



# HAWAII STATE DEPARTMENT OF HEALTH DISEASE OUTBREAK CONTROL DIVISION

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

WEEK 2: JANUARY 8, 2017 – JANUARY 14, 2017

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

### REPORT SNAPSHOT FOR WEEK 2

*The 2016–17 influenza season began during week 40<sup>1</sup> (2016) and will end on week 39 (2017)*

Surveillance for Influenza-like Illness (ILI)		
Metric	Value	Comment
Outpatient visits related to influenza-like illness (ILI) from ILINet Sentinel Providers	5.2%	Higher than the previous week. Comparable to Hawaii’s historical baseline, higher than the national ILI rate, and higher than the national baseline.
Number of ILI clusters reported to HDOH	3	There have been 20 clusters this season.

Surveillance for Severe Outcomes		
Pneumonia and influenza (P&I) mortality rate	8.9%	Comparable to the historical baseline for Hawaii. Due to data processing problems, NCHS mortality surveillance data for this week will be delayed.
Number of influenza-associated pediatric deaths reported nationwide	2	

Laboratory Surveillance		
Percent of all respiratory specimens positive for influenza this week	22.1%	Lower than the previous week. This number means that many, if not all, of the 77.9% who tested negative for influenza had illness from another respiratory etiology.
Percent of all respiratory specimens positive for influenza this season to date	16.3%	

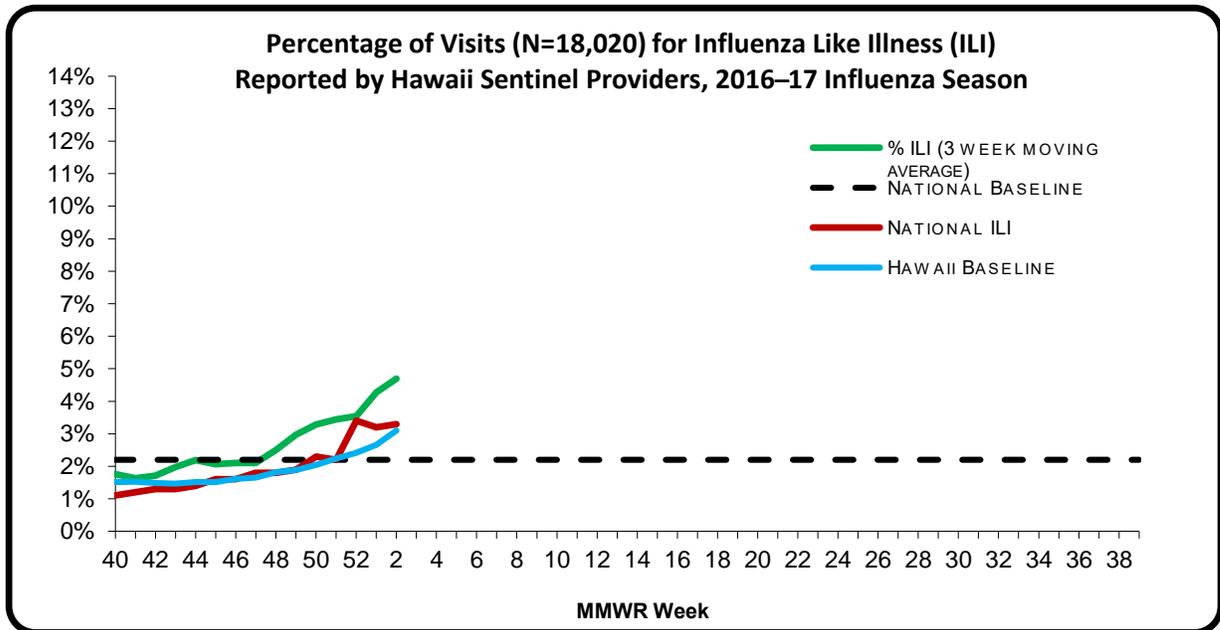
<sup>1</sup> MMWR stands for “Morbidity and Mortality Weekly Report,” conventionally used by the Centers for Disease Control and Prevention (CDC). The weeks of a flu season are often referred to by their respective MMWR week. See appendix 2 for interpretation of MMWR weeks.

