

California Influenza and Other Respiratory Disease Surveillance for Week 3 (January 15-21, 2012)

Note: This report includes data from many different sources of influenza surveillance, 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.

In Week 3, overall influenza activity in California remained “local*.”

Influenza Report Highlights

- Outpatient influenza-like illness (ILI) activity as a percentage of total visits to sentinel providers remained low in Week 3 (1.2%).
- Of 1328 specimens tested by the Respiratory Laboratory Network (RLN) and sentinel laboratories during Week 3, 120 (9.0%) were positive for influenza; of these 10 (8.3%) were influenza B and 110 (91.7%) were influenza A. Of the 110 specimens that tested positive for influenza A, 32 (29.1%) were subtyped as seasonal A (H3), 5 (4.5%) were subtyped as 2009 A (H1), and 73 (66.4%) were not subtyped.
- The California Department of Public Health Viral and Rickettsial Disease Laboratory (CDPH-VRDL) has performed antiviral resistance testing on 20 influenza specimens during the 2011-2012 influenza season; no resistance to neuraminidase inhibitors has been identified.
- Twenty-seven specimens from California residents have been strain-typed this season; all but four matched with components of the 2011-12 influenza vaccine for the Northern Hemisphere.
- In Week 3, CDPH received no report of a laboratory-confirmed influenza-associated death among persons less than 65 years.
- No suspected or confirmed influenza A (H3N2)v [variant influenza A (H3N2), formerly called swine-origin triple reassortant A (H3N2)] has been detected in California to date.

*For CDC definitions of activity level, see URL: <http://www.cdc.gov/flu/weekly/overview.htm>

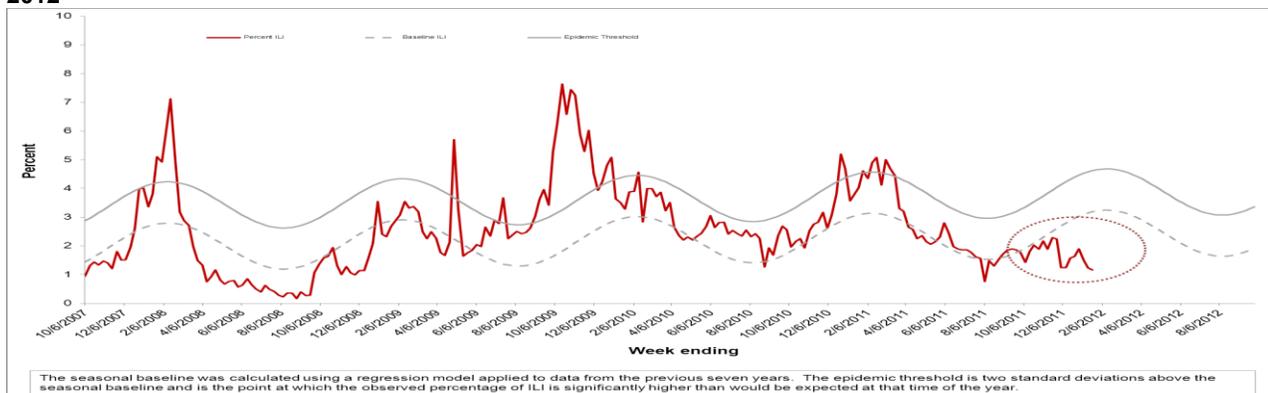
A. Syndromic Surveillance Update

1. CDC Influenza Sentinel Providers

Sentinel providers (physicians, nurse practitioners, and physician assistants) throughout California report the number of outpatient visits for ILI and the total number of visits per week. ILI is defined as any illness with fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat in the absence of a known cause other than influenza. Data are reported weekly as a percentage of total visits. At present, over 200 sentinel providers have indicated their willingness to report ILI data and submit specimens to CDPH-VRDL for further testing this season, allowing CDPH to attain the Centers for Disease Control and Prevention (CDC) goal of 1 sentinel provider per 250,000 population.

A total of 76 (36.7%) out of 207 enrolled sentinel providers have reported data for Week 3. Based on available data, the percentage of ILI visits for Week 3 (1.2%) remained below baseline (Figure 1).

Figure 1. Percentage of Influenza-like Illness Visits Among Patients Seen by California Sentinel Providers, 2007–2012



2. Kaiser Permanente Hospitalization Data (“Flu Admissions”)

“Flu Admissions” are defined as a diagnosis of “flu,” “pneumonia,” or “influenza” recorded in text fields at time of admission to the hospital. Influenza activity is tracked by dividing the number of “Flu Admissions” by the total number of hospital admissions for the same day to obtain a percentage of pneumonia and influenza (P&I) admissions.

The percentage of Kaiser Permanente hospitalizations for P&I in Northern California remained the same in Week 3 (6.5%) compared to Week 2 (6.5%).

