



## Influenza Highlights



▶ **0.7%**

### Laboratory

flu positivity



▼ **3.5%**

### Outpatient

ILI activity



▼ **0.0%**

### Hospital

flu admissions



**619**

### Deaths

since 10/2/2022

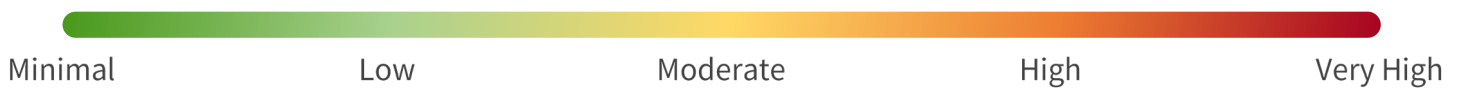


**105**

### Outbreaks

since 10/2/2022

## Influenza Activity Levels<sup>+</sup>



Geographic Area	Activity Level
California Statewide	Minimal
Northern Region	Minimal
Bay Area Region	Minimal
Central Region	Minimal
Upper Southern Region	Minimal
Lower Southern Region	Minimal

## Key Messages

- » Influenza activity is minimal throughout California.
- » The majority of detected influenza viruses are A (H3N2).
- » The flu shot is still the best way to protect yourself against flu, its potentially serious complications, and reduce strain on our healthcare system.
- » Respiratory syncytial virus (RSV) activity is decreasing in California.
- » Prophylactic palivizumab can prevent serious RSV illness in [high risk-infants](#).

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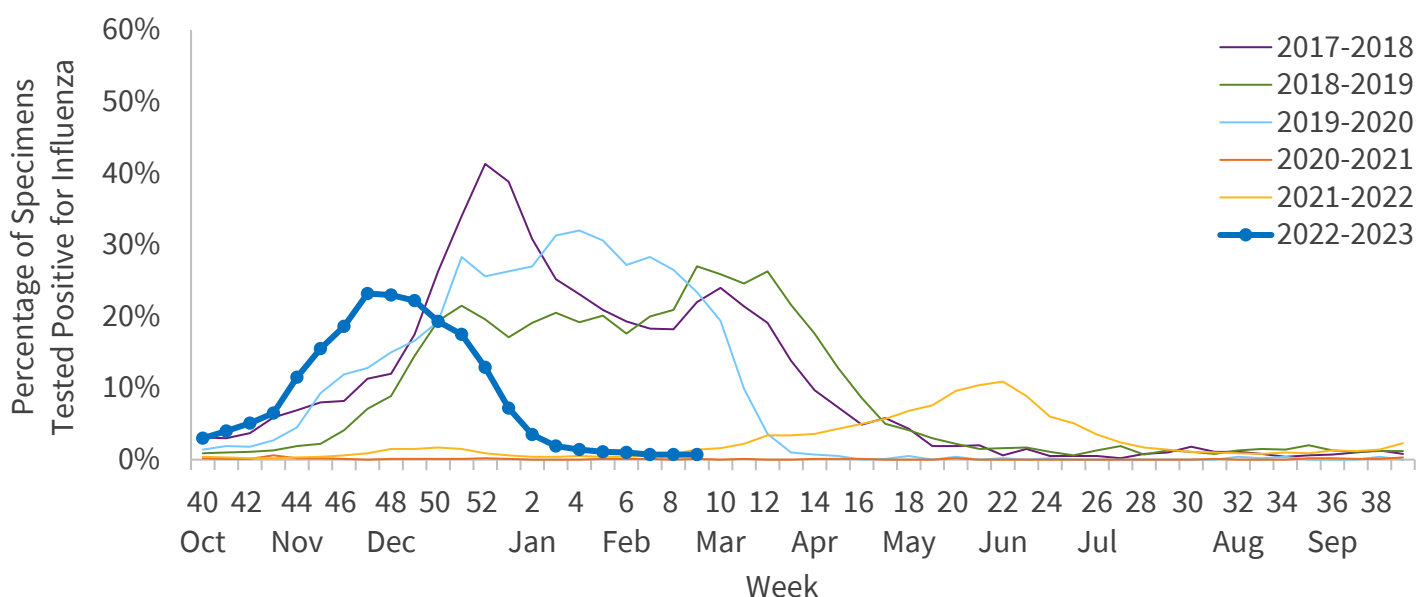
# Influenza Laboratory Surveillance

## Influenza Detections from 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 9 (0.7%) was similar compared to Week 8 (0.7%) ([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**



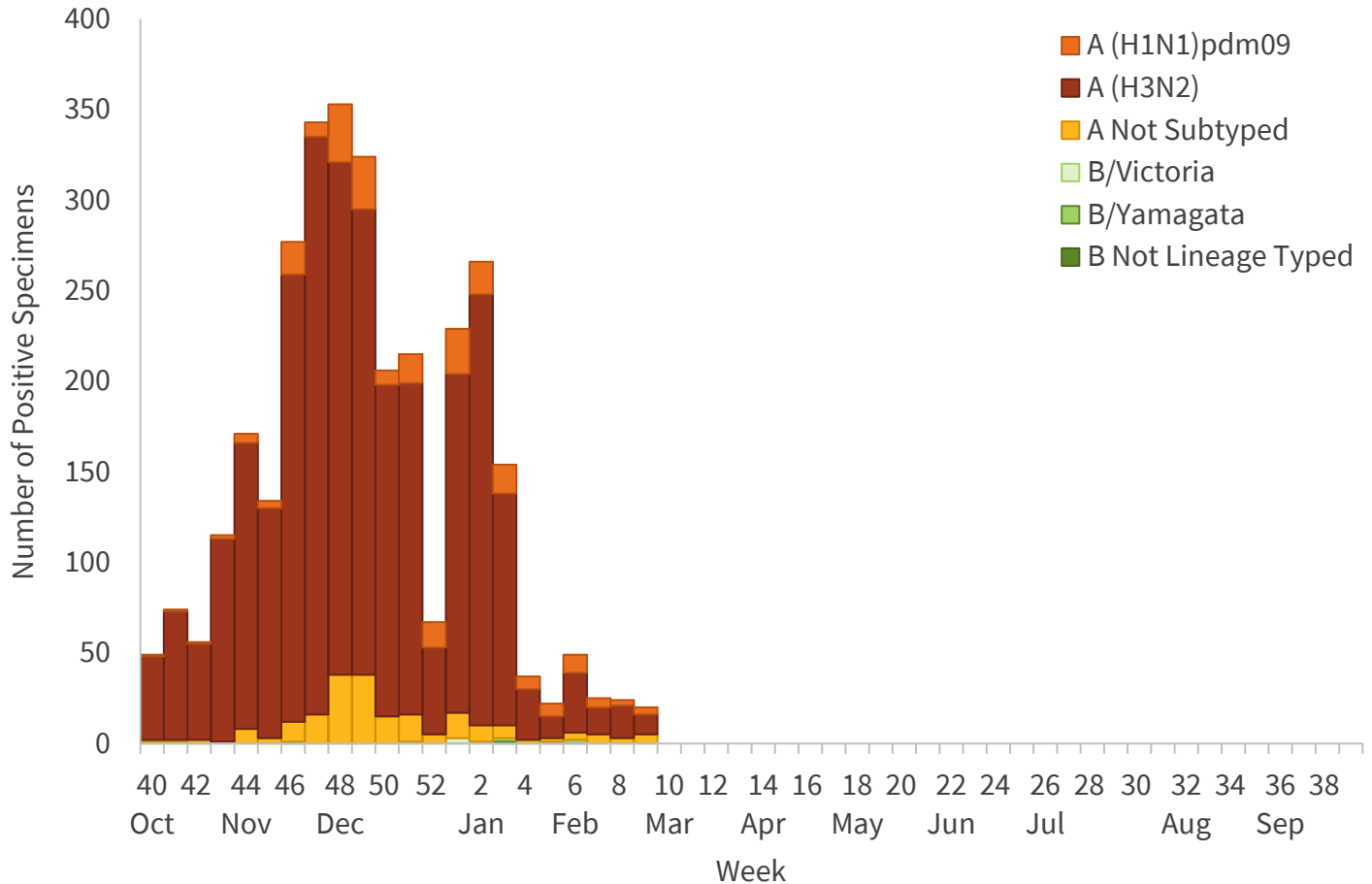
Note: Data have been shifted so that Week 1 aligns across seasons.

**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
<b>Number of Specimens Tested</b>	14,694		463,007	
<b>Influenza Positive</b>	109	0.7	54,895	11.9
<b>A</b>	75	68.8*	54,607	99.5*
<b>B</b>	34	31.2*	288	0.5*

\* 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**



**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
<b>Influenza Positive</b>	20		3,210	
<b>A</b>	20	100.0*	3,195	99.5*
<b>A (H1)pdm09</b>	4	20.0 <sup>†</sup>	234	7.3 <sup>†</sup>
<b>A (H3)</b>	11	55.0 <sup>†</sup>	2757	86.3 <sup>†</sup>
<b>A, not subtyped</b>	5	25.0 <sup>†</sup>	204	6.4 <sup>†</sup>
<b>B</b>	0	0.0*	15	0.5*
<b>B Victoria</b>	0	0.0 <sup>‡</sup>	10	66.7 <sup>‡</sup>
<b>B Yamagata</b>	0	0.0 <sup>‡</sup>	0	0 <sup>‡</sup>
<b>B, not lineage typed</b>	0	0.0 <sup>‡</sup>	5	33.3 <sup>‡</sup>

<sup>†</sup> Percentage of specimens positive for influenza A

<sup>‡</sup> Percentage of specimens positive for influenza B

## Antiviral Resistance Testing

The Viral and Rickettsial Disease Laboratory (VRDL) assesses susceptibility of influenza viruses to antiviral drugs, including the neuraminidase inhibitors (oseltamivir, zanamivir, and peramivir) and the polymerase acidic (PA) endonuclease inhibitor (baloxavir), by using next-generation sequence analysis. Neuraminidase gene sequences are analyzed to detect the presence of well-known amino acid substitutions previously associated with reduced or inhibited activity to any of the three neuraminidase inhibitors. Susceptibility to baloxavir is assessed by identifying an amino acid substitution in the PA gene.

