



Influenza (Flu) and Other Respiratory Viruses

Week 44: October 30, 2022 – November 5, 2022

Highlights



▲ 14.1%
Laboratory
flu positivity



▲ 4.5%
Outpatient
ILI activity



▲ 0.4%
Hospital
flu admissions

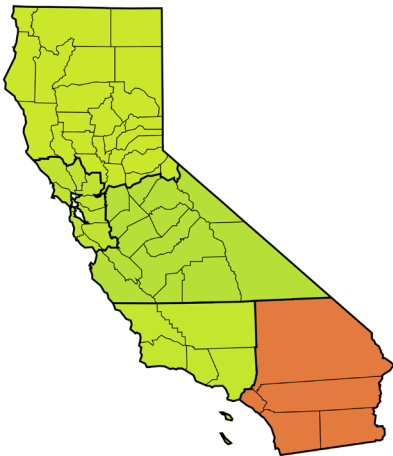
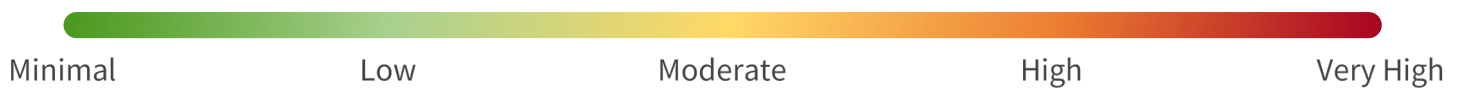


13
Deaths
since 10/2/2022



2
Outbreaks
since 10/2/2022

Influenza Activity Levels⁺



Geographic Area	Activity Level
California Statewide	Moderate
Northern Region	Low
Bay Area Region	Low
Central Region	Low
Upper Southern Region	Low
Lower Southern Region	High

Key Messages

- » Overall influenza activity in California is increasing; activity in the Lower Southern region is higher than elsewhere in the state.
- » Now is a good time to get your flu shot to protect yourself against flu, its potentially serious complications, and reduce strain on our healthcare system.
- » Respiratory syncytial virus (RSV) activity is higher than usual for this time of year.
- » Prophylactic palivizumab can prevent serious RSV illness in [high risk-infants](#).

In This Report

Influenza Laboratory Surveillance	3
Influenza Detections from the Respiratory Laboratory Network and Clinical Sentinel Laboratories	3
Influenza Outpatient, Inpatient, and Death Surveillance	5
Sentinel Provider Outpatient Visits for Influenza-like Illness	5
Influenza Admissions at Kaiser Permanente Northern California Facilities	6
Influenza-associated Hospitalizations in California Emerging Infections Program Counties	8
Influenza Mortality Surveillance from Death Certificates	8
Laboratory-confirmed Influenza-associated Pediatric Deaths	10
Influenza-associated Outbreaks	11
California Border Region Influenza Surveillance Network	12
Syndromic Surveillance Update	12
Virologic Surveillance Update	13
Respiratory Syncytial Virus Surveillance	14
RSV Detections from Clinical Sentinel Laboratories	14
RSV Admissions at Kaiser Permanente Northern California Facilities	14
RSV Mortality Surveillance from Death Certificates	16
Laboratory-confirmed Respiratory Syncytial Virus-associated Deaths	18
Other Respiratory Viruses Surveillance	18
About This Report	19
More Information	19
Highlights Indicators	19
Influenza Activity Levels	19
California Regions	19

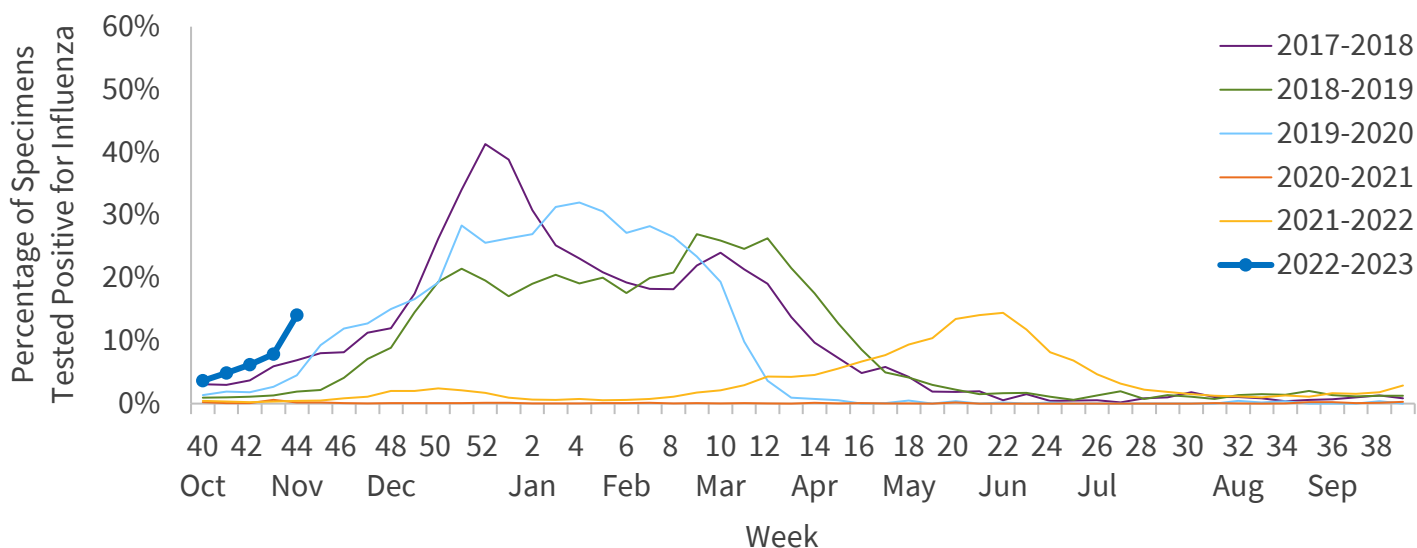
Influenza Laboratory Surveillance

Influenza Detections from the Respiratory Laboratory Network and Clinical Sentinel Laboratories

Laboratory surveillance for influenza and other respiratory viruses involves the use of data from clinical sentinel laboratories and public health laboratories in the Respiratory Laboratory Network (RLN) 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 during Week 44 (14.1%) was higher compared to Week 43 (7.9%) (Figure 1). Additional details, including influenza typing and subtyping information from public health laboratories can be found in Figures 1 and 2 and Tables 1 and 2.

Figure 1. Percentage of Influenza Detections at Clinical Sentinel Laboratories, 2017–2023 Season to Date



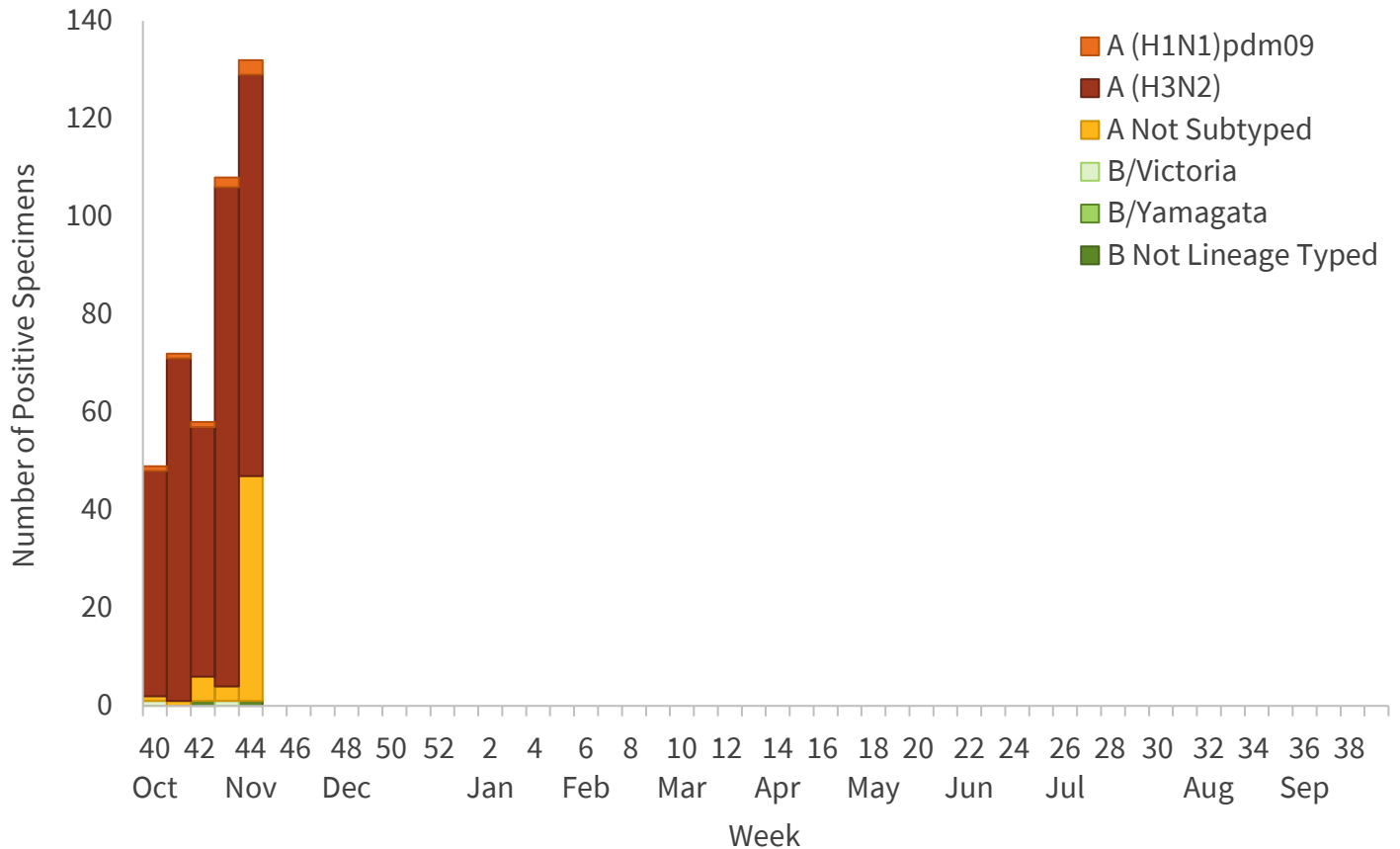
Note: Data have been shifted so that Week 1 aligns across seasons.

