

Influenza and Other Respiratory Viruses Weekly Report

California Influenza Surveillance Program



Highlights (Week 46: November 10, 2019 – November 16, 2019)

Statewide Activity



- ▶ **Deaths:** 13* since Sept. 29, 2019
- ▶ **Outbreaks:** 5 since Sept. 29, 2019
- ▶ **Laboratory:** 12.5% flu positive
- ▶ **Outpatient ILI:** Above expected levels
- ▶ **Hospitalizations:** Within expected levels

Regions with Elevated Activity



*Influenza-coded deaths from death certificates
Click on images and links for more information

Key messages:

- Influenza activity is increasing in California.
- Influenza A (H3N2), influenza A (H1N1)pdm09, and influenza B viruses are all circulating in California.
- Now is the time to get vaccinated; everyone over the age of 6 months needs a flu shot.
- Pregnant women, children <5, adults 65+, and people with chronic medical conditions are at high-risk for flu-related complications.

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.

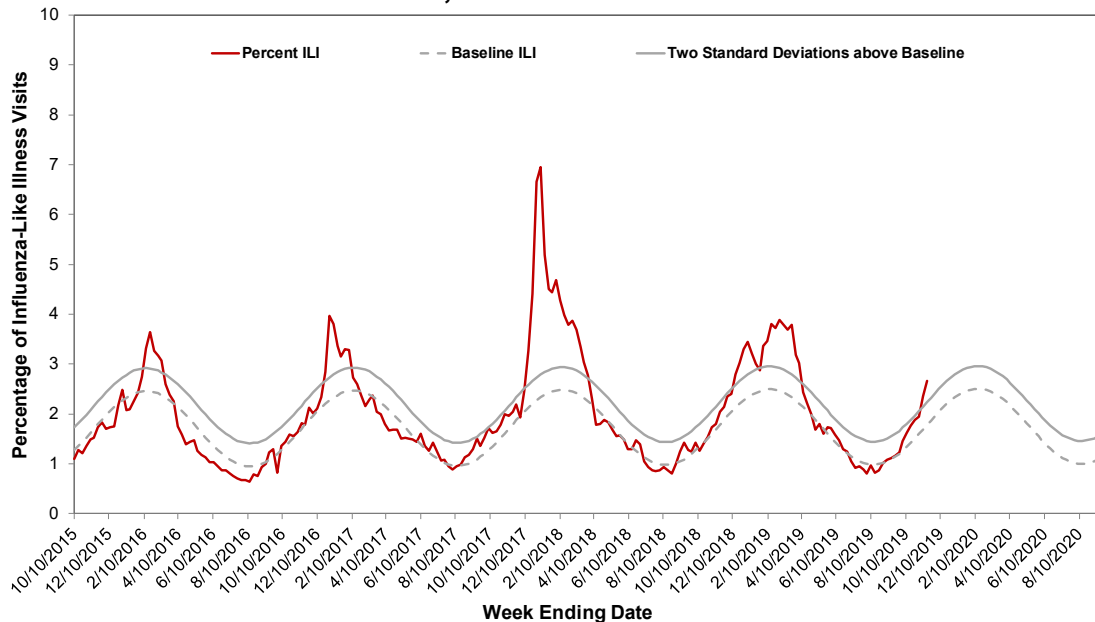
A. Outpatient, Inpatient, and Death Data

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 96 enrolled sentinel providers have reported data for Week 46. Based on available data, the percentage of visits for ILI during Week 46 was 2.7% compared to Week 45 (2.4%) and is above expected levels for this time of year (Figure 1).

Figure 1. Percentage of Influenza-like Illness Visits Among Patients Seen by California Sentinel Providers, 2015–2020



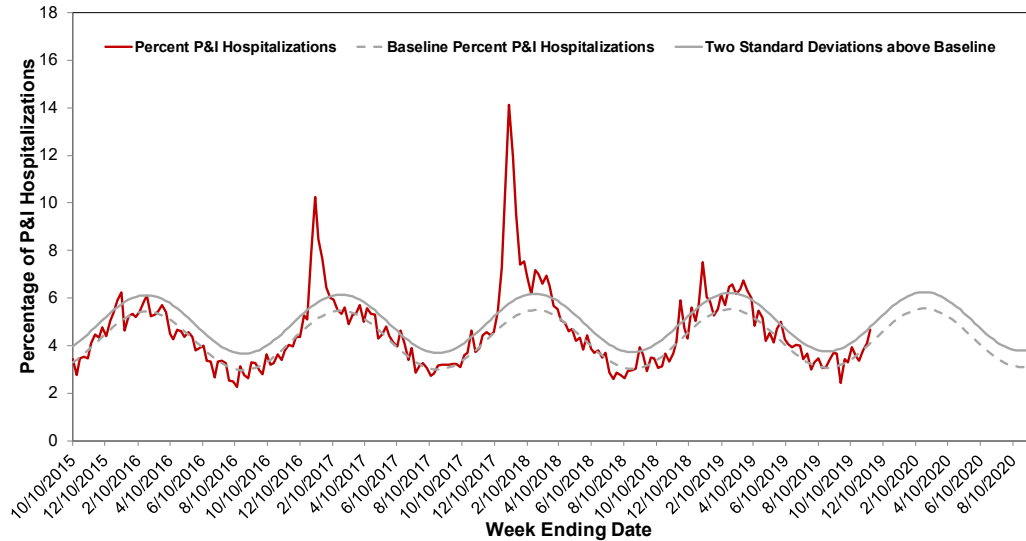
The seasonal baseline was calculated using a regression model applied to data from the previous five years. Two standard deviations above the seasonal baseline is the point at which the observed percentage of ILI is significantly higher than would be expected at that time of year.

