Weekly Update

California Department of Public Health
Influenza Surveillance Program

California Influenza and Other Respiratory Disease Surveillance for Week 42 (October 16, 2016 to October 22, 2016)

Note: This report includes data from many sources of influenza surveillance and it should be viewed as a preliminary "snapshot" of influenza activity for each surveillance week. Because data are preliminary, the information may be updated in later reports as additional data are received. These data should not be considered population-based or representative of all California public health jurisdictions.

Overall influenza activity in California remained "sporadic*" during Week 42.

Influenza Report Highlights

- Influenza activity in California is low and within expected activity levels for this time of year
- Outpatient influenza-like illness (ILI)
  - 1.4% of patient visits during Week 42 were for ILI, which is within expected levels for this time of year
- Hospitalization data
  - 3.4% of Kaiser (Northern California) patients hospitalized during Week 42 were admitted with a pneumonia or influenza (P&I) diagnosis, which is within expected levels for this time of year
- Influenza virus detections by Respiratory Laboratory Network and Sentinel Laboratories
  - 30 (2.7%) of 1,126 specimens tested were positive for influenza during Week 42
- Influenza-associated deaths among patients 0–64 years of age
  - No laboratory-confirmed influenza deaths were reported during Week 42
- Influenza-associated outbreaks
  - One laboratory-confirmed influenza outbreak was reported during Week 42

***Sporadic:** 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.

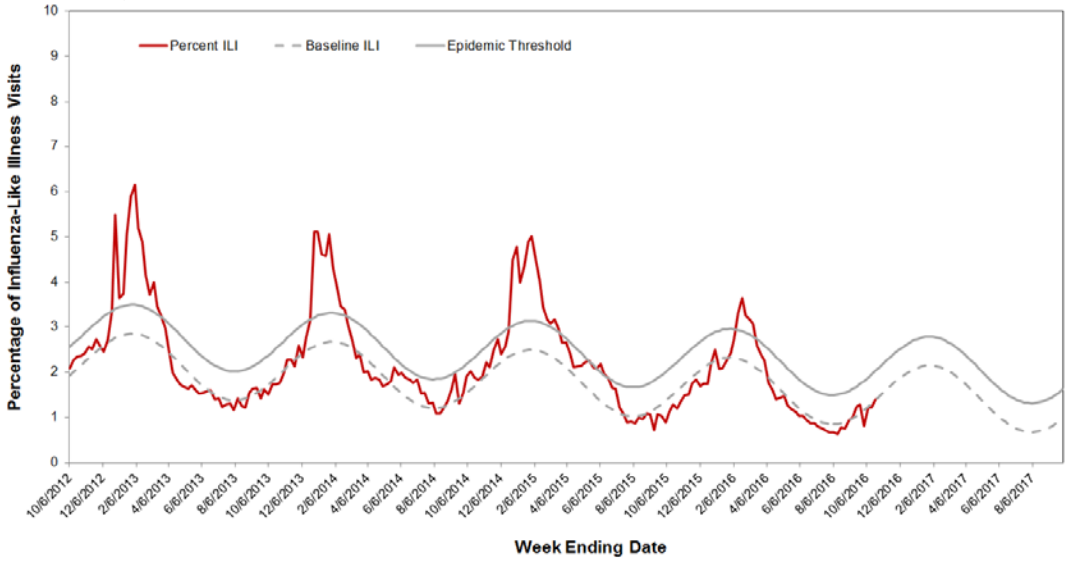
A. Outpatient and Inpatient Data

1. Influenza Sentinel Providers

Sentinel providers (physicians, nurse practitioners, and physician assistants) situated throughout California report on a weekly basis the number of patients seen with influenza-like illness (ILI) and the total number of patients seen for any reason. ILI is defined as any illness with fever (≥100°F or 37.8°C) AND cough and/or sore throat (in the absence of a known cause other than influenza).

