



California Department of Public Health Influenza Surveillance Program

California Influenza and Other Respiratory Disease Surveillance for Week 9 (March 1, 2015 to March 7, 2015)

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 geographic influenza activity in California was downgraded to “regional*” during Week 9.

Influenza Report Highlights

- Influenza activity in California continues to decrease
- Outpatient influenza-like illness (ILI)
 - 2.4% of patient visits during Week 9 were for ILI, which is lower compared to Week 8 (3.1%); the percentage of outpatient visits for ILI does not exceed the epidemic threshold for this time of year
- Hospitalization data
 - 7.2% of Kaiser patients hospitalized during Week 9 were admitted with a pneumonia and/or influenza (P&I) diagnosis, which is less than Week 8 (7.9%); the percentage of P&I admissions remains above the epidemic threshold for this time of year
- Influenza virus detections by Respiratory Laboratory Network and Sentinel Laboratories
 - 307 (11.1%) of 2761 specimens tested positive for influenza during Week 9, which is similar compared to Week 8 (11.1%)
 - Influenza A (H3) and influenza B viruses continue to be detected more than influenza 2009 A (H1) viruses
 - Nationally, 28% of influenza A (H3) viruses strain characterized match the 2014–2015 influenza vaccine component as of Week 9. The drifted influenza A (H3) virus, A/Switzerland/9715293/2013-Like (H3N2), is circulating in California
- Influenza-associated deaths among patients 0–64 years of age
 - 5 new laboratory-confirmed influenza deaths were reported during Week 9
- Influenza-associated outbreaks
 - 16 laboratory-confirmed influenza outbreaks were reported during Week 9
- For the [Centers for Disease Control and Prevention \(CDC\)](http://www.cdc.gov/flu/weekly/overview.htm) definitions of influenza geographic distribution, please go to <http://www.cdc.gov/flu/weekly/overview.htm>.

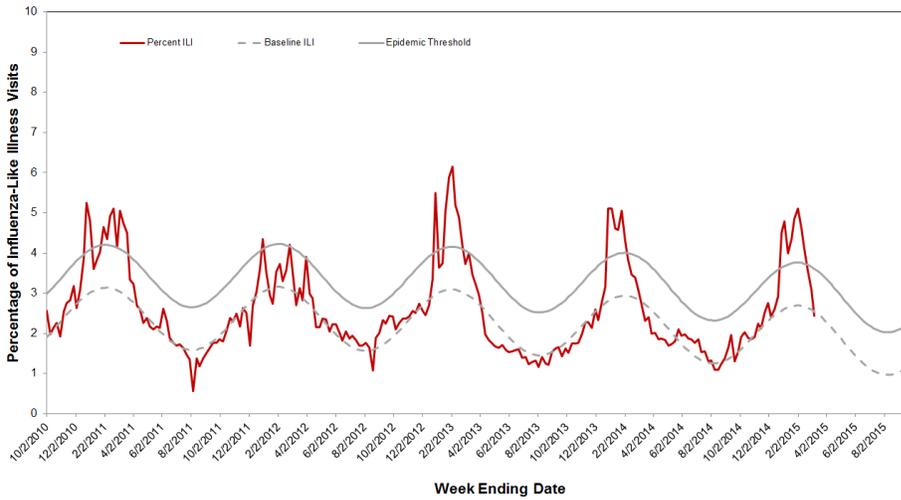
A. Outpatient and Inpatient Data

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 ($\geq 100^{\circ}\text{F}$ or 37.8°C) AND cough and/or sore throat (in the absence of a known cause other than influenza).

A total of 112 enrolled sentinel providers have reported data for Week 9. Based on available data, the percentage of visits for ILI in Week 9 (2.4%) does not exceed the epidemic threshold for this time of year (Figure 1).

