16.2%) of all laboratory specimens have tested positive for influenza.
- There was one ILI cluster reported to HDOH during week 18, which occurred in a school and was laboratory confirmed.
- One influenza-associated pediatric death was reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 18 which occurred in the preceding weeks.

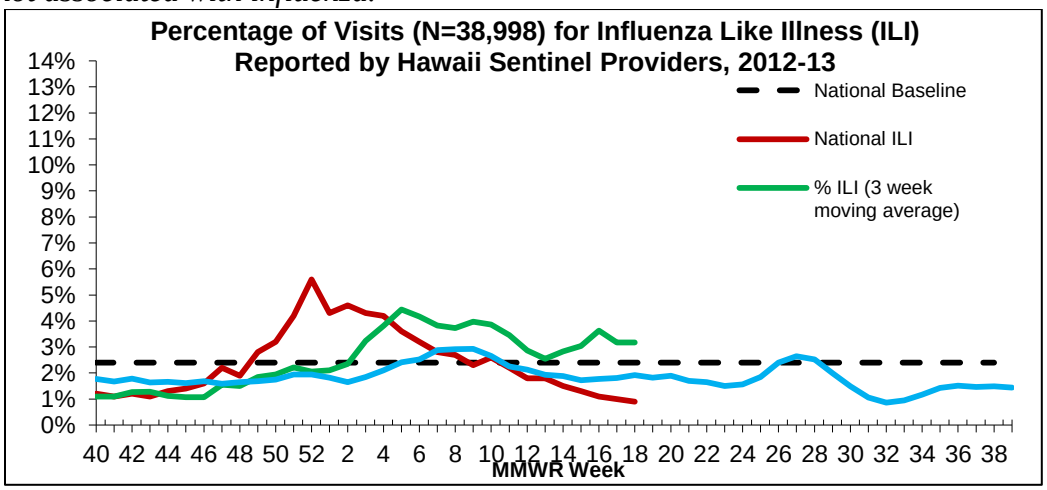
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) but higher than the national ILI (0.9%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was one ILI cluster reported to HDOH during week 18, which occurred in a school and was laboratory confirmed. For the 2012–13 influenza season there have been 19 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and eight were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

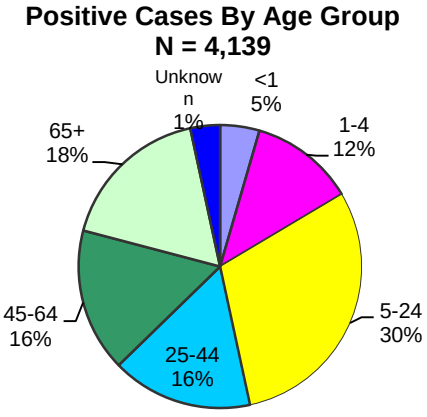
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

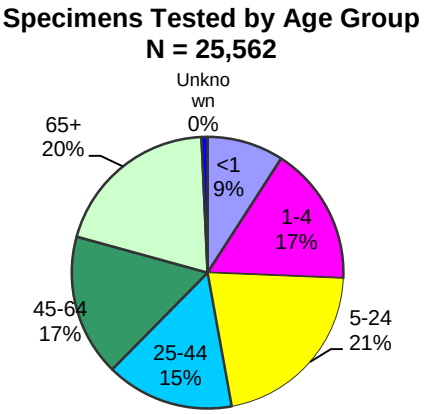
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

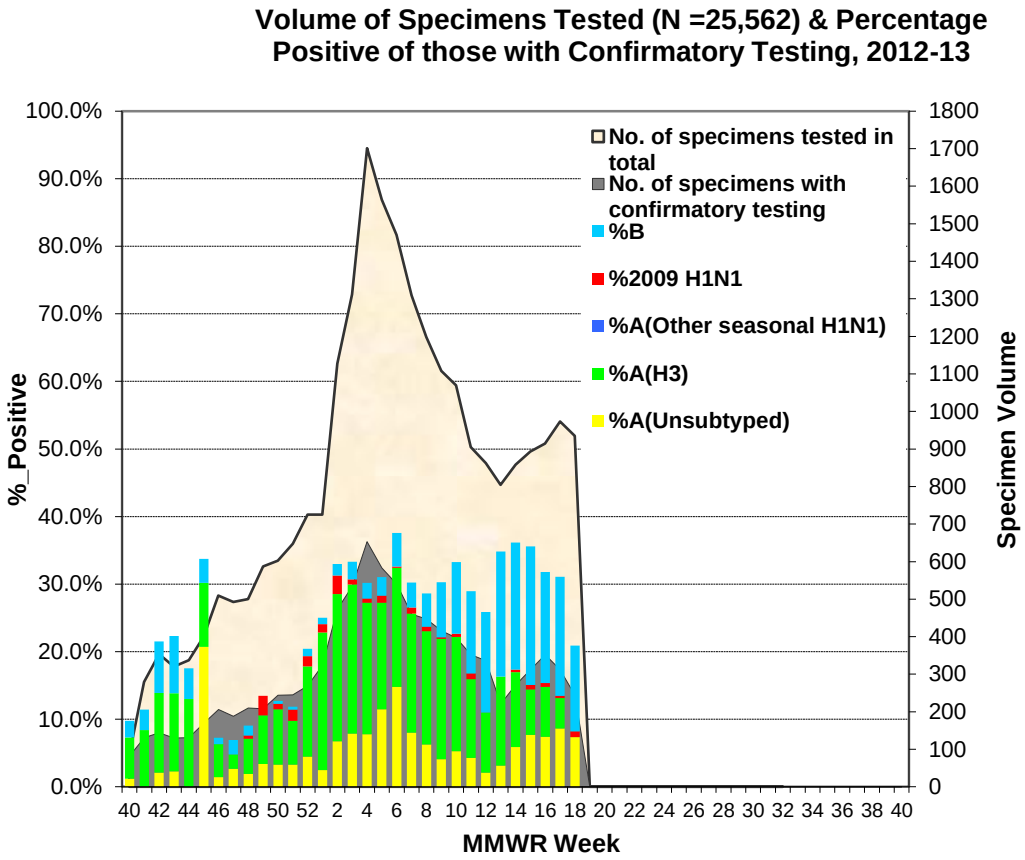
- *A total of 25,562 specimens have been tested statewide for influenza viruses*
  - *15,978 (62.5%) were screened only by rapid antigen tests with no confirmatory testing*
  - *9,584 (37.5%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,784 (10.9%) cases of influenza A and 1,355 (5.3%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *70 (2.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,282 (46.0%) were influenza A (H3),*
    - *and the remaining (n = 1,432, 51.4%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.2% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

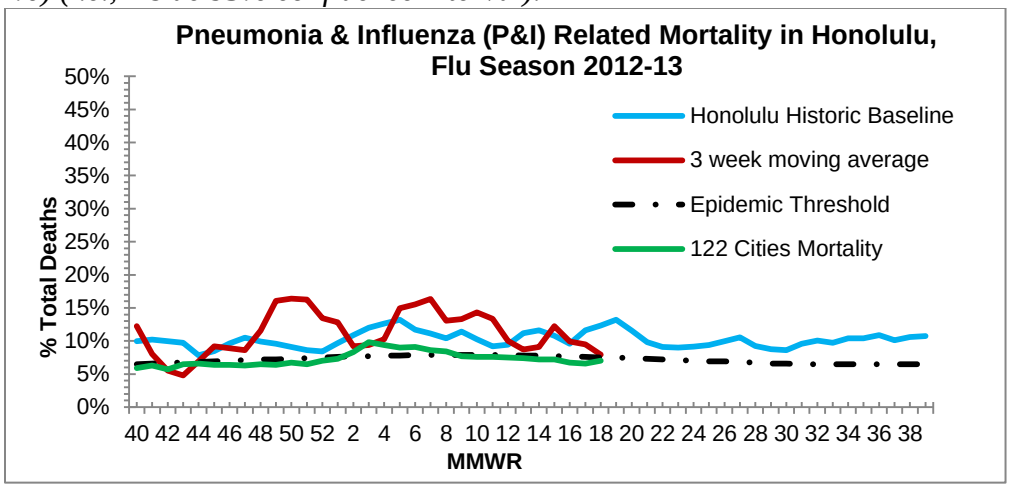
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X		X																						
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X																							
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X																									
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																						
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X		X	X	X																						
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																						
Influenza A (Other seasonal H1N1)																																																					
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	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 Honolulu specific data 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:

- *9.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (7.0%) and epidemic threshold (7.2%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

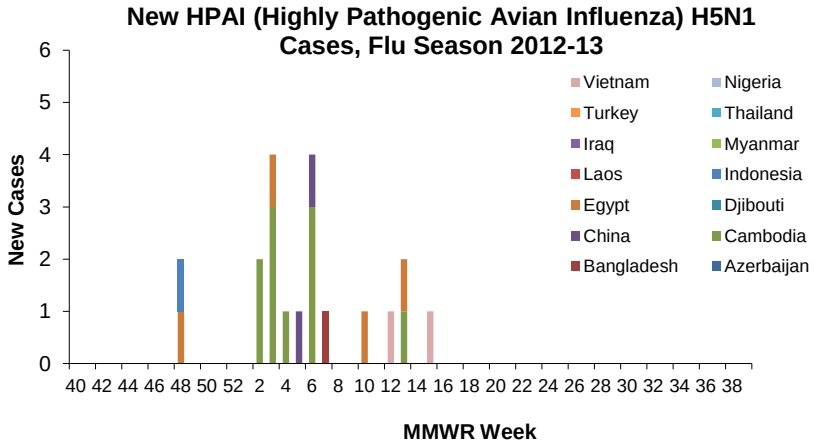
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths have been reported in Hawaii during the 2012–2013 season.
- One influenza-associated pediatric death was reported to CDC during week 18. This death was associated with an influenza A virus for which the subtype was not determined and occurred during week 6 (week ending February 9, 2013). A total of 138 influenza-associated pediatric deaths have been reported during the 2012–2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 18.*
- *A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on April 26, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	31	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	172	62
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	628	374

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

May 5 – May 11, 2013: Week 19

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of May 17, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 131, including 36 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 19 (3.7%) were higher than the level in week 18 and the national ILI level. They were comparable to what has been observed on average in the previous 5 years during the same week.
- 4,362 (16.4%) of all laboratory specimens have tested positive for influenza.
- There was one ILI cluster reported to HDOH during week 19, which occurred in a school and was not laboratory confirmed.
- One influenza-associated pediatric death was reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 19 which occurred in the preceding weeks.

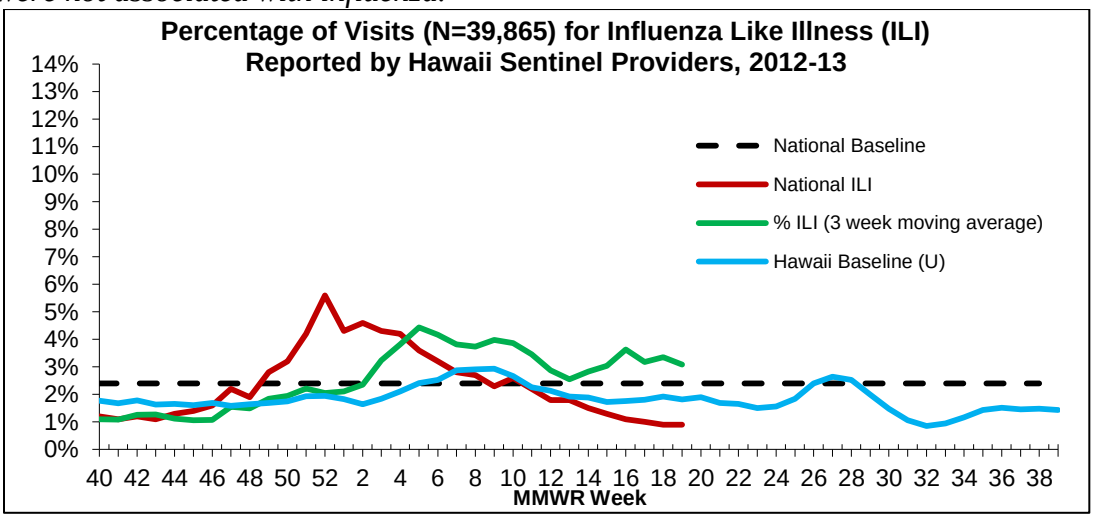
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.7% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and the national ILI (0.9%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was one ILI cluster reported to HDOH during week 19, which occurred in a school and was not laboratory confirmed. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

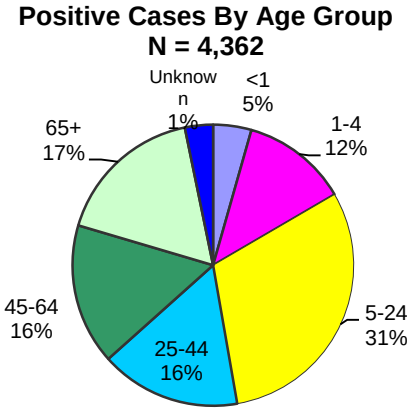
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

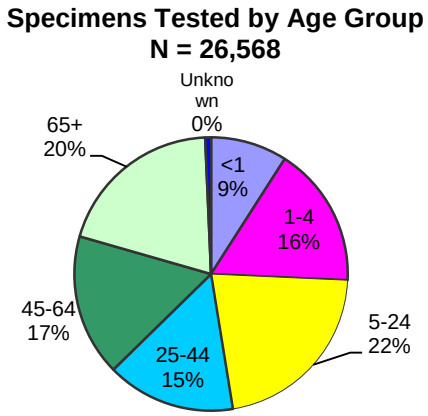
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

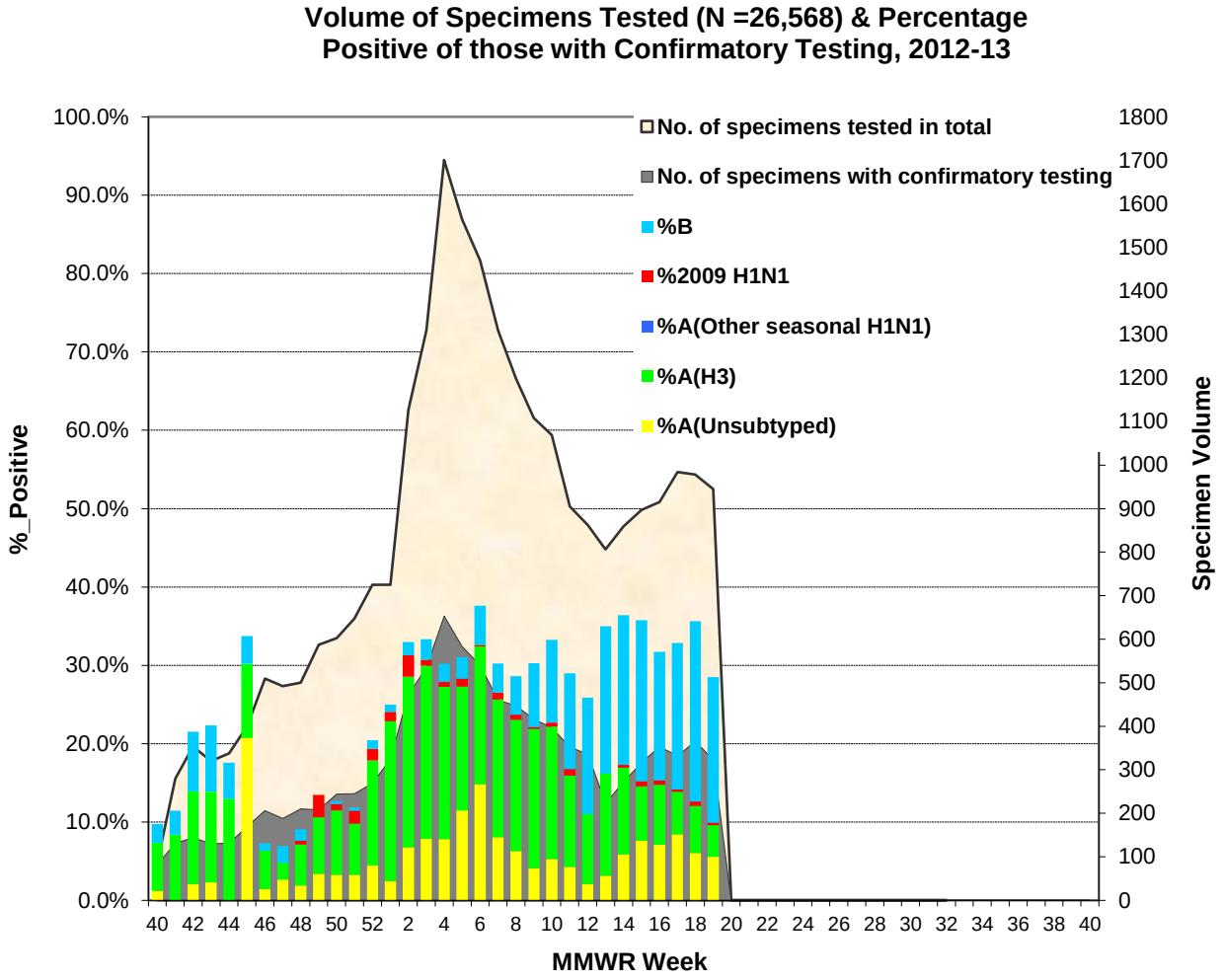
- *A total of 26,568 specimens have been tested statewide for influenza viruses*
  - *16,512 (62.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *10,056 (37.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,849 (10.7%) cases of influenza A and 1,513 (5.7%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *71 (2.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,323 (46.4%) were influenza A (H3),*
    - *and the remaining (n = 1,455, 51.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.4% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

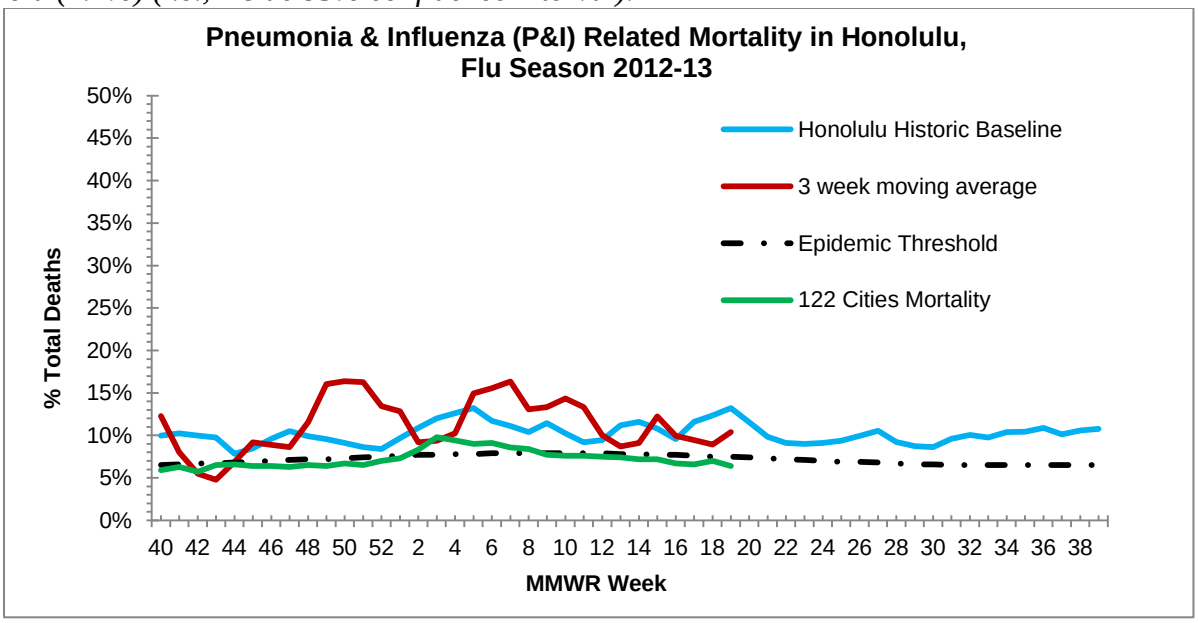
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X		X	X																					
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X																							
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X																									
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X																					
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																					
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X		X	X	X	X																					
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																					
Influenza A (Other seasonal H1N1)																																																					
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	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 Honolulu specific data 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:

- *10.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (6.4%) and epidemic threshold (7.1%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

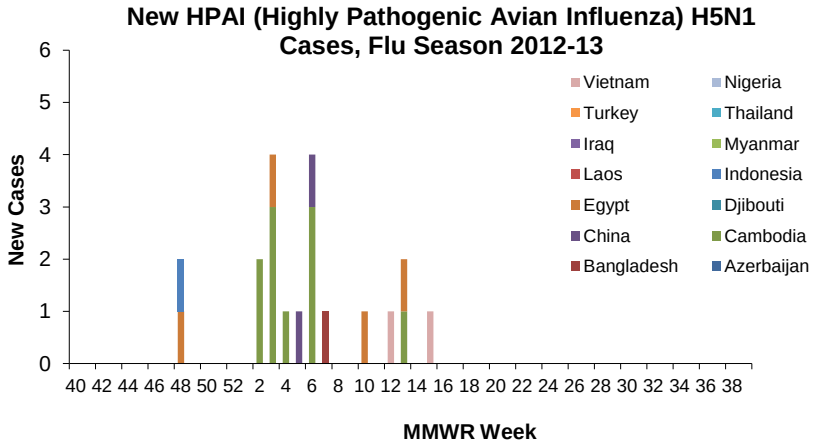
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths have been reported in Hawaii during the 2012–2013 season.
- One influenza-associated pediatric death was reported to CDC during week 19. This death was associated with an influenza A virus for which the subtype was not determined and occurred during week 51 (week ending December 22, 2012). A total of 139 influenza-associated pediatric deaths have been reported during the 2012–2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 19.*
- *A total of 2 H3N2v infections have been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on April 26, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	31	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	172	62
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	628	374

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

May 12 – May 18, 2013: Week 20

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of May 29, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 132, including 37 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 20 (3.9%) were higher than the level in week 19 and the national ILI level. They were comparable to what has been observed on average in the previous 5 years during the same week.
- 4,496 (16.4%) of all laboratory specimens have tested positive for influenza.
- There was no ILI cluster reported to HDOH during week 20.
- Seven influenza-associated pediatric deaths, which occurred in the preceding weeks, were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 20.

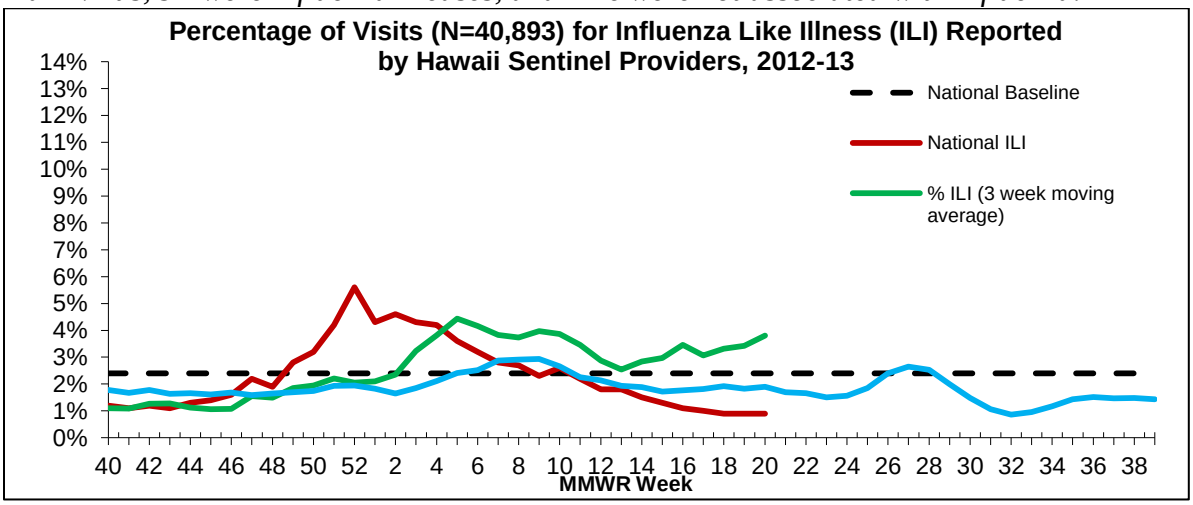
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.9% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and the national ILI (0.9%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 20. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

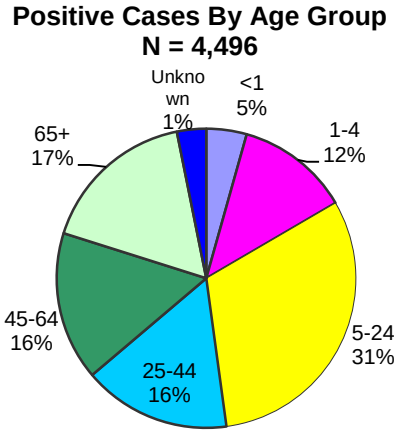
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

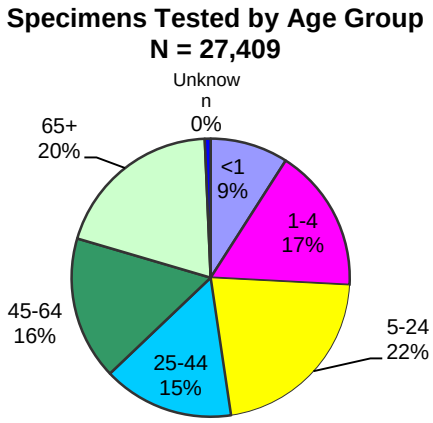
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

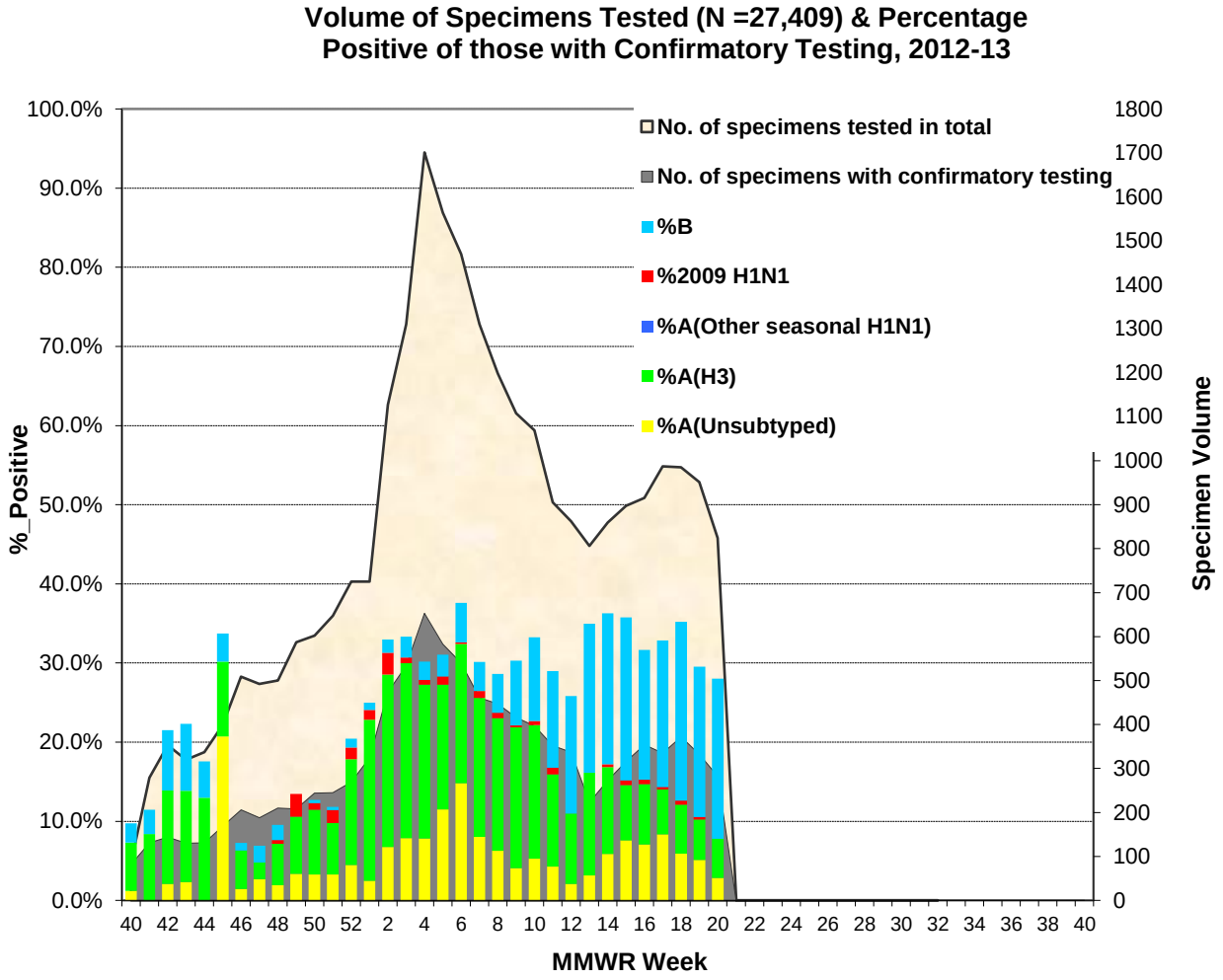
- *A total of 27,409 specimens has been tested statewide for influenza viruses*
  - *17,048 (62.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *10,361 (37.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,878 (10.5%) cases of influenza A and 1,618 (5.9%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *71 (2.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,343 (46.4%) were influenza A (H3),*
    - *and the remaining (n = 1,464, 50.9%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.4% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

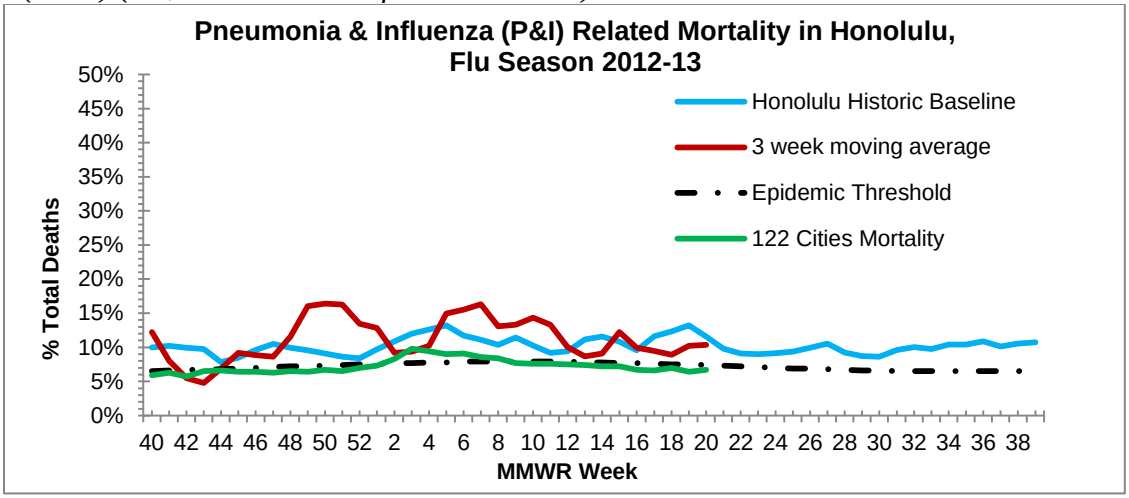
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X		X	X																					
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X																							
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X																				
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X																				
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																				
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X		X	X	X	X																					
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																				
Influenza A (Other seasonal H1N1)																																																					
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																				
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																				

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 Honolulu specific data 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:

- *9.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (6.7%) and epidemic threshold (7.0%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

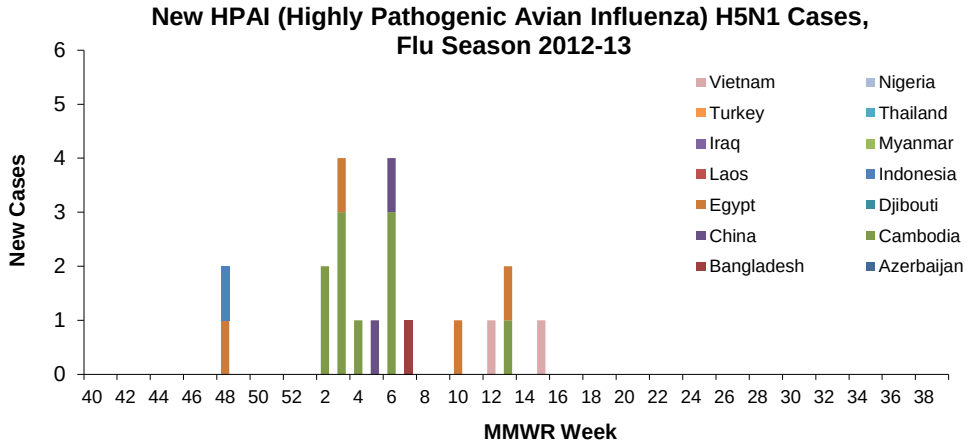
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- Seven influenza-associated pediatric deaths were reported to CDC during week 20. One death was associated with an influenza A (H3) virus and occurred during week 1 (week ending January 5, 2013), one death was associated with an influenza A virus for which the subtype was not determined and occurred during week 8 (week ending February 23, 2013), and one death was associated with an influenza virus for which the type was not determined and occurred during week 13 (week ending March 30, 2013). Four deaths were associated with influenza B viruses and occurred during weeks 9, 12, 14, and 16 (weeks ending March 2, March 23, April 6, and April 20, 2013). A total of 146 influenza-associated pediatric deaths has been reported during the 2012–2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 20.*
- *A total of 2 H3N2v infections has been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on April 26, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	31	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	172	62
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	628	374

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

May 19 – May 25, 2013: Week 21

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of May 29, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 132, including 37 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 21 (1.3%) were lower than the level in week 20. They were comparable to the national ILI level and what has been observed on average in the previous 5 years during the same week.
- 4,602 (16.3%) of all laboratory specimens have tested positive for influenza.
- There was no ILI cluster reported to HDOH during week 21.
- Three influenza-associated pediatric deaths were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 21 with two cases having occurred in the preceding weeks.

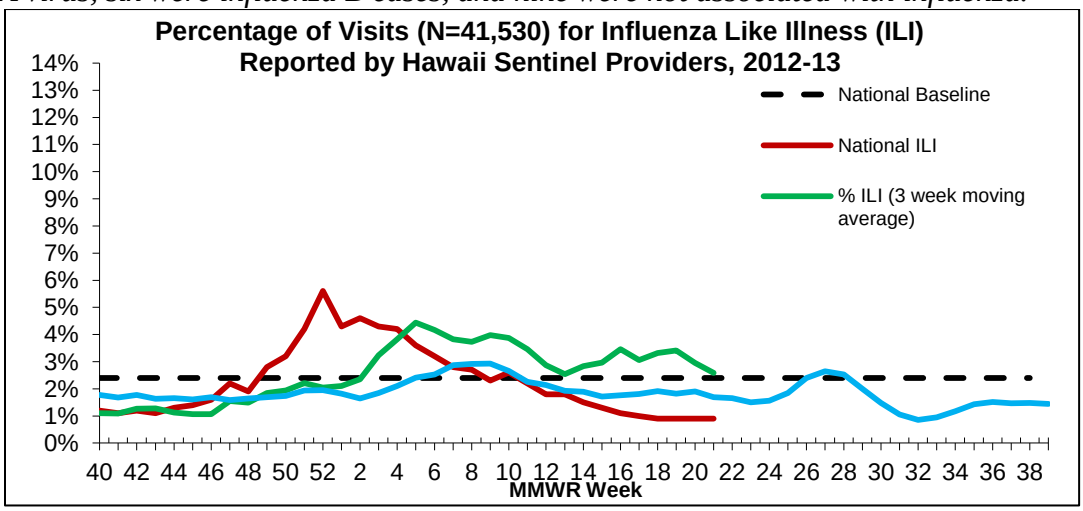
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *1.3% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and comparable to the national ILI (0.9%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 21. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

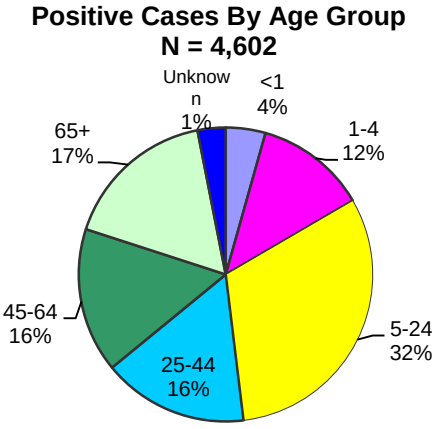
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

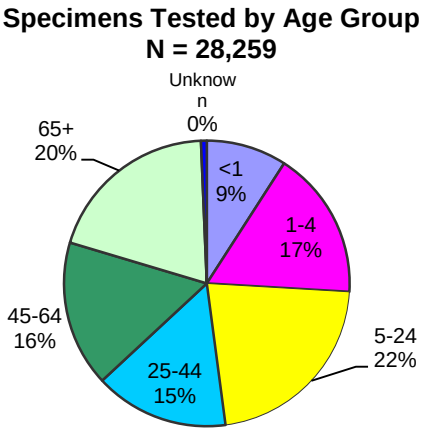
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

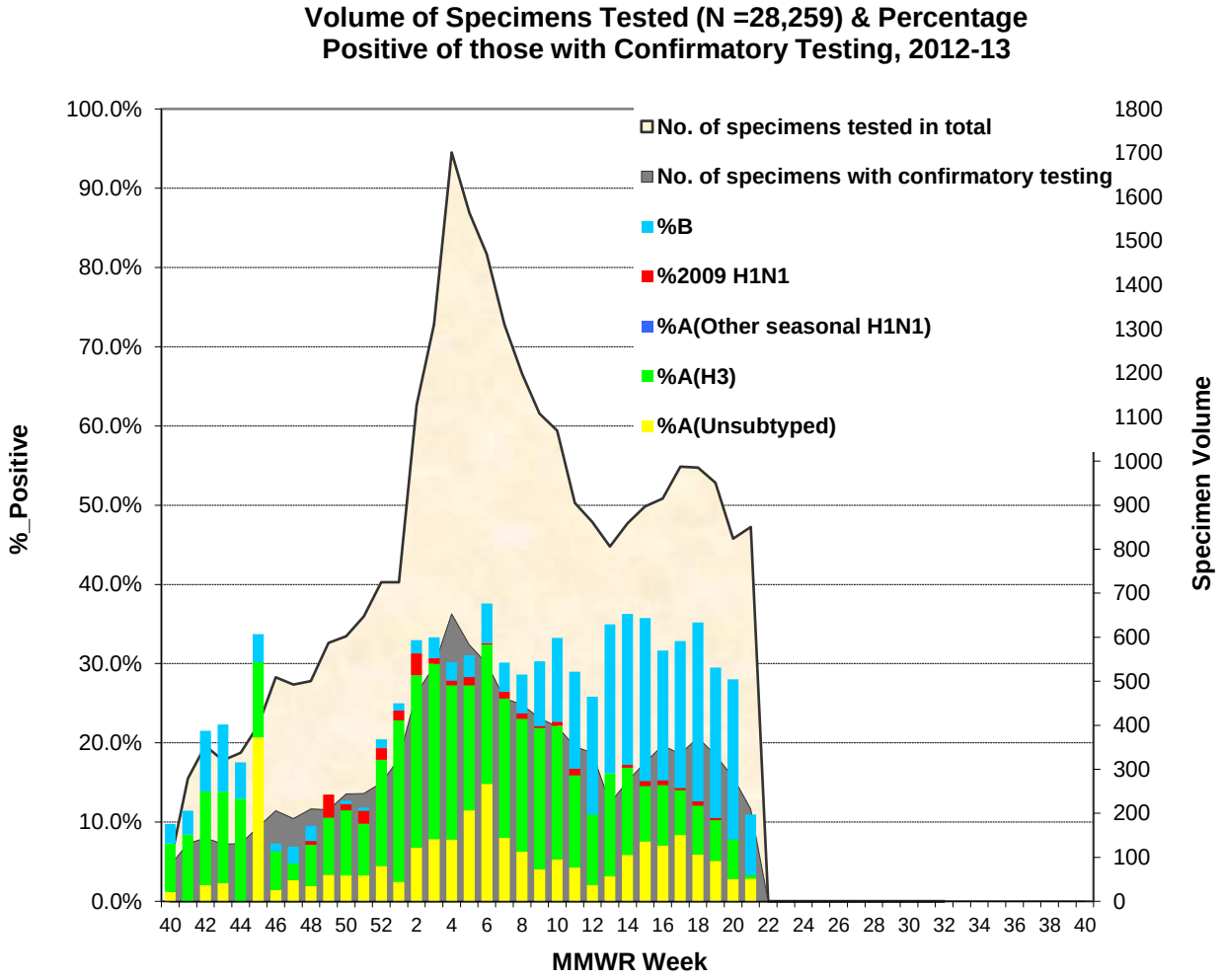
- *A total of 28,259 specimens has been tested statewide for influenza viruses*
  - *17,688 (62.6%) were screened only by rapid antigen tests with no confirmatory testing*
  - *10,571 (37.4%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,897 (10.3%) cases of influenza A and 1,705 (6.0%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *71 (2.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,344 (46.4%) were influenza A (H3),*
    - *and the remaining (n = 1,482, 51.2%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

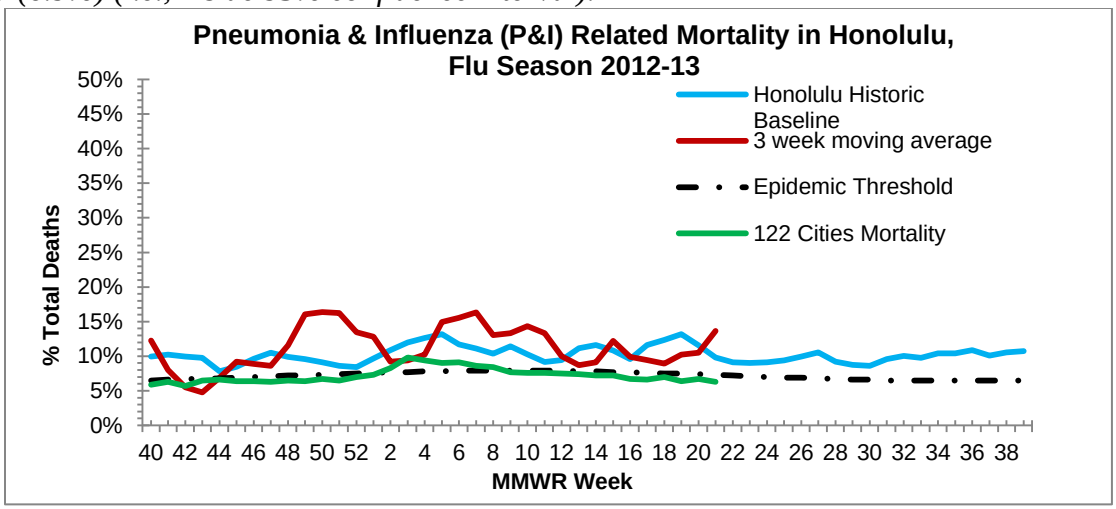
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X		X	X	X																				
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X																							
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X																				
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X																			
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X		X	X	X	X																					
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
Influenza A (Other seasonal H1N1)																																																					
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																			
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																			

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 Honolulu specific data 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:

- *10.8% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (6.3%) and epidemic threshold (6.9%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

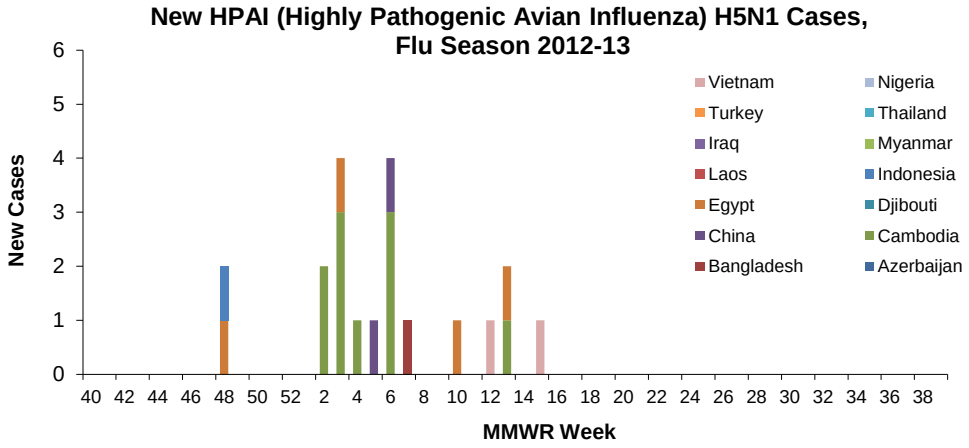
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- Three influenza-associated pediatric deaths were reported to CDC during week 21. One death was associated with an influenza A (H3) virus and occurred during week 2 (week ending January 12, 2013), one death was associated with a 2009 H1N1 virus and occurred during week 21 (week ending May 25, 2013), and one death was associated with an influenza B virus and occurred during week 1 (week ending January 5, 2013). A total of 149 influenza-associated pediatric deaths has been reported during the 2012–2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 21.*
- *A total of 2 H3N2v infections has been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on April 26, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	31	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	172	62
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	628	374

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

May 26 – June 1, 2013: Week 22

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of June 7, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 132, including 37 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 22 (3.4%) were higher than the level in week 21. They were comparable to the national baseline ILI level and what has been observed on average in the previous 5 years during the same week.
- 4,726 (16.3%) of all laboratory specimens have tested positive for influenza.
- There was no ILI cluster reported to HDOH during week 22.
- One influenza-associated pediatric death was reported to CDC during week 22. This death was associated with an influenza B virus and occurred during week 8 (week ending February 23, 2013).

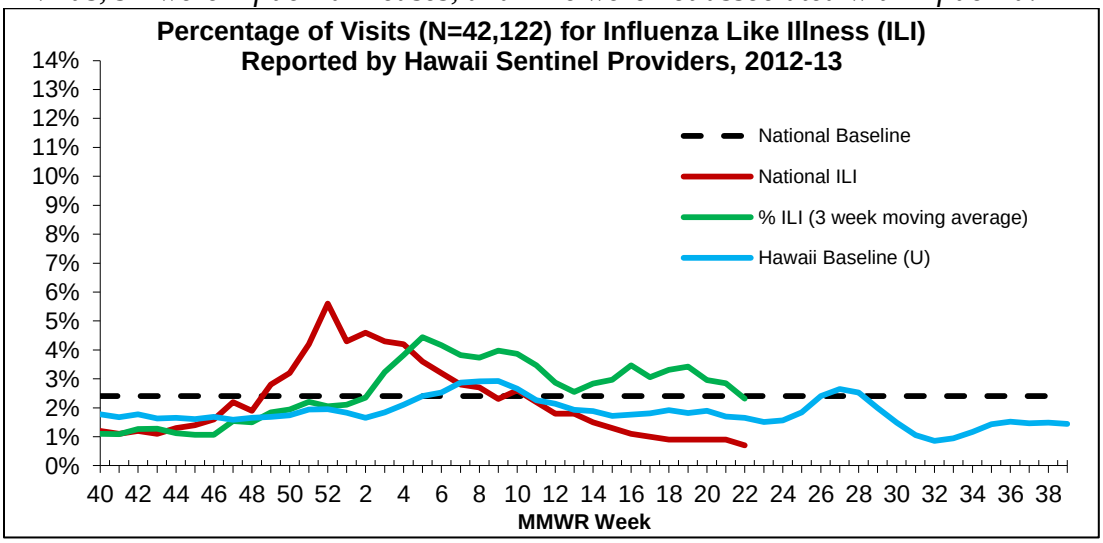
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *3.4% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) but higher than the national ILI (0.7%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 22. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

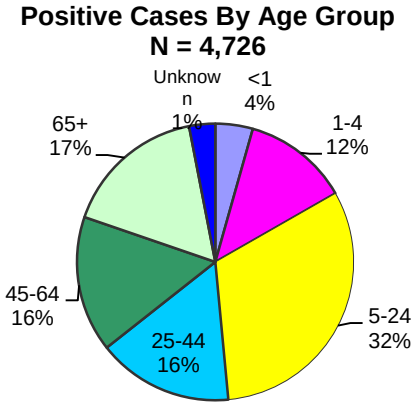
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

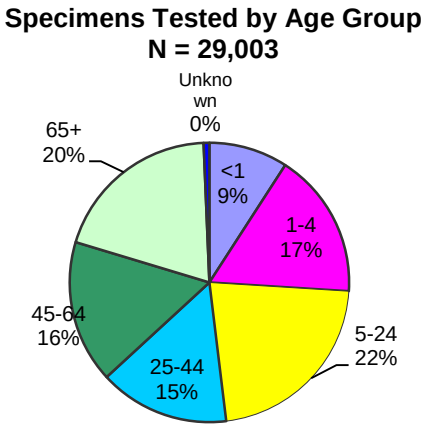
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

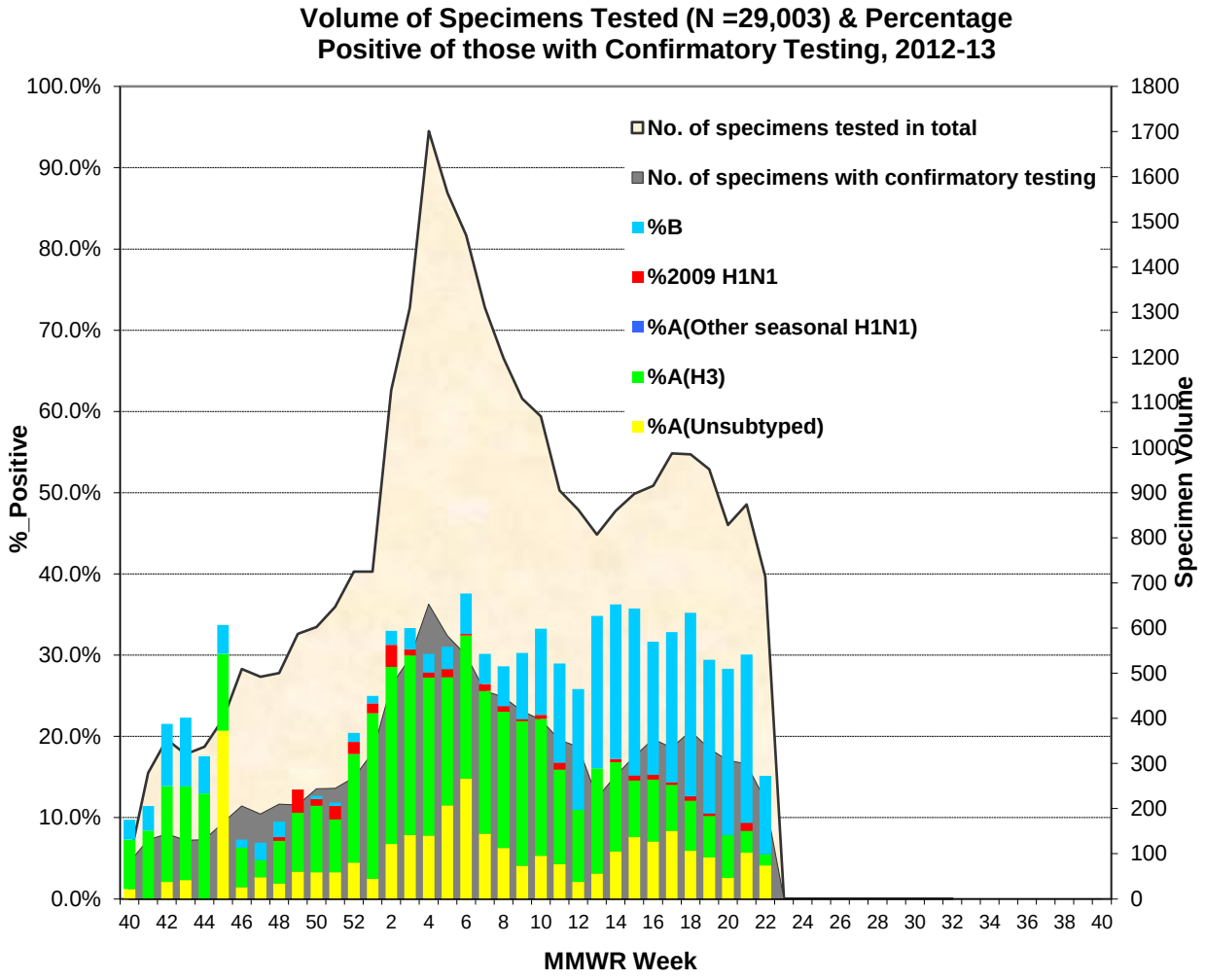
- *A total of 29,003 specimens has been tested statewide for influenza viruses*
  - *18,098 (62.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *10,905 (37.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,920 (10.1%) cases of influenza A and 1,806 (6.2%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *74 (2.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,356 (46.5%) were influenza A (H3),*
    - *and the remaining (n = 1,490, 51.0%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

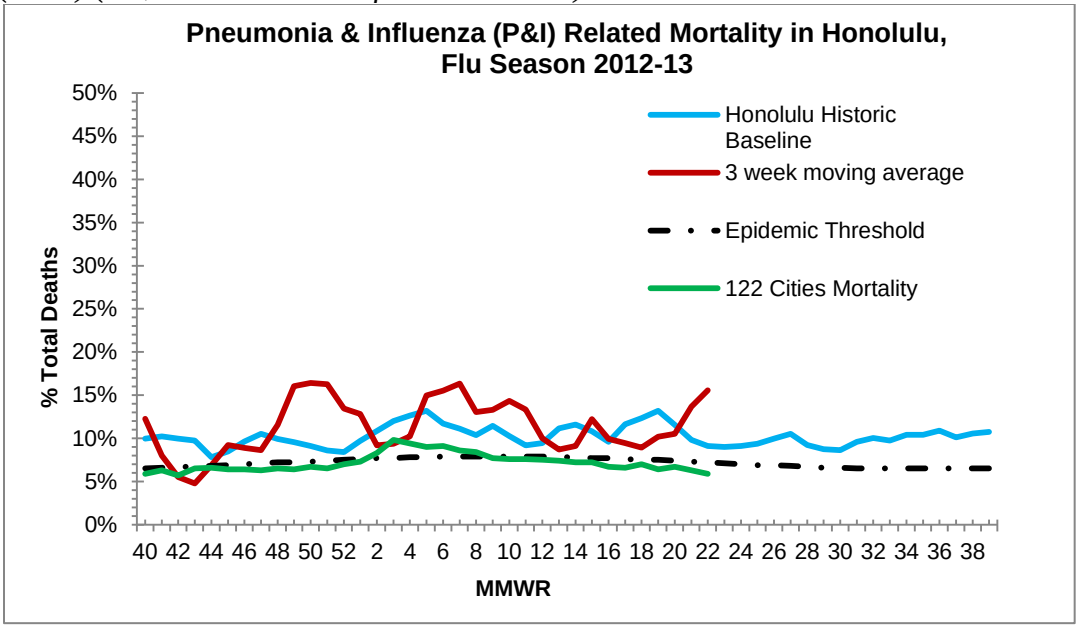
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X		X	X		X	X																		
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																						
Enterovirus							X			X	X	X			X		X				X		X							X																							
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X																			
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X																		
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																			
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X		X	X	X	X			X																		
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																		
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																		
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	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 Honolulu specific data 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:

- *20.4% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was higher than the historical baseline in Hawaii (i.e., outside 95% confidence interval)*
- *The Honolulu P&I was higher than both the national 122 city P&I mortality (5.9%) and epidemic threshold (6.8%) (i.e., outside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

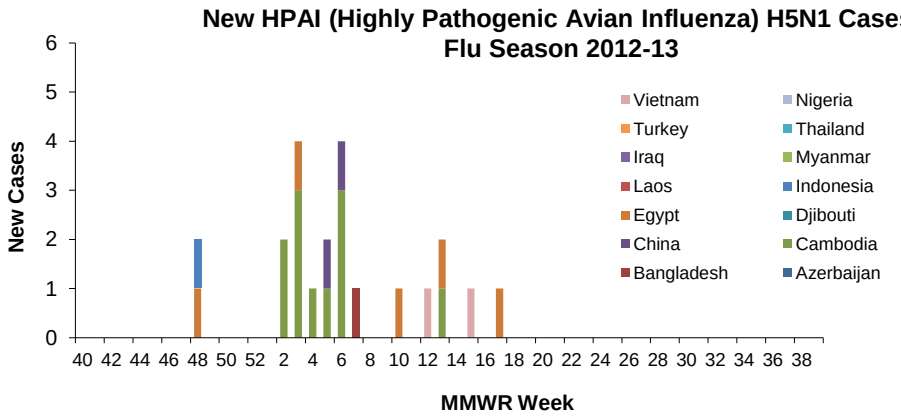
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- One influenza-associated pediatric death was reported to CDC during week 22. This death was associated with an influenza B virus and occurred during week 8 (week ending February 23, 2013). A total of 150 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 22.*
- *A total of 2 H3N2v infections has been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on June 4, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	32	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	630	375

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

June 2 – June 8, 2013: Week 23

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- As of June 7, 2013, according to the World Health Organization (WHO), the total number of confirmed cases of human infection with influenza A(H7N9) virus in China was 132, including 37 deaths. The WHO continues to post updates (here) regarding this evolving situation.
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 23 (2.1%) were lower than the level in week 22. They were comparable to the national baseline ILI level and what has been observed on average in the previous 5 years during the same week.
- 4,885 (16.4%) of all laboratory specimens have tested positive for influenza.
- There was no ILI cluster reported to HDOH during week 23.
- Two influenza-associated pediatric deaths, which occurred in the preceding weeks, were reported nationwide to the Centers for Disease Control and Prevention (CDC) during week 23.