A total of 78 enrolled sentinel providers have reported data for Week 42. Based on available data, the percentage of visits for ILI during Week 42 was 1.4% compared to Week 41 (1.2%) and was within expected baseline levels for this time of year (Figure 1).

Figure 1. Percentage of Influenza-like Illness Visits Among Patients Seen by California Sentinel Providers, 2012–2017



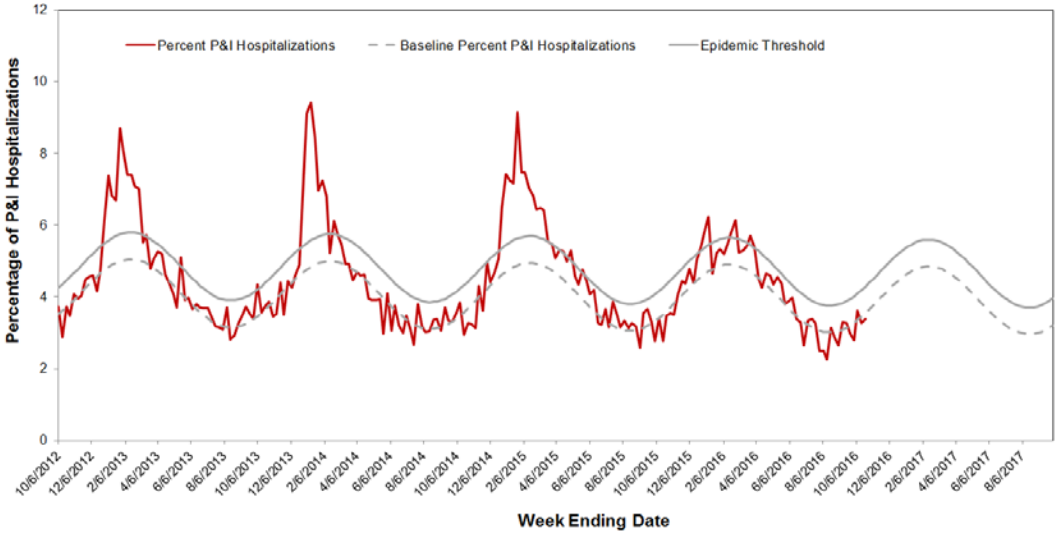
The seasonal baseline was calculated using a regression model applied to data from the previous six years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of ILI is significantly higher than would be expected at that time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

2. Kaiser Permanente Hospitalization Data

Inpatients at Kaiser Permanente facilities with an admission diagnosis including the keywords "flu," "influenza," "pneumonia," or variants of the keywords are defined as pneumonia and influenza (P&I)-related admissions. The number of P&I admissions is divided by the total number of hospital admissions occurring in the same time period to estimate the percentage of P&I admissions. Admissions for pregnancy, labor and delivery, birth, and outpatient procedures are excluded from the denominator.

The percentage of hospitalizations for pneumonia and influenza (P&I) in Kaiser Permanente facilities in northern California during Week 42 was 3.4% compared to Week 41 (3.3%) and was within expected levels for this time of the year (Figure 2).

Figure 2. Percentage of P&I Hospitalizations in Kaiser Permanente Northern California Hospitals, 2012–2017



The seasonal baseline was calculated using a regression model applied to data from the previous five 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.

3. 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.

CEIP has not received any reports on laboratory-confirmed influenza-associated hospitalizations to date.