Of the influenza specimens tested by the CDPH-VRDL to date this season, one influenza A (H1)pdm09 virus has been found to be resistant to neuraminidase inhibitors and none have been found to be resistant to PA endonuclease inhibitors ([Table 3](#)).

**Table 3. Number of Specimens Tested for Antiviral Resistance, 2022–2023 Season to Date**

	Neuraminidase Inhibitor Resistance	PA Endonuclease Inhibitor
<b>Influenza A (H1)pdm09</b>	1/31	0/31
<b>Influenza A (H3)</b>	0/48	0/48
<b>Influenza B</b>	0/4	0/4

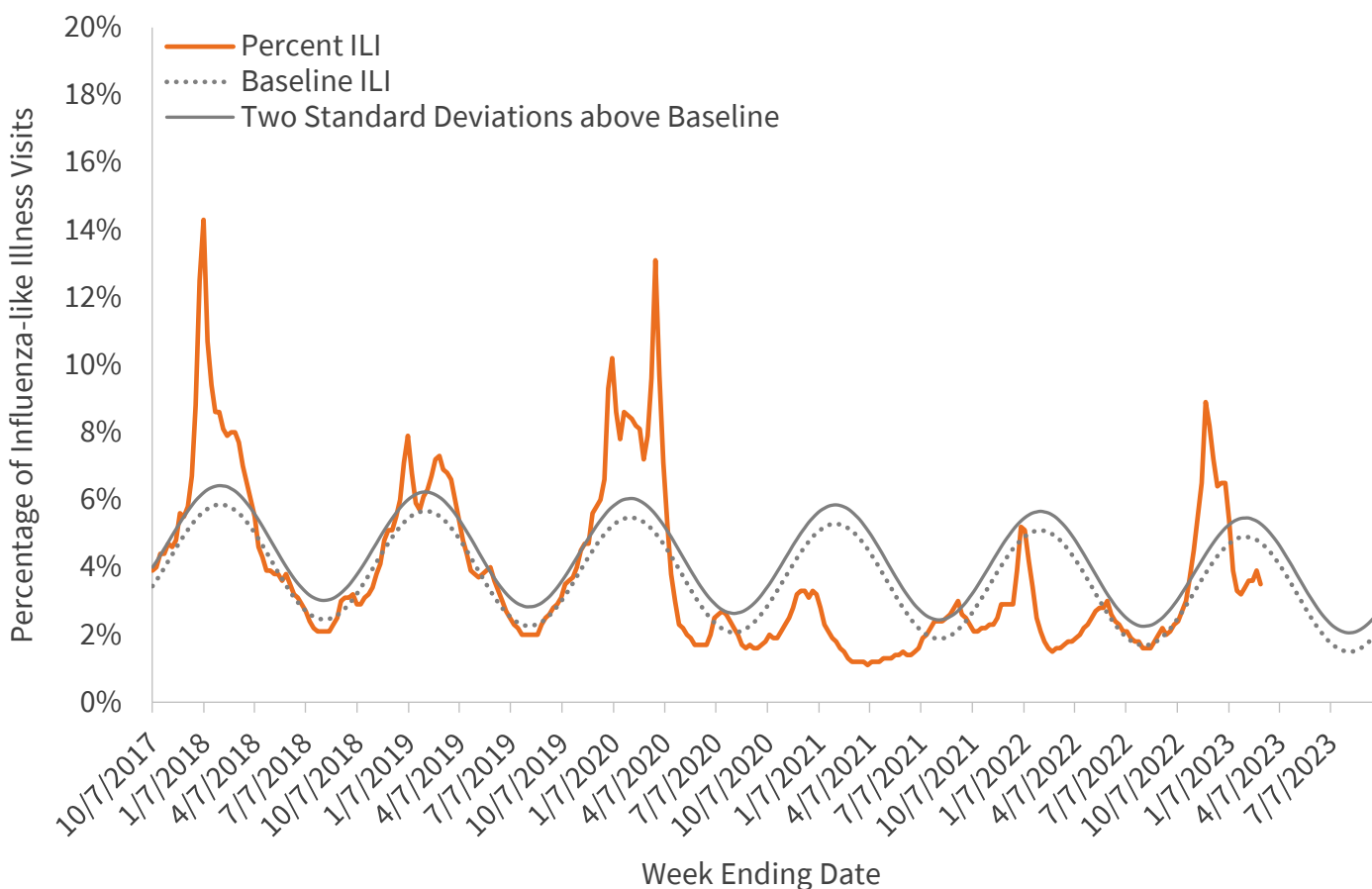
# Influenza Outpatient, Inpatient, and Death Surveillance

## 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  $37.8^{\circ}\text{C}$ ) AND cough and/or sore throat.

A total of 201 enrolled sentinel providers have reported data for Week 9. The percentage of visits for ILI during Week 9 was 3.5% compared to 3.9% during Week 8 and was within 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**



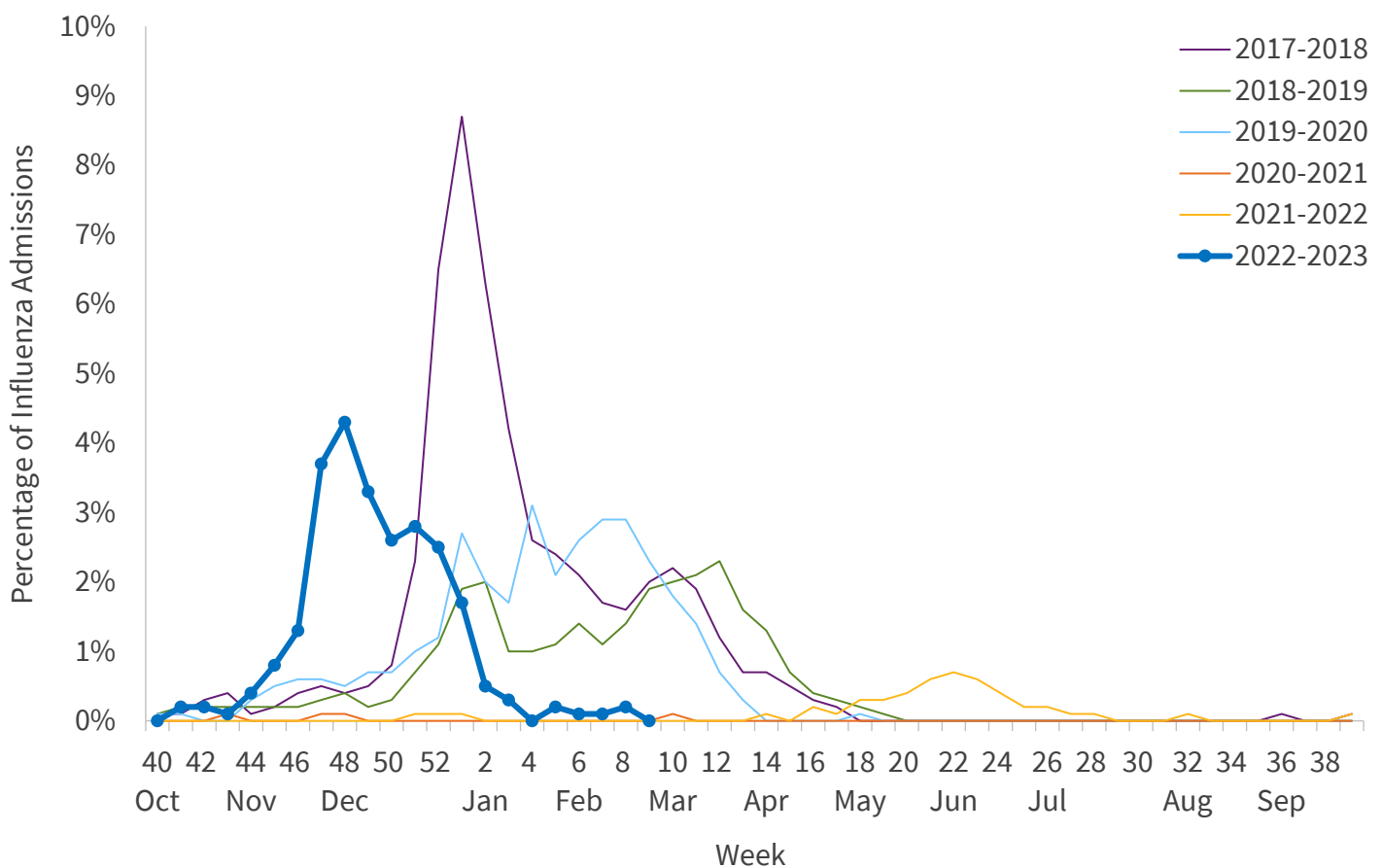
The seasonal baseline was calculated using a regression model applied to data from the five previous seasons, excluding the COVID-19 pandemic. Two standard deviations above the seasonal baseline is the point at which the observed percentage of ILI is significantly higher than would be expected at that 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 9 was 0.0% compared to 0.2% during Week 8 ([Figure 4](#)).