B. Laboratory Update

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

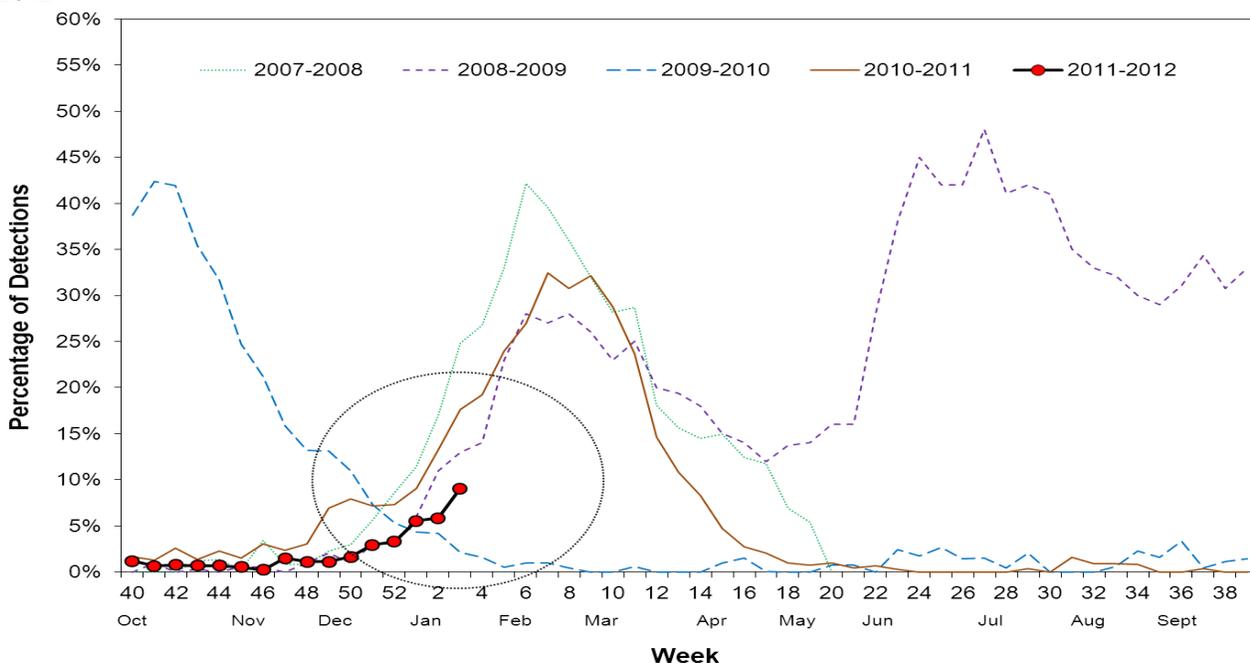
The RLN is composed of 29 local public health laboratories that offer polymerase chain reaction (PCR) testing for influenza A and B. Sentinel laboratories are a network of clinical, commercial, academic, and hospital laboratories located throughout California that provide weekly data on the number of laboratory-confirmed influenza and other respiratory virus detections and isolations. These laboratories use various testing methods, including rapid test, direct fluorescent assay, viral culture, and PCR.

The percentage of influenza detections in the RLN and sentinel laboratories continued an upward trend, with an increase of 3.2% in Week 3 (9.0%) compared to Week 2 (5.8%) (Figure 2). Of 1328 specimens tested by the RLN and sentinel laboratories, 10 (0.8%) were positive for influenza B and 110 (8.3%) were positive for influenza A. Of the 110 specimens that tested positive for influenza A, 32 (29.1%) were subtyped as seasonal A (H3), 5 (4.5%) were subtyped as 2009 A (H1), and 73 (66.4%) were not subtyped. The influenza-positive specimens were reported statewide.

To date for the 2011-2012 season, of 16,115 specimens tested, 431 (2.7%) were positive for influenza; of these, 62 (14.4%) were influenza B and 369 (85.6%) were influenza A. Of the 369 specimens that tested positive for influenza A, 103 (27.9%) were subtyped as seasonal A (H3), 25 (6.8%) were subtyped as A (2009 H1N1), and 241 (65.3%) had no further subtyping performed.