B. Laboratory Update - Influenza

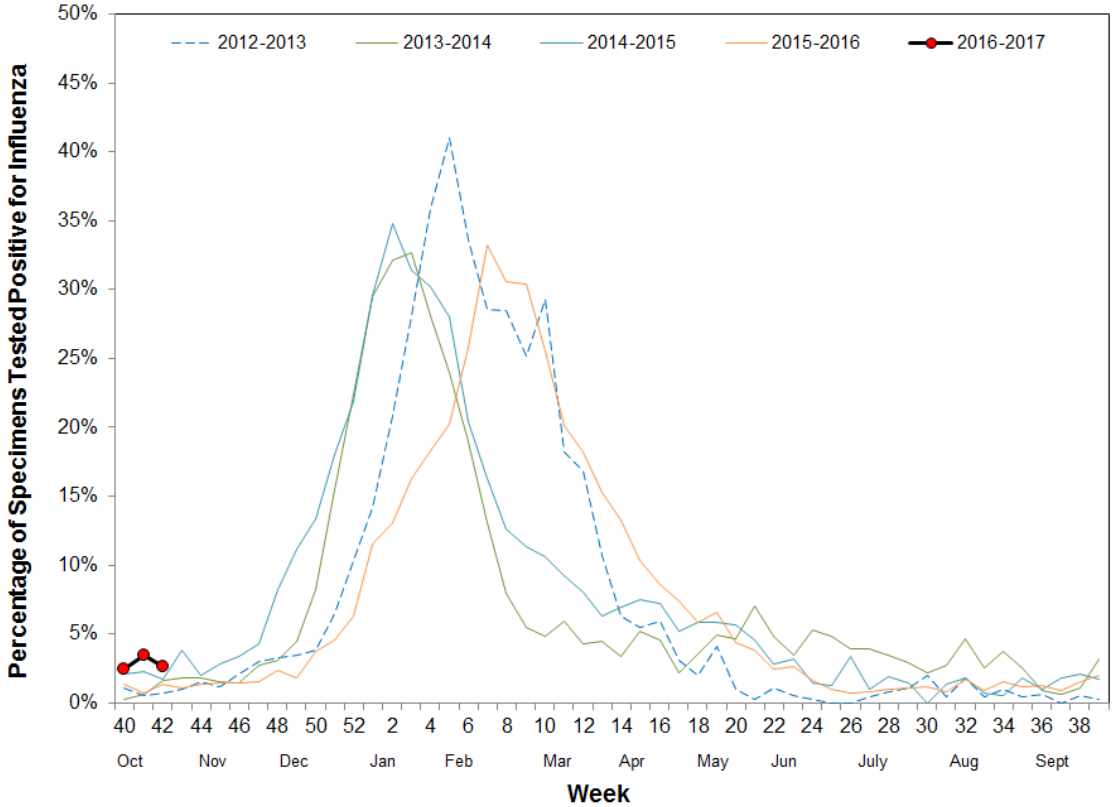
1. Respiratory Laboratory Network (RLN) and Sentinel Laboratory Surveillance Results

Laboratory surveillance for influenza and other respiratory viruses involves the use of data from hospital, academic, private and public health laboratories located throughout California. These laboratories report the number of laboratory-confirmed influenza and other respiratory virus detections and isolations on a weekly basis.

The percentage of influenza detections in the RLN and sentinel laboratories decreased in Week 42 (2.7%) compared to Week 41 (3.4%) (Figure 3). Additional details can be found in Figures 3 and 4 and Table 1.

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

Figure 3. Percentage of Influenza Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2012–2017



Note: The 2014–15 season contains a week 53. Data have been shifted so that week 1 aligns across years.

Figure 4. Number of Influenza Detections by Type and Subtype Detected in Respiratory Laboratory Network and Sentinel Laboratories, 2016–2017

