

Weekly Update



California Department of Public Health Influenza Surveillance Program

California Influenza and Other Respiratory Disease Surveillance for Week 3 (January 13 - 19, 2013)

Note: This report includes information from many different data sources, including syndromic surveillance, laboratory surveillance, and mandatory reporting of influenza deaths for cases ages 0-64 years. The information contained in this report should be viewed as a “snapshot” of influenza activity for each surveillance week, and should not be considered as population-based data or representative of all California public health jurisdictions. Additionally, it is important to keep in mind that the data included in this report represent a sampling of various influenza indicators and are not meant to capture all influenza cases in the state. The trends of these influenza indicators, however, are useful for monitoring influenza activity. Data in previous weeks may be revised as additional information becomes available.

Overall influenza activity in California during Week 3 remained “widespread*.”

During Week 3, increases in influenza-like illness, laboratory detections of influenza, and influenza-associated outbreaks were reported in multiple regions statewide. Current trends in influenza activity remain within the range of patterns seen in California in previous years. Most influenza-positive specimens identified in California during the 2012–2013 influenza season are influenza A; of the influenza A viruses subtyped, most are influenza A (H3) viruses. Of the specimens strain-typed this season nationwide (including three from California residents), 90% match the 2012–2013 influenza vaccine.

Influenza Report Highlights

- Outpatient influenza-like illness (ILI) increased 0.1% in week 3 (4.9%) compared to week 2 (4.8%).
- Of 3652 specimens tested during Week 3,
 - 1108 (30.3%) were positive for influenza virus; of these
 - 162 (14.6%) were influenza B and
 - 946 (85.4%) were influenza A
 - 345 (36.5%) were subtyped as seasonal A (H3)
 - 31 (3.3%) was subtyped as 2009 A (H1)
 - 570 (60.3%) were not subtyped
- The California Department of Public Health Viral and Rickettsial Disease Laboratory (CDPH-VRDL) has tested 12 influenza isolates for antiviral resistance to date; none have been resistant to neuraminidase inhibitors.
- Three specimens from California residents have been strain-typed this season; all strains match the components of the 2012–2013 influenza vaccine.
- Five influenza-associated deaths in adults less than 65 years of age were reported during

- Week 3. No pediatric deaths have been reported for the 2012–2013 season.
- No cases of novel influenza have been detected in California to date.

