



Emerging Infections Newsletter for Clinicians

Feb. 1, 2024

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Topics

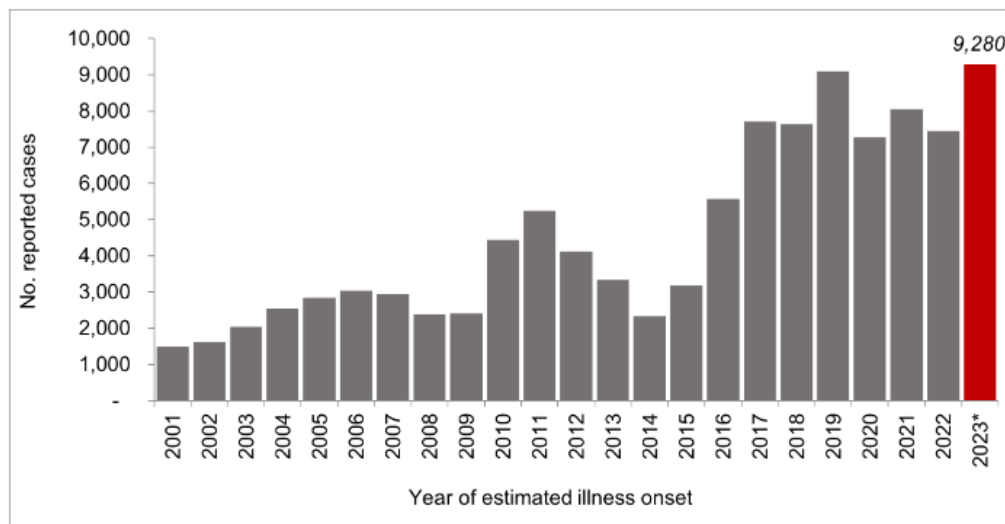
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Coccidioidomycosis

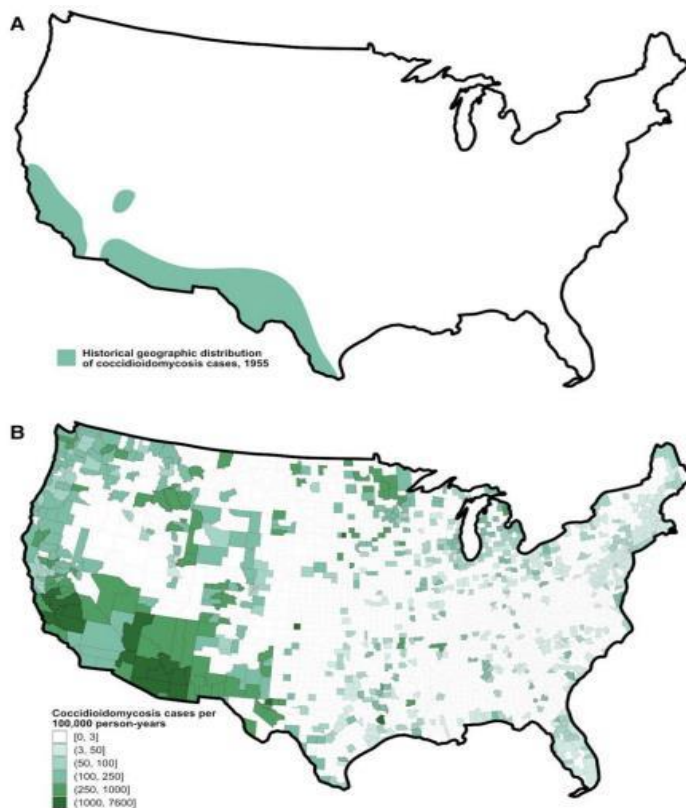
- Coccidioidomycosis (colloquially called “valley fever” or “cocci”) is caused by the inhalation of the soil-residing spores of *Coccidioides* sp. It has been known for many years to be highly endemic in parts of California and Arizona with hot summers, gentle winters and [annual rainfall](#) between 4 and 20 inches.
- About 60% of infected patients are asymptomatic and 40% develop a respiratory tract infection with a variety of non-specific systemic symptoms including fever, chills, sweats, fatigue, headaches and shortness of breath.
- If accompanied by erythema nodosum, the differential diagnosis is markedly shortened. Up to 10% of symptomatic patients develop chronic pulmonary disease and about 1% develop disseminated disease, most commonly to bone, skin and/or the nervous system.
- [CDPH](#) released a health advisory Jan. 18. A record number of cases with new onset were reported in 2023. This was anticipated after the heavy rainfall in 2022-23 that followed multiple years of drought. The graph below shows the number of cases reported to CDPH annually.