Figure 1. Percentage of Influenza-like Illness Visits Among Patients Seen by California Sentinel Providers, 2010–2015



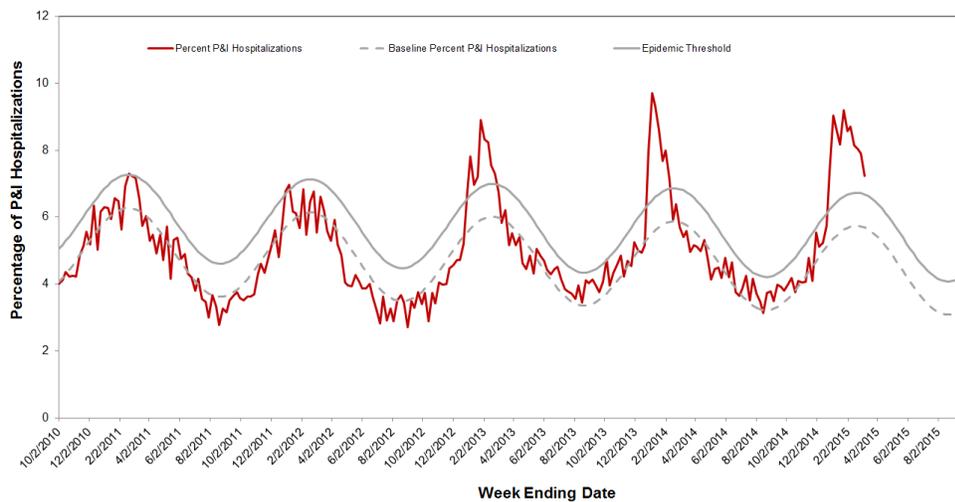
The seasonal baseline was calculated using a regression model applied to data from the previous eight years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of ILI is significantly higher than would be expected at that time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

2. Kaiser Permanente Hospitalization Data

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 and southern California during Week 9 was 7.2% and exceeds the epidemic threshold (6.7%) for this time of the year (Figure 2).

Figure 2. Percentage of P&I Hospitalizations in Kaiser Permanente Northern and Southern California Hospitals, 2010–2015



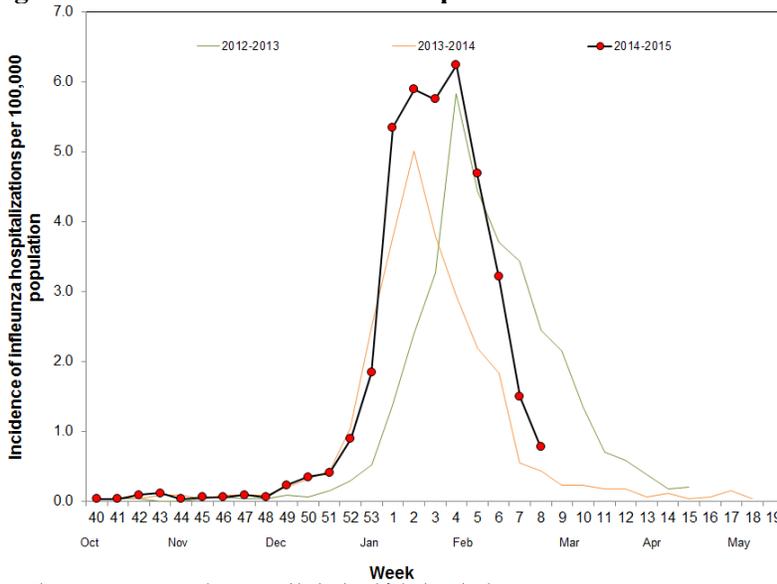
The seasonal baseline was calculated using a regression model applied to data from the previous six years. The epidemic threshold is two standard deviations above the seasonal baseline and is the point at which the observed percentage of pneumonia and influenza hospitalizations in Kaiser Permanente hospitals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

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.