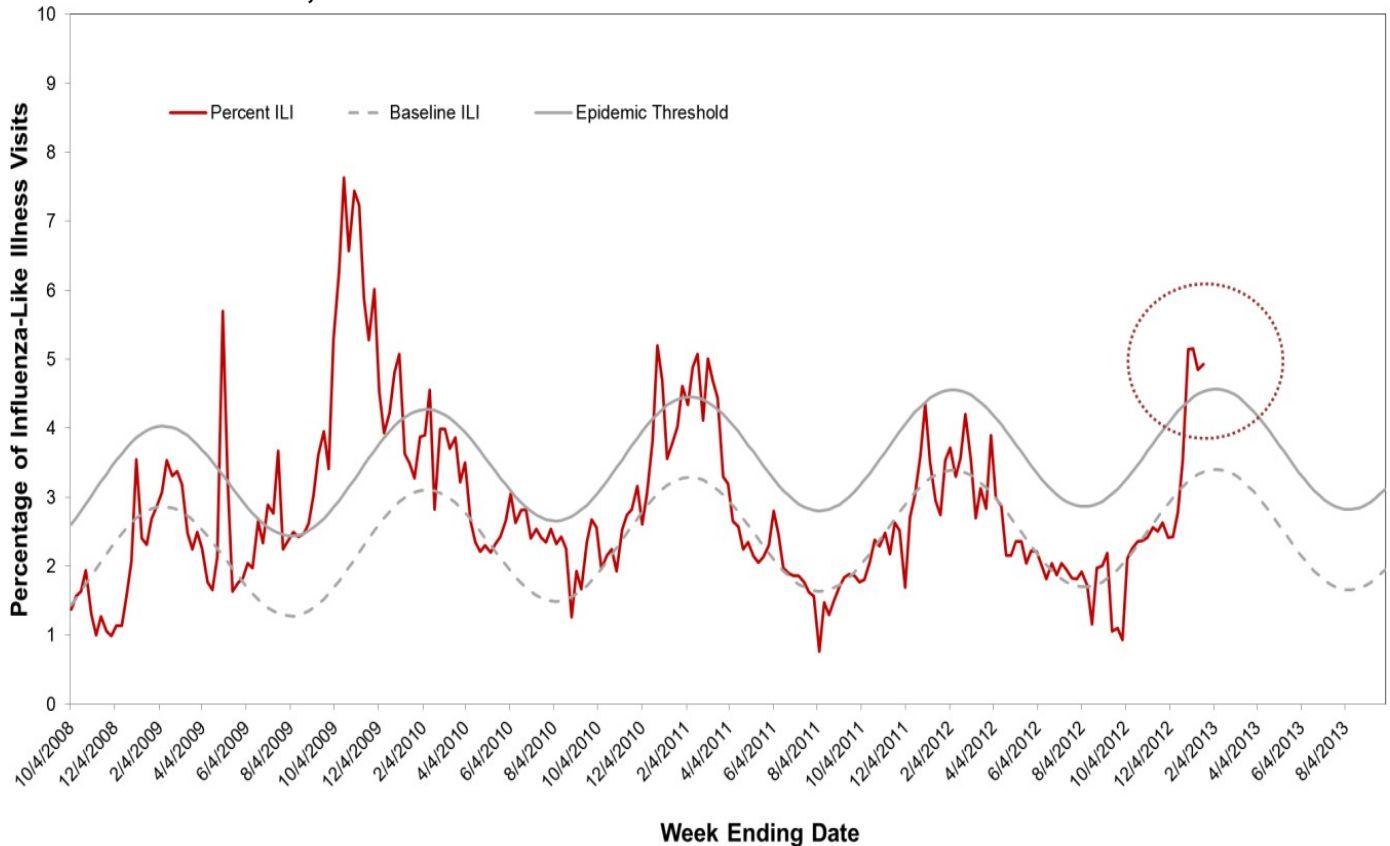
*For the Centers for Disease Control and Prevention (CDC) definitions of influenza geographic distribution, please go to the [CDC influenza web page](http://www.cdc.gov/flu/weekly/overview.htm) at <http://www.cdc.gov/flu/weekly/overview.htm>.

A. Syndromic Surveillance Update

1. CDC Influenza Sentinel Providers

A total of 91 enrolled sentinel providers have reported data for Week 3, compared to an average of 115 providers reporting for each of the previous weeks. Based on available data, the percentage of visits for ILI in Week 3 (4.9%) remained above the epidemic threshold (4.5%) (Figure 1).

Figure 1. Percentage of Influenza-like Illness Visits Among Patients Seen by California Sentinel Providers, 2008– 2013



