

Weekly Update



## California Department of Public Health Influenza Surveillance Program

### *California Influenza and Other Respiratory Disease Surveillance for Week 50 (December 8, 2013 to December 14, 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 50 was “local\*.”**

##### **California Influenza Report Highlights**

- Outpatient influenza-like illness (ILI) increased in Week 50 (2.5%) compared to Week 49 (2.1%).
- Of 1249 specimens tested during Week 50,
  - 108 (8.6%) were positive for influenza virus; of these
    - 7 (6.5%) were influenza B and
    - 101 (93.5%) were influenza A
      - 2 (2.0%) were subtyped as seasonal A (H3)
      - 51 (50.5 %) were subtyped as 2009 A (H1)
      - 48 (47.5%) 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 A (H3N2) 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, strains identical to the H1N1 and H3N2 components included in the 2013–2014 vaccine for the Northern Hemisphere.
- One influenza-associated death was reported during Week 50.
- No influenza outbreaks have been reported in California to date.
- No cases of novel influenza have been detected in California to date.

##### **California Border Region Influenza Highlights**

- Outpatient influenza-like-illness (ILI) for the California border region increased in Week 50 (1.59%) compared to Week 49 (1.15%).
- Of the 155 respiratory specimens tested in the California border region during Week 50,
  - 15 (10%) were positive for influenza; of these
    - None were influenza B
    - 15 (100%) were influenza A
      - 1 (7%) was subtyped as seasonal A (H3)
      - 8 (53%) were subtyped as 2009 A (H1)
      - 6 (40%) had no further subtyping performed

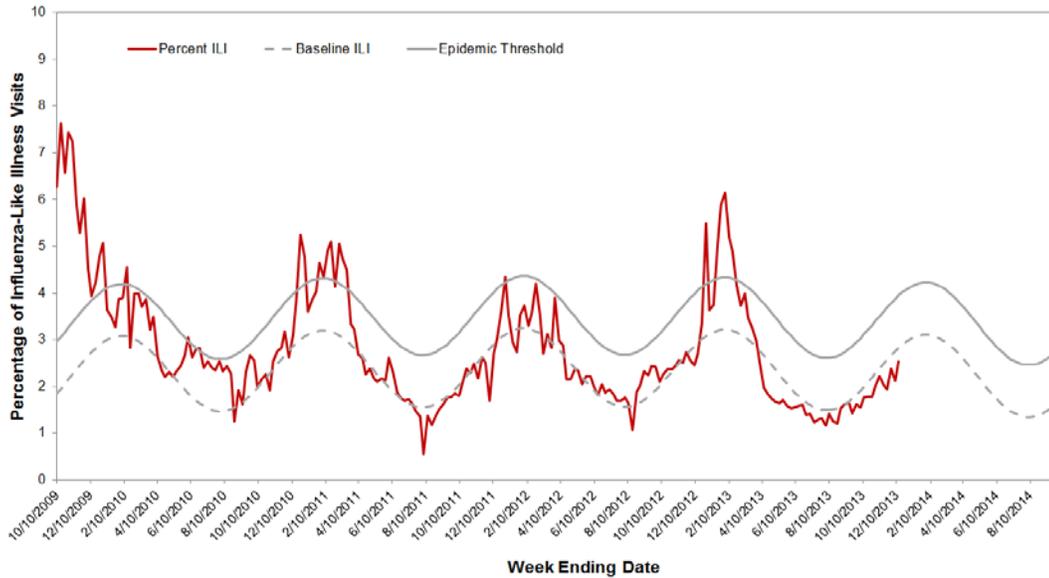
\*For the Centers for Disease Control and Prevention (CDC) definitions of influenza geographic distribution, please go to <http://www.cdc.gov/flu/weekly/overview.htm>.

## A. Syndromic Surveillance Update

### 1. CDC Influenza Sentinel Providers

A total of 79 enrolled sentinel providers have reported data for Week 50, compared to an average of 119 providers reporting for each of the previous weeks. Based on available data, the percentage of visits for ILI in Week 50 (2.5%) was below the epidemic threshold (3.9%) (Figure 1).