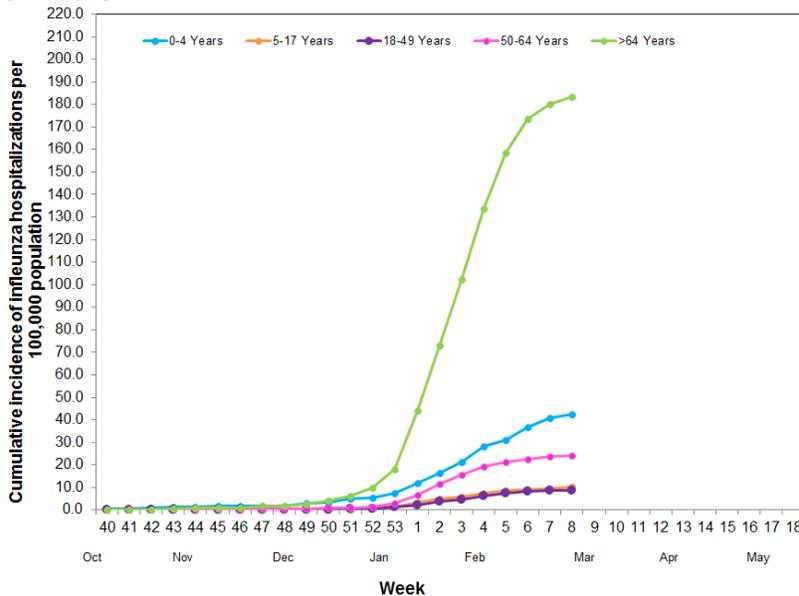
The incidence of influenza-associated hospitalizations per 100,000 population decreased in Week 8 (0.8) compared to Week 7 (1.5) (Figure 3). Data for Week 9 are not presented because results are still being collected and are likely to change. To date this season, the highest rate of hospitalization is among older adults age 64 and over, followed by children age 0-4 years (Figure 4). Adults age 64 and over have accounted for more than 60% of reported hospitalized cases.

Figure 3. Incidence of Influenza Hospitalizations in CEIP Counties, 2012–2015



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

Figure 4. Cumulative Incidence of Influenza Hospitalizations in CEIP Counties by Age Group, 2014-2015



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

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 in Week 9 was 11.1%, which is comparable to Week 8 (11.1%) (Figure 5). Additional details can be found in Figure 6 and Table 1.

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 5. Percentage of Influenza Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2010–2015

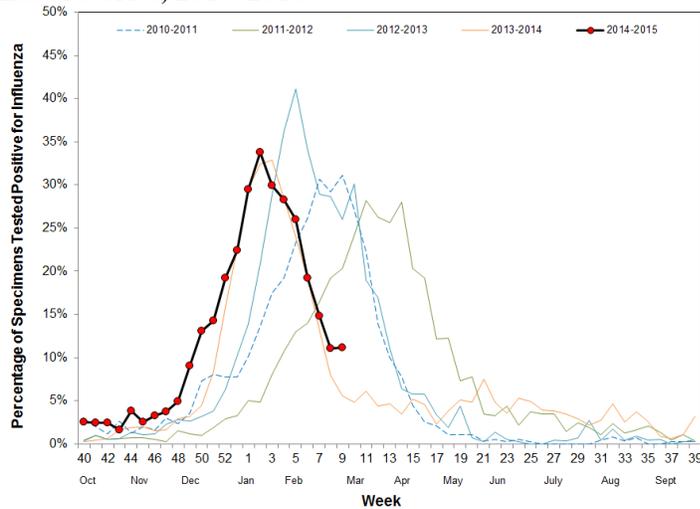


Figure 6. Number of Influenza Detections by Type and Subtype Detected in Respiratory Laboratory Network and Sentinel Laboratories, 2014–2015

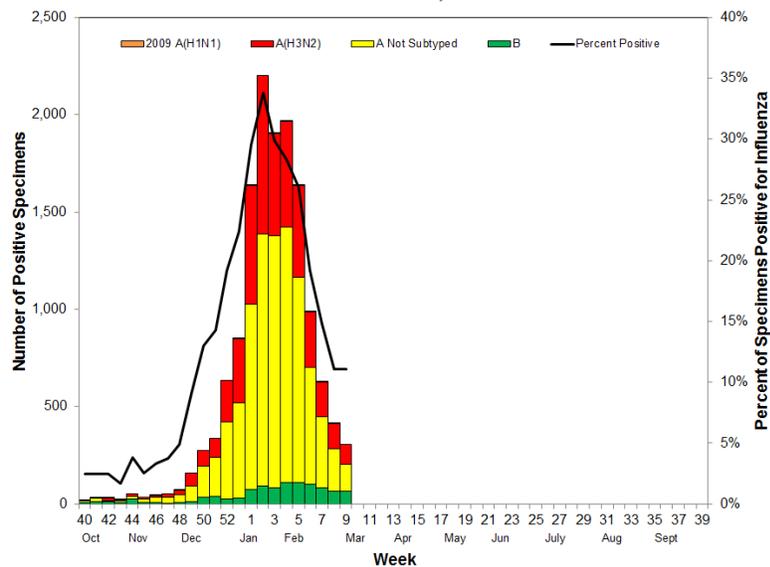


Table 1. Respiratory Specimens Testing Positive for Influenza by Influenza Type and Subtype — Respiratory Laboratory Network and Sentinel Laboratories, Current Week and Season to Date