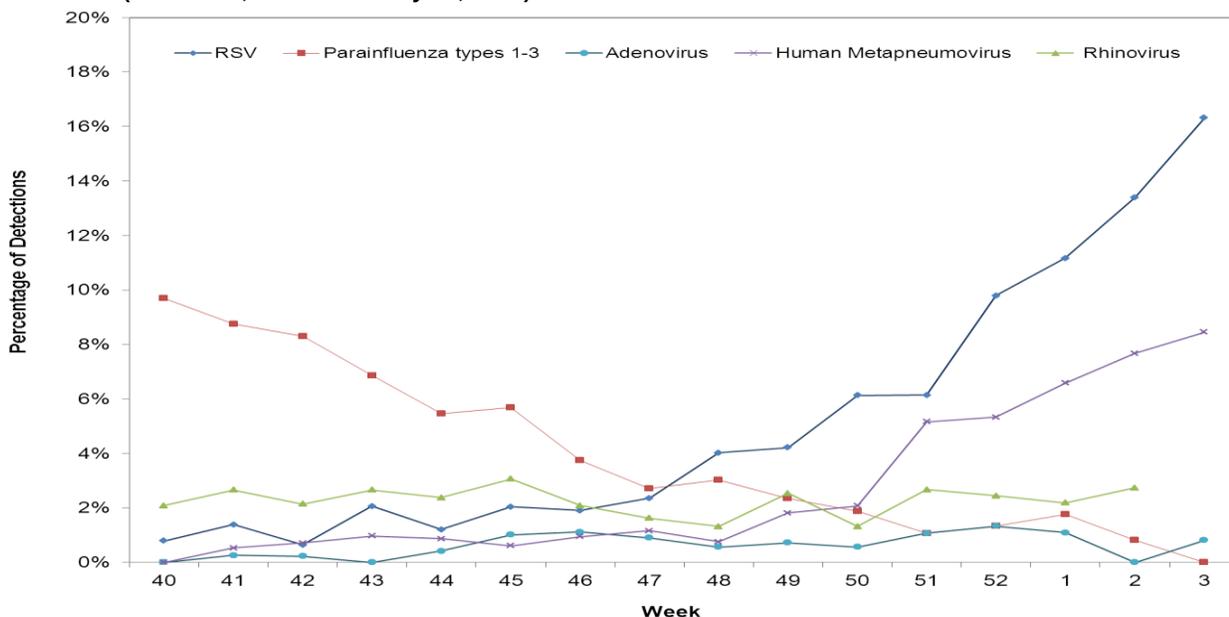
Neither the RLN nor CDPH-VRDL has identified any influenza viruses by PCR typing or subtyping that are suggestive of the influenza A (H3N2)v infection.

Figure 2. Percentage of Influenza Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2007–2012



The proportion of respiratory syncytial virus (RSV) detections continued to increase in Week 3 (16.3%, compared to 13.4% in Week 2). Likewise, the proportion of human metapneumovirus (hMPV) detections increased in Week 3 (8.4%) compared to Week 2 (7.7%), (Figure 3).

Figure 3. Other Respiratory Pathogen Detections in Respiratory Laboratory Network and Sentinel Laboratories, Weeks 40-3 (October 2, 2011 – January 21, 2011)



2. Antiviral Resistance Testing (AVR)

The CDPH-VRDL performs surveillance testing for antiviral resistance on a limited basis and for individual cases upon special request. During the 2011-12 influenza season, as part of a CDC national surveillance effort, the CDPH-VRDL implemented a functional assay to survey circulating influenza strains for resistance to neuraminidase inhibitors. In addition, selected 2009 A/H1 clinical specimens will be tested using pyrosequencing for a single known mutation that confers oseltamivir resistance (H275Y). Adamantane resistance testing will not be performed at the CDPH-VRDL on a routine basis. The combined AVR data are summarized below and should be considered for epidemiological purposes only.

CDPH-VRDL has tested 20 influenza specimens to date during the 2011-2012 influenza season, all of which have been sensitive to neuraminidase inhibitors (Table 1).

Table 1. Number of specimens tested for antiviral resistance

	Neuraminidase Inhibitors Resistance
Influenza A (2009 H1N1)	0/1
Influenza A (H3N2)	0/19

3. Influenza Virus Strain Characterization

The CDPH-VRDL, as part of the CDC-WHO regional laboratory network, has the capacity to perform antigenic characterization (strain-typing) on select circulating influenza strains based on type/subtype, geographic area, demographics, and case definition. However, because strain-typing requires the culture of viruses at high titers and the use of a broad panel of antisera, most antigenic characterization is conducted at the CDC. Upon special request, the CDPH-VRDL can expedite strain-typing on a limited number of samples using a smaller panel of antisera.

Twenty-seven California specimens have been strain-typed to date during the 2011-2012 influenza season; all but four matched with components of the 2011-2012 vaccine for the Northern Hemisphere (Table 2).

Table 2. Influenza virus antigenic characterization for the 2011-12 season

	Total (N=27)
Influenza A	18
A/Perth/16/2009-like (H3N2)*	17
A/California/07/2009-like (H1N1)*	1
Influenza B	9
B/Brisbane/60/2008-like*	5
B/Wisconsin/01/2010-like	4

*Matches components of the 2011-12 Northern Hemisphere influenza vaccine

C. Laboratory-confirmed Fatal Case Reports

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

In Week 3, CDPH received no case of an influenza-associated death among persons age 0-64 years. To date during the 2011-2012 influenza season, CDPH has received three reports of influenza-associated deaths, including one child in the 10-14 year age group and two adults in the 30-49 year age group with chronic medical conditions.

D. Influenza-associated Outbreaks

CDPH received one report of a laboratory-confirmed influenza outbreak in the southern California region in Week 3.

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

To obtain additional information regarding influenza, please visit the CDPH influenza website at [http://www.cdph.ca.gov/HealthInfo/discond/Pages/Influenza\(Flu\).aspx](http://www.cdph.ca.gov/HealthInfo/discond/Pages/Influenza(Flu).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 [http://www.cdph.ca.gov/HealthInfo/discond/Pages/Influenza\(Flu\).aspx](http://www.cdph.ca.gov/HealthInfo/discond/Pages/Influenza(Flu).aspx).