

Weekly Update



California Department of Public Health Influenza Surveillance Program

California Influenza and Other Respiratory Disease Surveillance for Week 52 (December 22, 2013 to December 28, 2013)

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 aged 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.

Overall influenza activity in California during Week 52 was “regional*.”

California Influenza Report Highlights

- Outpatient influenza-like illness (ILI) increased in Week 52 (3.4%) compared to Week 51 (2.6%).
- Of 1,945 specimens tested during Week 52,
 - 442 (22.7%) were positive for influenza virus; of these
 - 23 (5.2%) were influenza B and
 - 419 (94.8%) were influenza A
 - 3 (0.7%) were subtyped as seasonal A (H3)
 - 72 (17.2%) were subtyped as 2009 A (H1)
 - 344 (82.1%) were not subtyped.
- One influenza-associated death was reported since our last report.
- One influenza outbreak was reported since our last report.

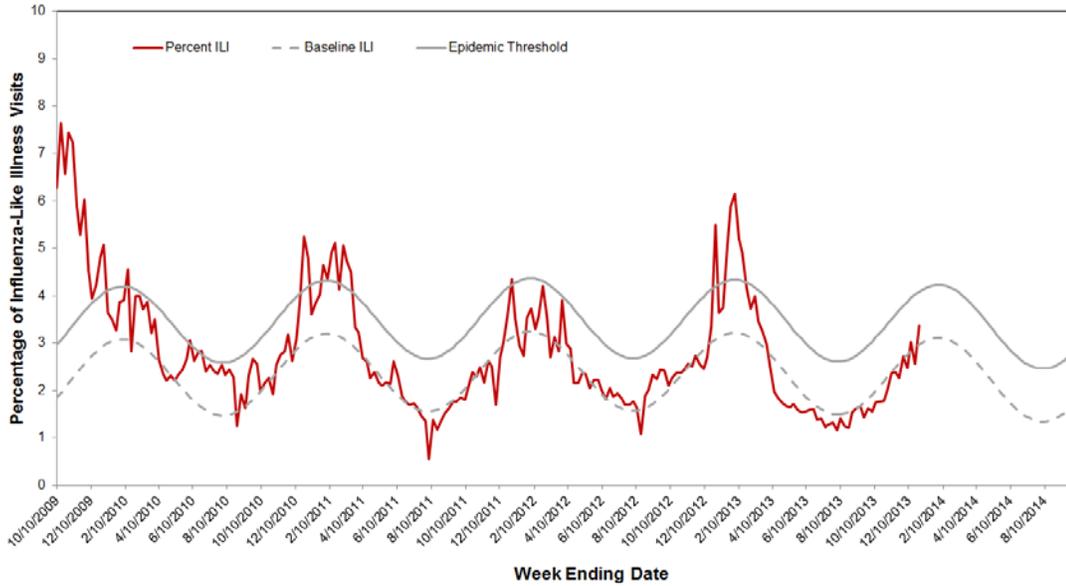
*For the Centers for Disease Control and Prevention (CDC) definitions of influenza geographic distribution, please go to <http://www.cdc.gov/flu/weekly/overview.htm>.

A. Syndromic Surveillance Update

1. CDC Influenza Sentinel Providers

A total of 47 enrolled sentinel providers have reported data for Week 52, compared to an average of 127 providers reporting for each of the previous weeks. Based on available data, the percentage of visits for ILI in Week 52 (3.4%) was below the epidemic threshold (4.1%) (Figure 1).

Figure 1. Percentage of Influenza-like Illness Visits Among Patients Seen by California Sentinel Providers, 2009–2014