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 admissions for pneumonia and influenza (P&I) in Kaiser Permanente facilities in northern California during Week 46 was 4.7% compared to Week 45 (4.1%) and is within expected levels for this time of the year (Figure 2).

Figure 2. Percentage of P&I Admissions in Kaiser Permanente Northern California Hospitals, 2015–2020

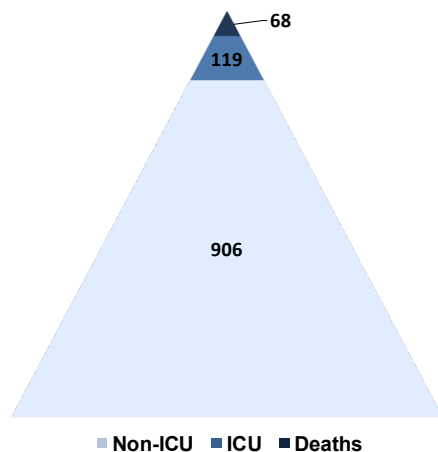


The seasonal baseline was calculated using a regression model applied to data from the previous five years. Two standard deviations above the seasonal baseline and is the point at which the observed percentage of pneumonia and influenza hospitalizations in Kaiser Permanente hospitals in Northern California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

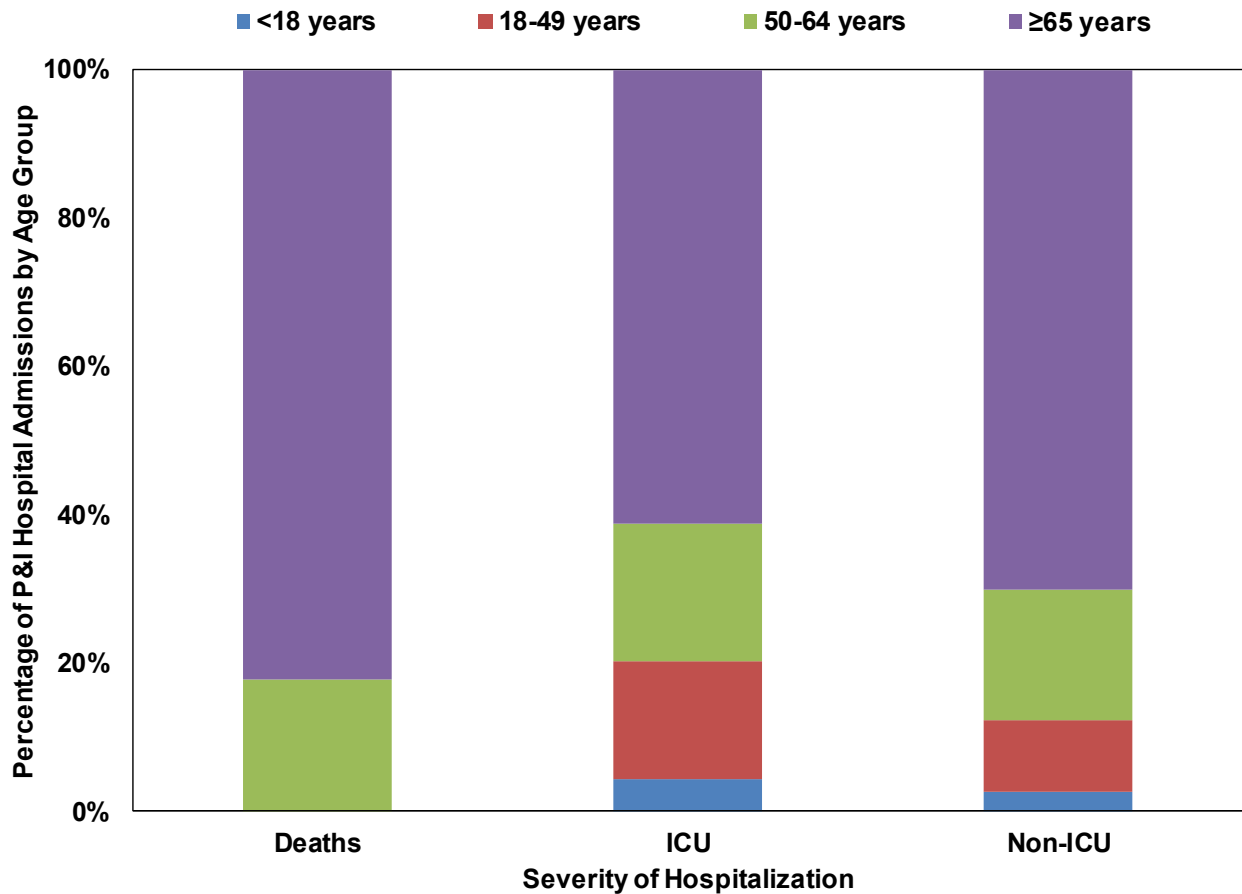
The majority of admissions for pneumonia and influenza did not result in intensive care unit (ICU) admission or death; however, 119 ICU admissions and 68 deaths have occurred among persons with P&I admission diagnoses (Figure 3a). The majority of P&I admissions occurred among persons ≥ 65 years of age across all severity categories, especially among deaths (Figure 3b). Please note that pneumonia and influenza admissions serve as a proxy for influenza activity, but do not necessarily represent influenza infections.