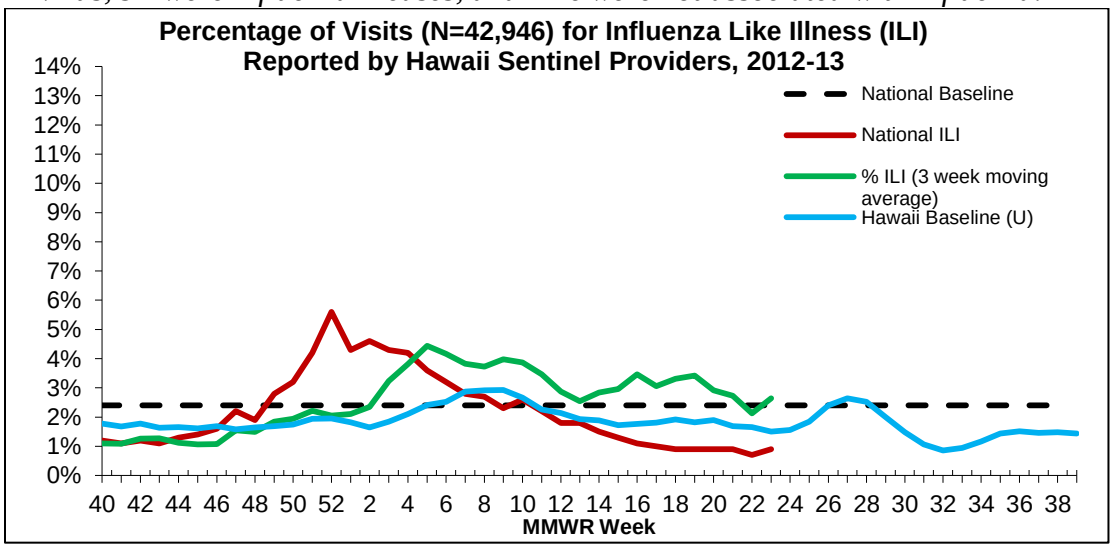
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *2.1% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) but higher than the national ILI (0.9%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 23. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

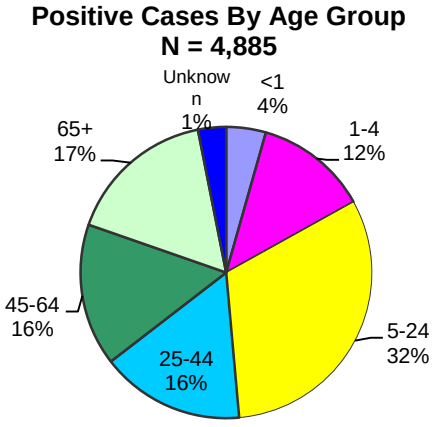
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

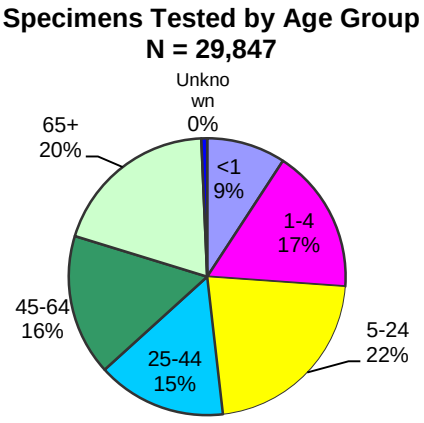
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

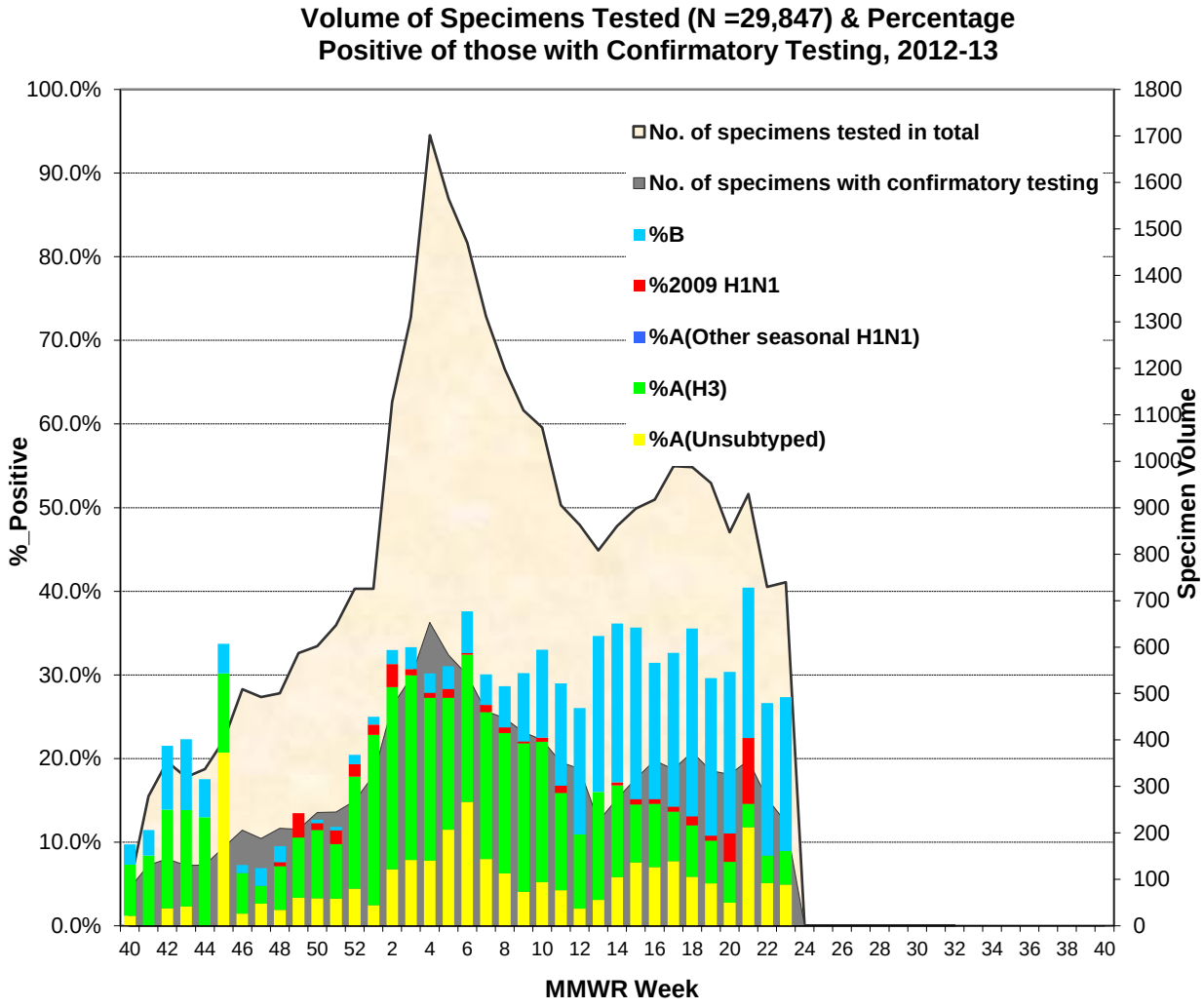
- *A total of 29,847 specimens has been tested statewide for influenza viruses*
  - *18,571 (62.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *11,276 (37.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,983 (10.0%) cases of influenza A and 1,902 (6.4%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *114 (3.4%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,374 (46.1%) were influenza A (H3),*
    - *and the remaining (n = 1,495, 50.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.4% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

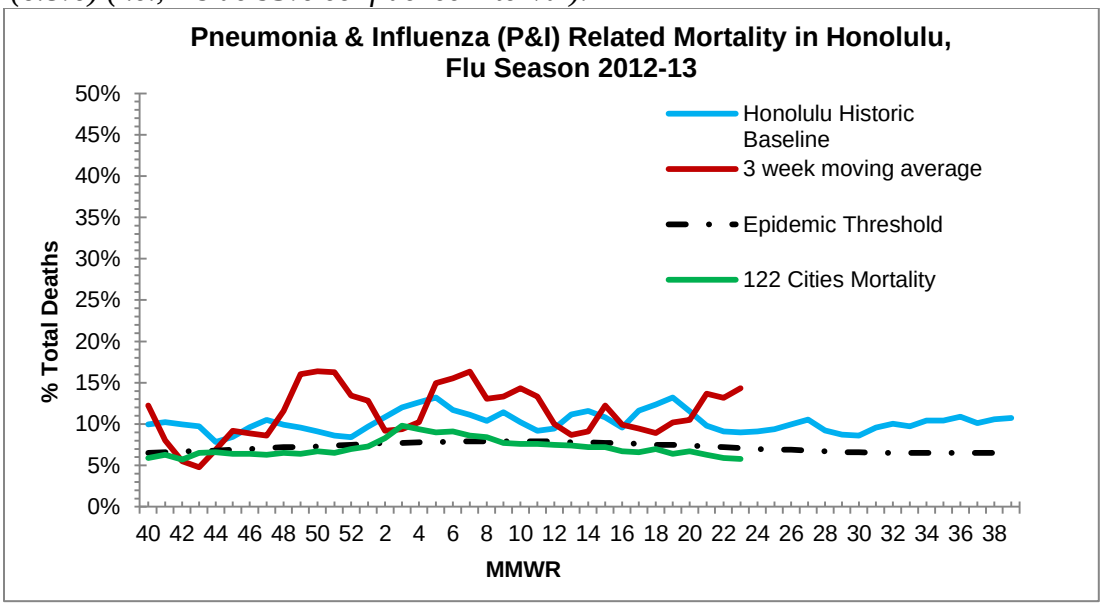
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X		X	X		X	X	X																	
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X																		
Herpes Simplex Virus, Type 1																																																				
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X																	
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X																	
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																	
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																				
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X																			
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	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	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																	

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 Honolulu specific data 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:

- *8.3% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (5.8%) and epidemic threshold (6.8%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

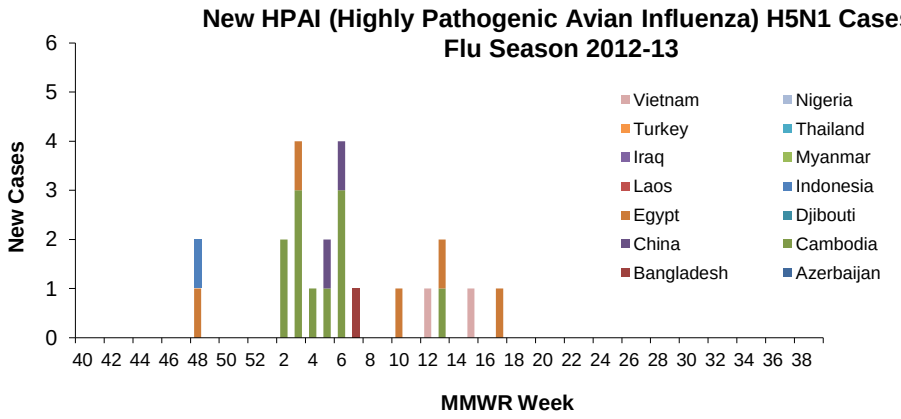
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- Two influenza-associated pediatric deaths were reported to CDC during week 23. One death was associated with an influenza A virus for which the subtype was not determined and occurred during week 20 (week ending May 18, 2013) and one was associated with an influenza B virus and occurred during week 11 (week ending March 16, 2013). A total of 152 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 23.*
- *A total of 2 H3N2v infections has been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on June 4, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	32	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	630	375

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

June 9 – June 15, 2013: Week 24

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 24 (4.0%) were higher than the level in week 23. They were also higher than the national baseline ILI level and what has been observed on average in the previous 5 years during the same week.
- 4,967 (16.3%) of all laboratory specimens have tested positive for influenza.
- There was no ILI cluster reported to HDOH during week 24.
- One influenza-associated pediatric death, which occurred in the preceding week, was reported to the Centers for Disease Control and Prevention (CDC) during week 24.

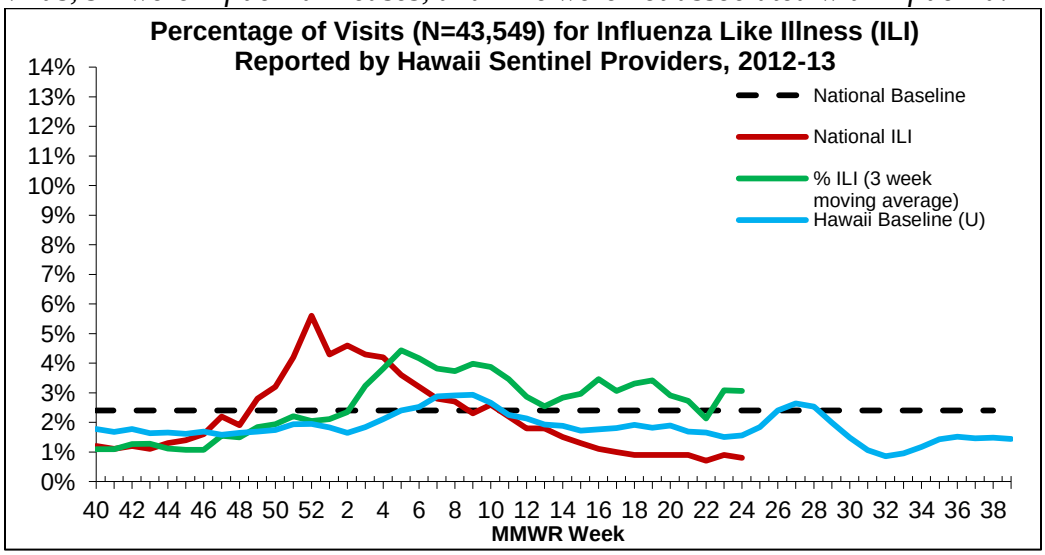
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *4.0% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were higher than the historical baseline in Hawaii[2,3] (i.e., outside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and the national ILI (0.8%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 24. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

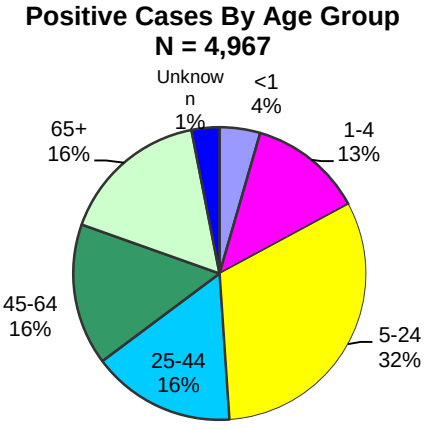
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

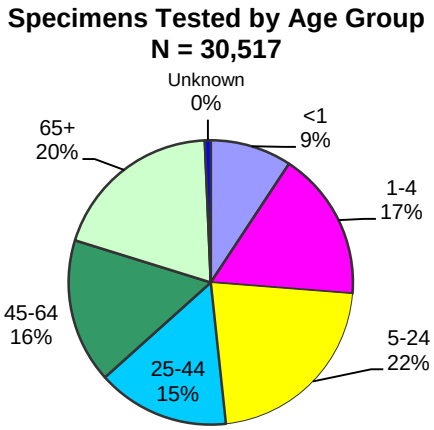
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

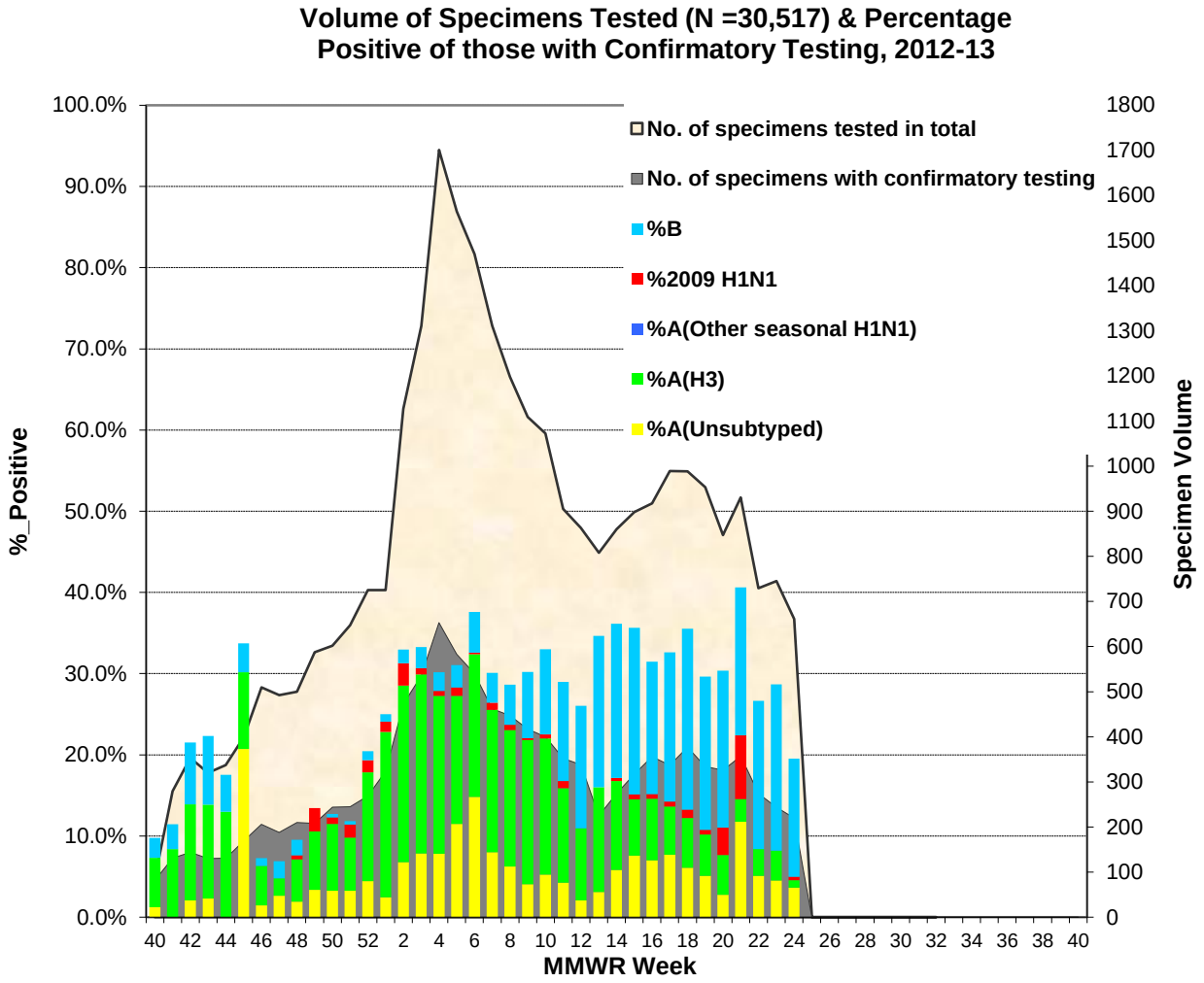
- *A total of 30,517 specimens has been tested statewide for influenza viruses*
  - *18,995 (62.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *11,522 (37.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *2,994 (9.8%) cases of influenza A and 1,973 (6.5%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *115 (3.8%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,376 (46.0%) were influenza A (H3),*
    - *and the remaining (n = 1,503, 50.2%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

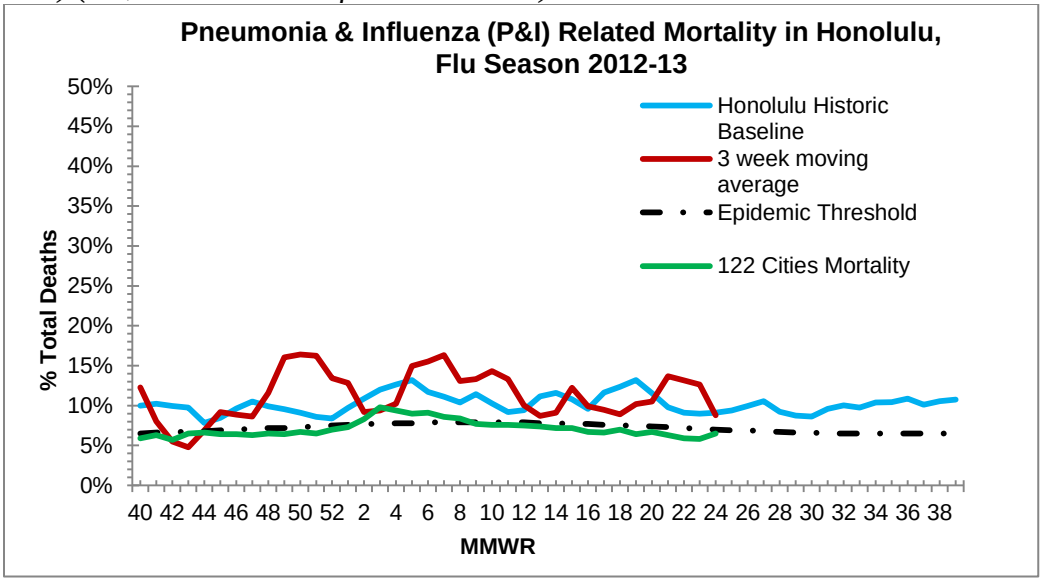
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X		X	X		X	X	X	X																
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X																		
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X																
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X																	
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X																
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	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	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																

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 Honolulu specific data 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:

- *9.2% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to both the national 122 city P&I mortality (6.5%) and epidemic threshold (6.7%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

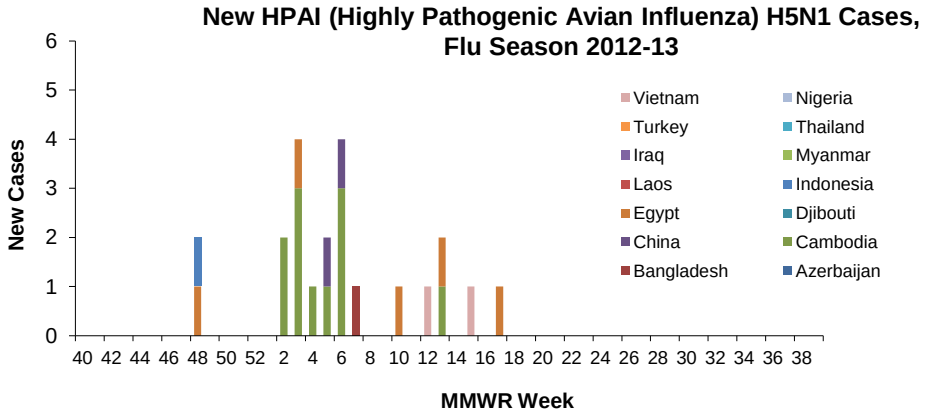
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- One influenza-associated pediatric death was reported to CDC during week 24. This death was associated with an influenza A virus for which the subtype was not determined and occurred during week 17 (week ending April 27, 2013). A total of 153 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

A. Variant Viruses: Since August 2011, 321 human infections with a variant A (H3N2v) virus have been detected throughout the United States. Human infections with the H3N2v virus were first identified in the northeastern United States in the summer of 2011 and have since spread to 13 states including Hawaii. The following states have reported cases: Hawaii (1), Illinois (4), Indiana (140), Iowa (4), Maine (2), Maryland (12), Michigan (6), Minnesota (5), Ohio (107), Pennsylvania (14), Utah (1), West Virginia (5), and Wisconsin (20). Most cases have reported contact with swine before illness onset, but some cases were likely the result of human-to-human transmission. There have been 16 hospitalizations and one death associated with the H3N2v virus. In September 2012, Minnesota reported three human cases of influenza A H1N2 variant (H1N2v) virus infection, and Missouri reported one case of influenza A H1N1 variant (H1N1v) virus. The cases all had exposure to swine before illness and have all recovered.

- *No human infections with a variant influenza virus were reported nationally during week 24.*
- *A total of 2 H3N2v infections has been reported for 2012-13 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies are currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on June 4, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	32	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	630	375

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

June 16 – June 22, 2013: Week 25

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 25 (1.7%) were lower than the level in week 24. They were comparable to the national baseline ILI level and what has been observed on average in the previous 5 years during the same week.
- 5,045 (16.2%) of all laboratory specimens have tested positive for influenza.
- Four human infections with a variant influenza virus were identified in Indiana and reported nationally during week 25.
- There was no ILI cluster reported to HDOH during week 25.
- No influenza-associated pediatric deaths were reported to CDC during week 25.

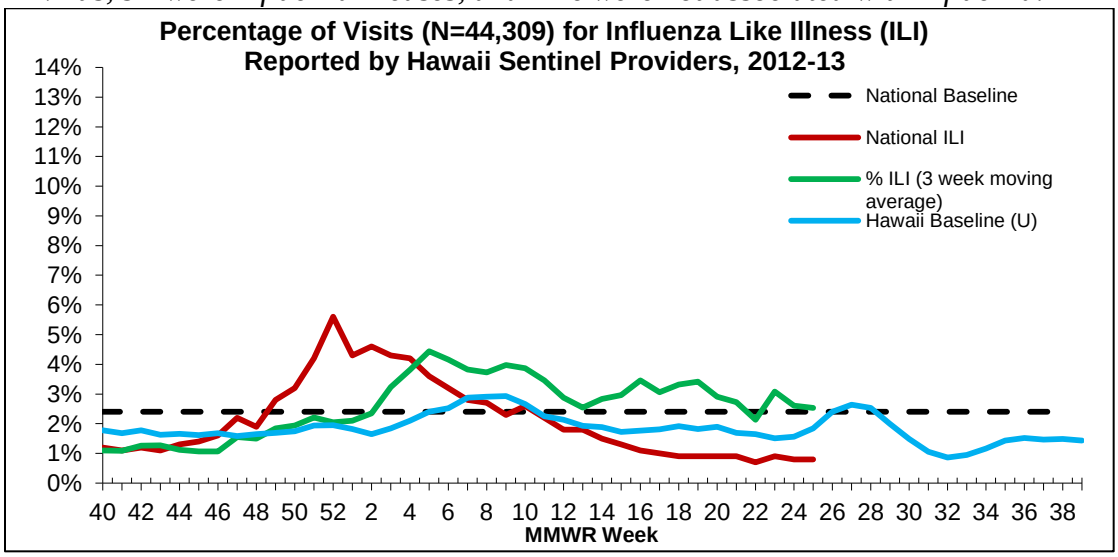
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *1.7% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) and the national ILI (0.8%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 25. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

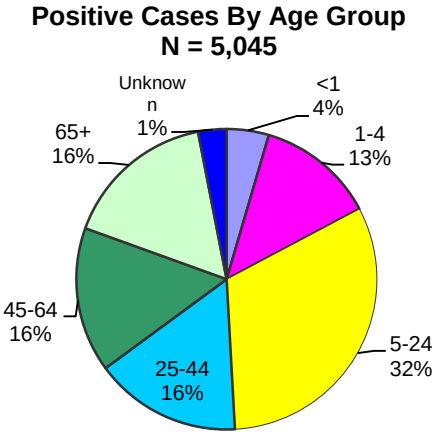
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

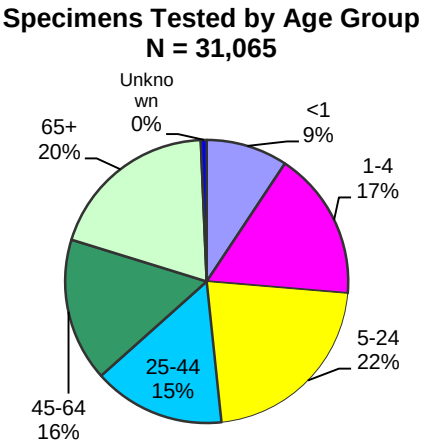
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

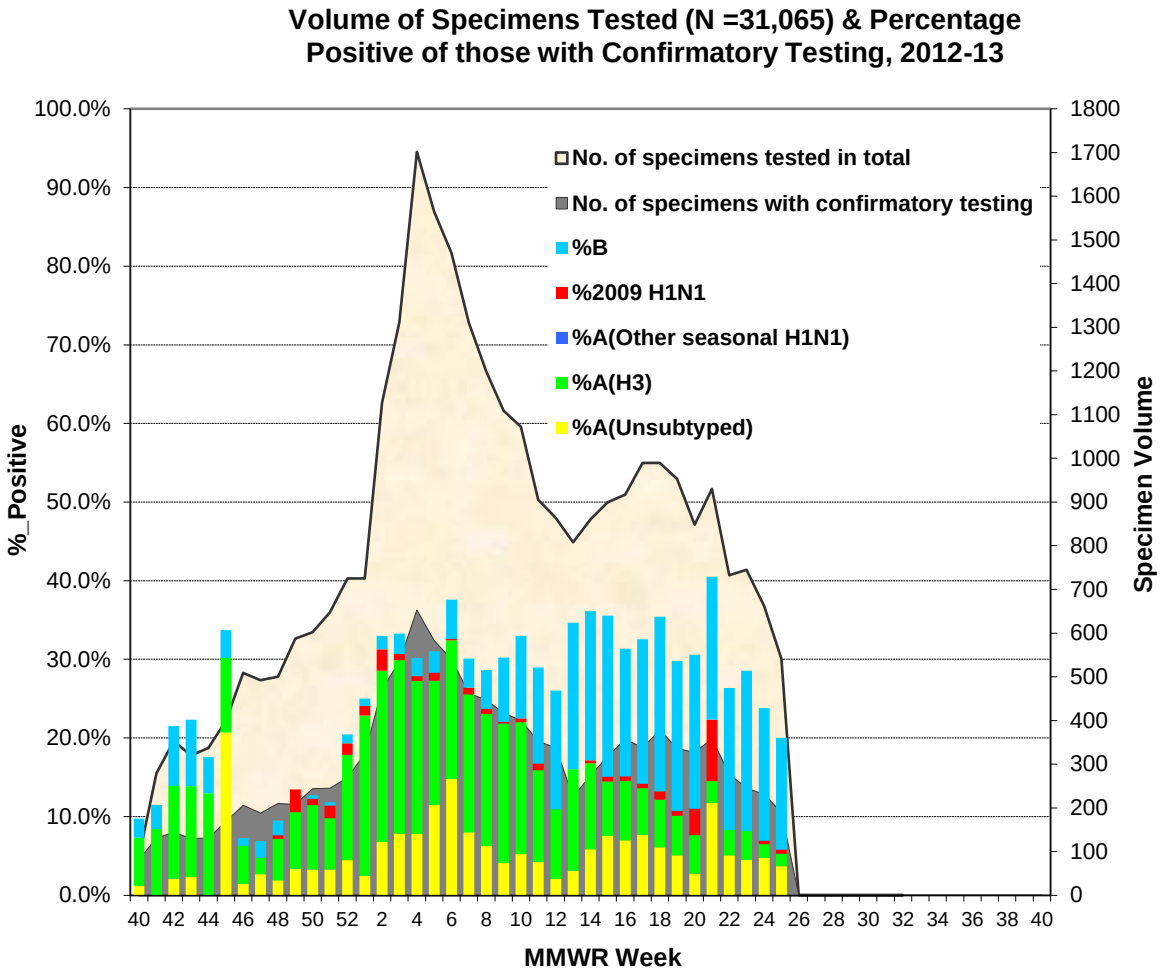
- *A total of 31,065 specimens has been tested statewide for influenza viruses*
  - *19,330 (62.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *11,735 (37.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,008 (9.7%) cases of influenza A and 2,037 (6.6%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *116 (3.9%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,381 (45.9%) were influenza A (H3),*
    - *and the remaining (n = 1,511, 50.2%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.2% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

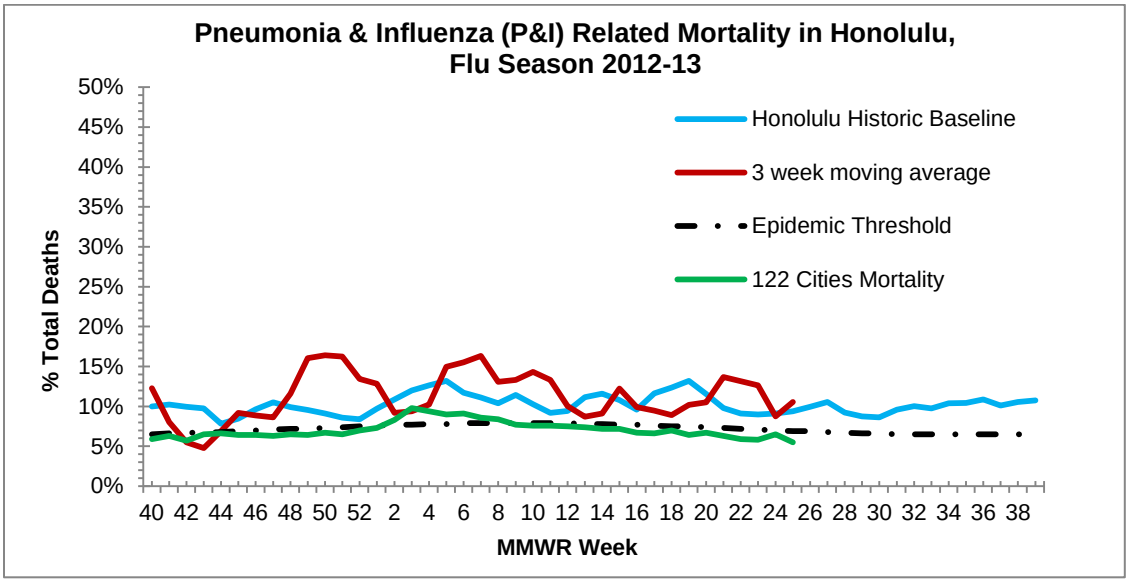
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X		X	X		X	X	X	X																
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X																		
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X	X															
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X																	
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X															
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X	X															
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X															
Influenza A (Other seasonal H1N1)																																																					
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	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 Honolulu specific data 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:

- *8.6% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was higher than the national 122 city P&I mortality (6.5%) (i.e., outside 95% confidence interval) but comparable to the epidemic threshold (6.7%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

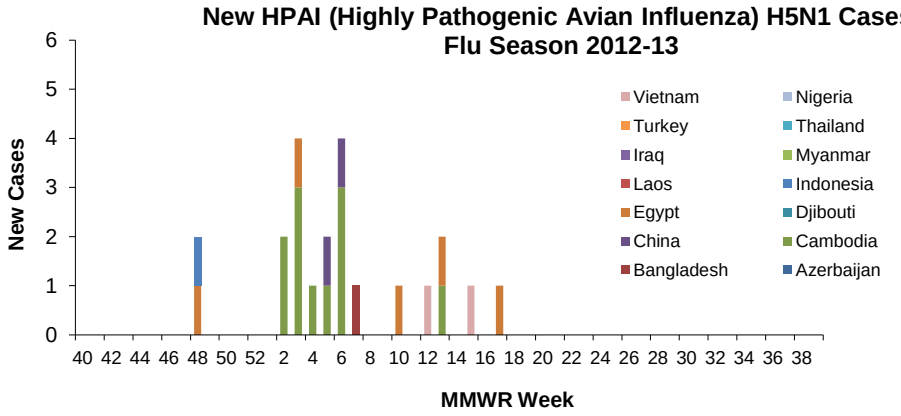
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No influenza-associated pediatric deaths were reported to CDC during week 25. A total of 153 influenza-associated pediatric deaths has been reported during the 2012–2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *Four human infections with a variant influenza virus were identified in Indiana and reported nationally during week 25.*
- *A total of 6 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been currently monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on June 4, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	32	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	630	375

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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
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7	2/19/2011	2/18/2012	2/16/2013	2/15/2014	2/21/2015
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9	3/5/2011	3/3/2012	3/2/2013	3/1/2014	3/7/2015
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13	4/2/2011	3/31/2012	3/30/2013	3/29/2014	4/4/2015
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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)[1]

June 23 – June 29, 2013: Week 26

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 26 (1.9%) were higher than the level in week 25. They were comparable to the national baseline ILI level and what has been observed on average in the previous 5 years during the same week.
- 5,107 (16.2%) of all laboratory specimens have tested positive for influenza.
- Eight human infections with a variant influenza virus were identified in Indiana and reported nationally during week 26.
- There was no ILI cluster reported to HDOH during week 26.
- One influenza-associated pediatric death, which occurred in the preceding week, was reported to the Centers for Disease Control and Prevention (CDC) during week 26.

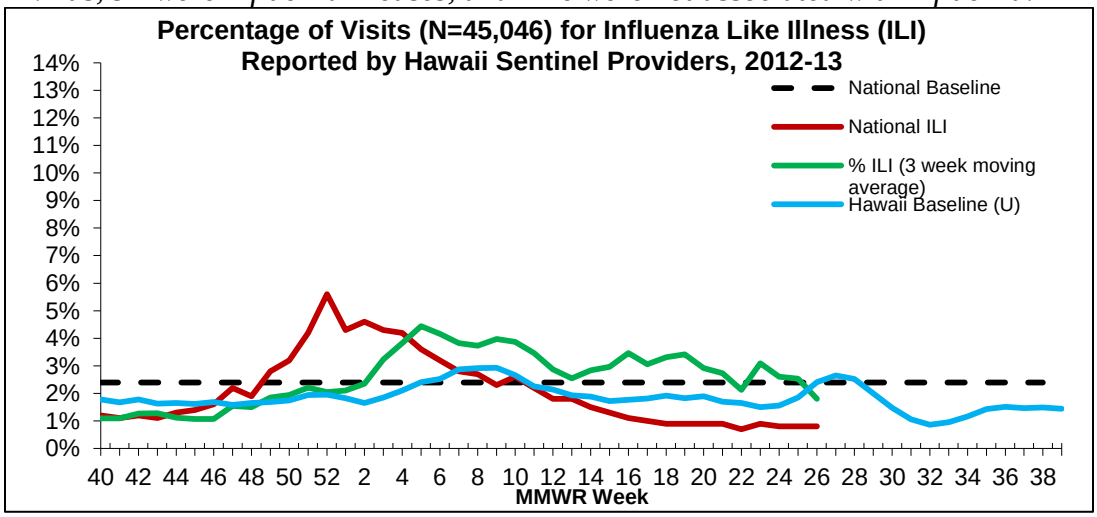
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *1.9% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) and the national ILI (0.7%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 26. For the 2012–13 influenza season there have been 20 ILI clusters reported to HDOH. Five were associated with an influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

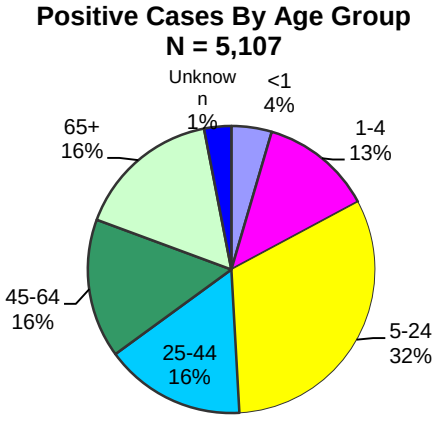
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

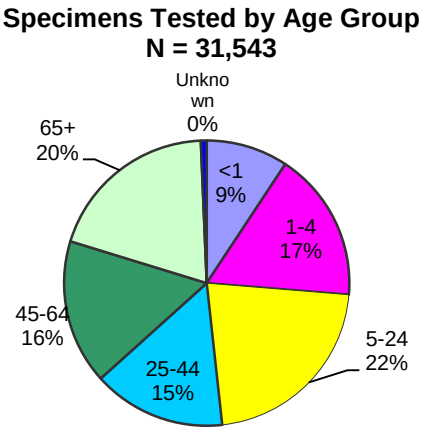
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

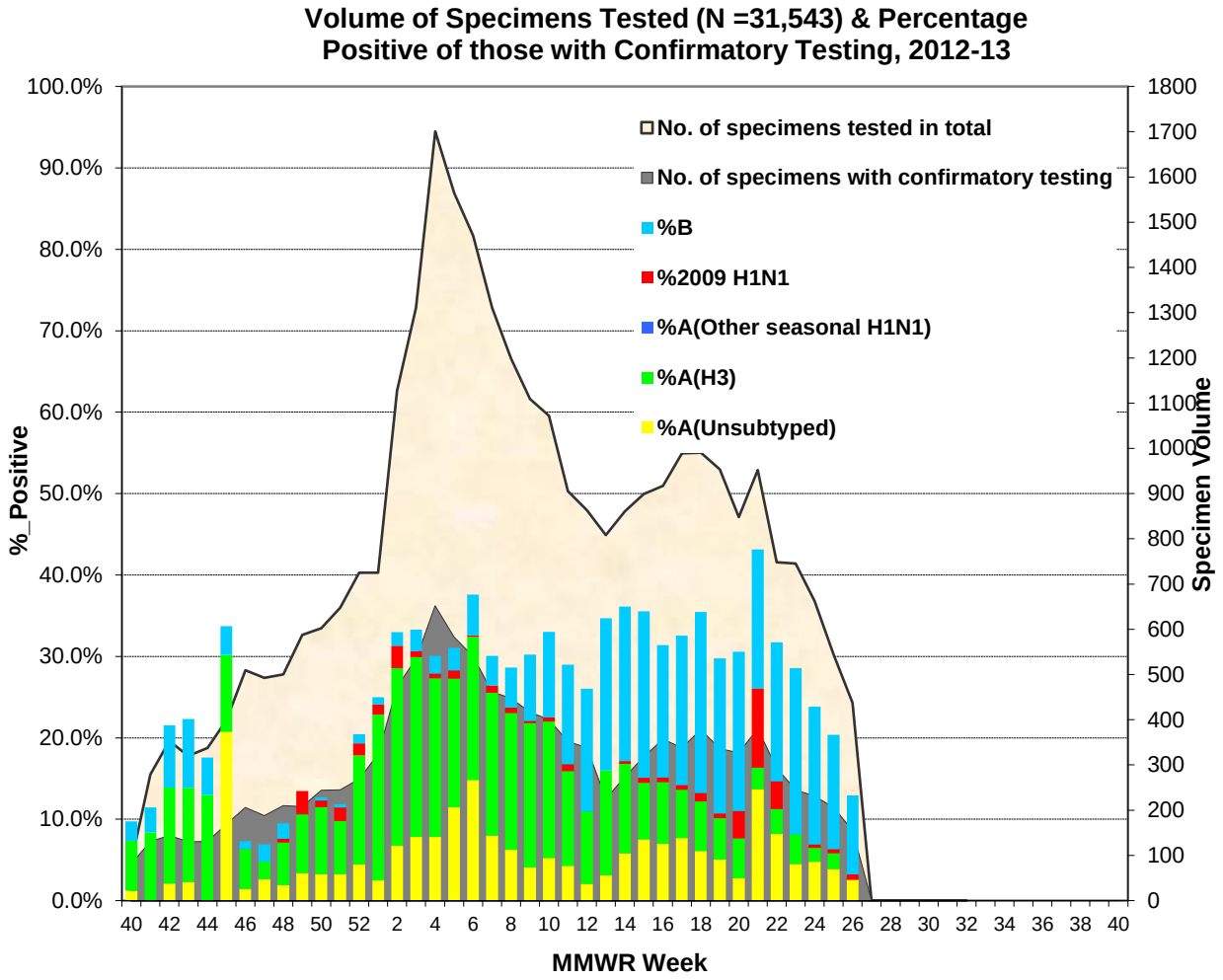
- *A total of 31,543 specimens has been tested statewide for influenza viruses*
  - *19,600 (62.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *11,943 (37.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,040 (9.6%) cases of influenza A and 2,067 (6.6%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *136 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,382 (45.5%) were influenza A (H3),*
    - *and the remaining (n = 1,522, 50.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.2% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

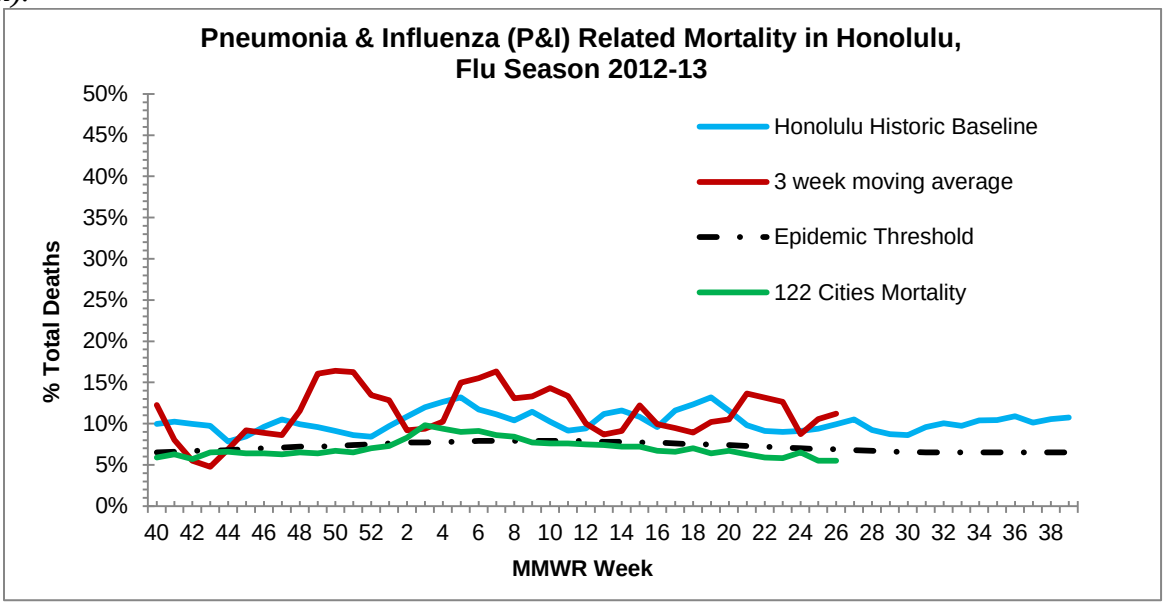
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X		X	X		X	X	X	X																
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X																		
Herpes Simplex Virus, Type 1																																																				
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X	X															
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X			X														
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X														
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																				
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X	X															
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X														
Influenza A (Other seasonal H1N1)																																																				
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	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 Honolulu specific data 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:

- *13.8% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was higher than the national 122 city P&I mortality (6.2%) (i.e., outside 95% confidence interval) but comparable to the epidemic threshold (6.5%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

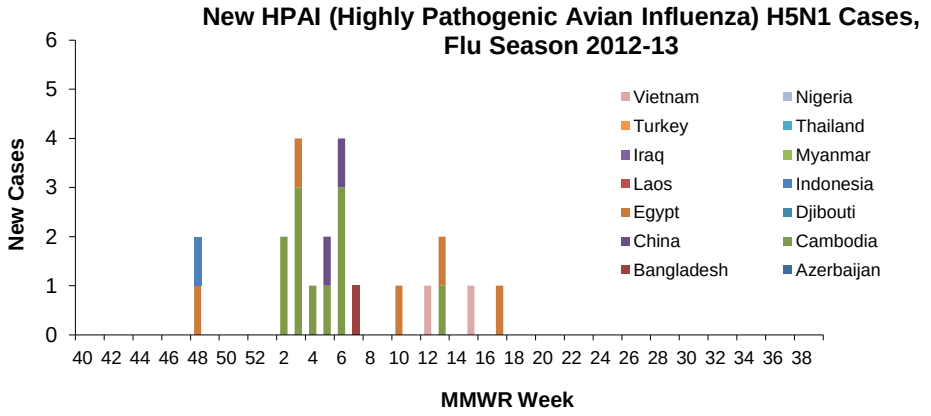
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- One influenza-associated pediatric death was reported to CDC during week 26. This death was associated with an influenza B virus and occurred during week 7 (week ending February 16, 2013). A total of 154 influenza-associated pediatric deaths has been reported during the 2012–2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *Eight human infections with a variant influenza virus were identified in Indiana and reported nationally during week 26.*
- *A total of 14 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on June 4, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	32	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	630	375

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

June 30 – July 6, 2013: Week 27

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 27 (0.8%) were lower than the level in week 26. They were lower than the national baseline ILI level but comparable to what has been observed on average in the previous 5 years during the same week.
- 5,107 (16.2%) of all laboratory specimens have tested positive for influenza.
- Eight human infections with a variant influenza virus were identified in Indiana and reported nationally during week 26.
- There was no ILI cluster reported to HDOH during week 27.
- No influenza-associated pediatric deaths were reported to CDC during week 27.

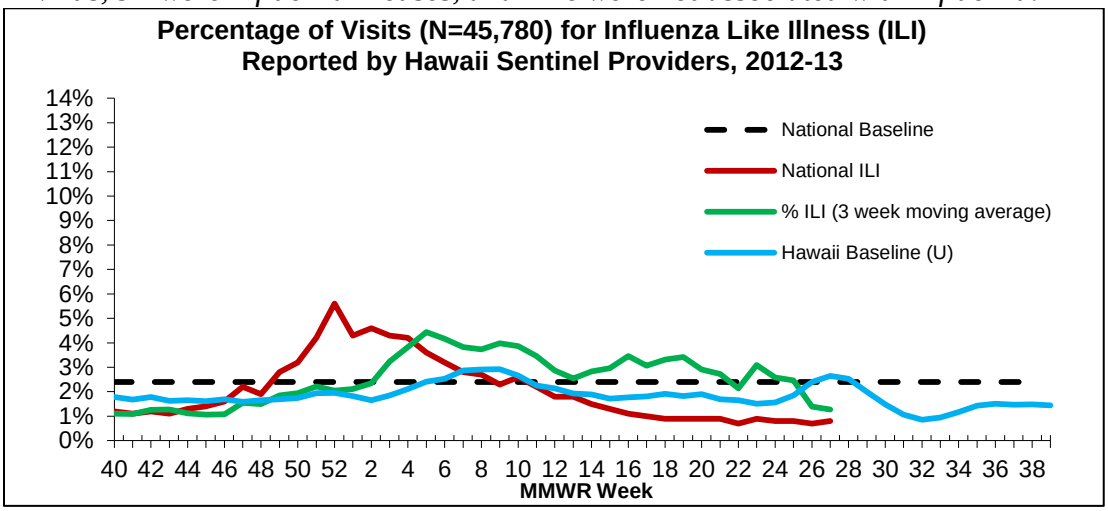
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, in combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website (here).

For week 27 of the current influenza season:

- *0.8% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) but comparable to the national ILI (0.8%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was no ILI cluster reported to HDOH during week 27. For the 2012–13 influenza season, there have been 20 ILI clusters reported to HDOH. Five were associated with influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

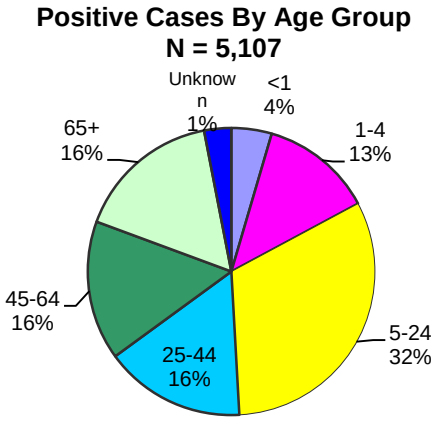
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

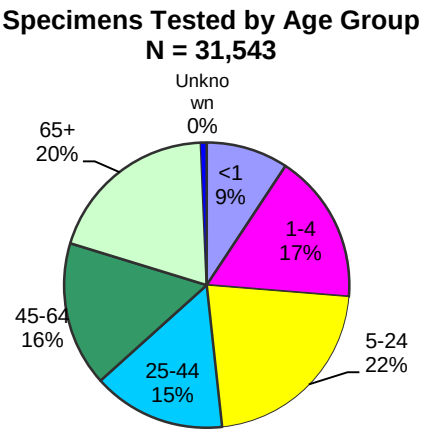
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

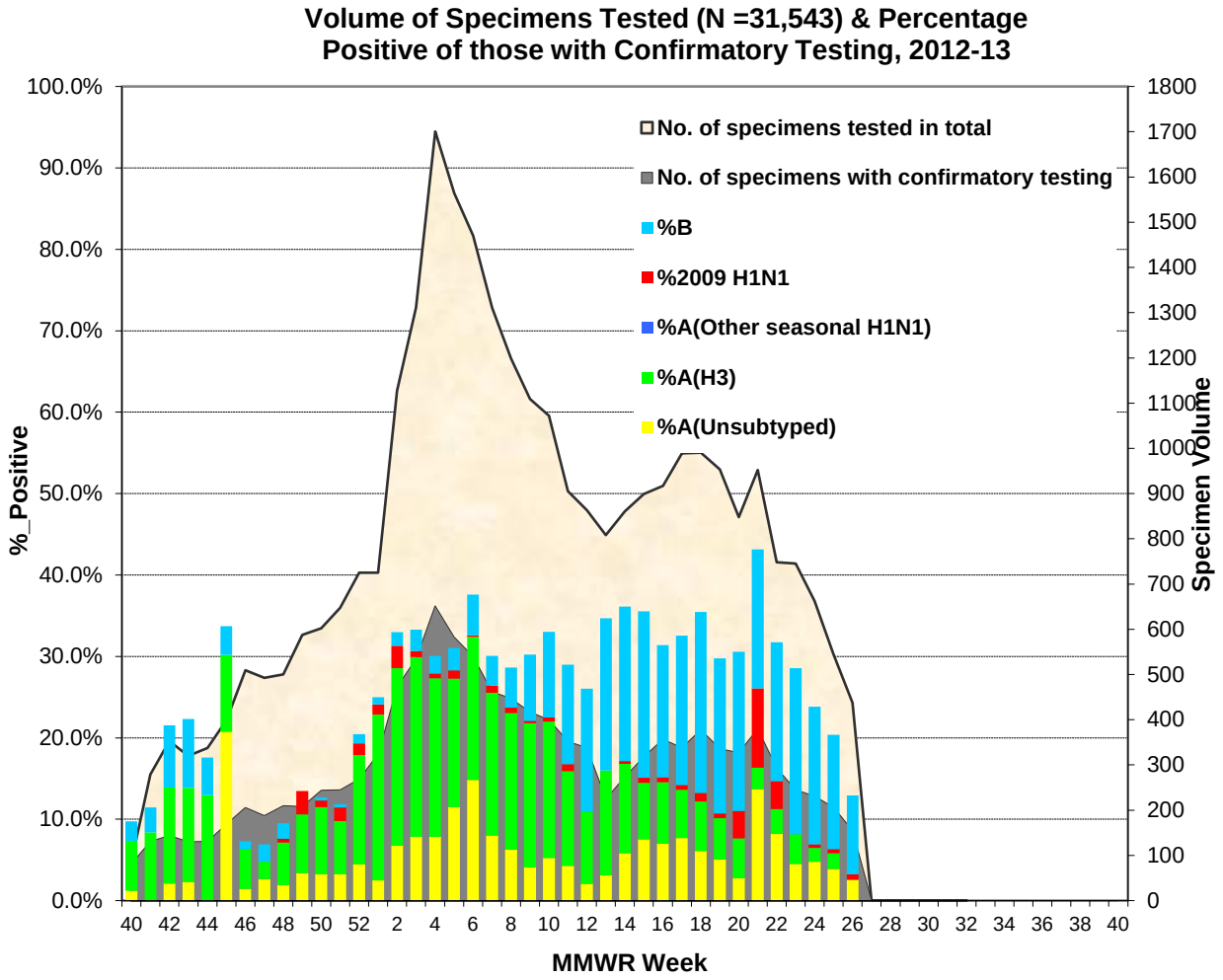
- *A total of 31,543 specimens has been tested statewide for influenza viruses*
  - *19,600 (62.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *11,943 (37.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,040 (9.6%) cases of influenza A and 2,067 (6.6%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *136 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,382 (45.5%) were influenza A (H3),*
    - *and the remaining (n = 1,522, 50.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.2% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

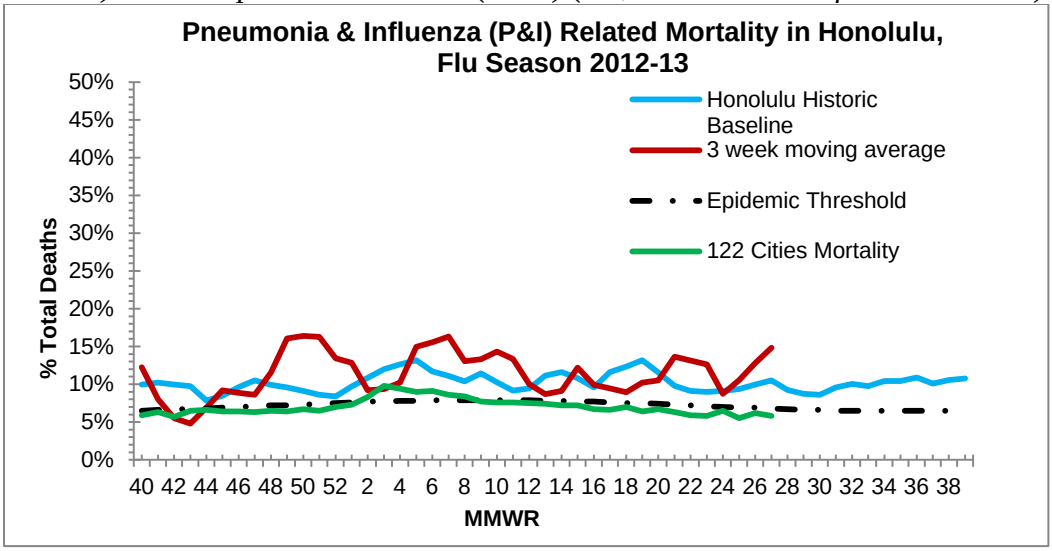
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X		X	X		X	X	X	X																
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X																		
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X	X															
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X			X														
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X														
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X	X															
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X														
Influenza A (Other seasonal H1N1)																																																					
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	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 Honolulu specific data 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:

- *16.0% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality (5.8%) (i.e., inside 95% confidence interval) and the epidemic threshold (6.4%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

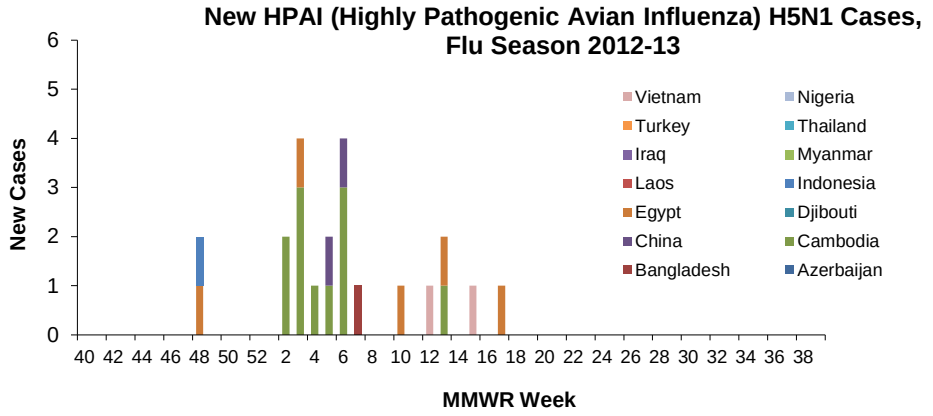
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No influenza-associated pediatric deaths were reported to CDC during week 27. A total of 154 influenza-associated pediatric deaths has been reported during the 2012–2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *Eight human infections with a variant influenza virus were identified in Indiana and reported nationally during week 26.*
- *A total of 14 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on June 4, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	10	8	32	27
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	3	2	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	192	160
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	18	14	630	375

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

July 7 – July 13, 2013: Week 28

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 28 (0.5%) were lower than the level in week 27. They were lower than the national baseline ILI level but comparable to what has been observed on average in the previous 5 years during the same week.
- 5,181 (16.0%) of all laboratory specimens have tested positive for influenza.
- There was one ILI cluster reported to HDOH during week 28.
- No influenza-associated pediatric deaths were reported to CDC during week 28.