	Week 9		Season to Date	
	Number	Percent	Number	Percent
Number of Specimens Tested	2761		72,536	
Number of Specimens Positive for Influenza	307	11.1*	14,299	19.7*
Influenza Type/Subtype of Positive Specimens				
A	242	78.8 [†]	13,280	92.9 [†]
2009 A (H1)	0	0.0 [‡]	20	0.1 [‡]
A (H3)	105	43.4 [‡]	4551	34.3 [‡]
A, not subtyped	137	56.6 [‡]	8709	65.6 [‡]
B	65	21.2 [†]	1019	7.1 [†]

* 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, 2014–2015

	Neuraminidase Inhibitors Resistance
Influenza A (H3)	0/73
Influenza B	0/14

3. Influenza Virus Strain Characterization

To date in California, not all influenza A (H3) antigenically characterized viruses have matched the influenza A (H3) component included in the trivalent and quadrivalent influenza vaccines (Table 3). The drifted influenza A (H3) virus, A/Switzerland/9715293/2013-Like (H3N2), is circulating in California.

Table 3. Influenza virus antigenic characterization data — California and the United States, 2014–2015

Influenza Subtype/Lineage	Vaccine Strain	Match Vaccine Strain	
		California	United States
Influenza A (H3)	A/Texas/50/2012-like (H3N2)	7/13	229/814
Influenza B Victoria*	B/Brisbane/60/2008-like	3/3	43/47
Influenza B Yamagata[†]	B/Massachusetts/02/2012-like	7/7	138/145

* The influenza B Victoria lineage virus is included in only the 2014–2015 quadrivalent influenza vaccine

[†] The influenza B Yamagata lineage virus is included in both the 2014–2015 trivalent and quadrivalent influenza vaccines

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.

In Week 9, five laboratory-confirmed influenza deaths were reported to CDPH. The deaths occurred in all regions of the state except the Bay Area. To date, 45 laboratory-confirmed influenza deaths have been reported for the 2014–2015 influenza season.

D. Influenza-Associated Outbreaks

CDPH received reports of 16 laboratory-confirmed influenza outbreaks during Week 9. All outbreaks occurred in congregate settings and occurred in all regions of the state. To date for the 2014-2015 season, there have been 164 laboratory-confirmed influenza outbreaks reported to CDPH. Additional details can be found in Table 4.

Table 4. Characteristics of Influenza-Associated Outbreaks

Influenza Type/Subtype	Week 9 (n=16)		Season to Date (n=182)	
	Number	Percent	Number	Percent
A	15	93.7*	146	80.2*
2009 A (H1)	0	0.0 [†]	0	0.0 [†]
A (H3)	7	46.7 [†]	34	23.3 [†]
A, not subtyped	8	53.3 [†]	112	76.7 [†]
B	0	0.0*	3	1.6*
A and B co-infection	1	6.3*	4	2.2*
Type unknown	0	0.0*	29	15.9*
Location of Outbreak				
Acute care healthcare facility	0	0.0	1	0.5
Correctional facility	0	0.0	3	1.6
Military facility	0	0.0	0	0.0
Residential healthcare facility	9	56.3	110	60.4
Independent living facility	4	25.0	59	32.4
School	3	18.7	9	4.9

