

Weekly Update



California Department of Public Health Influenza Surveillance Program

California Influenza and Other Respiratory Disease Surveillance for Week 49 (December 1, 2013 to December 7, 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 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.

Overall influenza activity in California during Week 49 was “sporadic*.”

Influenza Report Highlights

- Outpatient influenza-like illness (ILI) decreased in Week 49 (2.0%) compared to Week 48 (2.4%).
- Of 1113 specimens tested during Week 49,
 - 58 (5.2%) were positive for influenza virus; of these
 - 2 (3.4%) were influenza B and
 - 56 (96.6%) were influenza A
 - 2 (3.6%) were subtyped as seasonal A (H3)
 - 23 (41.1 %) were subtyped as 2009 A (H1)
 - 31 (55.4%) were not subtyped.
- The California Department of Public Health Viral and Rickettsial Disease Laboratory (CDPH-VRDL) has tested ten 2009 A (H1) influenza isolates and five A (H3) influenza isolates for antiviral resistance to date. All specimens were sensitive to neuraminidase inhibitors.
- The Centers for Disease Control and Prevention (CDC) has strain-typed eight 2009 A (H1N1) and two AH3N2 influenza specimens from California to date. These were strain-typed as A/California/07/2009-like (H1N1) and A/Texas/50/2012-like (H3N2), respectively; the H1N1 and H3N2 components included in the 2013–2014 vaccine for the Northern Hemisphere.
- One influenza-associated death was reported during Week 49.
- No influenza outbreaks have been reported in California to date.
- No cases of novel influenza have been detected in California to date.

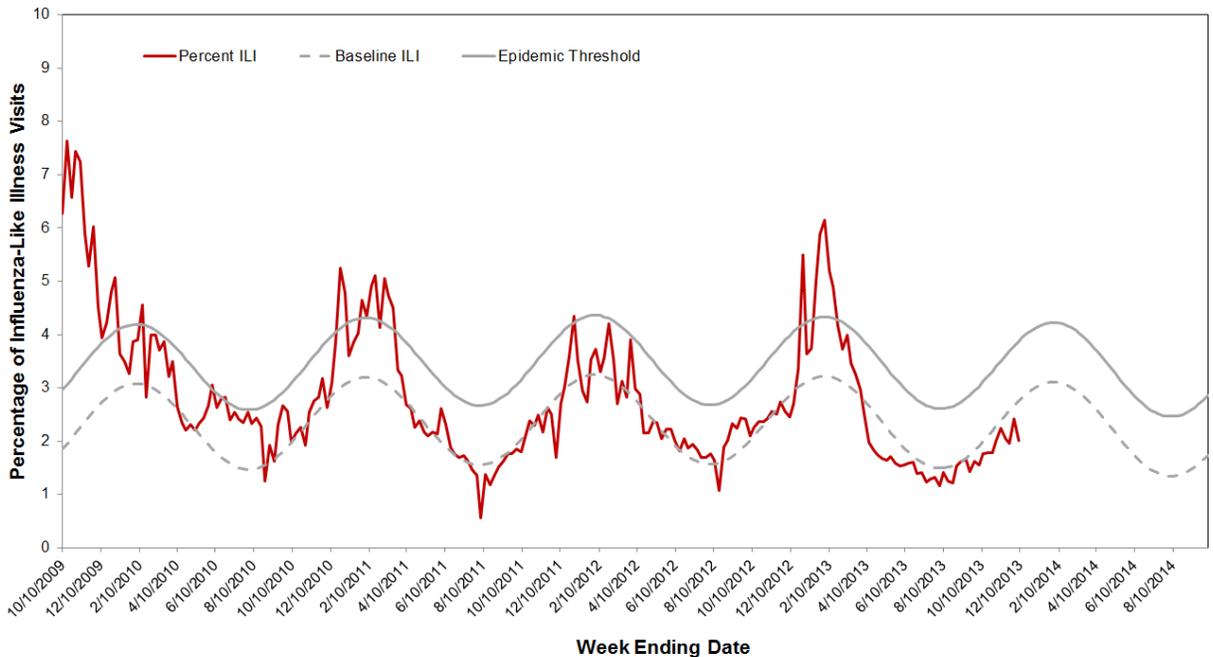
*For the Centers for Disease Control and Prevention (CDC) definitions of influenza geographic distribution, please go to <http://www.cdc.gov/flu/weekly/overview.htm>.