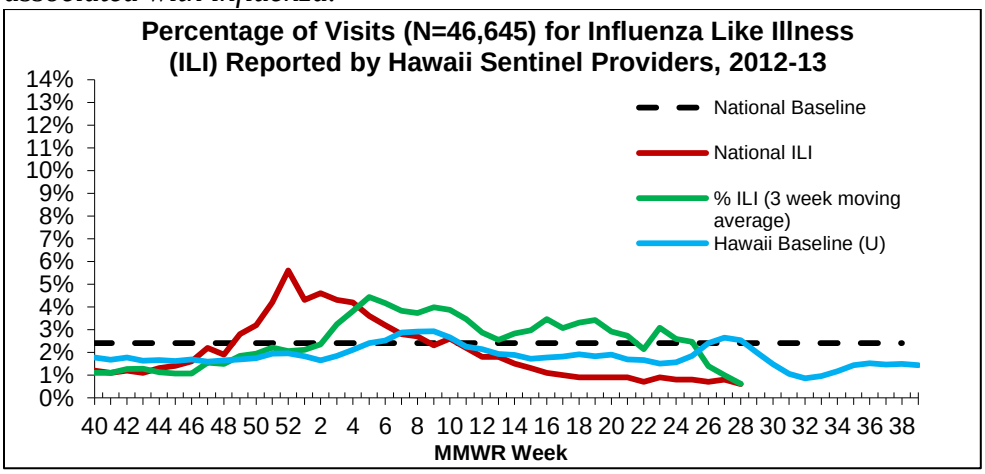
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, in combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website (here).

For week 28 of the current influenza season:

- *0.5% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) but comparable to the national ILI (0.6%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There was one ILI cluster reported to HDOH during week 28, which occurred in a nursing home and was laboratory confirmed. For the 2012–13 influenza season, there have been 21 ILI clusters reported to HDOH. Six were associated with influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

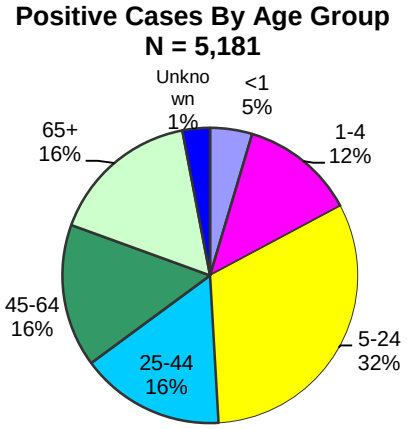
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

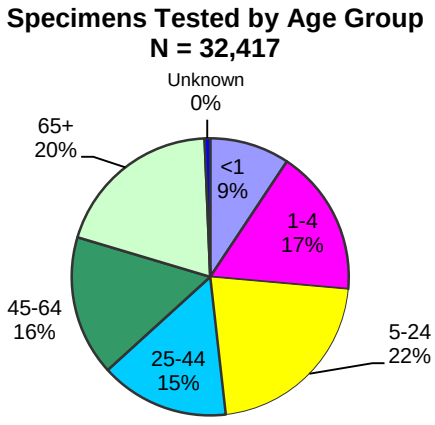
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

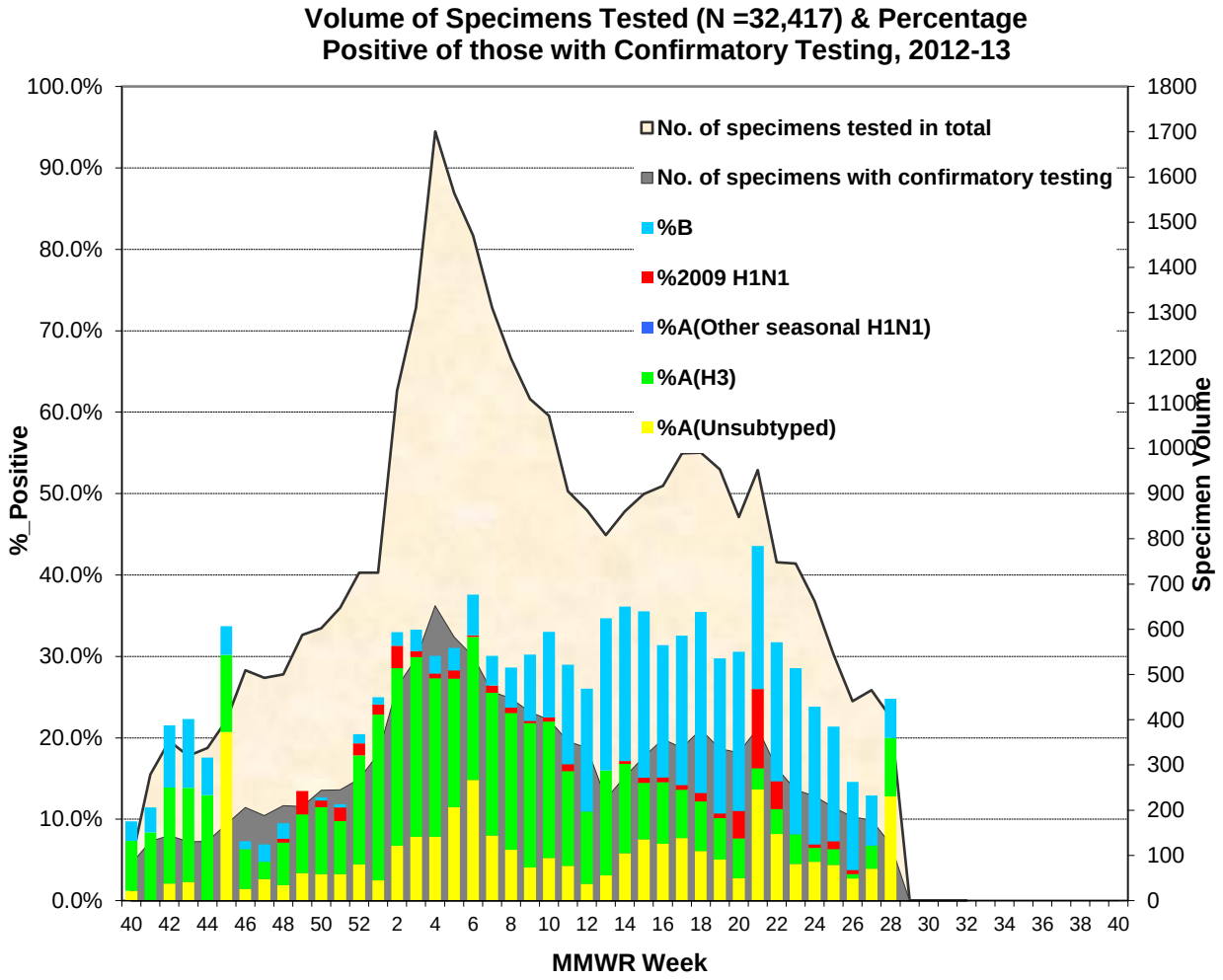
- *A total of 32,417 specimens has been tested statewide for influenza viruses*
  - *20,140 (62.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *12,227 (37.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,074 (9.5%) cases of influenza A and 2,107 (6.5%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *137 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,397 (45.4%) were influenza A (H3),*
    - *and the remaining (n = 1,540, 50.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *16.0% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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 2012–13 Flu Season

MMWR Week (weeks 40–13)

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
Adenovirus										X	X		X			X			X	X	X	X	X		X	X
Coxsackie Virus																										
Cytomegalovirus																		X				X	X			
Echovirus																										
Enterovirus							X			X	X	X			X		X				X		X			
Herpes Simplex Virus, Type 1																										
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X		
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X
Varicella Zoster Virus																										
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X			
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																										
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

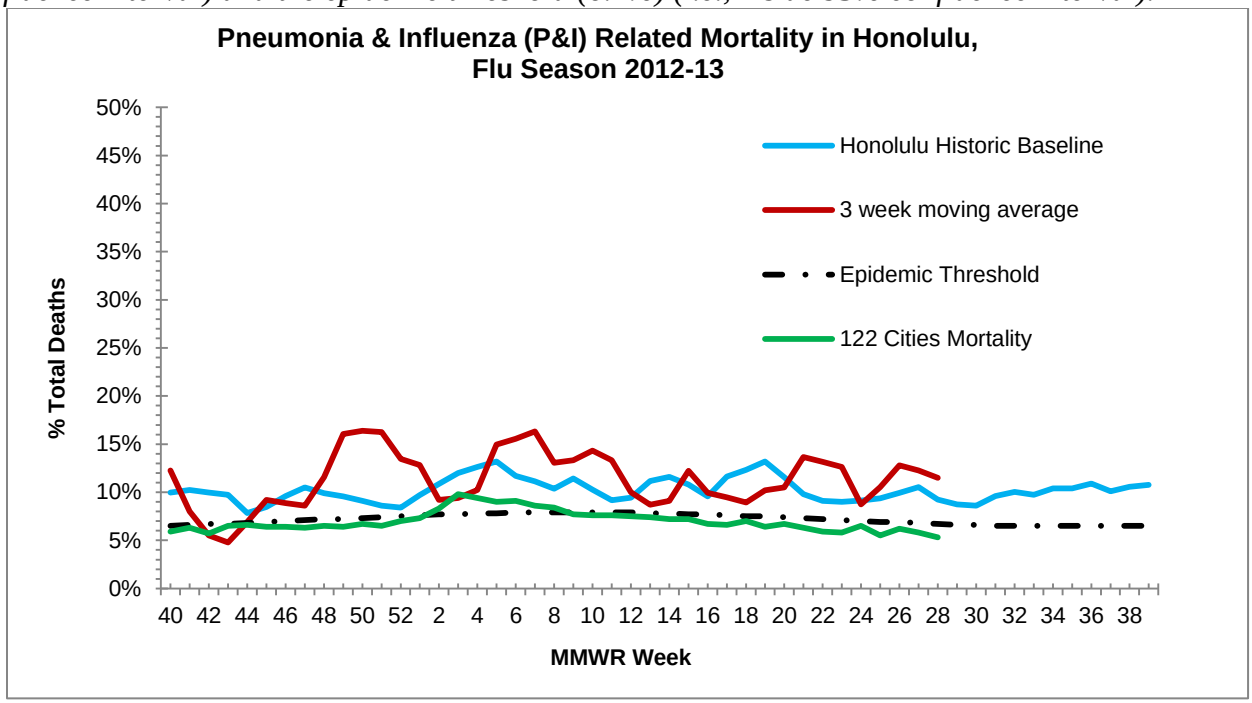
MMWR Week (weeks 14–40)

Isolates	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	X													
Coxsackie Virus																											
Cytomegalovirus			X																								
Echovirus																											
Enterovirus				X					X						X												
Herpes Simplex Virus, Type 1																											
Metapneumovirus	X	X					X	X		X	X	X			X												
Parainfluenza Virus	X	X	X	X		X	X	X		X			X	X	X												
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X												
Rhinovirus	X	X	X																								
Varicella Zoster Virus																											
Influenza 2009 H1N1	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 H1N1)																											
Influenza A (unsubtyped)	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 Honolulu specific data 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:

- *7.1% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality (5.3%) (i.e., inside 95% confidence interval) and the epidemic threshold (6.4%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

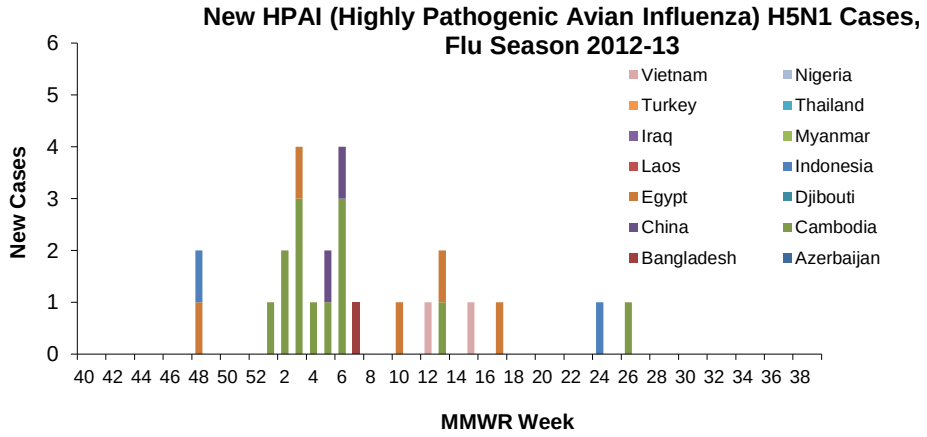
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No influenza-associated pediatric deaths were reported to CDC during week 28. A total of 154 influenza-associated pediatric deaths has been reported during the 2012–2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No new human infections with influenza A (H3N2) variant (H3N2v) virus were reported to CDC during week 28*
- *A total of 14 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on July 4, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	13	9	34	28
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	23	17	633	377

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

July 14 – July 20, 2013: Week 29

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 29 (0.7%) were higher than the level in week 28 (0.5%). They were lower than the national baseline ILI level and comparable to what has been observed on average in the previous 5 years during the same week.
- 5,193 (15.8%) of all laboratory specimens have tested positive for influenza.
- There were no ILI clusters reported to HDOH during week 29.
- Three influenza-associated pediatric deaths, which occurred during the preceding weeks, were reported to CDC during week 29.

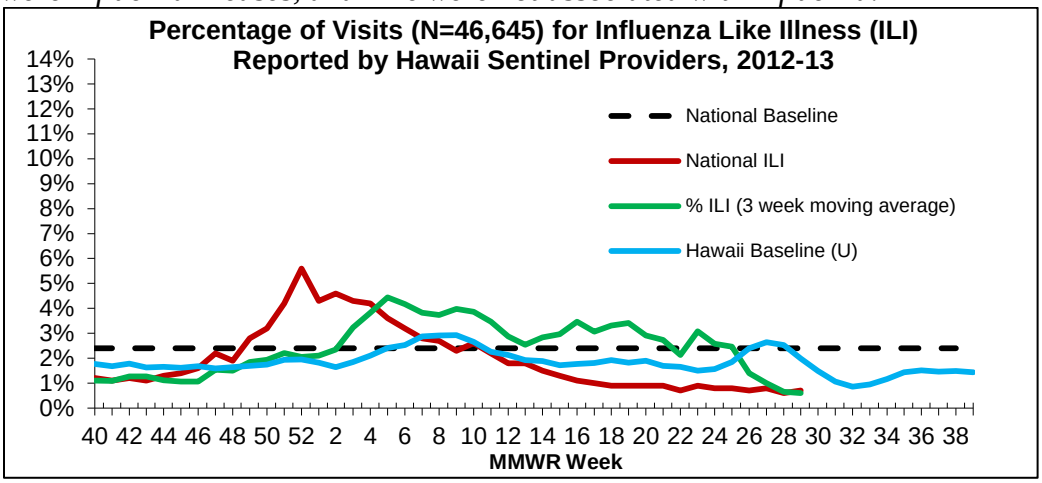
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, in combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website (here).

For week 29 of the current influenza season:

- *0.7% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) but comparable to the national ILI (0.7%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 29. For the 2012–13 influenza season, there have been 21 ILI clusters reported to HDOH. Six were associated with influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

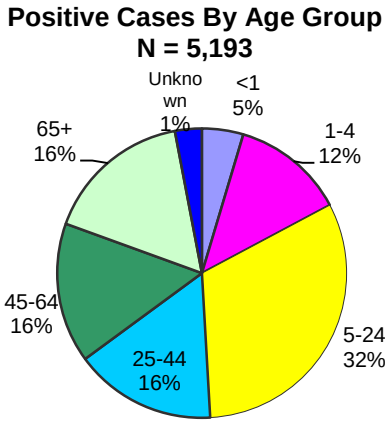
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

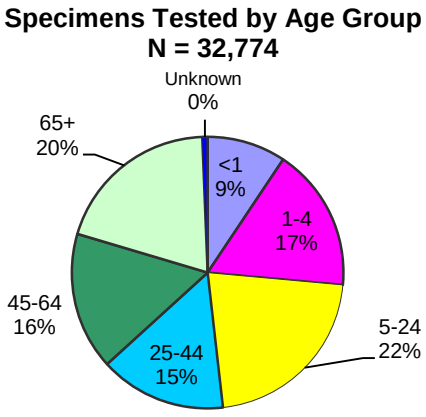
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

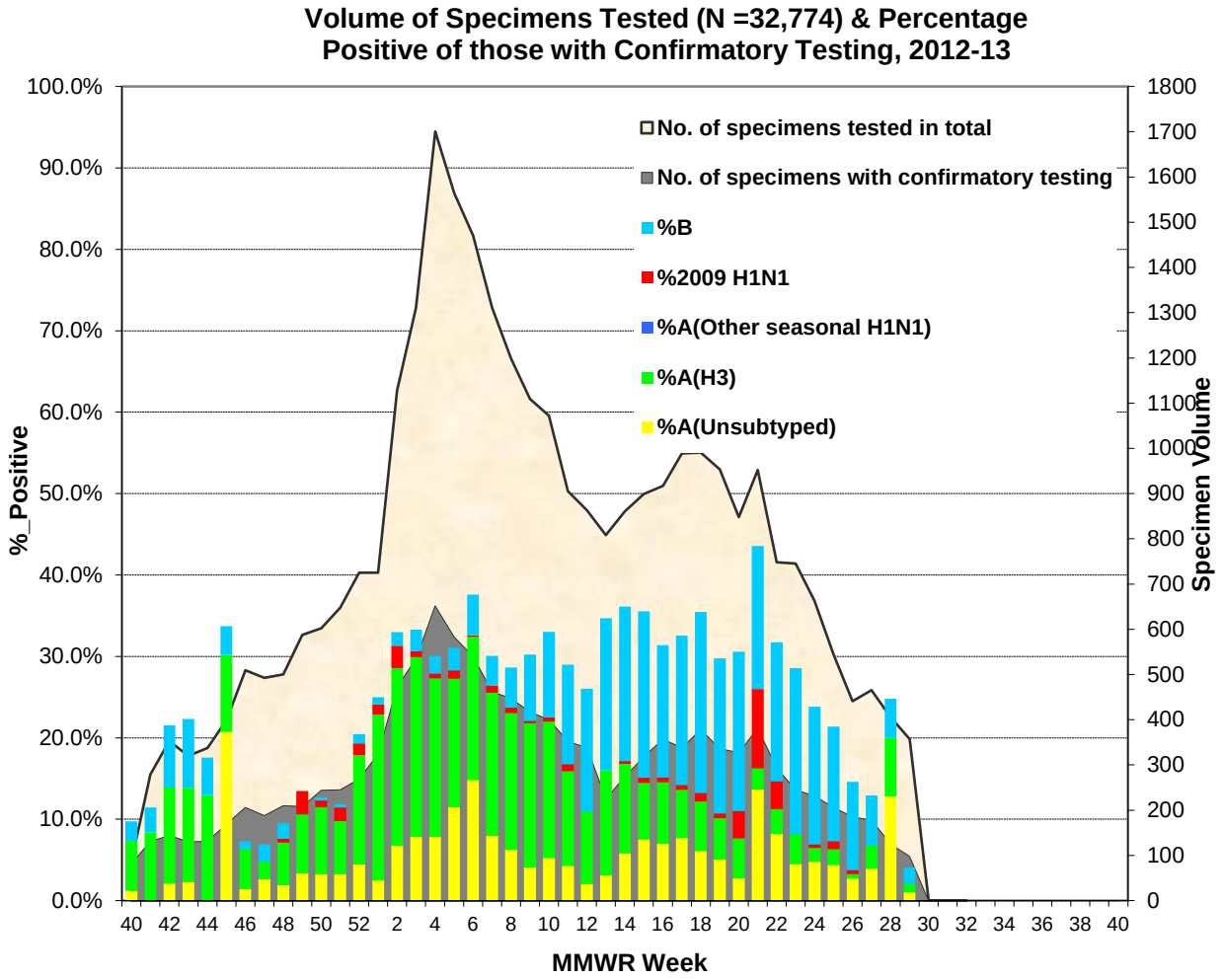
- *A total of 32,774 specimens has been tested statewide for influenza viruses*
  - *20,399 (62.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *12,375 (37.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,079 (9.4%) cases of influenza A and 2,114 (6.5%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *137 (4.4%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,398 (45.4%) were influenza A (H3),*
    - *and the remaining (n = 1,544, 50.1%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.8% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

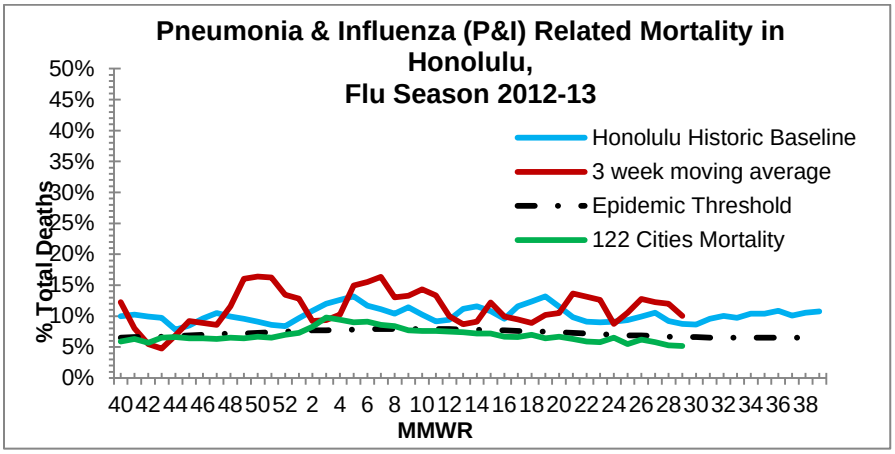
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X		X	X		X	X	X	X		X	X													
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X						X												
Herpes Simplex Virus, Type 1																																																				
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X	X			X												
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X			X	X	X												
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X	X															
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											
Influenza A (Other seasonal H1N1)																																																					
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											
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											

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 Honolulu specific data 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:

- *13.0% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval)*
- *The Honolulu P&I was higher than the national 122 city P&I mortality (5.2%) (i.e., outside the 95% confidence interval) but comparable to the epidemic threshold (6.4%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

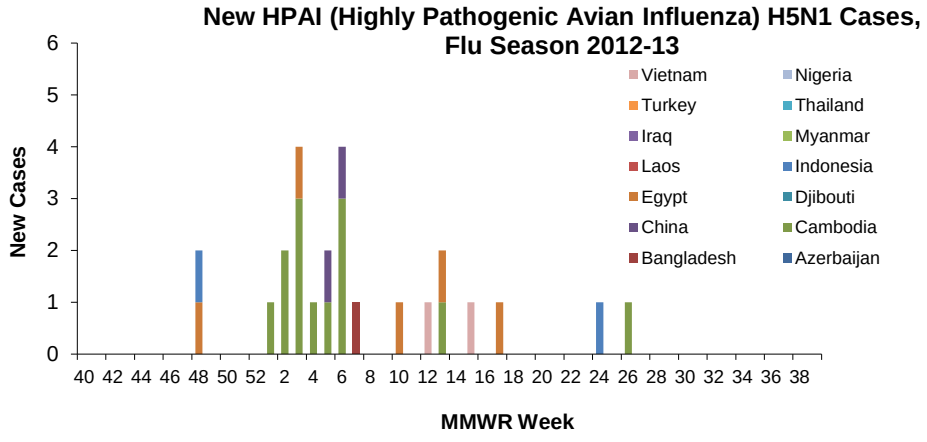
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- Three influenza-associated pediatric deaths were reported to the CDC during week 29. Two deaths were associated with an influenza A virus for which the subtype was not determined and occurred during weeks 1 (week ending January 5) and 4 (week ending January 26) of 2013. One death reported during week 29 was associated with influenza A virus for which the subtype was not determined. This death occurred during week 12 of the 2011-2012 influenza season (week ending March 24, 2012). A total of 156 influenza-associated pediatric deaths has been reported to CDC during the 2012-2013 season

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *Two new human infections with influenza A (H3N2) variant (H3N2v) virus were reported to CDC during week 29.*
- *A total of 16 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on July 5, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	13	9	34	28
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	23	17	633	377

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

July 21 – July 27, 2013: Week 30

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  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
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- 5,209 (15.7%) of all laboratory specimens have tested positive for influenza.
- There were no ILI clusters reported to HDOH during week 30.
- One influenza-associated pediatric death, which occurred during the preceding weeks, was reported to CDC during week 30.

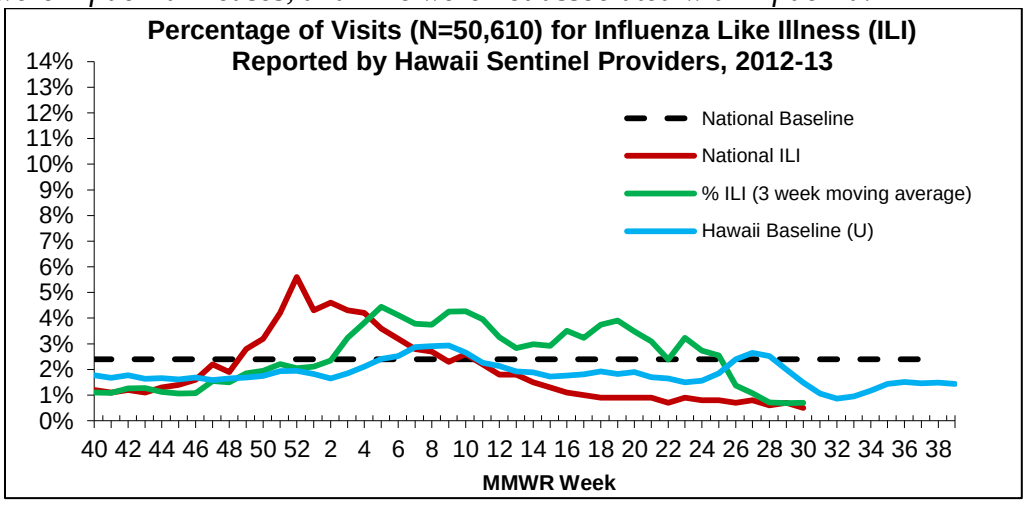
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) but comparable to the national ILI (0.5%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 30. For the 2012–13 influenza season, there have been 21 ILI clusters reported to HDOH. Six were associated with influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



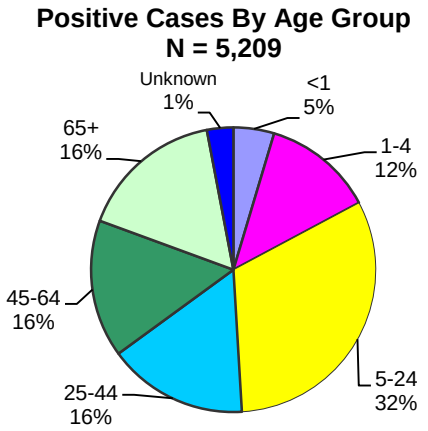
[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).
[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

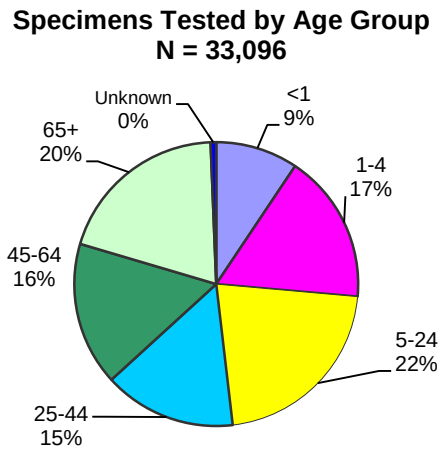
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

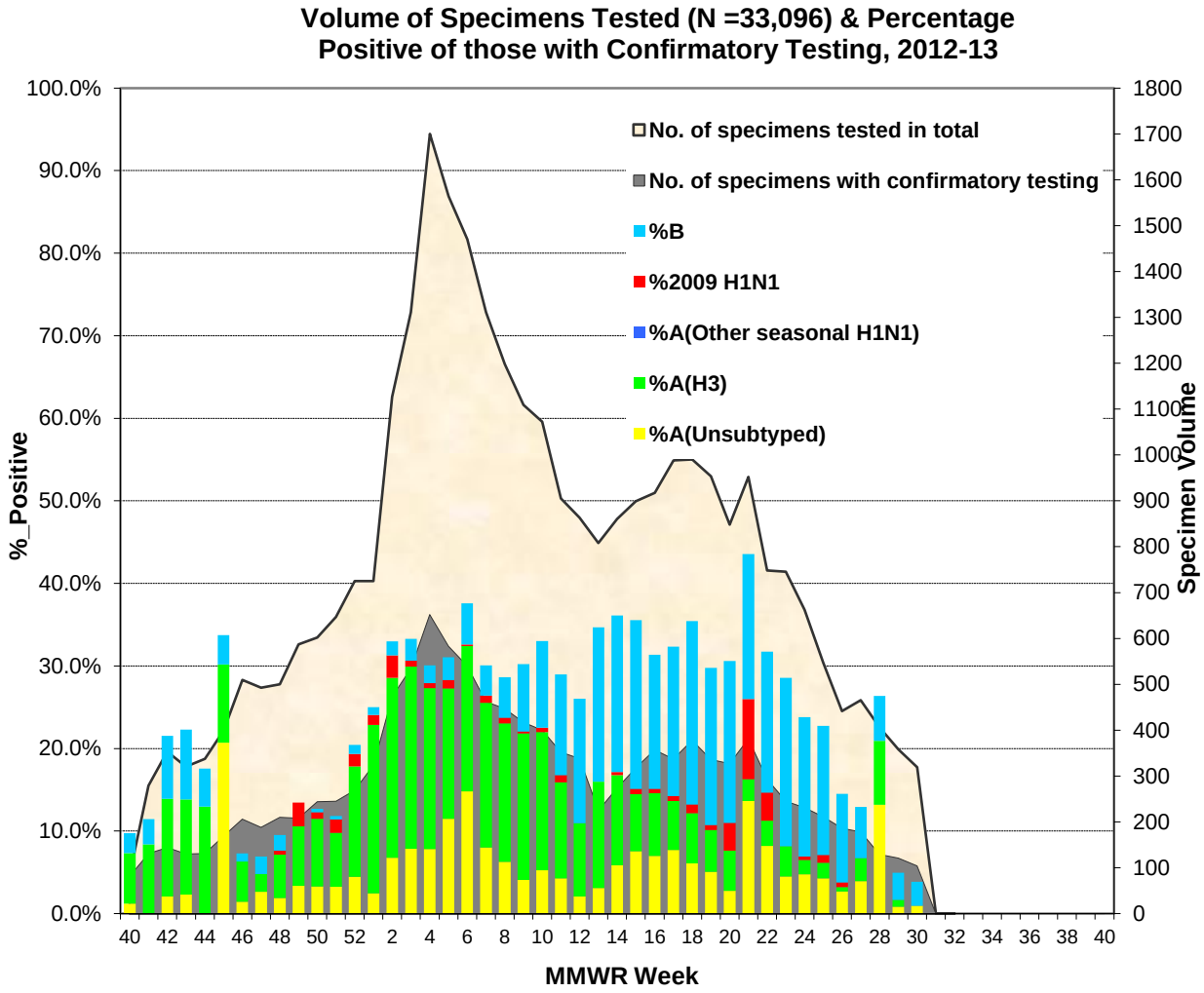
- *A total of 33,096 specimens has been tested statewide for influenza viruses*
  - *20,585 (62.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *12,511 (37.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,082 (9.3%) cases of influenza A and 2,127 (6.4%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *137 (4.4%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,399 (45.4%) were influenza A (H3),*
    - *and the remaining (n = 1,546, 50.2%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.7% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

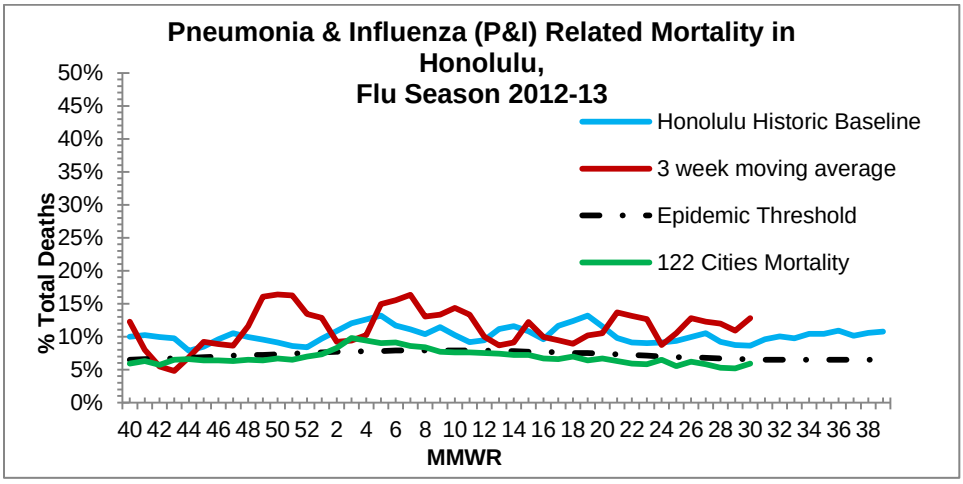
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X		X	X		X	X	X	X		X	X			X										
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X						X												
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X	X			X												
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X			X	X	X		X										
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X										
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X	X															
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											
Influenza A (Other seasonal H1N1)																																																					
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										
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										

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 Honolulu specific data 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:

- *12.6% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was higher than the national 122 city P&I mortality (5.9%) (i.e., outside the 95% confidence interval) but comparable to the epidemic threshold (6.2%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

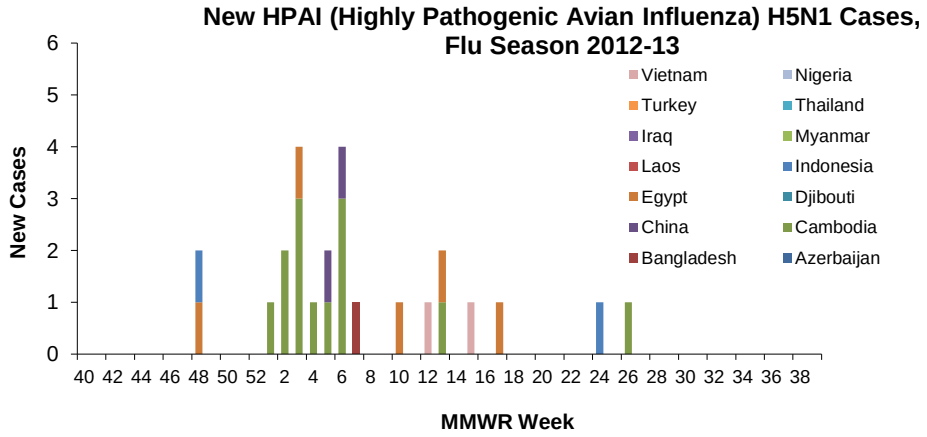
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- One influenza-associated pediatric death was reported to CDC during week 30. This death was associated with an influenza A (H3) virus and occurred during week 5 (week ending February 2, 2013). A total of 157 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *One new human infection with influenza A (H3N2) variant (H3N2v) virus was reported to CDC during week 30.*
- *A total of 17 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on July 5, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	13	9	34	28
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	23	17	633	377

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

July 28 – August 3, 2013: Week 31

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 31 (0.8%) were higher than the level in week 30 (0.7%). They were lower than the national baseline ILI level but comparable to what has been observed on average in the previous 5 years during the same week.
- 5,235 (15.7%) of all laboratory specimens have tested positive for influenza.
- There were no ILI clusters reported to HDOH during week 31.
- One influenza-associated pediatric death, which occurred during the preceding weeks, was reported to CDC during week 31.

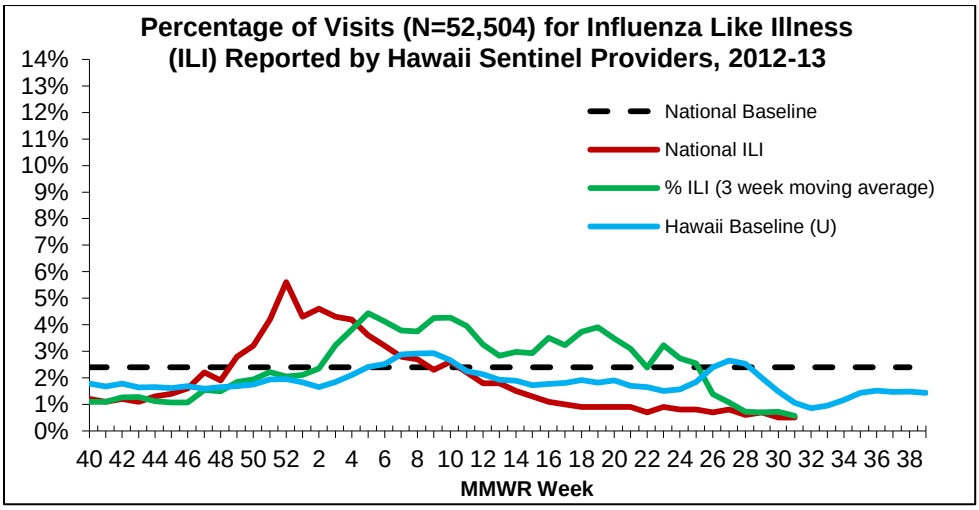
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *0.8% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) but comparable to the national ILI (0.5%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 31. For the 2012–13 influenza season, there have been 21 ILI clusters reported to HDOH. Six were associated with influenza A virus, six were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

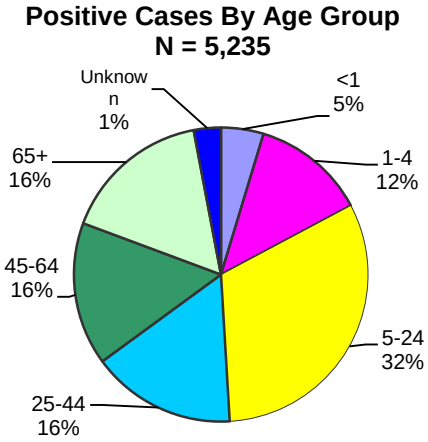
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

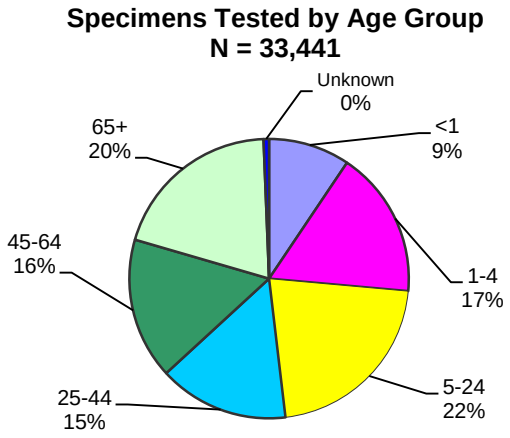
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

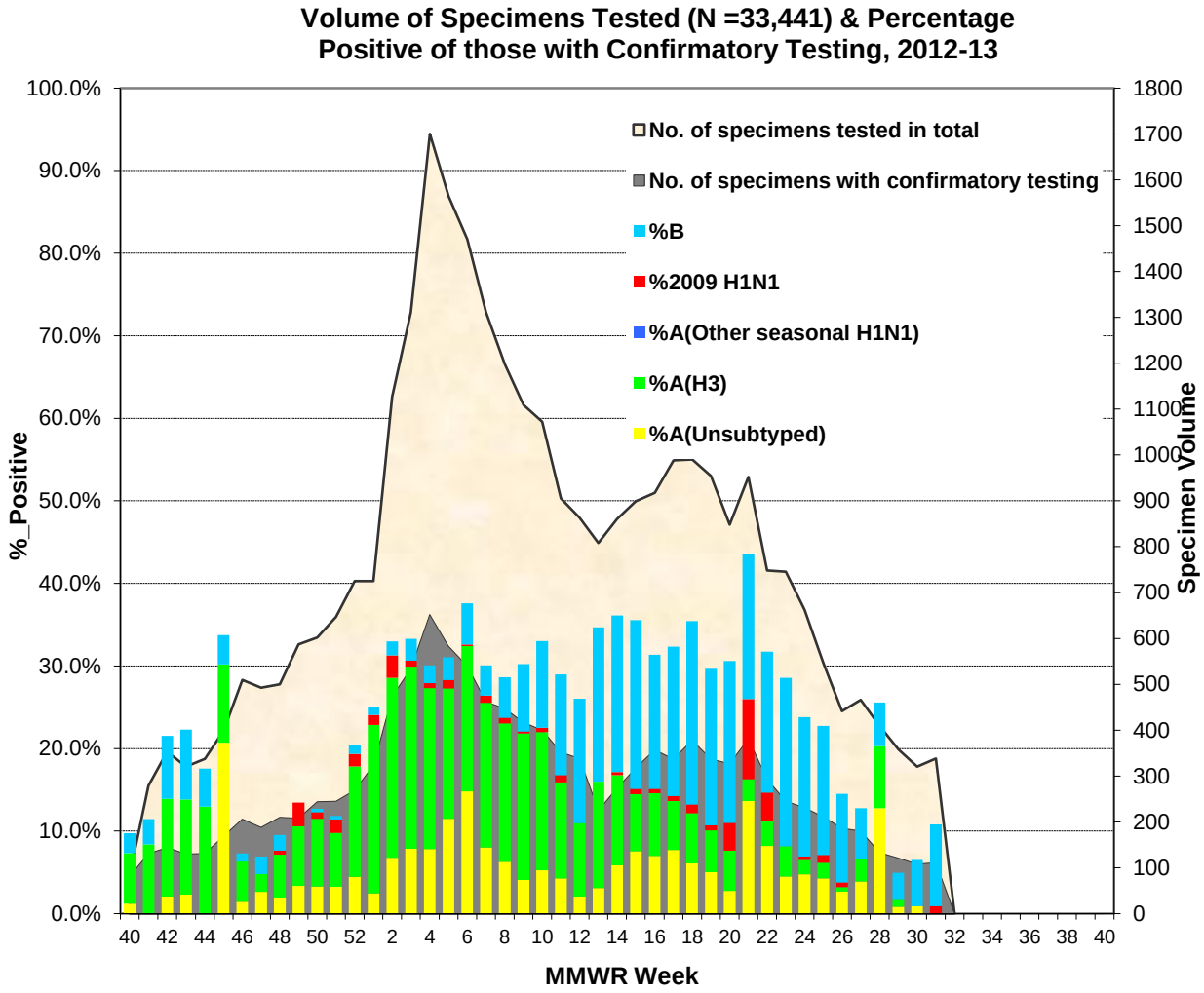
- *A total of 33,441 specimens has been tested statewide for influenza viruses*
  - *20,808 (62.2%) were screened only by rapid antigen tests with no confirmatory testing*
  - *12,633 (37.8%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,089 (9.2%) cases of influenza A and 2,146 (6.4%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *138 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,399 (45.3%) were influenza A (H3),*
    - *and the remaining (n = 1,552, 50.2%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.7% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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**.

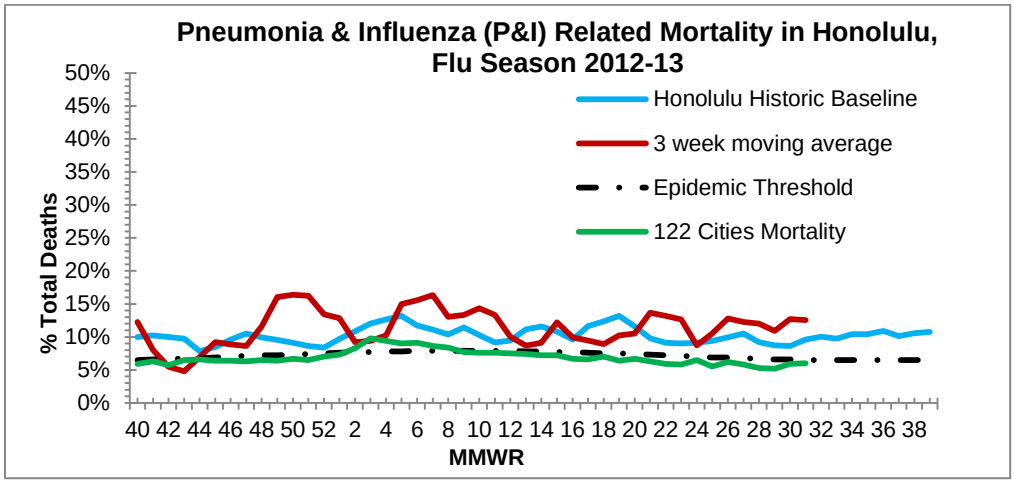
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																			
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		X	X		X	X		X	X		X	X	X	X		X	X			X	X									
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X						X												
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X	X			X												
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X			X	X	X		X	X									
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X									
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X	X						X									
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											
Influenza A (Other seasonal H1N1)																																																					
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									
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									

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 Honolulu specific data 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:

- *12.5% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality (6.0%) (i.e., inside the 95% confidence interval) and to the epidemic threshold (6.2%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

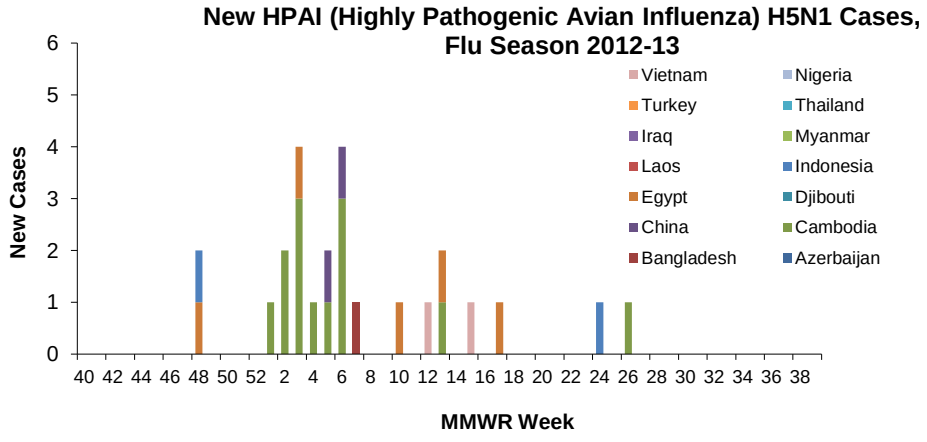
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- One influenza-associated pediatric death was reported to CDC during week 31. This death was associated with an influenza B virus and occurred during week 9 (week ending March 2, 2013). A total of 158 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *One new human infection with influenza A (H3N2) variant (H3N2v) virus was reported to CDC during week 31.*
- *A total of 17 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on July 5, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	13	9	34	28
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	23	17	633	377

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

August 4 – August 10, 2013: Week 32

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 32 (0.2%) were lower than the level in week 31 (0.8%). They were lower than the national baseline ILI level and comparable to what has been observed on average in the previous 5 years during the same week.
- 5,248 (15.5%) of all laboratory specimens have tested positive for influenza.
- There was one ILI cluster reported to HDOH during week 32. It occurred in a long-term care center.
- No new influenza-associated pediatric deaths were reported to CDC during week 32.

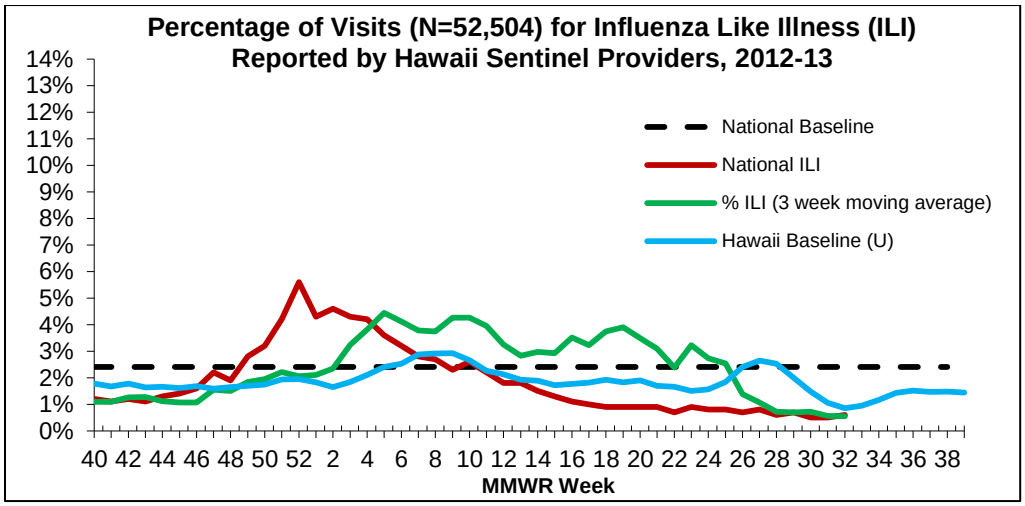
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *0.2% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval) and lower than the national ILI (0.6%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There were one ILI cluster reported to HDOH during week 32. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

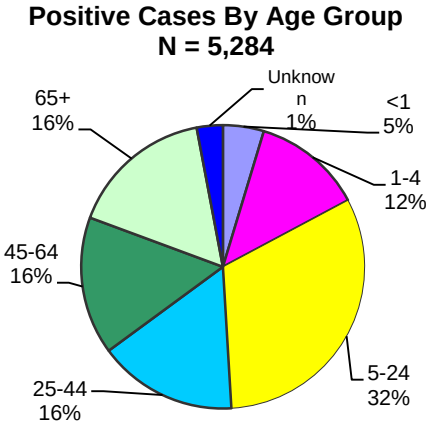
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

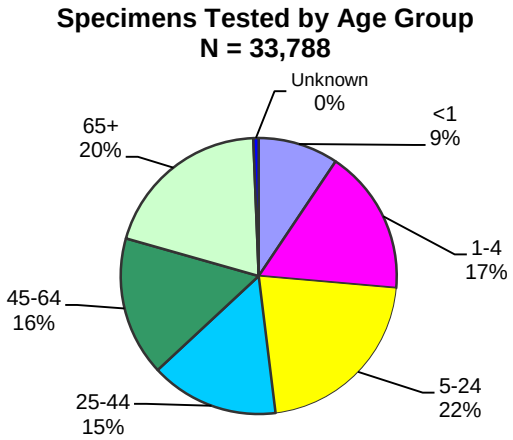
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

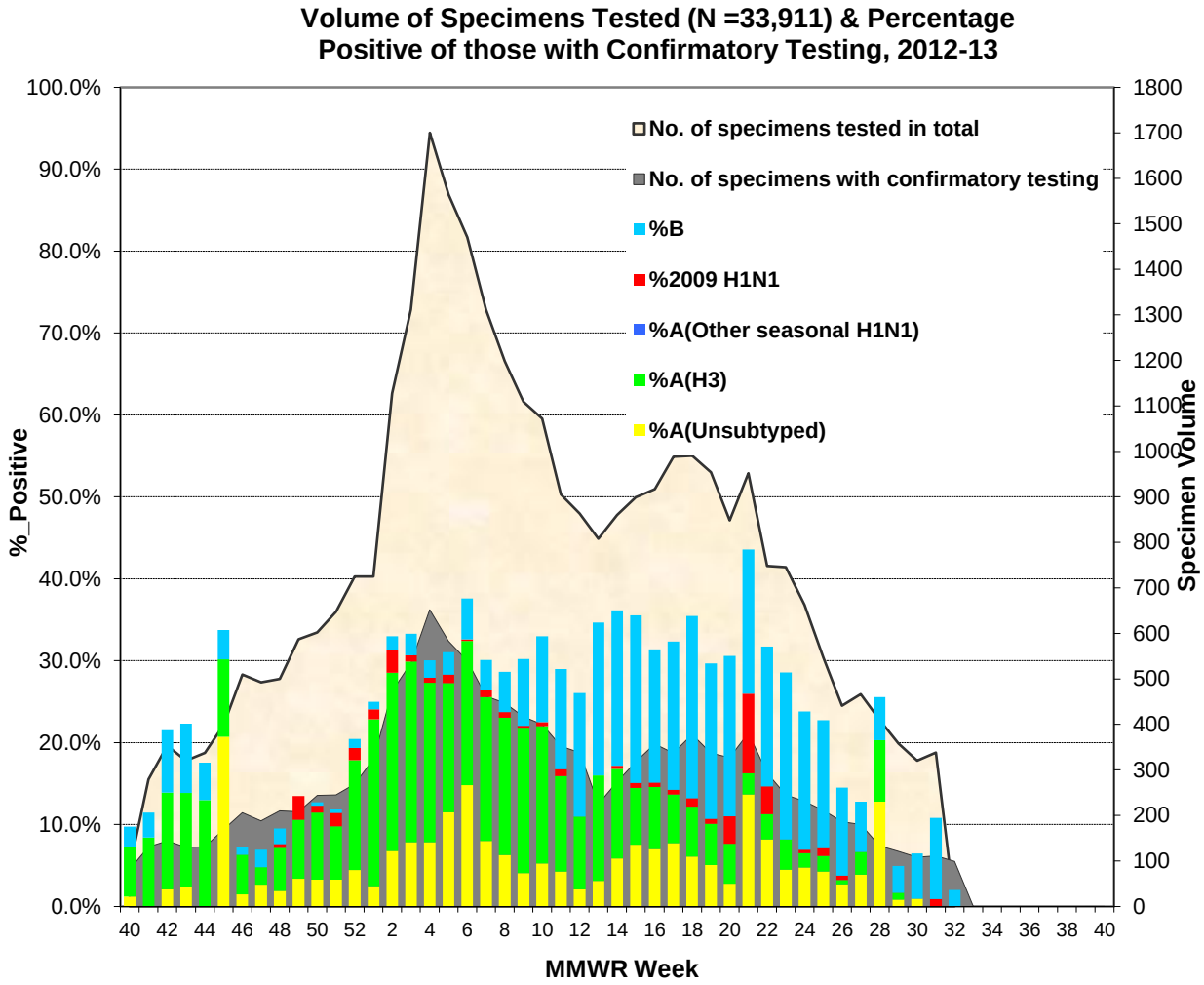
- *A total of 33,788 specimens has been tested statewide for influenza viruses*
  - *21,056 (62.3%) were screened only by rapid antigen tests with no confirmatory testing*
  - *12,732 (37.7%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,091 (9.1%) cases of influenza A and 2,157 (6.4%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *138 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,399 (45.3%) were influenza A (H3),*
    - *and the remaining (n = 1,554, 50.3%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.7% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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 2012–13 Flu Season

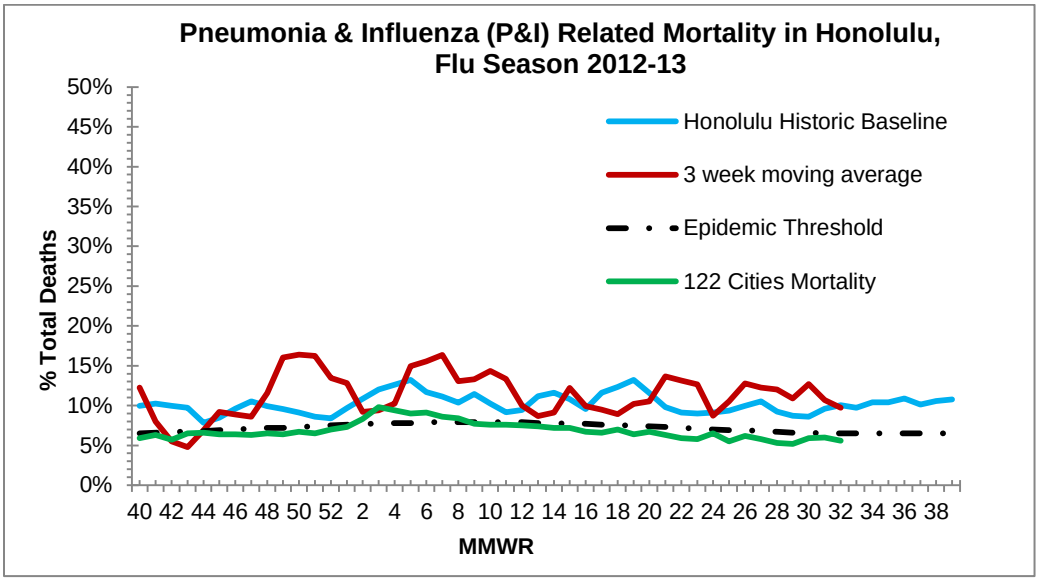
	MMWR Week																								
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12
Adenovirus										X	X		X			X			X	X	X	X	X		X
Coxsackie Virus																									
Cytomegalovirus																		X				X	X		
Echovirus																									
Enterovirus							X			X	X	X			X		X				X		X		
Herpes Simplex Virus, Type 1																									
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X	
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
Varicella Zoster Virus																									
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X		
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																									
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	X	X	X	X	X	X	X	X	X	X

	MMWR Week																											
Isolates	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		X	X			X	X									
Coxsackie Virus																												
Cytomegalovirus				X																								
Echovirus																												
Enterovirus					X					X						X												
Herpes Simplex Virus, Type 1																												
Metapneumovirus		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								
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	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	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	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 Honolulu specific data 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:

- *6.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality (5.6%) (i.e., inside the 95% confidence interval) and to the epidemic threshold (6.2%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

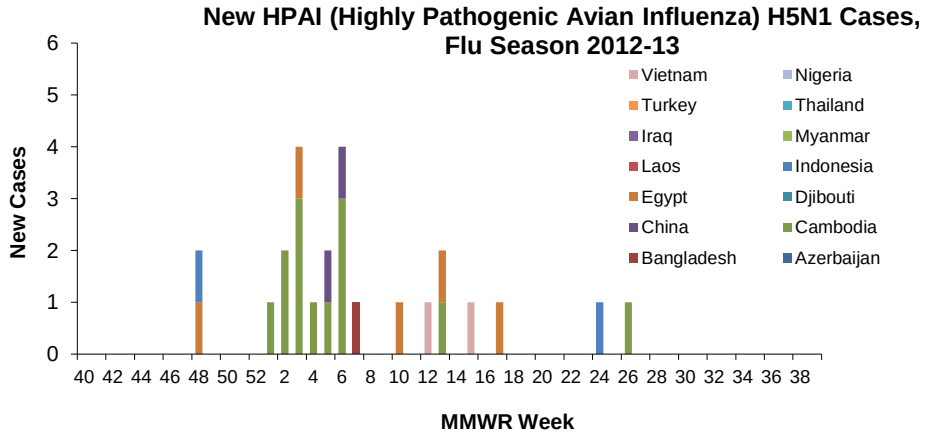
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 32. A total of 158 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No new human infections with influenza A (H3N2) variant (H3N2v) virus were reported to CDC during week 32.*
- *A total of 17 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and has begun posting weekly avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on July 5, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	13	9	34	28
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	23	17	633	377

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

August 11 – August 17, 2013: Week 33

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:

- **The 2012–13 influenza season officially began on week 40, 2012 (week ending October 6, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 33 (0.7%) were higher than the level in week 32 (0.2%). They were lower than the national baseline ILI level and comparable to what has been observed on average in the previous 5 years during the same week.
- 5,255 (15.4%) of all laboratory specimens have tested positive for influenza.
- There were no ILI clusters reported to HDOH during week 33. There have been 22 ILI clusters reported during the 2012-2013 influenza season.
- No new influenza-associated pediatric deaths were reported to CDC during week 33.
- On August 11, 2013, China reported a new laboratory-confirmed case of human infection with avian influenza A (H7N9) virus. This is the first new confirmed case of human infection with avian influenza A (H7N9) virus since 20 July, 2013. To date, WHO has reported a total of 135 laboratory-confirmed human cases with avian influenza A (H7N9) virus, including 44 deaths.