Figure 1: Reported coccidioidomycosis by year of estimated onset, California, 2001-2023 (Preliminary data for 2023 in red, reported as of December 31, 2023)



- Santa Barbara County tracks residents identified with cocci. In 2023, 96 cases were reported. That is the highest number since 2018 and consistent with the CDPH health advisory. Of note, 96 cases are only two above the 94-case average in [Santa Barbara County](#) between 2017-2021.
- [Clinical Infectious Diseases](#), April 2023 published updated geographic distribution maps of cocci, blastomycosis and histoplasmosis. Two maps of cocci are shown below. The original distribution map developed in 1955 was based on skin testing. The new map was developed from a cohort of Medicare patients ≥ 65 years old, using ICD-9 codes between 2007 and 2016, and excluding cases with only diagnostic and laboratory claims.
- Using the age cut-off probably significantly underestimates the incidence of disease in younger, healthy, more active persons who are more likely to have asymptomatic or self-limited disease.
- County of residence was considered the geographic location, which could be an important error in some counties with low numbers of cases. It is not uncommon for people who live in cold environments to spend part of the winter in warmer locations like California and Arizona.

- This new map does suggest that cocci has expanded its range, although unlikely to be throughout the United States. Endemicity is still most likely in areas with the appropriate climate as discussed above.



Coccidioidomycosis Take-Home:

Valley Fever is an important diagnostic consideration in patients with community-acquired pneumonia with eosinophilia, erythema nodosum or residence in or after travel to highly endemic areas.

- The geographic distribution is expanding within California to more frequently include the Central Coast, Northern San Joaquin Valley and Southern California.
- A record number of cases were reported in 2023 believed to be secondary to the multi-year drought followed by heavy rains.

The Tripledemic

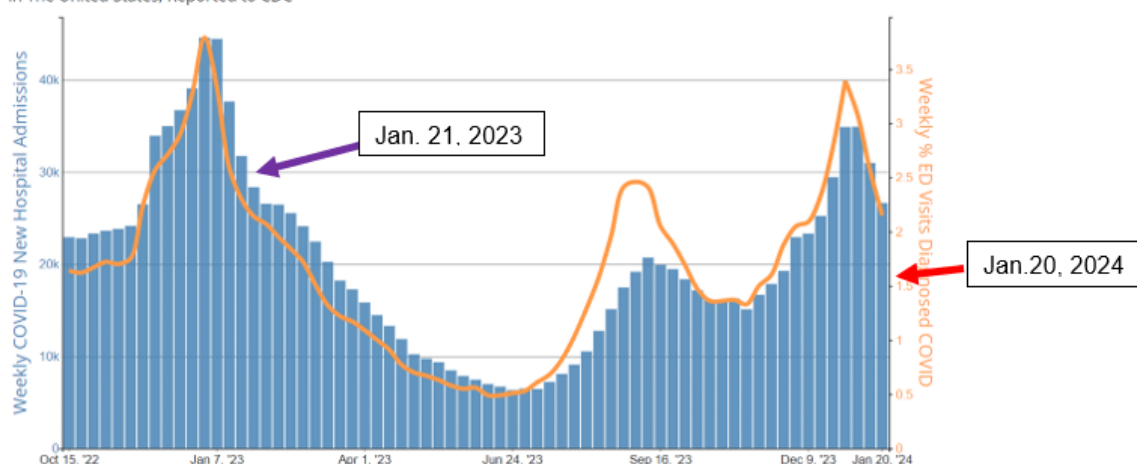
- JN.1 remains dominant over other SARS-CoV-2 strains. JN.1 is not more virulent than other strains.
- International travelers landing in the U.S. have over a 25% positivity rate and almost 90% of sequenced isolates are JN.1.
- U.S. SARS-CoV-2 positivity rates remain elevated above 10% but are stable.
- Weekly hospitalizations with COVID as a diagnosis (severity not indicated) are lower than the same time last year.
- Testing for all three respiratory infections is decreasing consistent with less illness in the communities.
- SARS-CoV-2 wastewater levels remain high but have decreased in some states.