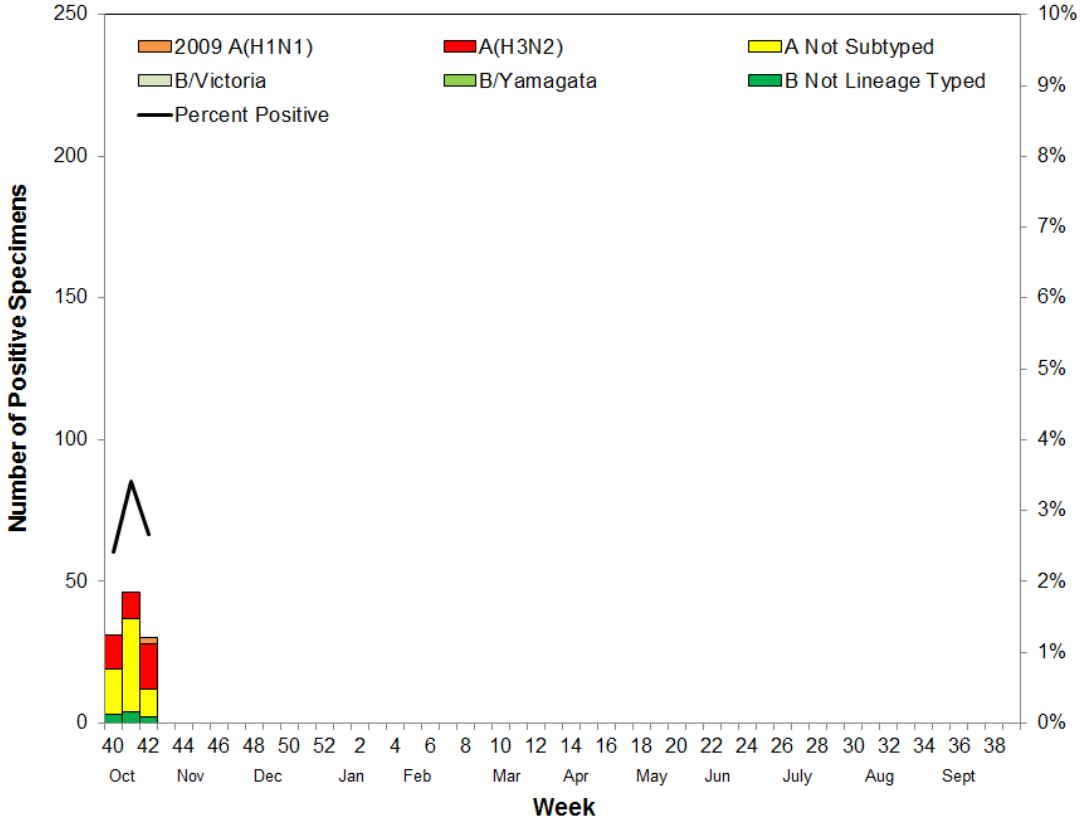


Table 1. Respiratory Specimens Testing Positive for Influenza by Influenza Type and Subtype — Respiratory Laboratory Network and Sentinel Laboratories, Current Week and Season to Date

	Week 42		Season to Date	
	Number	**Percent**	**Number**	**Percent**
Number of Specimens Tested	1,126		3,757	
Number of Specimens Positive for Influenza	30	2.7*	107	2.8*
Influenza Type/Subtype of Positive Specimens				
A	28	93.3†	98	91.6†
2009 A (H1)	2	7.1‡	2	2.0‡
A (H3)	16	57.1‡	37	37.8‡
A, not subtyped	10	35.7‡	59	60.2‡
B	2	6.7†	9	8.4†

* Percent of total specimens tested for influenza

† Percent of specimens positive for influenza

‡ Percent of influenza A positives

2. Antiviral Resistance Testing

Of the influenza specimens tested by the CDPH-VRDL to date this season, no specimens have been found to be resistant to Oseltamivir (Table 2).

Table 2. Number of specimens tested for antiviral resistance, 2016–2017

	Neuraminidase Inhibitors Resistance
Influenza 2009A (H1)	0/0
Influenza A (H3)	0/0
Influenza B	0/1

3. Influenza Virus Strain Characterization

No California specimens have been strain-typed to date during the 2016–2017 influenza season.

C. Laboratory-Confirmed Severe Influenza 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. The weekly influenza report includes confirmed deaths formally reported to CDPH as of October 22, 2016 (Week 42).

During Week 42, no laboratory-confirmed influenza fatalities were reported. To date, CDPH has received no reports of laboratory-confirmed influenza-associated deaths among patients <65 years of age during the 2016–2017 influenza season.