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

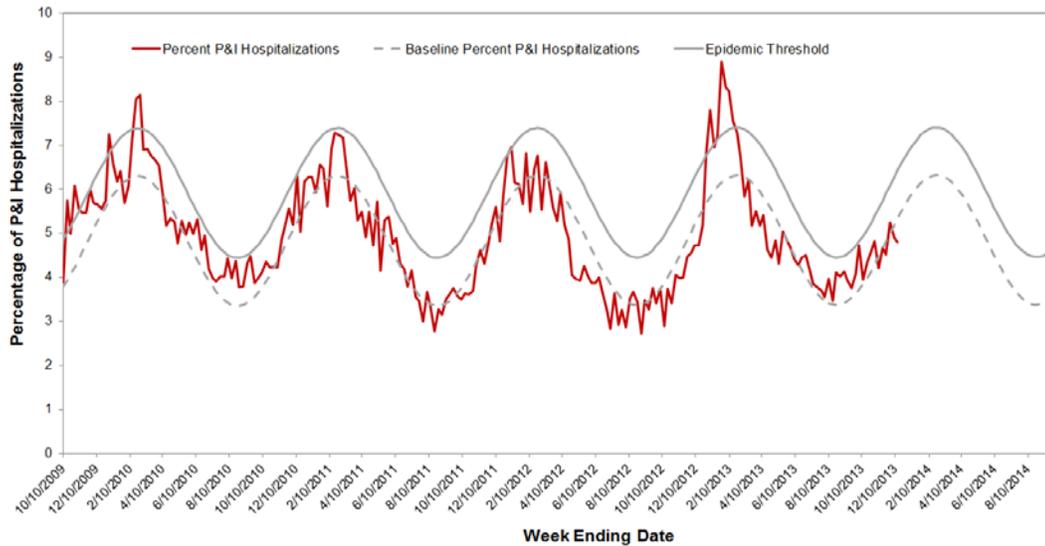


The seasonal baseline was calculated using a regression model applied to data from the previous eight years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of ILI is significantly higher than would be expected at that time 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 slightly during Week 50 (4.8%), compared to Week 49 (4.9%) (Figure 2). The percentage was below the epidemic threshold (6.4%) 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.

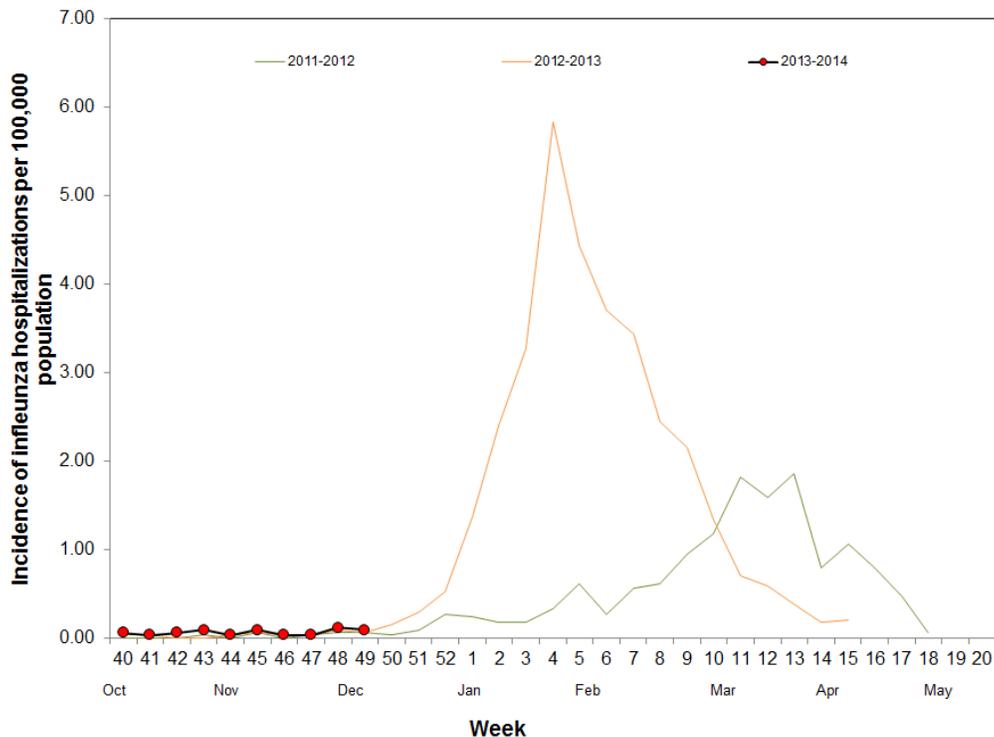
## B. Hospitalization Surveillance Update