A. Syndromic Surveillance Update

1. CDC Influenza Sentinel Providers

A total of 74 enrolled sentinel providers have reported data for Week 49, compared to an average of 121 providers reporting for each of the previous weeks. Based on available data, the percentage of visits for ILI in Week 49 (2.0%) was below the epidemic threshold (3.8%) (Figure 1).

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

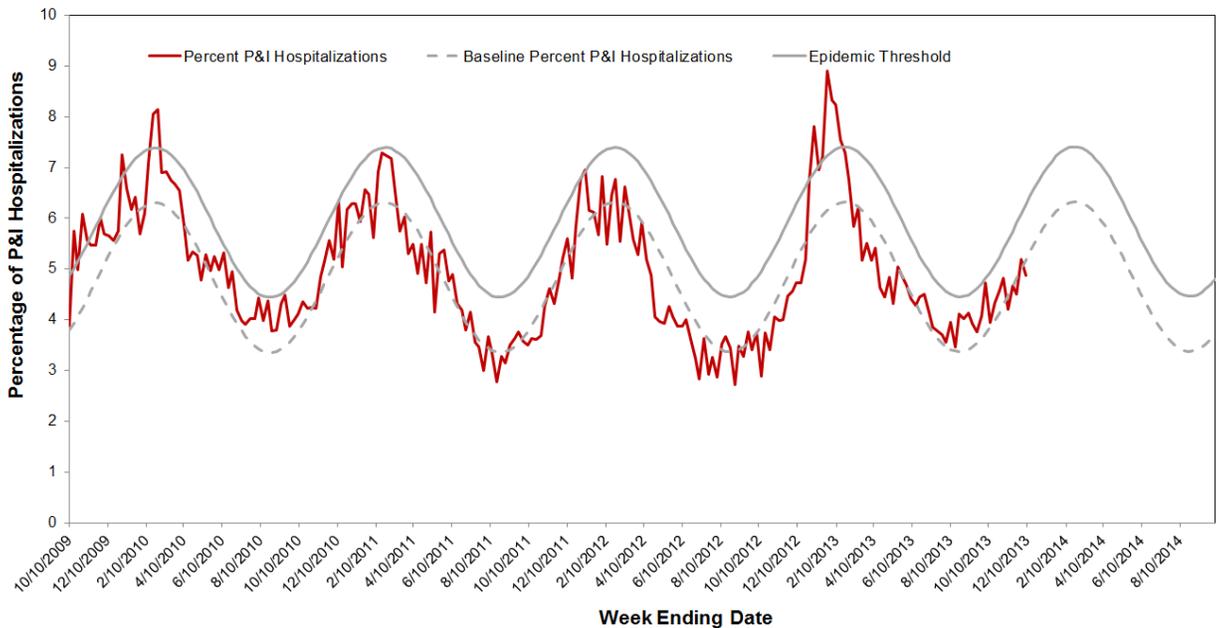


The seasonal baseline was calculated using a regression model applied to data from the previous eight years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of ILI is significantly higher than would be expected at that time 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 decreased during Week 49 (4.9%), compared to Week 48 (5.2%) (Figure 2). The percentage was below the epidemic threshold (6.1%) during Week 49.