**INFLUENZA SURVEILLANCE**

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

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

- **5.2%** (season to date: **2.6%**) of the outpatient visits recorded by Hawaii sentinel providers were for ILI.
- ILI visits were comparable to the historical baseline in Hawaii<sup>2,3</sup> (i.e., inside the 95% confidence interval).
- Hawaii's ILI outpatient visits were higher than the national baseline (2.2%)<sup>4</sup> (i.e., outside the 95% confidence interval) and higher than the national ILI rate (3.3%) (i.e., outside the 95% confidence interval).
- **ILI Cluster Activity:** Three clusters were reported to HDOH during week 2. Two clusters occurred at schools and one occurred at a long-term care facility in Oahu. One school is on Hawaii and the other one is on Oahu. All the clusters had cases of influenza A.



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

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

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

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

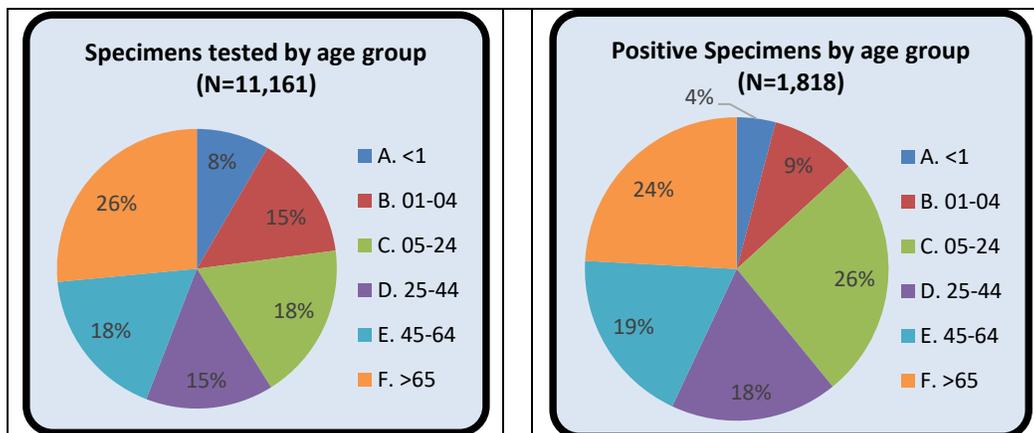
**A. INFLUENZA:**

- The following reflects laboratory findings for week 2 of the 2016-17 influenza season:
  - A total of **897** specimens have been tested statewide for influenza viruses (positive: **198 [22.1%]**). (Season to date: **11,161** tested [**16.3%** positive])
    - 487 (54.3%) were screened only by rapid antigen tests with no confirmatory testing
    - 410 (45.7%) underwent confirmatory testing (either RT-PCR or viral culture)
    - 699 (77.9%) were negative.

Influenza type	Current week 2 (%)	Season to date (%)
Influenza A (H1) <sup>6</sup>	0 (0.0)	12 (0.7)
Influenza A (H3)	0 (0.0)	152 (8.4)
Influenza A no subtyping	160 (80.8)	1394 (76.7)
Influenza B (Yamagata)	0 (0.0)	11 (0.6)
Influenza B (Victoria)	0 (0.0)	10 (0.6)
Influenza B no genotyping	38 (19.2)	239 (13.1)