### 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 decreased in Week 49 (0.09) compared to Week 48 (0.12). Data for Week 50 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

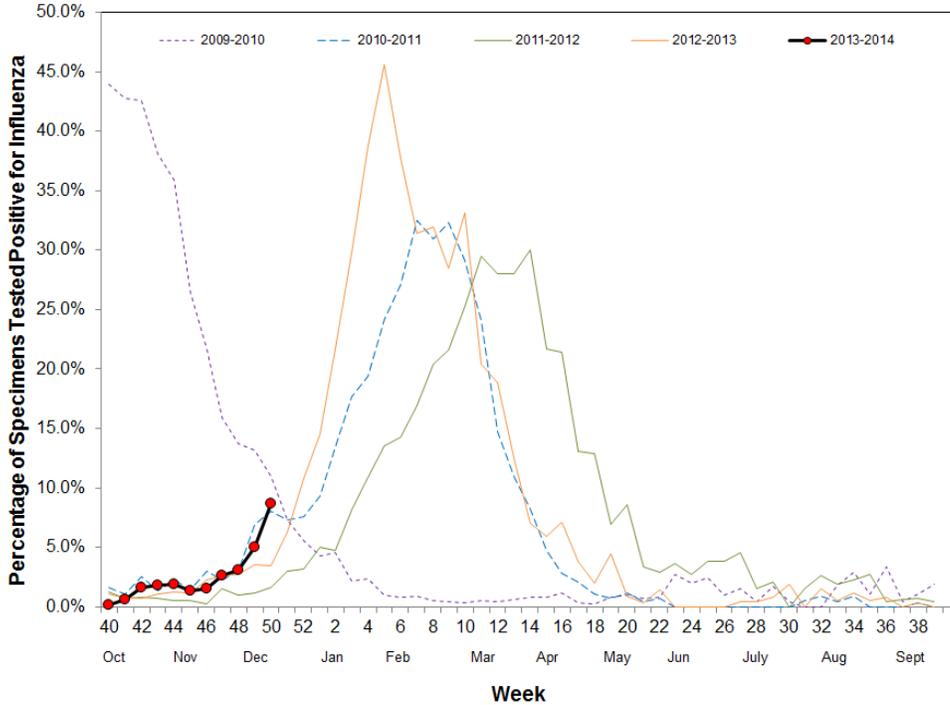
### 1. Respiratory Laboratory Network (RLN) and Sentinel Laboratory Surveillance Results

The percentage of influenza detections in the RLN and sentinel laboratories increased in Week 50 (8.6%) compared to Week 49 (5.0%) (Figure 4). In Week 50, of 1,249 specimens tested by the RLN and sentinel laboratories, 7 (0.6%) were positive for influenza B and 101 (8.1%) were positive for influenza A. Of the 101 specimens that tested positive for influenza A, 2 (2.0%) were subtyped as seasonal A (H3), 51 (50.5%) were subtyped as 2009 A (H1), and 48 (47.5%) had no further subtyping performed.

To date for the 2013–2014 season, of 10,190 specimens tested, 303 (3.0%) were positive for influenza; of these, 21 (0.2%) were influenza B and 282 (2.8%) were influenza A. Of the 282 specimens that tested positive for influenza A, 23 (8.2%) were subtyped as seasonal A (H3), 116 (41.1%) were subtyped as 2009 A (H1), and 143 (50.7%) had no further subtyping performed. Positive specimens have been detected throughout the state.