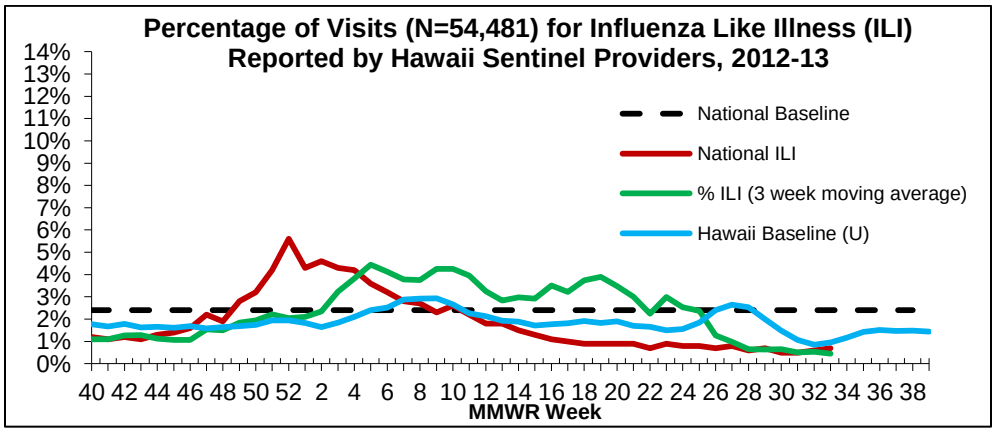
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, in combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website (here).

For week 33 of the current influenza season:

- *0.7% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval), but comparable with the national ILI (0.7%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 33. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

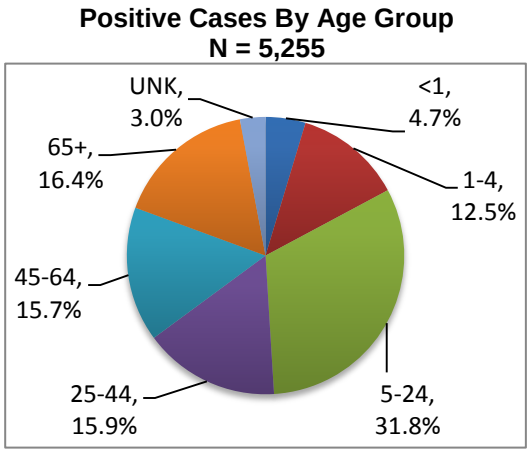
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

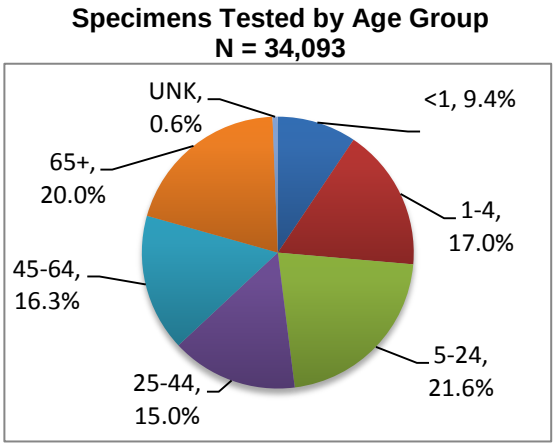
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

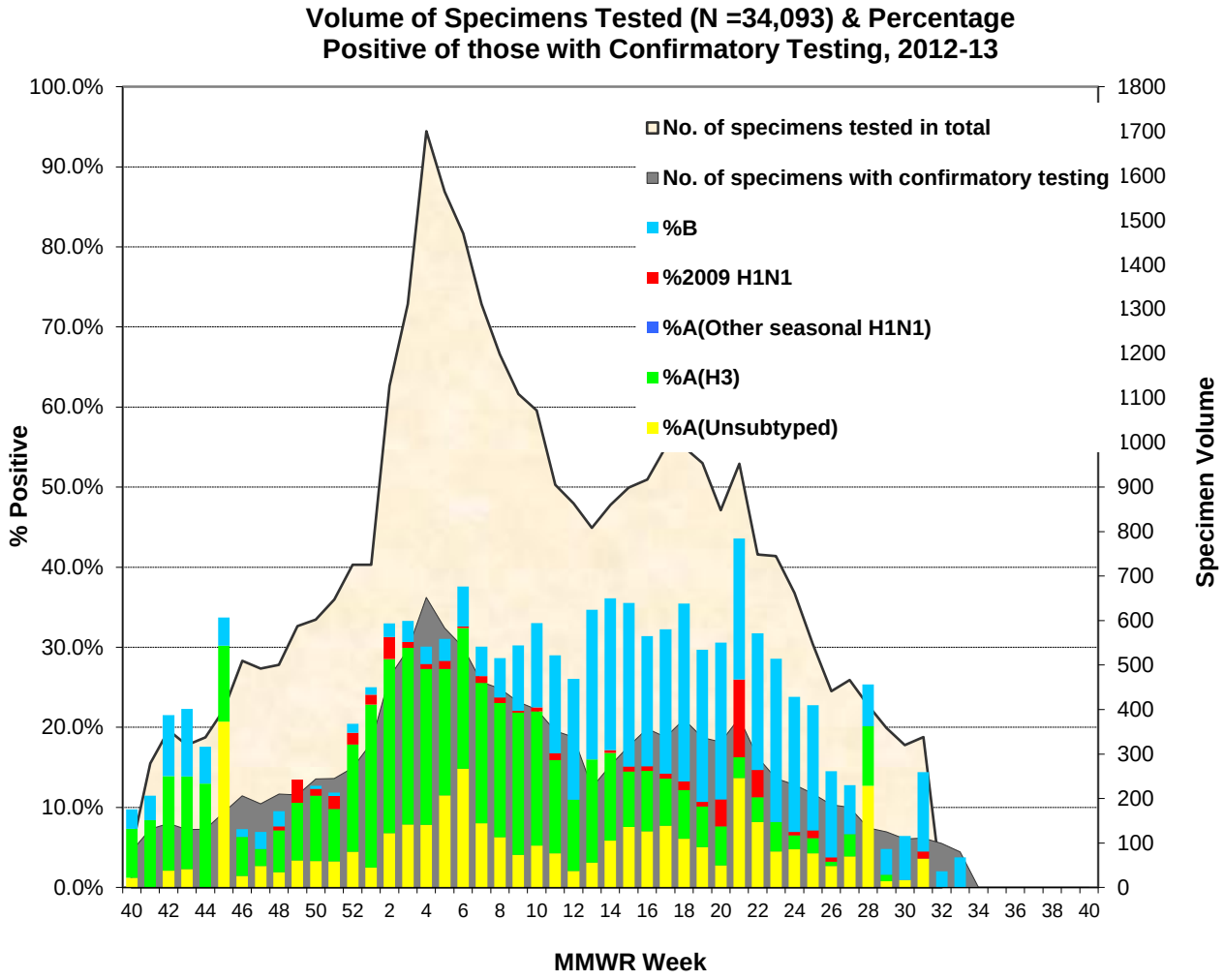
- *A total of 34,093 specimens has been tested statewide for influenza viruses*
  - *21,274 (62.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *12,819 (37.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,092 (9.1%) cases of influenza A and 2,163 (6.3%) cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *138 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,399 (45.2%) were influenza A (H3),*
    - *and the remaining (n = 1,555, 50.3%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.4% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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 2012–13 Flu Season

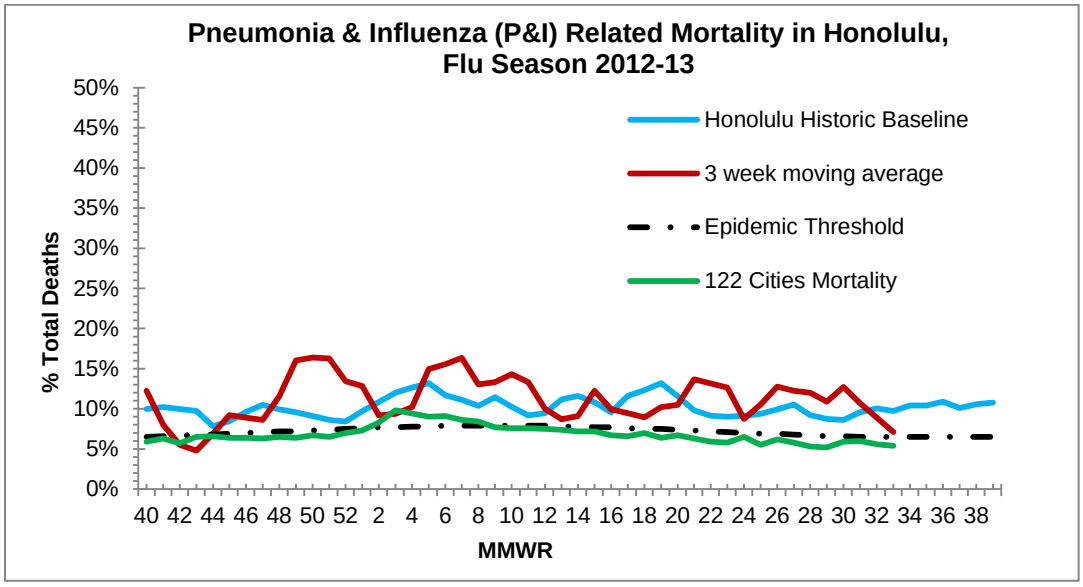
	MMWR Week																							
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11
Adenovirus										X	X		X			X			X	X	X	X	X	
Coxsackie Virus																								
Cytomegalovirus																		X				X	X	
Echovirus																								
Enterovirus							X			X	X	X			X		X				X		X	
Herpes Simplex Virus, Type 1																								
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X
Varicella Zoster Virus																								
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X	
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																								
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	X	X	X	X	X	X	X	X	X	X	X

	MMWR Week																												
Isolates	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	X		X	X			X	X	X	X							
Coxsackie Virus																													
Cytomegalovirus					X																								
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							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
Rhinovirus	X	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	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	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							

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 Honolulu specific data 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:

- *7.25% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality (5.4%) (i.e., inside the 95% confidence interval) and to the epidemic threshold (6.1%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

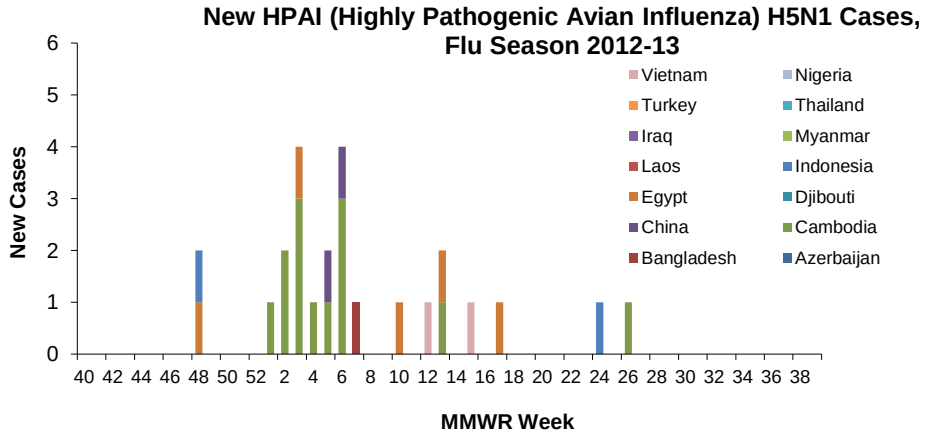
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 33. A total of 158 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No new human infections with influenza A (H3N2) variant (H3N2v) virus were reported to CDC during week 33.*
- *A total of 17 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian influenza, H7N9, of 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on July 5, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	13	9	34	28
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	0	0	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	23	17	633	377

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

August 18 – August 24, 2013: Week 34

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:

- **The 2012–13 influenza season: Began on week 40 of 2012 (week ending October 6, 2012) and ends on week 40 of 2013 (week ending October 5, 2013)**
    - The 2012–13 vaccine includes the following influenza virus selection**:**
        - an A/California/7/2009 (H1N1)pdm09-like virus;
        - an A/Victoria/361/2011 (H3N2)-like virus;
        - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 34 (0.5%) were lower than the level in week 33 (0.7%). They were lower than the national baseline ILI level, but comparable to what has been observed on average in the previous 5 years during the same week.
- 5,262 (15.3% of total) of all laboratory specimens have tested positive for influenza.
- There were no ILI clusters reported to HDOH during week 34. There have been 22 ILI clusters reported during the 2012-2013 influenza season.
- Two new influenza-associated pediatric deaths, which occurred in the preceding weeks, were reported to CDC during week 34.
- In the WHO's August influenza report, four new cases of H5N1 were reported in Cambodia and two new cases of H7N9 were reported in China.

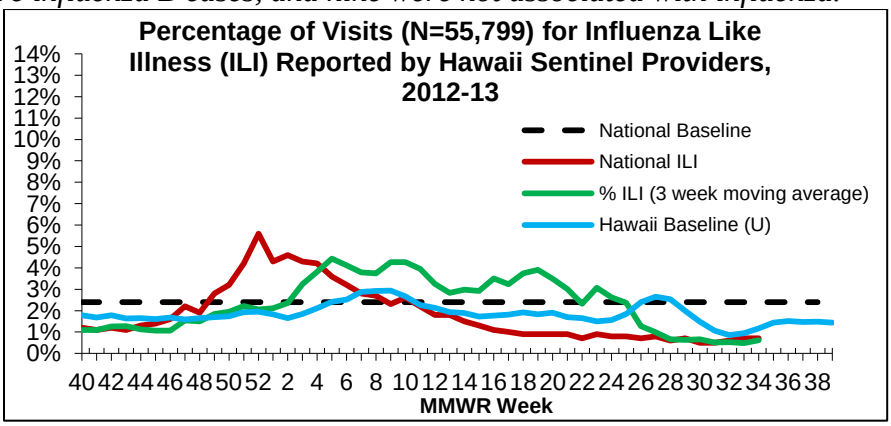
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, in combination with laboratory testing and other surveillance systems, ILI surveillance helps monitor influenza and other respiratory pathogen activity. For more information concerning ILINet and sentinel requirements, please visit the CDC website (here).

For week 34 of the current influenza season:

- *0.5% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.2%)[4] (i.e., outside the 95% confidence interval), but comparable with the national ILI (0.7%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 34. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

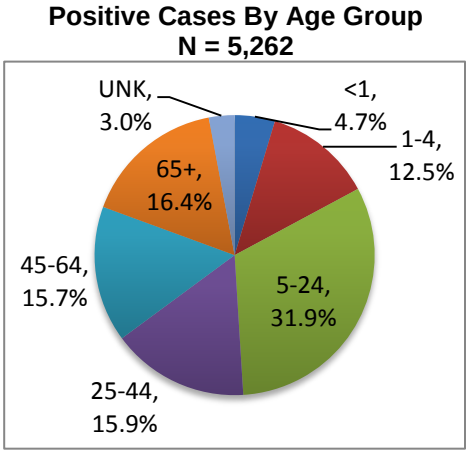
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

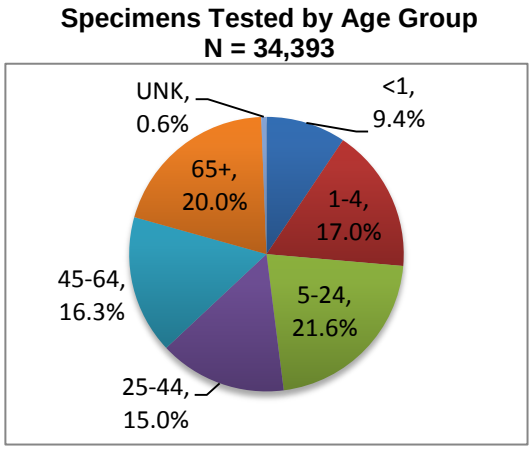
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

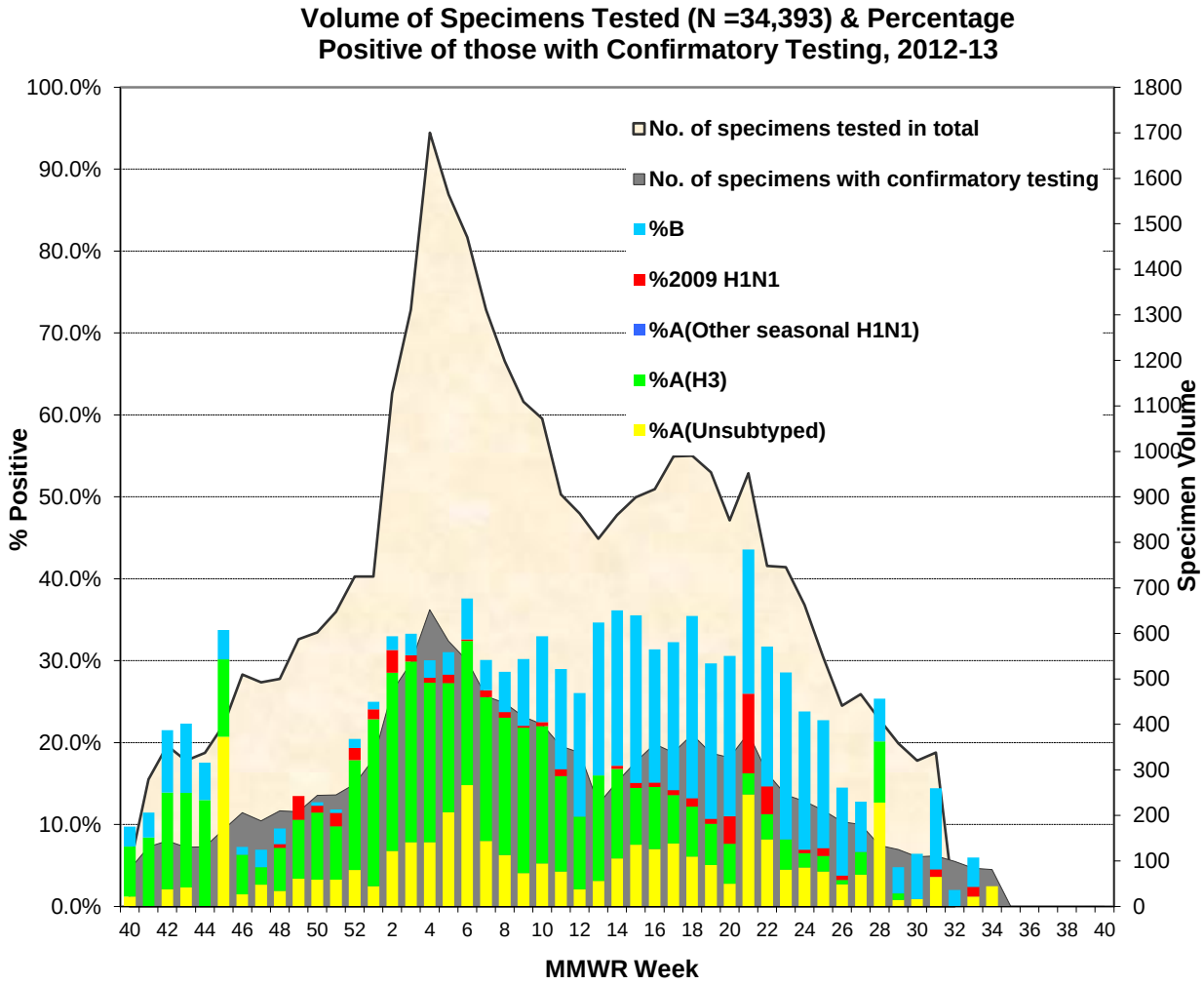
- *A total of 34,393 specimens has been tested statewide for influenza viruses*
  - *21,489 (62.5%) were screened only by rapid antigen tests with no confirmatory testing*
  - *12,904 (37.5%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,096 (9%) were cases of influenza A and 2,166 (6.3%) were cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *139 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,399 (45.2%) were influenza A (H3),*
    - *and the remaining (n = 1,558, 50.3%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.3% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 on a limited basis 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 2012–13 Flu Season

MMWR Week (weeks 40–13)

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
Adenovirus										X	X		X			X			X	X	X	X	X		X	X
Coxsackie Virus																										
Cytomegalovirus																		X				X	X			
Echovirus																										
Enterovirus							X			X	X	X			X		X				X		X			
Herpes Simplex Virus, Type 1																										
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X		
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X
Varicella Zoster Virus																										
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X			
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																										
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

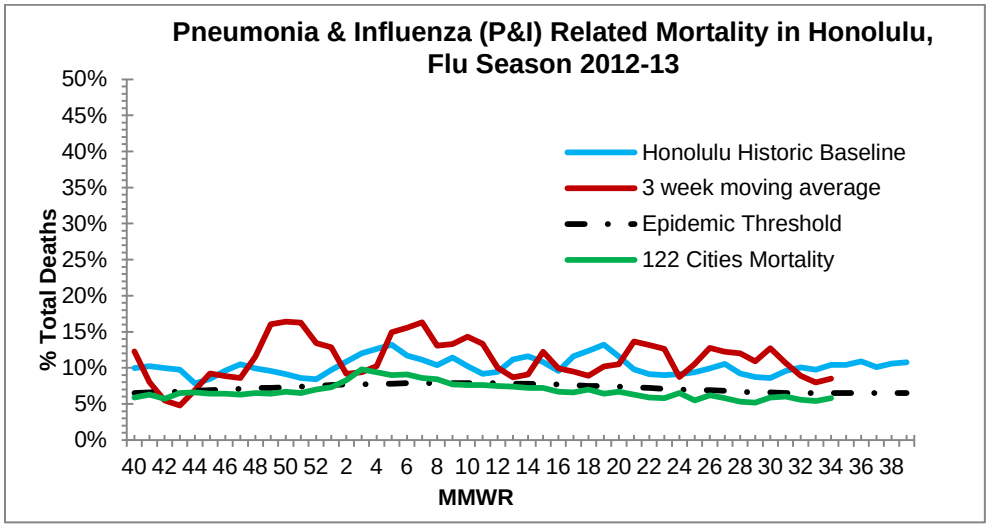
MMWR Week (weeks 14–40)

Isolates	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	X			X	X	X	X							
Coxsackie Virus																											
Cytomegalovirus			X																								
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							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	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	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 H1N1)																											
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	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 Honolulu specific data 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:

- *9.8% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality (5.8%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.1%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

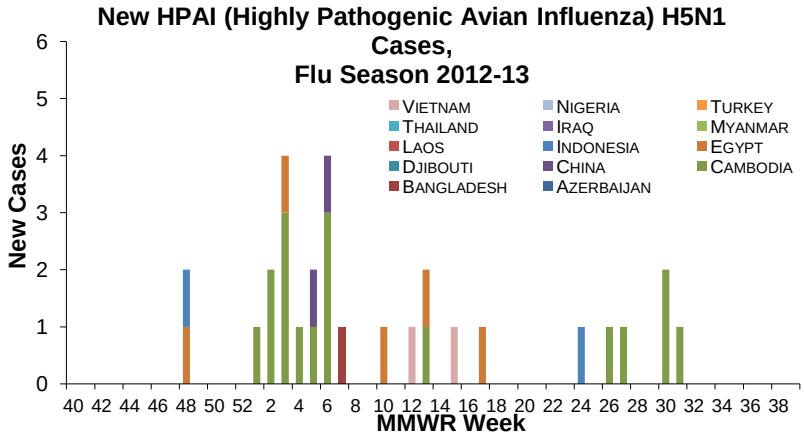
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- Two new influenza-associated pediatric deaths were reported to CDC during week 34. One death was associated with influenza A virus for which the subtype was not determined and occurred during week 33 (week ending August 17, 2013). The other death was associated with both a 2009 H1N1 and influenza A (H3) viruses and occurred during week 4 (week ending January 26, 2013). A total of 160 influenza-associated pediatric deaths has been reported during the 2012-2013 season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *One new human infection with influenza A (H3N2) variant (H3N2v) virus was reported to CDC during week 34.*
- *A total of 18 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on July 5, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	17	10	38	29
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	1	1	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	27	18	637	378

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

August 25 – August 31, 2013: Week 35

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:

- **The 2012–13 influenza season: Began on week 40 of 2012 (week ending October 6, 2012) and ends on week 40 of 2013 (week ending October 5, 2013)**
  - The 2012–13 vaccine includes the following influenza virus selection**:**
    - an A/California/7/2009 (H1N1)pdm09-like virus;
    - an A/Victoria/361/2011 (H3N2)-like virus;
    - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI visits during week 35 (1.7%) were higher than the level in week 34 (0.5%). They were comparable to the national baseline ILI level (2.2%), but higher than what has been observed on average in the previous 5 years during the same week (0.6%).
- 5,271 (15.2% of total) of all laboratory specimens have tested positive for influenza.
- There were no ILI clusters reported to HDOH during week 35. There have been 22 ILI clusters reported during the 2012-2013 influenza season.
- One new influenza-associated pediatric death, which occurred in the preceding weeks, was reported to CDC during week 35.

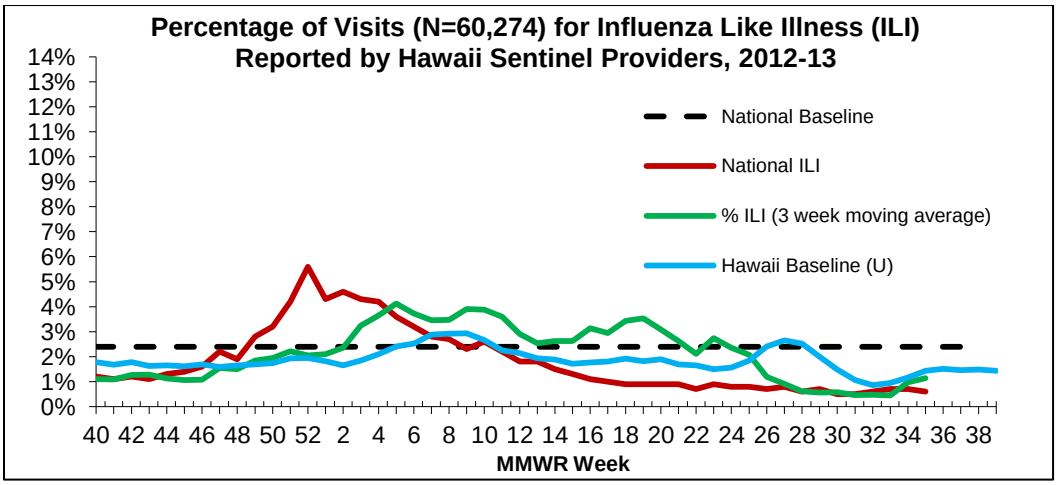
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *1.7% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval), but higher than the national ILI (0.6%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 35. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of five 3-week moving averages over the preceding five flu seasons of historical data (2005–06, 2006–07, 2007–08, 2008–09, and 2009–10).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captured outpatient ILI. There is no historical baseline for urgent care, emergency, and inpatient visits exists since these comprise a new class of ILINet providers. The chart above represents a 3-week moving average and not the actual ILI by week.

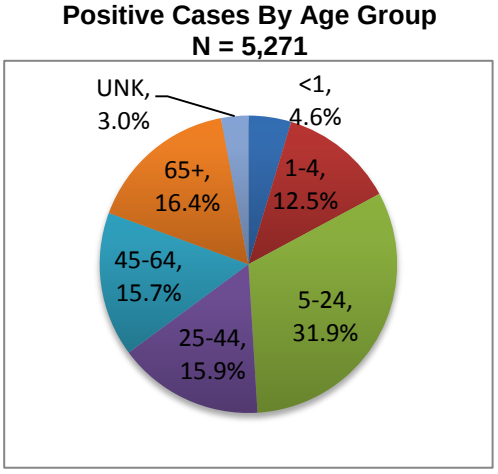
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful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

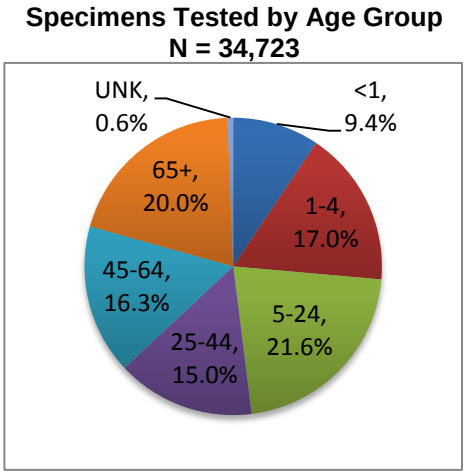
II. Laboratory Surveillance: SLD, the HDOH public health laboratory, and Hawaii's major private laboratories report results through confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

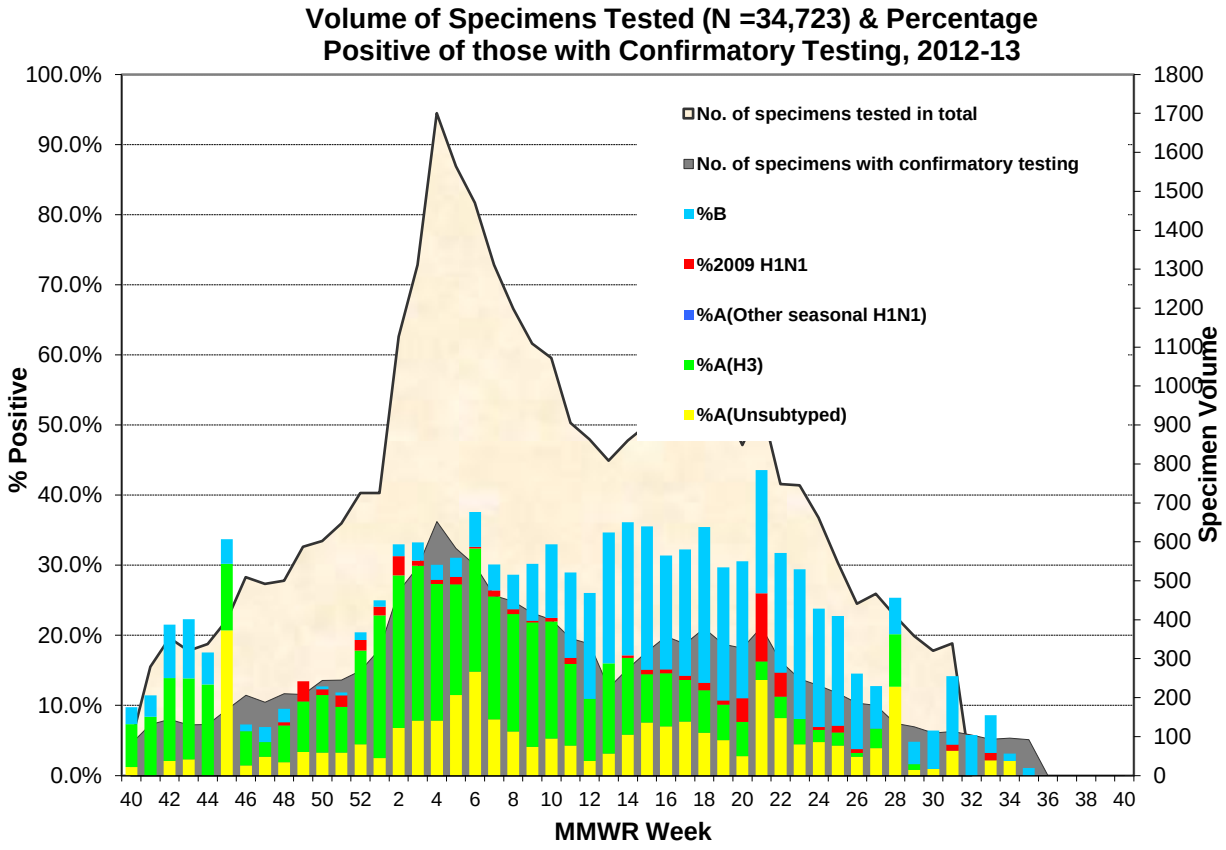
- *A total of 34,723 specimens has been tested statewide for influenza viruses*
  - *21,693 (62.5%) were screened only by rapid antigen tests with no confirmatory testing*
  - *13,030 (37.5%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,096 (8.9%) were cases of influenza A and 2,175 (6.3%) were cases of influenza B were detected using any method*
  - *influenza A cases included:*
    - *139 (4.5%) were 2009 H1N1,*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,399 (45.2%) were influenza A (H3),*
    - *Remaining (n = 1,558, 50.3%) were influenza A of undetermined subtype.*

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the *15.2% of specimens* that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.





The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).[5]



[5] *Influenza testing at SLD was suspended between 08/15/13 and 09/05/13 due to lack of reagents, which may account for the anomalously decreased testing volume and positive influenza cases during this period.*

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 on a limited basis 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 2012–13 Flu Season

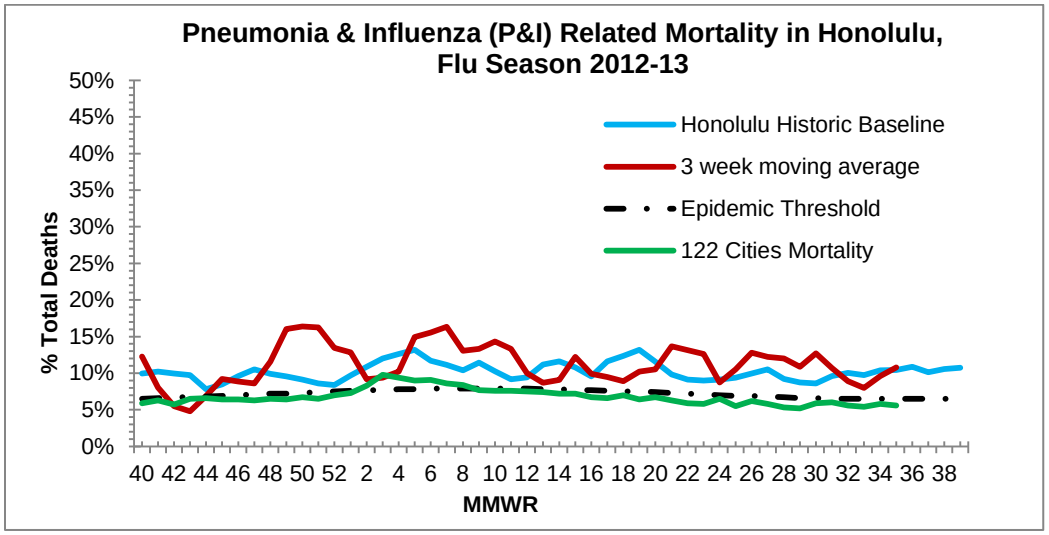
	MMWR Week																							
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11
Adenovirus										X	X		X			X			X	X	X	X	X	
Coxsackie Virus																								
Cytomegalovirus																		X				X	X	
Echovirus																								
Enterovirus							X			X	X	X			X		X				X		X	
Herpes Simplex Virus, Type 1																								
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X
Varicella Zoster Virus																								
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X	
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																								
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	X	X	X	X	X	X	X	X	X	X	X

	MMWR Week																												
Isolates	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	X		X	X			X	X	X	X		X					
Coxsackie Virus																													
Cytomegalovirus					X																								
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							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Rhinovirus	X	X	X	X	X																								
Varicella Zoster Virus																													
Influenza 2009 H1N1			X	X	X	X	X	X	X	X			X	X						X			X						
Influenza A (H3)	X	X	X	X	X	X	X	X	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	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					

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 Honolulu specific data 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:

- *11.8% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality (5.6%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.1%) (i.e., inside 95% confidence interval).*



Influenza-Associated Pediatric Deaths:

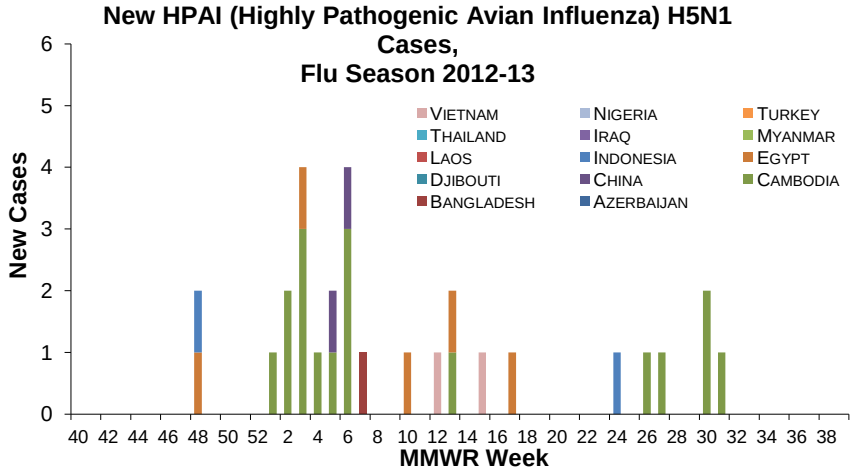
- Influenza-associated deaths are considered pediatric in persons aged less than 18 years.
- Influenza-associated pediatric mortality has been a nationally notifiable condition since October 2004.
- All pediatric influenza-associated deaths are laboratory confirmed.
- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- One new influenza-associated pediatric death was reported to CDC during week 35. The death was associated with influenza B virus and occurred during week 6 (week ending February 9, 2013). A total of 161 pediatric deaths has been reported during the 2012-2013 flu season.

VI. 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).

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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *One new human infection with Influenza A (H3N2) variant (H3N2v) virus was reported to CDC during week 35 from Michigan.*
- *A total of 19 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	17	10	38	29
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	1	1	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	27	18	637	378

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

September 1 – September 7, 2013: Week 36

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 2012–13 influenza season: Began on week 40[1] of 2012 (week ending October 6, 2012) and ends on week 39 of 2013 (week ending October 5, 2013).**
    - The 2012–13 vaccine includes the following influenza virus selection**:**
        - an A/California/7/2009 (H1N1)pdm09-like virus;
        - an A/Victoria/361/2011 (H3N2)-like virus;
        - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI outpatient visits during week 36 (1.6%) were higher than the level in week 35 (1.4%). They were comparable to the national baseline ILI level (2.2%), but higher than what has been observed on average in the previous 5 years during the same week (0.7%).
- 5,277 (15.1% of total) of all samples submitted to participating laboratories for testing were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 36. There have been 22 ILI clusters reported during the 2012-2013 influenza season.
- Three new influenza-associated pediatric deaths were reported to CDC during week 36. These cases occurred in the preceding weeks.

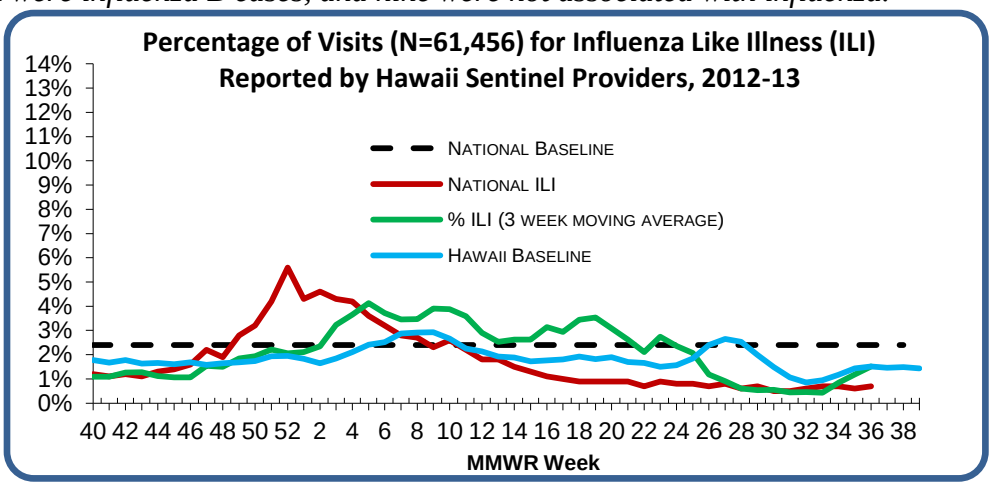
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *1.6% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval), but higher than the national ILI rate (0.7%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 36. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2007–08, 2008–09, 2009–10, 2010-2011, and 2011-2012).

[3] Based on comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.

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

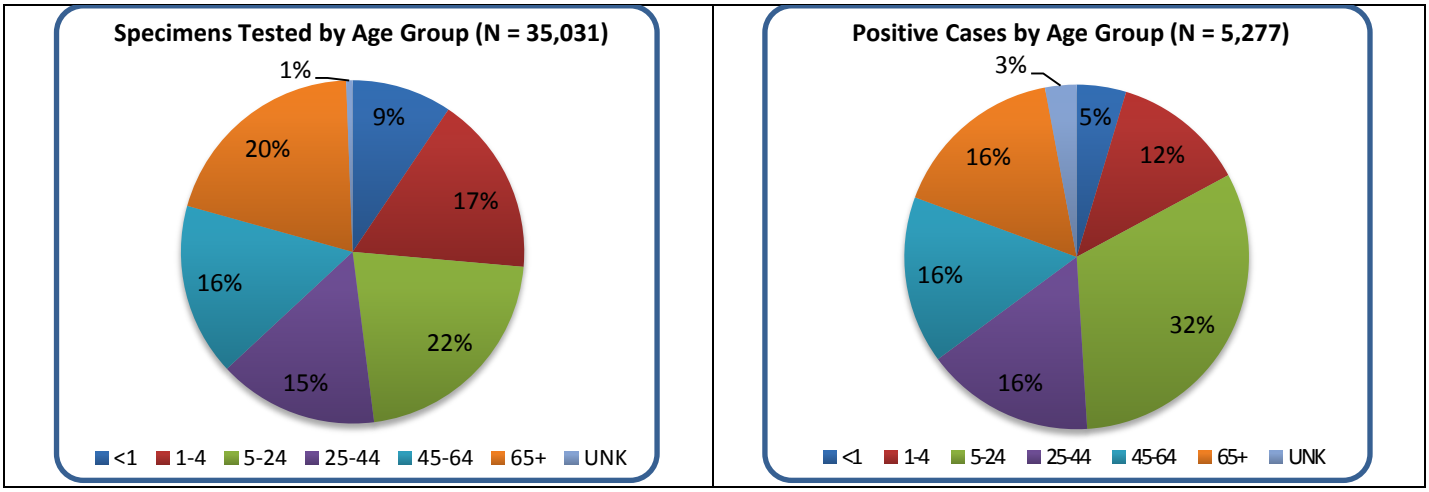
II. Laboratory Surveillance: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

- *A total of 35,031 specimens has been tested statewide for influenza viruses*
  - *21,864 (62.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *13,167 (37.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,100 (8.8%) cases of influenza A and 2,177 (6.2%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *139 (4.5%) 2009 H1N1*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,401 (45.2%) influenza A (H3)*
    - *1,560 (50.3%) influenza A of undetermined subtype*

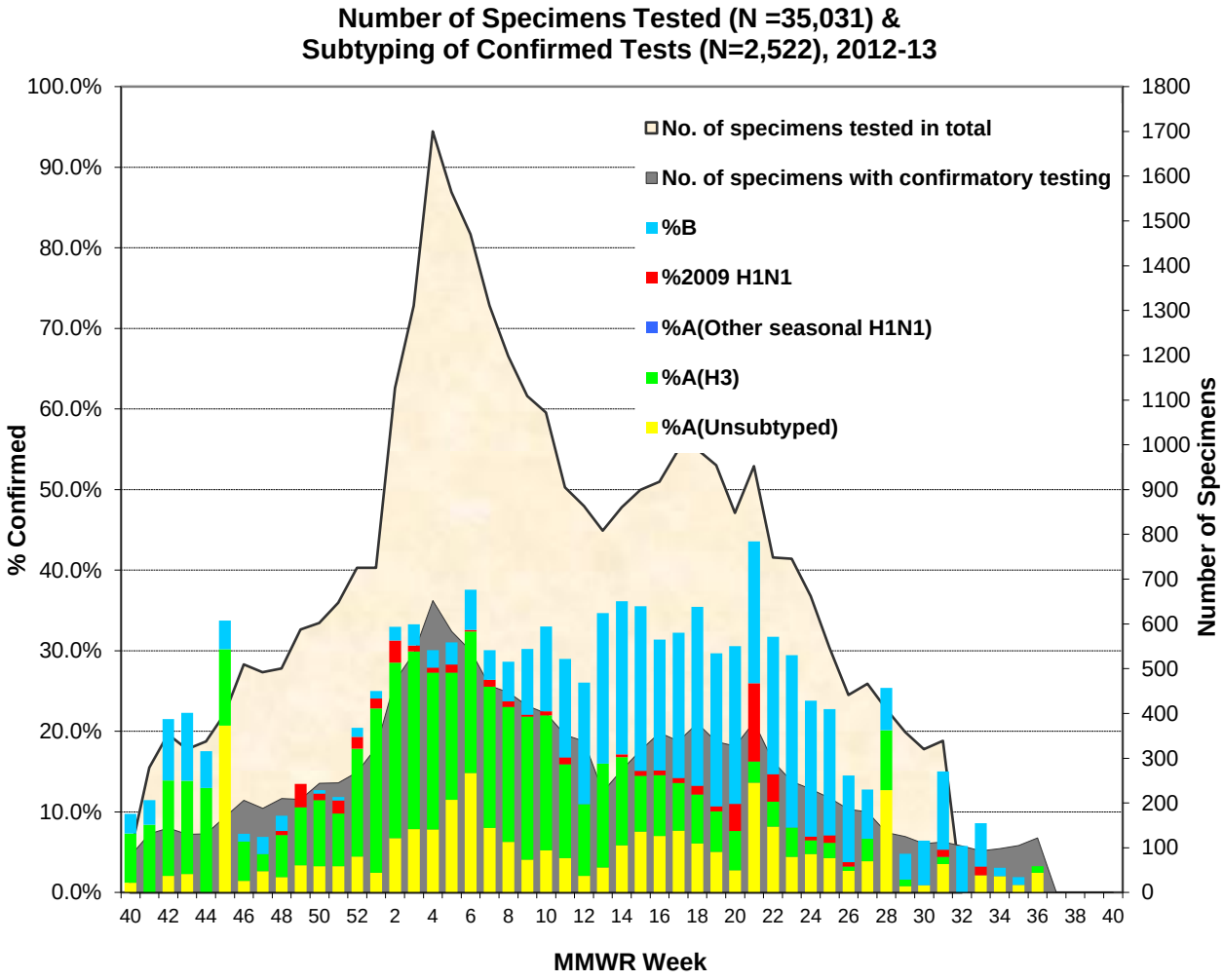
I. Age distribution

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the ***15.1% of specimens*** that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.



II. Laboratory testing

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 2012–13 Flu Season

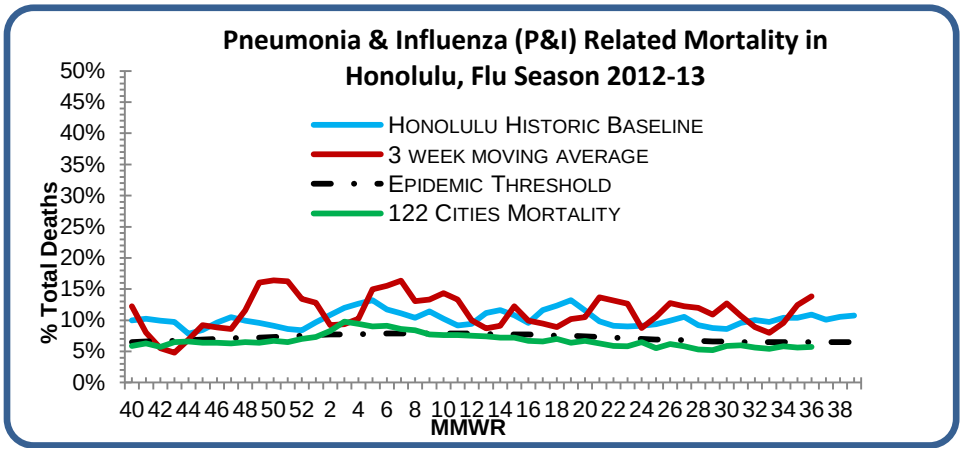
	MMWR Week																									
Isolates	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13
Adenovirus										X	X		X			X			X	X	X	X	X		X	X
Coxsackie Virus																										
Cytomegalovirus																		X				X	X			
Echovirus																										
Enterovirus							X			X	X	X			X		X				X		X			
Herpes Simplex Virus, Type 1																										
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X		
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X
Varicella Zoster Virus																										
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X			
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																										
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	MMWR Week																										
Isolates	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	X			X	X	X	X		X					
Coxsackie Virus																											
Cytomegalovirus			X																								
Echovirus																											
Enterovirus				X					X						X												
Herpes Simplex Virus, Type 1																											
Metapneumovirus	X	X					X	X		X	X	X			X					X			X				
Parainfluenza Virus	X	X	X	X		X	X	X		X			X	X	X		X	X	X	X							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Rhinovirus	X	X	X																								
Varicella Zoster Virus																											
Influenza 2009 H1N1	X	X	X	X	X	X	X	X			X	X						X			X						
Influenza A (H3)	X	X	X	X	X	X	X	X	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	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				

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 Honolulu specific data 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:

- *15.9% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii[5] (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was higher than the national 122 city P&I mortality[6] (5.7%) (i.e., outside the 95% confidence interval) and the epidemic threshold (6.1%) (i.e., outside the 95% confidence interval).*



Influenza-Associated Pediatric Deaths[7]:

- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- Three new influenza-associated pediatric deaths were reported to CDC during week 36. These occurred in the preceding weeks. One death was associated with an influenza A (H3) virus and occurred during week 11 (week ending March 16, 2013) and two deaths were associated with an influenza B virus and occurred during weeks 12 and 13 (weeks ending March 23 and 30, 2013). A total of 164 influenza-associated pediatric deaths have been reported during the 2012-2013 season

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2006–07, 2007–08, 2008–09, 2009–10, and 2010-2011).

[6] 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

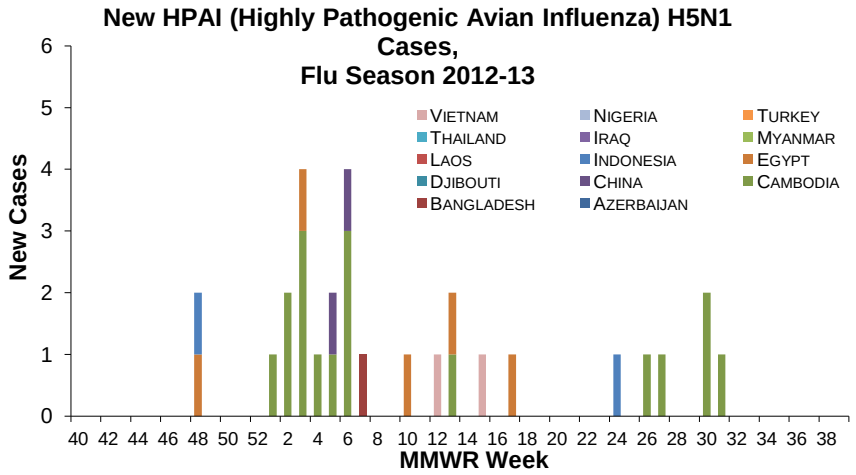
[7] Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

VI. 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No new infections with (H3N2) variant (H3N2v) virus was reported to CDC during week 36.*
- *A total of 19 H3N2v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	17	10	38	29
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	1	1	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	27	18	637	378

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 37: September 8 – September 14, 2013

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 2012–13 influenza season: Began on week 40[1] of 2012 (week ending October 6, 2012) and ends on week 39 of 2013 (week ending October 5, 2013).**
    - The 2012–13 vaccine includes the following influenza virus selection**:**
        - an A/California/7/2009 (H1N1)pdm09-like virus;
        - an A/Victoria/361/2011 (H3N2)-like virus;
        - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI outpatient visits during week 37 (1.8%) were higher than the level in week 36 (1.6%). They were comparable to the national baseline ILI level (2.2%), but higher than what has been observed on average in the previous 5 years during the same week (0.9%).
- 5,286 (14.9% of total) of all samples submitted to participating laboratories for testing were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 37. There have been 22 ILI clusters reported during the 2012-2013 influenza season.
- Two additional novel influenza A virus infections have been reported to CDC during week 37.
- No new influenza-associated pediatric deaths were reported to CDC during week 37.