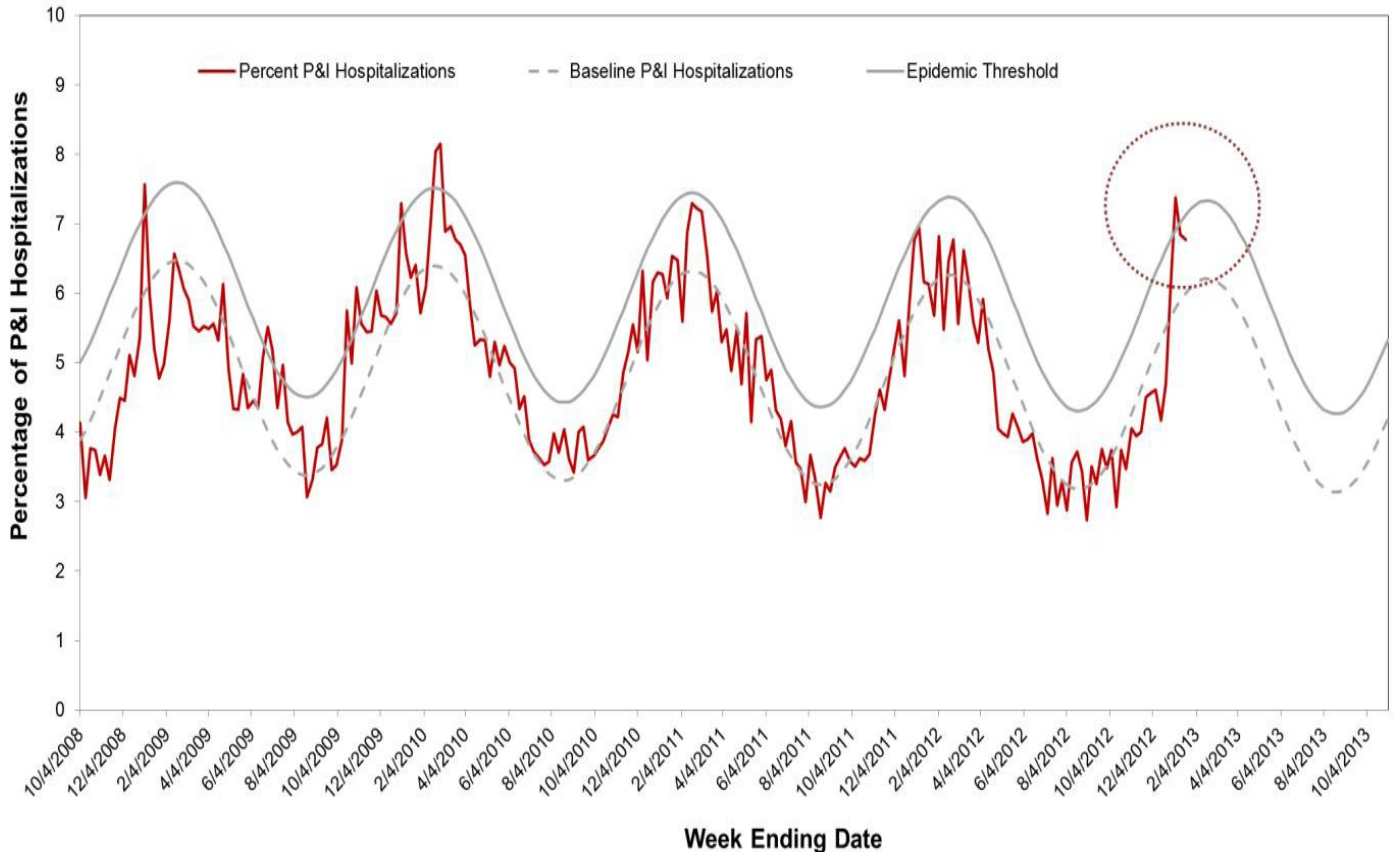
The seasonal baseline was calculated using a regression model applied to data from the previous seven years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of ILI is significantly higher than would be expected at that time of the year.

2. Kaiser Permanente Hospitalization Data

The percentage of hospitalizations for pneumonia and influenza (P&I) in Kaiser Permanente facilities in northern California remained the same during Week 3 (6.8%), compared to Week 2 (6.8%) (Figure 2). The percentage was below the epidemic threshold (7.1%) during Week 3.



Figure 2. Percentage of P&I Hospitalizations in Kaiser Permanente Northern California Hospitals, 2008–2013



The seasonal baseline was calculated using a regression model applied to data from the previous five years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of pneumonia and influenza hospitalizations in Kaiser Permanente hospitals in northern California is significantly higher than would be expected at that time of the year.

B. Laboratory Update

1. Respiratory Laboratory Network (RLN) and Sentinel Laboratory Surveillance Results

The percentage of influenza detections in the RLN and sentinel laboratories increased in Week 3 (30.3%, compared to 21.0% in Week 2) (Figure 3). In Week 3, of 3652 specimens tested by the RLN and sentinel laboratories, 162 (4.4%) were positive for influenza B and 946 (25.9%) were positive for influenza A. Of the 946 influenza A positive specimens, 376 (39.7%) were further subtyped; 345 (91.8%) were seasonal A (H3) and 31 (8.2%) were 2009 A (H1).