* Percent of specimens positive for influenza

[†] Percent of influenza A positives

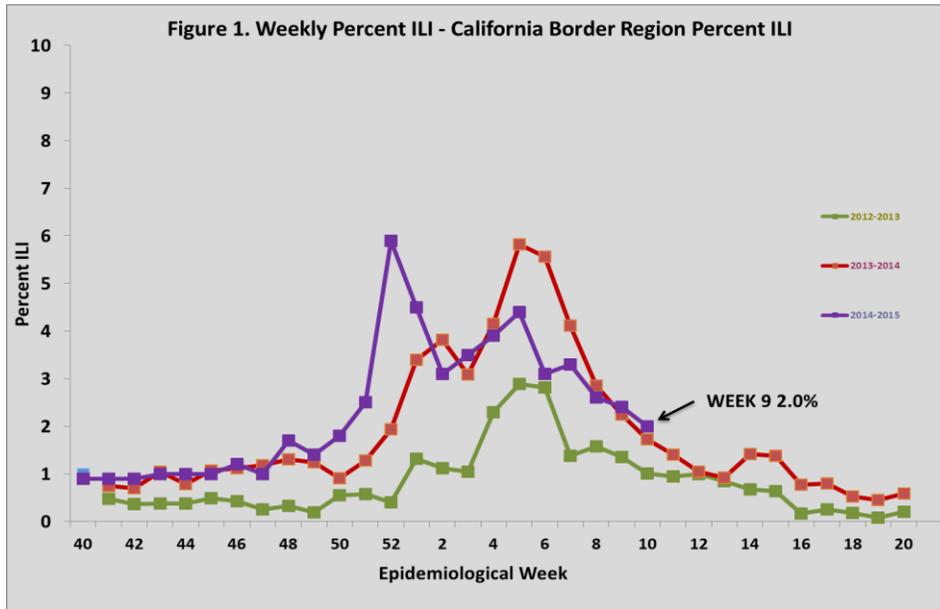
E. California Border Region Influenza Surveillance Network Data

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.

1. Syndromic Surveillance Update

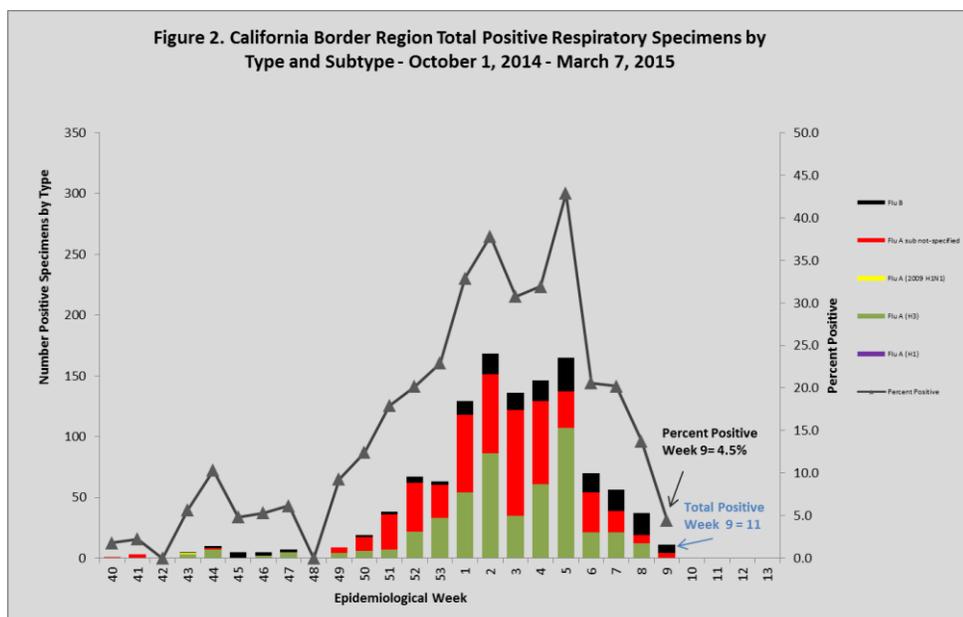
A total of 13 border region sentinel providers reported data during Week 8 and Week 9 of 2015. The total number of patients screened by all sentinel sites for ILI during Week 9 was 5,526. Outpatient ILI activity decreased by 0.2% from Week 8 (2.2% ILI) to Week 9 (2.0% ILI). ILI activity for the California border region during Week 9 was higher when compared to activity for the same weeks during the 2012–2013

and 2013-2014 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 5,167 respiratory specimens have been tested from border region clinics; of these, 1,150 (22.3%) tested positive for influenza. Of the 1,150 specimens that have tested positive, 980 (85.2%) were influenza A and 170 (14.8%) were influenza B. Of the 980 specimens that tested positive for influenza A, 486 (49.6%) were A (H3), 1 (0.1%) was 2009 A (H1), and 493 (50.3%) had no further subtyping performed. For Week 9, a total of 246 respiratory specimens were submitted for testing; 11 (4.5%) were positive for influenza virus. Of the positive specimens, 4 (36.4%) were influenza A and 7 (63.6%) were influenza B. Of the 4 specimens that tested positive for influenza A, none had further subtyping performed. Laboratory data summarized in Figure 2 includes data from influenza sentinel sites as well as laboratory data from other border region laboratories.