D. Influenza-Associated Outbreaks

During Week 42, there was one laboratory-confirmed influenza outbreak reported. To date, two laboratory-confirmed influenza outbreaks have been reported to CDPH for the 2016–2017 season.

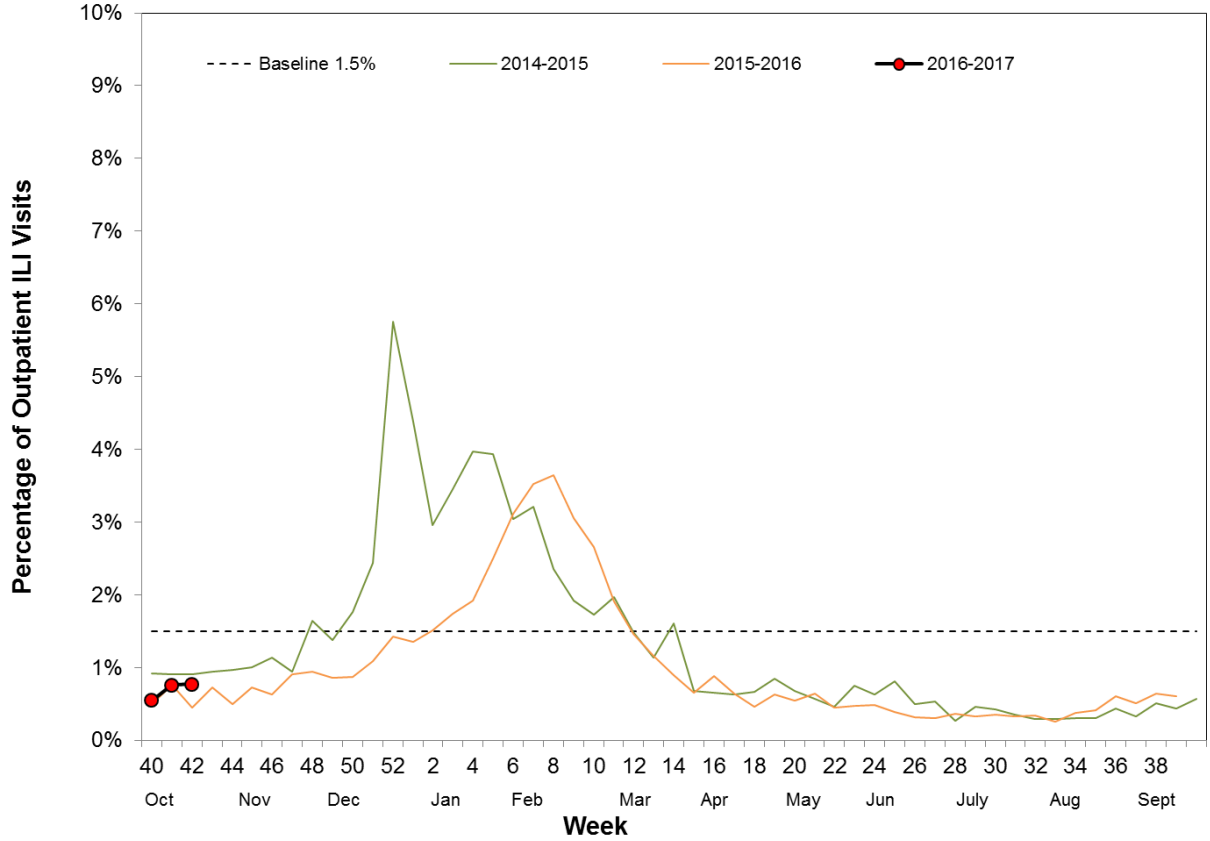
E. California Border Region Influenza Surveillance Network Data

The border influenza surveillance network is comprised of outpatient provider sentinel sites whose geographical coverage extends approximately 100 kilometers (60 miles) north of the California-Baja California border and includes Imperial and San Diego Counties, as well as some parts of Riverside County.