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	17,642		66,898	
Influenza Positive	2,490	14.1	5,420	8.1
A	2,481	99.6*	5,383	99.3*
B	9	0.4*	37	0.7*

* Percentage of specimens positive for influenza

Figure 2. Number of Influenza Detections by Type and Subtype Detected in the Respiratory Laboratory Network, 2022–2023 Season to Date



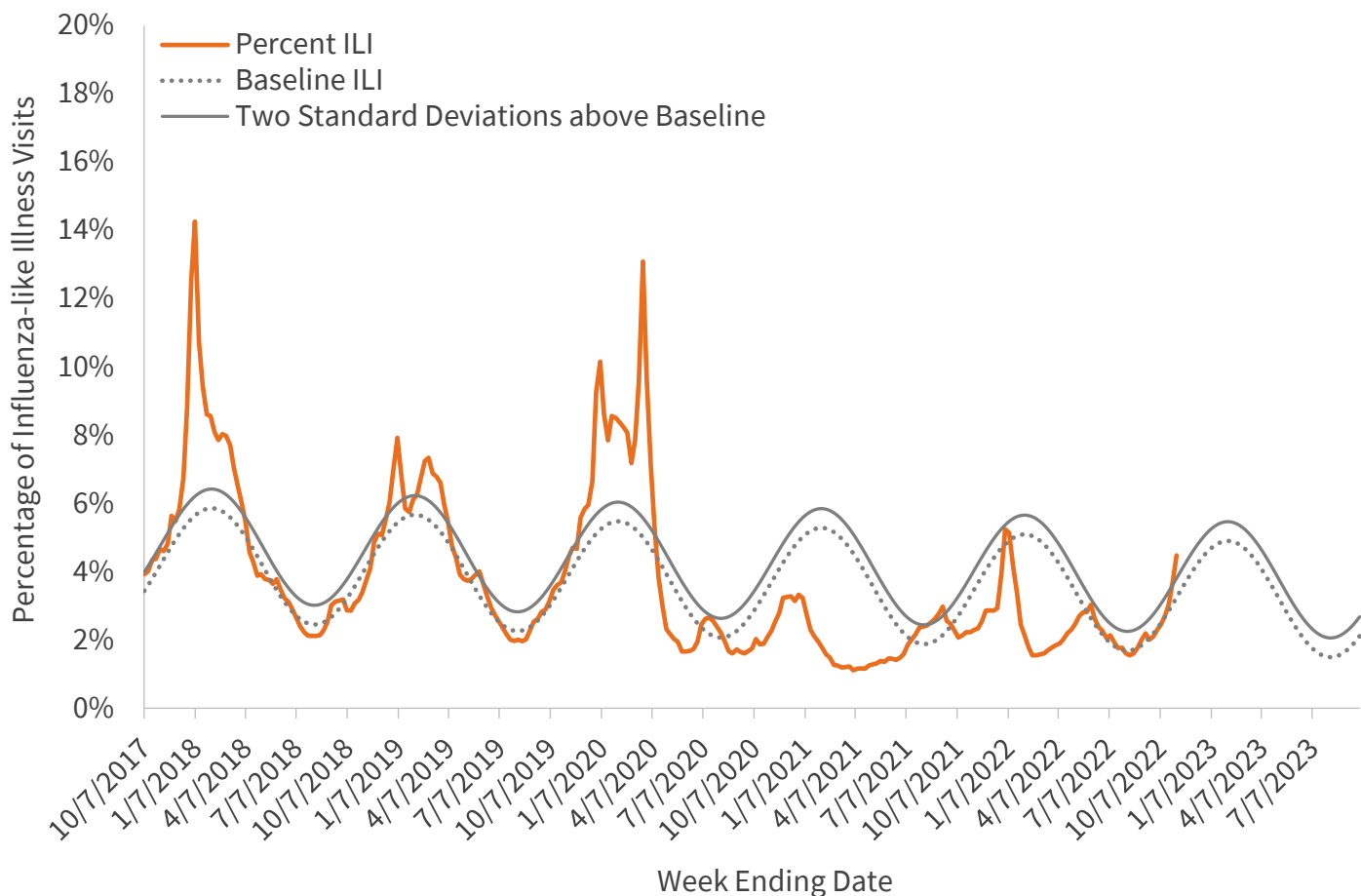
Influenza Outpatient, Inpatient, and Death Surveillance

Sentinel Provider Outpatient Visits for Influenza-like Illness

[Sentinel providers](#) (physicians, nurse practitioners, physician assistants) 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.

A total of 196 enrolled sentinel providers have reported data for Week 44. The percentage of visits for ILI during Week 44 was 4.5% compared to 3.7% during Week 43 and was above expected levels for this time of year ([Figure 3](#)). Increases in ILI-related outpatient visits might also include people seeking care for other respiratory illnesses, including COVID-19.

Figure 3. Percentage of Influenza-like Illness Visits Among Patients Seen by California Sentinel Providers, 2017–2023 Season to Date



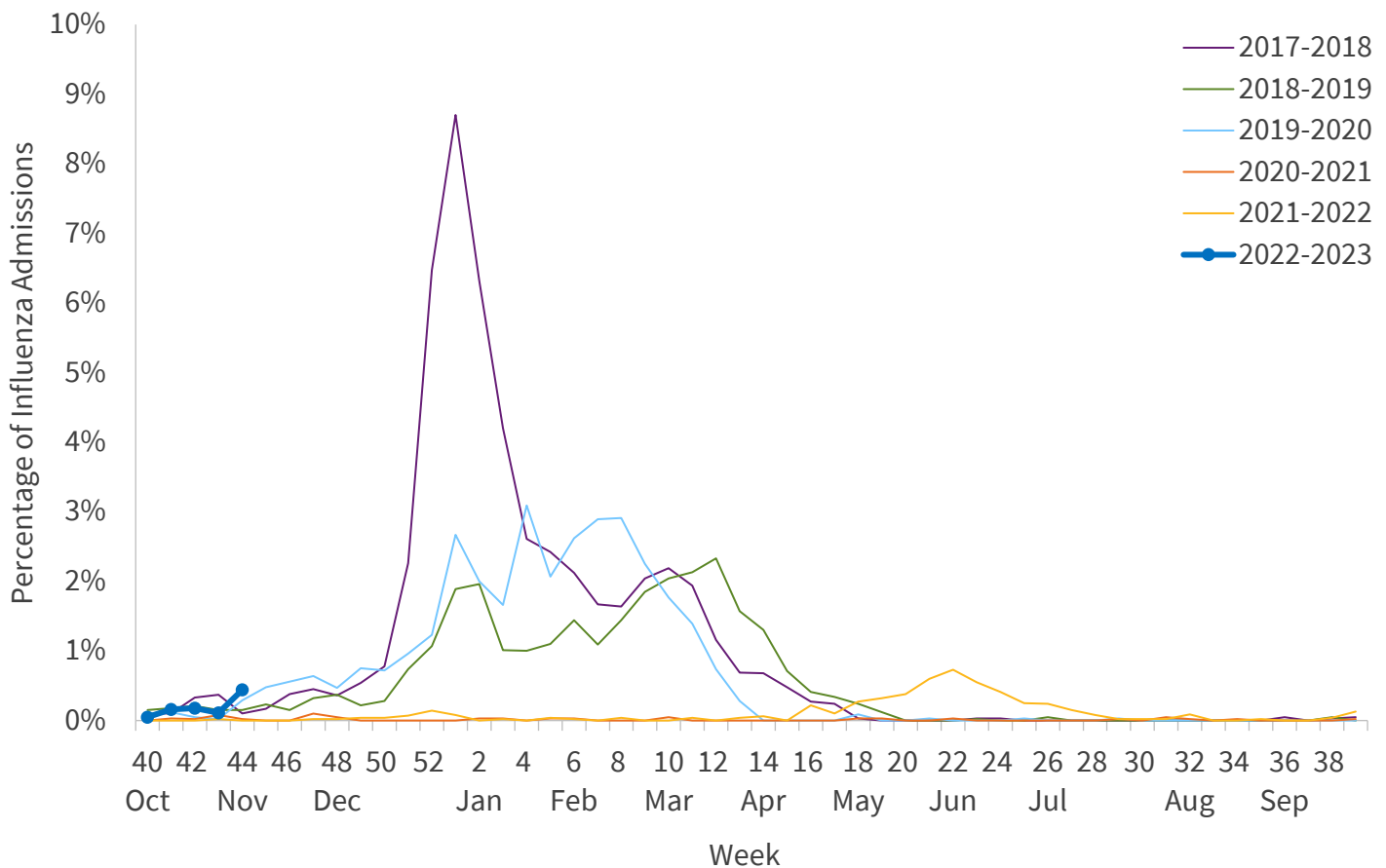
The seasonal baseline was calculated using a regression model applied to data from the five previous seasons, excluding the COVID-19 pandemic. Two standard deviations above the seasonal baseline is the point at which the observed percentage of ILI is significantly higher than would be expected at that time of year. Historic data for large sentinel providers enrolled during the season are included to account for impacts on baselines and allow for comparison to previous season data.

Influenza Admissions at Kaiser Permanente Northern California Facilities

Inpatients at [Kaiser Permanente Northern California](#) facilities with an admission diagnosis including the keywords “flu,” “influenza,” or variants of the keywords are defined as influenza-related admissions. The number of influenza admissions is divided by the total number of hospital admissions occurring in the same time period to estimate the percentage of influenza admissions. Admissions for pregnancy, labor and delivery, birth, and outpatient procedures are excluded from the denominator. Influenza admission data is not comparable to previous seasons reports which included pneumonia and influenza (P&I) admissions.

The percentage of admissions for influenza in Kaiser Permanente Northern California facilities during Week 44 was 0.4% compared to 0.1% during Week 43 ([Figure 4](#)).