To date for the 2012–2013 season, of 23,160 specimens tested, 2686 (11.6%) were positive for influenza; of these, 408 (15.2%) were influenza B and 2278 (84.8%) were influenza A. Of the 2278 specimens that tested positive for influenza A, 823 (36.1%) were further subtyped; 763 (92.7%) were subtyped as seasonal A (H3) and 60 (7.3%) were subtyped as 2009 A (H1). Influenza detections have been reported in multiple regions statewide (Figure 4).

Neither the RLN nor CDPH-VRDL have identified any influenza viruses (by polymerase chain reaction (PCR) typing or subtyping) that are suggestive of a novel influenza virus.

Figure 3. Percentage of Influenza Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2007– 2013

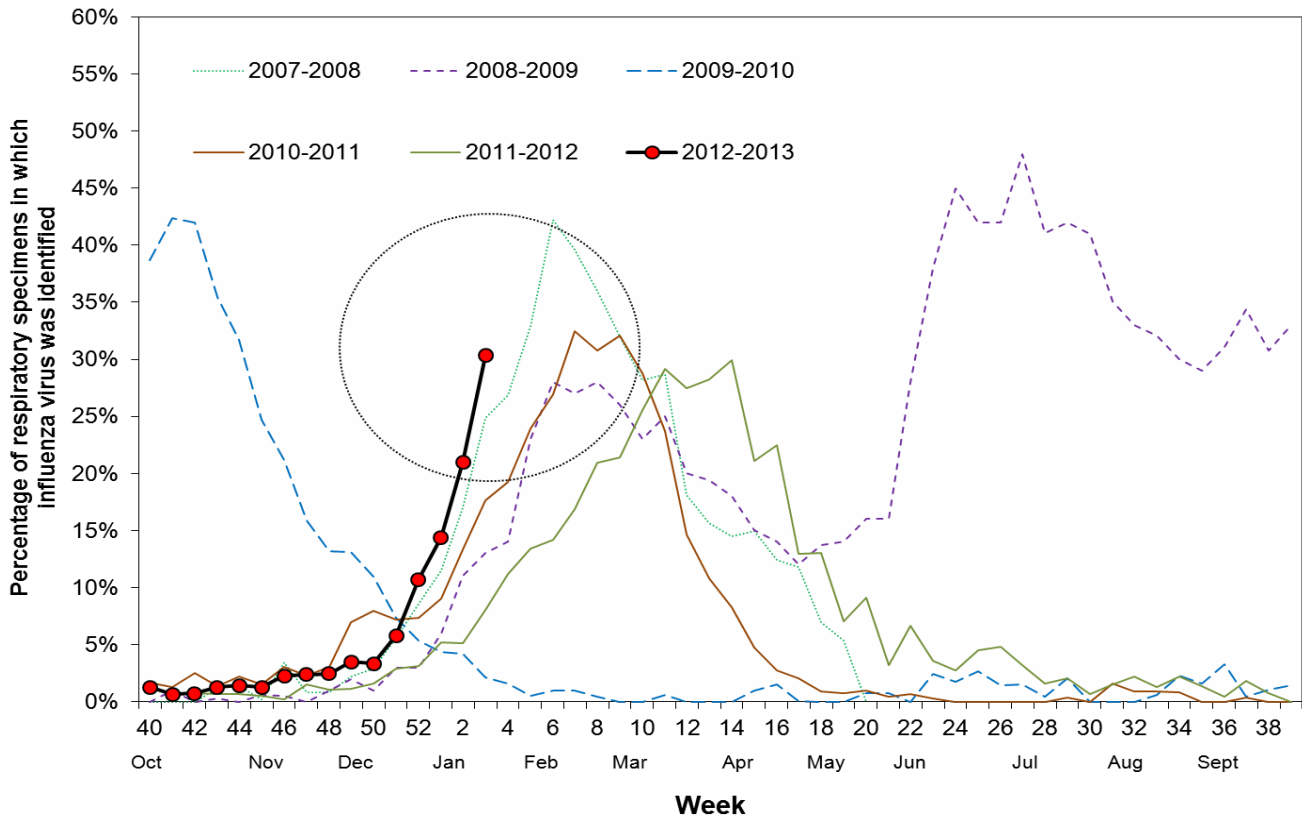
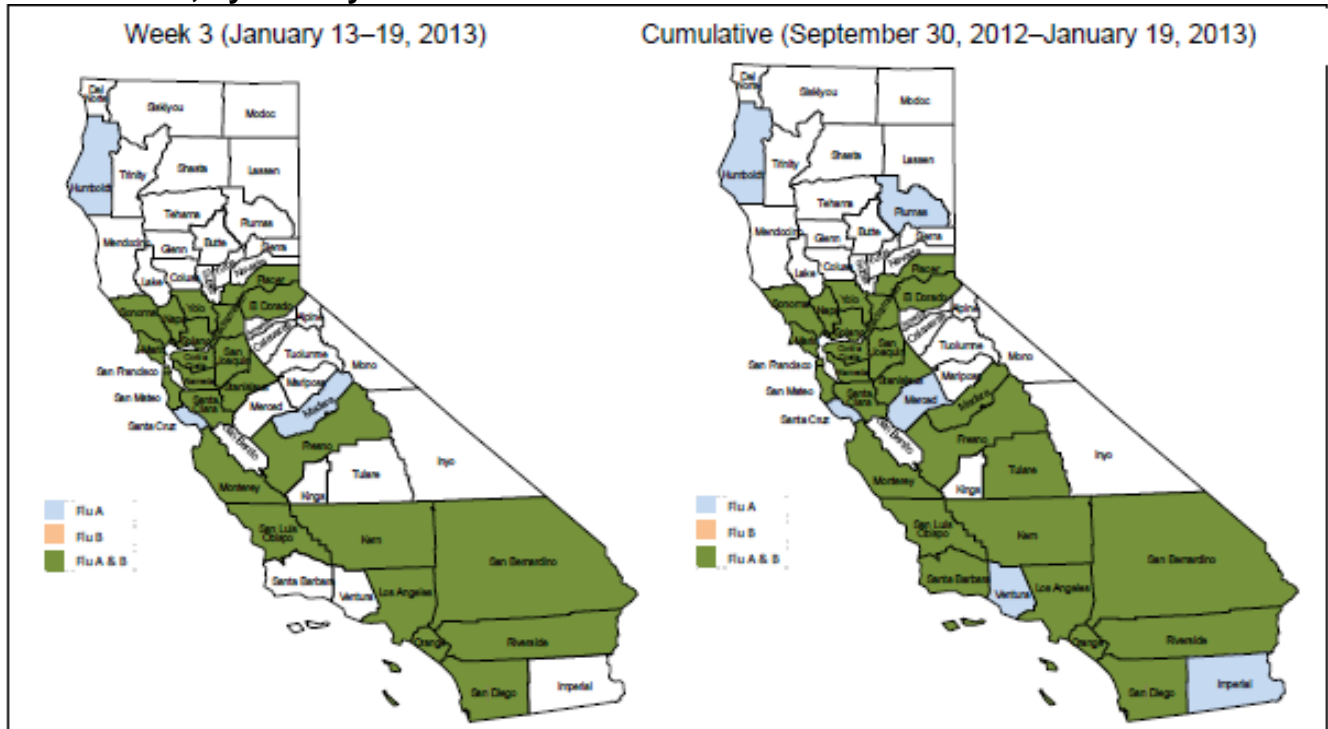


Figure 4. Influenza Detections in Respiratory Laboratory Network and Sentinel Laboratories, by County*