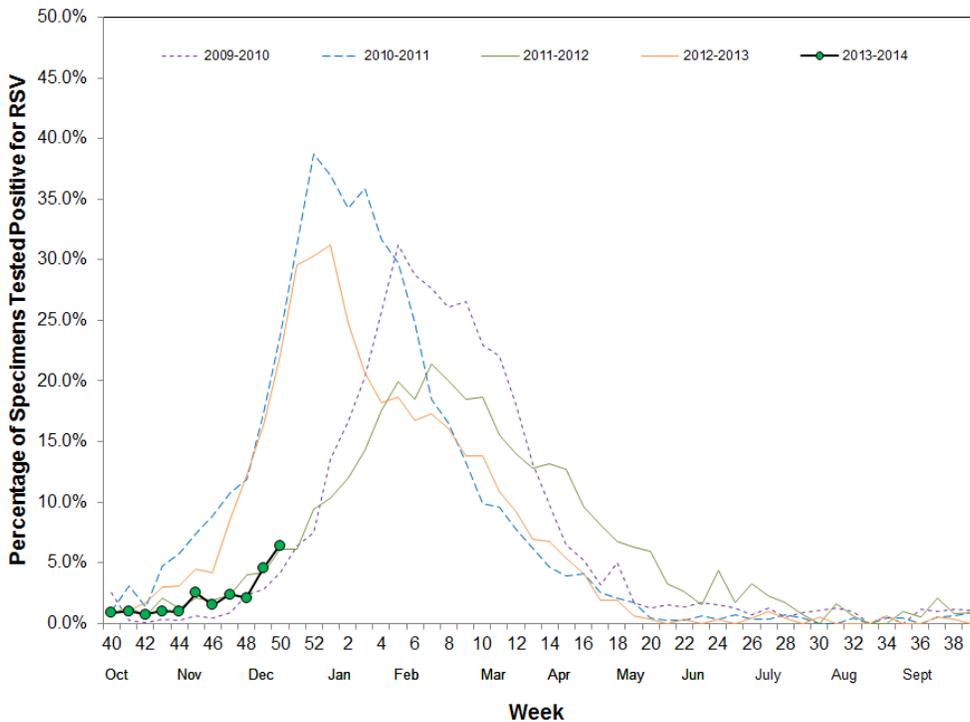
Neither the RLN nor CDPH-VRDL have identified any influenza viruses by polymerase chain reaction (PCR) typing or subtyping that are suggestive of a novel influenza virus.

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



During Week 50, 1,042 specimens were tested for RSV and 67 (6.4%) were positive, which represents an increase compared to Week 49 (4.5%) (Figure 5).

