

California Influenza and Other Respiratory Disease Surveillance for Week 50 (December 11-17, 2011)

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.

Based on low levels of influenza-like illness (ILI) and laboratory detections, overall influenza activity in California for Week 50 remained “sporadic*.”

Influenza Report Highlights

- Influenza activity remains low in California.
- Outpatient ILI activity as a percentage of total visits to sentinel providers was low (2.0%).
- Of 956 specimens tested by the Respiratory Laboratory Network (RLN) and sentinel laboratories during Week 50, 4 (0.4%) were positive for influenza B and 15 (1.6%) were positive for influenza A; no further subtyping was performed.
- The California Department of Public Health Viral and Rickettsial Disease Laboratory (CDPH-VRDL) has performed antiviral resistance testing on eight influenza specimens during the 2011-2012 influenza season; no resistance to neuraminidase inhibitors has been identified.
- Three specimens from California residents have been strain-typed this season; all matched with components of the 2011-12 influenza vaccine for the Northern Hemisphere.
- CDPH received one report of a laboratory-confirmed influenza-associated death among persons less than 65 years of age.

*Sporadic activity is defined by the Centers for Disease Control and Prevention (CDC) as “small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.”

A. Syndromic Surveillance Update

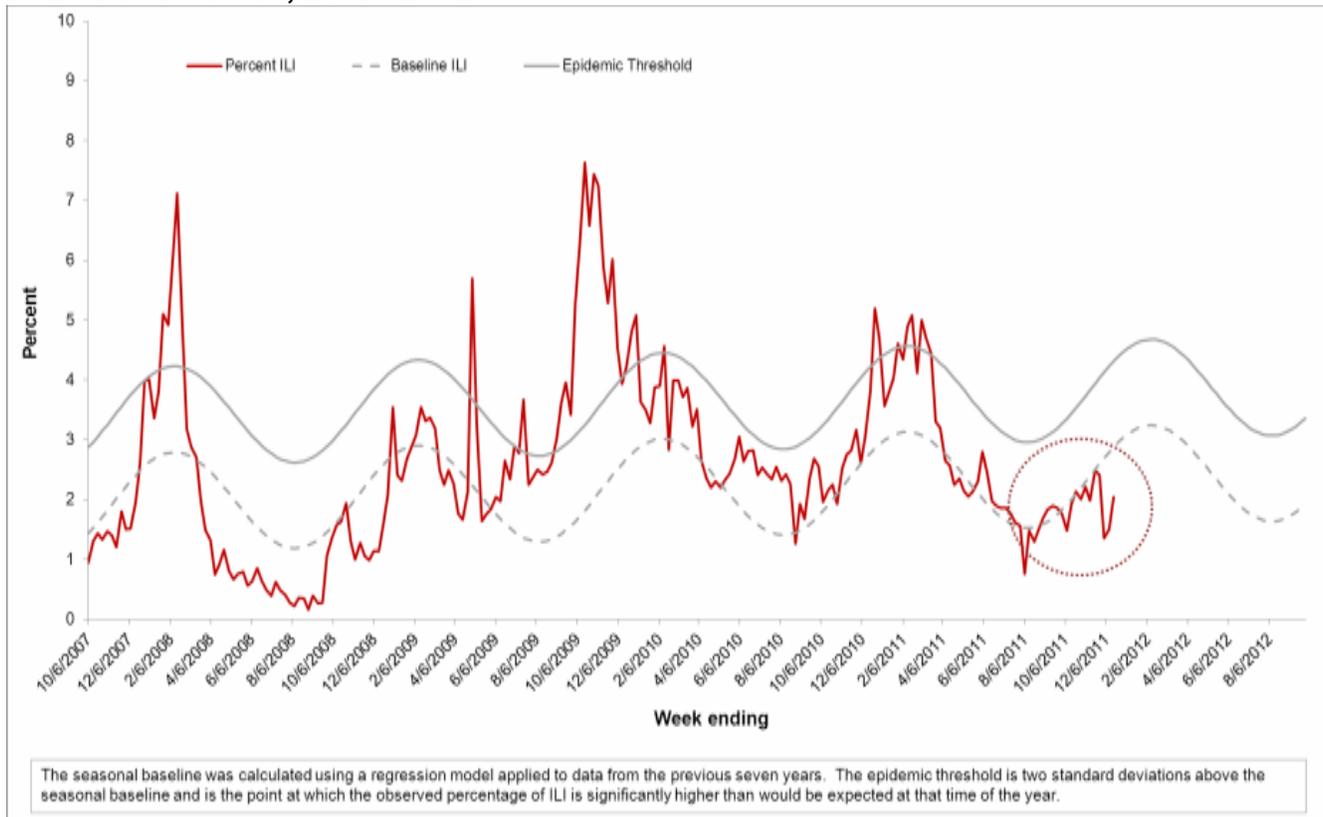
1. CDC Influenza Sentinel Providers

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 81 (39.1%) out of 207 enrolled sentinel providers have reported Week 50 data,

compared to an average of 106 providers reporting in previous weeks. Based on available data, the percentage of ILI visits (2.0%) 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.