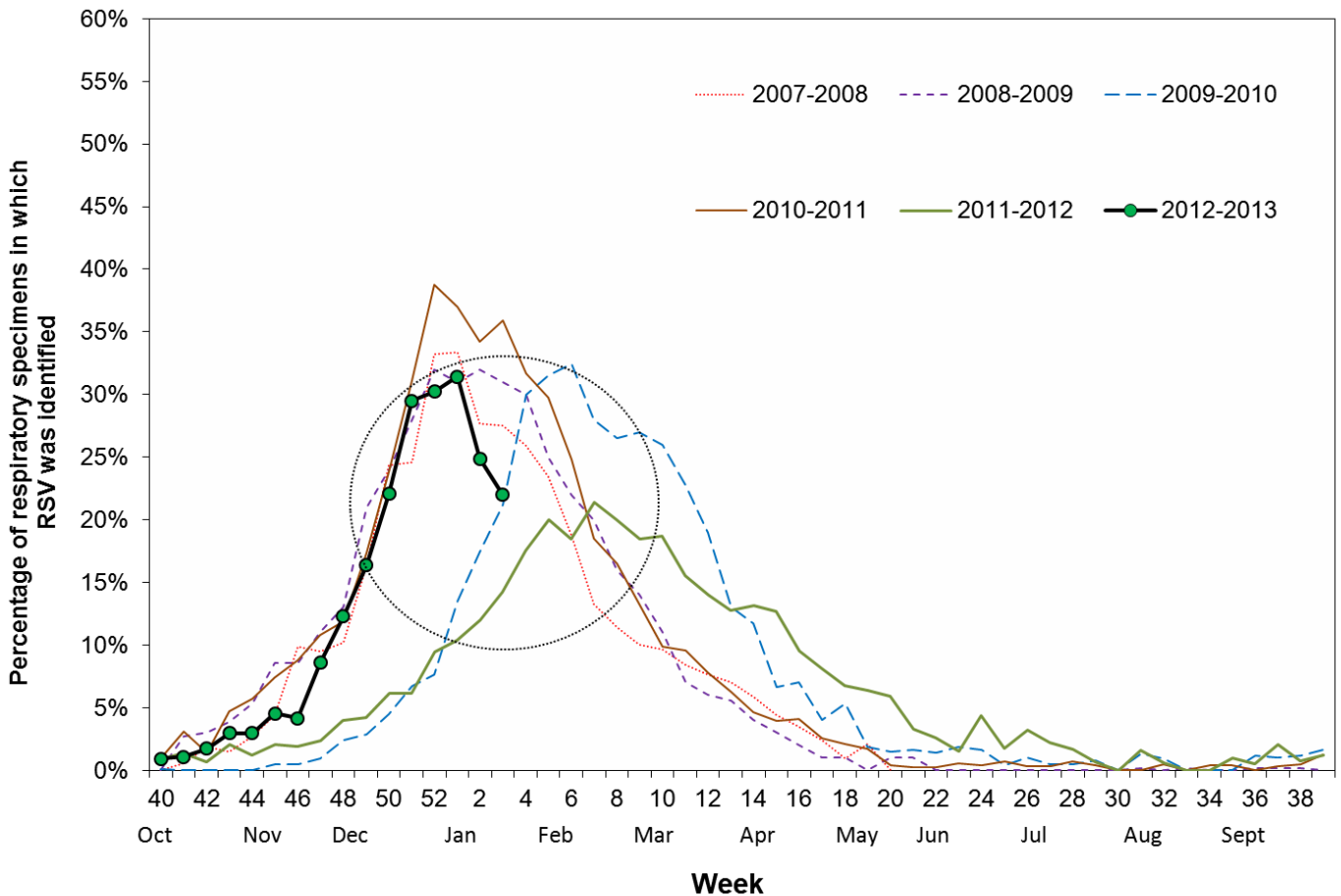


*Laboratory detections reported by county of patient's residence or laboratory location. Influenza activity in regions without participating laboratories may be underrepresented in this figure.

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Respiratory syncytial virus (RSV) detections decreased in Week 3 (22.0%, compared to 24.9% in Week 2) (Figure 5).