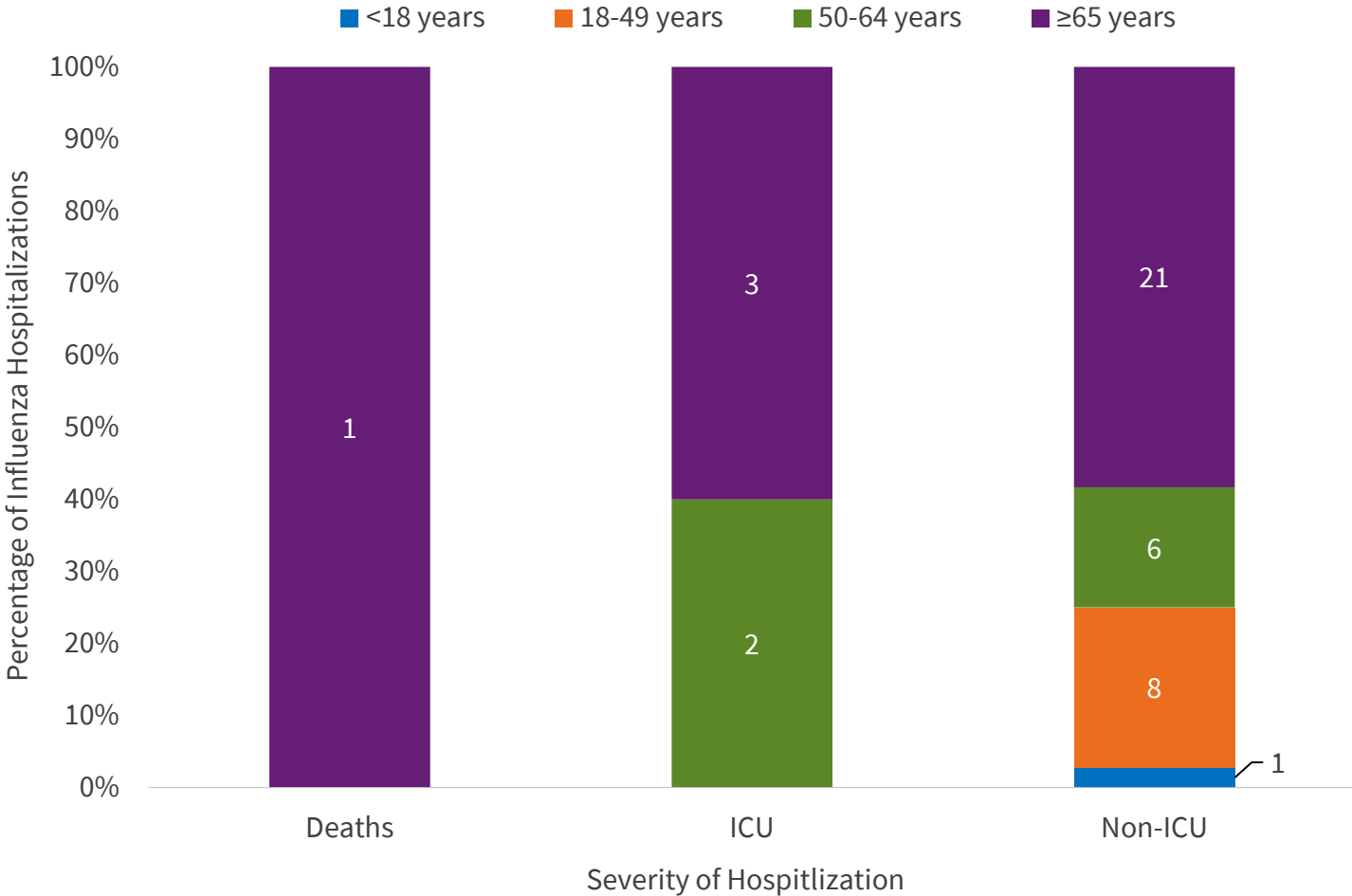
Figure 4. Percentage of Influenza Admissions at Kaiser Permanente Northern California Facilities, 2017-2023 Season to Date



Note: Data have been shifted so that Week 1 aligns across seasons.

To date, 36 non-intensive care unit (ICU) hospitalizations, five ICU admissions, and one death have occurred among persons with influenza admission diagnoses. Most influenza admissions occurred among persons ≥ 65 years ([Figure 5](#)). Please note that influenza admissions serve as a proxy for influenza activity, but do not necessarily represent laboratory-confirmed influenza infections.

Figure 5. Age Group Distribution of Non-ICU, ICU, and Deaths Associated with Influenza Admissions at Kaiser Permanente Northern California Facilities, 2022–2023 Season to Date

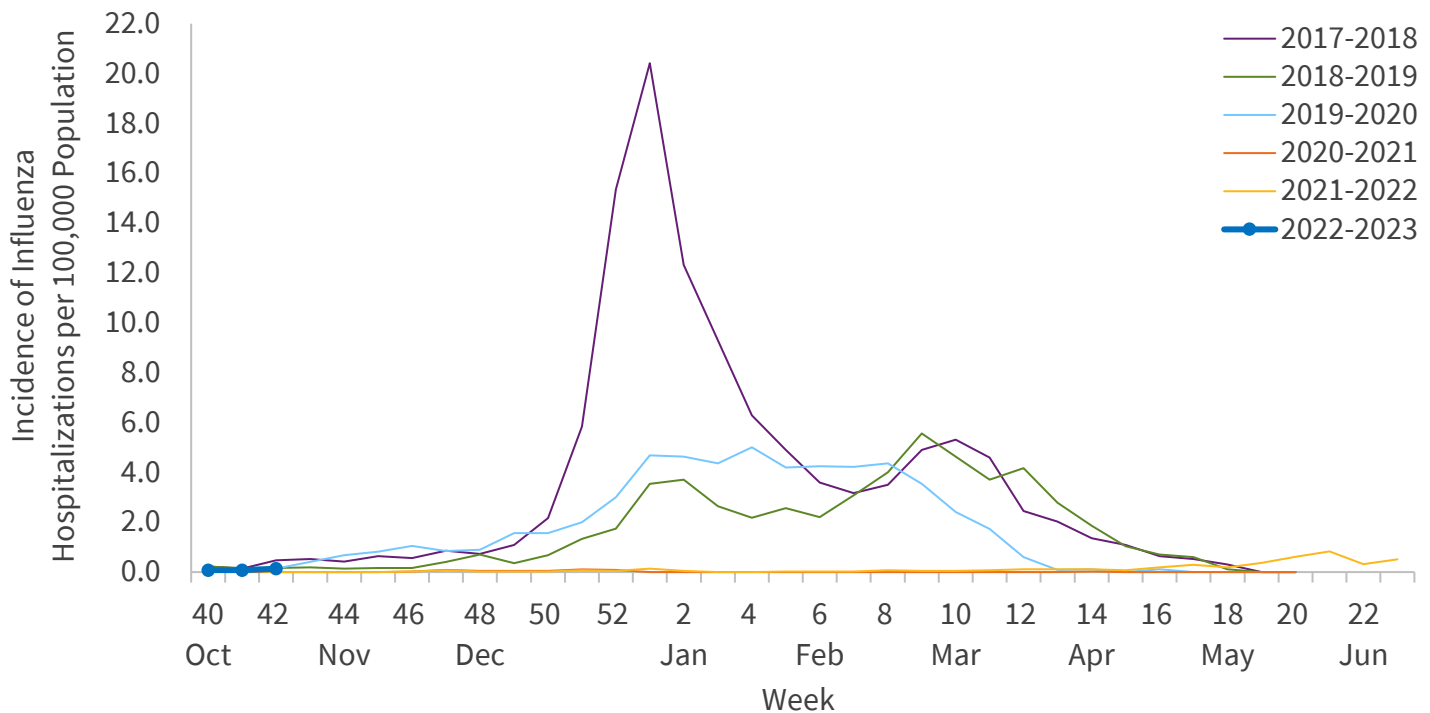


Influenza-associated Hospitalizations in California Emerging Infections Program Counties

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.

Five new influenza-associated hospitalizations were reported during Week 42. To date during the 2022–2023 season, 11 influenza-associated hospitalizations have been reported ([Figure 6](#)). Data for the most recent two weeks are not presented because results are still being collected and are likely to change.

Figure 6. Incidence of Influenza-associated Hospitalizations per 100,000 Population in CEIP Counties, 2017–2023 Season to Date



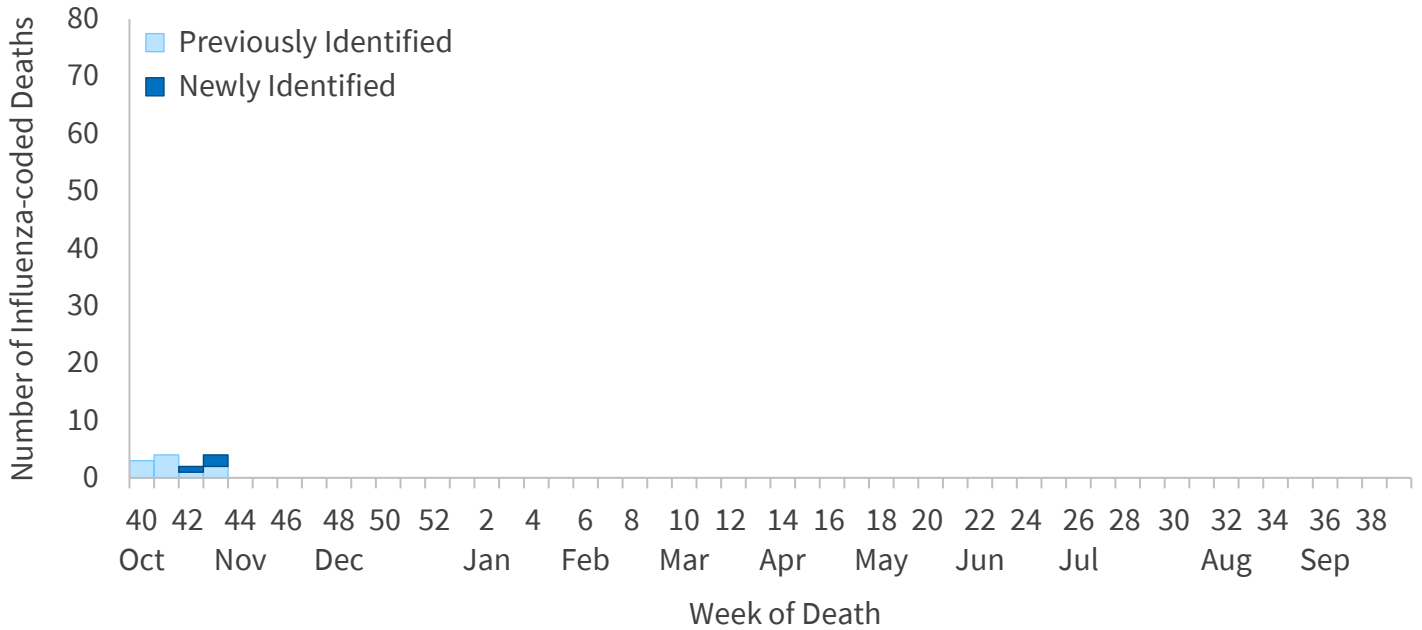
Note: Data have been shifted so that Week 1 aligns across seasons. For the 2021-2022 season, the CEIP surveillance period was extended through Week 23 due to elevated influenza activity. Comparable data from all other seasons are not available.