**1. AGE DISTRIBUTION**

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

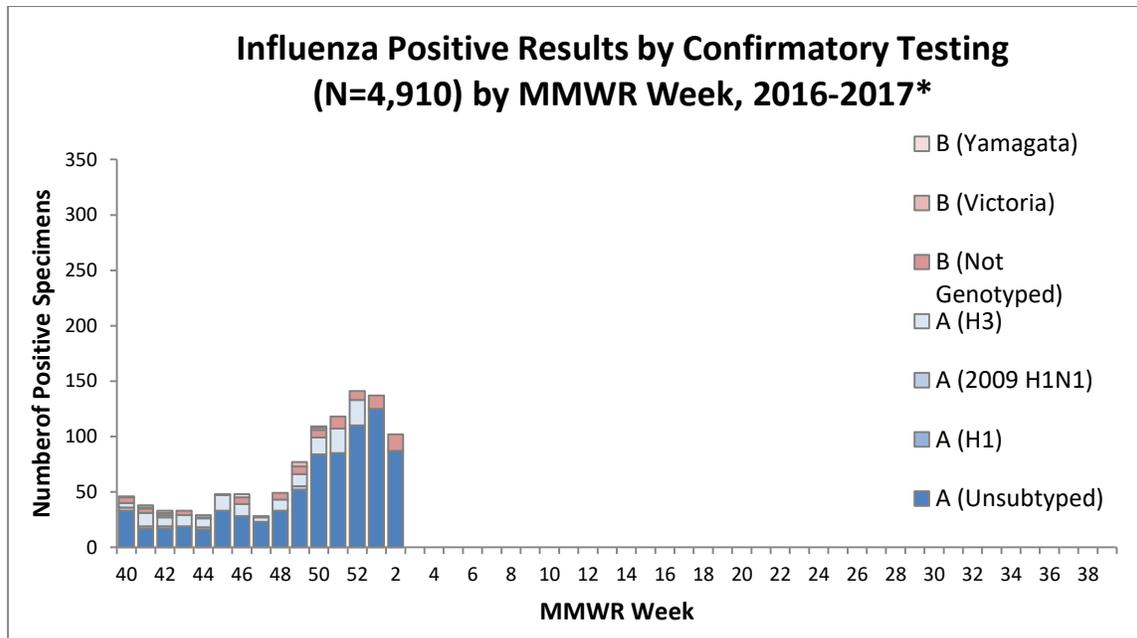
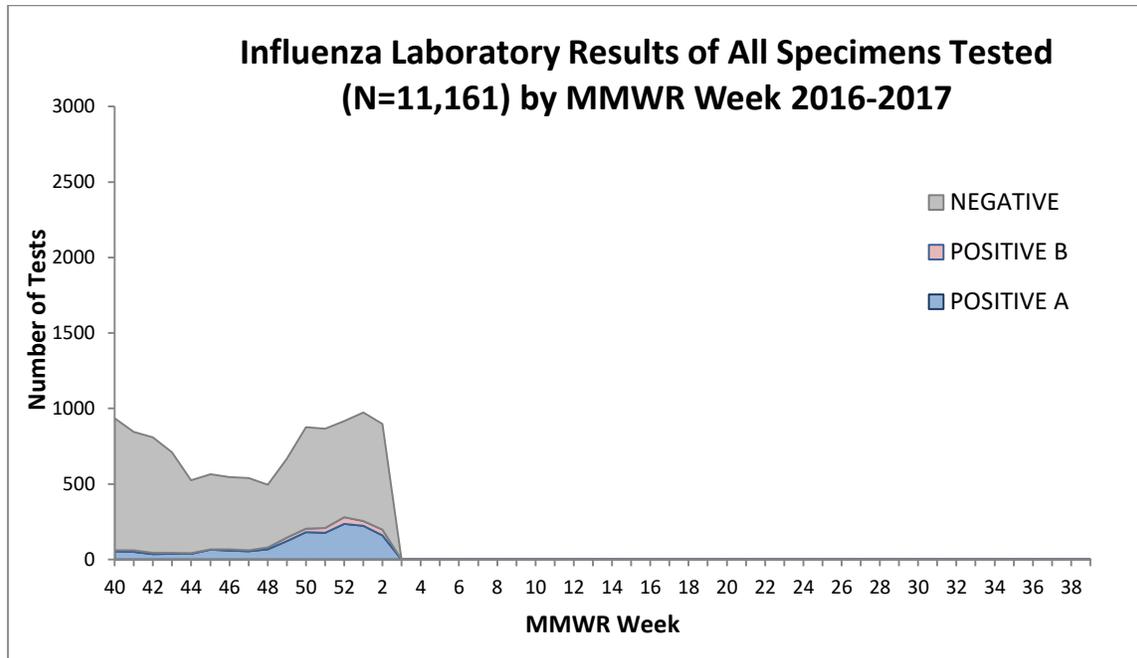