Figure 5. Percentage of RSV Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2007–2013



2. Antiviral Resistance Testing

The CDPH-VRDL performs surveillance for antiviral resistance (AVR) testing on a limited basis and on individual cases upon special request. During the 2012–2013 influenza season, as part of a CDC national surveillance effort, the VRDL implemented a functional assay to survey circulating influenza strains for resistance to neuraminidase inhibitors. In addition, selected seasonal A (H3) and 2009 A (H1) clinical specimens are tested using pyrosequencing for a single known mutation that confers oseltamivir resistance (H275Y). Since high levels of resistance to adamantanes (amantadine and rimantadine) are observed among circulating influenza A viruses [2009 A (H1) and seasonal A (H3)], adamantane resistance testing will not be performed at the VRDL on a routine basis.

The combined AVR data is summarized below and should be considered for epidemiological purposes only.

CDPH-VRDL has tested twelve influenza A (H3) specimens to date during the 2012–2013 influenza season (Table 1), all of which have been sensitive to neuraminidase inhibitors.

Table 1. Number of specimens tested for antiviral resistance

	Neuraminidase Inhibitors Resistance
Influenza 2009 A (H1)	N/A
Influenza A (H3)	0/12

3. Influenza Virus Strain Characterization

Three California specimens have been strain-typed to date during the 2012–2013 influenza season; all matched with components of the 2012–2013 vaccine for the Northern Hemisphere (Table 2).

Table 2. Influenza Virus Antigenic Characterization for the 2012–2013 Season

	Total (N=3)
Influenza A	2
A/Victoria/361/2011-like (H3N2)*	1
A/California/07/2009-like (H1N1)*	1
Influenza B	1
B/Wisconsin/01/2010-like *	1

*Matches components of the 2012-13 Northern Hemisphere influenza vaccine

c. Laboratory-confirmed Fatal Case Reports

Currently, as mandated under Section 2500 of the California Code of Regulations, deaths among patients aged 0-64 years with laboratory-confirmed influenza are reportable to CDPH.

CDPH received five reports of influenza-associated deaths in adults less than 65 years of age during Week 3. The deaths were reported from the Metropolitan Fresno area, the Greater Los Angeles area, and the San Diego metropolitan area, with deaths occurring from January 2, 2013 to January 15, 2013.

A total of nine influenza-associated deaths among individuals less than 65 years of age have been reported to CDPH to date during the 2012–2013 influenza season. The deaths were reported from the Sacramento metropolitan area (1), the Visalia-Porterville metropolitan area in the Central Valley (1), the Metropolitan Fresno or Greater Fresno area (1), the Greater Los

Angeles Area (3), and the San Diego metropolitan area (3). As of Week 3, no pediatric deaths have been reported. Of note, one death previously reported from Inland Empire is now under further investigation by the local health jurisdiction and was removed from the final cumulative tally.

D. Influenza-associated Outbreaks

CDPH received eight reports of laboratory-confirmed influenza outbreaks during Week 3. All eight outbreaks occurred in congregate living facilities and were associated with influenza A. Subtyping performed on specimens from three of the eight outbreaks identified influenza A (H3).

CDPH has received a total of 11 reports of laboratory-confirmed influenza outbreaks to date during the 2012– 2013 influenza season. All 11 outbreaks have been associated with influenza A.

For questions regarding influenza surveillance and reporting in California, please email InfluenzaSurveillance@cdph.ca.gov. This account is monitored daily by several epidemiologists.

For more information regarding the different influenza surveillance data sources, please visit the [CDPH Influenza Surveillance Program](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Flu-Reports.aspx) at <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Flu-Reports.aspx>

To obtain additional information regarding influenza, please visit the [CDPH influenza website](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.aspx) at <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.aspx>.

A copy of the case report form for reporting any laboratory-confirmed influenza case that was either admitted to the ICU or died can be downloaded from the [Severe Influenza Case History Form](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph9070.pdf) Link at <https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph9070.pdf>