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

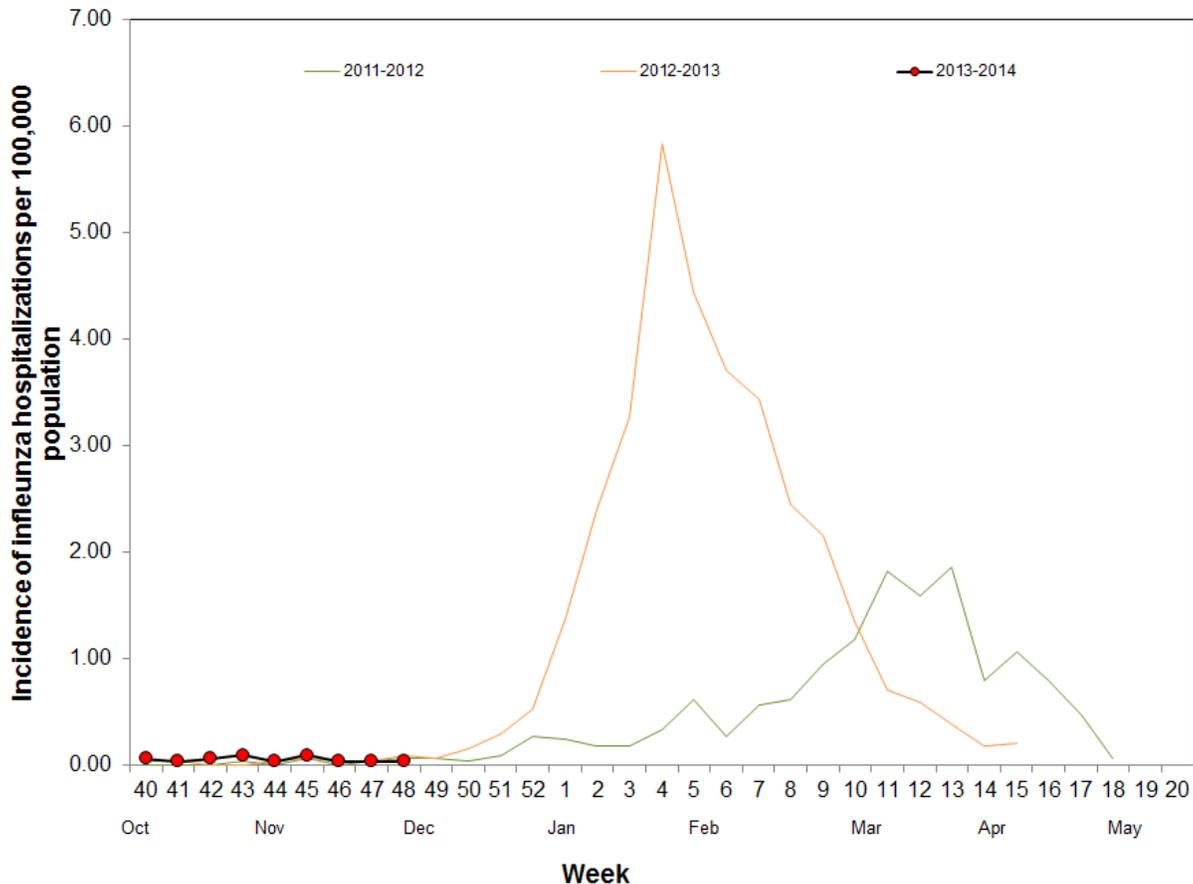
The California Emerging Infections Program (CEIP), Influenza Surveillance Network (FluSurv-NET) conducts population-based surveillance for laboratory-confirmed influenza-associated hospitalizations in all ages in Alameda, Contra Costa, and San Francisco counties.

CEIP is funded by the Centers for Disease Control and Prevention (CDC). FluSurv-NET is a national network which covers over 80 counties in 10 Emerging Infections Program (EIP) states (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN) and five additional states (IA, MI, OH, RI, and UT). The network represents approximately 9% of US population (~28 million people). Weekly updates of influenza hospitalizations in FluSurv-NET sites can be found on CDC's website, FluView: <http://www.cdc.gov/flu/weekly>.

CEIP receives reports of positive influenza tests from hospital and reference laboratories on a weekly or biweekly basis. These data are incorporated into the surveillance data along with hospitalization status and residence information. Medical record abstraction is also conducted to collect the following additional information for each case patient: demographics, laboratory data, underlying conditions, vaccination status, antiviral administration, discharge diagnoses, and outcome.