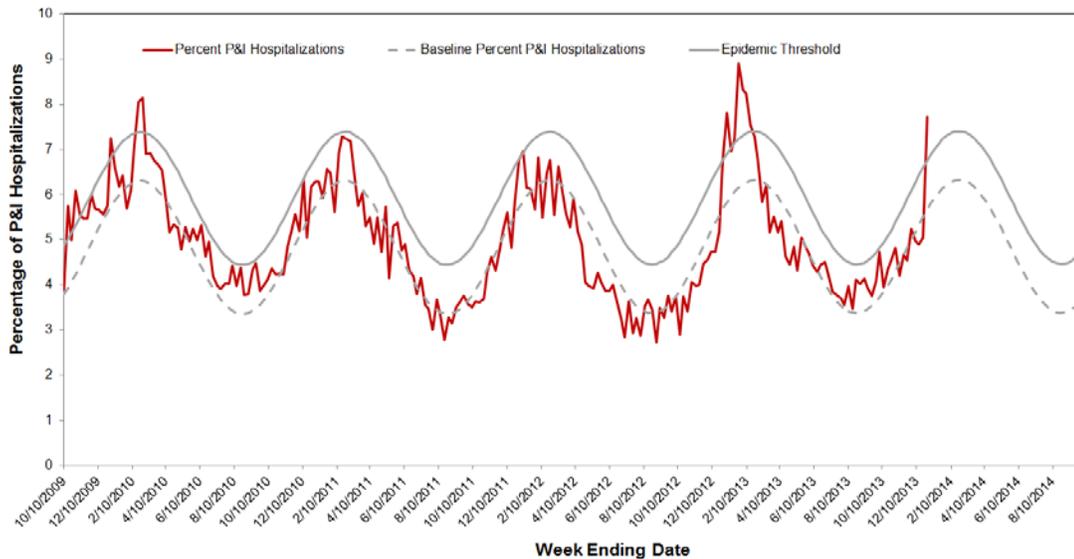


The seasonal baseline was calculated using a regression model applied to data from the previous eight years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of ILI is significantly higher than would be expected at that time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

2. Kaiser Permanente Hospitalization Data

The percentage of hospitalizations for pneumonia and influenza (P&I) in Kaiser Permanente facilities in northern and southern California increased during Week 52 (7.7%), compared to Week 51 (5.1%) (Figure 2). The percentage exceeded the epidemic threshold (6.7%) during Week 50.

Figure 2. Percentage of P&I Hospitalizations in Kaiser Permanente Northern and Southern California Hospitals, 2009–2014



The seasonal baseline was calculated using a regression model applied to data from the previous six 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. Hospitalization Surveillance Update

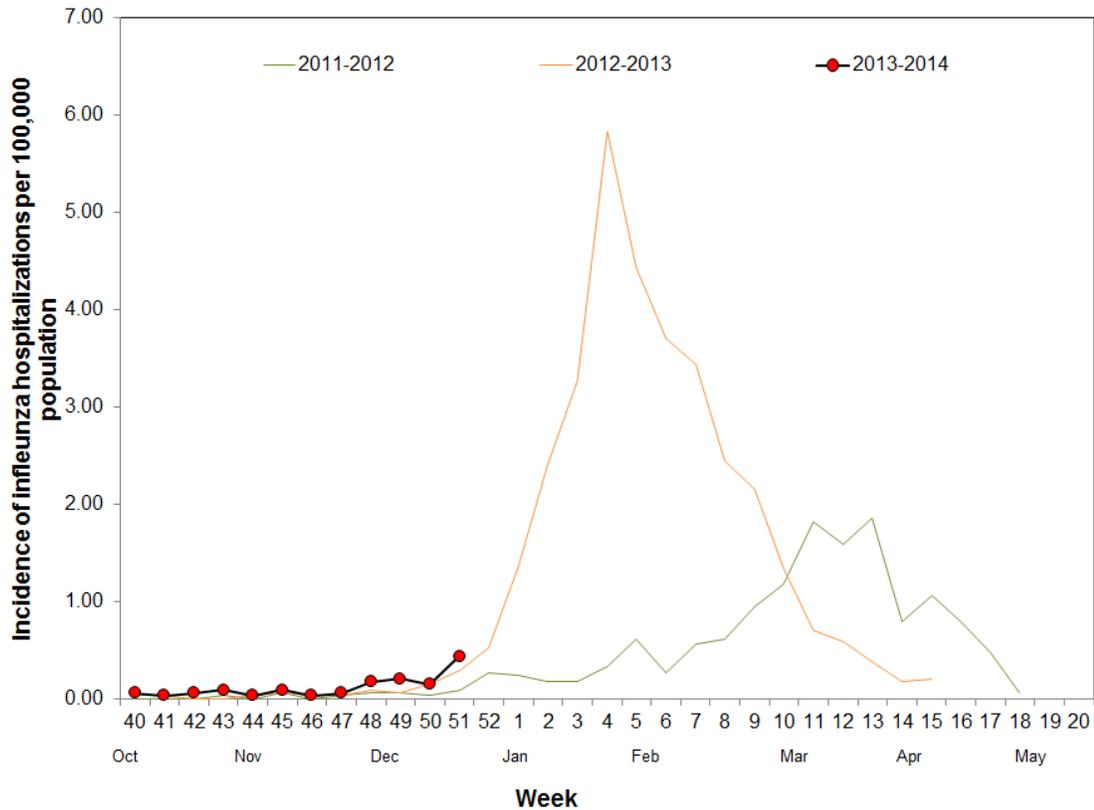
1. Influenza-Associated Hospitalizations, California Emerging Infections Program