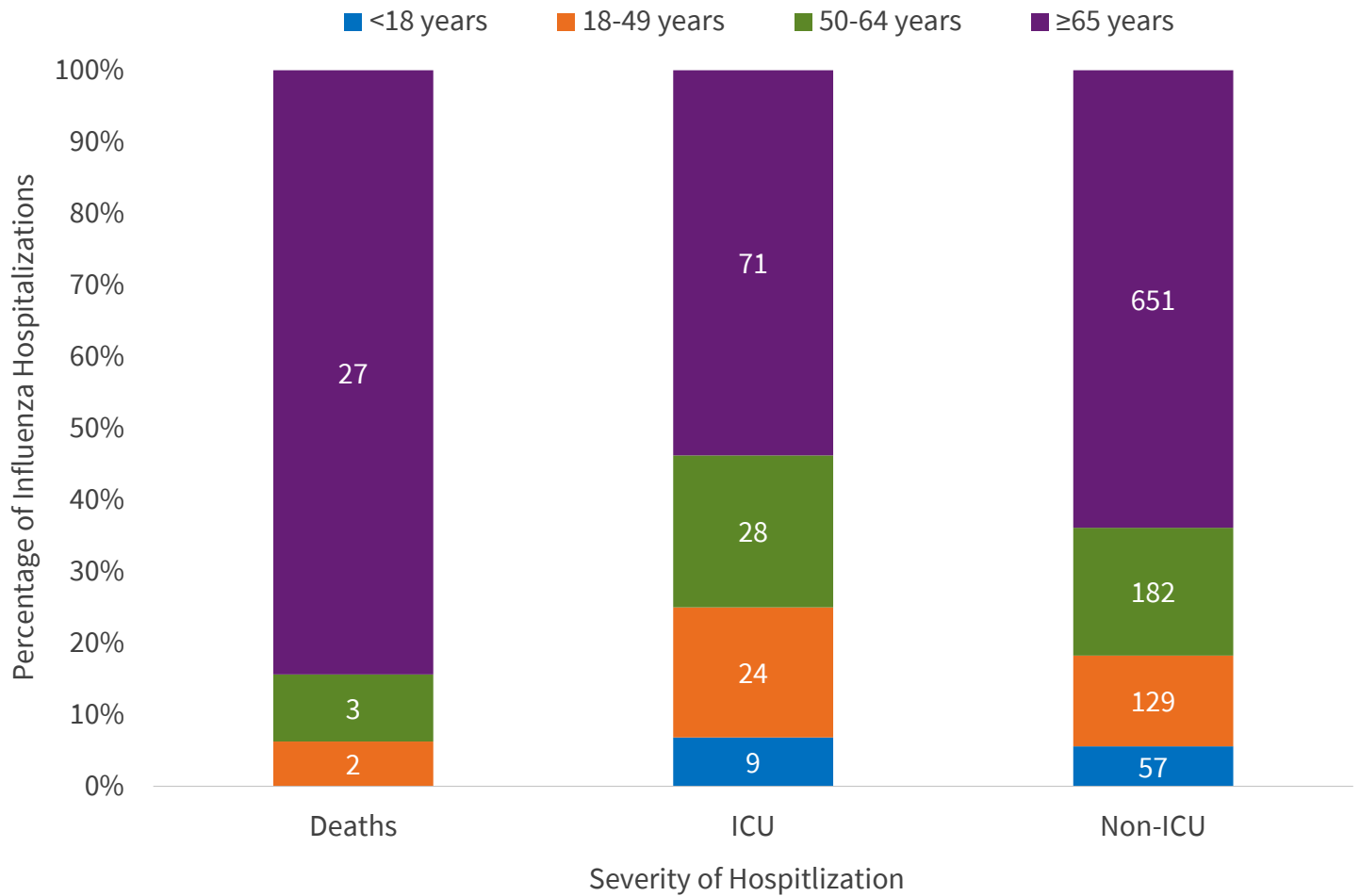
**Figure 4. Percentage of Influenza Admissions at Kaiser Permanente Northern California Facilities, 2017-2023 Season to Date**



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

To date, 1,019 non-intensive care unit (ICU) hospitalizations, 132 ICU admissions, and 32 deaths have occurred among persons with influenza admission diagnoses. Most influenza admissions occurred among persons  $\geq 65$  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**



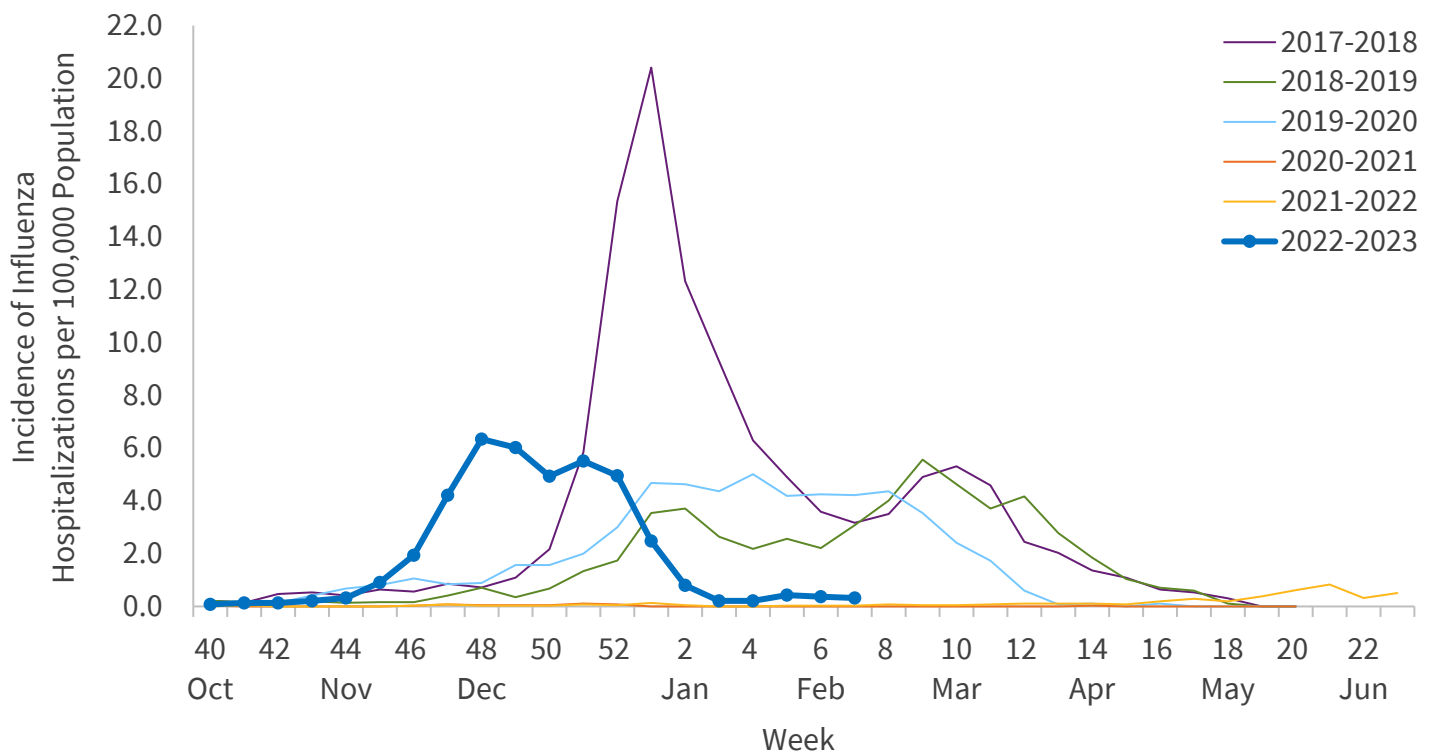


## Influenza-associated Hospitalizations in California Emerging Infections Program Counties

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.

The incidence of influenza-associated hospitalizations per 100,000 population during Week 7 was 0.32 compared to 0.37 during Week 6 ([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**



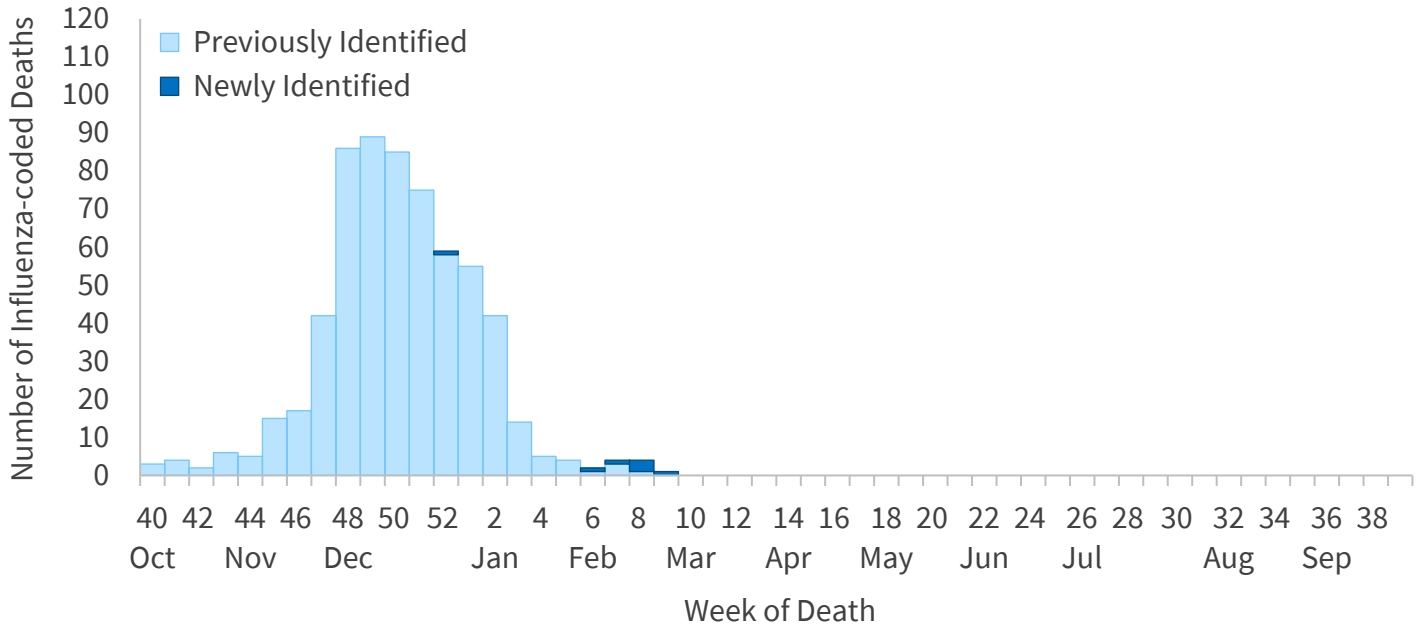
Note: Data have been shifted so that Week 1 aligns across seasons. For the 2021-2022 season, the CEIP surveillance period was extended through Week 23 due to elevated influenza activity. Comparable data from all other seasons are not available.