F. Laboratory Update – Other Respiratory Viruses

During Week 9, there were 1560 specimens tested for RSV and 266 (17.1%) were positive, which is lower compared to Week 8 (21.4%) (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, 2010–2015

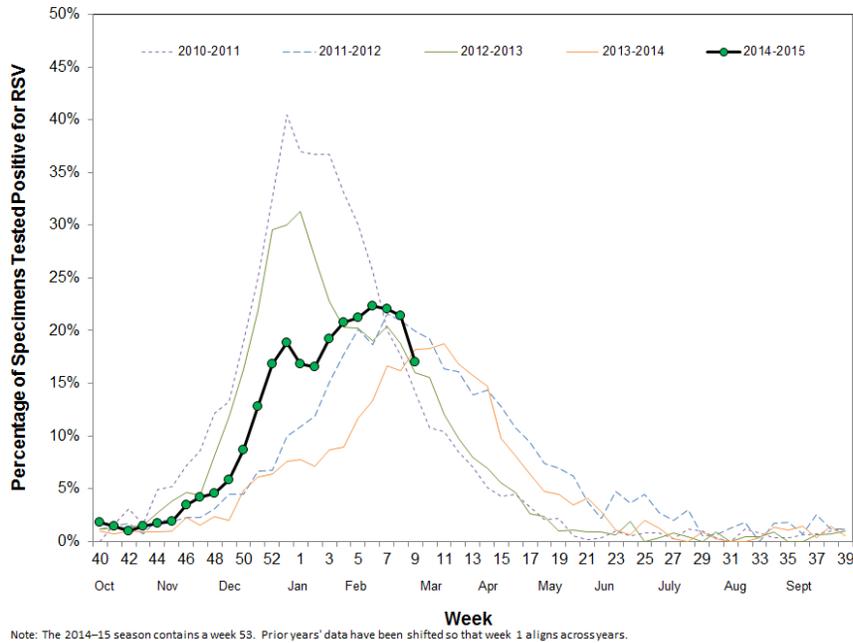
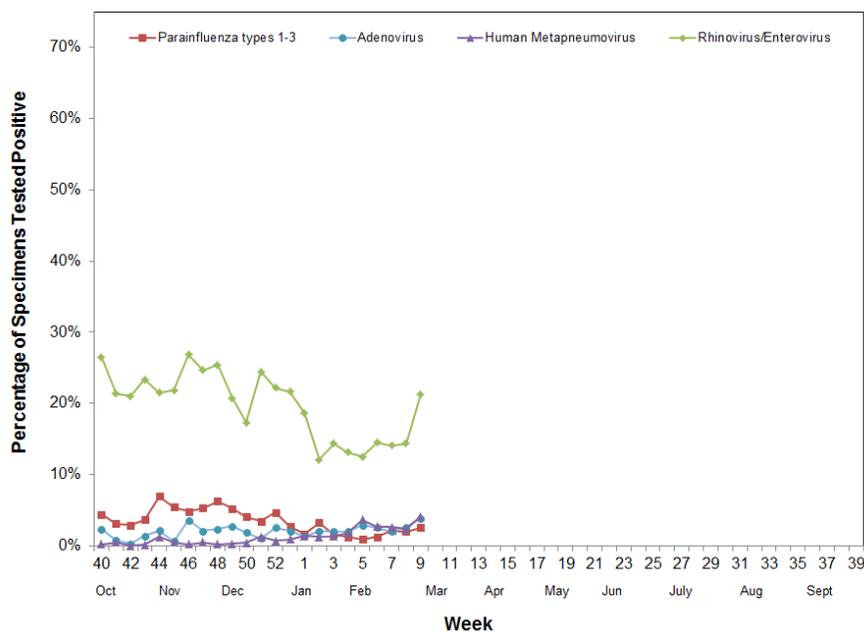


Figure 8. Percentage of Other Respiratory Pathogen Detections in Respiratory Laboratory Network and Sentinel Laboratories, 2014–2015



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](#).

To obtain additional information regarding influenza, please visit the [CDPH influenza website](#).

Download a copy of the case report form for reporting any [laboratory-confirmed influenza case](#) that was either admitted to the ICU or died