The California Emerging Infections Program (CEIP), Influenza Surveillance Network (FluSurv-NET) conducts

population-based surveillance for laboratory-confirmed influenza-associated hospitalizations among patients of all ages in Alameda, Contra Costa, and San Francisco counties.

The incidence of influenza-associated hospitalizations per 100,000 population increased in Week 51 (0.44) compared to Week 50 (0.15). Data for Week 52 are not shown because results are still being collected and are likely to change.

Figure 3. Incidence of Influenza Hospitalizations in CEIP Counties, 2011–2014



C. Laboratory Update

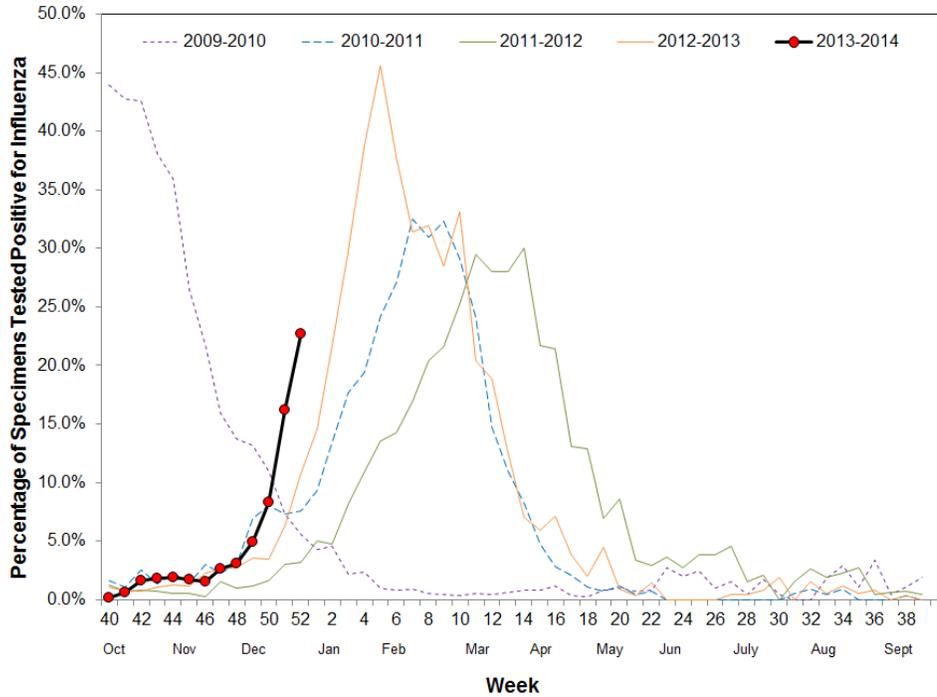
1. Respiratory Laboratory Network (RLN) and Sentinel Laboratory Surveillance Results

The percentage of influenza detections in the RLN and sentinel laboratories increased in Week 52 (22.7%) compared to Week 51 (16.2%) (Figure 4). In Week 52, of 1,945 specimens tested by the RLN and sentinel laboratories, 23 (1.2%) were positive for influenza B and 419 (21.5%) were positive for influenza A. Of the 419 specimens that tested positive for influenza A, 3 (0.7%) were subtyped as seasonal A (H3), 72 (17.2%) were subtyped as 2009 A (H1), and 344 (82.1%) had no further subtyping performed.