## 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.

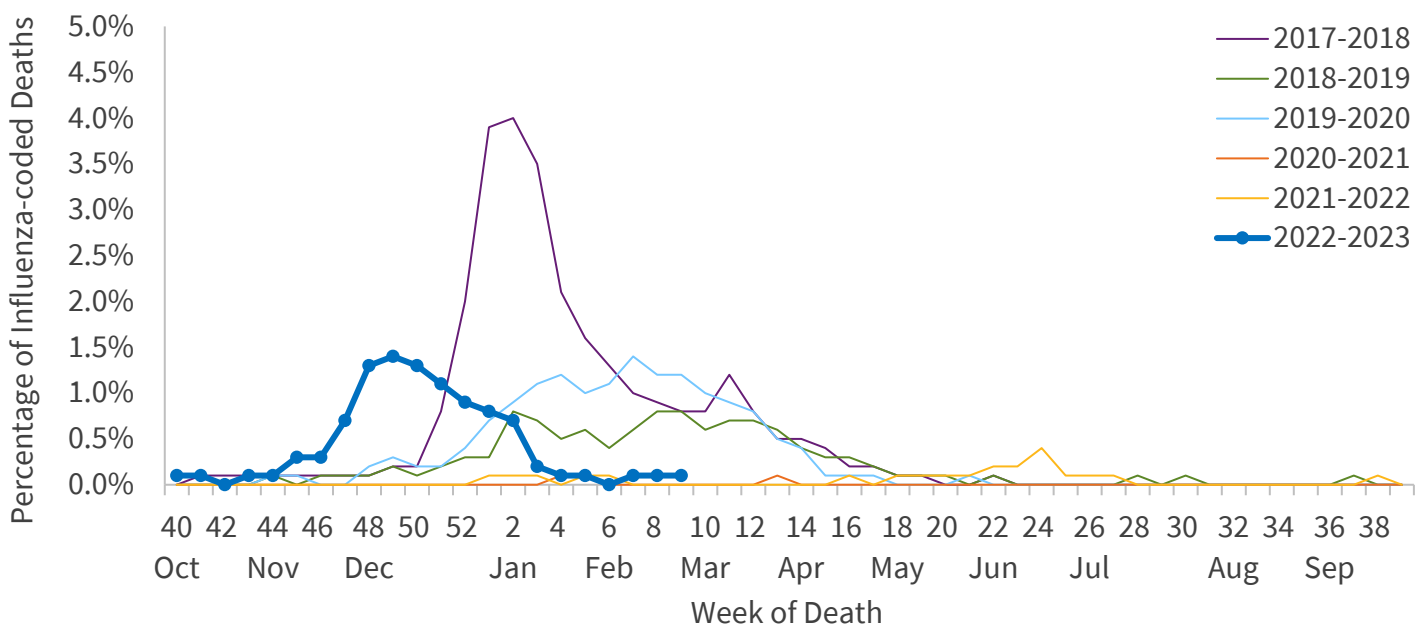
During Week 9, seven influenza-coded deaths were identified. To date during the 2022–2023 influenza season, 619 influenza-coded deaths have been identified ([Figure 7](#)). The percentage of deaths coded as influenza during Week 9 was 0.1% compared to 0.1% during Week 8 ([Figure 8](#)).

**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.

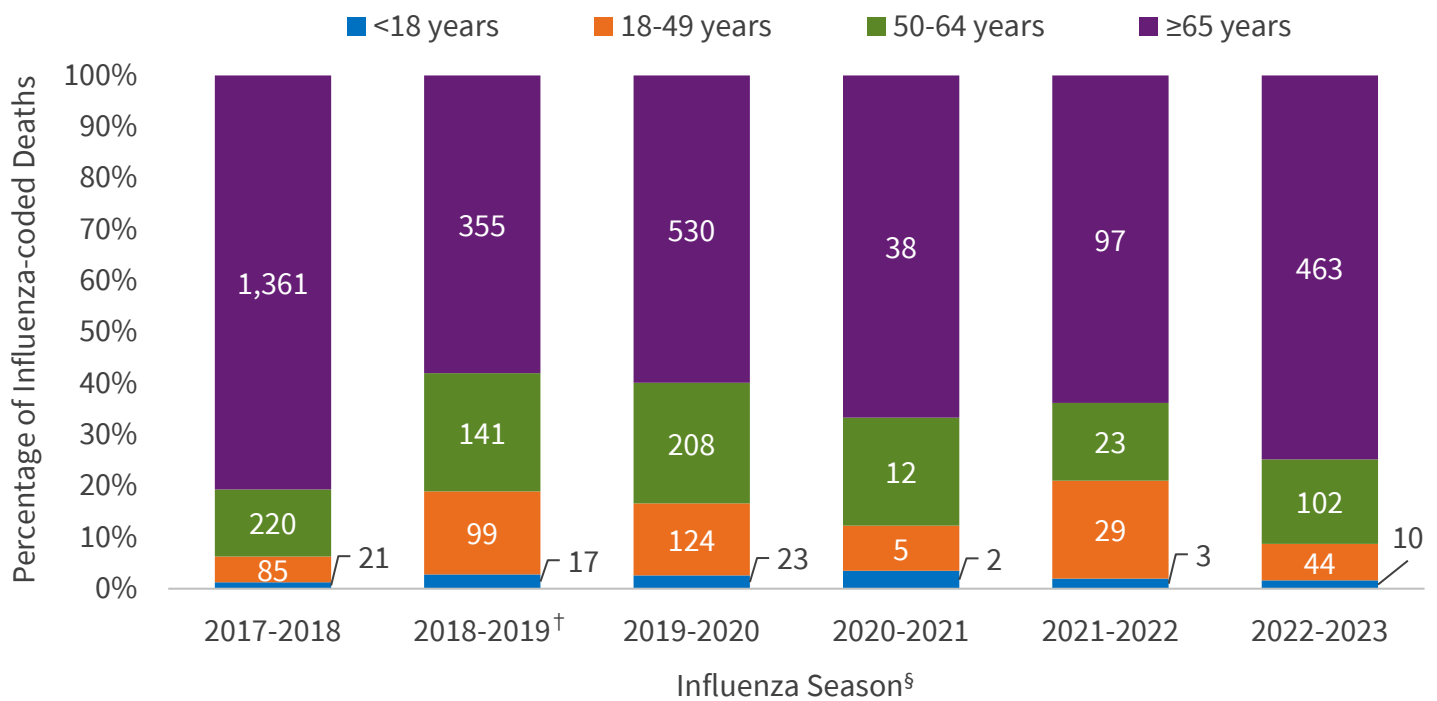
**Figure 8. Percentage of Influenza-coded Deaths from Death Certificates, 2017–2023 Season to Date**



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

To date, the majority of influenza-coded deaths (74.8%) have been identified among persons  $\geq 65$  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.

<sup>†</sup> One death during the 2018–2019 influenza season has unknown age and is not included in the figure.

<sup>§</sup> 2017–2018 season: Oct. 1, 2017–Sept. 29, 2018; influenza A (H3N2) predominant season  
 2018–2019 season: Sept. 30, 2018–Sept. 28, 2019; mixed influenza A (H1N1)pdm09 and influenza A (H3N2) season  
 2019–2020 season: Sept. 29, 2019–Sept. 26, 2020; mixed influenza B (Victoria) and influenza A (H1N1)pdm09 season  
 2020–2021 season: Sept. 27, 2020–Oct. 2, 2021; influenza activity was too low to determine a predominant strain  
 2021–2022 season: Oct. 3, 2021–Oct. 1, 2022; influenza A (H3N2) predominant season  
 2022–2023 season: Oct. 2, 2022–Sept. 30, 2023; influenza A (H3N2) predominant season