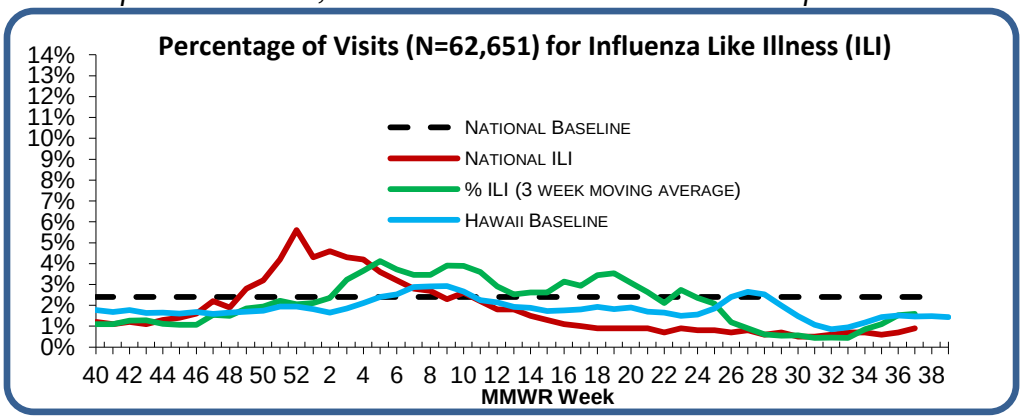
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *1.8% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval), but higher than the national ILI rate (0.9%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 37. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2007–08, 2008–09, 2009–10, 2010-2011, and 2011-2012).

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

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

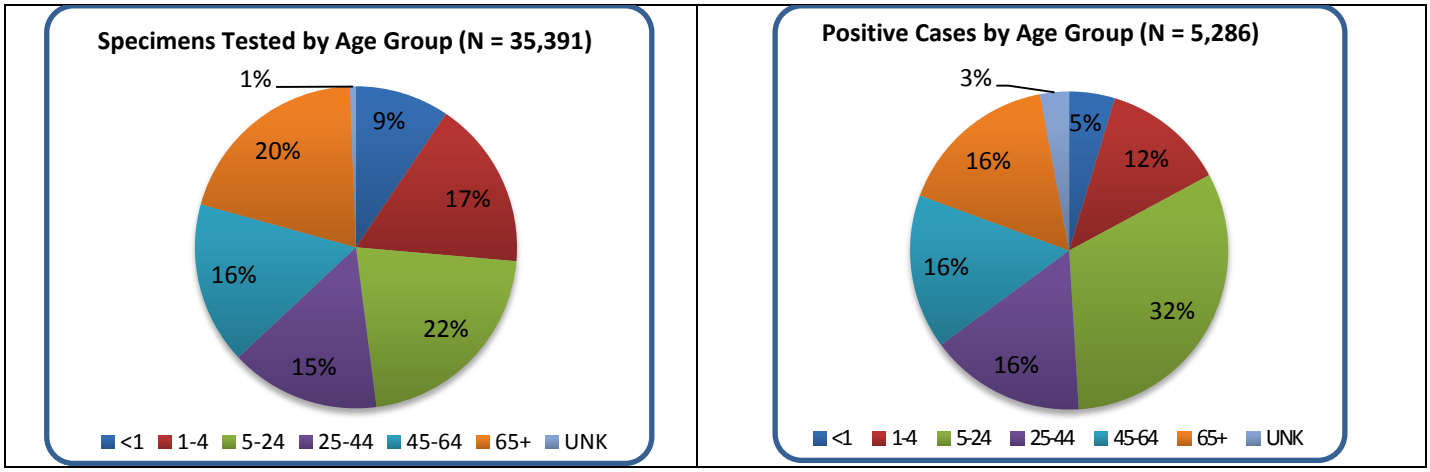
II. Laboratory Surveillance: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

- *A total of 35,391 specimens has been tested statewide for influenza viruses*
  - *22,082 (62.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *13,309 (37.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,105 (8.8%) cases of influenza A and 2,181 (6.2%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *139 (4.5%) 2009 H1N1*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,401 (45.1%) influenza A (H3)*
    - *1,565 (50.4%) influenza A of undetermined subtype*

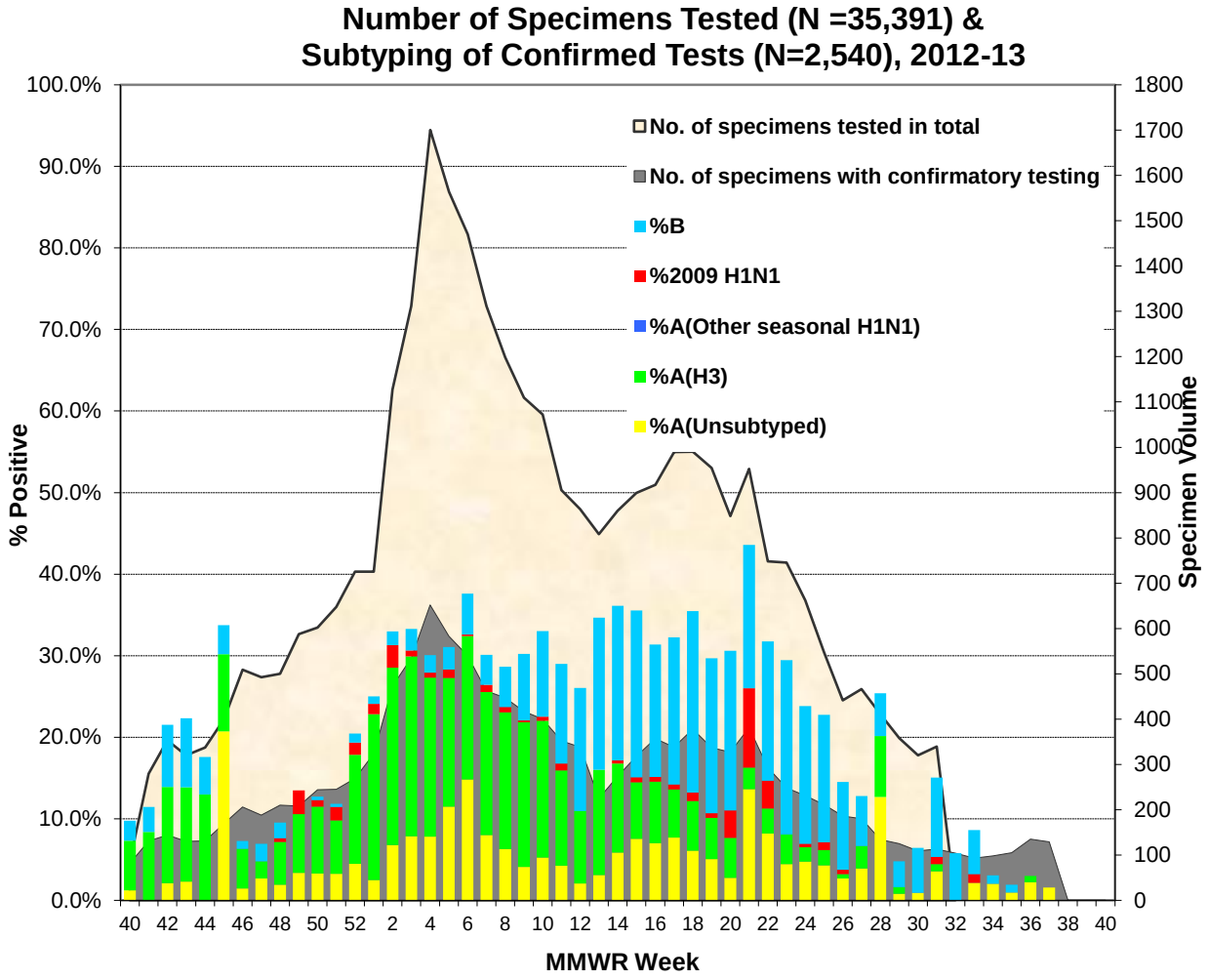
I. Age distribution

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the ***14.9% of specimens*** that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.



II. Laboratory testing

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

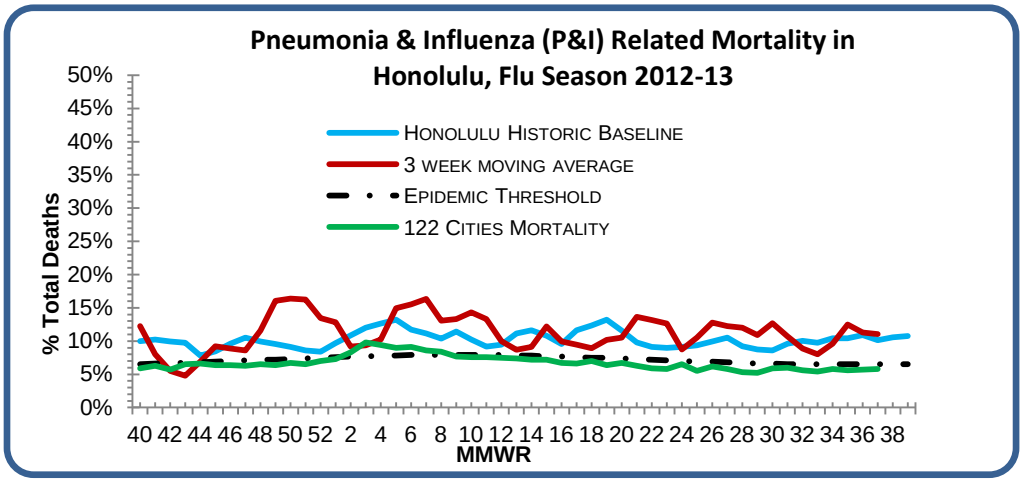
All Respiratory Isolates Identified during the 2012–13 Flu Season

	MMWR Week																																																				
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		X	X		X	X		X	X		X	X	X	X		X	X			X	X	X	X		X					
Coxsackie Virus																																																					
Cytomegalovirus																		X				X	X						X																								
Echovirus																																																					
Enterovirus							X			X	X	X			X		X				X		X							X					X						X												
Herpes Simplex Virus, Type 1																																																				
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X					X	X		X	X	X			X					X			X				
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X			X	X	X		X	X	X	X							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X																								
Varicella Zoster Virus																																																					
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X	X	X	X	X	X			X	X						X			X						
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							X				
Influenza A (Other seasonal H1N1)																																																					
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			
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			

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 Honolulu specific data 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:

- *6.1% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii[5] (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality[6] (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[7]:

- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 37.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2006–07, 2007–08, 2008–09, 2009–10, and 2010-2011).

[6] 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

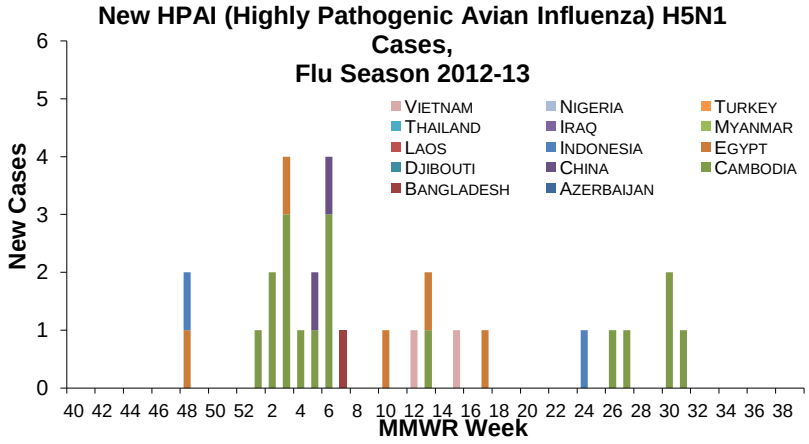
[7] Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

VI. 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *Two additional novel influenza A virus infections were reported to CDC during week 37. Two infections with influenza A (H1N1) variant (H1N1v) viruses were reported by Arkansas.*
- *A total of 21 H3N2v and H1N1v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	17	10	38	29
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	1	1	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	27	18	637	378

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 38: September 15 – September 21, 2013

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 2012–13 influenza season: Began on week 40[1] of 2012 (week ending October 6, 2012) and ends on week 39 of 2013 (week ending October 5, 2013).**
    - The 2012–13 vaccine includes the following influenza virus selection**:**
        - an A/California/7/2009 (H1N1)pdm09-like virus;
        - an A/Victoria/361/2011 (H3N2)-like virus;
        - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI outpatient visits during week 38 (1.6%) were lower than the level in week 37 (1.7%). They were comparable to the national baseline ILI level (2.2%), and comparable to what has been observed on average in the previous 5 years during the same week (1.0%).
- Hawaii's pneumonia and influenza (P&I) rate of 8.3% was comparable to the historical baseline for Hawaii, the 122-cities average (5.7%), and to what has been observed on average in the previous 5 years during the same week (6.1%).
- 5,293 (14.8% of total) of all samples submitted to participating laboratories for testing were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 38. There have been 22 ILI clusters reported during the 2012-2013 influenza season.
- No additional novel influenza A virus infections have been reported to CDC during week 38.
- No new influenza-associated pediatric deaths were reported to CDC during week 38.

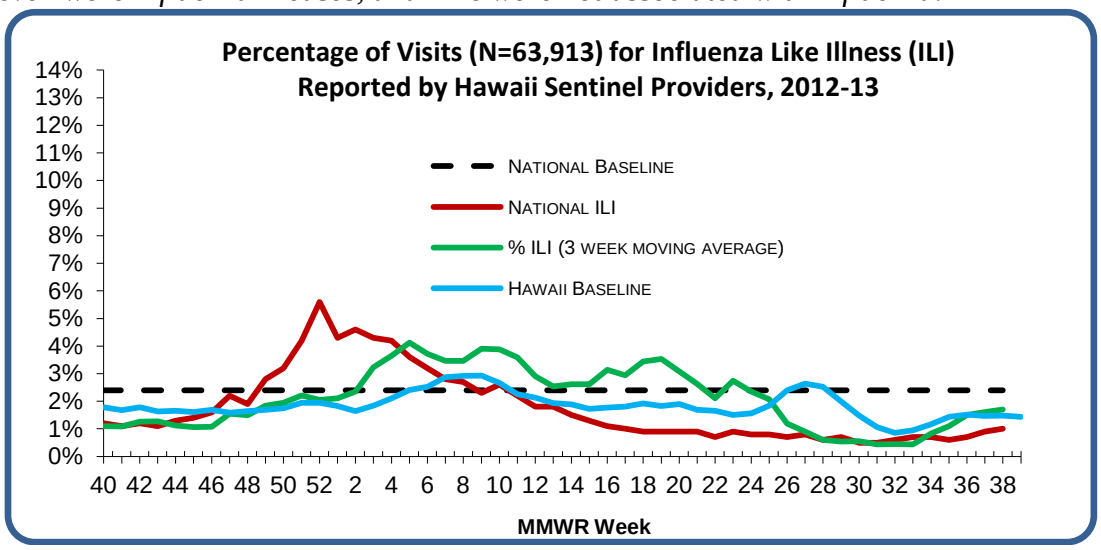
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *1.6% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval) and the national ILI rate (1.0%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 38. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2007–08, 2008–09, 2009–10, 2010-2011, and 2011-2012).

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

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

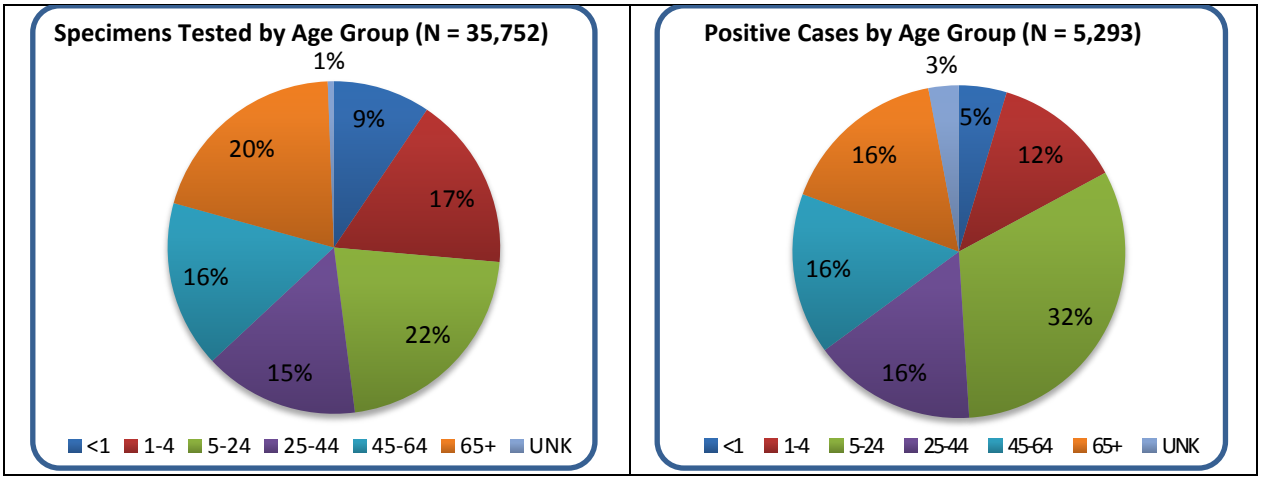
II. Laboratory Surveillance: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

- *A total of 35,752 specimens has been tested statewide for influenza viruses*
  - *22,351 (62.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *13,437 (37.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,110 (8.7%) cases of influenza A and 2,183 (6.1%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *139 (4.5%) 2009 H1N1*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,401 (45.0%) influenza A (H3)*
    - *1,570 (50.5%) influenza A of undetermined subtype*

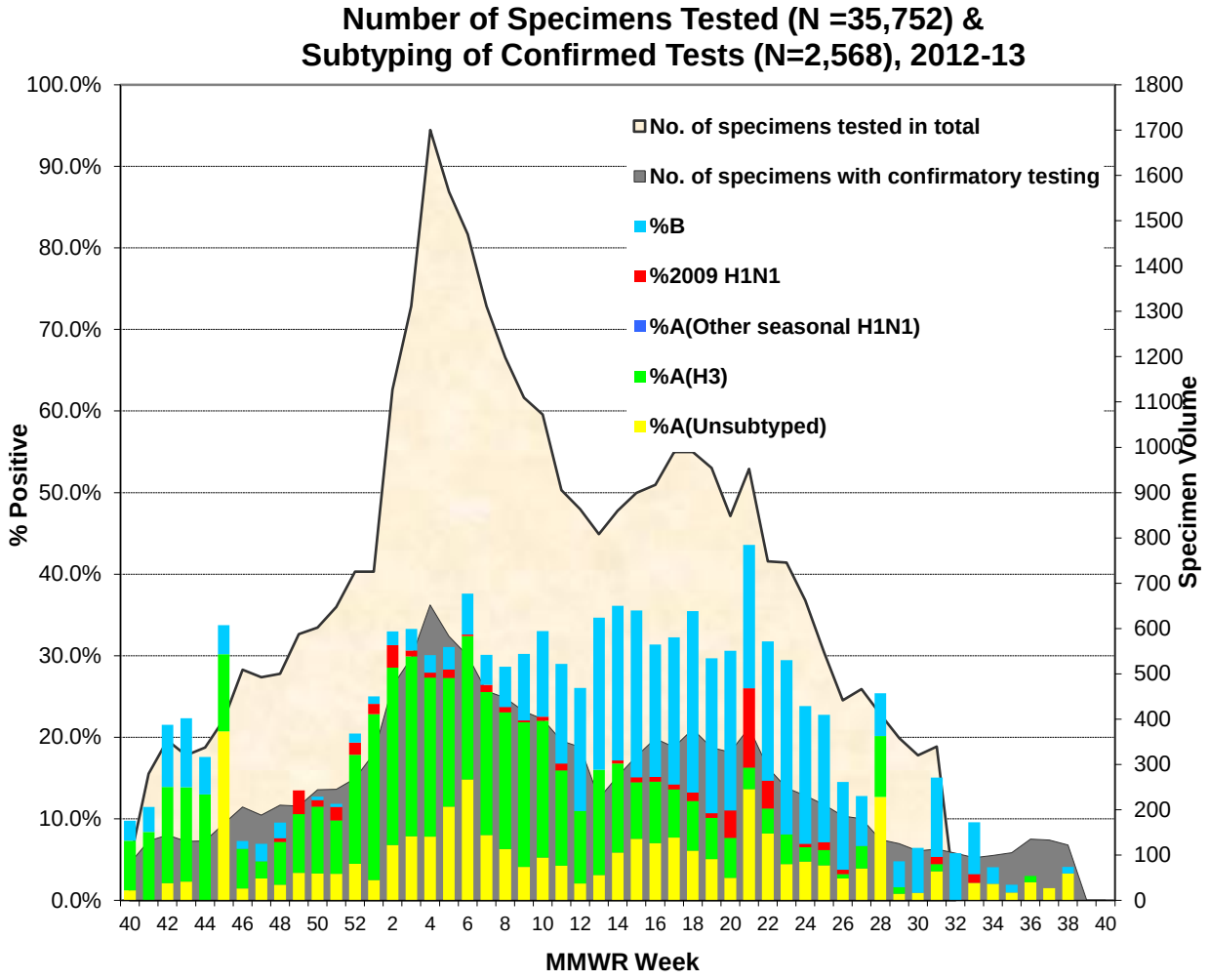
I. Age distribution

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the ***14.8% of specimens*** that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.



II. Laboratory testing

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 2012–13 Flu Season

MMWR Week (weeks 40–16)

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
Adenovirus										X	X		X			X			X	X	X	X	X		X	X		X	X
Coxsackie Virus																													
Cytomegalovirus																		X				X	X						X
Echovirus																													
Enterovirus							X			X	X	X			X		X				X		X						
Herpes Simplex Virus, Type 1																													
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X			X	X	
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X
Varicella Zoster Virus																													
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X				X	X	X
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																													
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

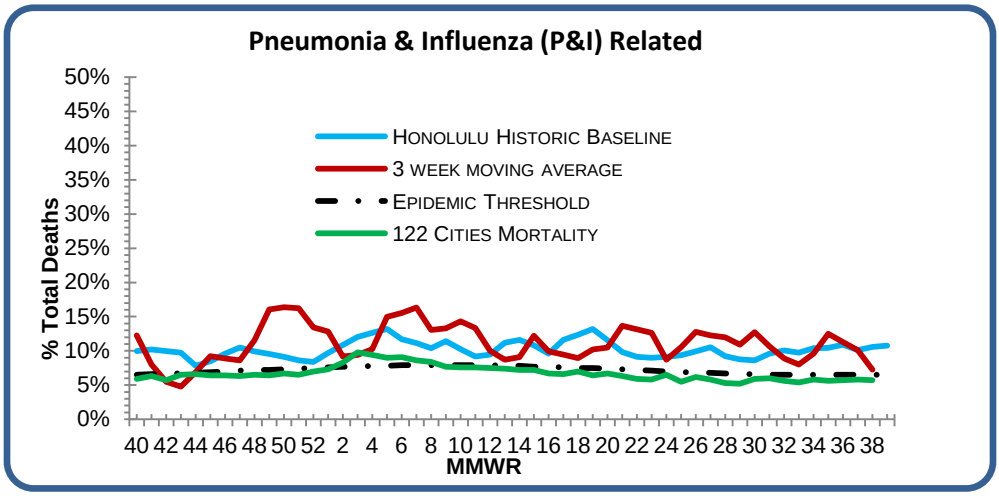
MMWR Week (weeks 17–40)

Isolates	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	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				
Parainfluenza Virus	X		X	X	X		X			X	X	X		X	X	X	X							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Rhinovirus																								
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				
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		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		

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 Honolulu specific data 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:

- *8.3% of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I was comparable to the historical baseline in Hawaii[5] (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122 city P&I mortality[6] (5.7%) (i.e., inside the 95% confidence interval) and the epidemic threshold (6.1%) (i.e., inside the 95% confidence interval).*



Influenza-Associated Pediatric Deaths[7]:

- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 38.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2006–07, 2007–08, 2008–09, 2009–10, and 2010-2011).

[6] 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

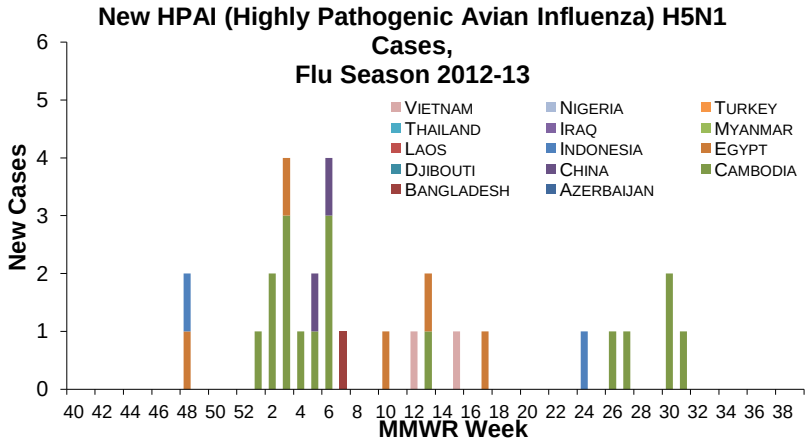
[7] Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

VI. 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No additional novel influenza A virus infections have been reported to CDC during week 38.*
- *A total of 21 H3N2v and H1N1v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	17	10	38	29
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	1	1	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	27	18	637	378

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 39: September 22 – September 28, 2013

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:

- **Due to the government shutdown, limited data was available from the weekly influenza report published by CDC for week 39.**
- **The 2012–13 influenza season: Began on week 40[1] of 2012 (week ending October 6, 2012) and ends on week 39 of 2013 (week ending October 5, 2013).**
    - The 2012–13 vaccine includes the following influenza virus selection**:**
        - an A/California/7/2009 (H1N1)pdm09-like virus;
        - an A/Victoria/361/2011 (H3N2)-like virus;
        - a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI outpatient visits during week 39 (2.1%) were higher than the level in week 38 (1.6%). They were comparable to the national baseline ILI level (2.2%), but higher than the national ILI rate during the same week (1.0%).
- Hawaii's pneumonia and influenza (P&I) rate of 16.88% was comparable to the historical baseline for Hawaii, but higher than the 122-cities average (5.7%), and the epidemic threshold (6.1%).
- 5,293 (14.8% of total) of all samples submitted to participating laboratories for testing were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 39. There have been 22 ILI clusters reported during the 2012-2013 influenza season.

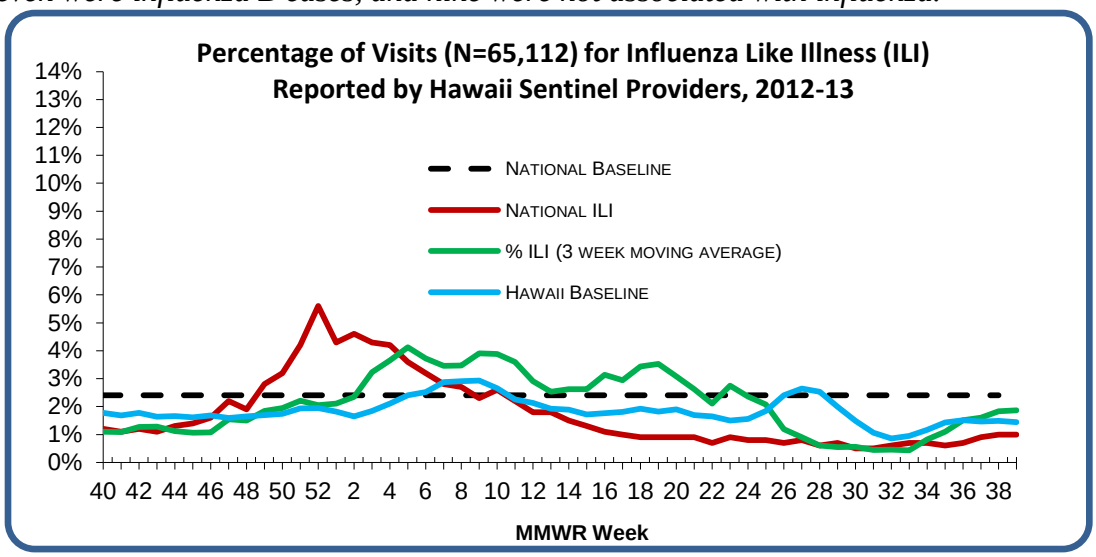
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *2.1% of outpatient visits to Hawaii sentinel providers were attributable to ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)[4] (i.e., inside the 95% confidence interval), but higher than the national ILI rate (1.0%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 39. For the 2012–13 influenza season, there have been 22 ILI clusters reported to HDOH. Six were associated with influenza A virus, seven were influenza B cases, and nine were not associated with influenza.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2007–08, 2008–09, 2009–10, 2010-2011, and 2011-2012).

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

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

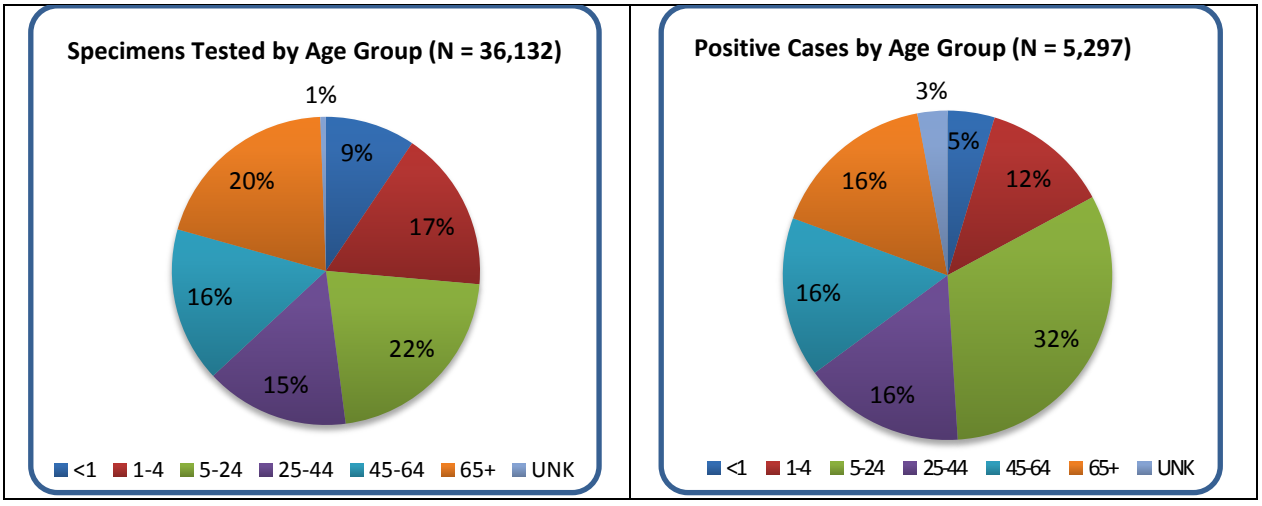
II. Laboratory Surveillance: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2012–13 flu season:

- *A total of 36,132 specimens has been tested statewide for influenza viruses*
  - *22,568 (62.5%) were screened only by rapid antigen tests with no confirmatory testing*
  - *13,564 (37.5%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *3,113 (8.6%) cases of influenza A and 2,184 (6.0%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *139 (4.5%) 2009 H1N1*
    - *0 (0.0%) were other seasonal influenza A (H1),*
    - *1,401 (45.0%) influenza A (H3)*
    - *1,573 (50.5%) influenza A of undetermined subtype*

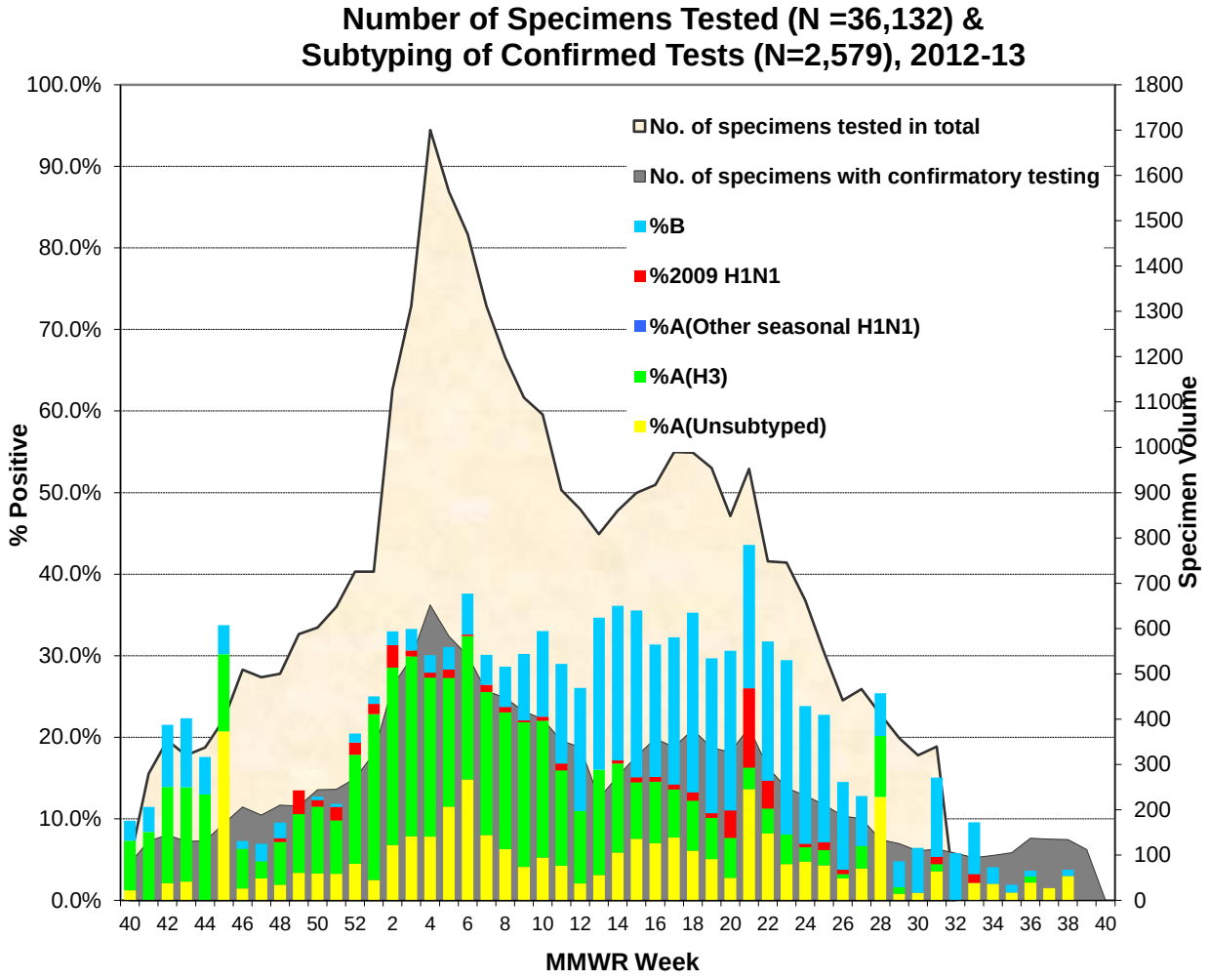
I. Age distribution

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the ***14.7% of specimens*** that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.



II. Laboratory testing

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 2012–13 Flu Season

MMWR Week (weeks 40–13)

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
Adenovirus										X	X		X			X			X	X	X	X	X		X	X
Coxsackie Virus																										
Cytomegalovirus																		X				X	X			
Echovirus																										
Enterovirus							X			X	X	X			X		X				X		X			
Herpes Simplex Virus, Type 1																										
Metapneumovirus							X	X	X	X	X	X	X	X	X		X	X			X	X	X	X		
Parainfluenza Virus			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X
Varicella Zoster Virus																										
Influenza 2009 H1N1									X	X	X	X	X	X	X	X	X	X	X	X		X	X			
Influenza A (H3)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza A (Other seasonal H1N1)																										
Influenza A (unsubtyped)	X		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Influenza B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

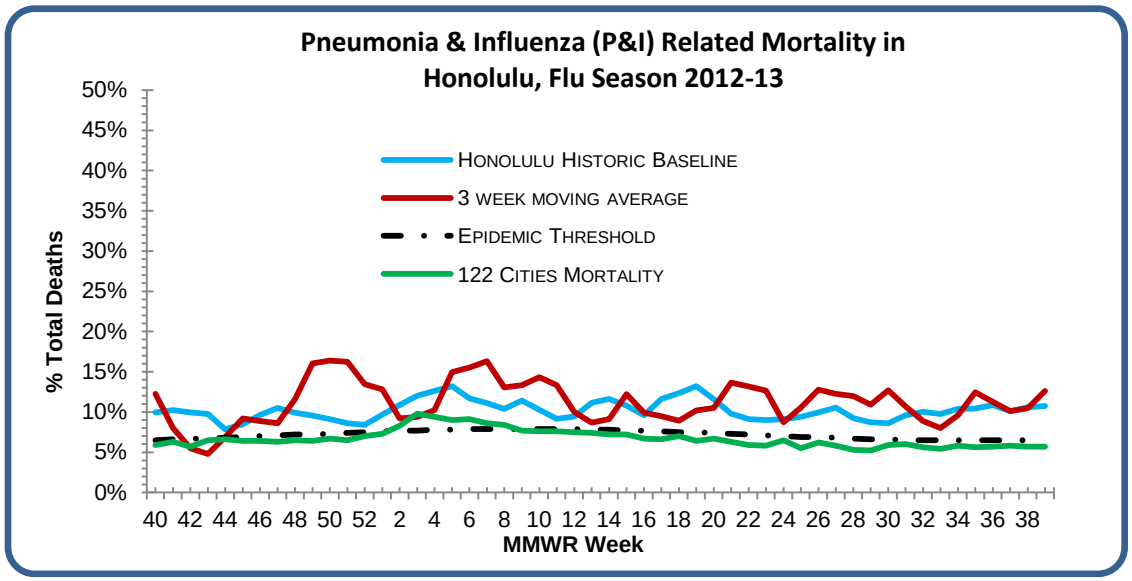
MMWR Week (weeks 14–40)

Isolates	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	X			X	X	X	X		X			X		
Coxsackie Virus																											
Cytomegalovirus			X																								
Echovirus																											
Enterovirus				X					X						X												
Herpes Simplex Virus, Type 1																											
Metapneumovirus	X	X					X	X		X	X	X			X					X			X				
Parainfluenza Virus	X	X	X	X		X	X	X		X			X	X	X		X	X	X	X						X	
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Rhinovirus	X	X	X																								
Varicella Zoster Virus																											
Influenza 2009 H1N1	X	X	X	X	X	X	X	X			X	X						X			X						
Influenza A (H3)	X	X	X	X	X	X	X	X	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	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		

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 Honolulu specific data 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 were related to pneumonia or influenza.*
- *The cumulative average P&I rate for this season is:* ***11.2%.***
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside 95% confidence interval).*
- *The Honolulu P&I was higher than the national 122-city P&I mortality*[6] *(5.7%) (i.e., outside the 95% confidence interval) and higher than the epidemic threshold (6.1%) (i.e., outside the 95% confidence interval).*



Influenza-Associated Pediatric Deaths[7]*:*

- A total of 2 influenza-associated pediatric deaths has been reported in Hawaii during the 2012–2013 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 39.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2006–07, 2007–08, 2008–09, 2009–10, and 2010-2011).

[6] 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

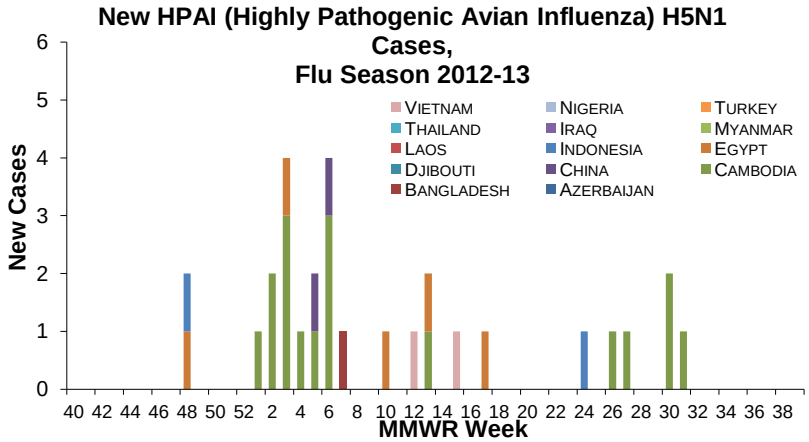
[7] Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No additional novel influenza A virus infections have been reported to CDC during week 39.*
- *A total of 21 H3N2v and H1N1v infections has been reported for 2012–2013 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	17	10	38	29
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	1	1	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	27	18	637	378

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 40: September 29 – October 4, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013-2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI outpatient visits during week 40 (1.0%) were higher than the level in week 39 (2.1%). They were comparable to the national baseline ILI level (2.2%) and to the national ILI rate during the same week (1.2%).
- Hawaii's pneumonia and influenza (P&I) rate of 7.1% was comparable to the historical baseline for Hawaii, comparable to the 122-cities average (5.7%), and the epidemic threshold (6.1%).
- Out of a total of 411 total samples submitted to participating laboratories for testing, 11 (2.7%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 40. There have been a total of 0 ILI clusters reported during the 2013-2014 influenza season.
- One pediatric death, which occurred during the 2012-2013 season, was reported to CDC. The death was associated with influenza A virus and no subtyping data is available. There have not been any pediatric deaths recorded during the 2013-2014 season.
- There were no cases of avian or novel influenza.

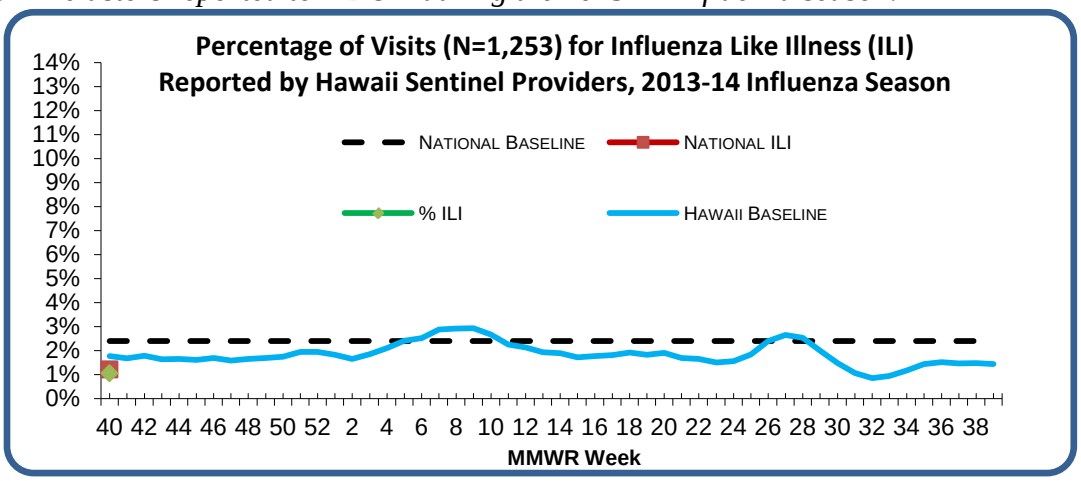
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. Influenza-Like Illness (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *The rate of outpatient visits due to ILI for Hawaii sentinel providers was:* ***1.0%****.*
- *ILI visits were comparable to the historical baseline in Hawaii*[2,3] *(i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.2%)*[4] *(i.e., inside the 95% confidence interval), and comparable to the national ILI rate (1.2%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 40, and there have been a total of 0 ILI clusters reported to HDOH during the 2013-14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010-2011, 2011-2012, and 2012-2013).

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

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

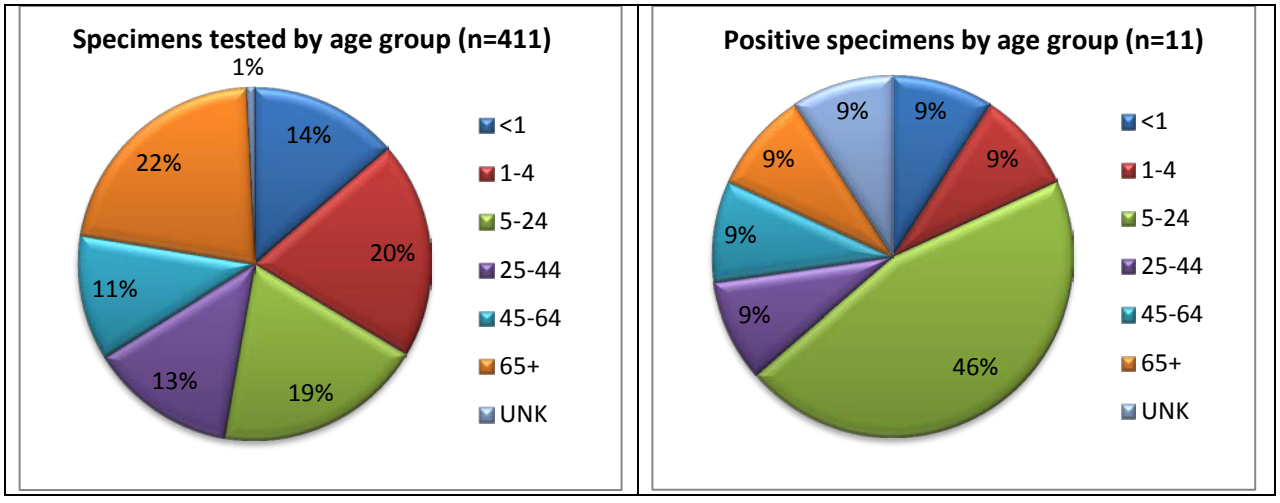
II. Laboratory Surveillance: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

A. Influenza: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **411** specimens has been tested statewide for influenza viruses (positive=**2.7%**).*
  - *287 (69.8%) were screened only by rapid antigen tests with no confirmatory testing*
  - *124 (30.2%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
- *8 (1.9%) cases of influenza A and 3 (0.7%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *0 (0%) 2009 H1N1*
    - *0 (0%) were other seasonal influenza A (H1),*
    - *0 (0%) influenza A (H3)*
    - *8 (100%) influenza A of undetermined subtype*

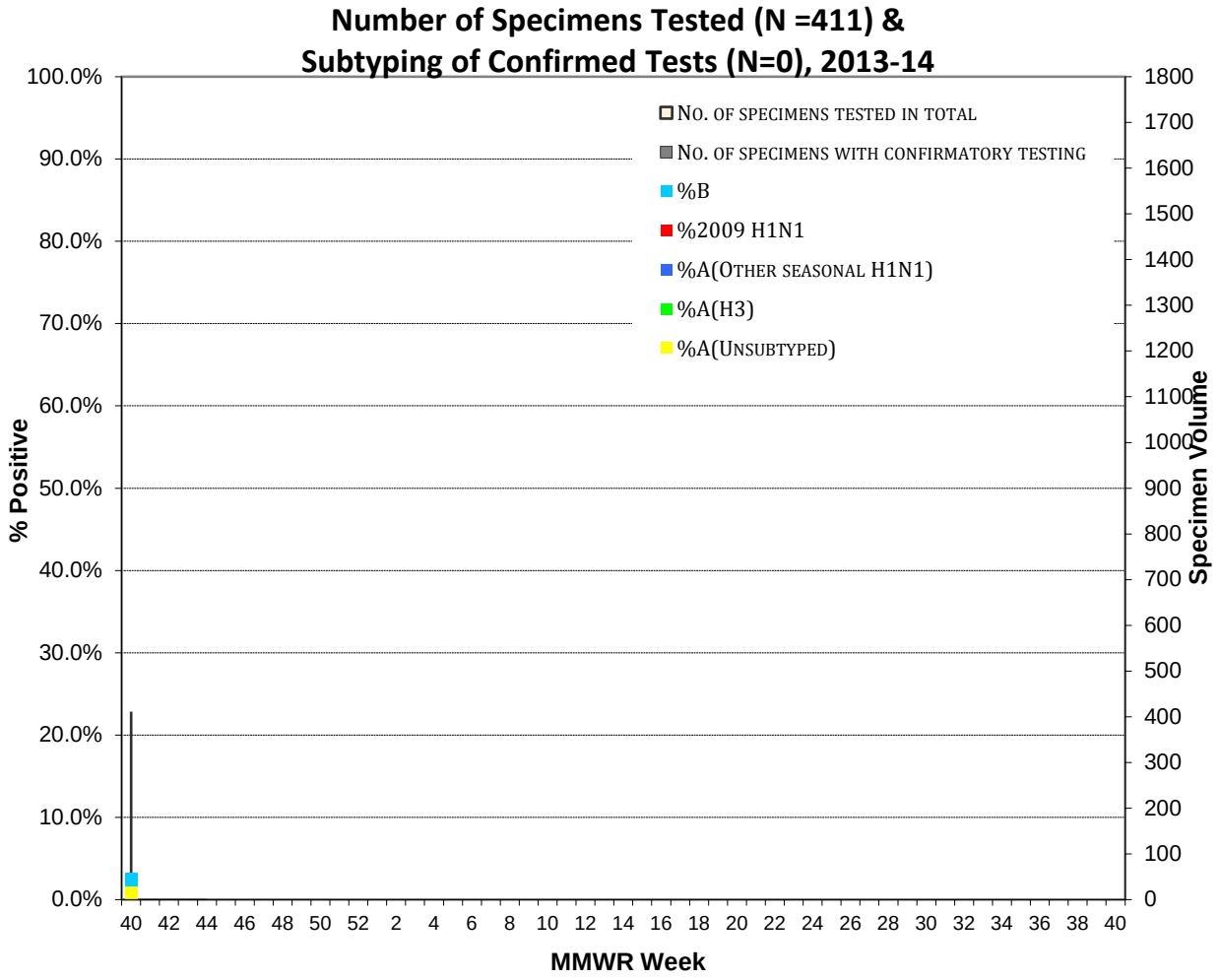
I. Age distribution

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the ***2.7% of specimens*** that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.



II. Laboratory testing

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																					
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus																																																					
Parainfluenza Virus																																																					
Respiratory Syncytial Virus	X																																																				
Rhinovirus																																																					
Varicella Zoster Virus																																																					
Influenza 2009 H1N1																																																					
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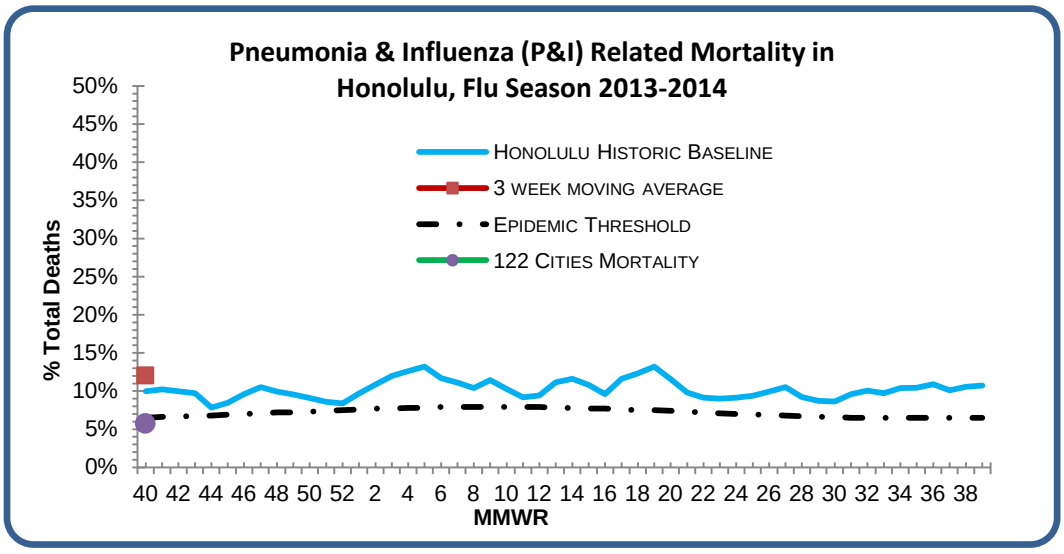
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X																																																				
Influenza B	X																																																				

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:

- ***7.1%** of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The cumulative average P&I rate for this season is: **7.1%**.*
- *The P&I rate was comparable to the historical baseline in Hawaii[5] (i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality[6] (5.7%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.1%) (i.e., inside the 95% confidence interval).*



Influenza-Associated Pediatric Deaths[7]:

- A total of 0 influenza-associated pediatric deaths has been reported in Hawaii during the 2013–2014 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 40.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009-2010, 2010-2011, 2011-2012, and 2012-2013).

[6] 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

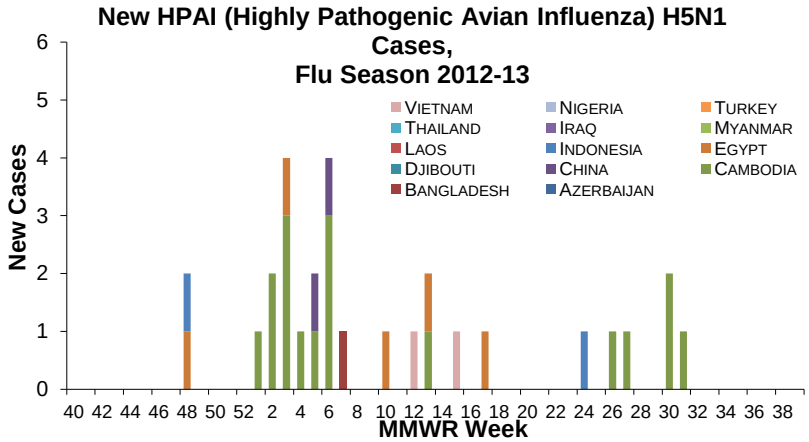
[7] Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No additional novel influenza A virus infections have been reported to CDC during week 40.*
- *A total of 0 H3N2v and H1N1v infections has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	17	10	38	29
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	1	1	193	161
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	27	18	637	378

* All dates refer to onset of illness.

Appendix 1: Additional Information

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: brittany.winston@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 41: OCTOBER 6 – OCTOBER 12, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**

- Vaccine composition for 2013-2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance suggests ILI outpatient visits during week 41 (1.8%) were higher than the level in week 40 (1.0%). They were comparable to the national baseline ILI level (2.0%), but higher than the national ILI rate during the same week (1.1%).
- Hawaii's pneumonia and influenza (P&I) rate of 13.8% was comparable to the historical baseline for Hawaii, but higher than the 122-cities average (5.6%), and the epidemic threshold (6.1%).
- Out of a total of **901** total samples submitted to participating laboratories for testing, **20** (2.2%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 41. There have been a total of 0 ILI clusters reported during the 2013-2014 influenza season.
- No pediatric deaths were reported to HDOH or CDC during week 41.
- There was one case of H3N2v reported to CDC from Iowa during week 41. The patient had exposure to swine during the week preceding the illness.