During Week 50, the percentage of Kaiser hospitalizations for P&I decreased in northern California (5.3%, compared to 6.0% in Week 49), and increased in southern California (4.6%, compared to 3.9% in Week 49).

B. Laboratory Update

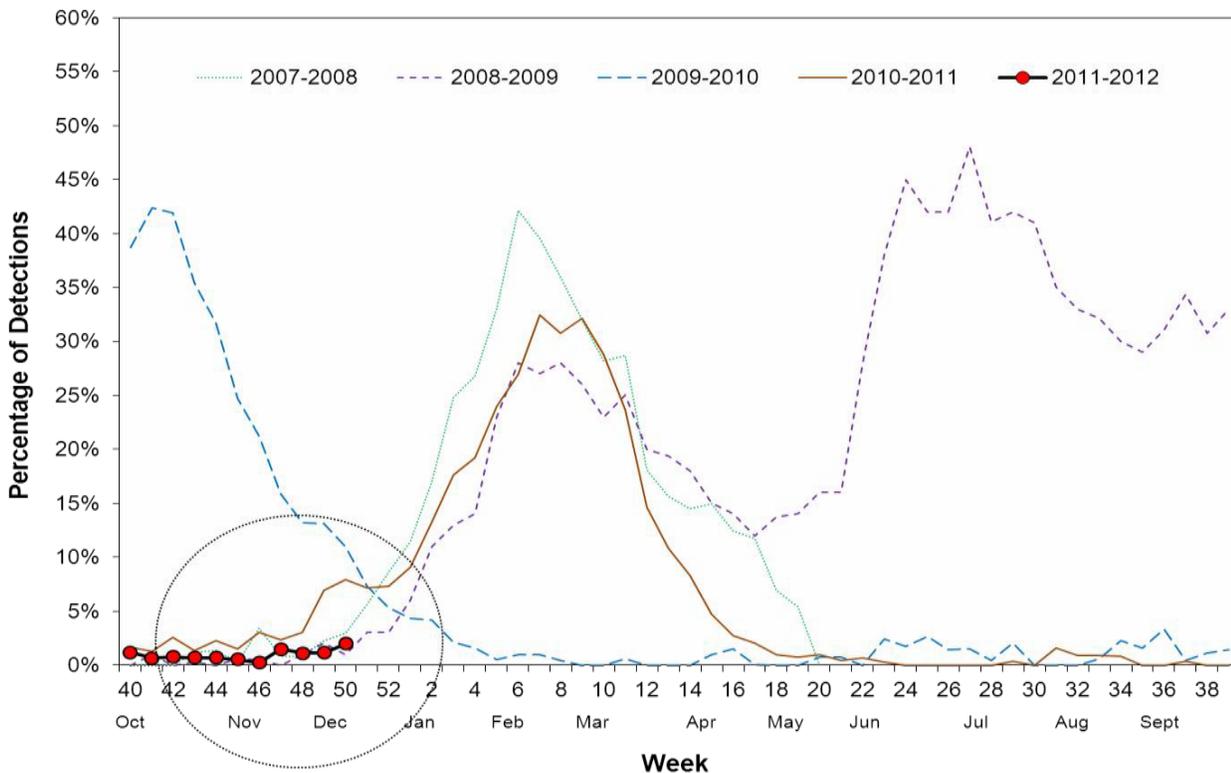
1. Respiratory Laboratory Network (RLN) and Sentinel Laboratory Surveillance Results

The RLN is composed of 29 local public health laboratories that offer 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 remained low (2.0%) during Week 50 (Figure 2). Of 956 specimens tested by the RLN and sentinel laboratories, 4 (0.4%) were positive for influenza B and 15 (1.6%) were positive for influenza A with no further subtyping performed. The influenza- positive specimens were reported in Alameda, Contra Costa, Los Angeles, Orange, Sacramento, San Diego, San Francisco, San Mateo, Santa Clara, and Stanislaus counties.