Figure 3. Number (a) and age group distribution (b) of non-ICU, ICU, and deaths associated with P&I Admissions in Kaiser Permanente Northern California hospitals, 2019–2020 season to date

(a)



(b)

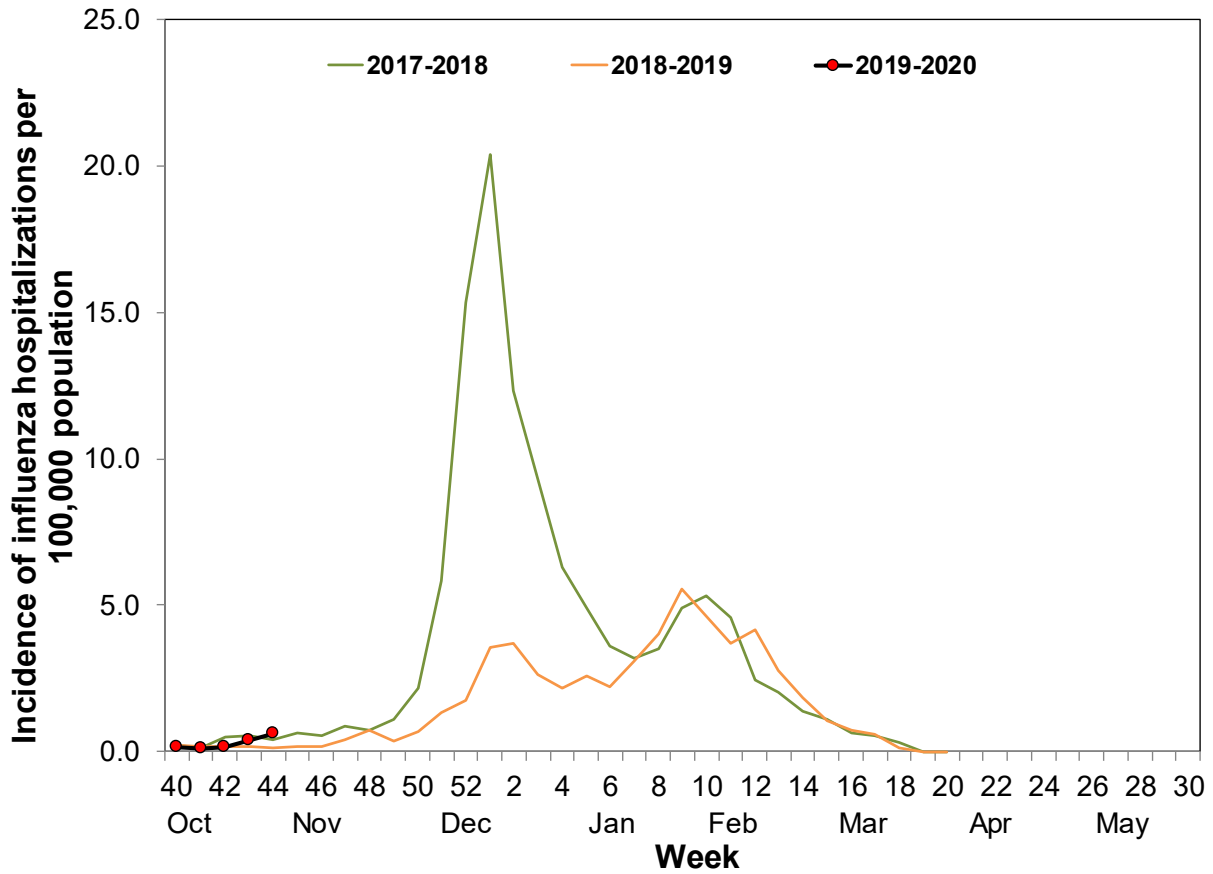


3. Influenza-Associated Hospitalizations, California Emerging Infections Program

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 was higher in week 44 (0.60) compared to Week 43 (0.38) (Figure 4). Data for the most recent two weeks are not presented because results are still being collected and are likely to change.