Syndromic Surveillance Update

A total of 15 border region sentinel providers reported data during Week 42, two fewer than Week 41 of 2016. The total number of patients screened by all sentinel sites for ILI during Week 42 was 13,642. Outpatient ILI activity was the same in Week 42 (0.8%) compared to Week 41 (0.8%). ILI activity for the California border region during Week 42 was lower when compared to activity for the same week during the 2014–2015 influenza season but higher when compared to the 2015–2016 season (Figure 5). All influenza syndromic data summarized for the border region represents a subset of CDC influenza sentinel providers in California.

Figure 5. Percentage of Influenza-like Illness Visits among Patients Seen by California Border Region Sentinel Providers, 2014-2017

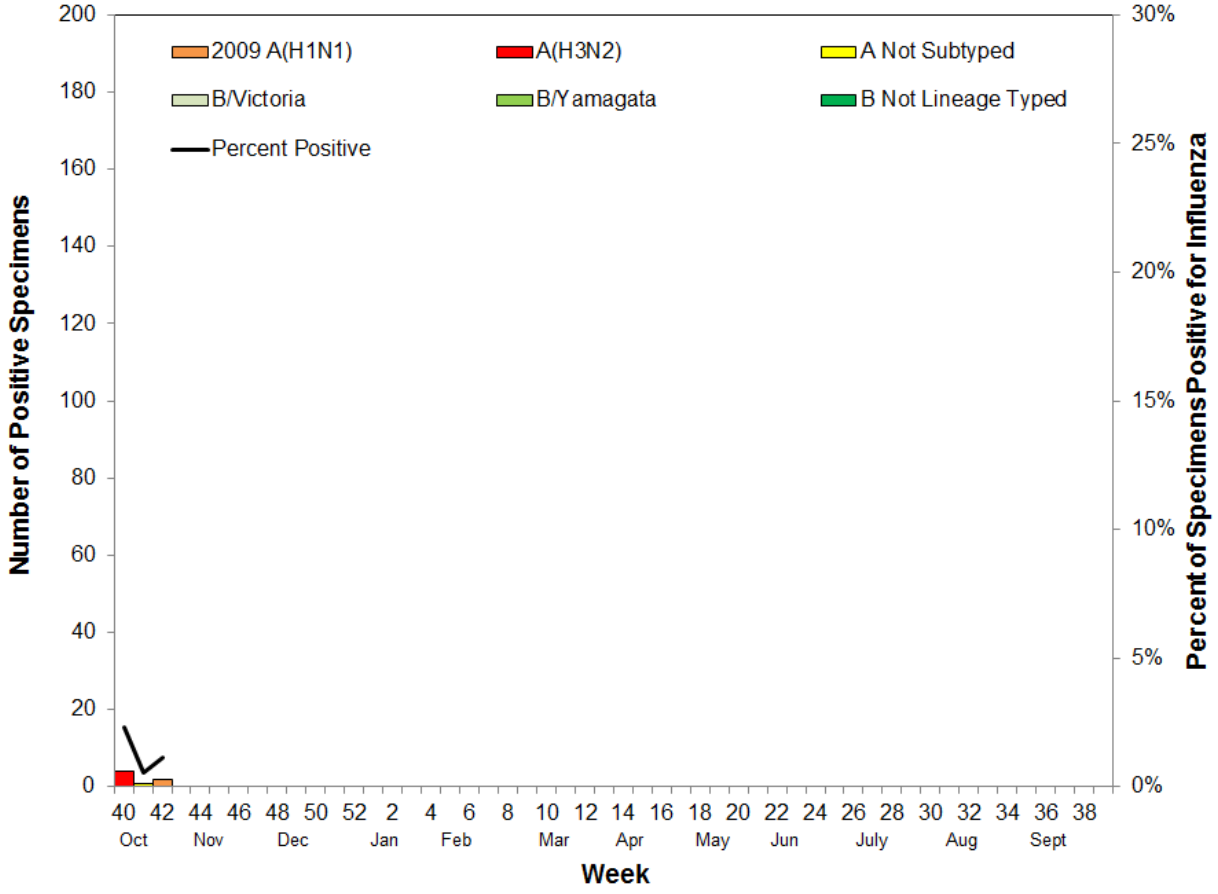


Note: The 2014-15 season contains a week 53. Prior years' data have been shifted so that week 1 aligns across years.

