

California Influenza and Other Respiratory Disease Surveillance for Week 1 (January 1-7, 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 1, overall influenza activity in California was upgraded from “sporadic” to “local*.”

Influenza Report Highlights

- Outpatient ILI activity as a percentage of total visits to sentinel providers remains low in Week 1 (1.6%).
- Of 1125 specimens tested by the Respiratory Laboratory Network (RLN) and sentinel laboratories during Week 1, 62 (5.5%) were positive for influenza; of these 6 (9.7%) were influenza B and 56 (90.3%) were influenza A. Of the 56 specimens that tested positive for influenza A, 22 (39.3%) were subtyped as seasonal A (H3), 7 (12.5%) were subtyped as 2009 A (H1), 26 (46.4%) were not subtyped and subtyping is pending on 1 (1.8%).
- 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.
- Fourteen specimens from California residents have been strain-typed this season; all but one matched with components of the 2011-12 influenza vaccine for the Northern Hemisphere.
- In Week 1, CDPH received one report of a laboratory-confirmed influenza-associated death in an adult in the 50-60 year age range.
- 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, please go to the [CDC Influenza page](http://www.cdc.gov/flu/weekly/overview.htm)
URL: <http://www.cdc.gov/flu/weekly/overview.htm>

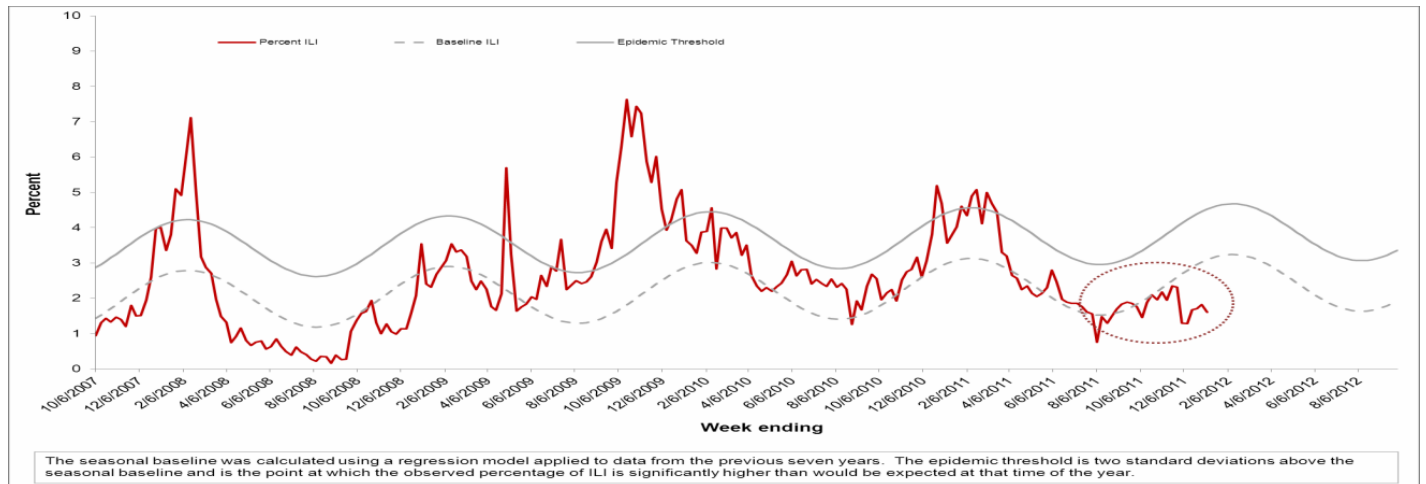
A. Syndromic Surveillance Update

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 80 (38.6%) out of 207 enrolled sentinel providers have reported data for Week 1. Based on available data, the percentage of ILI visits for Week 1 (1.6%) 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 increased in Week 1 (7.6%) compared to Week 52 (7.3%). Data for Southern California Kaiser Permanente are unavailable for week 1.

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.