To date for the 2013–2014 season, of 13,976 specimens tested, 1,030 (7.4%) were positive for influenza; of these, 62 (6.0%) were influenza B and 968 (94.0%) were influenza A. Of the 968 specimens that tested positive for influenza A, 31 (3.2%) were subtyped as seasonal A (H3), 258 (26.7%) were subtyped as 2009 A (H1), and 679 (70.1%) had no further subtyping performed. Positive specimens have been detected throughout the state.

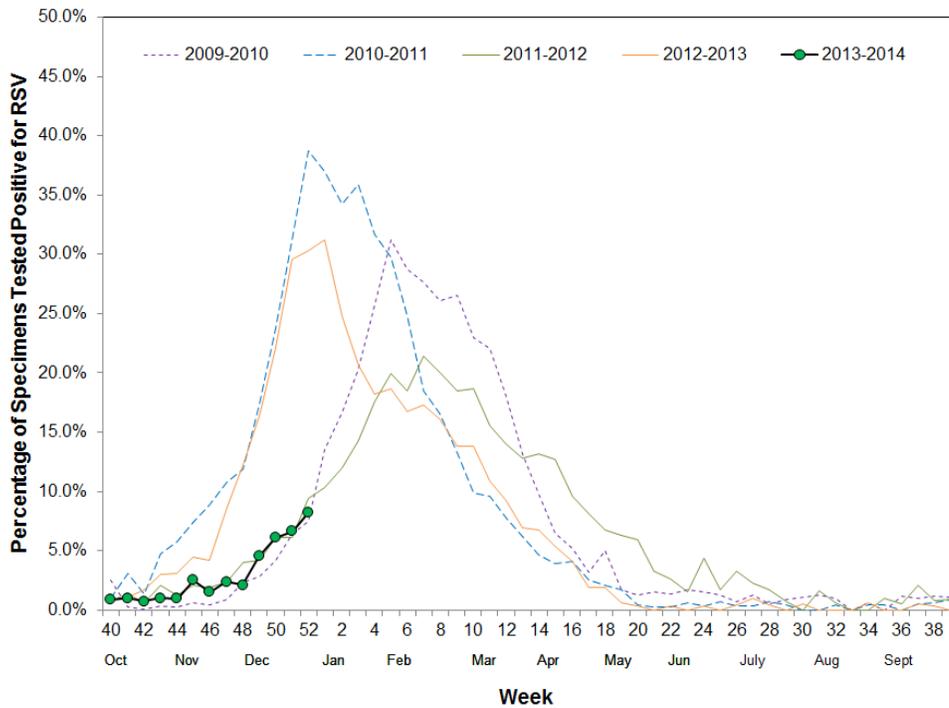
Neither the RLN nor CDPH-VRDL have identified any influenza viruses by polymerase chain reaction (PCR) typing or subtyping that are suggestive of a novel influenza virus.

Figure 4. Percentage of Influenza Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2009–2014



During Week 52, 1,552 specimens were tested for RSV and 128 (8.2%) were positive, which represents an increase compared to Week 51 (6.6%) (Figure 5).

Figure 5. Percentage of RSV Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2009–2014