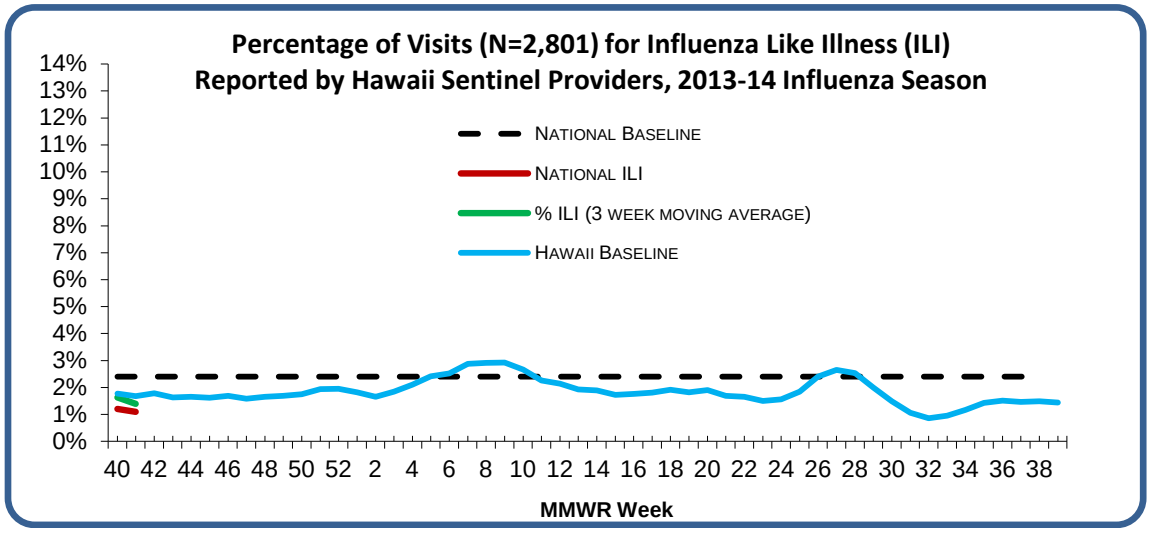
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. Nevertheless, 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:

- *The rate of outpatient visits due to ILI for Hawaii sentinel providers was:* ***1.8%****.*
- *The cumulative average ILI rate for Hawaii thus far is:* ***1.4%****.*
- *ILI visits were comparable to the historical baseline in Hawaii*[2,3] *(i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)*[4] *(i.e., inside the 95% confidence interval), but higher than the national ILI rate (1.1%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 41, and there have been a total of 0 ILI clusters reported to HDOH during the 2013-14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010-2011, 2011-2012, and 2012-2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of confirmatory testing (i.e., RT-PCR or viral culture). Only specimens meeting priority criteria (those from hospitalized patients with acute respiratory distress syndrome, or 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

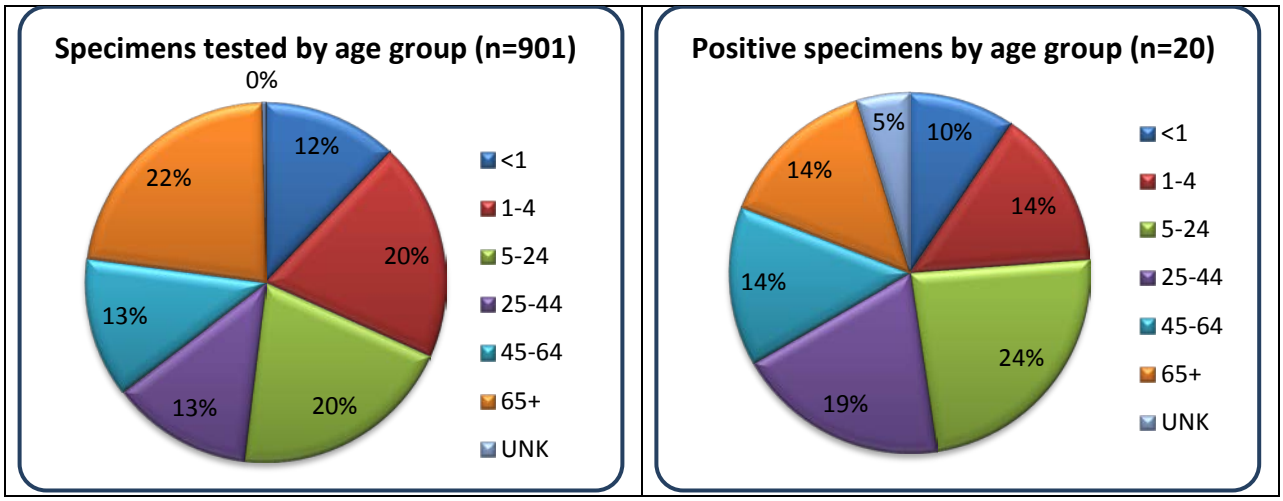
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **901** specimens has been tested statewide for influenza viruses*
  - *Out of these 901 specimens, 20 tested positive for influenza (positive=**2.2%**).*
  - *610 (67.7%) were screened only by rapid antigen tests with no confirmatory testing*
  - *291 (32.3%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*

- *15 (1.7%) cases of influenza A and 5 (0.5%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *2 (13.3%) 2009 H1N1*
    - *0 (0%) were other seasonal influenza A (H1),*
    - *2 (13.3%) influenza A (H3)*
    - *11 (73.4%) influenza A of undetermined subtype*

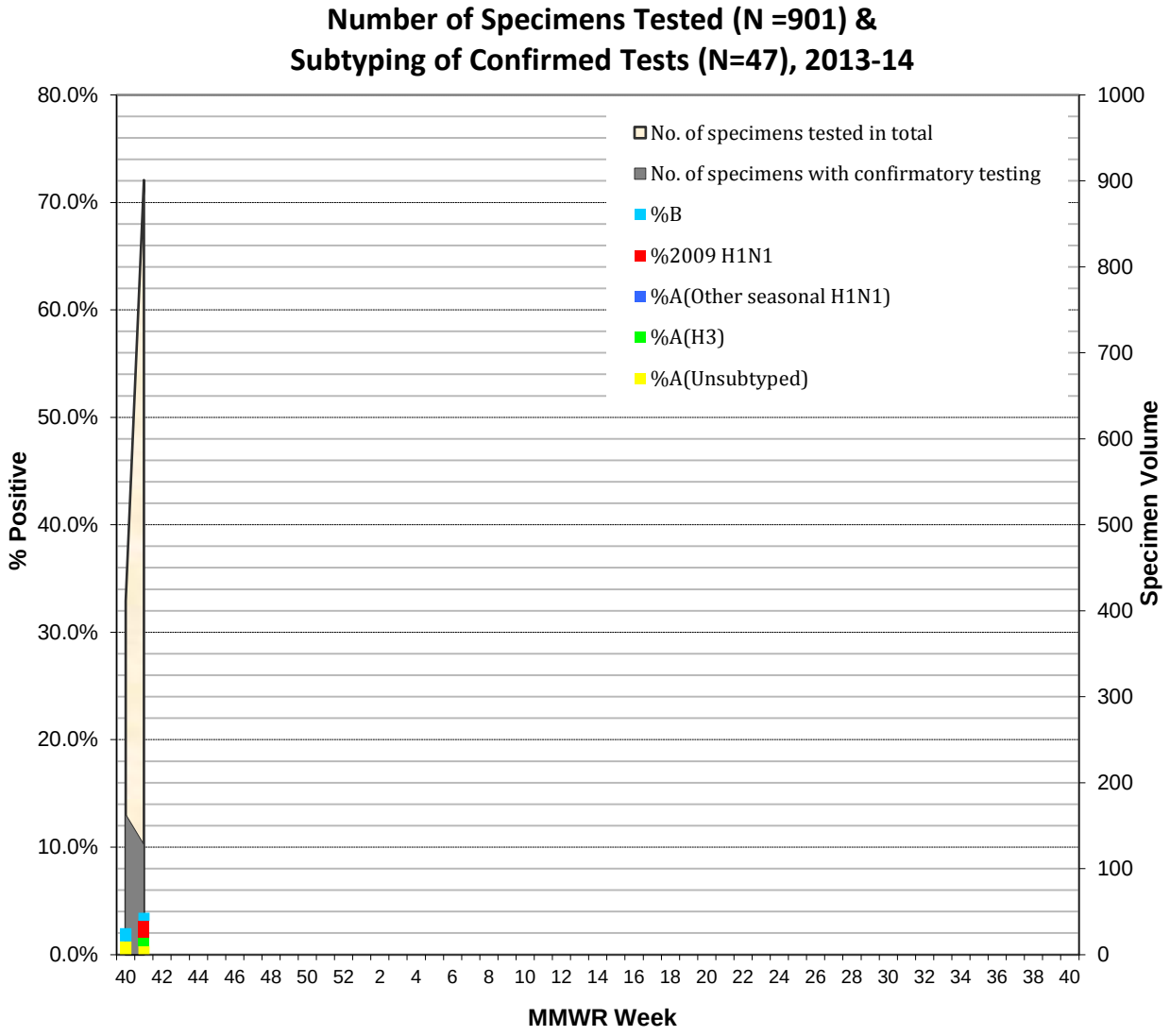
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2012–13 influenza season. Of the ***2.2% of specimens*** that tested positive for influenza, more were likely to be aged 5–24 years than any other age group.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																			
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X																																																		
Parainfluenza Virus	X																																																				
Respiratory Syncytial Virus	X	X																																																			
Rhinovirus	X	X																																																			
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X																																																			
Influenza A (H3)		X																																																			
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X	X																																																			
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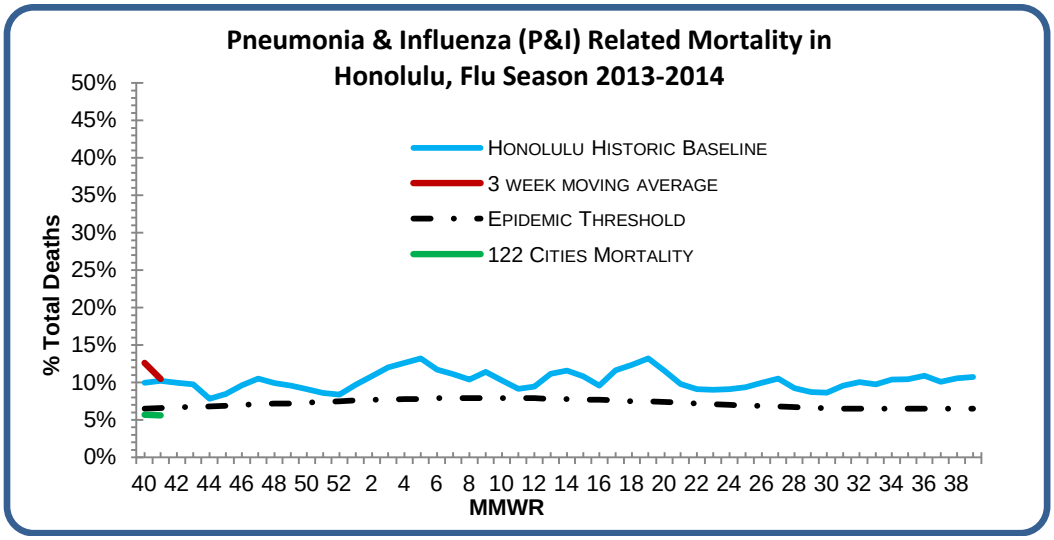
III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY: P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. CDC collects the 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:

- ***13.8%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The cumulative average P&I rate for this season is:* ***10.5%.***
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside 95% confidence interval).*
- *The Honolulu P&I was higher than the national 122-city P&I mortality*[6] *(5.6%) (i.e., outside the 95% confidence interval) and higher than the epidemic threshold (6.1%) (i.e., outside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- A total of 0 influenza-associated pediatric deaths has been reported in Hawaii during the 2013–2014 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 41.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009-2010, 2010-2011, 2011-2012, and 2012-2013).

[6] 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

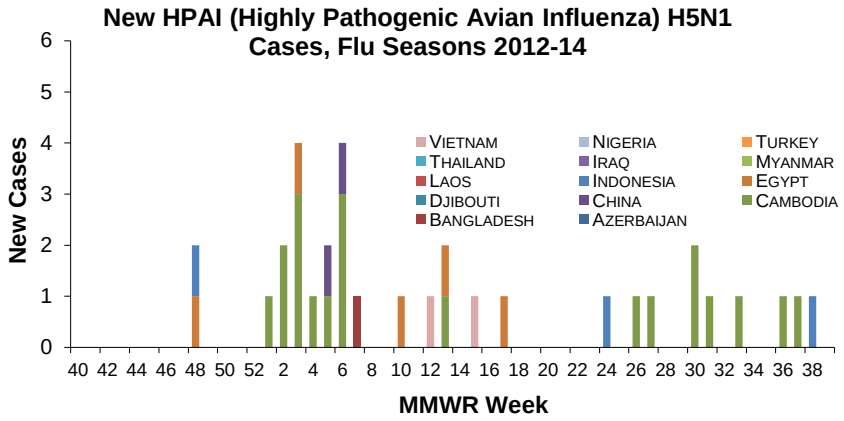
[7] Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *One infection with an influenza A (H3N2) variant virus (H3N2v) was reported to CDC by Iowa during week 41. Contact between the case and swine during the week preceding illness was reported.*
- *A total of 1 H3N2v and H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	641	380

* All dates refer to onset of illness.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 42: OCTOBER 13 – OCTOBER 19, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013—2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 42 (1.3%) were lower than the level in week 41 (1.8%). They were lower than the national baseline ILI level (2.0%), but comparable to the national ILI rate during the same week (1.2%).
- Hawaii's pneumonia and influenza (P&I) rate of 6.1% was comparable to the historical baseline for Hawaii and comparable to the 122-cities average (5.8%).
- Out of a total of 1,381 total samples submitted to participating laboratories for testing, 40 (2.9%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 40. There have been a total of 0 ILI clusters reported during the 2013-2014 influenza season.
- Two pediatric deaths were reported to HDOH or CDC during week 42. These occurred during the previous influenza season and were attributed to influenza B.
- There were no cases of novel or avian influenza reported to CDC during week 42.

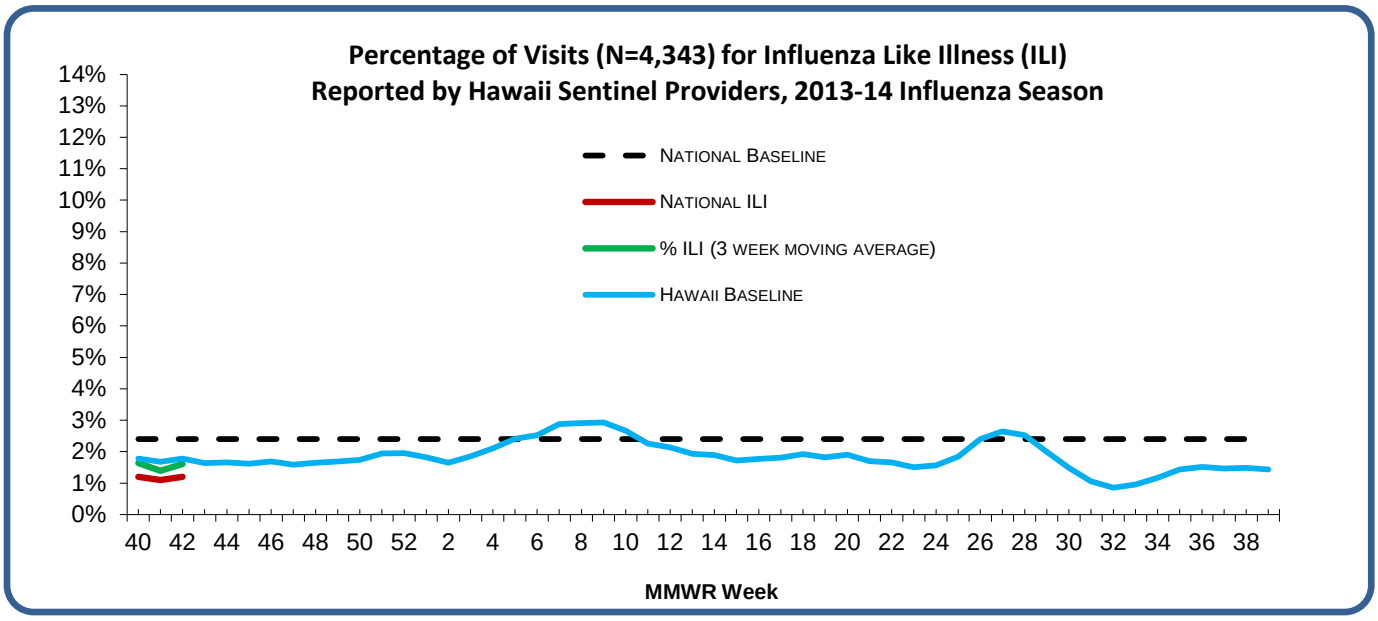
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. 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:

- *1.3% of outpatient visits to Hawaii sentinel providers was for ILI.*
- *An average of 1.4% of outpatient visits to Hawaii sentinel providers have been for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.0%)[4] (i.e., outside the 95% confidence interval), but comparable to the national ILI rate (1.2%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 42, and there have been no ILI clusters reported to HDOH during the 2013—14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010-2011, 2011-2012, and 2012-2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

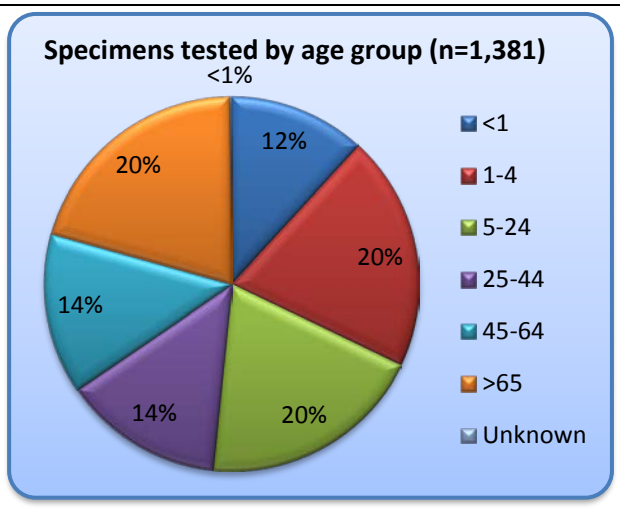
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

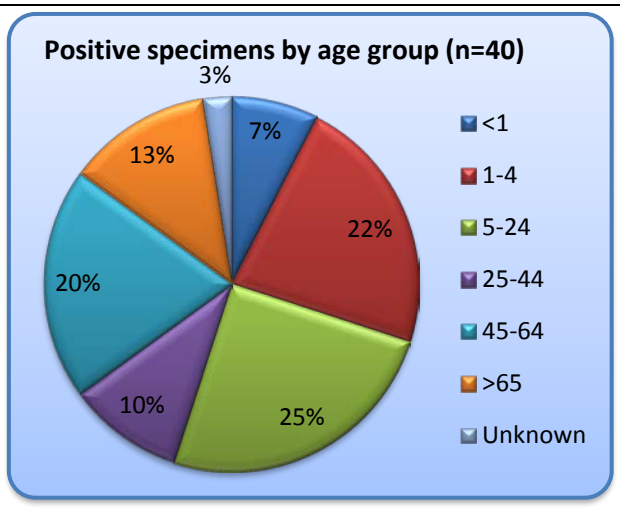
- *A total of **1,381** specimens has been tested statewide for influenza viruses (positive=40 [**2.9%**]).*
  - *893 (64.7%) were screened only by rapid antigen tests with no confirmatory testing*
  - *488 (35.3%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*

- *34 (2.5%) cases of influenza A and 6 (0.4%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *4 (11.7%) 2009 H1N1*
    - *0 (0%) were other seasonal influenza A (H1),*
    - *6 (17.7%) influenza A (H3)*
    - *24 (70.6%) influenza A of un-subtyped*

1. AGE DISTRIBUTION

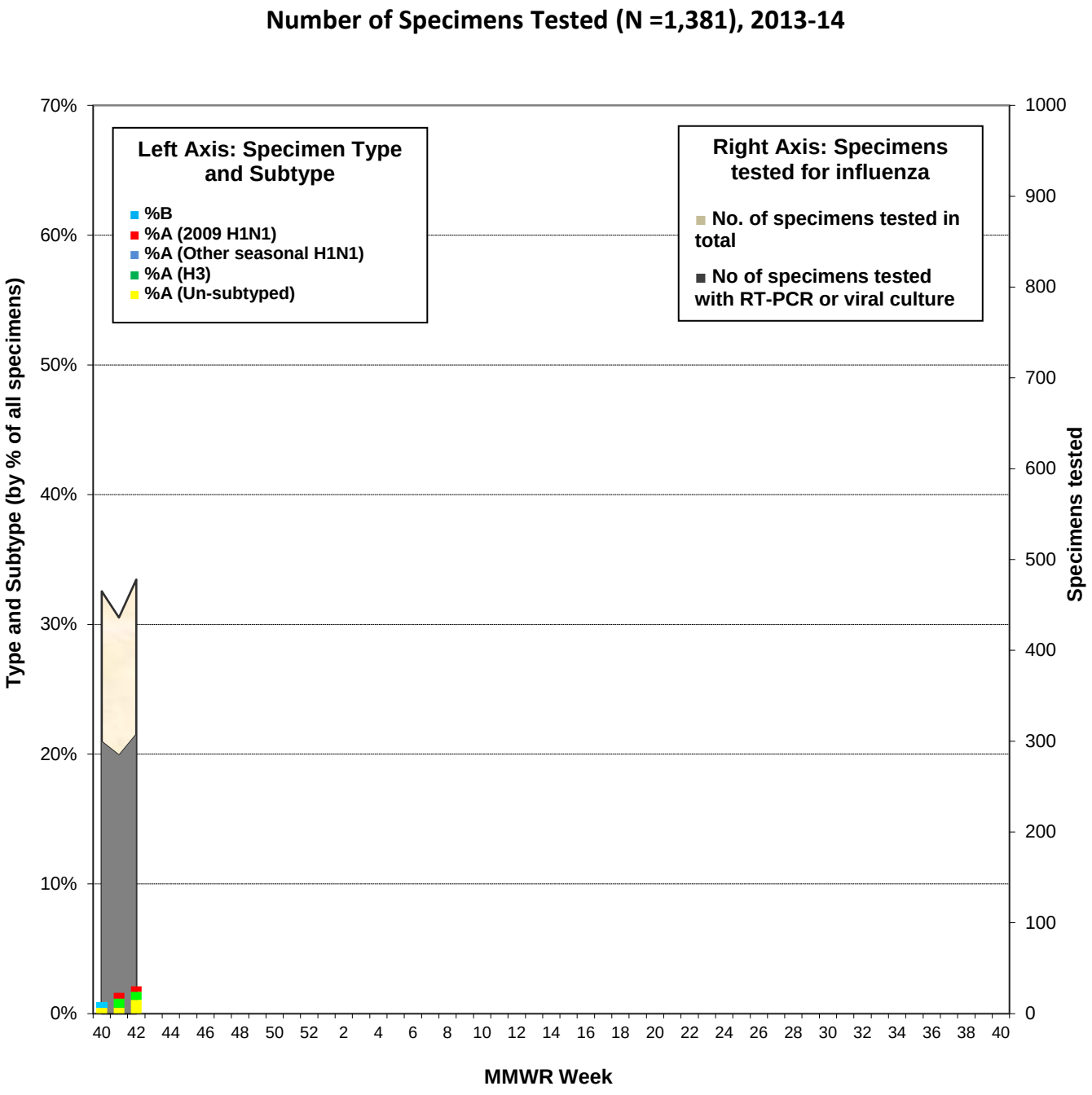
The pie charts on the below indicate the distribution of specimens tested and positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the ***2.9% of specimens*** that tested positive for influenza, more were aged 5–24 years than any other age group.





2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2012–13 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

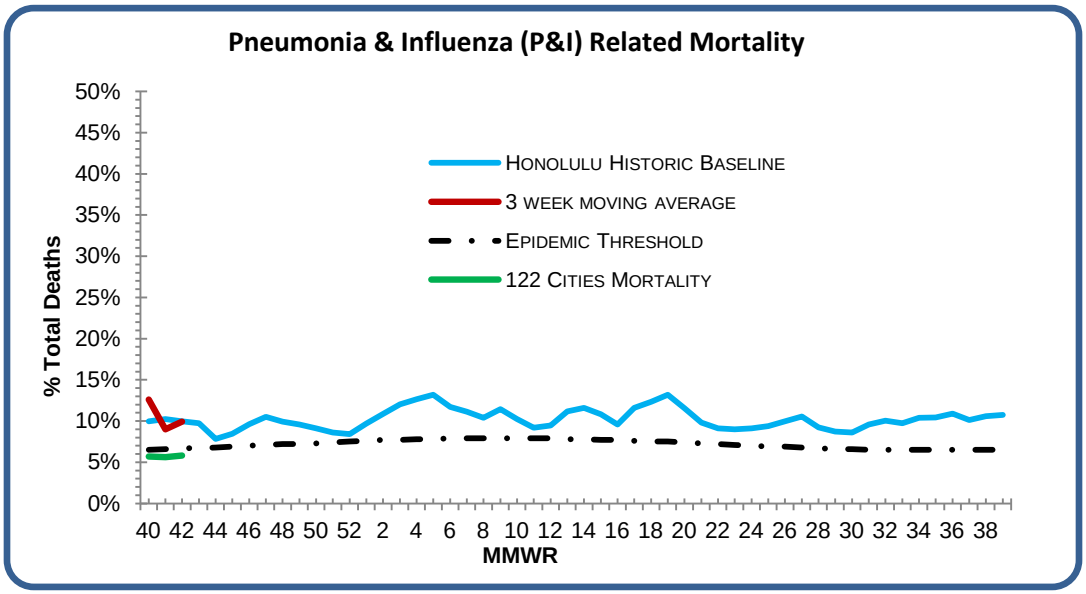
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																			
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X																																																		
Parainfluenza Virus	X		X																																																		
Respiratory Syncytial Virus	X	X	X																																																		
Rhinovirus	X	X	X																																																		
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X																																																		
Influenza A (H3)		X	X																																																		
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X	X	X																																																		
Influenza B	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:

- ***6.1%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *An average of* ***9.0%*** *of deaths has been due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality*[6] *(5.8%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.2%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- A total of 0 influenza-associated pediatric deaths has been reported in Hawaii during the 2013–2014 season.
- Two new influenza-associated pediatric deaths were reported to CDC during week 42, both associated with influenza B. This brings the total for the 2012-13 influenza season to 167.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009-2010, 2010-2011, 2011-2012, and 2012-2013).

[6] 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

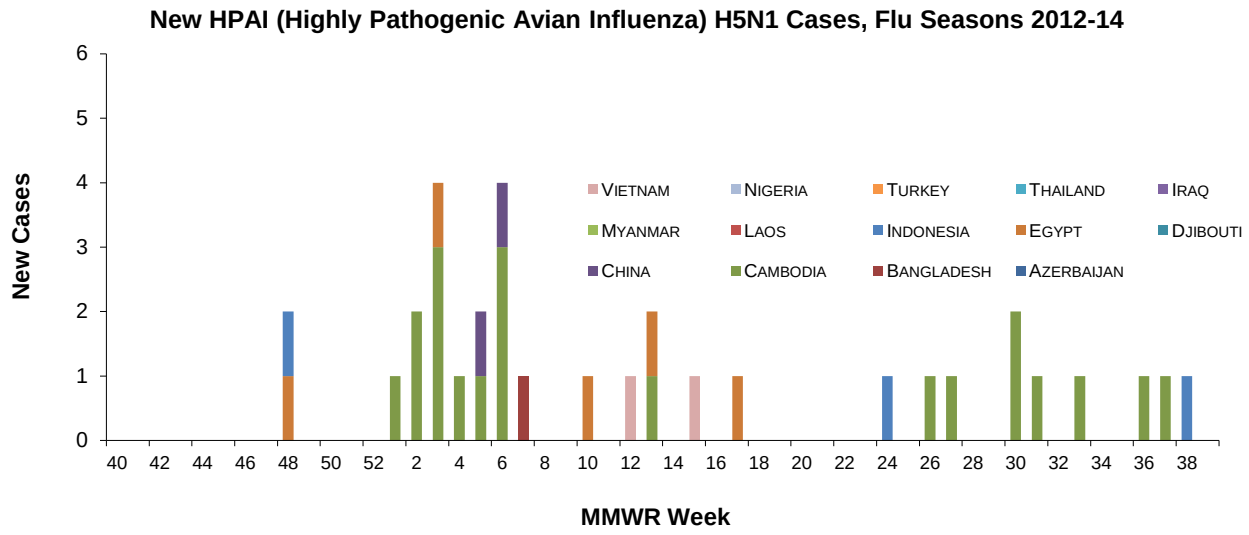
[7] Influenza-associated deaths are considered pediatric in persons aged less than 18 years. It was made a nationally notifiable condition in October, 2004. All pediatric influenza-associated deaths are laboratory confirmed.

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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 42.*
- *A total of 1 H3N2v and H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on August 29, 2013.



H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	641	380

* All dates refer to onset of illness.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 43: OCTOBER 20 – OCTOBER 26, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013—2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 43 (1.6%) were higher than the level in week 42 (1.3%). They were comparable to the national baseline ILI level (2.0%), and comparable to the national ILI rate (1.2%) during the same week.
- Hawaii's pneumonia and influenza (P&I) rate of 5.1% (season average: 5.8%) was comparable to the historical baseline for Hawaii and comparable to the 122-cities average (5.6%).
- Out of a total of 1,862 total samples submitted to participating laboratories for testing, 51 (2.7%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 43. There have not been any ILI clusters reported during the 2013-2014 influenza season.
- No new pediatric deaths were reported to HDOH or CDC during week 43.
- There were no cases of novel or avian influenza reported to CDC during week 43.

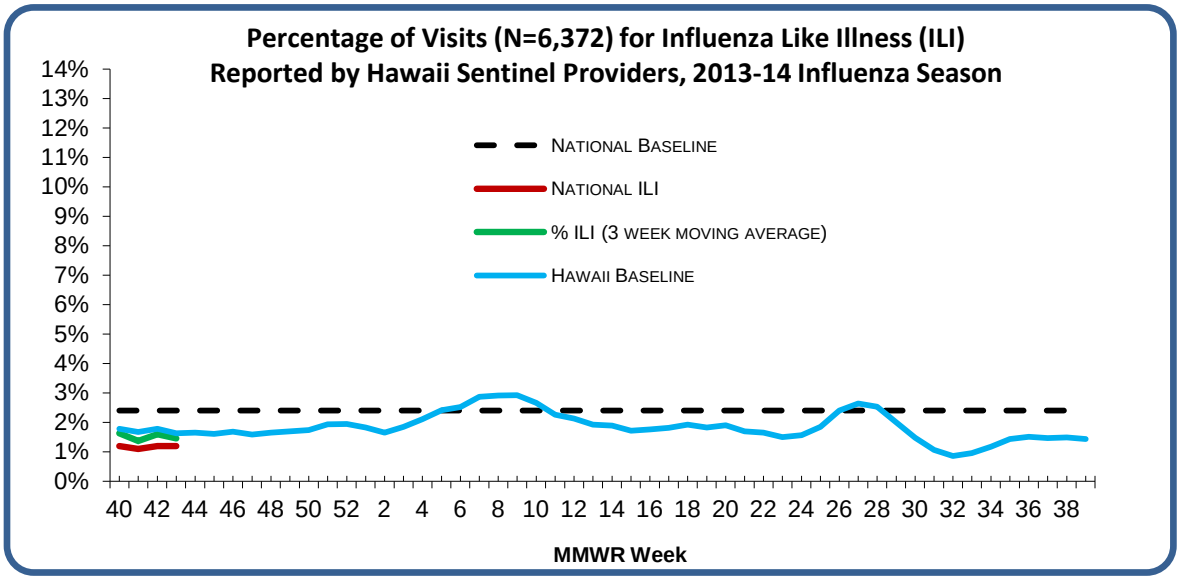
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

I. INFLUENZA-LIKE ILLNESS (ILI): HDOH collaborates with recruited doctors and healthcare providers who report the total number of outpatient visits 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 from sentinel providers. 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:

- *1.6% of outpatient visits to Hawaii sentinel providers was for ILI.*
- *An average of 1.4% of outpatient visits to Hawaii sentinel providers have been for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and comparable to the national ILI rate (1.2%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: There were no ILI clusters reported to HDOH during week 43, and there have been no ILI clusters reported to HDOH to date during the 2013—14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010-2011, 2011-2012, and 2012-2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD), the HDOH public health laboratory, and Hawaii's major private laboratories report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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 were not subtyped. For more information on influenza tests and types, please visit the CDC website (here).

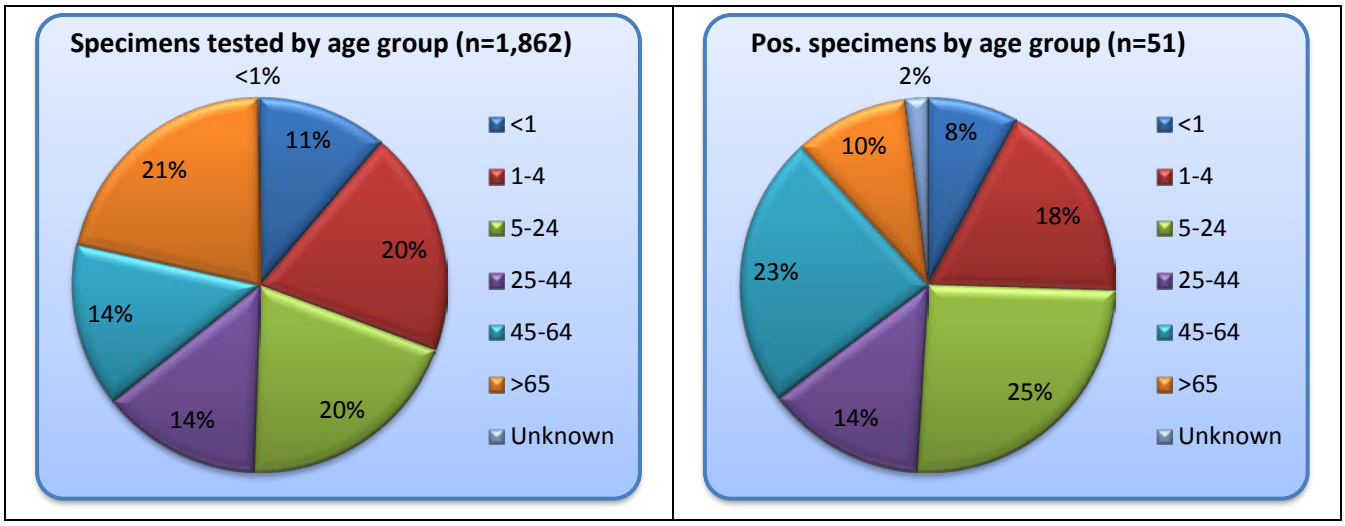
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **1,862** specimens has been tested statewide for influenza viruses (positive=51 [**2.7%**]).*
  - *1,204 (64.7%) were screened only by rapid antigen tests with no confirmatory testing*
  - *658 (35.3%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*

- *45 (2.4%) cases of influenza A and 6 (0.3%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *10 (22.2%) 2009 H1N1*
    - *0 (0%) were other seasonal influenza A (H1),*
    - *12 (26.7%) influenza A (H3)*
    - *23 (51.1%) influenza A (un-subtyped)*

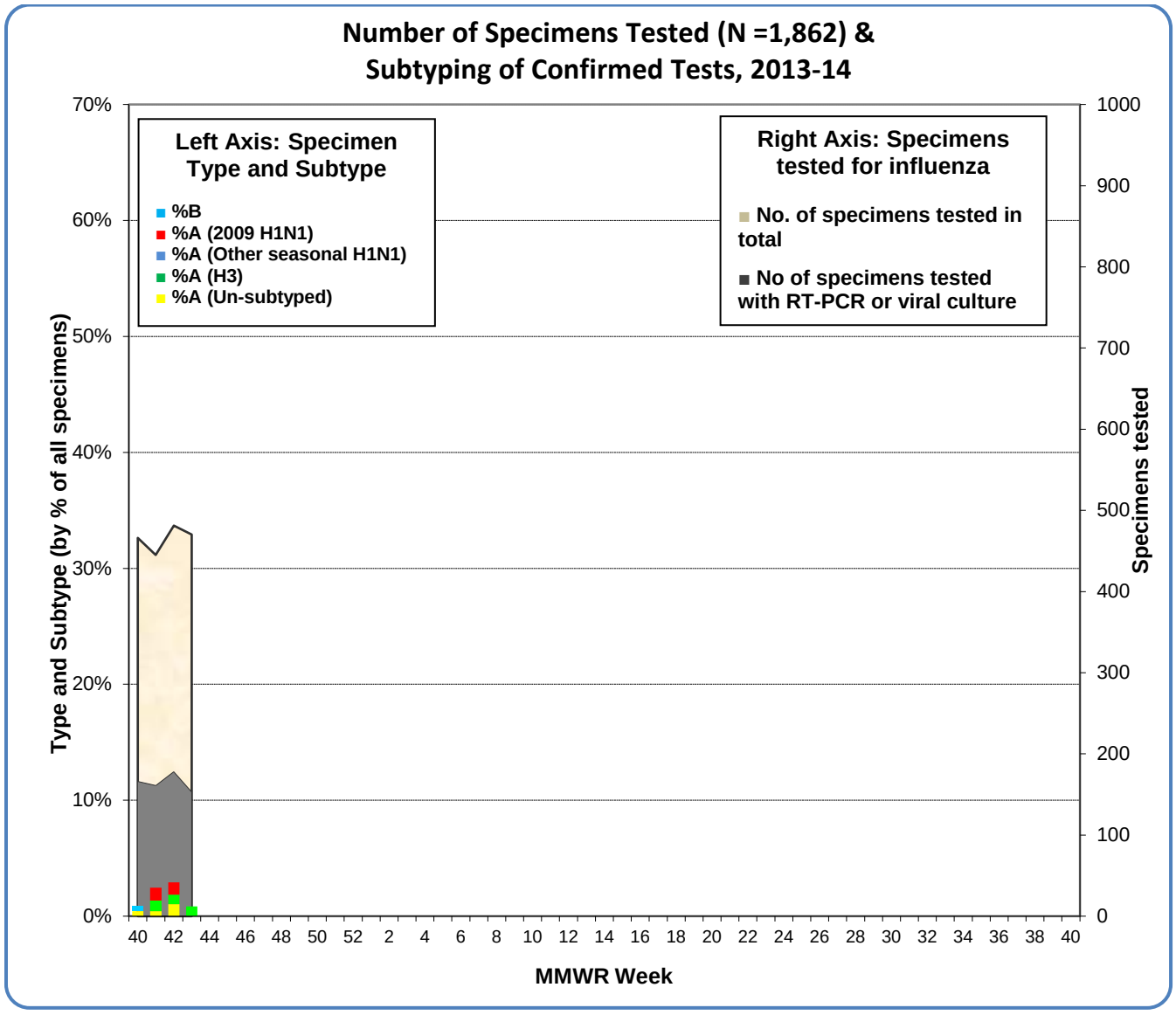
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the ***2.7% of specimens*** that tested positive for influenza, more were aged 5–24 years than any other age group.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

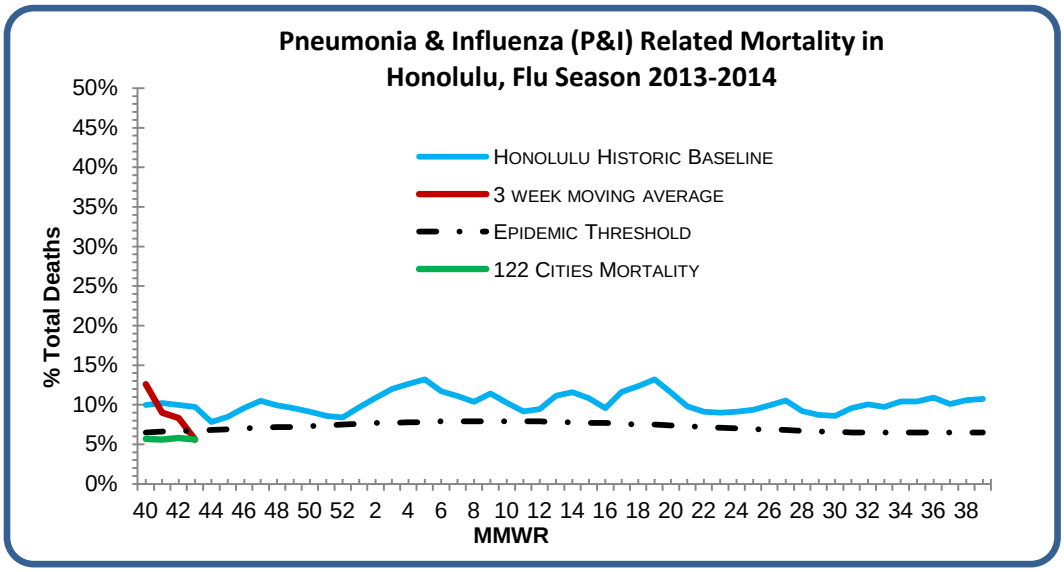
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																			
Coxsackie Virus																																																					
Cytomegalovirus																																																					
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X																																																		
Parainfluenza Virus	X		X	X																																																	
Respiratory Syncytial Virus	X	X	X	X																																																	
Rhinovirus	X	X	X	X																																																	
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X																																																		
Influenza A (H3)		X	X	X																																																	
Influenza A (Other seasonal H1N1)																																																					
Influenza A (unsubtyped)	X	X	X	X																																																	
Influenza B	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 43 of the current influenza season:

- ***5.1%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *An average of* ***8.0%*** *of deaths this flu season has been due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality*[6] *(5.8%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.2%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- A total of 0 influenza-associated pediatric deaths has been reported in Hawaii during the 2013–2014 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 43.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009-2010, 2010-2011, 2011-2012, and 2012-2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 43.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on October 7, 2013.

H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	641	380

* All dates refer to onset of illness.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 44: OCTOBER 27 – NOVEMBER 2, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013—2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 44 (1.3%) were lower than the level in week 43 (1.6%). They were lower than the national baseline ILI level (2.0%) and comparable to the national ILI rate (1.4%) during the same week.
- Hawaii's pneumonia and influenza (P&I) rate of 12.1% (season average: 8.9%) was comparable to the historical baseline for Hawaii and comparable to the 122-cities average (5.3%).
- Out of a total of 2,359 total samples submitted to participating laboratories for testing, 67 (2.8%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 44. There have not been any ILI clusters reported during the 2013-2014 influenza season.
- Two new pediatric deaths were reported to CDC during week 44 that occurred during the previous season. These bring the total for the 2012-13 flu season to 169. No influenza-associated pediatric deaths for the 2013-2014 season have been reported to CDC.
- There were no cases of variant or avian influenza reported to CDC during week 44.

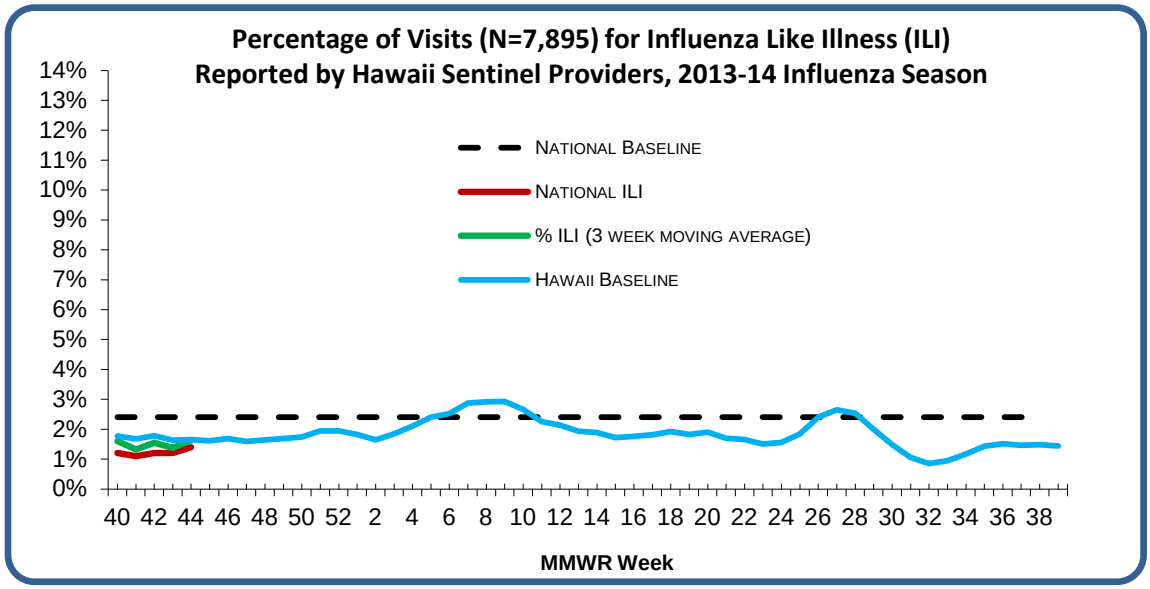
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 44 of the current influenza season:

- *1.3% of the 7,895 outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *An average of 1.4% of outpatient visits to Hawaii sentinel providers this flu season have been for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were lower than the national baseline (2.0%)[4] (i.e., outside the 95% confidence interval), and comparable to the national ILI rate (1.4%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI clusters reported to HDOH during week 44, and there have not been any ILI clusters reported to HDOH to date during the 2013—14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010-2011, 2011-2012, and 2012-2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

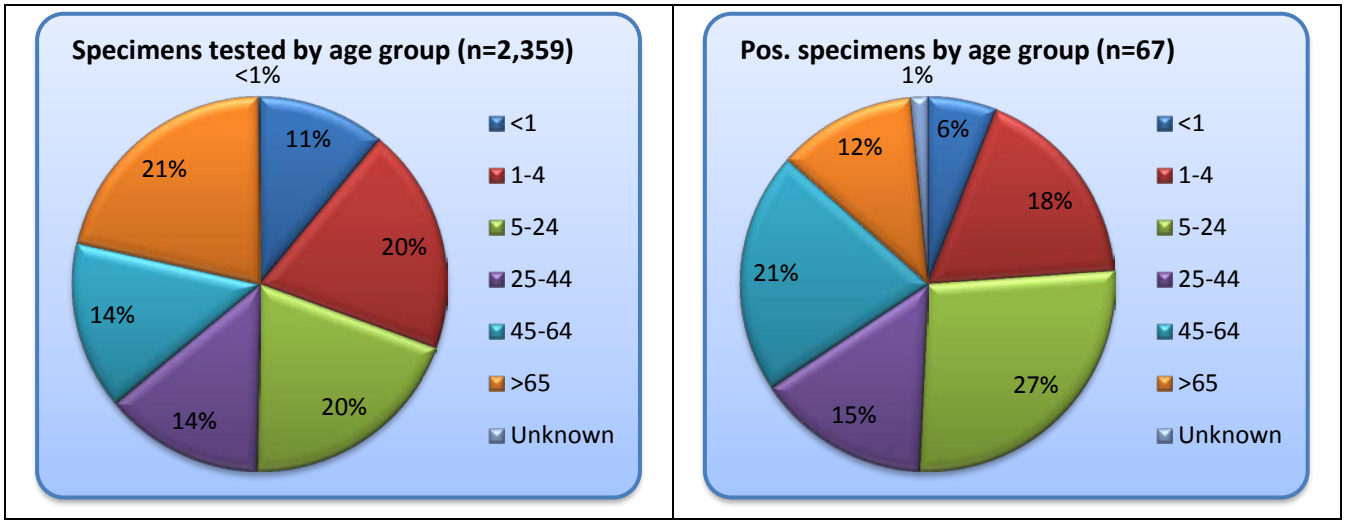
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **2,359** specimens has been tested statewide for influenza viruses (positive=**67** [**2.8%**]).*
  - *1,535 (65.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *824 (34.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *2,292 of the 2,359 specimens were negative.*

- *56 (2.4%) cases of influenza A and 11 (0.5%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *11 (19.7%) 2009 H1N1*
    - *0 (0%) other seasonal influenza A (H1),*
    - *13 (23.2%) influenza A (H3)*
    - *32 (57.1%) influenza A (un-subtyped)*

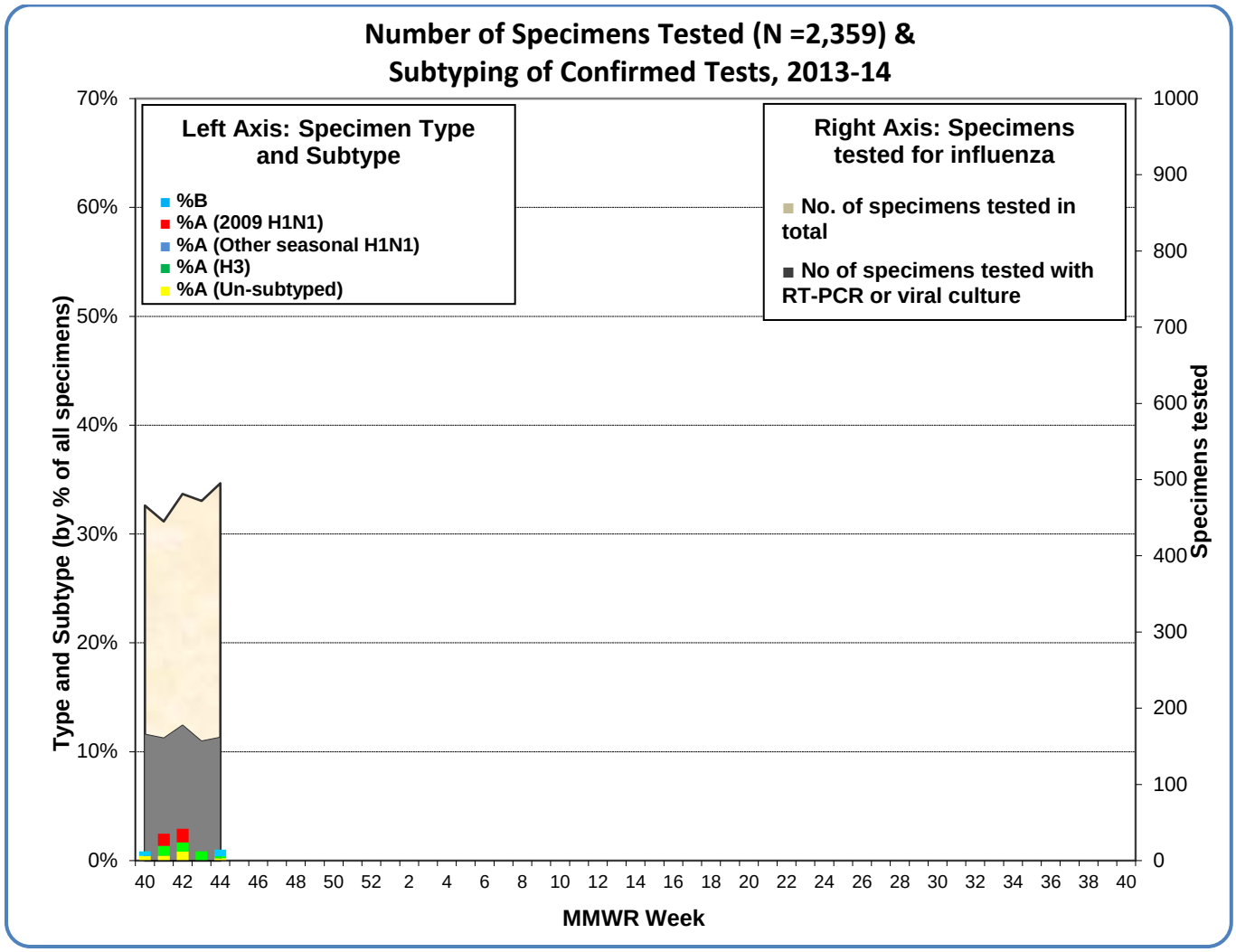
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *2.8% of specimens* that tested positive for influenza, **more were aged 5–24 years than any other age group**.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

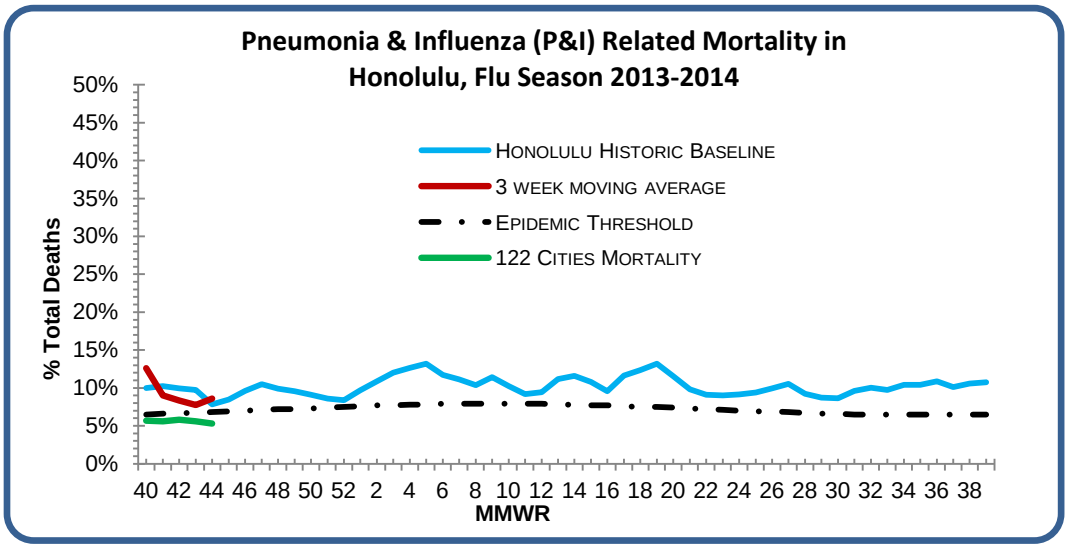
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																
Coronavirus		X																																																			
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus																																																					
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X																																																		
Parainfluenza Virus	X		X	X	X																																																
Respiratory Syncytial Virus	X	X	X	X	X																																																
Rhinovirus	X	X	X	X	X																																																
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X																																																		
Influenza A (H3)		X	X	X	X																																																
Influenza A (Other seasonal H1N1)																																																				
Influenza A (unsubtyped)	X	X	X	X	X																																																
Influenza B	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:

- ***12.1%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *An average of* ***8.9%*** *of deaths this flu season has been due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality*[6] *(5.3%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.3%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths has been reported in Hawaii during the 2013–2014 season.
- Two new influenza-associated pediatric deaths were reported to CDC during week 44 that occurred during the previous season. One was associated with influenza A (H3) and one was associated with influenza A virus for which no subtyping was performed. These deaths bring the total for the 2012-2013 season to 169.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009-2010, 2010-2011, 2011-2012, and 2012-2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 44.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on October 7, 2013.

H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	0	0	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	0	0	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	0	0	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	0	0	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	0	0	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	0	0	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	0	0	641	380

* All dates refer to onset of illness.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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
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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
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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)[1]

WEEK 45: NOVEMBER 3 – NOVEMBER 9, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013—2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 45 (1.6%) were higher than the level in week 44 (1.3%). They were comparable to the national baseline ILI level (2.0%) and comparable to the national ILI rate (1.6%) during the same week.
- Hawaii's pneumonia and influenza (P&I) rate of 21.3% (season average: 10.9%) was higher than the historical baseline for Hawaii and higher than the 122-cities average (6.1%).
- Out of a total of 6,226 total samples submitted to participating laboratories for testing, 211 (3.4%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 45. There have not been any ILI clusters reported during the 2013-2014 influenza season.
- Two new pediatric deaths were reported to CDC during week 45 that occurred during weeks 43 and 42, bringing the total for the 2013-14 season to 2.
- There were no cases of variant or avian influenza reported to CDC during week 45.