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. Please note that during the 2022-2023 season, an update to the methods used to identify influenza-coded deaths resulted in some changes to data from previous seasons.

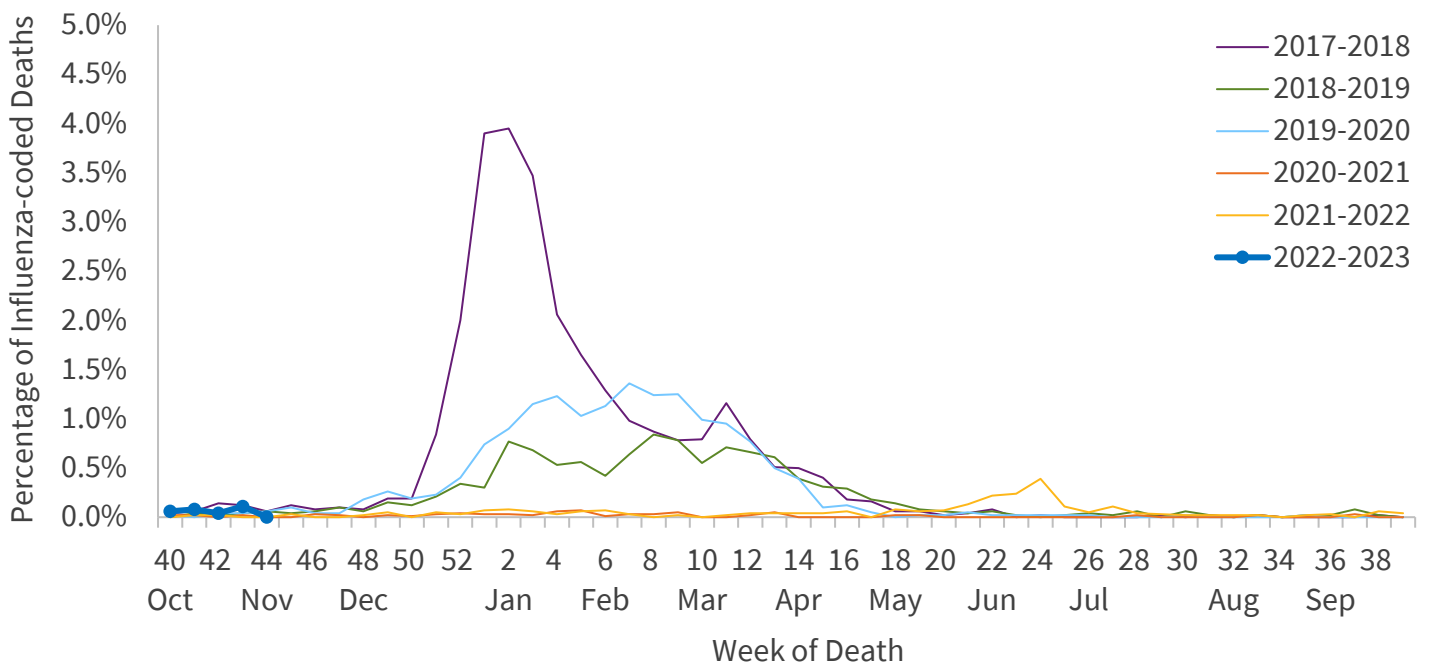
During Week 44, three influenza-coded deaths were identified. To date during the 2022–2023 influenza season, 13 influenza-coded deaths have been identified ([Figure 7](#)). The percentage of deaths coded as influenza during Week 44 was 0.0% compared to 0.1% during Week 43 ([Figure 8](#)).

Figure 7. Number of Influenza-coded Deaths Identified from Death Certificates by Week of Death, 2022–2023 Season to Date



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

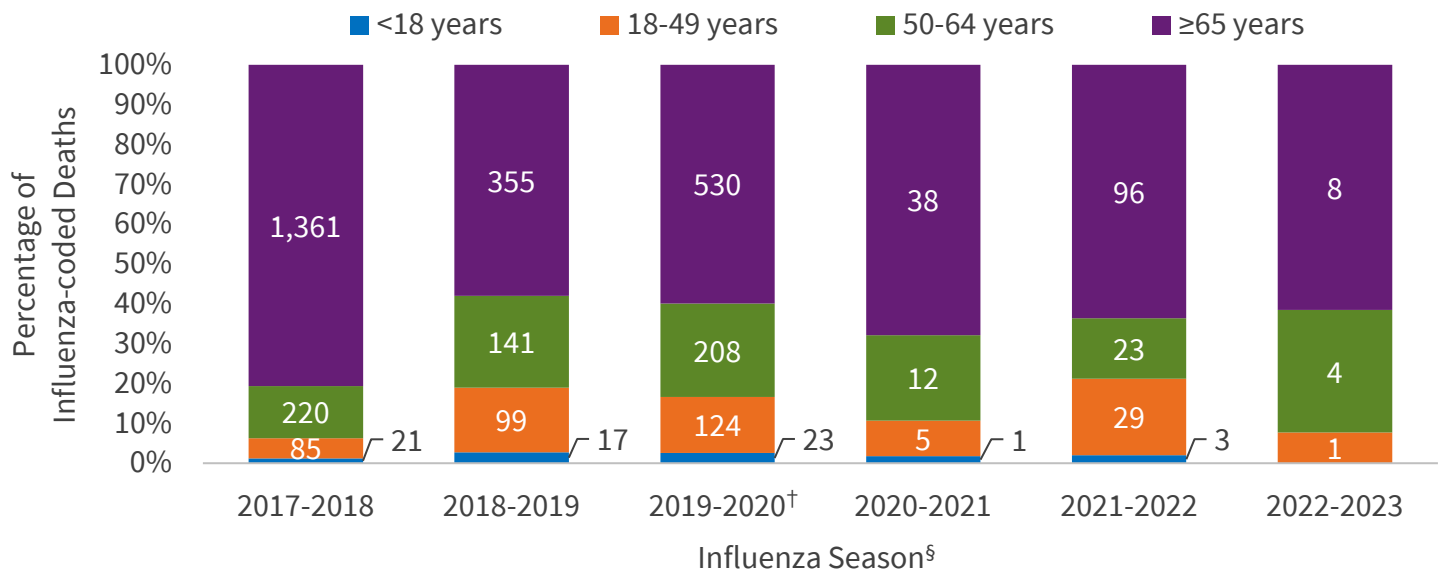
Figure 8. Percentage of Influenza-coded Deaths from Death Certificates, 2017–2023 Season to Date



Note: Data have been shifted so that Week 1 aligns across seasons.

To date, eight (61.5%) influenza-coded deaths have been identified among persons ≥ 65 years of age during the 2022–2023 influenza season ([Figure 9](#)).

Figure 9. Age Distribution of Influenza-coded Deaths from Death Certificates, 2017–2023 Season to Date



* Methods used to identify pediatric influenza-coded deaths on death certificates do not consider laboratory testing and thus differ from those used to identify the influenza-associated pediatric deaths presented below, which require laboratory confirmation of influenza.

[†] One death during the 2018–2019 season has unknown age and is not included in the figure.

[§] 2017–2018 influenza season: October 1, 2017–September 29, 2018; influenza A (H3N2) predominant season
 2018–2019 influenza season: September 30, 2018–September 28, 2019; mixed influenza A (H1N1)pdm09 and influenza A (H3N2) season

2019–2020 influenza season: September 29, 2019–September 26, 2020; mixed influenza B (Victoria) and influenza A (H1N1)pdm09 season

2020–2021 influenza season: September 27, 2020–October 2, 2021; Influenza activity was too low to determine a predominant strain

2021–2022 influenza season: October 3, 2021–October 1, 2022; influenza A (H3N2) predominant season

Laboratory-confirmed Influenza-associated Pediatric Deaths

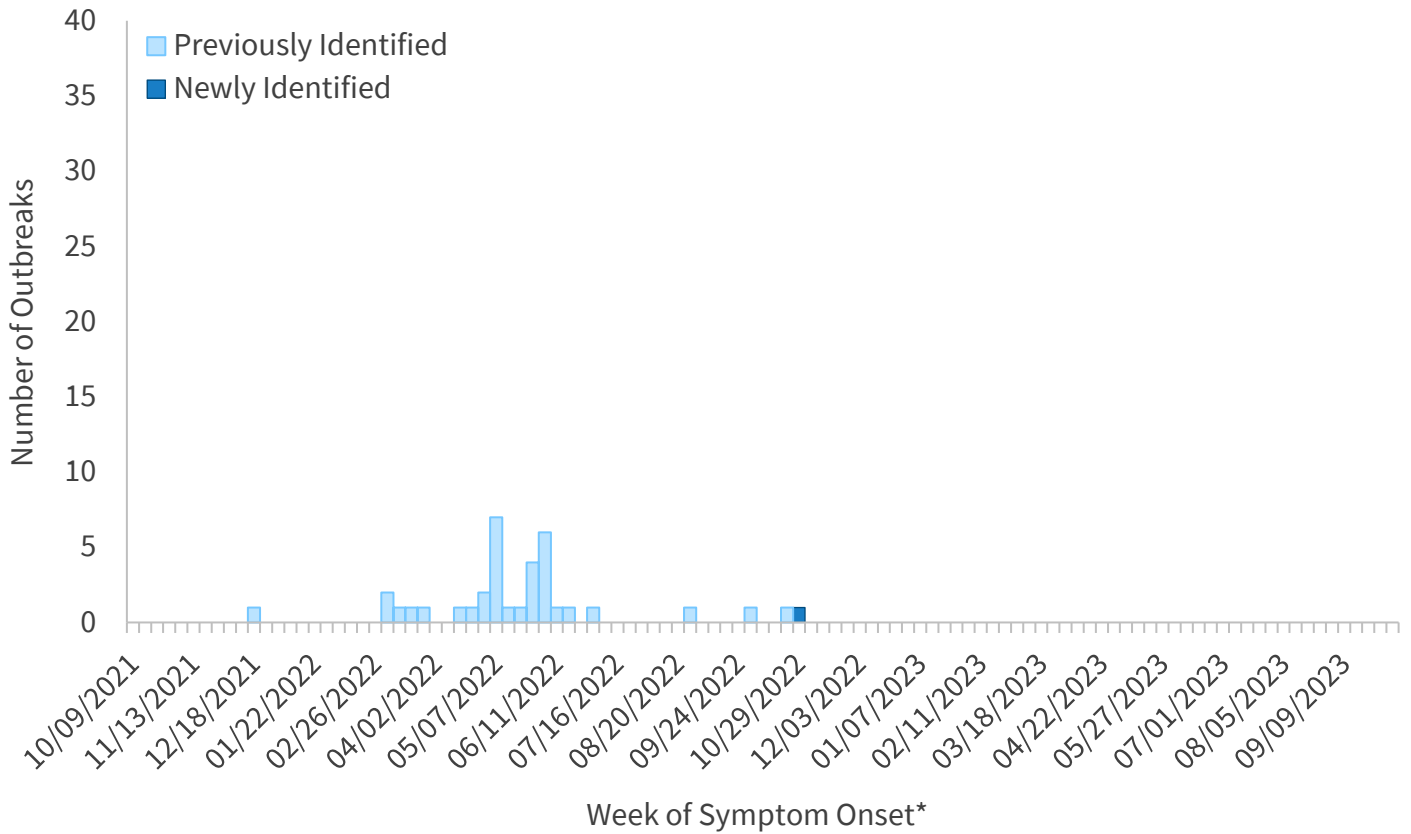
Influenza-associated deaths in children <18 years of age are nationally notifiable. The weekly influenza report includes confirmed deaths formally reported to CDPH through November 5, 2022 (Week 44). Methods used to identify pediatric influenza-coded deaths on death certificates differ from those used to identify the influenza-associated pediatric deaths presented below, which require laboratory confirmation of influenza, and might not include the same individuals.