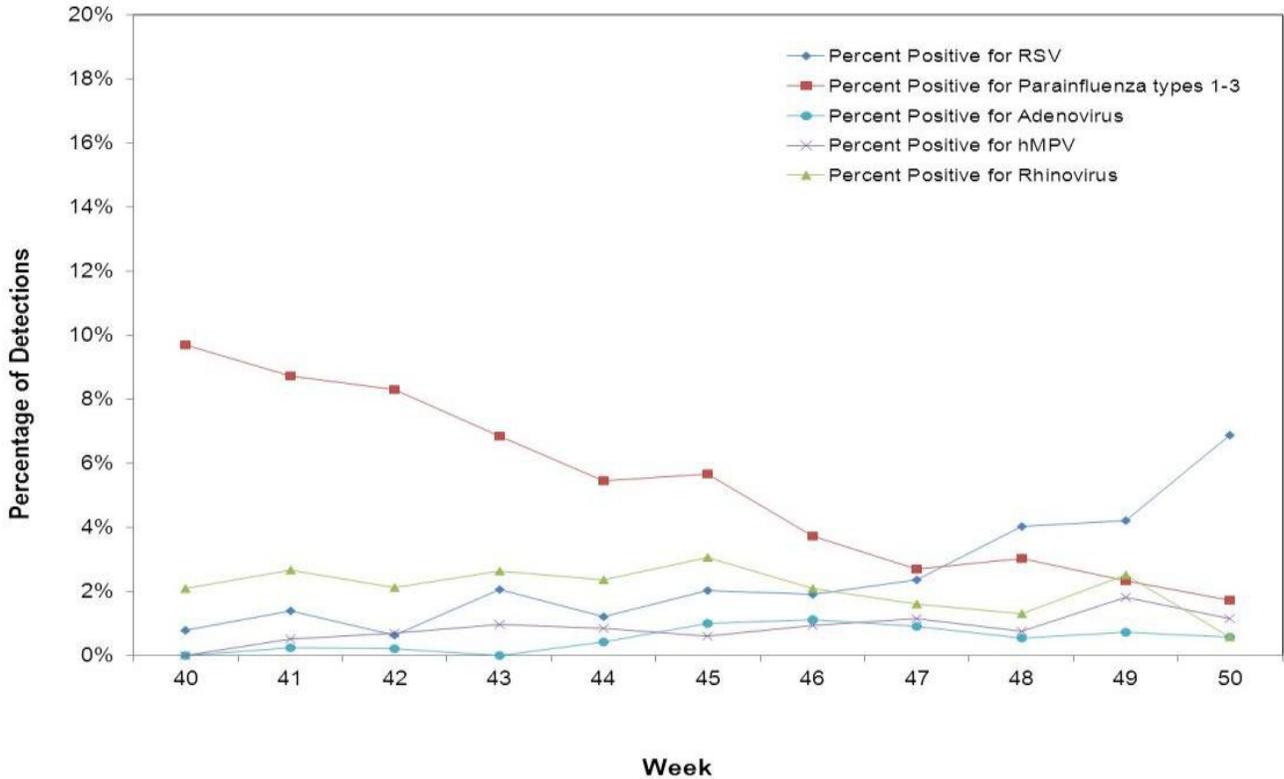
To date for the 2011-2012 season, of the 63 influenza A detections, 2 (3.2%) have been subtyped as A (2009 H1N1), 10 (15.9%) were subtyped as seasonal A (H3) and 51 (80.9%) had no further subtyping performed. Neither the RLN nor VRDL have identified any influenza viruses by PCR typing or subtyping that are suggestive of swine-origin triple reassortant influenza A (H3N2) (S-OtrH3N2) infection, although the number of specimens tested has been low.

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



Parainfluenza virus continues to be reported in both northern and southern California, but in decreasing proportion compared to previous weeks (Figure 3). Respiratory syncytial virus (RSV) detections increased in Week 50 (6.9%) compared to Week 49 (4.2%).

Figure 3. Other Respiratory Pathogen Detections in Respiratory Laboratory Network and Sentinel Laboratories, Weeks 40-50 (October 2, 2011 – December 17, 2011)



2. Antiviral Resistance Testing (AVR)

The VRDL performs surveillance for antiviral resistance testing on a limited basis and on individual cases upon special request. During the 2011-12 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 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 VRDL on a routine basis.

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

CDPH-VRDL has tested eight 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 2009 A/H1 | 0/1 |
| Influenza A/H3 | 0/7 |

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.

Three California specimens have been strain-typed to date during the 2011-2012 influenza season; all 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=3) |
|------------------------------|--------------------|
| Influenza A | 2 |
| A/Perth/16/2009-like (H3N2)* | 2 |
| Influenza B | 1 |
| B/Brisbane/60/2008-Like* | 1 |

* Matches components of the 2010-11 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 50, CDPH received the first report of an influenza-associated death for the 2011-12 influenza season. The case-patient was an adult between the ages of 30-39 years from Central California who had multiple co- morbid conditions considered by the Advisory Committee on Immunization Practices (ACIP) as risk factors for severe influenza. The patient tested positive for influenza by a rapid test that does not distinguish between influenza A or B.

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](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>.