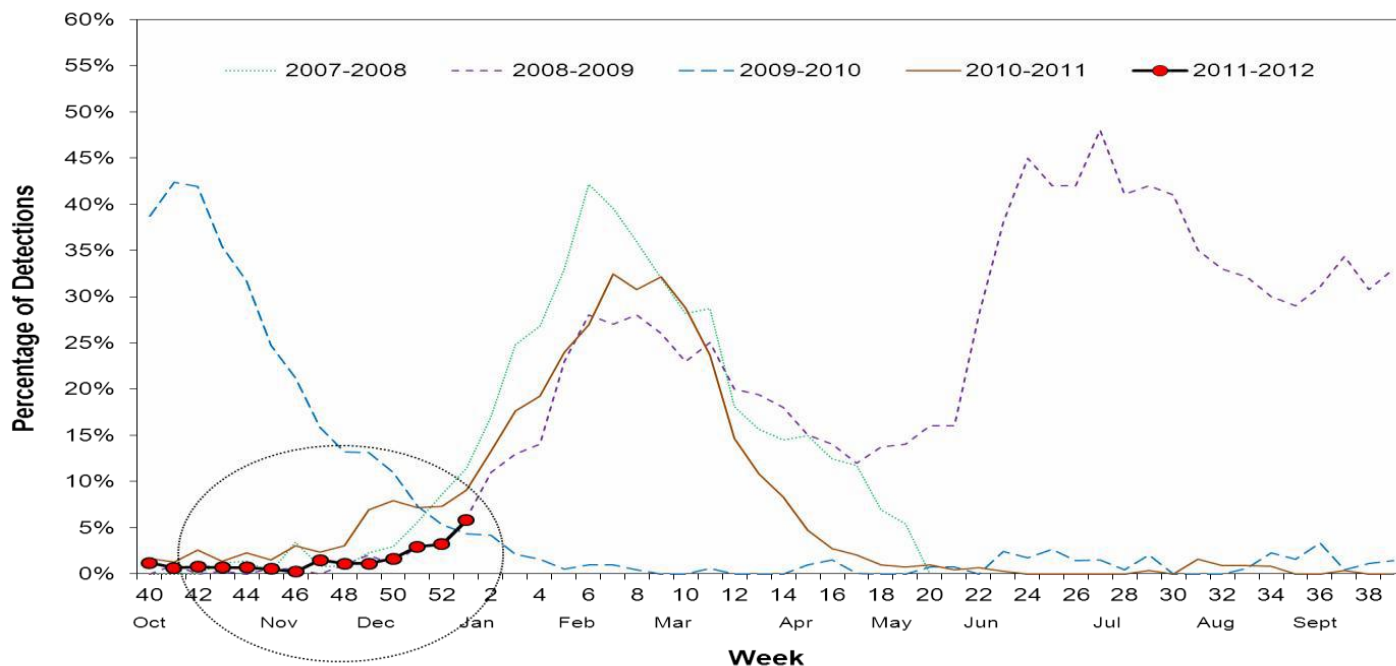
The percentage of influenza detections in the RLN and sentinel laboratories increased in Week 1 (5.8%) compared to Week 52 (3.2%) (Figure 2). Of 1125 specimens tested by the Respiratory Laboratory Network (RLN) and sentinel laboratories, 6 (0.5%) were positive for influenza B and 56 (5.0%) were positive for influenza A. Of the 56 specimens that tested positive for influenza A, 22 (39.3%) were subtyped as seasonal A (H3), 7 (12.5%) were subtyped as 2009 A (H1), 26 (46.4%) were not subtyped and 1 (1.8%) is pending subtyping. The influenza-positive specimens were reported in Alameda, Contra Costa, Imperial, Los Angeles, Marin, Orange, Sacramento, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, Solano, Sonoma, and Riverside counties.

To date for the 2011-2012 season, of 13,293 specimens tested, 233 (1.8%) were positive for influenza; of these, 186 (79.8%) were influenza A and 47 (20.2%) were influenza B. Of the 186

influenza A detections, 49 (26.3%) were subtyped as seasonal A (H3), 11 (5.9%) were subtyped as A (2009 H1N1), 125 (67.2%) had no further subtyping performed and 1 (0.5%) is pending subtyping.