No laboratory-confirmed influenza-associated deaths among children <18 years of age were reported to CDPH during Week 44. To date, CDPH has received no reports of laboratory-confirmed influenza-associated deaths among persons <18 years of age during the 2022–2023 influenza season.

Influenza-associated Outbreaks

One laboratory-confirmed influenza outbreak was reported during Week 44. To date, two laboratory-confirmed influenza outbreaks have been reported to CDPH for the 2022–2023 season.

Figure 10. Number of Laboratory-confirmed Influenza-associated Outbreaks by Week of First Onset, 2021–2023 Season to Date



*Earliest date associated with the outbreak was used for outbreaks without reported date of first patient's symptom onset.

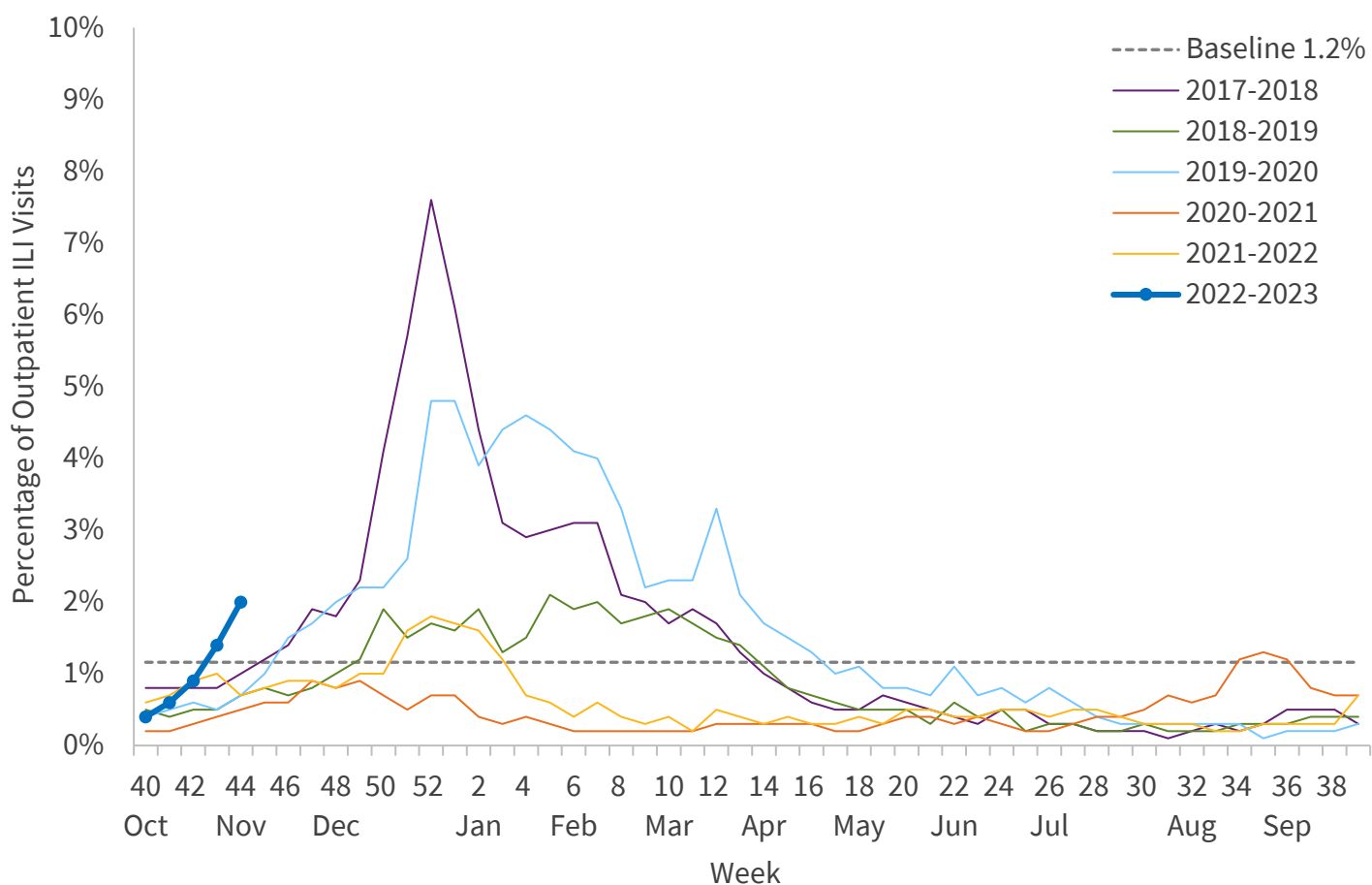
California Border Region Influenza Surveillance Network

The border influenza surveillance network is comprised of outpatient sentinel provider 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 13 border region sentinel providers reported data during Week 44. The total number of patients screened by all sentinel sites for ILI during Week 44 was 13,137. Outpatient ILI activity was 2.0% in Week 44 ([Figure 11](#)). All influenza syndromic data summarized for the border region represent a subset of CDC influenza sentinel providers in California. Increases in ILI-related outpatient visits might also include people seeking care for other respiratory illness, including COVID-19.

Figure 11. Percentage of Influenza-like Illness Visits among Patients Seen by Sentinel Providers — California Border Region, 2017–2023 Season to Date



Note: Data have been shifted so that Week 1 aligns across seasons.

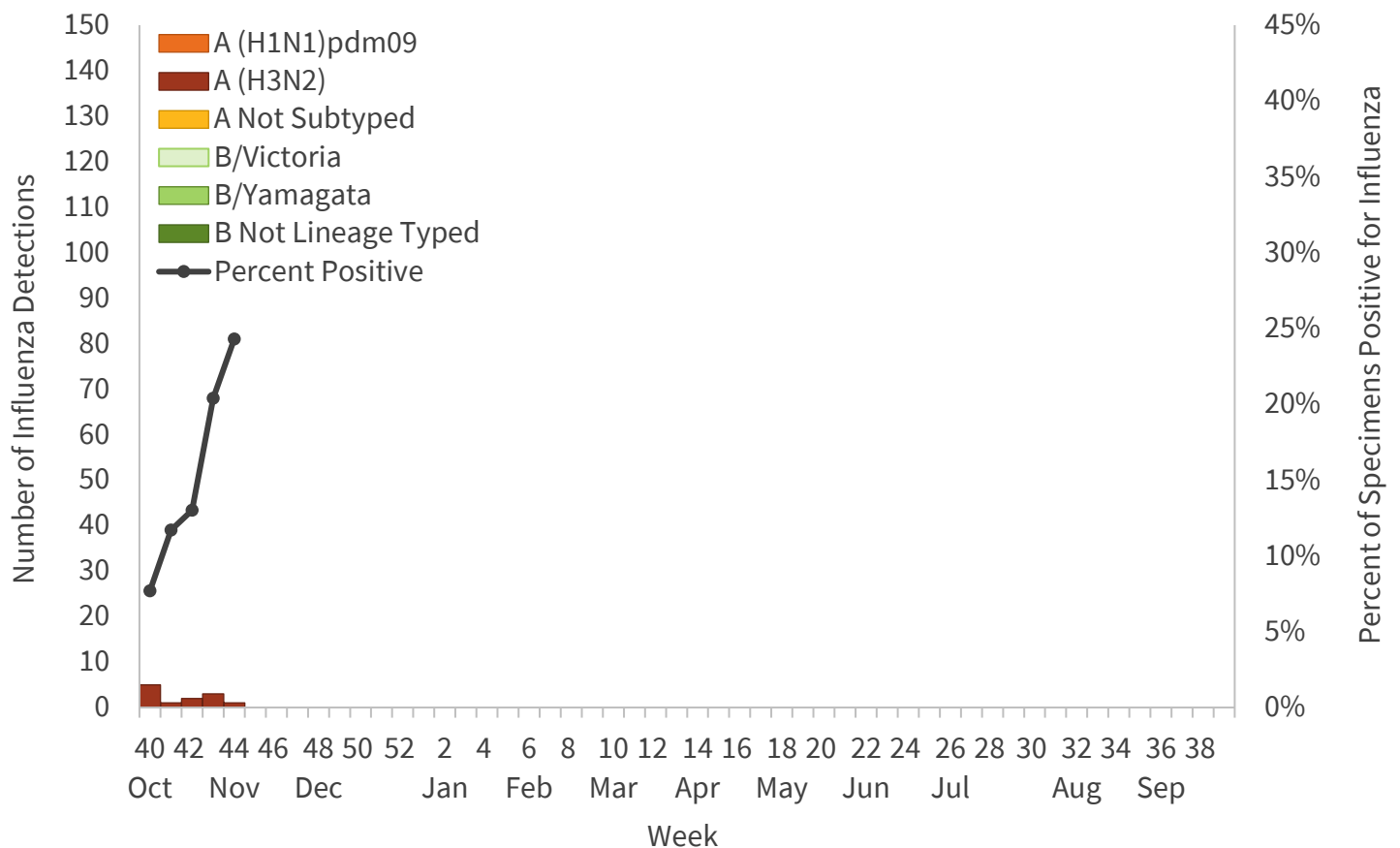
Virologic Surveillance Update

During Week 44, 894 respiratory specimens were tested from border region sentinel clinical laboratories; of these, 217 (24.3%) tested positive for influenza (216 [99.5%] influenza A and one [0.5%] influenza B). Cumulatively this season, a total of 3,714 respiratory specimens were tested from border region sentinel clinical laboratories; of these, 600 (16.2%) tested positive for influenza (593 [98.8%] influenza A and seven [1.2%] influenza B).