### Laboratory-confirmed Influenza-associated Pediatric Deaths

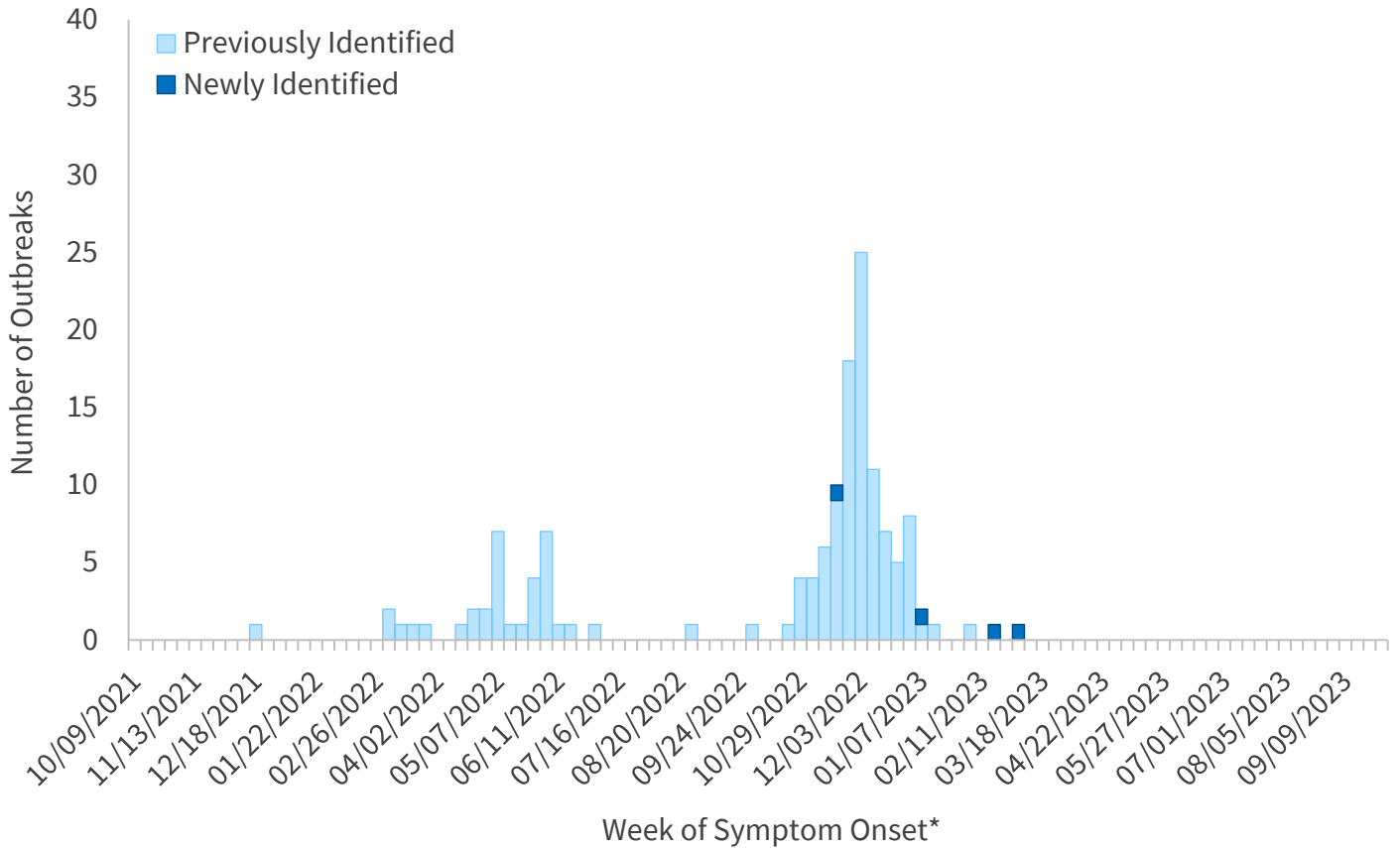
Influenza-associated deaths in children <18 years of age are nationally notifiable. The weekly influenza report includes confirmed deaths formally reported to CDPH through March 4, 2023 (Week 9). Methods used to identify pediatric influenza-coded deaths on death certificates differ from those used to identify the influenza-associated pediatric deaths presented below, which require laboratory confirmation of influenza, and might not include the same individuals.

One laboratory-confirmed influenza-associated death among a child <18 years of age was reported to CDPH during Week 9. To date, CDPH has received 10 reports of laboratory-confirmed influenza-associated deaths among persons <18 years of age during the 2022–2023 influenza season.

# Influenza-associated Outbreaks

Four laboratory-confirmed influenza outbreaks were reported during Week 9. To date, 105 laboratory-confirmed influenza outbreaks have been reported to CDPH during the 2022–2023 season. Please note that one duplicate outbreak has been removed.

**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.

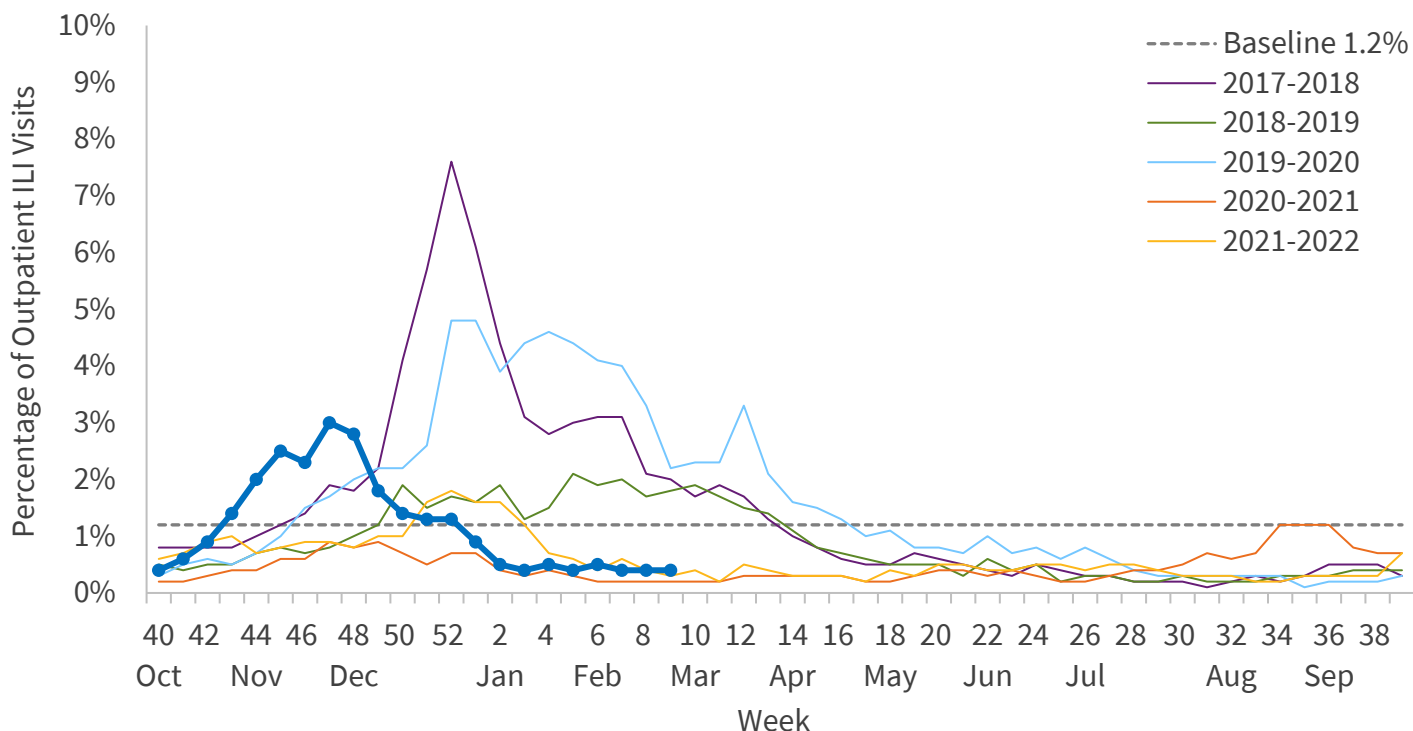
# California Border Region Influenza Surveillance Network

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 9. The total number of patients screened by all sentinel sites for ILI during Week 9 was 12,260. Outpatient ILI activity was 0.4% in Week 9 ([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**

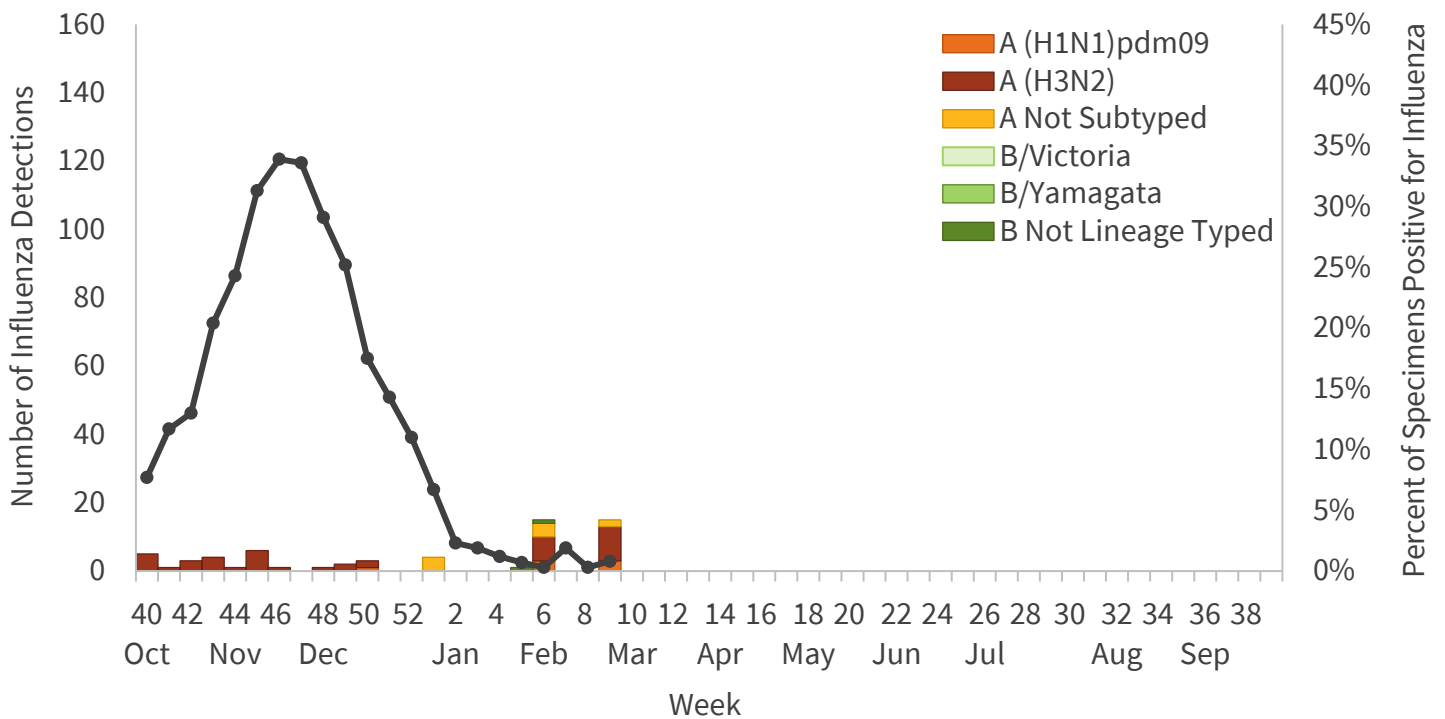


Note: Data have been shifted so that Week 1 aligns across seasons.