Figure 4. Incidence of Influenza Hospitalizations in CEIP Counties, 2017–2020

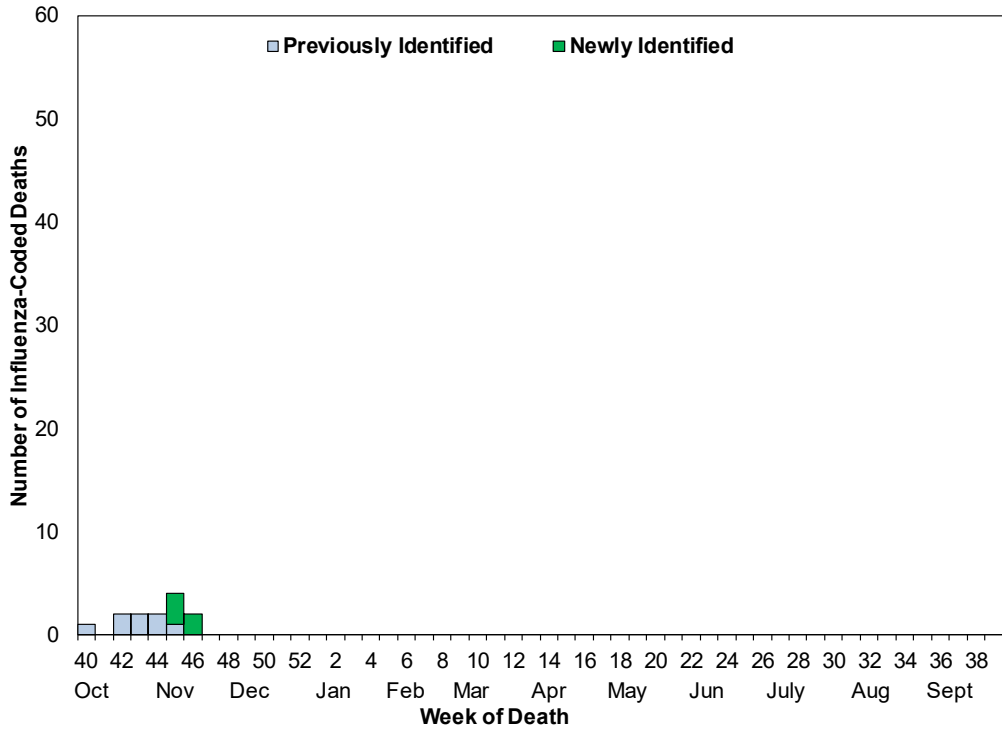


4. Influenza Mortality Surveillance from Death Certificates

Deaths occurring in California among residents who had influenza noted in any cause of death field on the death certificate (text or coded) are defined as influenza-coded deaths. The percentage of influenza-coded deaths is calculated by dividing the number of influenza-coded deaths by the total number of all cause deaths during the same period. Influenza-coded deaths are not necessarily laboratory-confirmed and are an underestimate of all influenza-associated deaths.

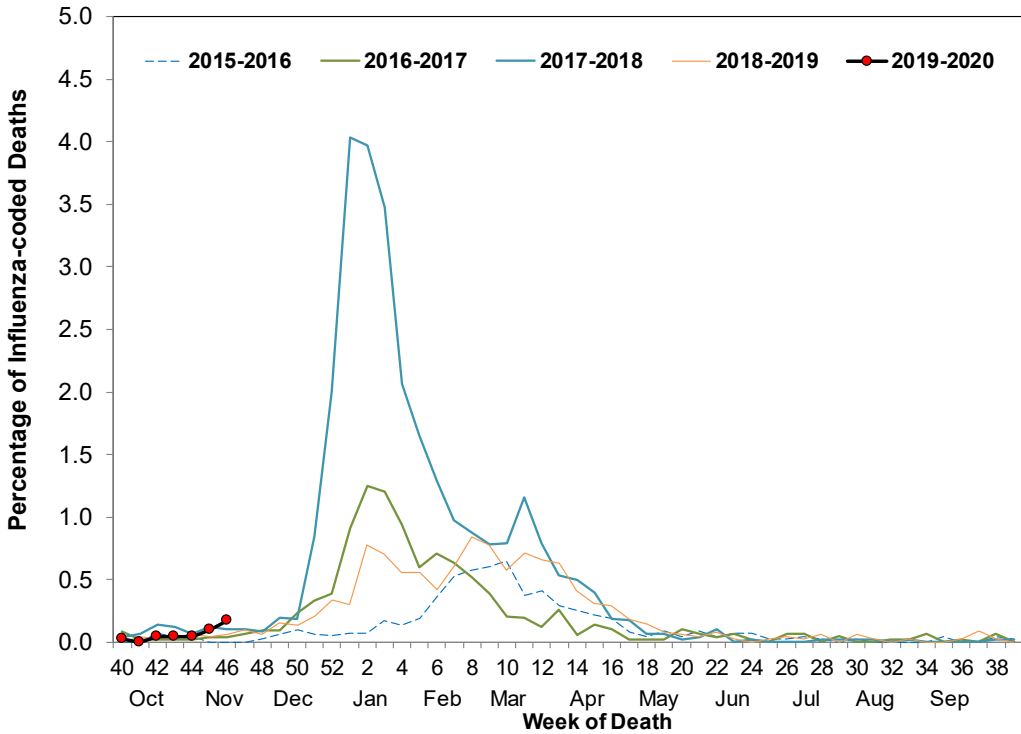
During Week 46, five new influenza-coded deaths were identified. To date during the 2019–2020 influenza season, 13 influenza-coded deaths have been identified (Figure 5). The percentage of deaths coded as influenza during Week 46 was 0.2% compared to 0.1% during Week 45 (Figure 6).

Figure 5. Number of Influenza-coded Deaths Identified from Death Certificates by Week of Death, 2019–2020 Season



Note: Coding of deaths can be delayed by several weeks. Influenza-coded deaths will be included once enough information is available to identify them.

Figure 6. Percentage of Influenza-coded Deaths Occurring in California among California Residents, 2015–2020



5. Laboratory-Confirmed Severe Influenza-associated Pediatric Deaths

Influenza-associated deaths in children <18 years of age are nationally notifiable. The weekly influenza report includes confirmed deaths formally reported to CDPH through November 16, 2019 (Week 46).

No laboratory-confirmed influenza-associated fatalities in children <18 years of age were reported to CDPH during Week 46. To date, CDPH has received no reports of laboratory-confirmed influenza-associated deaths among persons <18 years of age during the 2019–2020 influenza season.

B. Laboratory Update – Influenza

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

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

The overall percentage of influenza detections in clinical sentinel laboratories in Week 46 (12.5%) was higher than Week 45 (9.4%) (Figure 7). Additional details, including influenza typing and subtyping information from public health laboratories can be found in Figures 7 and 8 and Tables 1 and 2.