During Week 44, one influenza positive specimen was reported from border region RLN laboratories; of which, one (100.0%) was influenza A. Of the one specimen that tested positive for influenza A at RLN laboratories, one (100.0%) was subtyped as A (H3). Cumulatively this season, a total of 12 influenza positive specimens have been detected at border region RLN laboratories; of which 12 (100.0%) were influenza A. Of the 12 specimens that tested positive for influenza A at RLN laboratories, 12 (100.0%) were subtyped as A (H3).

Laboratory data summarized in [Figure 12](#) 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 12. 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, 2022–2023 Season to Date

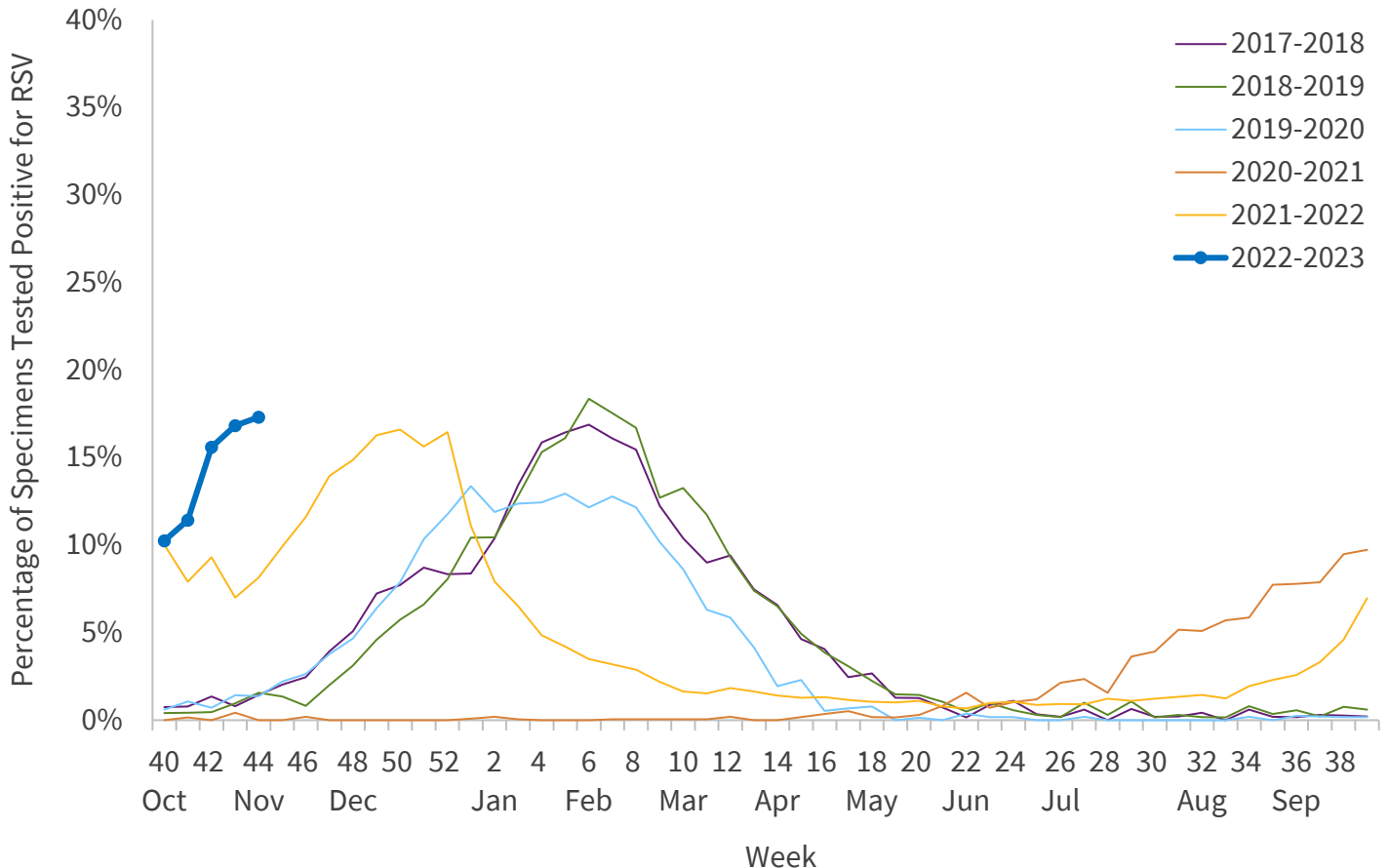


Respiratory Syncytial Virus Surveillance

RSV Detections from Clinical Sentinel Laboratories

During Week 44, 16,825 specimens were tested for RSV and 2,912 (17.3%) were positive, which is higher compared to Week 43 (16.8%) ([Figure 13](#)).

Figure 13. Percentage of RSV Detections at Clinical Sentinel Laboratories, 2017–2023 Season to Date



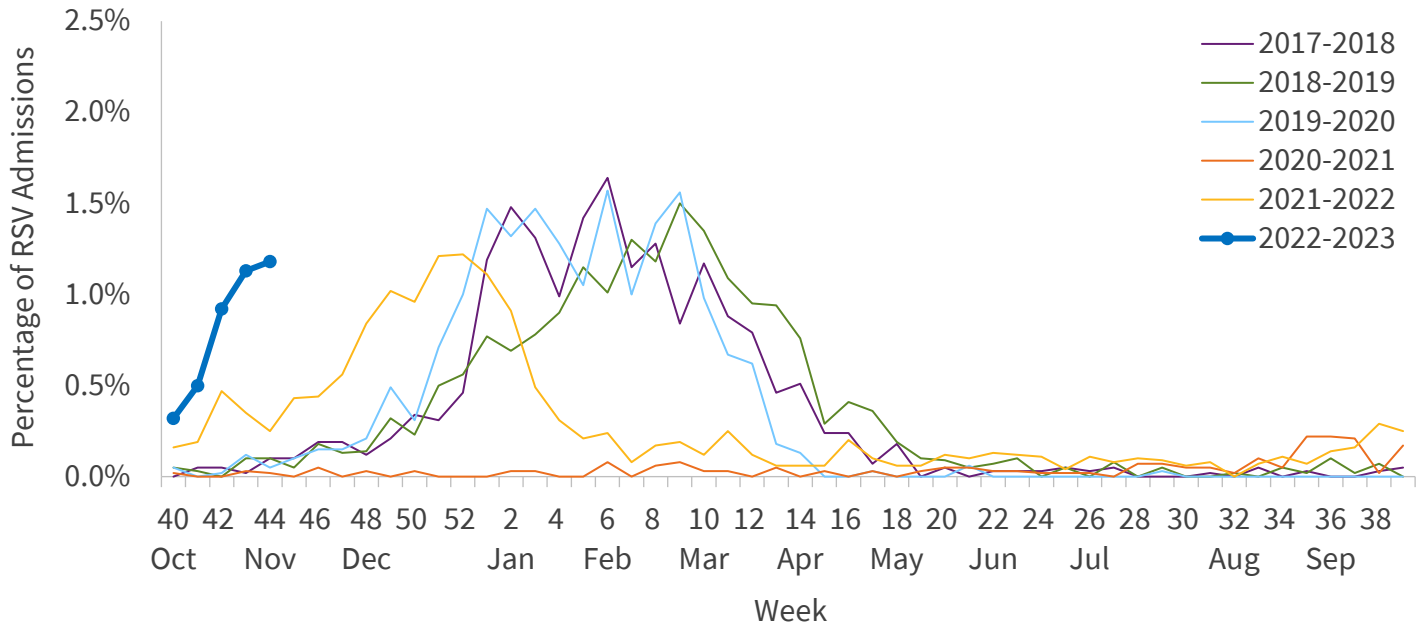
Note: Data have been shifted so that Week 1 aligns across seasons.

RSV Admissions at Kaiser Permanente Northern California Facilities

Inpatients at Kaiser Permanente Northern California facilities with an admission diagnosis including the keywords “RSV,” “syncytial,” “bronchiolitis,” and variants of the keywords are defined as respiratory syncytial virus (RSV)-related admissions. The number of RSV admissions is divided by the total number of hospital admissions occurring in the same period to estimate the percentage of RSV admissions. Admissions for pregnancy, labor and delivery, birth, and outpatient procedures are excluded from the denominator.

The percentage of admissions for RSV in Kaiser Permanente facilities in northern California during Week 44 was 1.2% compared to 1.1% during Week 43 ([Figure 14](#)).