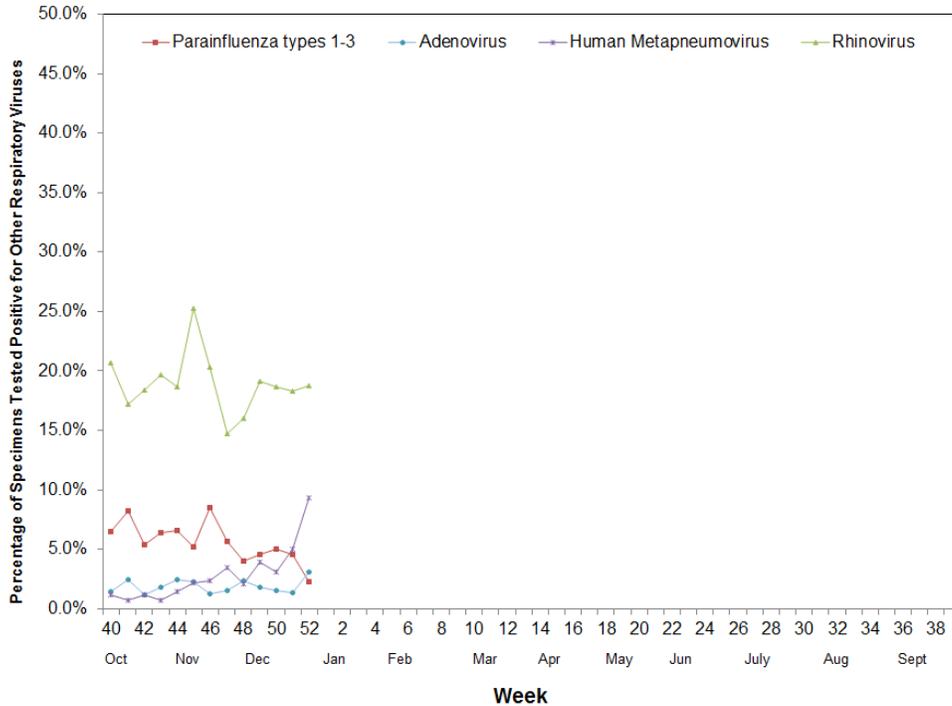


In Week 52, parainfluenza virus detections decreased (2.3%, compared to 4.5% in Week 51), adenovirus detections increased (3.1%, compared to 1.4% in Week 51), human metapneumovirus detections increased (9.3%, compared to 5.0% in Week 51), and rhinovirus detections increased (18.8%, compared to 18.3% in Week 51) (Table 1, Figure 6).

Table 1. Number of specimens tested for other respiratory viruses and percentage positive in Week 46

Other Respiratory Pathogens	No. Specimens Tested	No. Specimens Tested Positive n (%)
Parainfluenza types 1-3	262	6 (2.3%)
Adenovirus	262	8 (3.1%)
Human Metapneumovirus	204	19 (9.3%)
Rhinovirus	64	12 (18.8%)

Figure 6. Percentage of Other Respiratory Pathogen Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2013–2014



2. Antiviral Resistance Testing

The CDPH-VRDL has tested 16 2009 A (H1) specimens and five A (H3) specimens for antiviral resistance to date during the 2013–2014 influenza season (Table 2). All specimens were sensitive to neuraminidase inhibitors.

Table 2. Number of specimens tested for antiviral resistance

	Neuraminidase Inhibitors Resistance
Influenza 2009 A (H1)	0/16
Influenza A (H3)	0/5
Influenza B	0/0

3. Influenza Virus Strain Characterization

Eight 2009 A (H1) strains have been antigenically characterized to date during the 2013–2014 influenza season. All were strain-typed as A/California/07/2009-like (H1N1), the H1N1 component included in the 2013–2014 vaccine for the Northern Hemisphere.

Three A (H3) strains have been antigenically characterized to date during the 2013–2014 influenza season. All were

strain-typed as A/Texas/50/2012-like (H3N2), the H3N2 component included in the 2013–2014 vaccine for the Northern Hemisphere.

D. 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.

In Week 51, CDPH received the fourth report of an influenza-associated death for the 2013-2014 season. The case-patient was from Alameda county and tested positive for 2009 influenza A (H1) by PCR. No influenza-associated deaths were reported during week 52. All influenza-associated deaths reported to date have been among adults.

E. Influenza-associated Outbreaks

CDPH received its first report of a laboratory-confirmed influenza outbreak during Week 51. The outbreak occurred in a congregate living facility in southern California and was caused by influenza A. No outbreak reports were received during Week 52.

F. California Border Region Influenza Surveillance

The next update on influenza surveillance in the California Border Region will be for Week 1.

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 at <http://www.cdph.ca.gov/programs/dcdc/Pages/CaliforniaInfluenzaSurveillanceProject.aspx>.

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).