## Virologic Surveillance Update

The percentage of influenza detections in border region clinical sentinel laboratories during Week 9 was 0.8% ([Figure 12](#)). Additional details, including influenza typing, subtyping, and lineage typing information from border region clinical sentinel laboratories and RLN laboratories can be found in [Figure 12](#) and [Table 4](#).

**Figure 12. Number of Influenza Detections by Type and Subtype Detected in RLN Laboratories and the Percentage of Specimens Testing Positive at Clinical Sentinel Laboratories – California Border Region, 2022–2023 Season to Date**



**Table 4. Respiratory Specimens Testing Positive for Influenza by Influenza Type, Subtype, and Lineage Type – Clinical Sentinel Laboratories and RLN, California Border Region, Current Week and Season to Date**

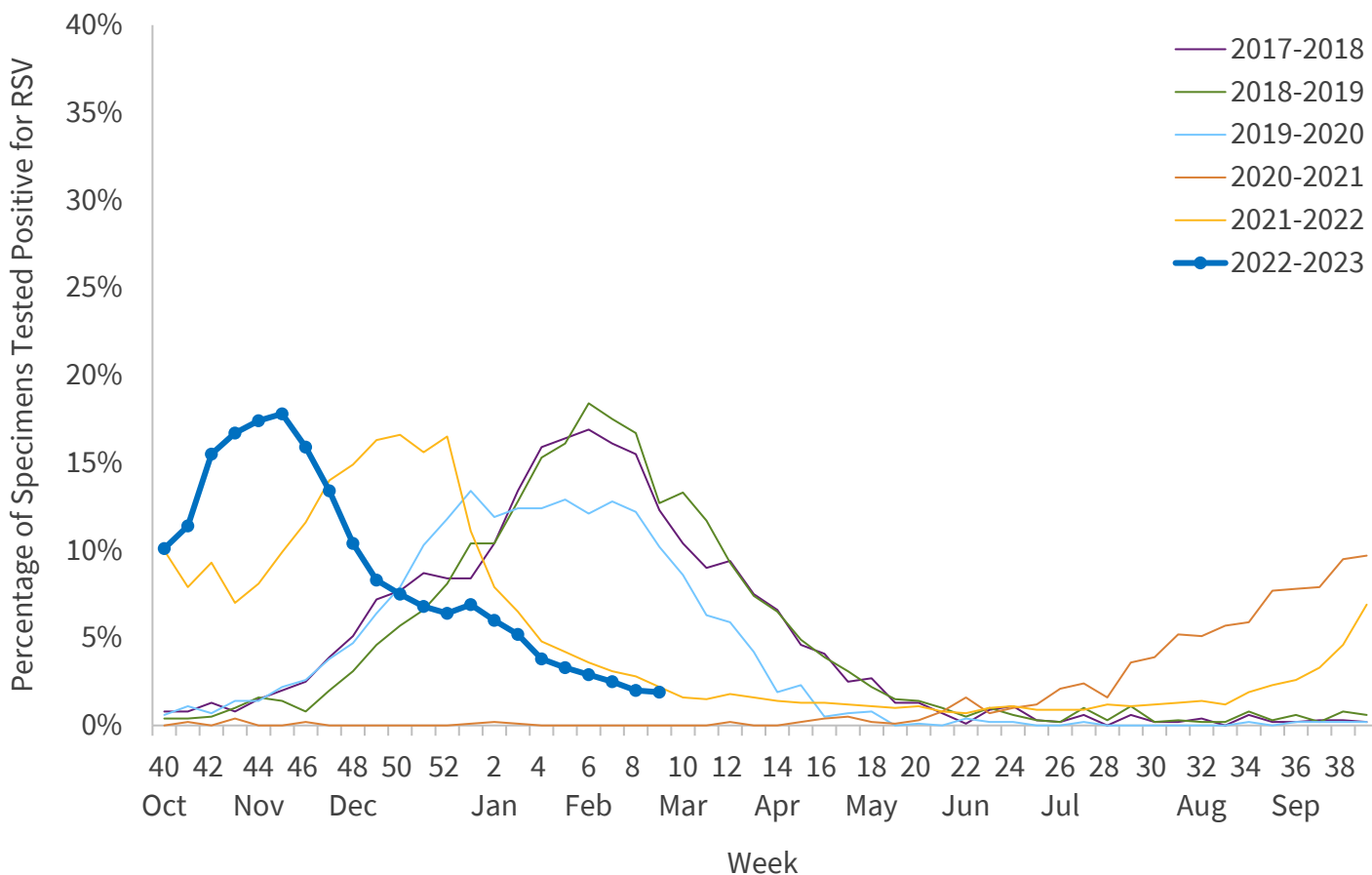
	Current Week Number	Current Week Percent	Season to Date Number	Season to Date Percent
<b>Clinical Sentinel Laboratories</b>				
Number of Specimens Tested	487		16305	
Influenza Positive	4	0.8	2,542	15.6
A	2	50.0*	2,523	99.3*
B	2	50.0*	19	0.7*
<b>Respiratory Laboratory Network</b>				
Influenza Positive	15		62	
A	15	100.0*	60	96.8*
A (H1)pdm09	3	20.0†	7	11.7†
A (H3)	10	66.7†	43	71.7†
A, not subtyped	2	13.3†	10	16.7†
B	0	0.0*	2	3.2*
B Victoria	0	0.0‡	0	0.0‡
B Yamagata	0	0.0‡	0	0.0‡
B, not lineage typed	0	0.0‡	2	100.0‡

# Respiratory Syncytial Virus Surveillance

## RSV Detections from Clinical Sentinel Laboratories

During Week 9, 10,901 specimens were tested for RSV and 208 (1.9%) were positive, which is lower compared to Week 8 (2.0%) ([Figure 13](#)).

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



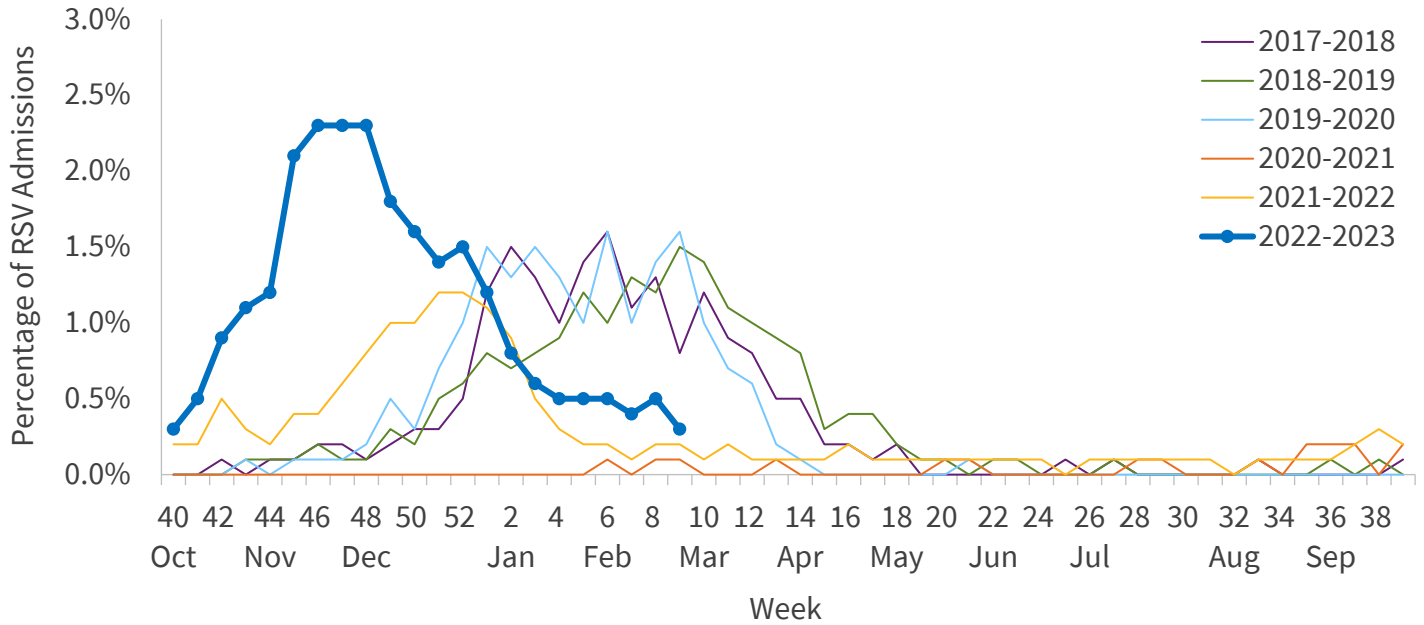
Note: Data have been shifted so that Week 1 aligns across seasons.