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



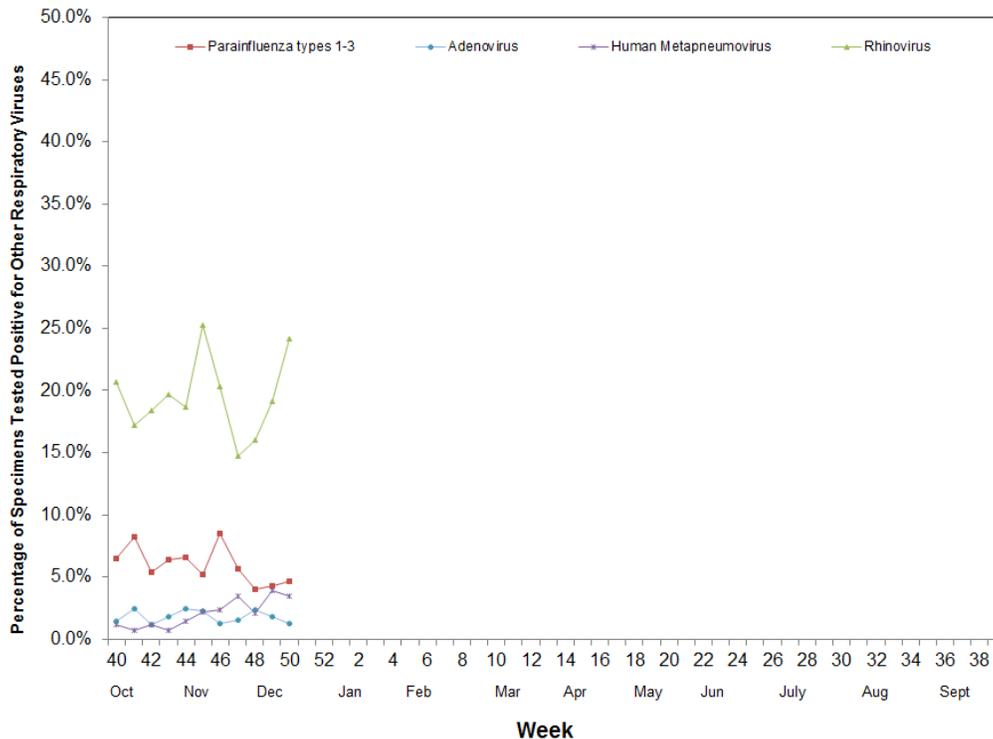
In Week 50, parainfluenza virus detections increased (4.6%, compared to 4.3% in Week 49), adenovirus detections decreased (1.3%, compared to 1.8% in Week 49), human metapneumovirus detections decreased (3.4%, compared to

3.9% in Week 49), and rhinovirus detections increased (24.1%, compared to 19.1% in Week 49) (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	388	18 (4.6%)
Adenovirus	388	5 (1.3%)
Human Metapneumovirus	319	11 (3.4%)
Rhinovirus	203	49 (24.1%)

**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 50, CDPH received the third report of an influenza-associated death for the 2013-2014 season. The case-patient was an adult from central 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

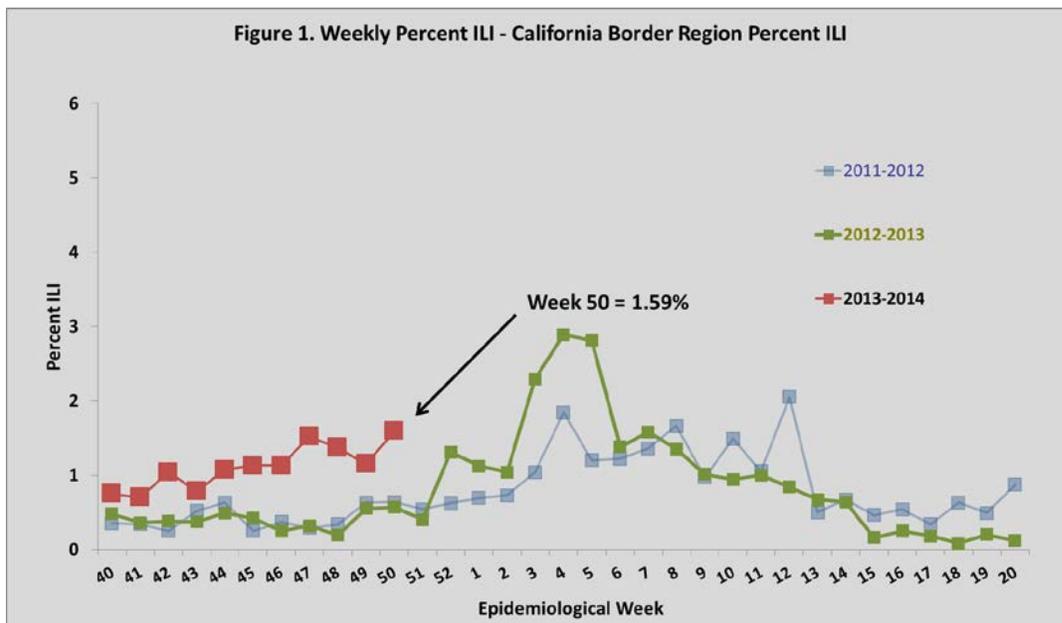
CDPH has received no reports of laboratory-confirmed influenza outbreaks to date during the 2013–2014 influenza season.