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

Figure 7. Percentage of Influenza Detections at Clinical Sentinel Laboratories, 2015–2020

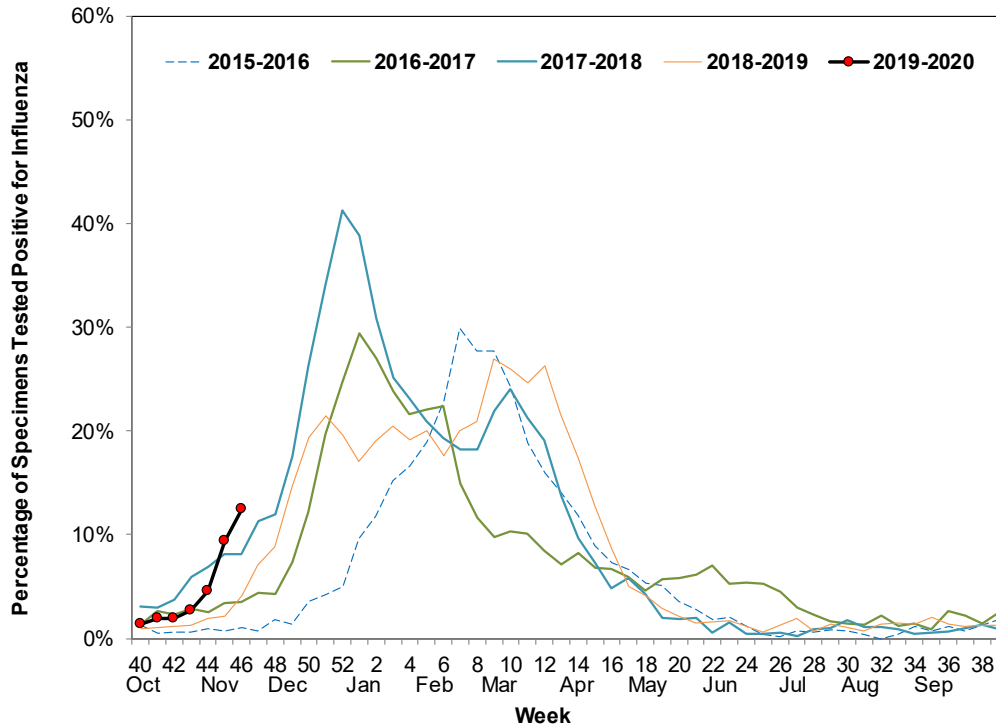


Figure 8. Number of Influenza Detections by Type and Subtype Detected in the Respiratory Laboratory Network, 2019–2020

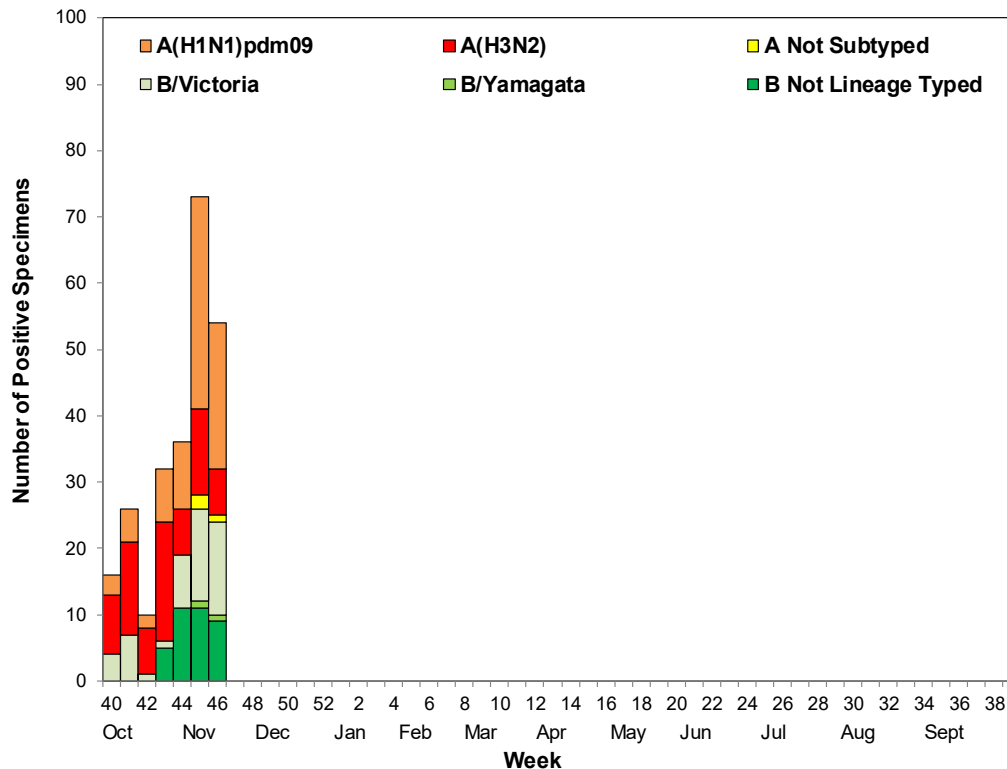


Table 1. Respiratory Specimens Testing Positive for Influenza — Clinical Sentinel Laboratories, Current Week and Season to Date

	Current Week Number	Current Week Percent	Season to Date Number	Season to Date Percent
Number of Specimens Tested	3,099		17,055	
Influenza Positive	386	12.5	933	5.5
A	131	33.9*	407	43.6*
B	255	66.1*	526	56.4*

* Percent of specimens positive for influenza

Table 2. Respiratory Specimens Testing Positive for Influenza by Influenza Type and Subtype — Respiratory Laboratory Network, Current Week and Season to Date

	Current Week Number	Current Week Percent	Season to Date Number	Season to Date Percent
Influenza Positive	54		247	
A	30	55.6*	160	64.8*
A (H1)pdm09	22	73.3 [†]	82	51.3 [†]
A (H3)	7	23.3 [†]	75	46.9 [†]
A, not subtyped	1	3.3 [†]	3	1.9 [†]
B	24	44.4*	87	35.2*
B Victoria	14	58.3 [‡]	49	56.3 [‡]
B Yamagata	1	4.2 [‡]	2	2.3 [‡]
B, not lineage typed	9	37.5 [‡]	36	41.4 [‡]

* Percent of specimens positive for influenza

[†] Percent of influenza A positives

[‡] Percent of influenza B positives

D. Influenza-Associated Outbreaks

Two laboratory-confirmed influenza outbreaks were reported to CDPH during Week 46. To date, five laboratory-confirmed influenza outbreaks have been reported to CDPH for the 2019–2020 season.