- Influenza is circulating at high levels in most of Europe and parts of Asia. Hospitalizations for influenza are decreasing in the United States and less testing is being performed, but positivity rates remain elevated. The path for this season is still unclear.
- Influenza vaccine matches circulating strains in the world.

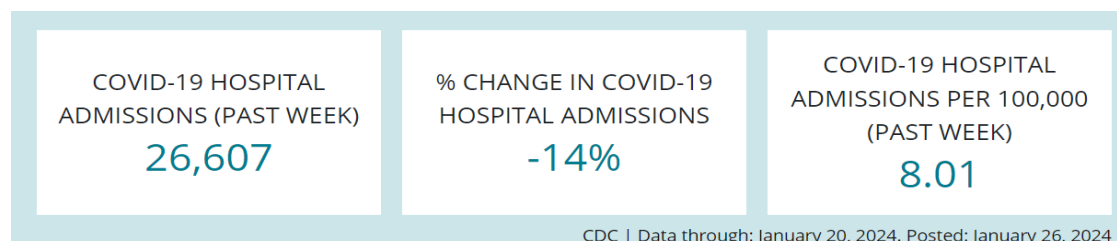
COVID-19

- JN.1 has established itself as the most dominant strain in the world.
- [Hospitalizations](#) in the United States are a surrogate for the virulence of the circulating strain. The graph below has been modified to make it easier to see trends from the last 15 months. As before, the blue vertical bars represent the number of hospitalizations per week and the orange run line demonstrates the percentage of patients being diagnosed with COVID in emergency departments.
- With the recent drop, hospitalization rates are much lower in the last recorded week compared to 1 year ago. The week of Jan. 20, 2024 had 26,607 hospitalizations (red arrow) compared to 31,699 during the week ending Jan. 21, 2023 (purple arrow). Both were declining at that time. Emergency room positivity rates were about the same during that 1-year comparison.

COVID-19 New Hospital Admissions and Percentage of Emergency Department (ED) Visits Diagnosed as COVID-19, by Week, in The United States, Reported to CDC