#### F. California Border Region Influenza Surveillance

The California border region is defined as the geographical area extending approximately 100 kilometers (60 miles) north of the US/Mexico border.

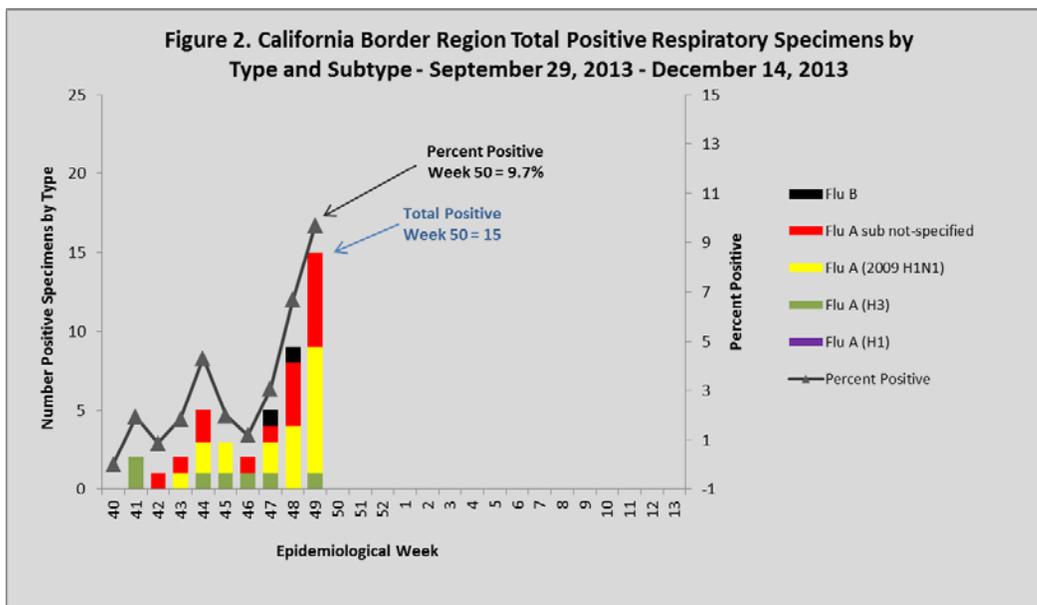
##### 1. Syndromic Surveillance Update

A total of 10 border region sentinel providers reported data for Week 50, compared to 9 during Week 49. The total number of patients screened by all sentinel sites for ILI during Week 50 was 4,400. Outpatient ILI activity increased from Week 49 (1.15% ILI) to Week 50 (1.59% ILI). ILI activity for the California border region was higher for Week 50 when compared to activity for the same weeks during the 2011–2012 and 2012–2013 influenza seasons (Figure 1). All influenza syndromic data summarized for the border region represents a subset of CDC influenza sentinel providers in California.



## 2. Virologic Surveillance Update

Cumulatively this season, a total of 1,298 respiratory specimens have been tested from border region clinics; of these, 44 (3.4%) tested positive for influenza. Of the influenza positive specimens, 2 (5%) were influenza B and 42 (95%) were influenza A. Of the 42 specimens that tested positive for influenza A, 7 (16.7%) were A (H3), 19 (45.2%) were 2009 A (H1), and 16 (38.1%) had no subtyping performed. For Week 50, a total of 155 respiratory specimens were submitted for testing; of these, 15 (10%) were positive for influenza virus. Of the positive specimens 15 (100%) were influenza A. Of the 15 specimens that tested positive for influenza A, 1 (7%) was A (H3), 8 (53%) were 2009 A (H1), and 6 (40%) had no further subtyping performed (Figure 2). Laboratory data summarized in Figure 2 includes data from influenza sentinel sites as well as laboratory data from other border region laboratories.



For questions regarding influenza surveillance and reporting in California, please email [InfluenzaSurveillance@cdph.ca.gov](mailto: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).