<sup>5</sup> Priority criteria include: hospitalized patients with acute respiratory distress syndrome [ARDS] or x-ray confirmed pneumonia; travelers with international travel history within 10 days of onset; specimens submitted by sentinel providers; specimens collected from healthcare workers, pregnant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

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

**2. LABORATORY TESTING**

The charts below show the laboratory results of all specimens tested for influenza by MMWR week during the 2016–2017 influenza season as well as the type and subtype of positive results for influenza. Again, sub-typing is only performed on selected specimens tested by confirmatory tests (i.e., RT-PCR or viral culture).



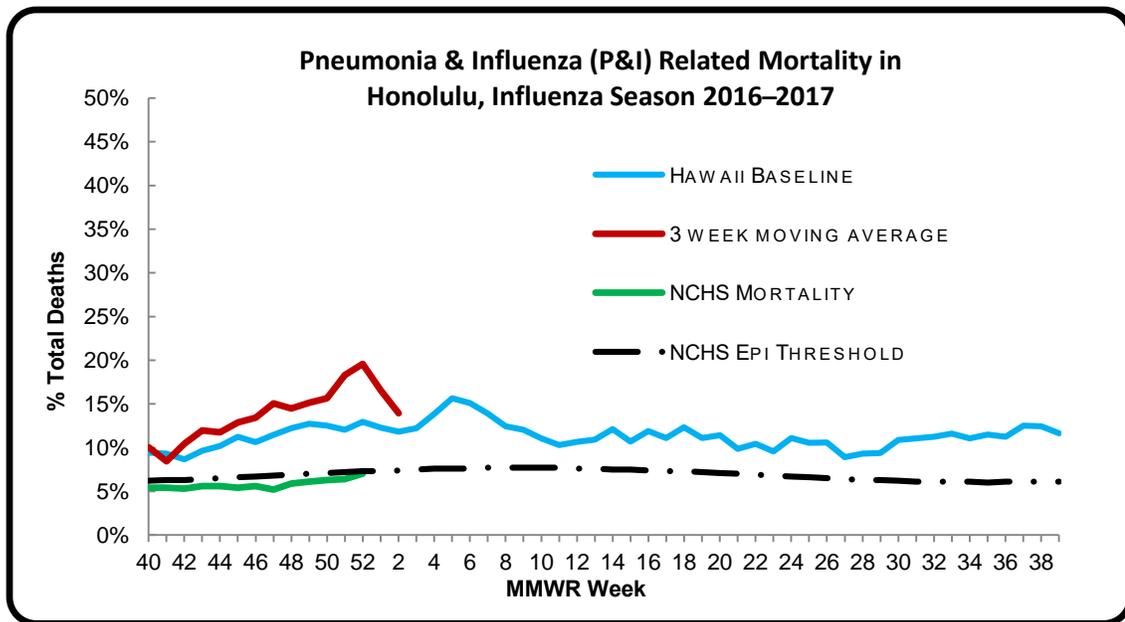
\* Not all positive influenza specimens receive confirmatory testing, and results may not necessarily represent the proportion of types/subtypes that are circulating in Hawaii.



**III. PNEUMONIA AND INFLUENZA (P&I) RELATED MORTALITY:** P&I mortality surveillance is collected by CDC using two methods: 122-cities and pediatric mortality. Each week the HDOH OHSM reports specific data from Honolulu to the CDC along with 121 other cities from across the United States. CDC collects the following information by age group: the total number of deaths, total deaths from pneumonia, and total deaths related to influenza. Studies have suggested that P&I is a good indicator of influenza-related deaths and therefore P&I is one method for influenza surveillance.