Virologic Surveillance Update

Cumulatively this season, a total of 526 respiratory specimens have been tested from border region clinics; of these, 7 (1.3%) tested positive for influenza. All specimens have tested positive for influenza A. Of the 7 specimens that tested positive for influenza A, 2 (28.6%) were subtyped as 2009 A (H1), 4 (57.1%) were subtyped as A (H3), and 1 (14.3%) had no further subtyping performed. For Week 42, a total of 175 respiratory specimens were submitted for testing; 2 (1.1%) were positive for influenza virus. The specimens that tested positive for influenza were both subtyped as 2009 A (H1). Laboratory data summarized in Figure 6 includes data from influenza sentinel sites as well as laboratory data from other border region laboratories.

Figure 6. Number of Influenza Detections by Type and Subtype Detected in California Border Region Respiratory Laboratory Network and Sentinel Laboratories, 2016-2017



F. Other Respiratory Viruses

1. Laboratory-Confirmed Severe Respiratory Syncytial Virus Case Reports

Currently, as mandated under Section 2500 of the California Code of Regulations, deaths among children aged 0–4 years with laboratory-confirmed respiratory syncytial virus (RSV) are reportable to CDPH. The weekly influenza report includes confirmed deaths formally reported to CDPH as of October 15, 2016 (Week 41).

During Week 42, no laboratory-confirmed RSV fatalities were reported. To date, CDPH has received no reports of laboratory-confirmed RSV-associated deaths among children <5 years of age during the 2016–2017 influenza season.

2. Laboratory Update

During Week 42, 807 specimens were tested for RSV and 11 (1.4%) were positive, which is similar to Week 41 (1.3%) (Figure 7). Information on other respiratory viruses can be found in Figure 8.

Figure 7. Percentage of RSV Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2012–2017