The incidence of influenza-associated hospitalizations per 100,000 population remained the same in Week 48 (2.9, compared to 2.9 in Week 47). Data for Week 49 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

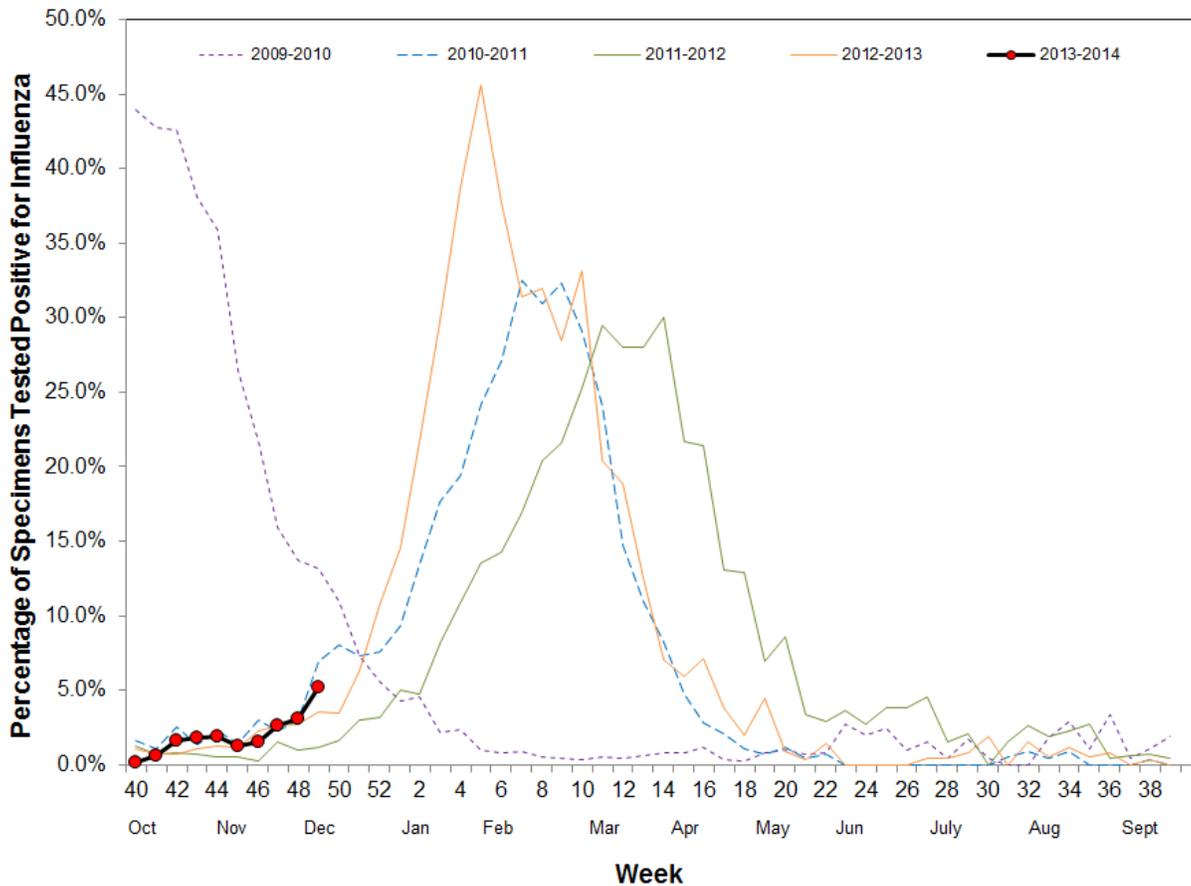
1. Respiratory Laboratory Network (RLN) and Sentinel Laboratory Surveillance Results

The percentage of influenza detections in the RLN and sentinel laboratories increased in Week 49 (5.2%, compared to 3.1% in Week 48) (Figure 4). In Week 49, of 1,113 specimens tested by the RLN and sentinel laboratories, 2 (0.2%) were positive for influenza B and 56 (5.0%) were positive for influenza A. Of the 56 specimens that tested positive for influenza A, 2 (3.6%) were subtyped as seasonal A (H3), 23 (41.1%) were subtyped as 2009 A (H1), and 31 (55.4%) had no further subtyping performed.

To date for the 2013–2014 season, of 8,845 specimens tested, 192 (2.2%) were positive for influenza; of these, 14 (0.2%) were influenza B and 178 (2.0%) were influenza A. Of the 178 specimens that tested positive for influenza A, 19 (10.7%) were subtyped as seasonal A (H3), 63 (35.4%) were subtyped as 2009 A (H1), and 96 (53.9%) had no further subtyping performed. Positive specimens have been detected throughout the state.