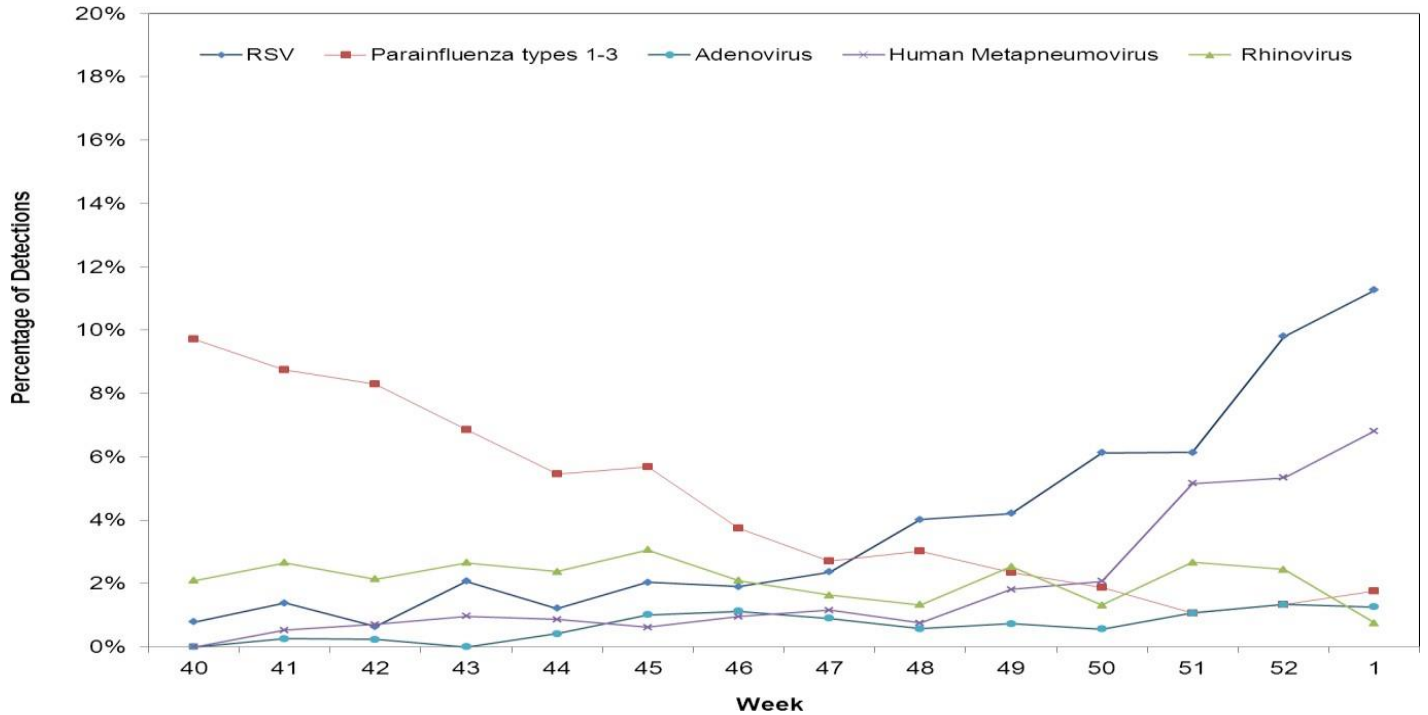
Neither the RLN nor CDPH-VRDL has identified any influenza viruses by PCR typing or subtyping that are suggestive of the influenza A (H3N2)v infection..

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



The proportion of human metapneumovirus (hMPV) detections continued to increase in Week 1 (6.8%, compared to 5.3%, 5.2%, and 2.1% in Weeks 52, 51, and 50, respectively). Likewise, respiratory syncytial virus (RSV) detections increased to 11.3% in Week 1 compared to 9.8% and 6.1% in Weeks 52 and 51, respectively (Figure 3).

Figure 3. Other Respiratory Pathogen Detections in Respiratory Laboratory Network and Sentinel Laboratories, Weeks 40-52 (October 2, 2011 – January 7, 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

Influenza Strain	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.

Fourteen California specimens have been strain-typed to date during the 2011-2012 influenza season; all but one 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

Influenza Strain	Total (N=14)
Influenza A	12
A/Perth/16/2009-like (H3N2)*	11
A/California/07/2009-like (H1N1)*	1
Influenza B	2
B/Brisbane/60/2008-like*	1
B/Wisconsin/01/2010-like	1

*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 1, CDPH received one report of an influenza-associated death in an adult in the 50-60 year age group with multiple chronic medical conditions. To date during the 2011-2012 influenza season, CDPH has received two reports of influenza-associated deaths in adults; one was rapid test positive for influenza (not typed) and the other was positive for influenza A by PCR with no subtyping performed.

D. Influenza-associated Outbreaks

CDPH received one report of a laboratory-confirmed influenza outbreak at a skilled nursing facility in the San Francisco Bay Area region. A total of 4 residents were ill; 3 were confirmed positive for influenza B by PCR (1), culture (1) and rapid test (1). No hospitalizations or deaths occurred.

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](http://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 Link](https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph9070.pdf) at <https://www.cdph.ca.gov/CDPH%20Document%20Library/ControlledForms/cdph9070.pdf>.