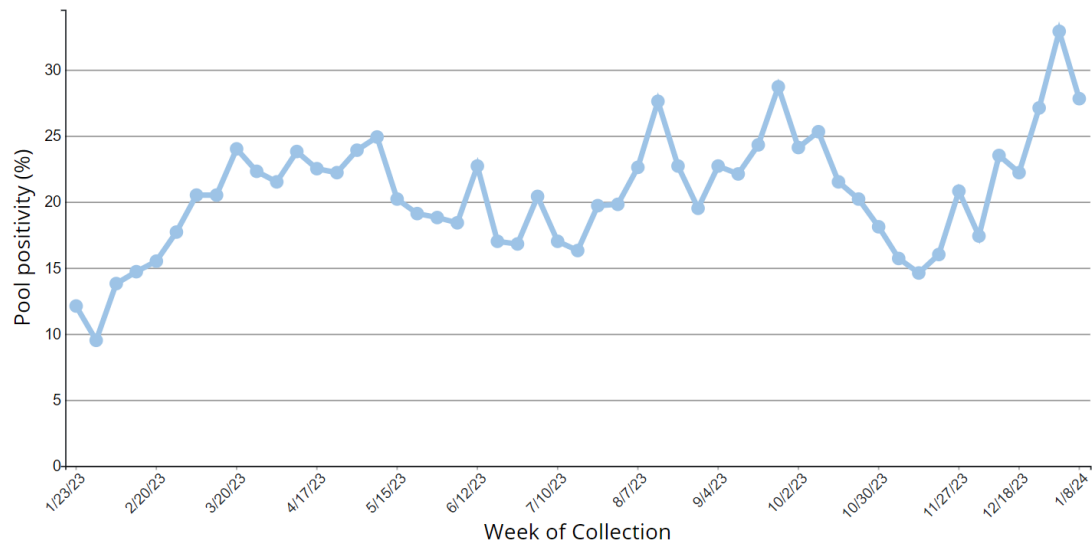


- The CDC tracks hospital admissions per 100,000 county population. Less than 10/100,000 is considered a low number of new hospital admissions. National rates have declined and are down to 8.0/100,000.

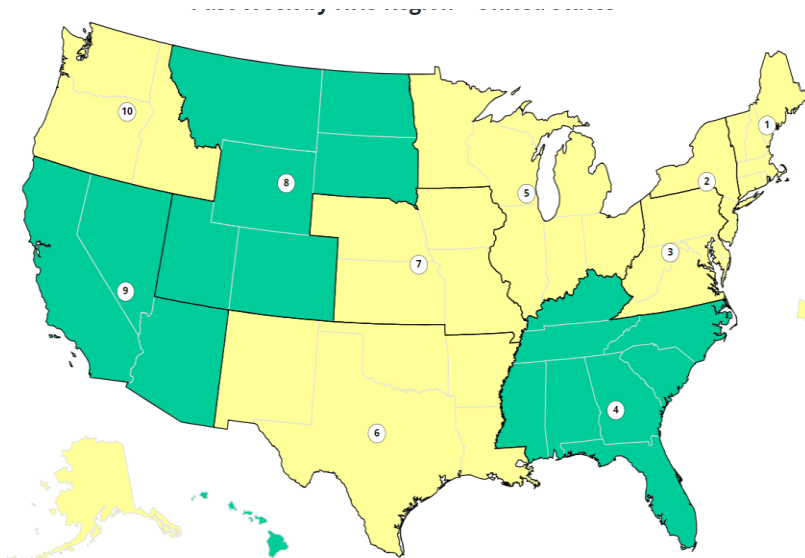


- [National genomic sequencing](#) will be updated by the CDC next week.
- Surveillance of international air travelers is conducted at several major U.S. airports as an early warning system and to fill gaps in worldwide genomic surveillance. It covers flights from more than 135 countries.