## 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 9 was 0.3% compared to 0.5% during Week 8 ([Figure 14](#)).

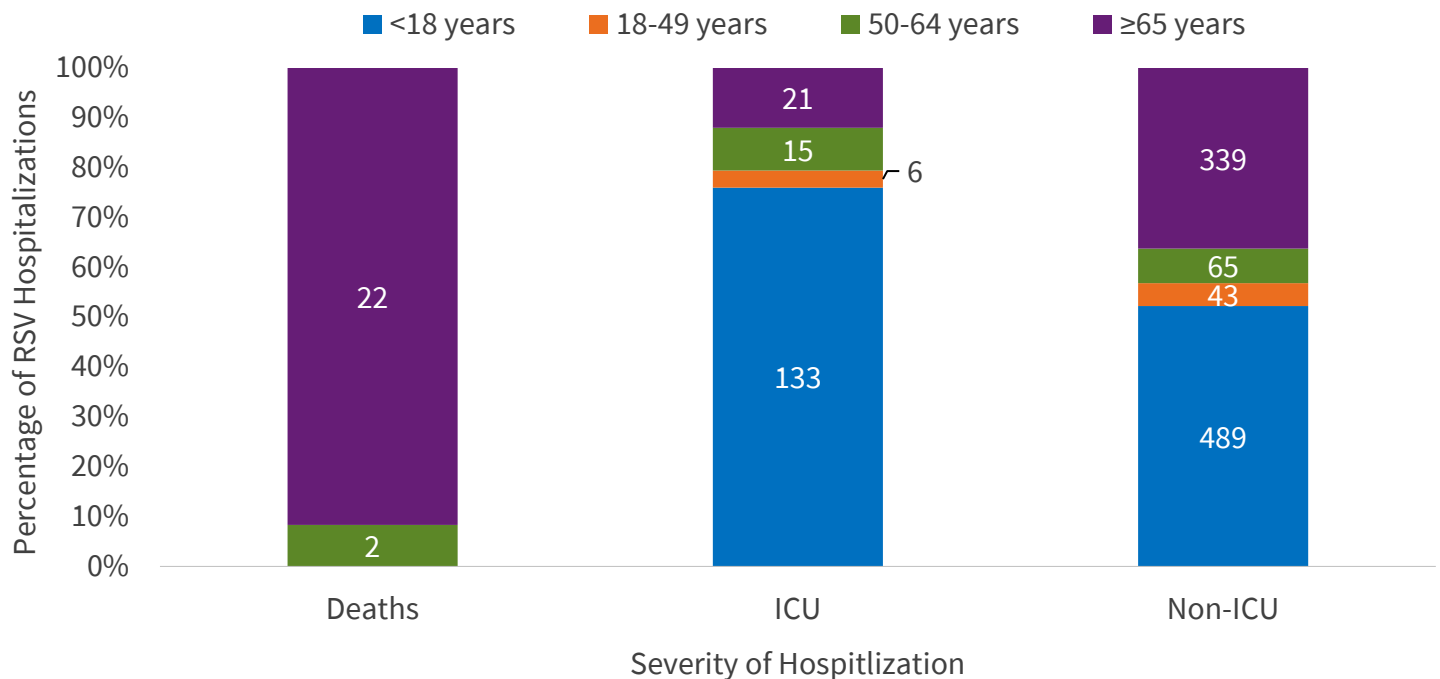
**Figure 14. Percentage of RSV Admissions in Kaiser Permanente Northern California Facilities, 2017–2023 Season to Date**



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

To date, 936 non-intensive care unit (ICU) hospitalizations, 175 ICU admissions, and 24 deaths 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**



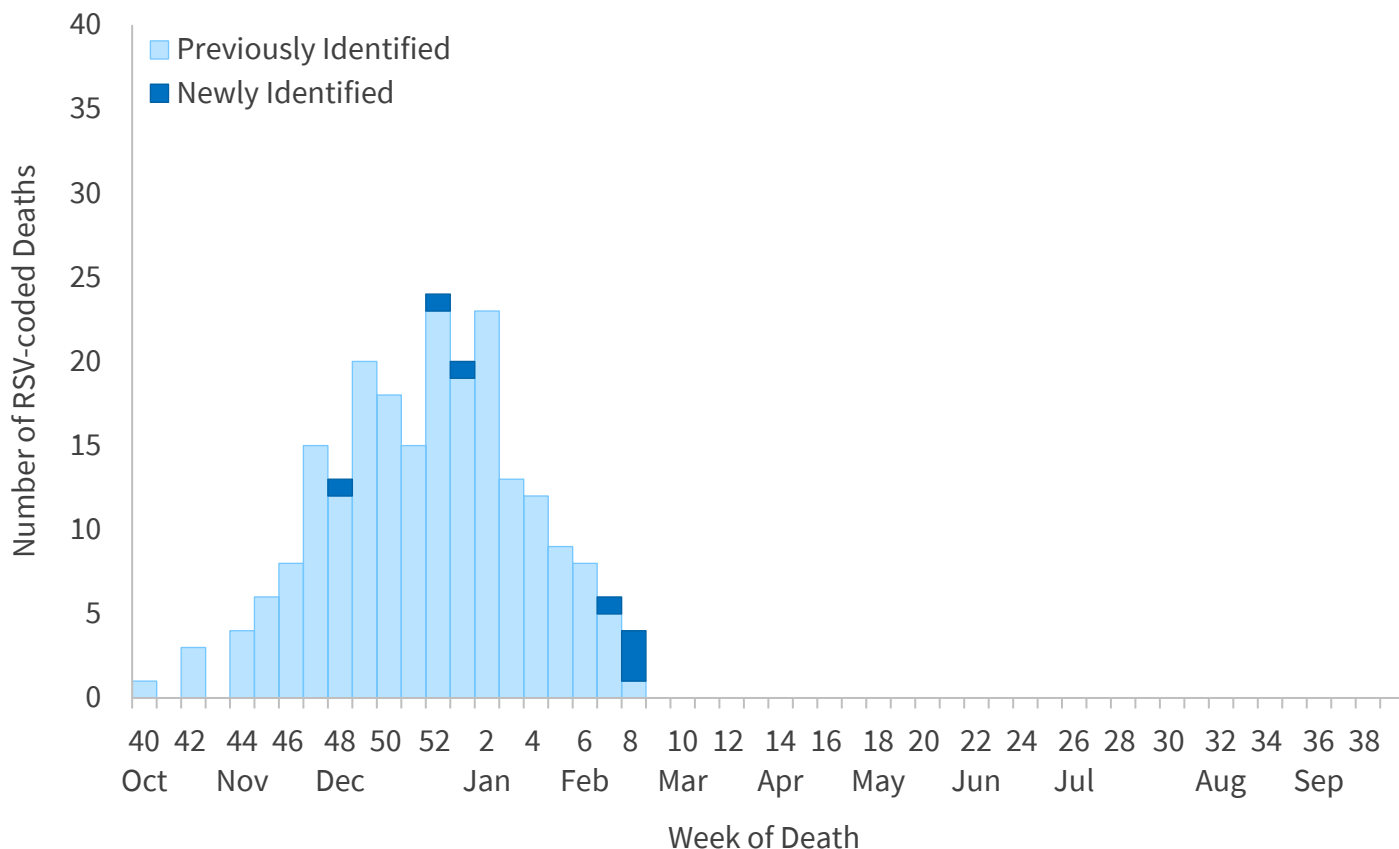


## RSV Mortality Surveillance from Death Certificates

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.

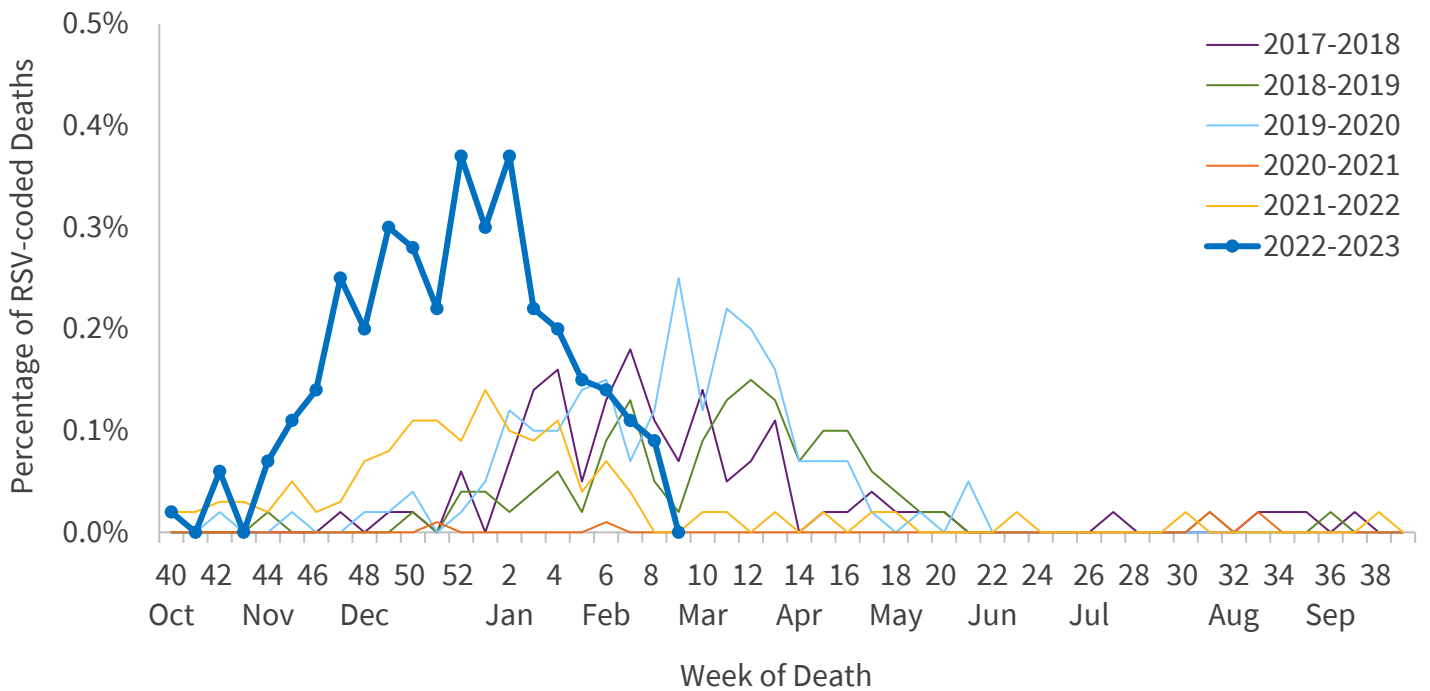
During Week 9, seven RSV-coded deaths were identified. To date during the 2022–2023 influenza season, 222 RSV-coded deaths have been identified ([Figure 16](#)). The percentage of deaths coded as RSV during Week 9 was 0.0% compared to 0.09% during Week 8 ([Figure 17](#)).