Figure 9. Number of Laboratory-Confirmed Influenza-Associated Outbreaks by Week of First Onset, 2018–2020

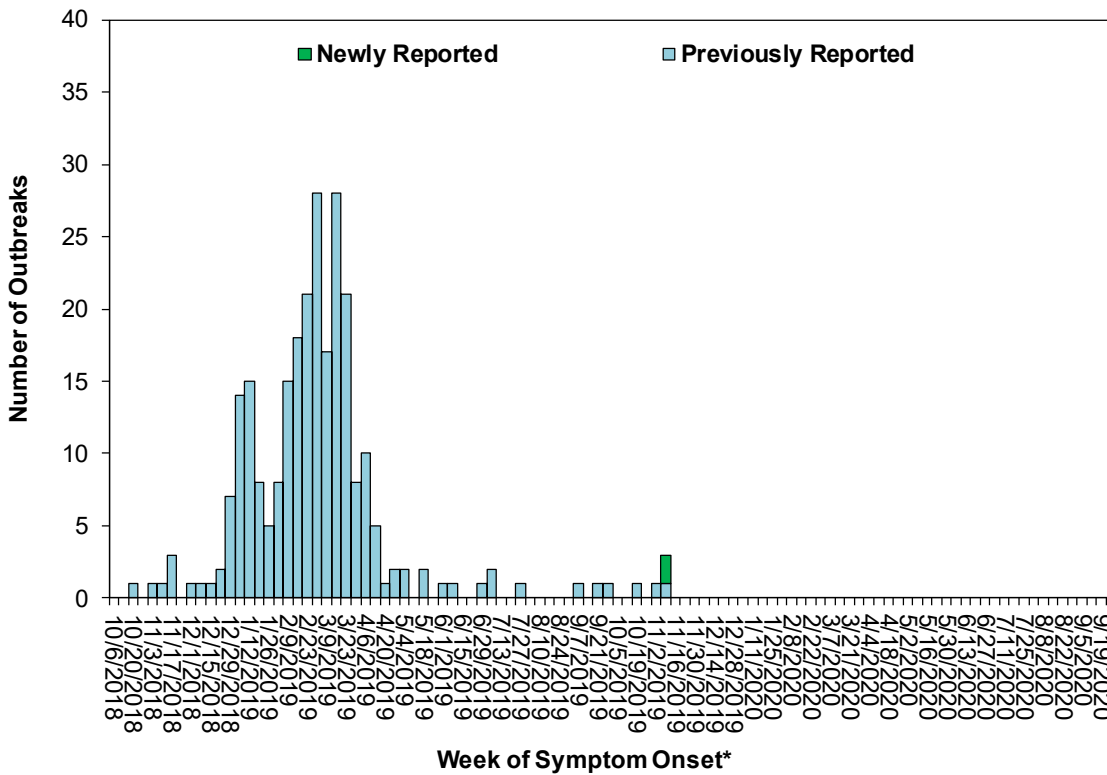
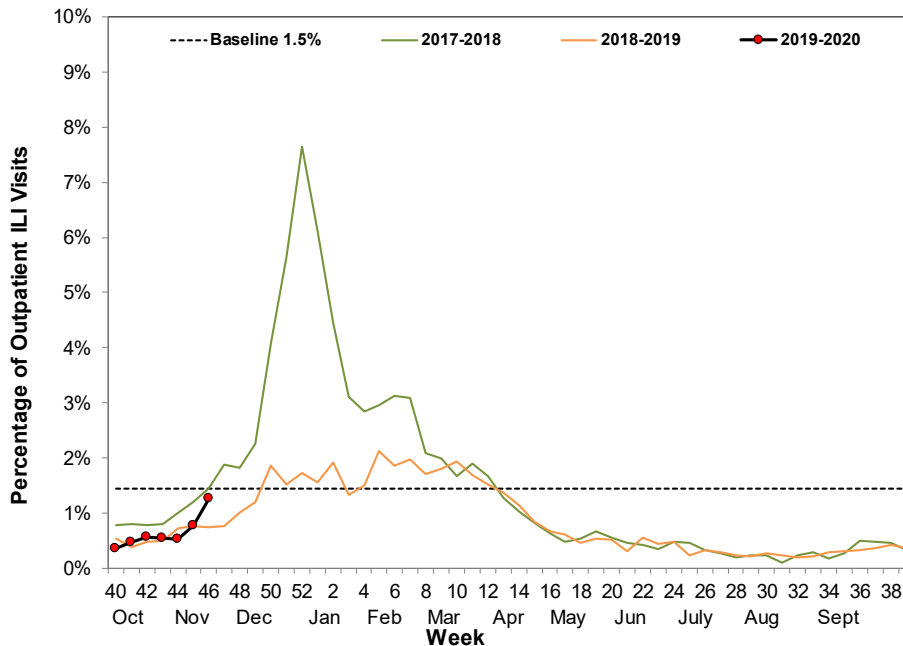


Figure 10. Percentage of Influenza-like Illness Visits among Patients Seen by Sentinel Providers – California Border Region, 2017–2020