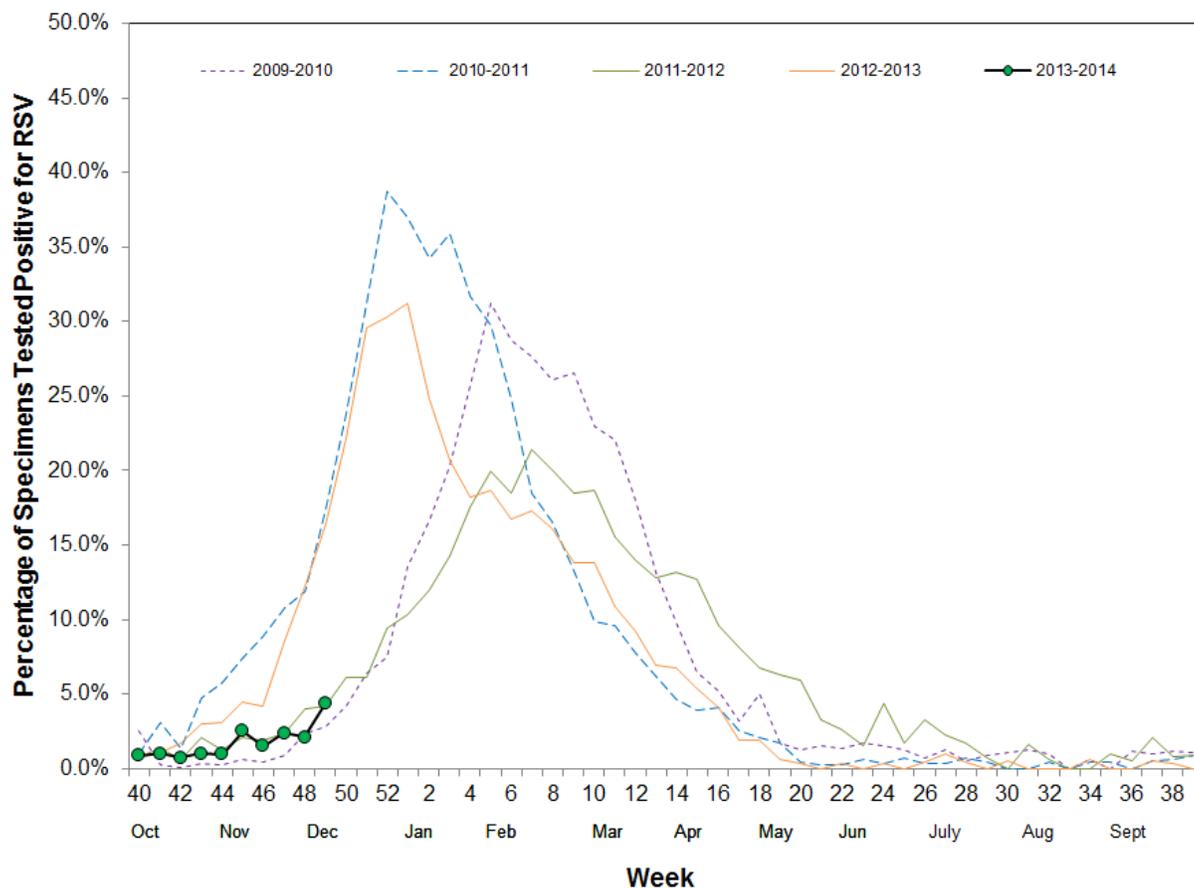
Neither the RLN nor CDPH-VRDL have identified any influenza viruses by polymerase chain reaction (PCR) typing or subtyping that are suggestive of a novel influenza virus.

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



During Week 49, 963 specimens were tested for RSV and 42 (4.4%) were positive, which represents an increase compared to Week 48 (2.1%) (Figure 5).