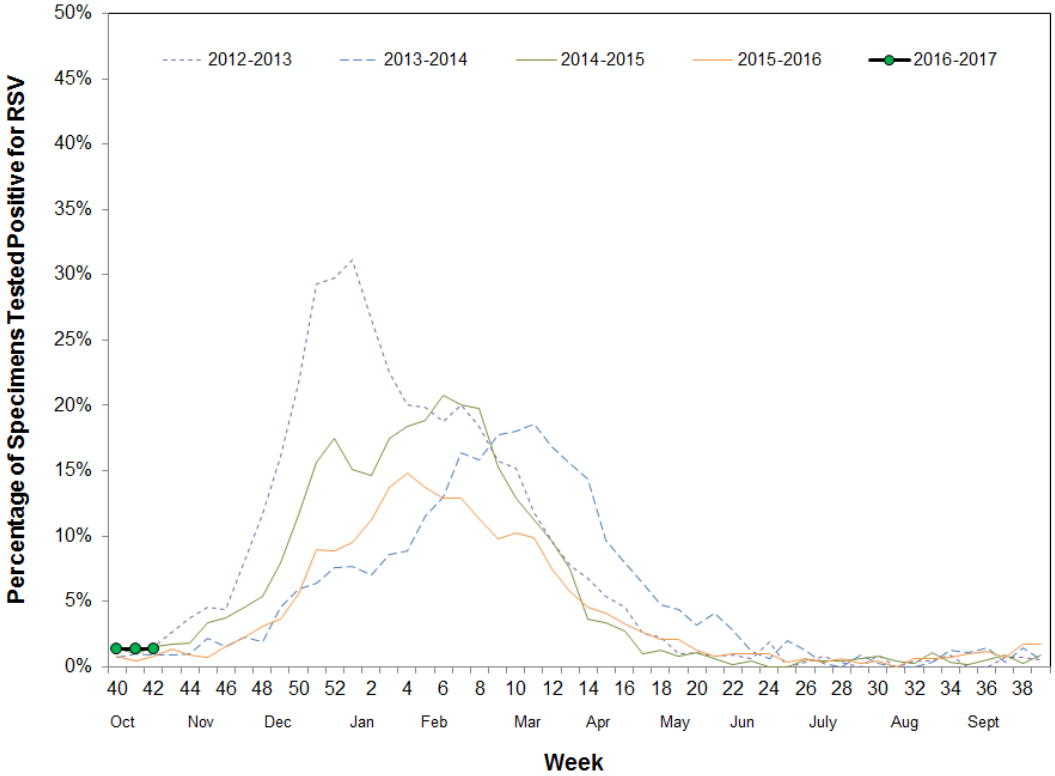


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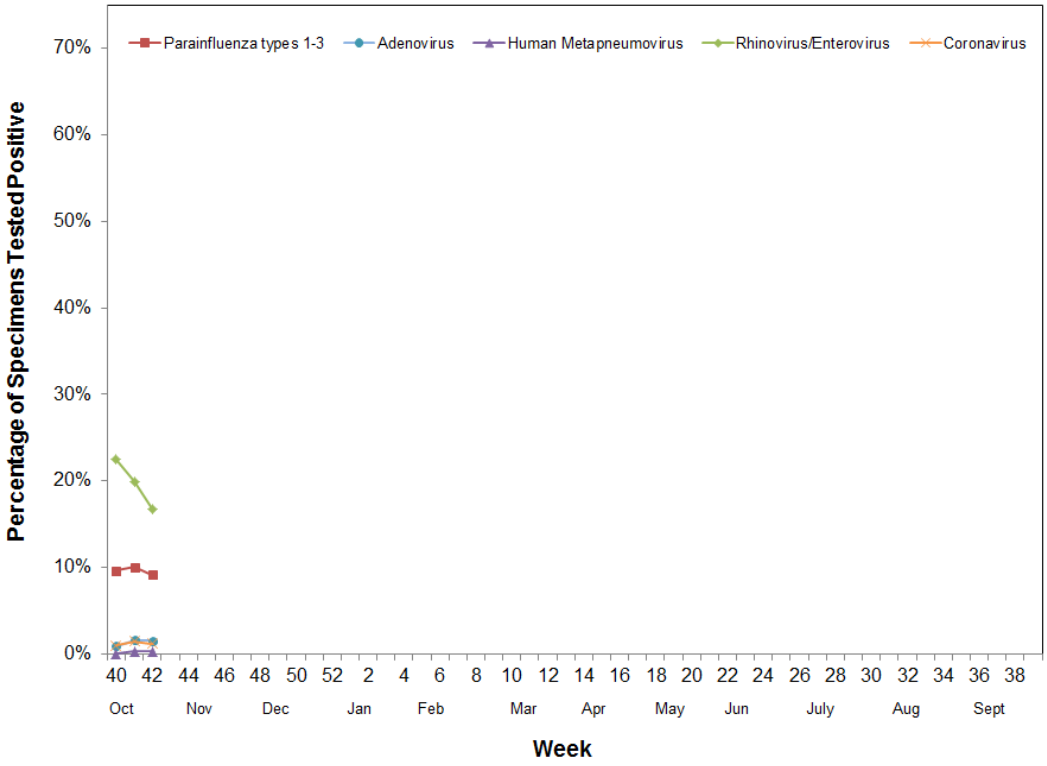
Figure 8. Percentage of Other Respiratory Pathogen Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2016–2017



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.

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.