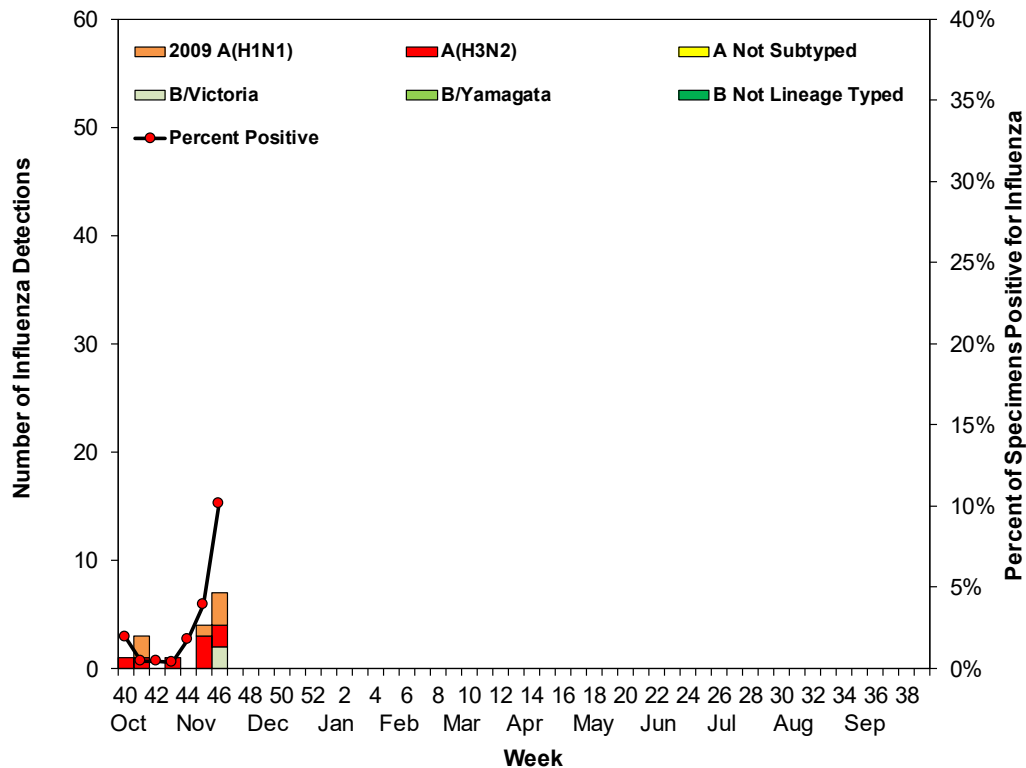
2. Virologic Surveillance Update

During Week 46, 462 respiratory specimens were tested from border region sentinel clinical laboratories; of these, 47 (10.2%) tested positive for influenza (seven [14.9%] influenza A and 40 [85.1%] influenza B). Cumulatively this season, a total of 1,991 respiratory specimens were tested from border region sentinel clinical laboratories; of these, 71 (3.6%) tested positive for influenza (17 [23.9%] influenza A; 54 [76.1%] influenza B).

During Week 46, seven influenza positive specimens were detected at border region RLN laboratories; of which, five (71.4%) were influenza A and two (28.6%) were influenza B. Of the specimens that tested positive for influenza A at RLN laboratories, three (60.0%) were subtyped as A (H1)pdm09 and two (40.0%) were subtyped as A (H3). Of the specimens that tested positive for influenza B at RLN laboratories, two (100.0%) were lineage typed as B (Victoria). Cumulatively this season, a total of 16 influenza positive specimens have been detected at border region RLN laboratories; of which, 14 (87.5%) were influenza A and two (12.5%) were influenza B. Of the 14 specimens that tested positive for influenza A at RLN laboratories, six (42.9%) were subtyped as A (H1)pdm09 and eight (57.1%) were subtyped as A (H3). Of the two specimens that tested positive for influenza B, two (100.0%) were lineage typed as B (Victoria).

Laboratory data summarized in Figure 11 include data from border region influenza clinical sentinel laboratories (percentage of specimens testing positive for influenza) as well as data from border region RLN laboratories (influenza type and subtype/lineage type).

Figure 11. Number of Influenza Detections by Type and Subtype Detected in Respiratory Laboratory Network Laboratories and the Percentage of Specimens Testing Positive at Clinical Sentinel Laboratories — California Border Region, 2019–2020



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 through November 16, 2019 (Week 46).

No laboratory-confirmed RSV-associated deaths among children <5 years of age were reported to CDPH during Week 45. To date, CDPH has received no reports of laboratory-confirmed RSV-associated deaths among children <5 years of age during the 2019–2020 influenza season.

2. Other Respiratory Virus Laboratory Update

During Week 46, 2,817 specimens were tested for RSV and 79 (2.8%) were positive, which is higher compared to Week 45 (2.2%) (Figure 12). During Week 46, rhinovirus/enterovirus and parainfluenza virus activity decreased; and adenovirus, coronavirus, and human metapneumovirus remained the same (Figure 13).

Figure 12. Percentage of RSV Detections at Clinical Sentinel Laboratories, 2015–2020