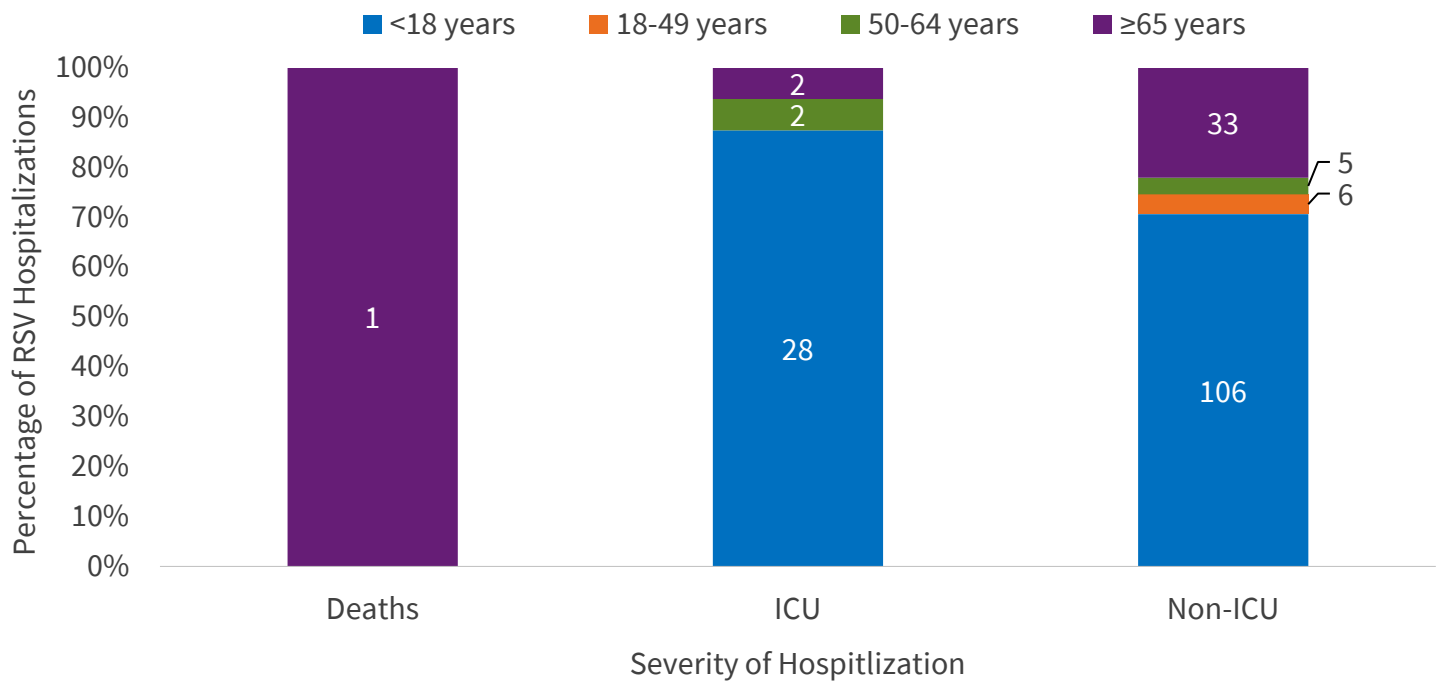
Figure 14. Percentage of RSV Admissions in Kaiser Permanente Northern California Facilities, 2017–2023 Season to Date



Note: Data have been shifted so that Week 1 aligns across seasons.

To date, 150 non-intensive care unit (ICU) hospitalizations, 32 ICU admissions, and one death have occurred among persons with RSV admission diagnoses. Most RSV admissions occurred among persons <18 years (Figure 15). Please note that RSV admissions serve as a proxy for RSV activity, but do not necessarily represent laboratory-confirmed RSV infections.

Figure 15. Age Group Distribution of Non-ICU, ICU, and Deaths Associated with RSV Admissions in Kaiser Permanente Northern California Facilities, 2022–2023 Season to Date

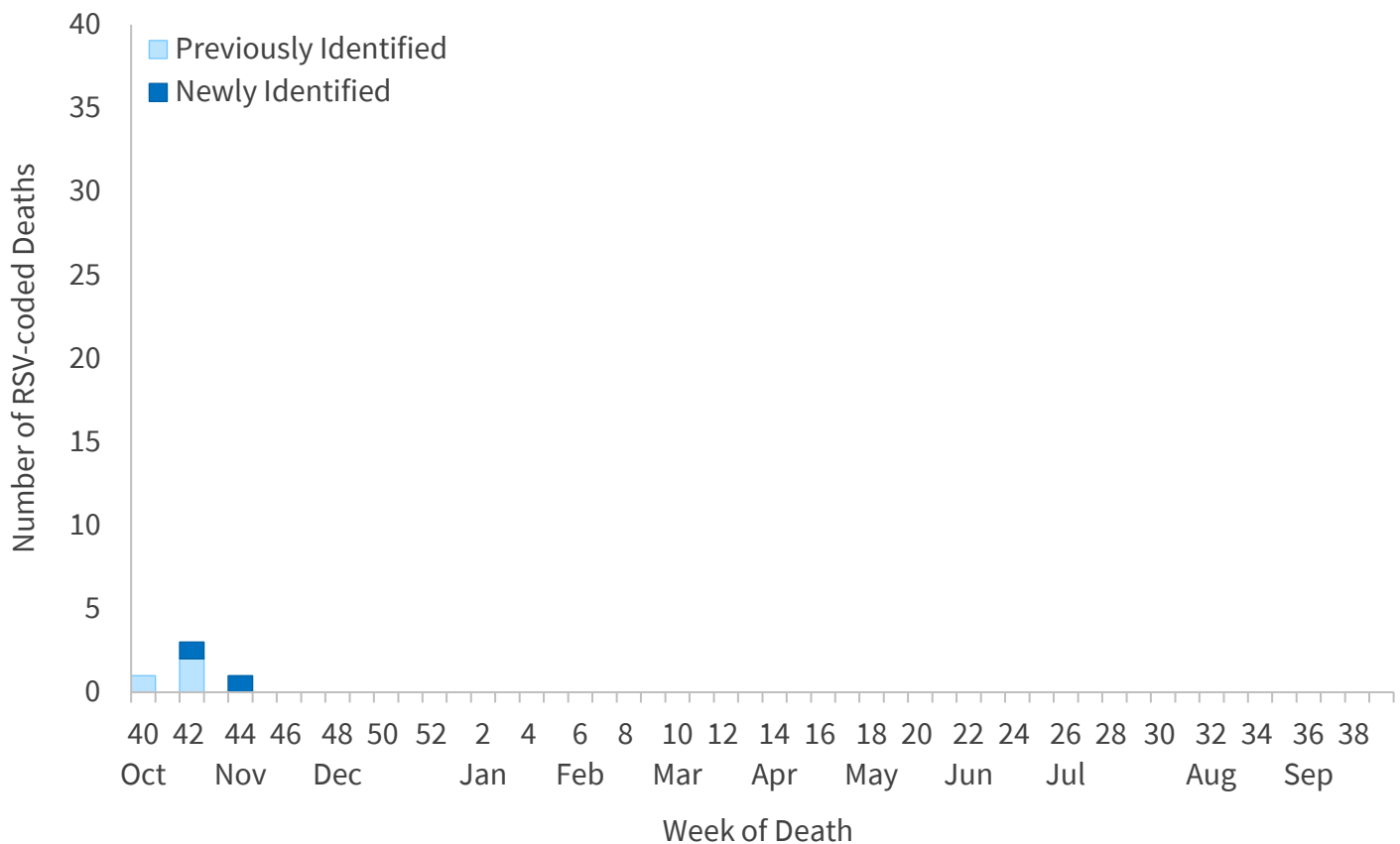


RSV Mortality Surveillance from Death Certificates

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

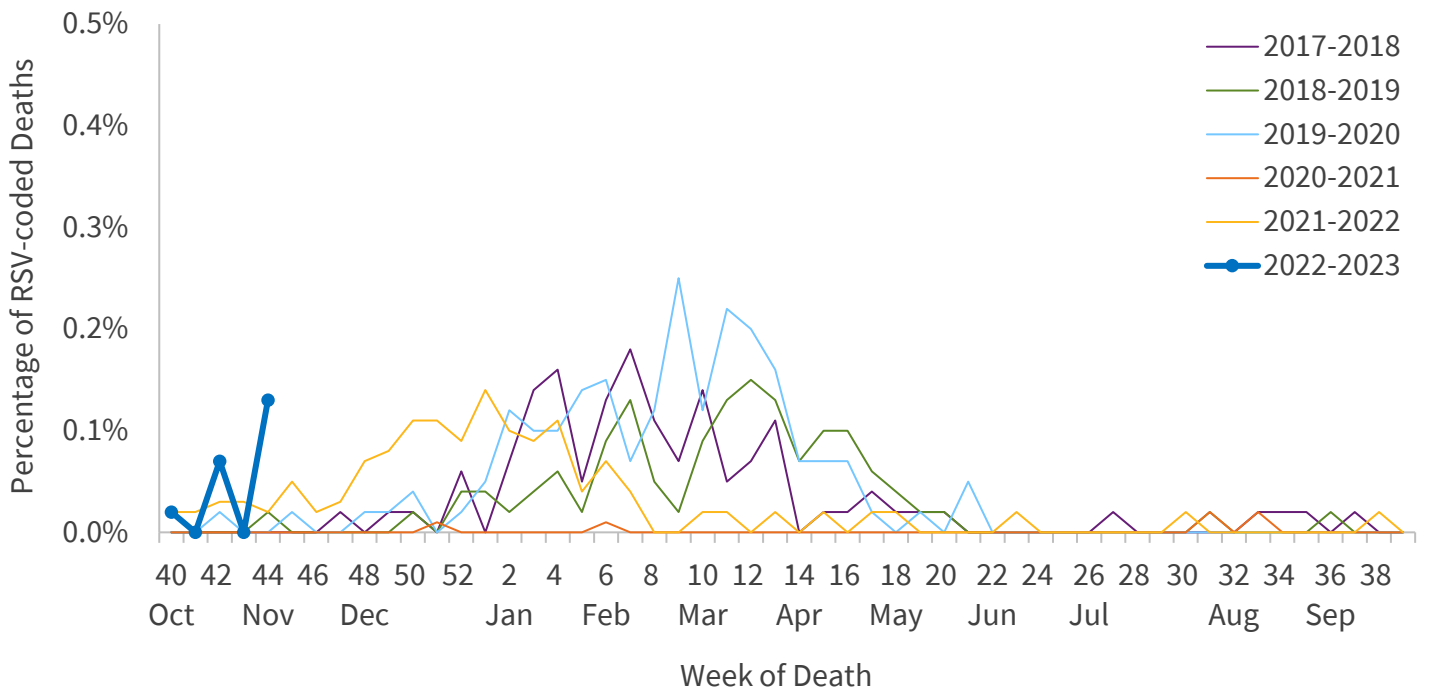
During Week 44, two RSV-coded deaths were identified. To date during the 2022–2023 influenza season, five RSV-coded deaths have been identified ([Figure 16](#)). The percentage of deaths coded as RSV during Week 44 was 0.13% compared to 0.00% during Week 43 ([Figure 17](#)).