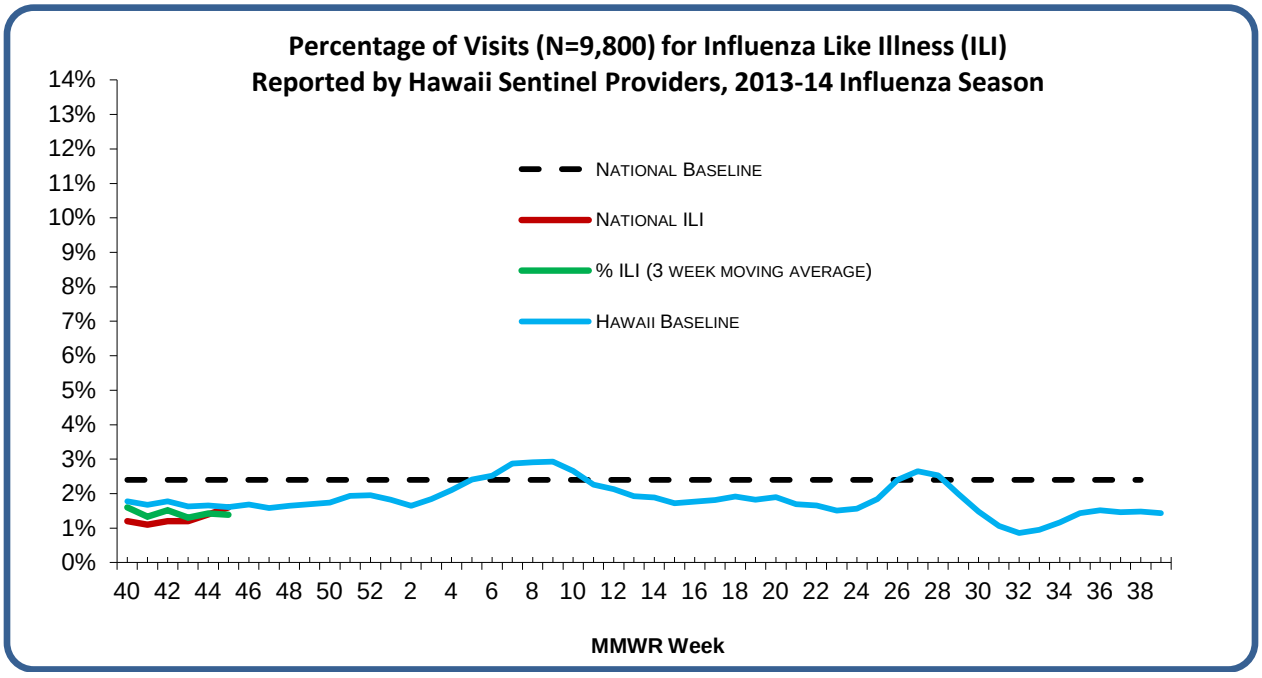
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 45 of the current influenza season:

- *1.6% of the 9,800 outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *An average of 1.4% of outpatient visits to Hawaii sentinel providers this flu season have been for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and comparable to the national ILI rate (1.6%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI clusters reported to HDOH during week 45, and there have not been any ILI clusters reported to HDOH to date during the 2013—14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010-2011, 2011-2012, and 2012-2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

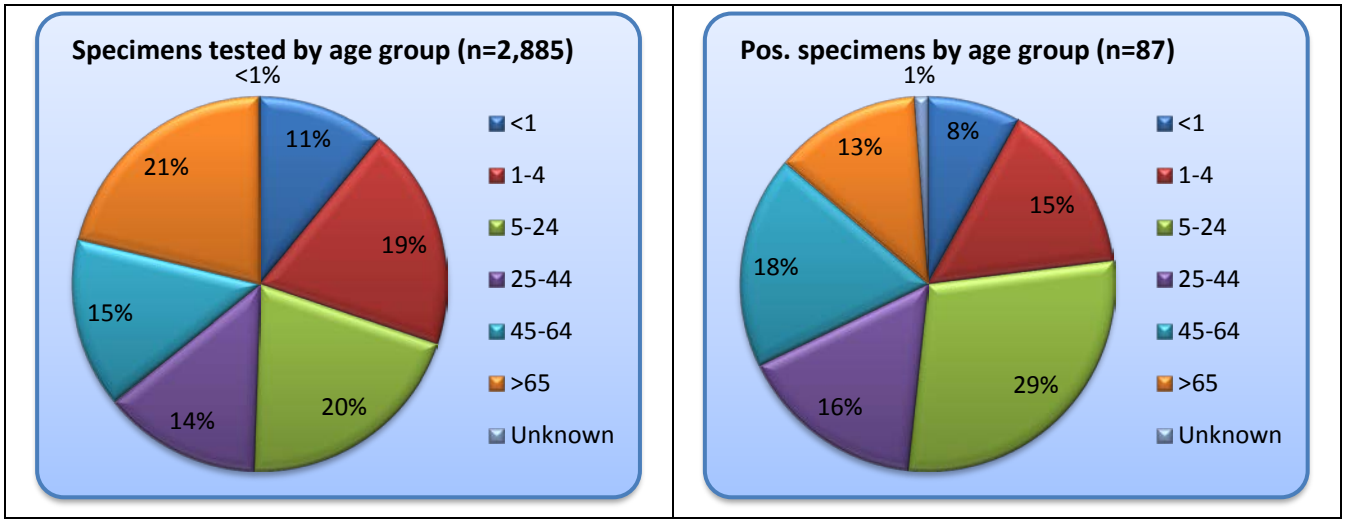
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **2,885** specimens has been tested statewide for influenza viruses (positive=**87** [**3.0%**]).*
  - *1,821 (63.1%) were screened only by rapid antigen tests with no confirmatory testing*
  - *1,064 (36.9%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *2,798 of the 2,885 specimens were negative.*

- *71 (2.5%) cases of influenza A and 16 (0.6%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *11 (15.5%) 2009 H1N1*
    - *1 (1.4) other seasonal influenza A (H1),*
    - *17 (23.9%) influenza A (H3)*
    - *42 (59.2%) influenza A (un-subtyped)*

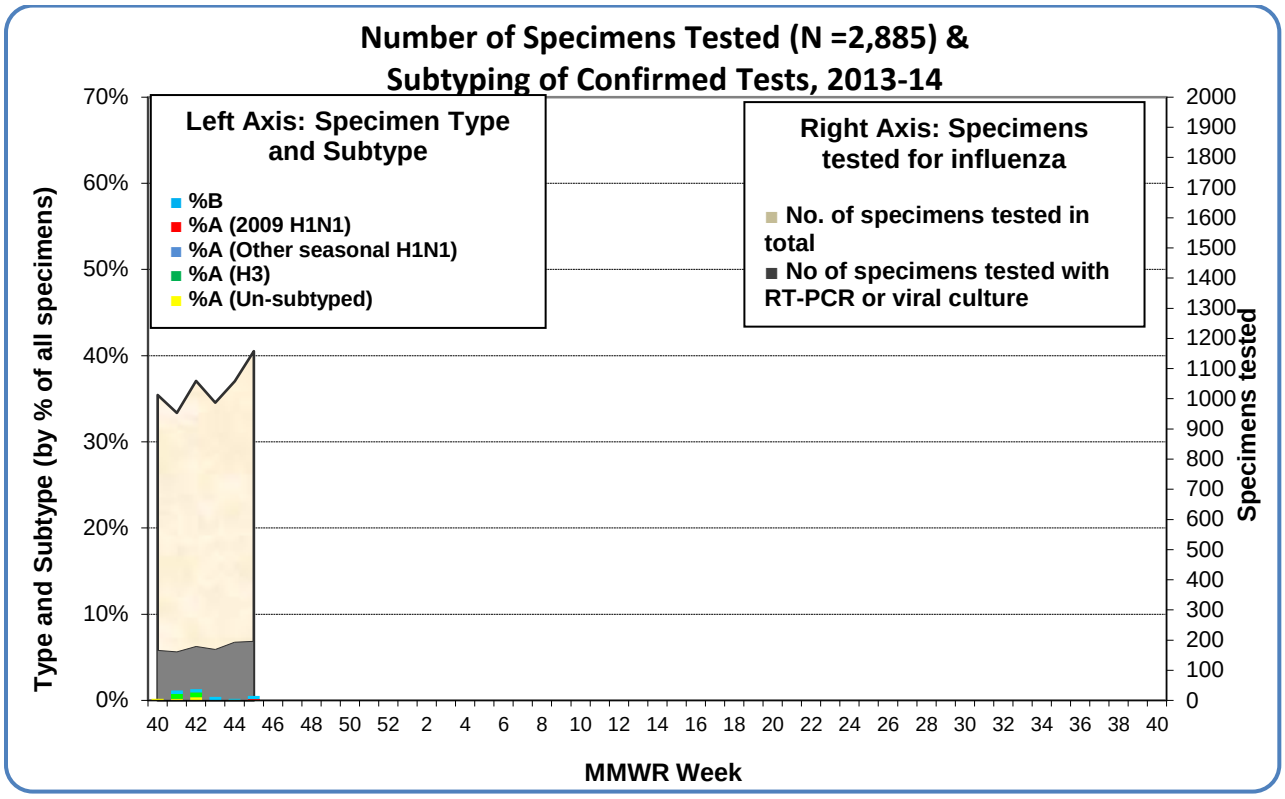
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *3.0% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the sub-set receiving confirmatory testing. Proportions of specimens positive for influenza viruses by type and sub-type are only presented for specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

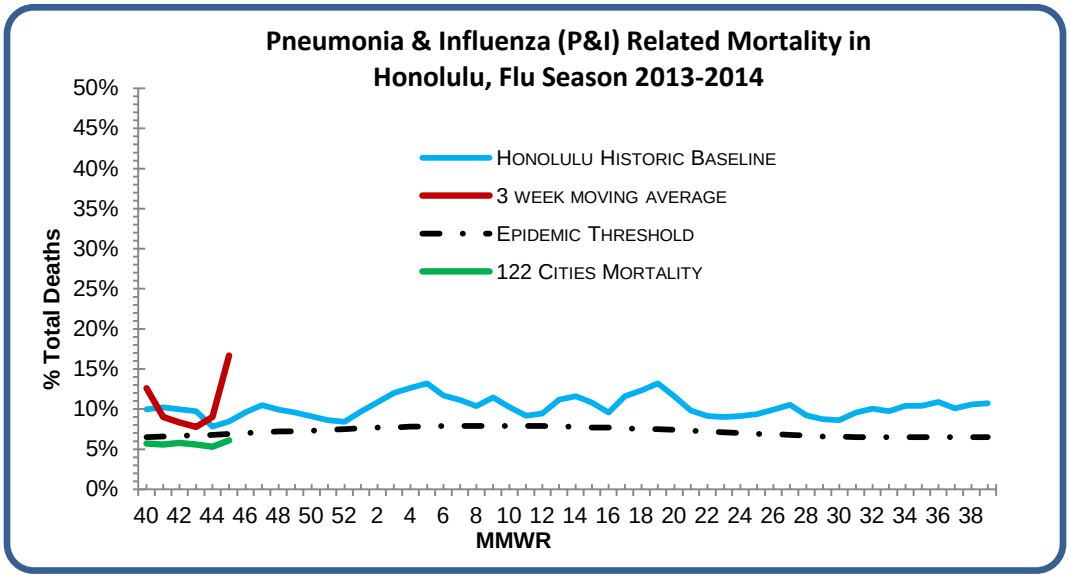
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																			
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X																																															
Parainfluenza Virus	X		X	X	X	X																																										
Respiratory Syncytial Virus	X	X	X	X	X	X																																										
Rhinovirus	X	X	X	X	X	X																																										
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X																																																		
Influenza A (H3)		X	X	X	X	X																																										
Influenza A (Other seasonal H1N1)						X																																															
Influenza A (unsubtyped)	X	X	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 45 of the current influenza season:

- ***21.3%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *An average of 10.9% of deaths this flu season has been due to P&I.*
- *The P&I rate was higher than the historical baseline in Hawaii*[5] *(i.e., outside 95% confidence interval).*
- *The Honolulu P&I was higher than the national 122-city P&I mortality*[6] *(6.1%) (i.e., outside the 95% confidence interval) and higher than the epidemic threshold (6.4%) (i.e., outside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths has been reported in Hawaii during the 2013–2014 season.
- Two new influenza-associated pediatric deaths were reported to CDC during week 45. One was associated with an influenza A and B co-infection and occurred during week 43, and the other didn't have sub-typing information and occurred during week 42. This brings the total for pediatric deaths to two for the 2013-14 season.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009-2010, 2010-2011, 2011-2012, and 2012-2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 45.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on October 7, 2013.

H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	0	0	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	0	0	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	0	0	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	0	0	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	0	0	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	0	0	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	0	0	641	380

* All dates refer to onset of illness.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 46: NOVEMBER 10 – NOVEMBER 16, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013—2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 46 (1.5%) were lower than the level in week 45 (1.9%). They were comparable to the national baseline ILI level (2.0%) and comparable to the national ILI rate (1.5%) during the same week.
- Hawaii's pneumonia and influenza (P&I) mortality rate of 13.6% (season average: 11.3%) was comparable to the historical baseline for Hawaii and comparable to the 122-cities average (5.8%).
- Out of a total of 3,448 total samples submitted to participating laboratories for testing, 102 (3.0%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 46. There have not been any ILI clusters reported during the 2013-2014 influenza season.
- Two new pediatric deaths were reported to CDC during week 46 that occurred during weeks 43 and 42, bringing the total for the 2013-14 season to 2.
- There were no cases of variant or avian influenza reported to CDC during week 46.

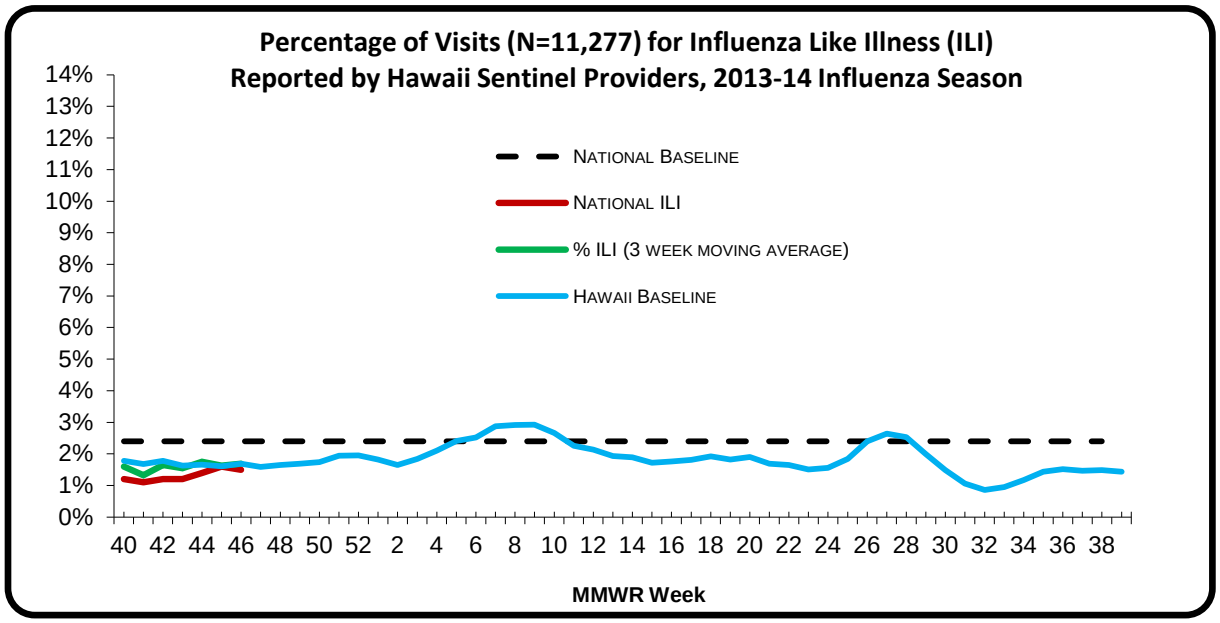
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 46 of the current influenza season:

- *1.5% of the 1,319 outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *An average of 1.5% of a total 11,277 total outpatient visits to Hawaii sentinel providers this flu season have been for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and comparable to the national ILI rate (1.5%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI clusters reported to HDOH during week 46, and there have not been any ILI clusters reported to HDOH to date during the 2013—14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010–2011, 2011–2012, and 2012–2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

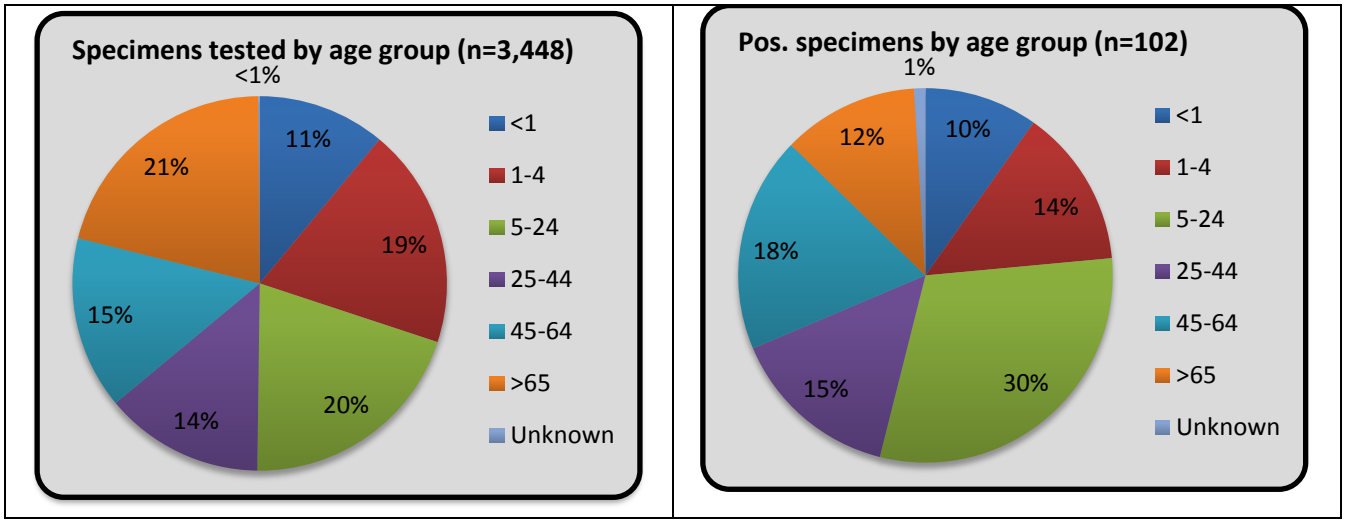
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **3,448** specimens has been tested statewide for influenza viruses (positive=**102** [**3.0%**]).*
  - *2,167 (62.9%) were screened only by rapid antigen tests with no confirmatory testing*
  - *1,281 (37.1%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *3,346 of the 3,448 specimens were negative.*

- *82 (2.4%) cases of influenza A and 20 (0.6%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *15 (18.3%) 2009 H1N1*
    - *1 (1.2) other seasonal influenza A (H1),*
    - *20 (24.4%) influenza A (H3)*
    - *46 (56.1%) influenza A (un-subtyped)*

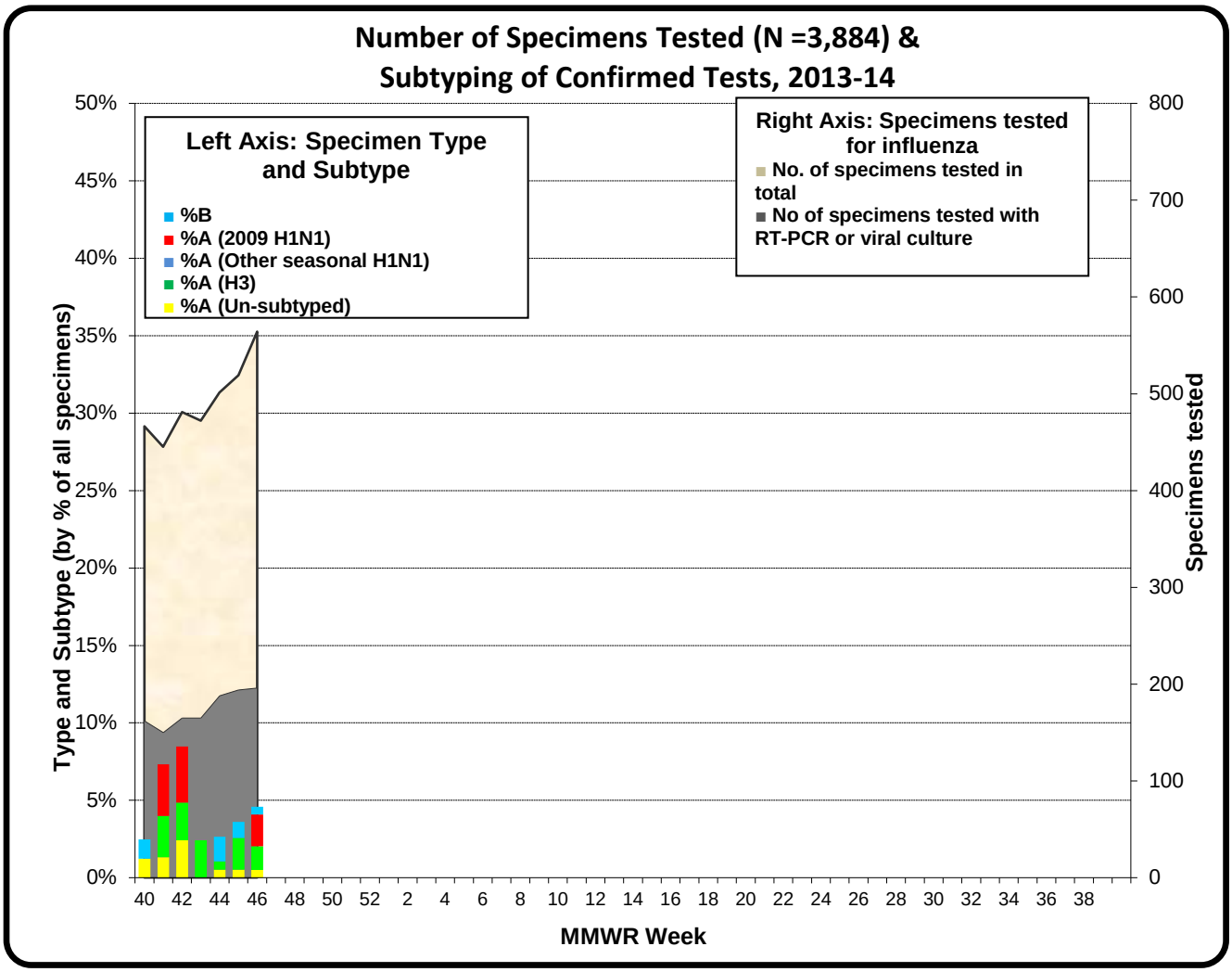
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *3.0% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the type and subtype of specimens tested. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

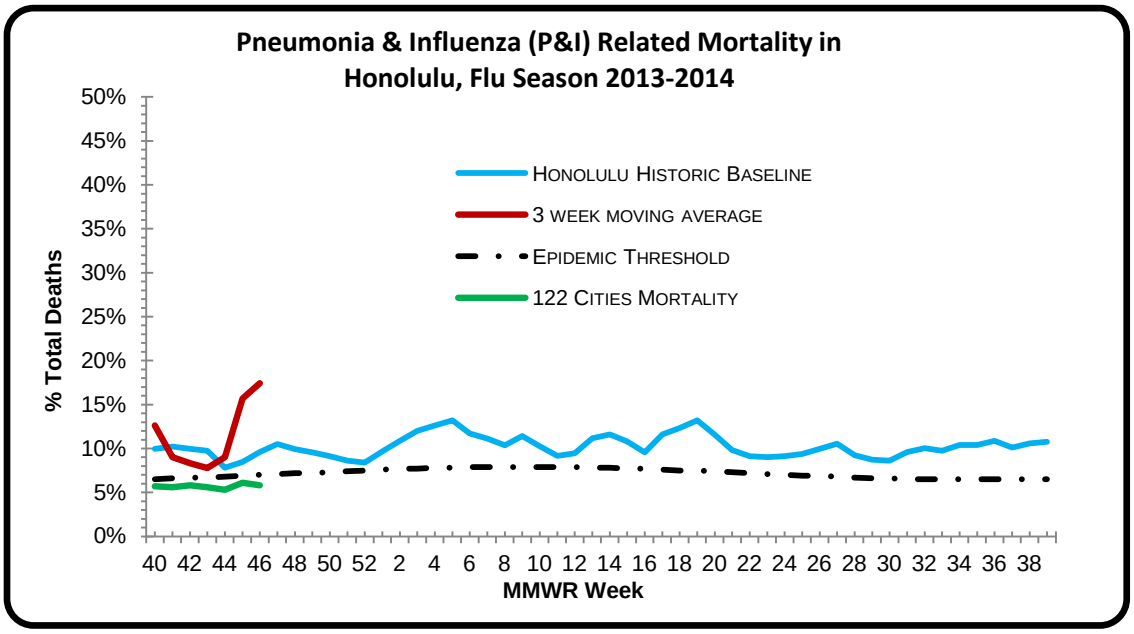
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																			
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X																																															
Parainfluenza Virus	X		X	X	X	X																																															
Respiratory Syncytial Virus	X	X	X	X	X	X	X																																														
Rhinovirus	X	X	X	X	X	X	X																																														
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X				X																																														
Influenza A (H3)		X	X	X	X	X	X																																														
Influenza A (Other seasonal H1N1)						X																																															
Influenza A (unsubtyped)	X	X	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 46 of the current influenza season:

- ***13.6%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *An average of 11.3% of deaths this flu season has been due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside the 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality*[6] *(5.8%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.5%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2013–2014 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 46. There have been a total of two pediatric deaths reported to CDC during the 2013–2014 season.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009–2010, 2010–2011, 2011–2012, and 2012–2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 46.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on October 7, 2013.

H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	0	0	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	0	0	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	0	0	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	0	0	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	0	0	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	0	0	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	0	0	641	380

* All dates refer to onset of illness.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 47: NOVEMBER 17 – NOVEMBER 23, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013–2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 47 (2.4%) were higher than the level in week 46 (1.4%). They were comparable to the national baseline ILI level (2.0%) and comparable to the national ILI rate (1.7%) during the same week.
- Hawaii's pneumonia and influenza (P&I) mortality rate of 16.5% (season average to date: 12%) was comparable to the historical baseline for Hawaii and higher than the 122-cities average (5.8%).
- Out of a total of 3,941 total samples submitted to participating laboratories for testing, 113 (2.9%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 47. There have not been any ILI clusters reported during the 2013–2014 influenza season.
- No new pediatric deaths were reported to CDC during week 47. There have been a total of two deaths during the current season.
- There were no cases of variant or avian influenza reported to CDC during week 47.

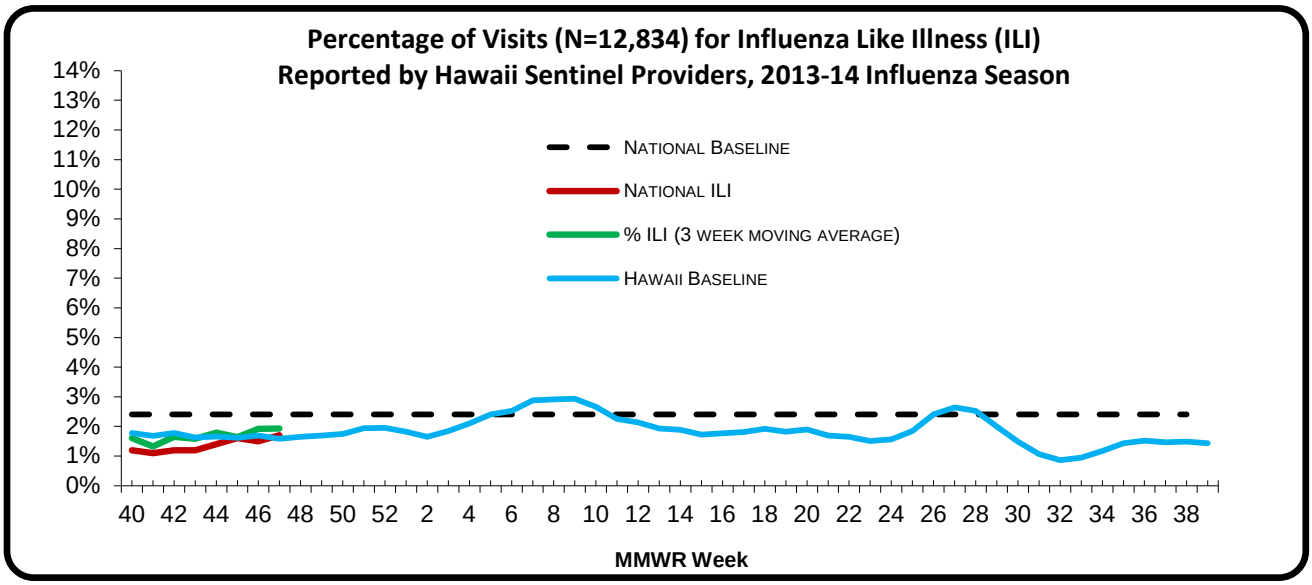
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 47 of the current influenza season:

- *2.4% of the outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *An average of 1.7% of 12,834 total outpatient visits to Hawaii sentinel providers this flu season have been for ILI.*
- *ILI visits were higher than the historical baseline in Hawaii[2,3] (i.e., outside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and comparable to the national ILI rate (1.7%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI clusters reported to HDOH during week 47, and there have not been any ILI clusters reported to HDOH to date during the 2013–14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010–2011, 2011–2012, and 2012–2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

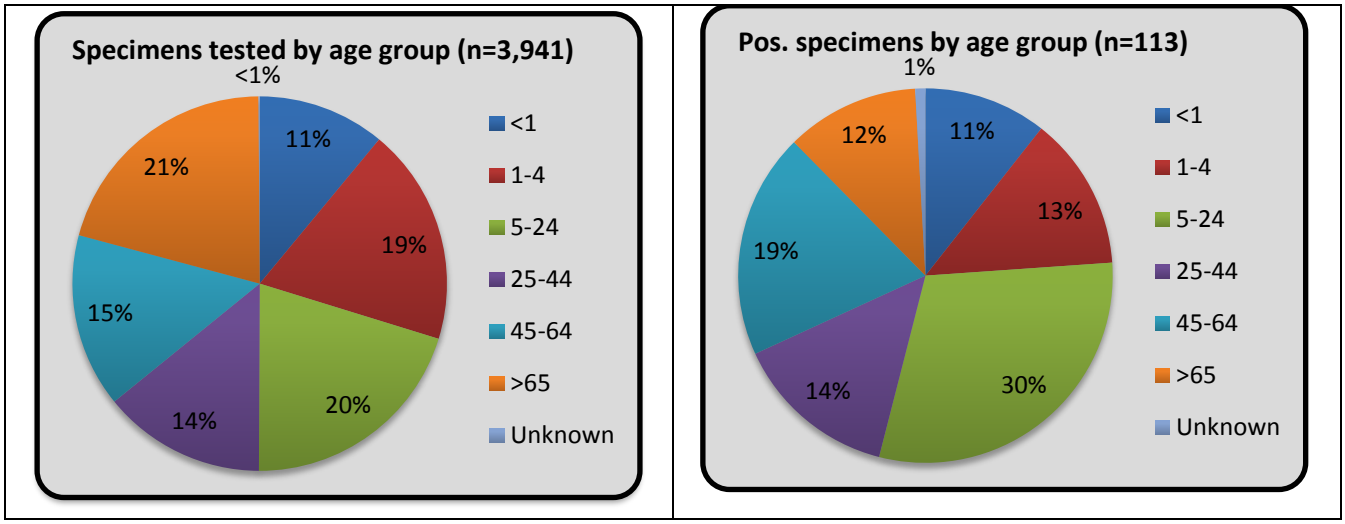
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **3,941** specimens has been tested statewide for influenza viruses (positive=**113** [**2.9%**]).*
  - *2,480 (62.9%) were screened only by rapid antigen tests with no confirmatory testing*
  - *1,461 (37.1%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *3,828 (97.1%) of the 3,941 specimens were negative.*

- *91 (2.3%) cases of influenza A and 22 (0.6%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *16 (17.6%) 2009 H1N1*
    - *1 (1.1) other seasonal influenza A (H1),*
    - *21 (23.1%) influenza A (H3)*
    - *53 (58.2%) influenza A (un-subtyped)*

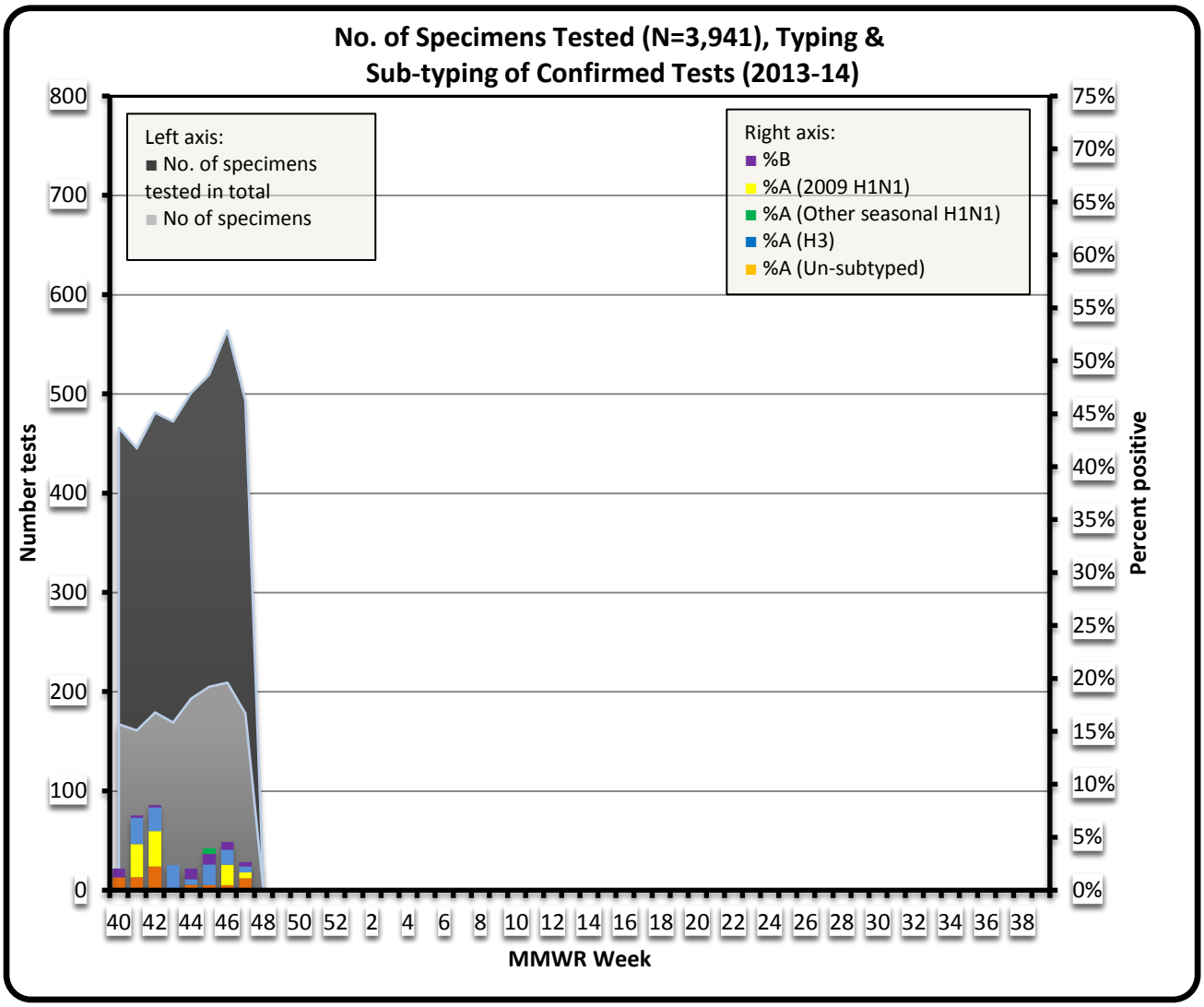
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *2.9% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the type and subtype of specimens tested. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

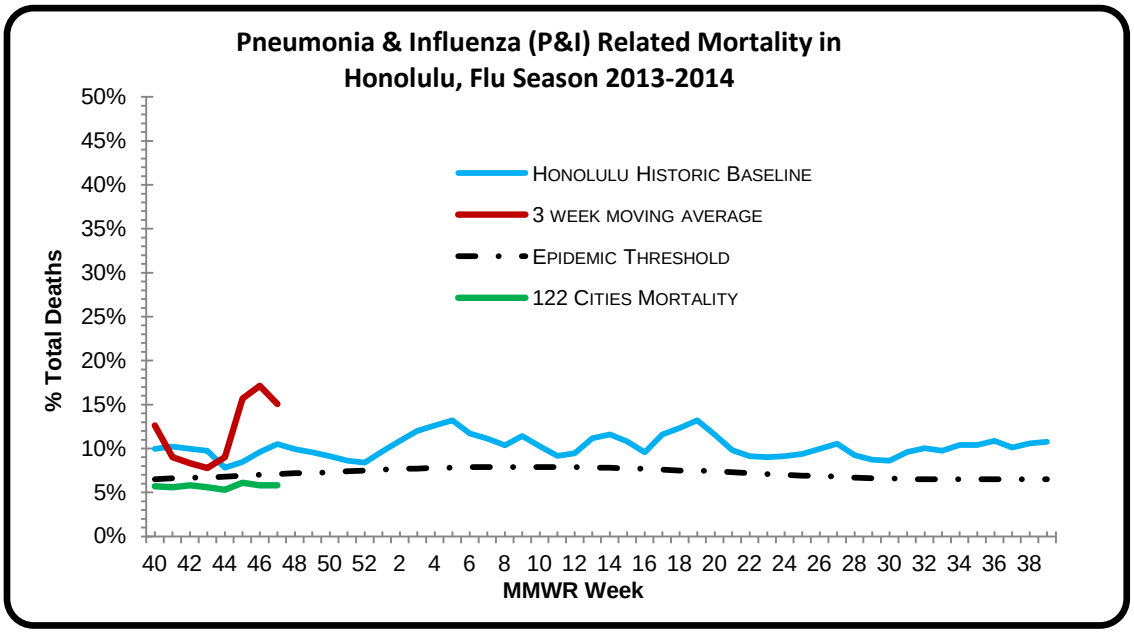
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																			
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X		X																																													
Parainfluenza Virus	X		X	X	X	X		X																																													
Respiratory Syncytial Virus	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																																													
Influenza A (H3)		X	X	X	X	X	X	X																																													
Influenza A (Other seasonal H1N1)						X																																															
Influenza A (unsubtyped)	X	X	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 47 of the current influenza season:

- ***16.5%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *An average of* ***12%*** *of deaths this flu season has been due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside the 95% confidence interval).*
- *The Honolulu P&I was higher than the national 122-city P&I mortality*[6] *(5.8%) (i.e., outside the 95% confidence interval) and higher than the epidemic threshold (6.6%) (i.e., outside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2013–2014 season.
- No new influenza-associated pediatric deaths were reported to CDC during week 47. There have been a total of two pediatric deaths reported to CDC during the 2013–2014 season.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009–2010, 2010–2011, 2011–2012, and 2012–2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 47.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on October 7, 2013.

H5N1: Total Cases (C) and Deaths (D) by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	0	0	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	0	0	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	0	0	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	0	0	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	0	0	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	0	0	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	0	0	641	380

* All dates refer to onset of illness.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 48: NOVEMBER 24 – NOVEMBER 30, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013–2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 48 (1.7%) were lower than the level in week 47 (2.3%). They were comparable to the national baseline ILI level (2.0%) and comparable to the national ILI rate (1.9%) during the same week.
- Hawaii's pneumonia and influenza (P&I) mortality rate of 11.3% (season average to date: 11.9%) was comparable to the historical baseline for Hawaii and comparable to the 122-cities average (5.8%).
- Out of the 4,512 total samples submitted to participating laboratories for testing this season, 132 (2.9%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 48. There have not been any ILI clusters reported during the 2013–2014 influenza season.
- One new pediatric death was reported to CDC during week 48, which occurred during week 47. There have been a total of three deaths reported to CDC during the current season.
- There were no cases of variant or avian influenza reported to CDC during week 48.

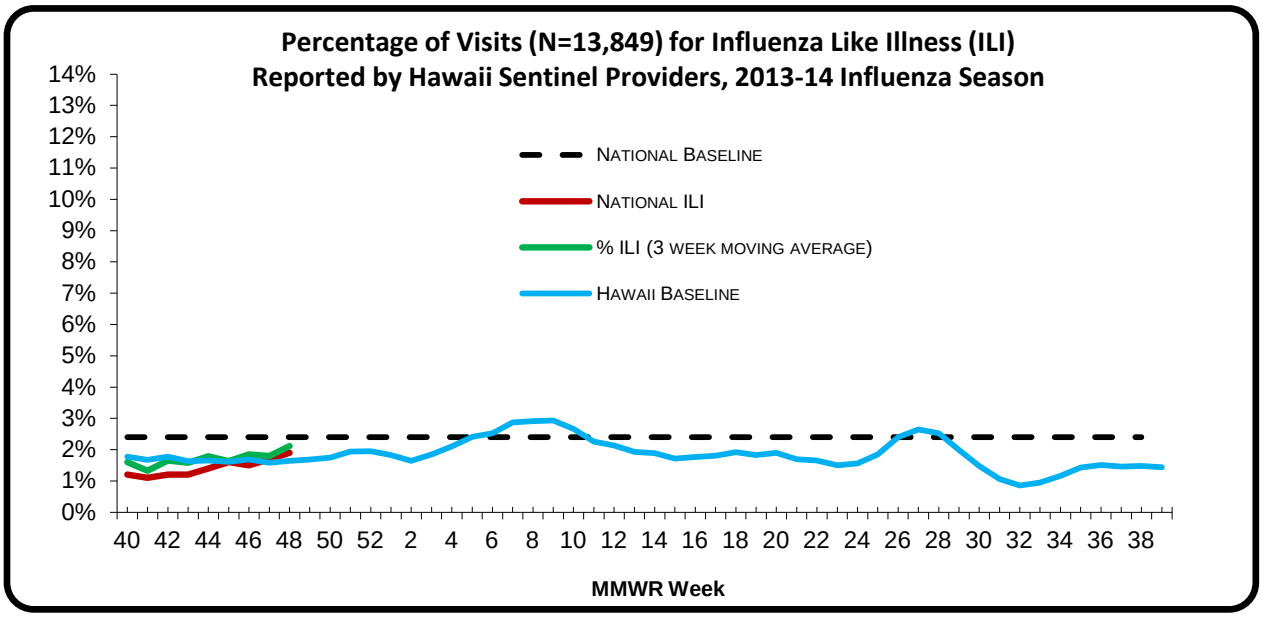
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 48 of the current influenza season:

- *1.7% of the outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *An average of 1.6% of 13,849 total outpatient visits to Hawaii sentinel providers this flu season have been for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and comparable to the national ILI rate (1.9%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI clusters reported to HDOH during week 48, and there have not been any ILI clusters reported to HDOH to date during the 2013–14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010–2011, 2011–2012, and 2012–2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

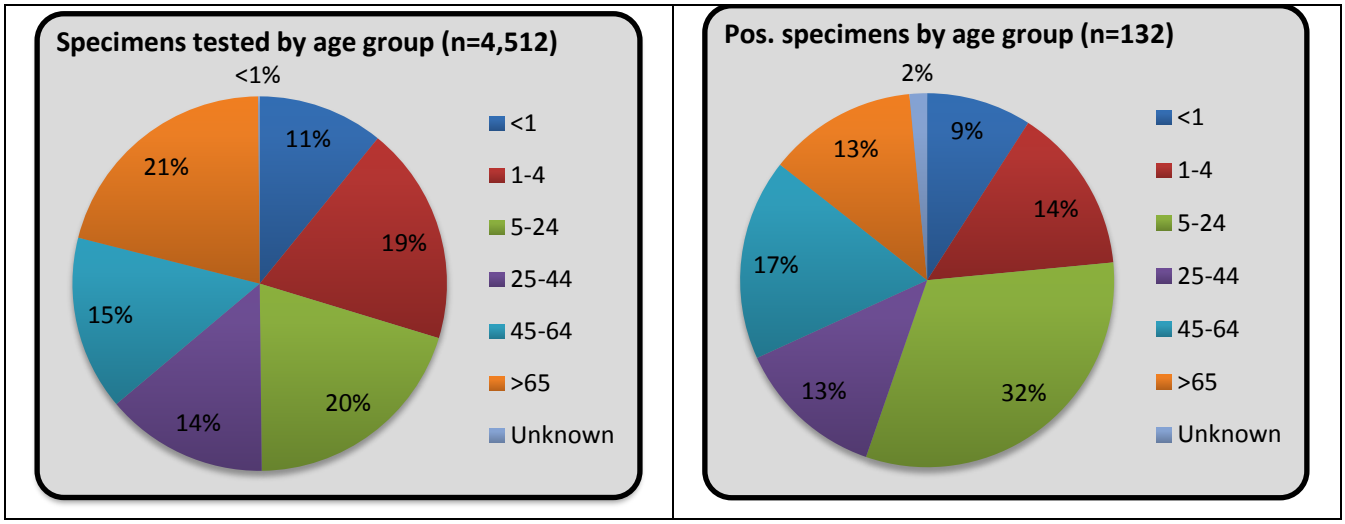
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **4,512** specimens has been tested statewide for influenza viruses (positive=**132** [**2.9%**]).*
  - *2,821 (62.5%) were screened only by rapid antigen tests with no confirmatory testing*
  - *1,691 (37.5%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *4,380 (97.1%) of the 4,512 specimens were negative.*

- *109 (2.4%) cases of influenza A and 23 (0.5%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *20 (18.4%) 2009 H1N1*
    - *2 (1.8%) other seasonal influenza A (H1),*
    - *24 (22%) influenza A (H3)*
    - *63 (57.8%) influenza A (un-subtyped)*

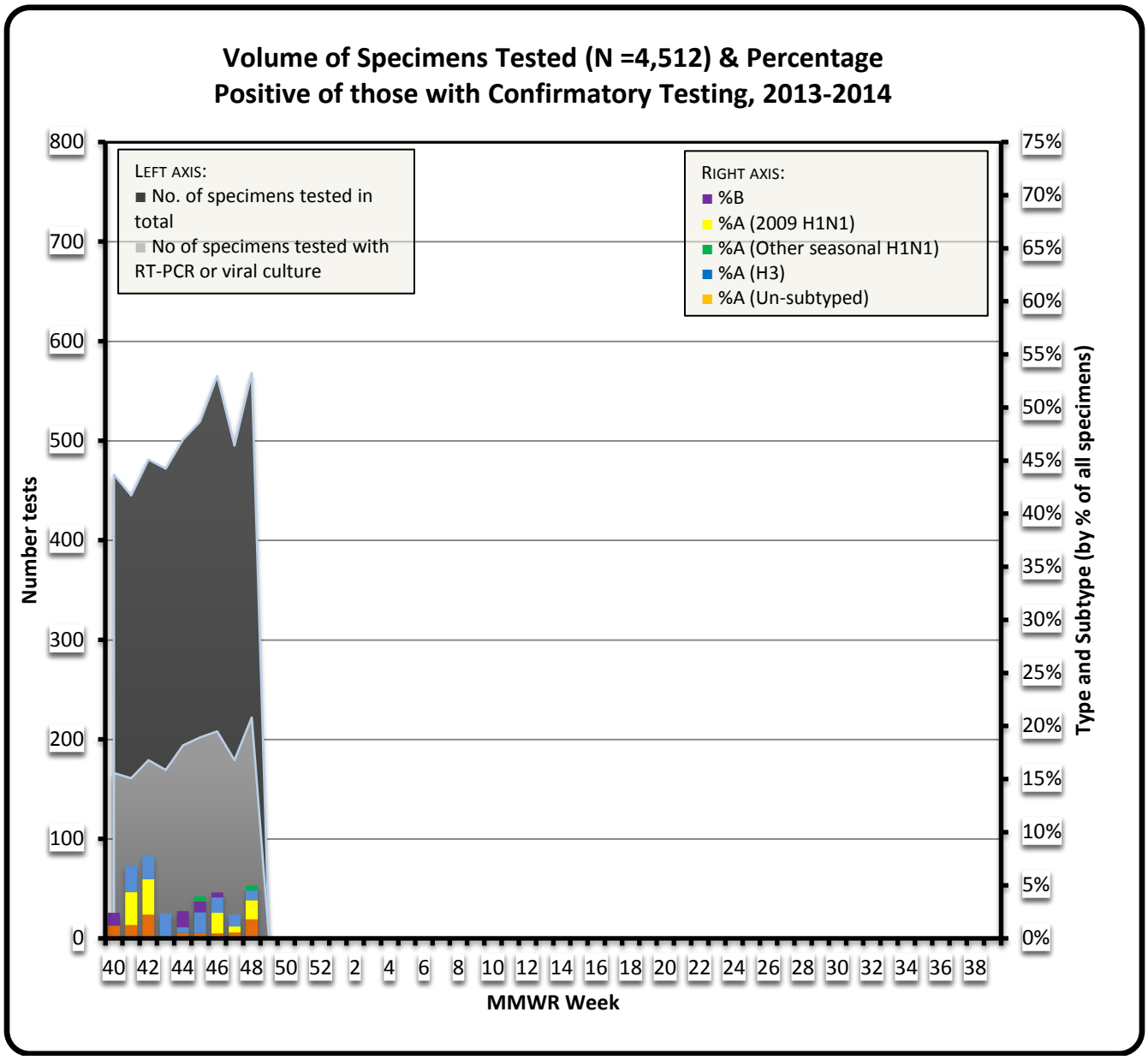
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *2.9% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the type and subtype of specimens tested. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

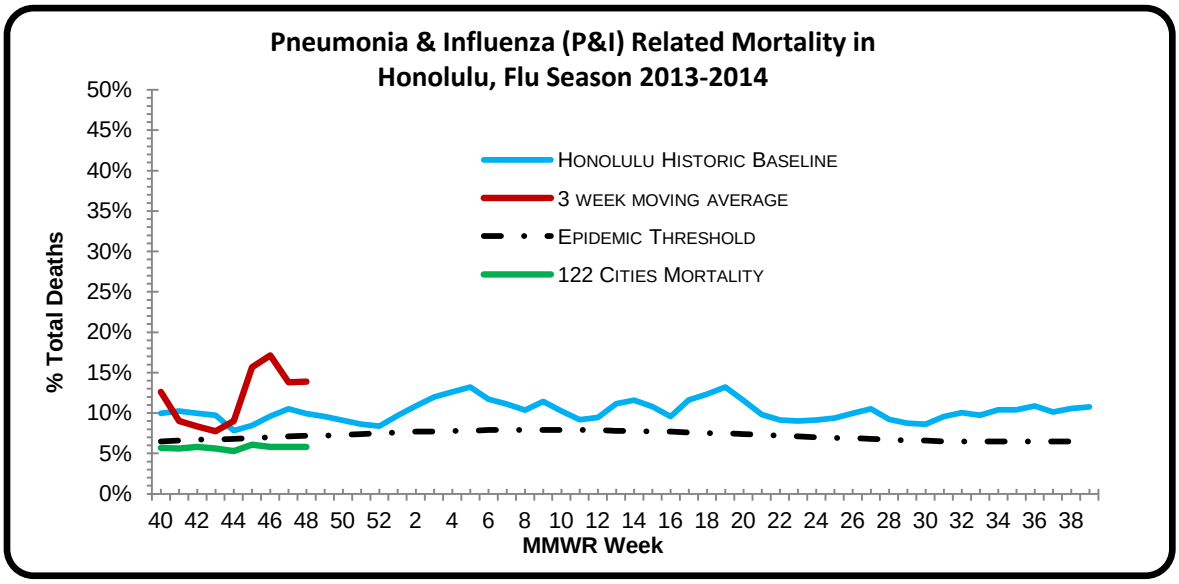
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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																																																			
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X		X																																													
Parainfluenza Virus	X		X	X	X	X		X																																													
Respiratory Syncytial Virus	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																																												
Influenza A (H3)		X	X	X	X	X	X	X	X																																												
Influenza A (Other seasonal H1N1)						X			X																																												
Influenza A (unsubtyped)	X	X	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 48 of the current influenza season:

- ***11.3%*** *of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *An average of* ***11.9%*** *of deaths this flu season has been due to P&I.*
- *The P&I rate was comparable to the historical baseline in Hawaii*[5] *(i.e., inside the 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality*[6] *(5.8%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.7%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2013–2014 season.
- One new influenza-associated pediatric death was reported to CDC during week 48, which was associated with 2009 H1N1 virus and occurred during week 47. A total of three pediatric deaths have been reported to CDC during the 2013–2014 season.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009–2010, 2010–2011, 2011–2012, and 2012–2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 48.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 influenza case counts (here), while the avian H5N1 influenza case data were last updated on October 7, 2013.

H5N1: Total Cases and Deaths by Country*

Country	2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		Total	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	1	1	0	0	7	1
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	1	1	8	8	3	3	20	11	0	0	41	30
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	2	1	1	1	2	1	2	2	0	0	45	30
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	29	13	39	15	11	5	4	3	0	0	173	63
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	9	7	12	10	9	9	2	2	0	0	194	162
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Laos	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	7	2	0	0	4	2	2	1	0	0	125	62
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	48	24	62	34	32	20	31	20	0	0	641	380

* All dates refer to onset of illness. C=Cases; D=Deaths.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 49: DECEMBER 1 – DECEMBER 7, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**
- Vaccine composition for 2013–2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*
- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 49 (2.1%) was higher than the level in week 48 (1.5%). They were comparable to the national baseline ILI level (2.0%) and comparable to the national ILI rate (2.1%) during the same week.
- Hawaii's pneumonia and influenza (P&I) mortality rate of 9.8% (season average to date: 11.8%) was comparable to the historical baseline for Hawaii and comparable to the 122-cities average (6.2%).
- Out of the 5,106 total samples submitted to participating laboratories for testing this season, 156 (3.1%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 49, and there have not been any ILI clusters reported during the 2013–2014 influenza season.
- No influenza-associated pediatric deaths were reported to CDC during week 49, and there have been a total of three deaths reported to CDC during the current season.