**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.

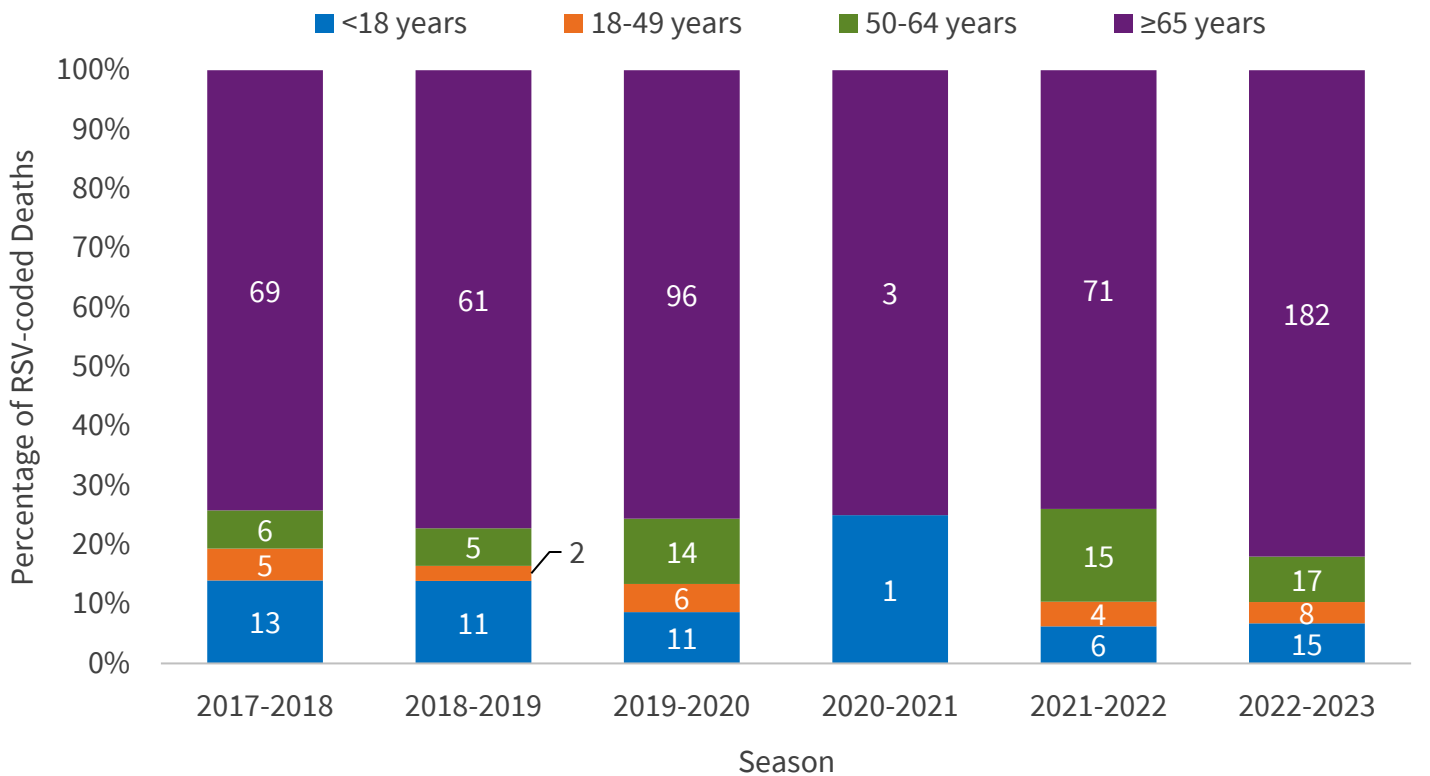
**Figure 17. Percentage of RSV-coded Deaths from Death Certificates, 2017–2023 Season to Date**



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

To date, 182 (82.0%) RSV-coded deaths have been identified among persons  $\geq 65$  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

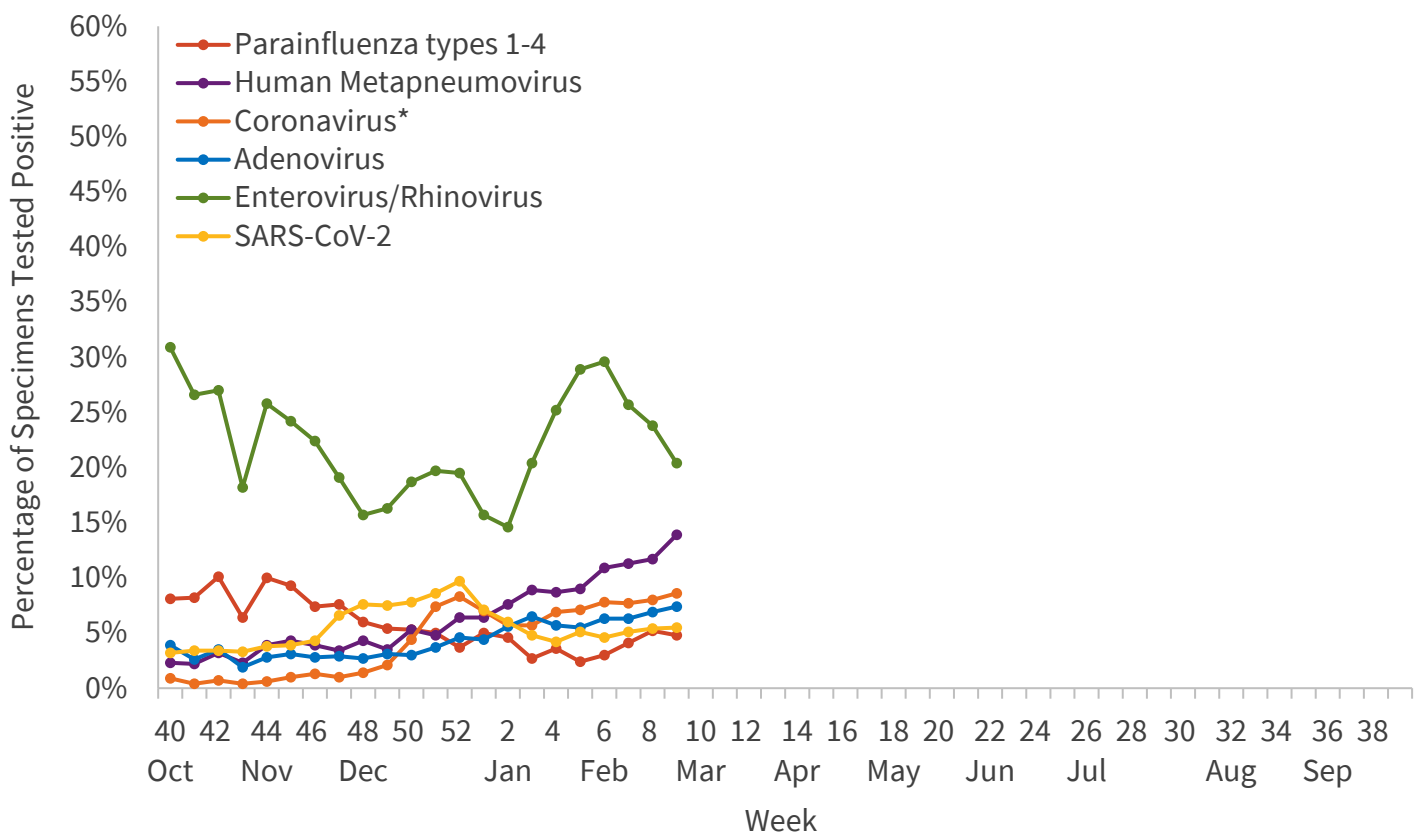
Currently, as mandated under Section 2500 of the California Code of Regulations, deaths among children aged 0–4 years with laboratory-confirmed RSV are reportable to CDPH. The weekly influenza report includes confirmed deaths formally reported to CDPH through March 4, 2023 (Week 9).

No laboratory-confirmed RSV-associated deaths in children <5 years of age were reported to CDPH during Week 9. To date, CDPH has received nine 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 9, adenovirus, coronavirus (non-SARS-CoV-2), and human metapneumovirus activity increased; enterovirus/rhinovirus and parainfluenza activity decreased; and SARS-CoV-2 virus activity remained similar compared to the previous week ([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/Week2022-2309_DataTables.xlsx) (www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Week2022-2309\_DataTables.xlsx).
- › For questions regarding influenza surveillance and reporting in California, please email [InfluenzaSurveillance@cdph.ca.gov](mailto: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 (▶).

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### Influenza Activity Levels<sup>+</sup>

**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%.

**Insufficient Data:** Total number of specimens tested is below the threshold for activity level determination.

### 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

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