Figure 16. Number of RSV-coded Deaths Identified from Death Certificates by Week of Death, 2022–2023 Season to Date



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

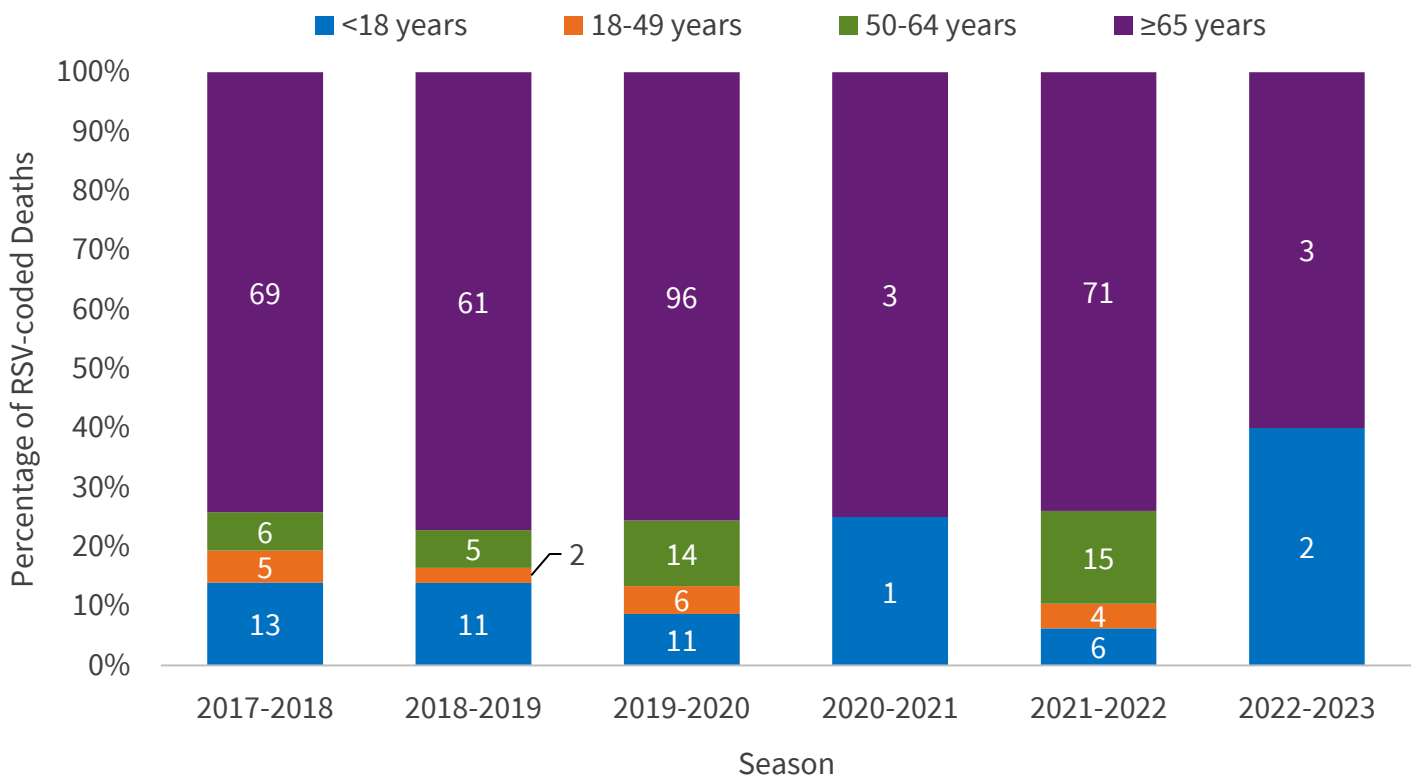
Figure 17. Percentage of RSV-coded Deaths from Death Certificates, 2017–2023 Season to Date



Note: Data have been shifted so that Week 1 aligns across seasons.

To date, five RSV-coded deaths have been identified, two (40.0%) among persons <18 years and three (60.0%) among persons ≥65 years of age during the 2022–2023 influenza season ([Figure 18](#)).

Figure 18. Age Distribution of RSV-coded Deaths from Death Certificates, 2017–2023 Season to Date



Laboratory-confirmed Respiratory Syncytial Virus-associated Deaths

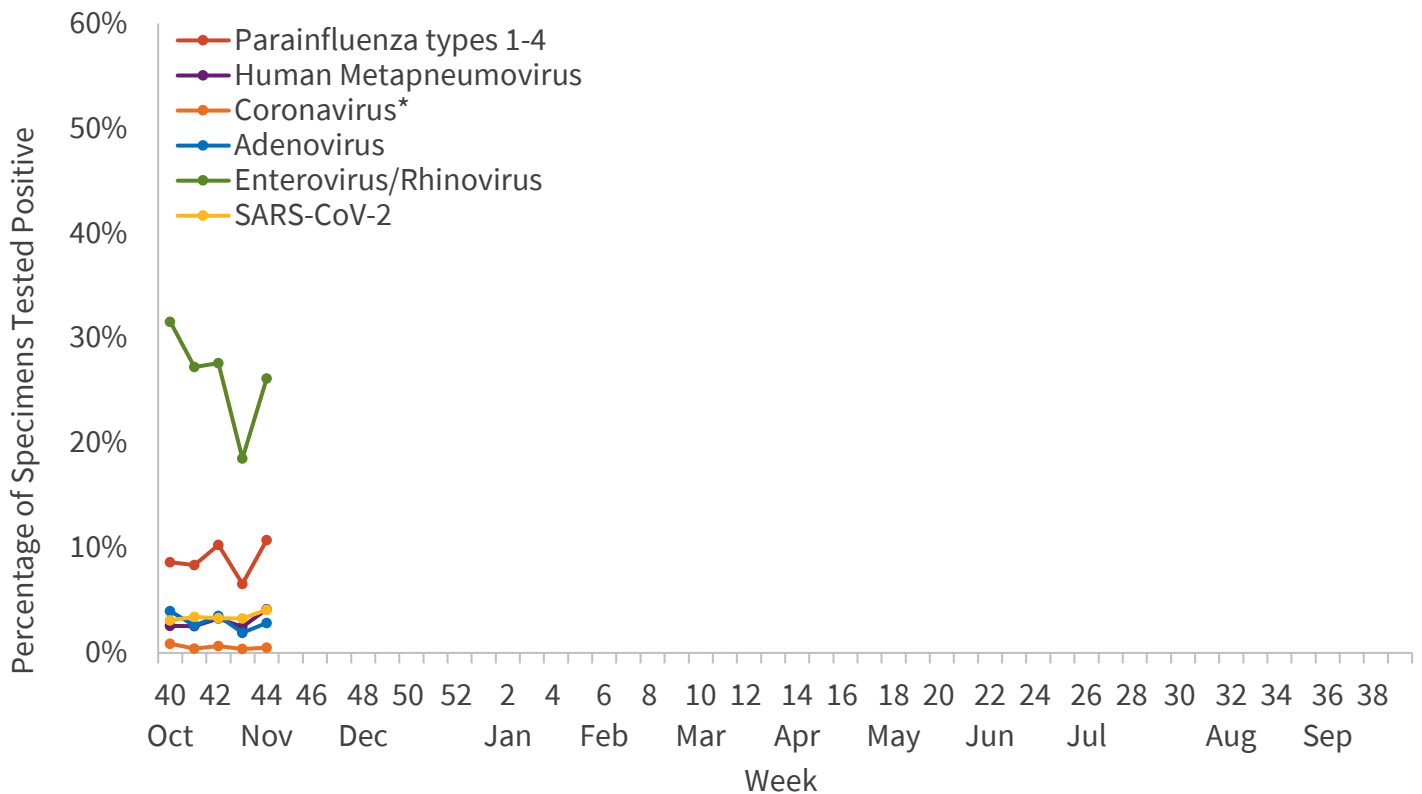
Currently, as mandated under Section 2500 of the California Code of Regulations, deaths among children aged 0–4 years with laboratory-confirmed RSV are reportable to CDPH. The weekly influenza report includes confirmed deaths formally reported to CDPH through November 5, 2022 (Week 44).

No laboratory-confirmed RSV-associated deaths among children <5 years of age were reported to CDPH during Week 44. To date, CDPH has received no reports of laboratory-confirmed RSV-associated deaths among children <5 years of age during the 2022–2023 influenza season.

Other Respiratory Viruses Surveillance

During Week 44, adenovirus, coronavirus (non-SARS-CoV-2), enterovirus/rhinovirus, human metapneumovirus, parainfluenza virus, and SARS-CoV-2 activity increased ([Figure 19](#)).

Figure 19. Percentage of Other Respiratory Pathogen Detections at Clinical Sentinel Laboratories, 2022-2023 Season to Date



*Coronaviruses identified include common human coronaviruses 229E, NL63, OC43, and HKU1 and do NOT include SARS-CoV-2.

About This Report

This report includes data from many sources of influenza and other respiratory virus surveillance, and it should be viewed as a preliminary “snapshot” of 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.

More Information

- › An accessible Excel file with data for all figures can be downloaded from the [CDPH Flu webpage](http://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Week2022-2344_DataTables.xlsx) (www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Week2022-2344_DataTables.xlsx).
- › For questions regarding influenza surveillance and reporting in California, please email InfluenzaSurveillance@cdph.ca.gov.
- › To obtain additional information regarding influenza, please visit the [CDPH Influenza website](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.aspx) (www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Influenza.aspx).
- › For information about national influenza activity, please visit the U.S. Centers for Disease Control and Prevention’s [FluView](http://www.cdc.gov/flu/weekly/index.htm) (www.cdc.gov/flu/weekly/index.htm) and [FluView Interactive](http://www.cdc.gov/flu/weekly/fluviewinteractive.htm) (www.cdc.gov/flu/weekly/fluviewinteractive.htm) websites.
- › For information about COVID-19 in California, please visit the [California COVID-19 website](http://www.covid19.ca.gov) (www.covid19.ca.gov).

Highlights Indicators

Triangle symbols are used to indicate direction of change between the previous week and the current week for laboratory flu positivity, outpatient ILI activity, and hospital flu admissions: Increase (▲), decrease (▼), no change (▶).

[Back to Top of Report](#)

Influenza Activity Levels⁺

Minimal: The percentage of specimens positive for influenza is <2%.

Low: The percentage of specimens positive for influenza is between 2% and <10%.

Moderate: The percentage of specimens positive for influenza is between 10% and <20%.

High: The percentage of specimens positive for influenza is between 20% and <40%.

Very High: The percentage of specimens positive for influenza is ≥40%.

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, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma counties

Central Valley: Calaveras, Fresno, Inyo, Kings, Madera, Mariposa, Merced, Mono, 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

⁺ Influenza activity levels are derived from the percentage of specimens from clinical sentinel laboratories that tested positive for influenza.