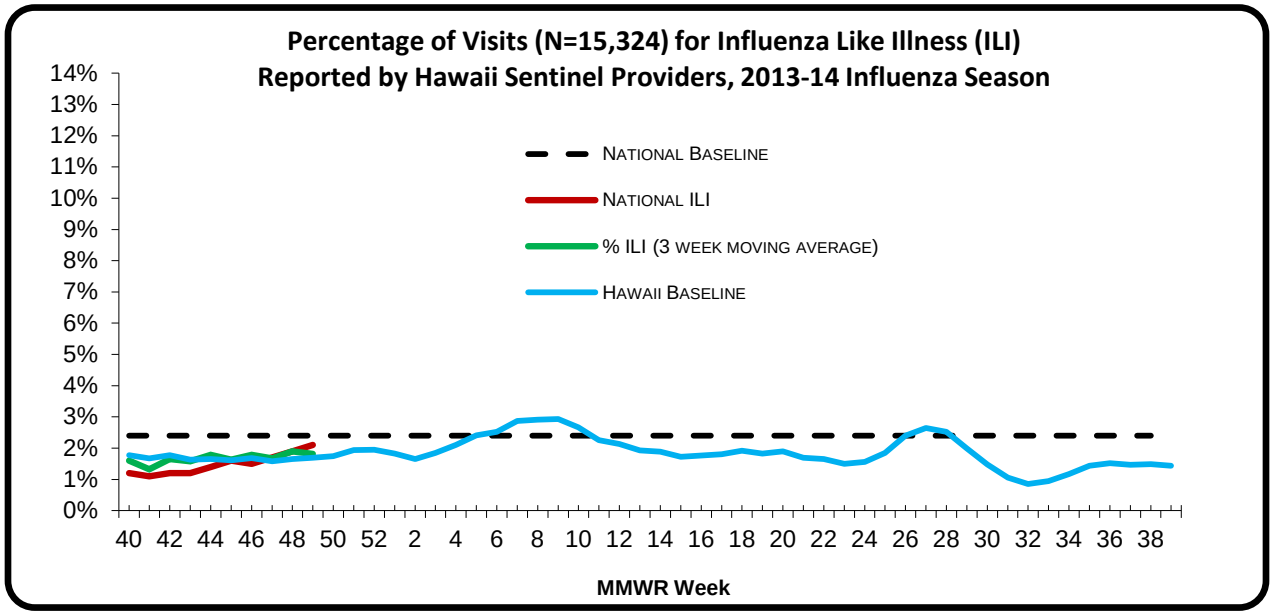
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 49 of the current influenza season:

- ***2.1**% (season average=**1.6**%) of the outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and comparable to the national ILI rate (2.1%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI clusters reported to HDOH during week 49, and there have not been any ILI clusters reported to HDOH to date during the 2013–14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010–2011, 2011–2012, and 2012–2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

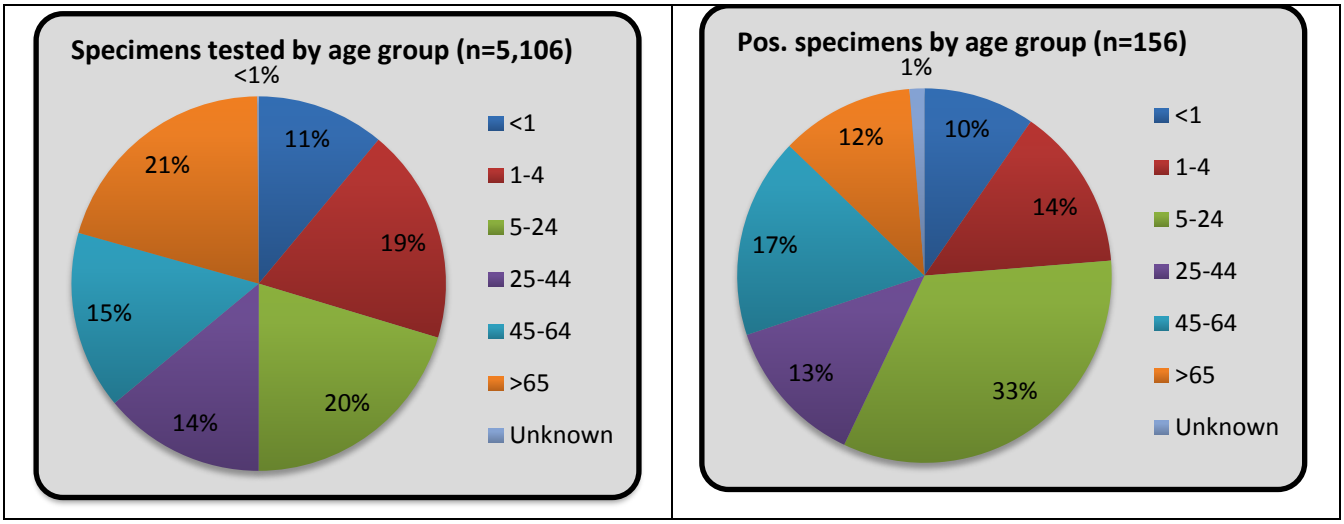
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **5,106** specimens has been tested statewide for influenza viruses (positive=**156** [**3.1%**]).*
  - *3,186 (62.4%) were screened only by rapid antigen tests with no confirmatory testing*
  - *1,920 (37.6%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *4,950 (96.9%) of the 5,106 specimens were negative.*

- *130 (2.6%) cases of influenza A and 26 (0.5%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *25 (19.2%) 2009 H1N1*
    - *2 (1.5%) other seasonal influenza A (H1),*
    - *26 (20%) influenza A (H3)*
    - *77 (59.2%) influenza A (un-subtyped)*

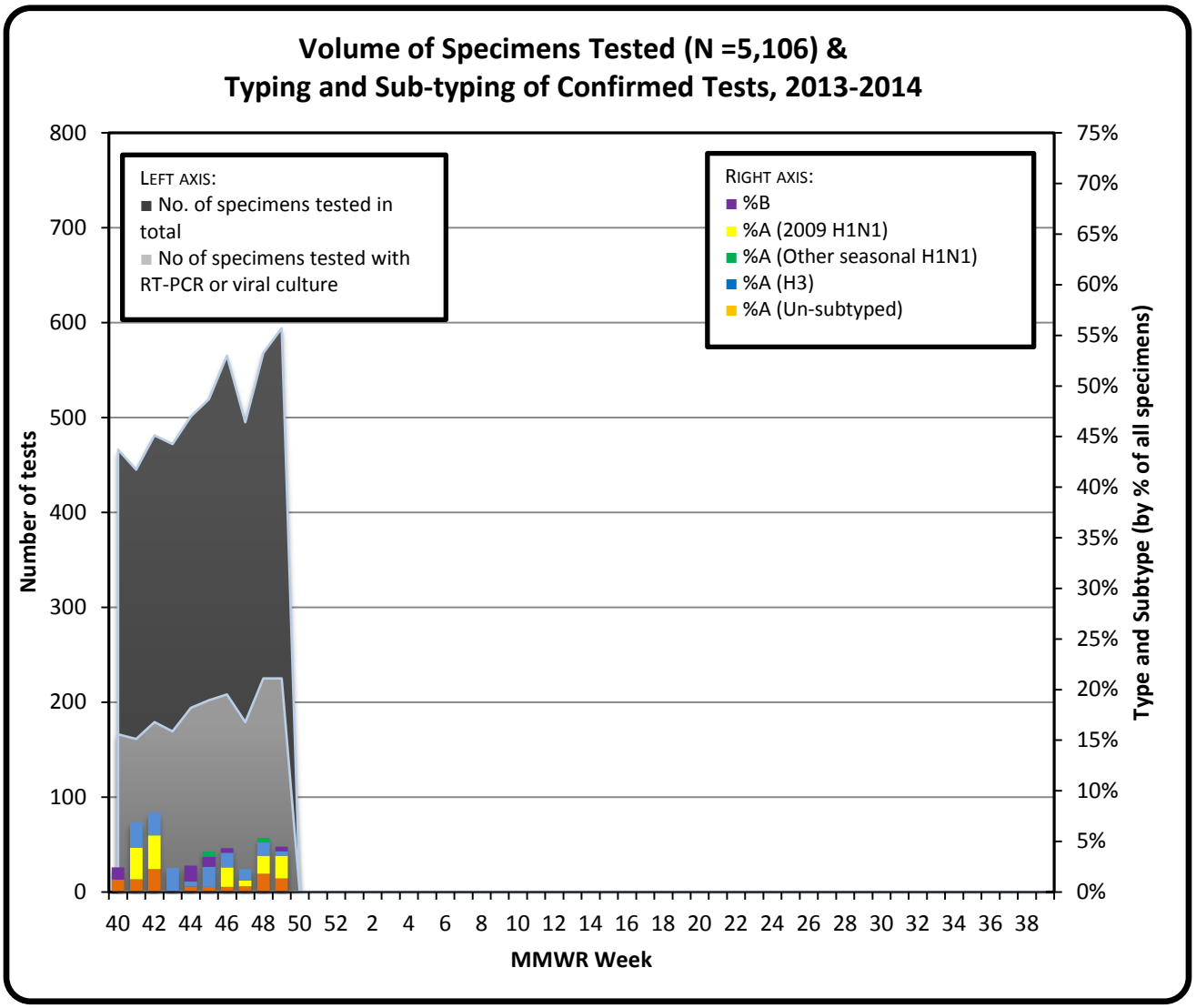
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *2.9% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the type and subtype of specimens tested. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

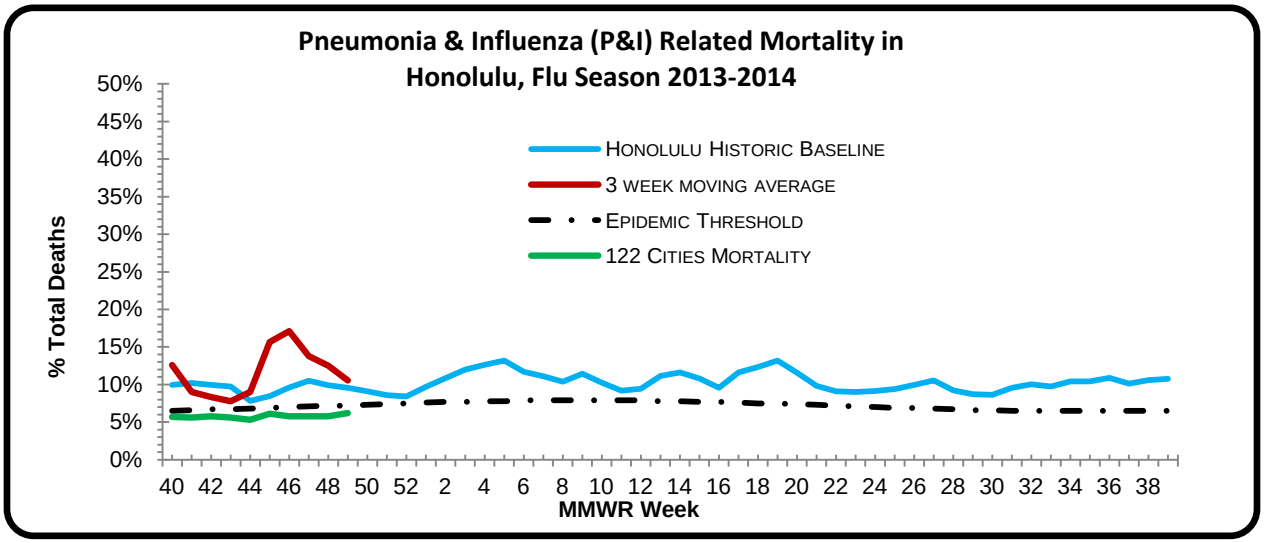
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																			
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	X																																											
Coronavirus		X																																																			
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X		X																																													
Parainfluenza Virus	X		X	X	X	X		X																																													
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X																																											
Rhinovirus	X	X	X	X	X	X	X	X	X	X																																											
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X				X	X	X	X																																											
Influenza A (H3)		X	X	X	X	X	X	X	X	X																																											
Influenza A (Other seasonal H1N1)						X			X																																												
Influenza A (unsubtyped)	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 49 of the current influenza season:

- ***9.8%*** *(season average=**11.7%**) of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I rate was comparable to the historical baseline in Hawaii[5] (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality[6] (6.2%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.8%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2013–2014 season.
- No influenza-associated pediatric death was reported to CDC during week 49. A total of three pediatric deaths have been reported to CDC during the 2013–2014 season.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009–2010, 2010–2011, 2011–2012, and 2012–2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here)

- *No infections with novel or variant influenza virus were reported to CDC during week 49.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well known avian influenza subtype is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 and H5N1 influenza case counts (here), which were last updated on **December 10, 2013**. Since the last WHO report on October 7, 2013, seven laboratory-confirmed H5N cases have been reported in Cambodia (6) and Indonesia (1). All cases are considered to be sporadic, with no evidence of community-level transmission. Additionally, China has reported six new cases of H7N9 infection[8].

[8] Hong Kong SAR has separately reported two H7N9 cases.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 50: DECEMBER 8 – DECEMBER 14, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**

- Vaccine composition for 2013–2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*

- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 50 (2.7%) was higher than the level in week 49 (2.0%). They were comparable to the national baseline ILI level (2.0%) and comparable to the national ILI rate (2.3%) during the same week.
- Hawaii's pneumonia and influenza (P&I) mortality rate of 15.2% (season average to date: 12%) was comparable to the historical baseline for Hawaii, but higher than the 122-cities average (5.6%).
- Out of the 5,758 total samples submitted to participating laboratories for testing this season, 188 (3.3%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 50, and there have not been any ILI clusters reported during the 2013–2014 influenza season.
- Two new influenza-associated pediatric deaths were reported to CDC during week 50: One occurred during the previous season (2012-13 total: 170), and the other during week 50 (2013-14 total: 4).
- CDC released a health advisory on December 24, 2013, reporting that 2009 pandemic H1N1 (pH1N1) has been the predominant circulating virus thus far this season. They have advised that illness that disproportionately affects young- and middle-aged adults may occur if pH1N1 virus continues to circulate widely.

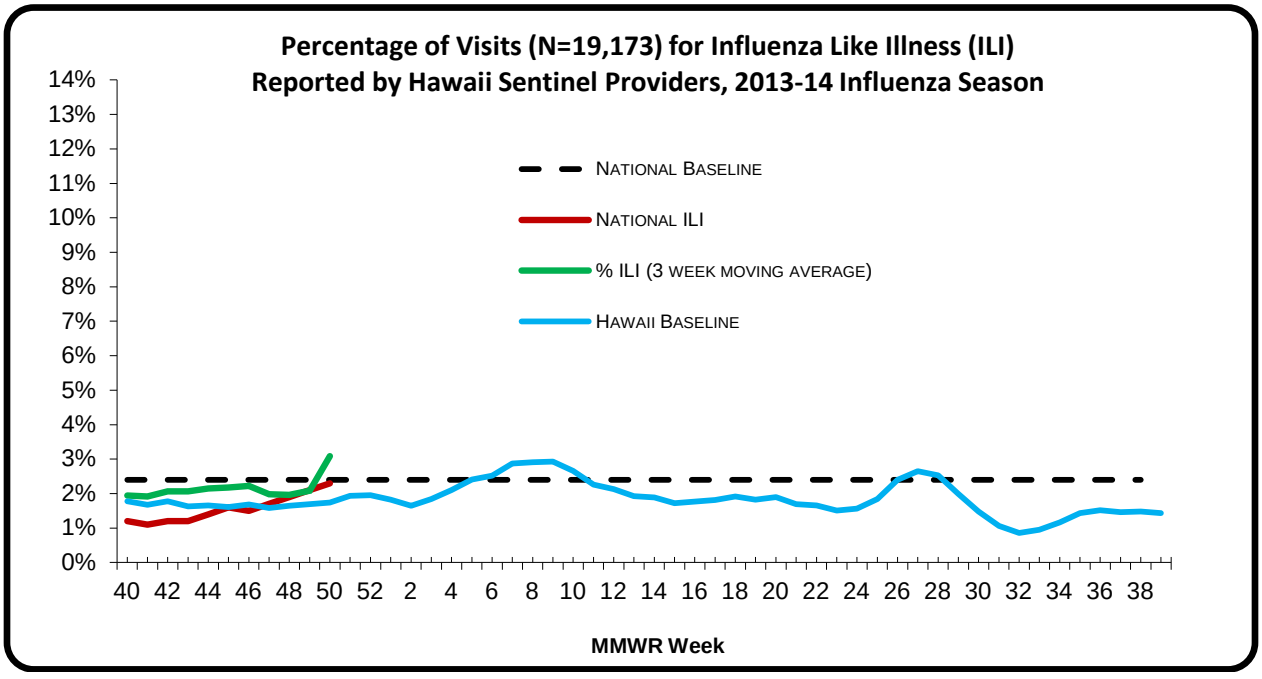
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 50 of the current influenza season:

- ***2.7**% (season average=**2.1**%) of the outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and comparable to the national ILI rate (2.3%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI or influenza clusters reported to HDOH during week 50, and there have not been any ILI clusters reported to HDOH to date during the 2013–14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010–2011, 2011–2012, and 2012–2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

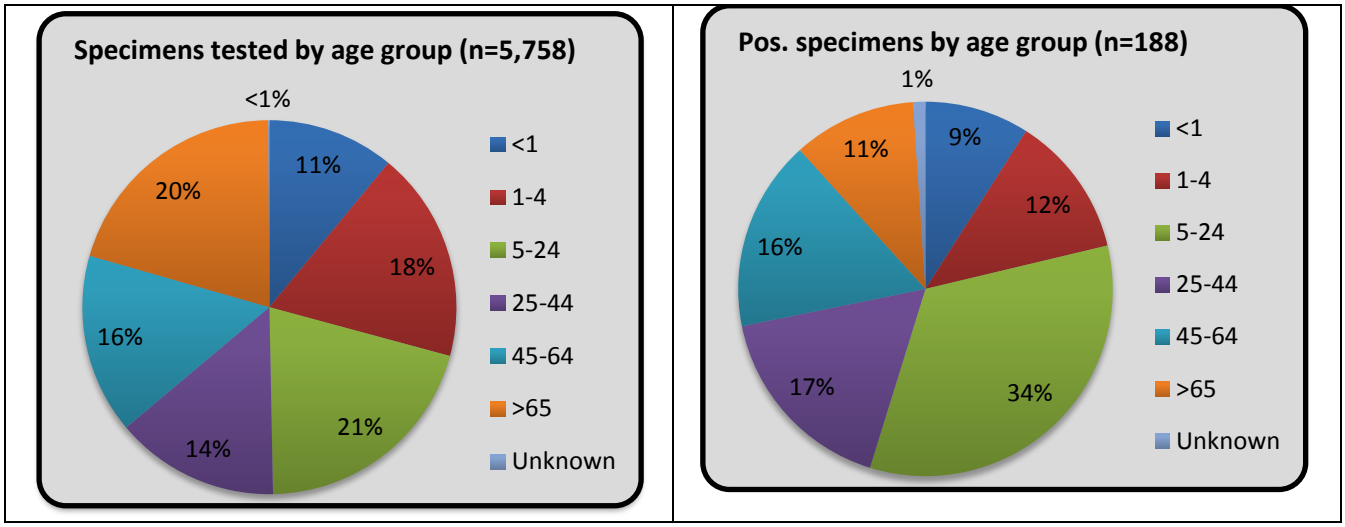
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **5,758** specimens has been tested statewide for influenza viruses (positive=**188** [**3.3%**]).*
  - *3,585 (62.3%) were screened only by rapid antigen tests with no confirmatory testing*
  - *2,173 (37.7%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *5,570 (96.7%) of the 5,758 specimens were negative.*

- *162 (2.8%) cases of influenza A and 26 (0.5%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *33 (20.4%) 2009 H1N1*
    - *2 (1.2%) other seasonal influenza A (H1),*
    - *32 (19.8%) influenza A (H3)*
    - *95 (58.6%) influenza A (un-subtyped)*

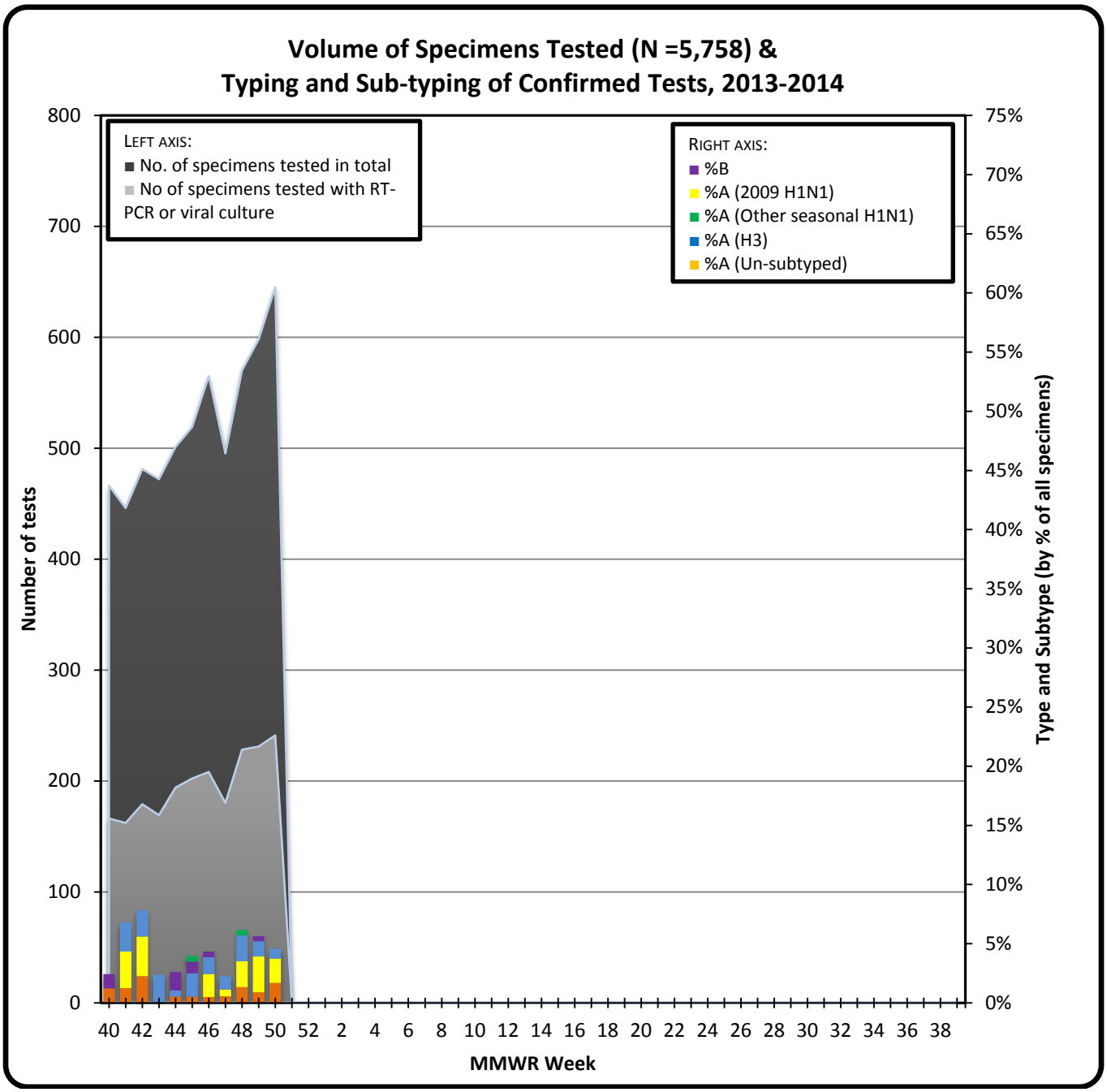
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *3.3% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the type and subtype of specimens tested. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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 2013–14 Flu Season

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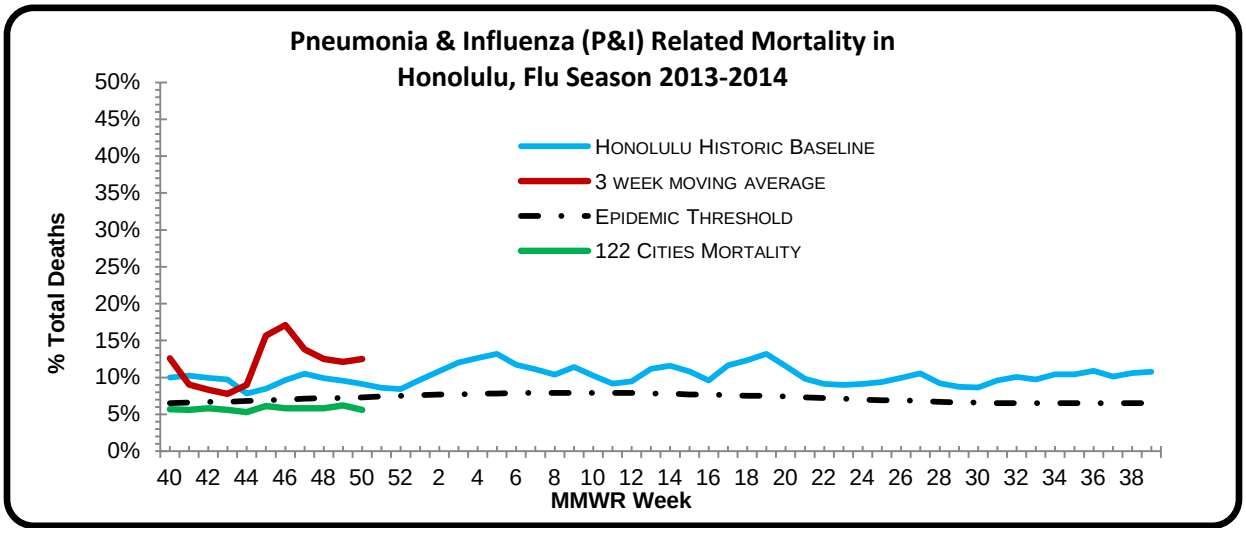
Adenovirus	X	X	X	X	X	X	X	X	X	X	X																																										
Coronavirus		X									X																																										
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X		X																																													
Parainfluenza Virus	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	X	X	X	X	X	X	X	X																																										
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X				X	X	X	X	X																																										
Influenza A (H3)		X	X	X	X	X	X	X	X	X	X																																										
Influenza A (Other seasonal H1N1)						X			X																																												
Influenza A (unsubtyped)	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 50 of the current influenza season:

- ***15.2%*** *(season average=**12%**) of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I rate was comparable to the historical baseline in Hawaii[5] (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I was higher than the national 122-city P&I mortality[6] (5.6%) (i.e., outside the 95% confidence interval) and higher than the epidemic threshold (6.9%) (i.e., outside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2013–2014 season.
- Two new influenza-associated pediatric deaths were reported to CDC during week 50: One was associated with 2009 H1N1 virus (occurred during week 50), bringing the total for the current season to four; The other was associated with influenza A (subtyping data is unavailable), and occurred during the previous season, bringing the total to 170.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009–2010, 2010–2011, 2011–2012, and 2012–2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here).

- *No infections with novel or variant influenza virus were reported to CDC during week 50.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well-known avian influenza sub-type is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 and H5N1 influenza case counts (here), which were last updated on **December 20, 2013**. Since the last WHO report (December 10, 2013), China has reported four new cases of H7N9 infection. There has been no evidence to support sustained human-to-human transmission of H7N9 virus. Additionally, the first human case of avian influenza A (H10N8) has been reported from China in a patient with multiple medical comorbidities. The patient had a history of exposure to a live bird market, and no cases have been identified to date among contacts.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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)[1]

WEEK 51: DECEMBER 15 – DECEMBER 21, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**

- Vaccine composition for 2013–2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*

- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 51 (3.5%) was higher than the level in week 50 (2.7%). They were higher than the national baseline ILI level (2.0%) and comparable to the national ILI rate (3.0%) during the same week.
- Hawaii's pneumonia and influenza (P&I) mortality rate of 9.7% (season average to date: 11.8%) was comparable to the historical baseline for Hawaii and to the 122-cities average (6.7%).
- Out of the 6,347 total samples submitted to participating laboratories for testing this season, 232 (3.7%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 51, and there have not been any ILI clusters reported during the 2013–2014 influenza season.
- One new influenza-associated pediatric death, which occurred during the 2012-13 season (total=171), was reported to CDC during week 51 and was associated with influenza B.
- CDC released a health advisory on December 24, 2013, reporting that 2009 pandemic H1N1 (pH1N1) has been the predominant circulating virus thus far this season. They have advised that illness that disproportionately affects young- and middle-aged adults may occur if pH1N1 virus continues to circulate widely.

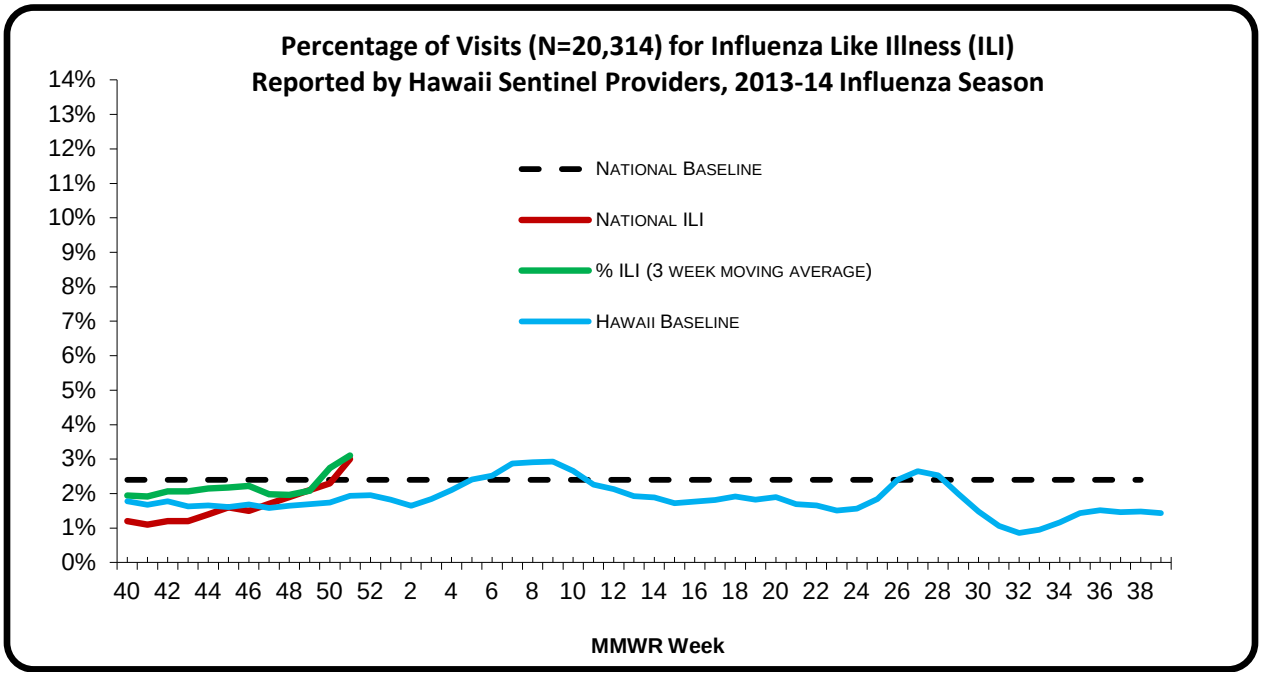
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 51 of the current influenza season:

- ***3.5****% (season average=****2.2****%) of the outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *ILI visits were higher than the historical baseline in Hawaii[2,3] (i.e., outside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were higher than the national baseline (2.0%)[4] (i.e., outside the 95% confidence interval), and comparable to the national ILI rate (3.0%) (i.e., inside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI or influenza clusters reported to HDOH during week 51, and there have not been any ILI clusters reported to HDOH to date during the 2013–14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010–2011, 2011–2012, and 2012–2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

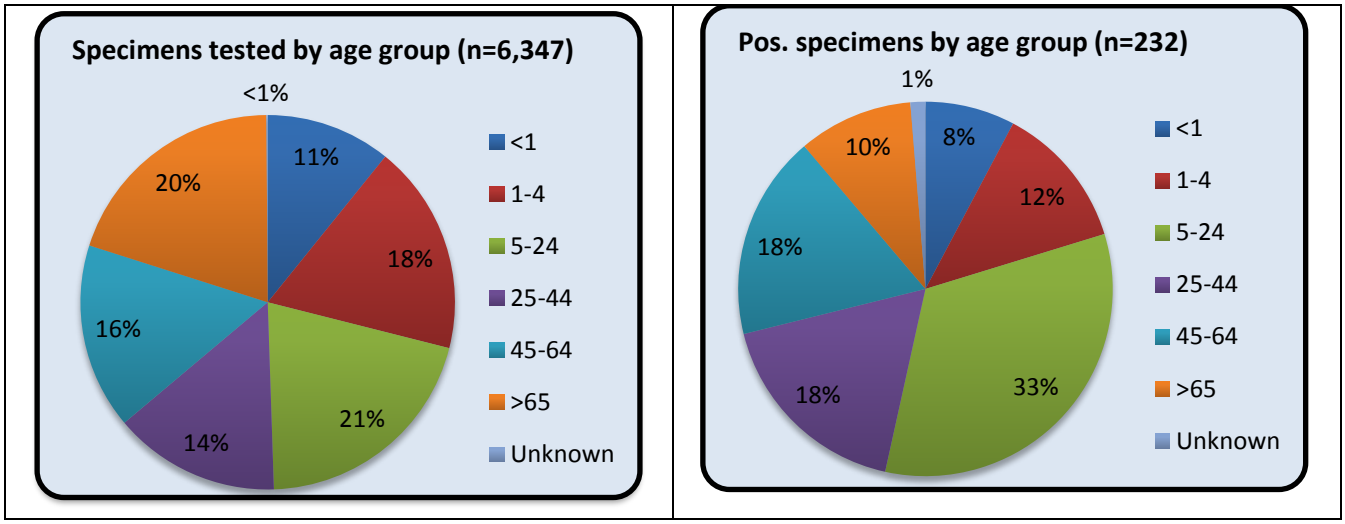
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **6,347** specimens has been tested statewide for influenza viruses (positive=**232** [**3.7%**]).*
  - *3,934 (62%) were screened only by rapid antigen tests with no confirmatory testing*
  - *2,413 (38%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *6,115 (96.3%) of the 6,437 specimens were negative.*

- *205 (3.2%) cases of influenza A and 27 (0.4%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *48 (23.4%) 2009 H1N1*
    - *2 (1%) other seasonal influenza A (H1),*
    - *35 (17.1%) influenza A (H3)*
    - *120 (58.5%) influenza A (un-subtyped)*

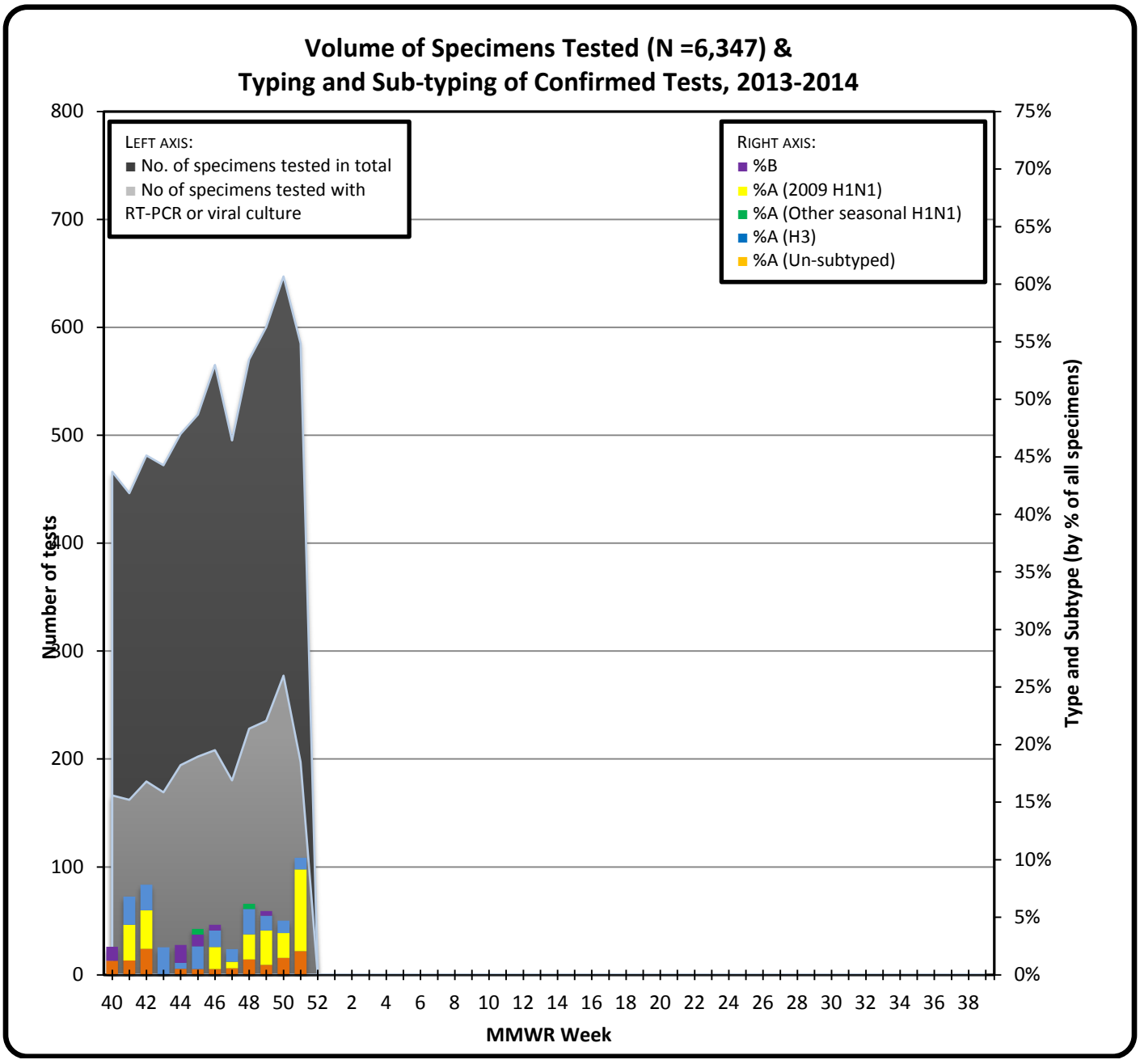
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *3.7% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the type and subtype of specimens tested. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

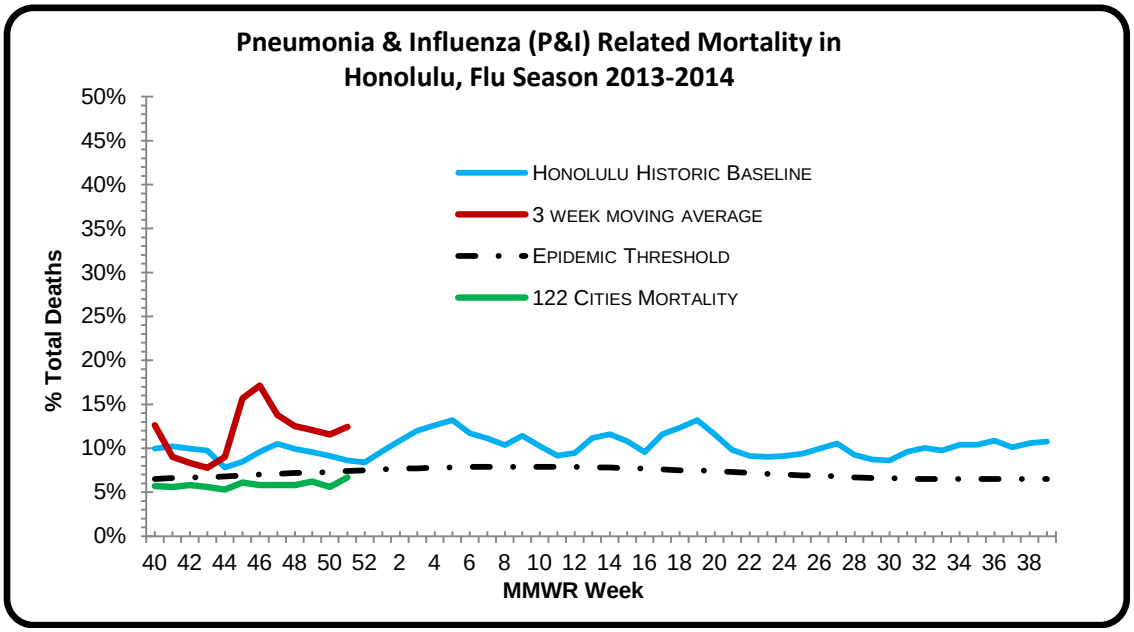
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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	X	X	X																																									
Coronavirus		X									X	X																																									
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X		X																																													
Parainfluenza Virus	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	X	X	X	X	X	X	X	X																																									
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X				X	X	X	X	X	X																																									
Influenza A (H3)		X	X	X	X	X	X	X	X	X	X	X																																									
Influenza A (Other seasonal H1N1)						X			X																																												
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	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:

- ***9.7%*** *(season average=**11.8%**) of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I rate was comparable to the historical baseline in Hawaii[5] (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality[6] (6.7%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (6.9%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2013–2014 season.
- One new influenza-associated pediatric death, which occurred during the 2012-13 season, was reported to CDC during week 51 and was associated with influenza B. This brings the total to 171 for last season.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009–2010, 2010–2011, 2011–2012, and 2012–2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here).

- *No infections with novel or variant influenza virus were reported to CDC during week 51.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well-known avian influenza sub-type is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 and H5N1 influenza case counts (here), which were last updated on **December 20, 2013**. Since the last WHO report (December 10, 2013), no new cases of H5N1 have been reported; the risk of community-level spread of H5N1 remains low. China has reported four new cases of H7N9 infection; there has been no evidence to support sustained human-to-human transmission of H7N9 virus. Additionally, the first human case of avian influenza A (H10N8) has been reported from China in a patient with multiple medical comorbidities. The patient had a history of exposure to a live bird market, and no cases have been identified to date among contacts.

APPENDIX 1: ADDITIONAL INFORMATION

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

Centers for Disease Control and Prevention	General Influenza: http://www.cdc.gov/flu/about/disease/index.htm National ILI and P&I Data: http://www.cdc.gov/flu/weekly/fluactivitysurv.htm Vaccine Virus Selection: **http://www.cdc.gov/flu/about/season/vaccine-selection.htm**
Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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
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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
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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)[1]

WEEK 52: DECEMBER 22 – DECEMBER 28, 2013

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 2013–14 influenza season began during week 40[1] (2013) and will end on week 39 (2014).**

- Vaccine composition for 2013–2014 influenza season:
  - **Trivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*
  - **Quadrivalent**: *A/California/7/2009 (H1N1)pdm09-like virus*; *A/Victoria/361/2011 (H3N2)-like virus*; *B/Massachusetts /2/2012-like virus*; *B/Brisbane/60/2008-like virus*

- Hawaii's influenza-like illness (ILI) surveillance found that ILI outpatient visits during week 52 (2.6%) was lower than the level in week 51 (3.3%). They were comparable to the national baseline ILI level (2.0%) and lower than the national ILI rate (4.3%) during the same week.
- Hawaii's pneumonia and influenza (P&I) mortality rate of 10.5% (season average to date: 11.7%) was comparable to the historical baseline for Hawaii and to the 122-cities average (6.5%).
- Out of the 7,081 total samples submitted to participating laboratories for testing this season, 295 (4.2%) samples were positive for influenza by any testing method (RT-PCR, rapid antigen, culture).
- There were no ILI clusters reported to HDOH during week 52, and there have not been any ILI clusters reported during the 2013–2014 influenza season.
- Two new influenza-associated pediatric deaths, which occurred during weeks 52 and 51, were reported to CDC during week 52. One was associated with H1N1 and the other with unsubtyped influenza A.
- The first case of H5N1 in the Americas was reported from Canada in an individual with recent travel to Beijing, China.

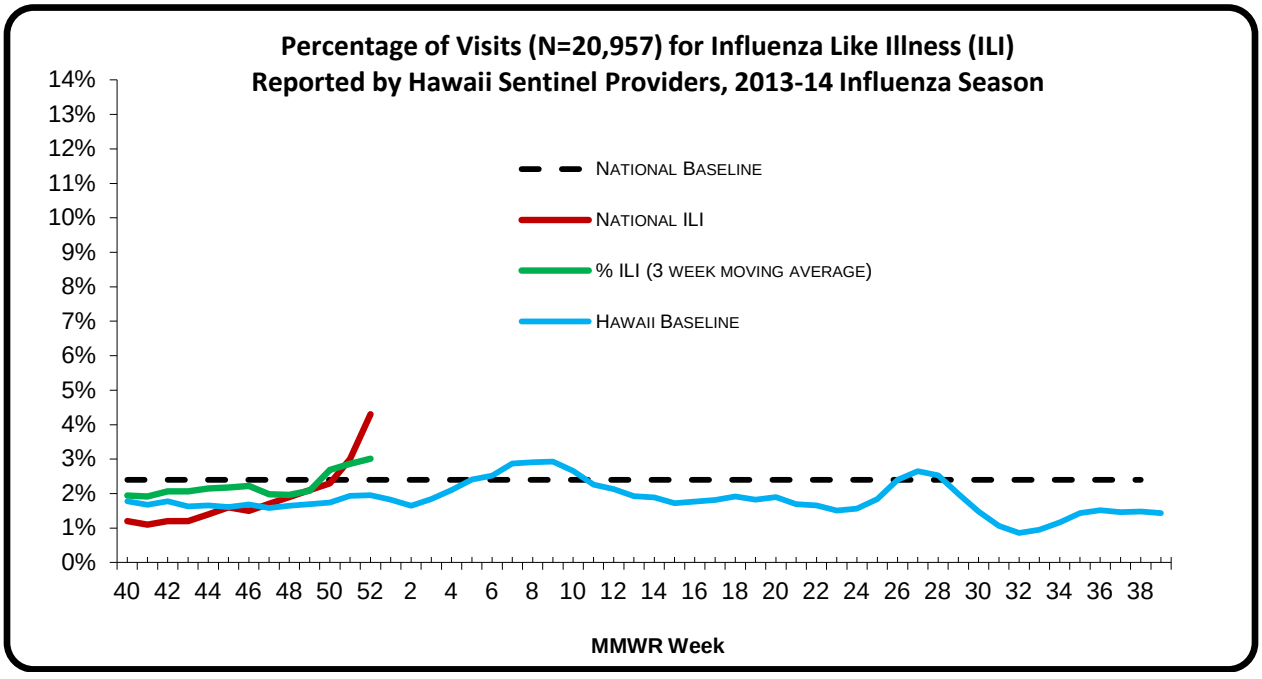
[1] MMWR stands for "Morbidity and Mortality Weekly Report," conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. **See appendix 2 for interpretation of MMWR weeks.**

INFLUENZA SURVEILLANCE

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

For week 52 of the current influenza season:

- ***2.6**% (season average=**2.2**%) of the outpatient visits recorded by Hawaii sentinel providers was for ILI.*
- *ILI visits were comparable to the historical baseline in Hawaii[2,3] (i.e., inside the 95% confidence interval).*
- *Hawaii's ILI outpatient visits were comparable to the national baseline (2.0%)[4] (i.e., inside the 95% confidence interval), and lower than the national ILI rate (4.3%) (i.e., outside the 95% confidence interval).*
- *ILI Cluster Activity: there were no ILI or influenza clusters reported to HDOH during week 52, and there have not been any ILI clusters reported to HDOH to date during the 2013–14 influenza season.*



[2] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2008–09, 2009–10, 2010–2011, 2011–2012, and 2012–2013).
[3] This value is based upon comparison of actual outpatient ILI with the historical baseline, which only captures outpatient ILI. The chart above represents a 3-week moving average and not the actual ILI by week.
[4] The National Baseline is calculated by CDC as the mean percentage of visits for ILI during weeks 21–39 with two standard deviations. Because of large variability in regional ILI, comparison of the national baseline with local ILI may not be appropriate. It is provided in this report because no meaningful regional baselines are available for comparison. The national baseline combines all data reported by states to CDC, including ILI in outpatient, ER, urgent care, and inpatient settings.

II. LABORATORY SURVEILLANCE: State Laboratories Division (SLD; the HDOH public health laboratory) and Hawaii's major private laboratories (DLS, CLH) report results of RT-PCR, which can be considered confirmatory (SLD may perform viral culture on select specimens). Only specimens meeting priority criteria (those from 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 infections) are forwarded to SLD for 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).

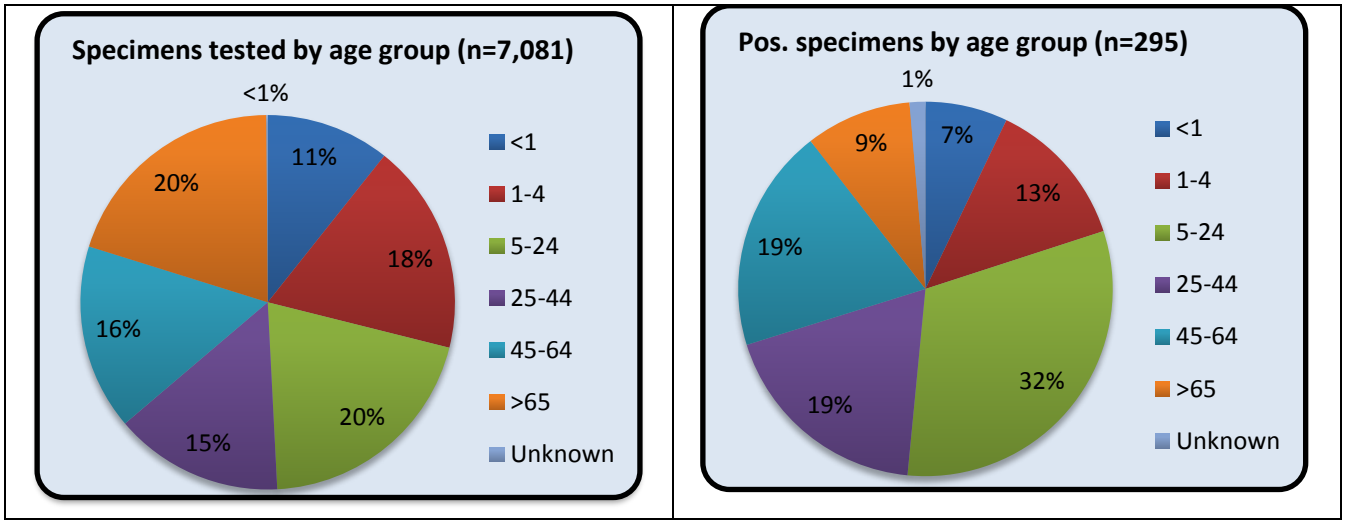
A. INFLUENZA: The following reflects laboratory findings since the beginning of the 2013–14 flu season:

- *A total of **7,081** specimens has been tested statewide for influenza viruses (positive=**295** [**4.2%**]).*
  - *4,408 (62.3%) were screened only by rapid antigen tests with no confirmatory testing*
  - *2,673 (37.7%) underwent some type of confirmatory testing (either RT-PCR or viral culture)*
  - *6,786 (95.8%) of the 7,081 specimens were negative.*

- *266 (3.8%) cases of influenza A and 29 (0.4%) cases of influenza B were detected using any method*
  - *Influenza A cases included:*
    - *81 (30.5%) 2009 H1N1*
    - *2 (0.8%) other seasonal influenza A (H1),*
    - *36 (13.5%) influenza A (H3)*
    - *147 (55.3%) influenza A (un-subtyped)*

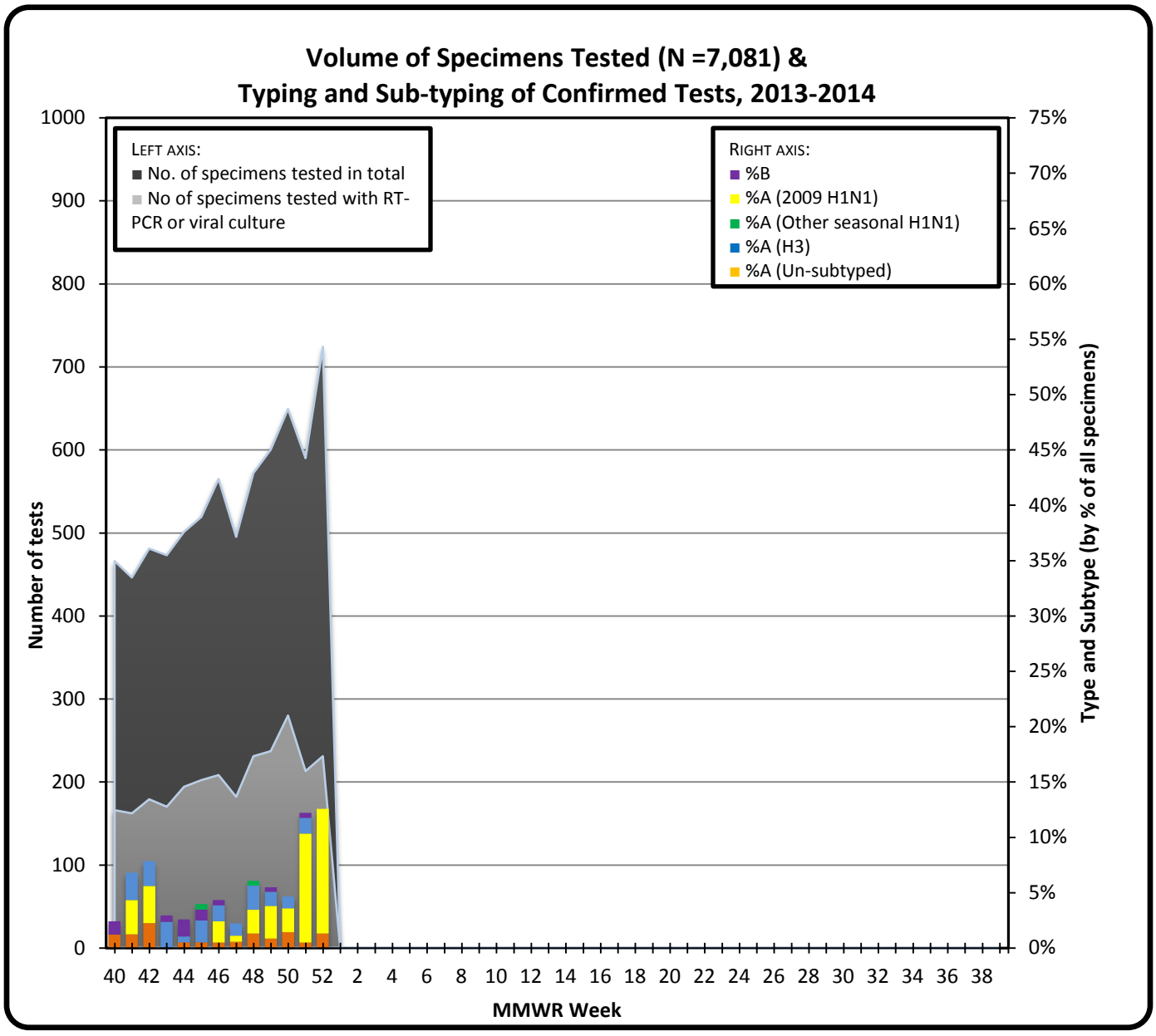
1. AGE DISTRIBUTION

The pie charts on the below indicate the distribution of specimens tested and of positive influenza cases in Hawaii by age group during the 2013–14 influenza season. Of the *4.2% of specimens* that tested positive for influenza, *more were aged 5–24 years than any other age group*.



2. LABORATORY TESTING

The chart below displays the total volume of specimens tested for influenza by MMWR week during the 2013 – 2014 influenza season as well as the type and subtype of specimens tested. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



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**.

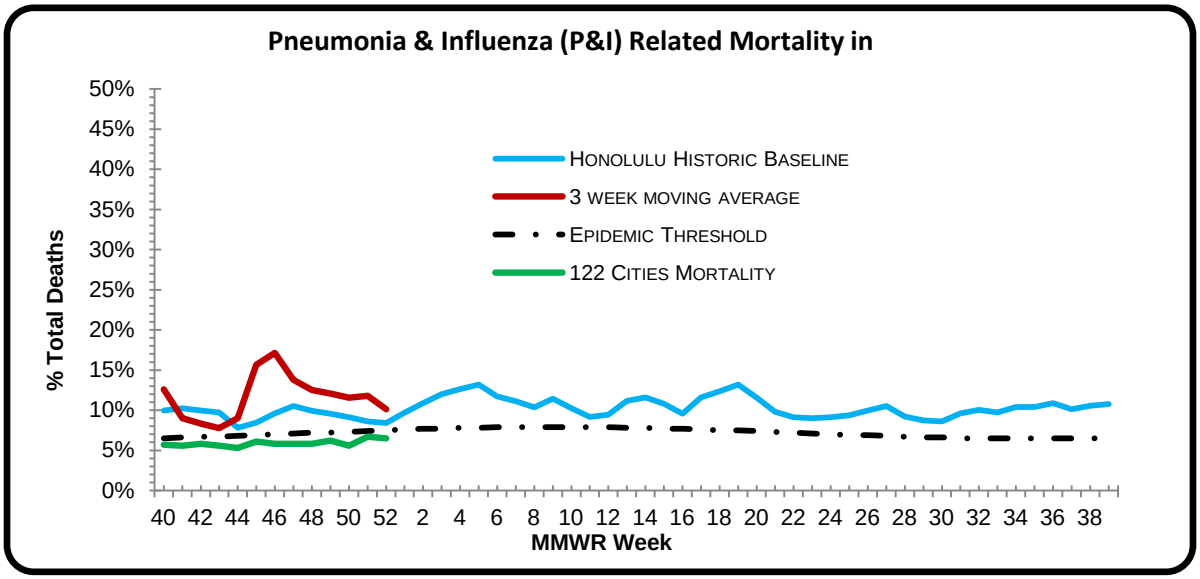
All Respiratory Isolates Identified during the 2013–14 Flu Season

	MMWR Week (2013-2014)																																																				
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	X	X	X																																									
Coronavirus		X									X	X																																									
Coxsackie Virus																																																					
Cytomegalovirus					X																																																
Echovirus																																																					
Enterovirus					X	X																																															
Herpes Simplex Virus, Type 1																																																					
Metapneumovirus		X	X			X		X																																													
Parainfluenza Virus	X		X	X	X	X		X			X		X																																							
Respiratory Syncytial Virus	X	X	X	X	X	X	X	X	X	X	X	X	X																																							
Rhinovirus	X	X	X	X	X	X	X	X	X	X	X	X	X																																							
Varicella Zoster Virus																																																					
Influenza 2009 H1N1		X	X				X	X	X	X	X	X	X																																							
Influenza A (H3)		X	X	X	X	X	X	X	X	X	X	X																																								
Influenza A (Other seasonal H1N1)						X			X																																												
Influenza A (unsubtyped)	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 52 of the current influenza season:

- ***10.5%*** *(season average=**11.7%**) of all deaths that occurred in Honolulu were related to pneumonia or influenza.*
- *The P&I rate was comparable to the historical baseline in Hawaii[5] (i.e., inside the 95% confidence interval).*
- *The Honolulu P&I was comparable to the national 122-city P&I mortality[6] (6.5%) (i.e., inside the 95% confidence interval) and comparable to the epidemic threshold (7.0%) (i.e., inside the 95% confidence interval).*



INFLUENZA-ASSOCIATED PEDIATRIC DEATHS[7]:

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2013–2014 season.
- Two new influenza-associated pediatric deaths (season total=6), which occurred during week 52, were reported to CDC. The first occurred during week 51 and was associated 2009 H1N1 virus, and the second occurred during week 50 and was associated with influenza A for which no subtyping was performed.

[5] The Hawaii historical baseline (%ILI and %P&I) is the average of 3-week moving averages over the preceding five flu seasons of historical data (2009–09, 2009–2010, 2010–2011, 2011–2012, and 2012–2013).

[6] 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

[7] 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). 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 at this time. More information regarding H3N2v viruses may be found on the CDC website (here).

- *No infections with novel or variant influenza virus were reported to CDC during week 52.*
- *A total of 1 H3N2v or H1N1v infection has been reported for 2013–2014 flu 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. One well-known avian influenza sub-type is H5N1 virus, which circulates globally among poultry. The WHO, CDC, and other public health agencies have been monitoring a new avian 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. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza and posts current avian H7N9 and H5N1 influenza case counts (here), which were last updated on **December 20, 2013**. Since the last WHO report (December 10, 2013), no new cases of H5N1 have been reported; the risk of community-level spread of H5N1 remains low. China has reported four new cases of H7N9 infection; there has been no evidence to support sustained human-to-human transmission of H7N9 virus. Additionally, the first human case of avian influenza A (H10N8) has been reported from China in a patient with multiple medical comorbidities. The patient had a history of exposure to a live bird market, and no cases have been identified to date among contacts. On **January 8, 2014**, Canada reported a fatal case of H5N1 in a Canadian resident who had a travel history to China. This is the first human case of H5N1 in the Americas.

APPENDIX 1: ADDITIONAL INFORMATION

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

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Flu.gov	General Influenza Information: flu.gov
HDOH Flu and Pneumonia	General Influenza: http://www.flu.hawaii.gov/ Surveillance: http://www.flu.hawaii.gov/surveillance.html To become part of the sentinel physicians, email: matthew.pflaum@doh.hawaii.gov
World Health Organization	General Global and Local Influenza: http://www.who.int/topics/influenza/en/ Avian Influenza: http://www.who.int/influenza/human_animal_interface/en/

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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
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19	5/14/2011	5/12/2012	5/11/2013	5/10/2014	5/16/2015
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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		