For week 2 of the current influenza season:

- 8.9% of all deaths that occurred in Honolulu during week 2 were related to pneumonia or influenza. For the current season (season to date: 13.2%), there have been 1,383 deaths from any cause, 183 of which were due to P&I.
- The P&I rate was comparable to the historical baseline in Hawaii<sup>7</sup> (i.e., inside the 95% confidence interval).
- The CDC’s National Center for Health Statistics (NCHS) P&I mortality<sup>8</sup> will not be published this week due to data processing issues.



**INFLUENZA-ASSOCIATED PEDIATRIC DEATHS<sup>9</sup>:**

- No influenza-associated pediatric deaths have been reported in Hawaii during the 2016–2017 season.
- Nationally, two influenza-associated pediatric deaths were reported to CDC during week 2. One death was associated with an influenza A virus for which no subtyping was performed and occurred during week 49 (the

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

<sup>8</sup> Each week, the vital statistics offices of 122 cities across the United States report the total number of death certificates processed and the number of those for which pneumonia or influenza was listed as the underlying or contributing cause of death by age group (Under 28 days, 28 days–1 year, 1–14 years, 15–24 years, 25–44 years, 45–64 years, 65–74 years, 75–84 years, and ≥85 years). The percentage of deaths due to pneumonia and influenza (P&I) are compared with a seasonal baseline and epidemic threshold value calculated for each week

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

week ending December 10, 2016). One death was associated with an influenza virus for which the type was not determined and occurred during week 1 (the week ending January 7, 2017). (Season total: 5).

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

**A. VARIANT VIRUSES:**

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

- *No variant or novel influenza infections have been reported to HDOH during the 2016–2017 influenza season.*
- *One human infection with novel influenza A viruses, H1N1v, H3N2v, and H1N2v, has been reported to CDC during the 2016–2017 influenza season.*
- *One human infection with novel influenza A H1N1v virus has been reported to WHO from the Netherlands during the 2016-2017 influenza season.*
- *One human infection with novel influenza A H3N2v virus has been reported to WHO from Canada during the 2016-2017 influenza season.*

**B. AVIAN (OR BIRD) INFLUENZA:**

These types of influenza viruses cause zoonotic (animal-associated) disease of public health concern and are therefore monitored globally by the WHO. Most avian influenza viruses do not cause disease in humans, but a few subtypes may pass the species barrier and cause sickness in humans. Avian influenza viruses may be of various subtypes, including H5N1, H5N2, H5N8, H7N3, H7N7, H7N8, H7N9, and H9N2. On January 15<sup>th</sup>, 2016, the USDA and APHIS reported detection of HPAI H7N8 in a commercial turkey flock in Indiana. There have been no associated human infections. This is the first detection of HPAI H7N8 in wild bird surveillance in the United States. More information the risk assessment and recommendations for HPAI H7N8 can be found ([here](#)). The WHO, CDC, and other public health agencies have also been monitoring influenza H7N9, which represents a potential public health concern. For more information regarding avian influenza, please visit the CDC ([here](#)) or the WHO ([here](#)) websites. WHO reports total number of cases and deaths related to laboratory-confirmed avian influenza viruses and posts current avian influenza case counts ([here](#)), which were last updated on **January 16, 2017**. Since the last update, one laboratory-confirmed case of human infection with H7N2 has been reported to WHO from the United States of America. The infection resulted in mild illness and the individual recovered; close contact with ill cats was the likely source of infection. One new case of laboratory-confirmed human infection with H9N2 was reported to WHO from China. The case had mild illness and has recovered; exposure to a live poultry market was reported. Also, 110 laboratory-confirmed cases of human infection with H7N9 were reported to WHO from China with 106 cases in mainland China, 3 in Hong Kong and one in Macao. Of the 110 cases, there were 36 fatalities. Reported exposures included contact with infected poultry or contaminated environments, including live poultry markets.

**APPENDIX 1: ADDITIONAL INFORMATION**

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

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

**APPENDIX 2: MMWR WEEK DATES**

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

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