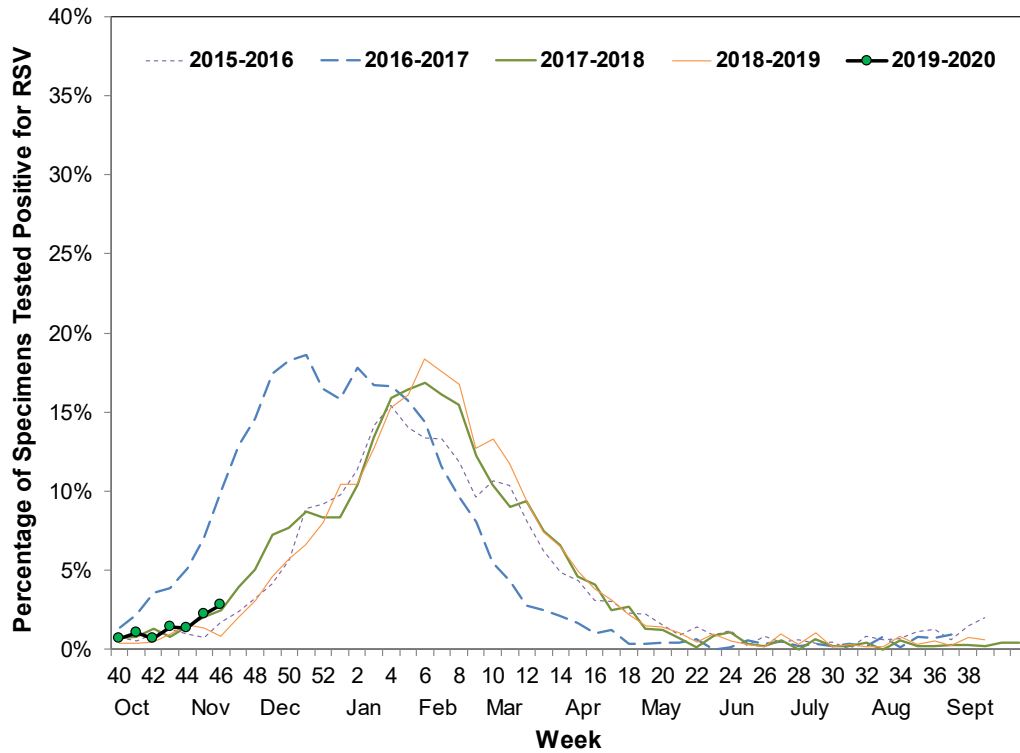
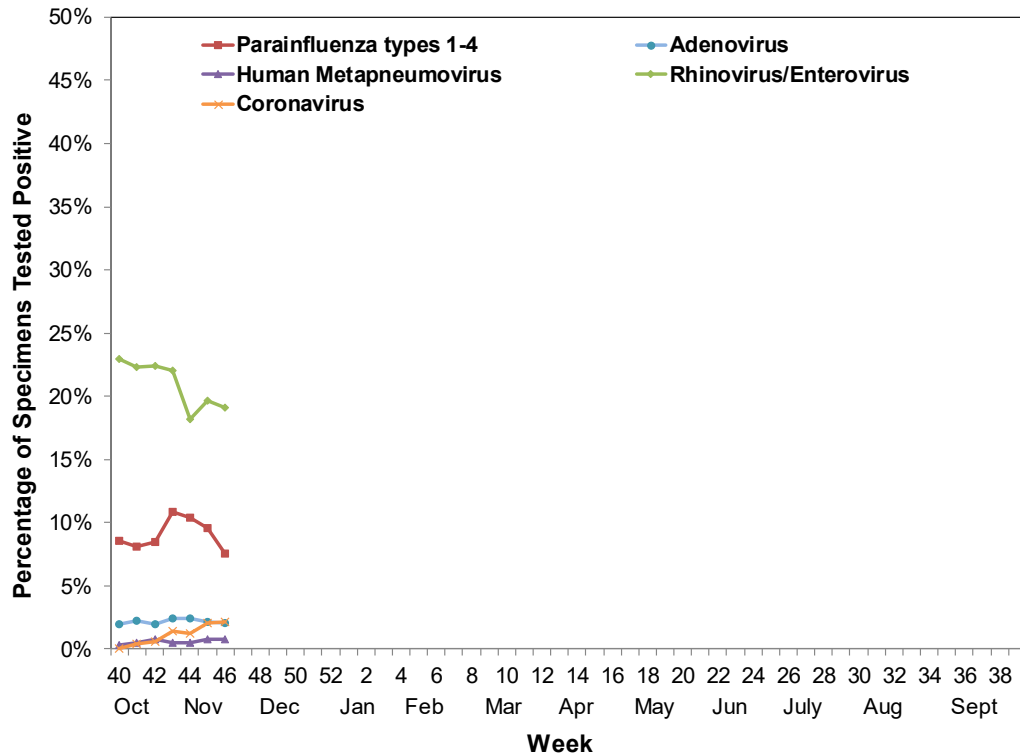


Figure 13. Percentage of Other Respiratory Pathogen Detections at Clinical Sentinel Laboratories, 2019–2020



Activity Levels:

No Activity: No laboratory-confirmed cases of influenza and no reported increase in the number of cases of ILI.

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.

Local: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.

Regional: Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

Widespread: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

California Regions:

Northern: Alpine, Amador, Butte, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, Yolo, and Yuba counties

Bay Area: Alameda, Contra Costa, Marin, Napa, Solano, San Francisco, San Mateo, Santa Clara, Santa Cruz, and Sonoma counties

Central Valley: Calaveras, Fresno, Inyo, Kings, Mono, Madera, Mariposa, Merced, Monterey, San Benito, San Joaquin, Stanislaus, Tulare, and Tuolumne counties

Upper Southern: Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura counties

Lower Southern: Imperial, Orange, Riverside, San Bernardino, and San Diego counties

For questions regarding influenza surveillance and reporting in California, please email InfluenzaSurveillance@cdph.ca.gov. This account is monitored daily by several epidemiologists.

To obtain additional information regarding influenza, please visit the [CDPH influenza website](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.aspx) (<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.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 the [CDPH influenza website](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.aspx) (<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.aspx>).

For information about national influenza activity, please visit the Centers for Disease Control and Prevention's [FluView](https://www.cdc.gov/flu/weekly/index.htm) (<https://www.cdc.gov/flu/weekly/index.htm>) and [FluView Interactive](https://www.cdc.gov/flu/weekly/fluviewinteractive.htm) (<https://www.cdc.gov/flu/weekly/fluviewinteractive.htm>) websites.

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