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

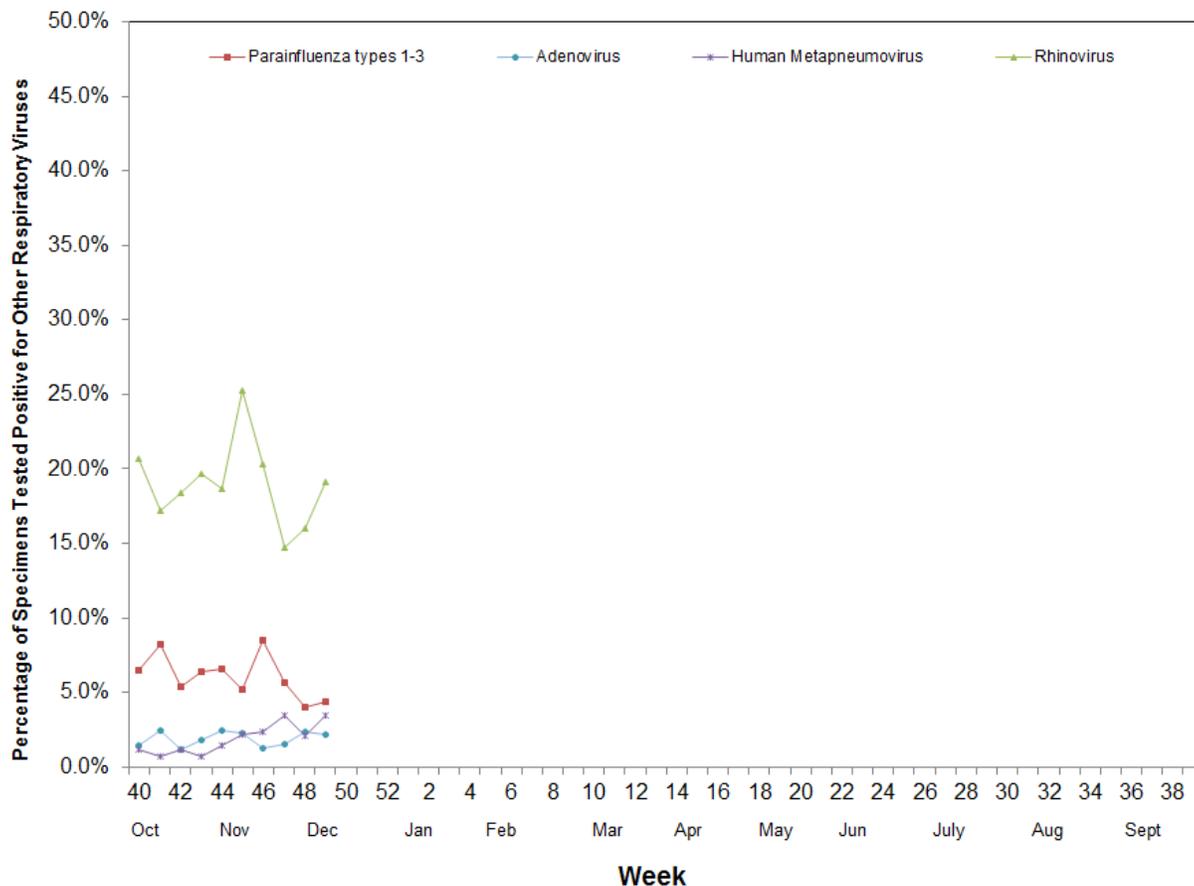


In Week 49, parainfluenza virus detections increased (4.4%, compared to 4.0% in Week 48), adenovirus detections decreased (2.2%, compared to 2.4% in Week 48), human metapneumovirus detections increased (3.4%, compared to 2.1% in Week 48), and rhinovirus detections increased (19.1%, compared to 16.0% in Week 48) (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	321	14 (4.4%)
Adenovirus	321	7 (2.2%)
Human Metapneumovirus	262	9 (3.4%)
Rhinovirus	262	50 (19.1%)

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 ten 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)	0/10
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.

Two 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 49, CDPH received the second report of an influenza-associated death for the 2013-2014 season. The case-patient was an adult between the ages of 40-49 years from northern California who had co-morbid conditions considered by the Advisory Committee on Immunization Practices (ACIP) as risk factors for severe influenza. The patient tested positive for 2009 influenza A (H1) by PCR.

E. Influenza-associated Outbreaks

CDPH has received no reports of laboratory-confirmed influenza outbreaks to date during the 2013–2014 influenza season.

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).