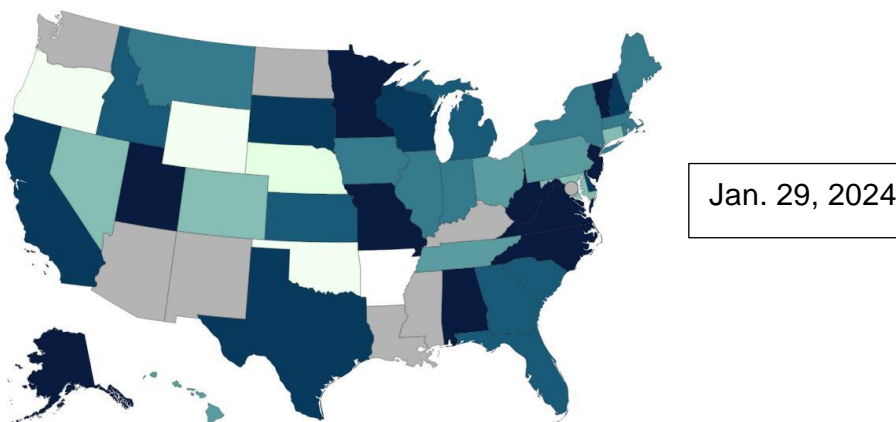
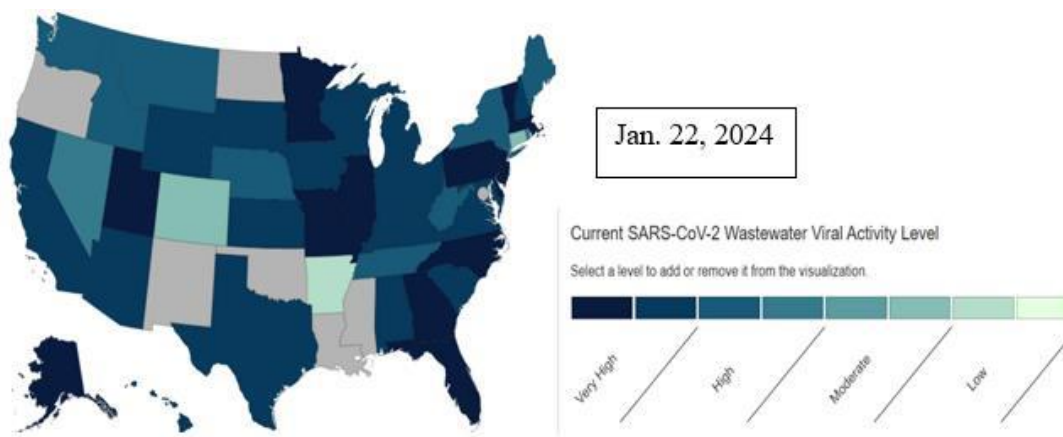
- Traveler-based genomic surveillance positivity rates are on the graph below. Positivity rates for the latest week reported (ending Dec. 25) were 28%.
- The week of Oct. 19, 2023, there were 19 different SARS-CoV-2 strains being reported. Now there are only seven. JN.1 represents 89% of sequenced international isolates (data not shown). BA.2.86 comprises 4.3% and the other five strains are each less than 1.5% of the sequenced isolates.



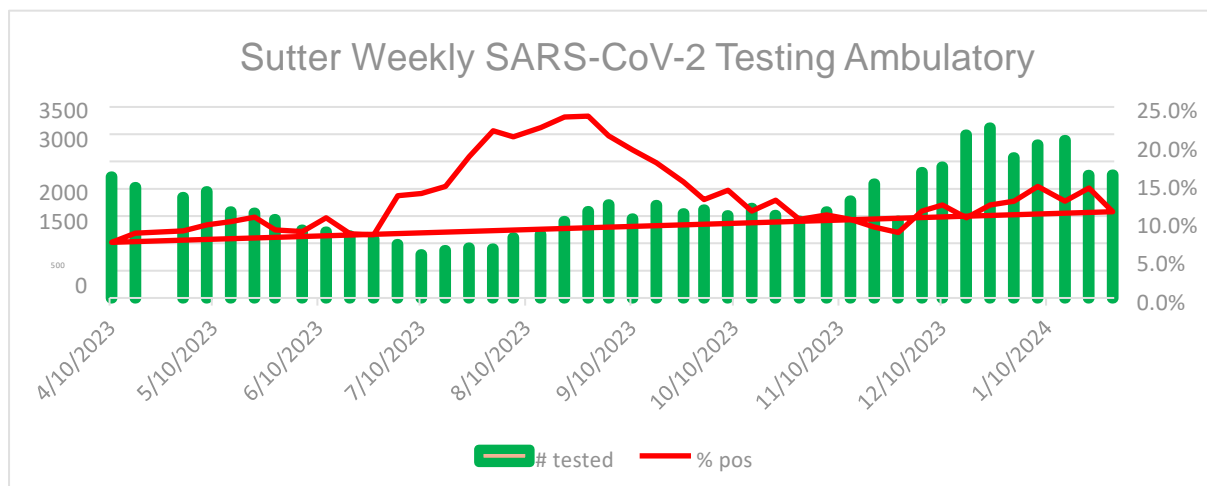
- The map below shows [national](#) molecular test positivity rates by region (updated Jan. 22). Despite the rapid rise of JN.1, three regions still have positivity rates <10% (green). Seven regions are yellow (10-14.9% positivity). None are higher.

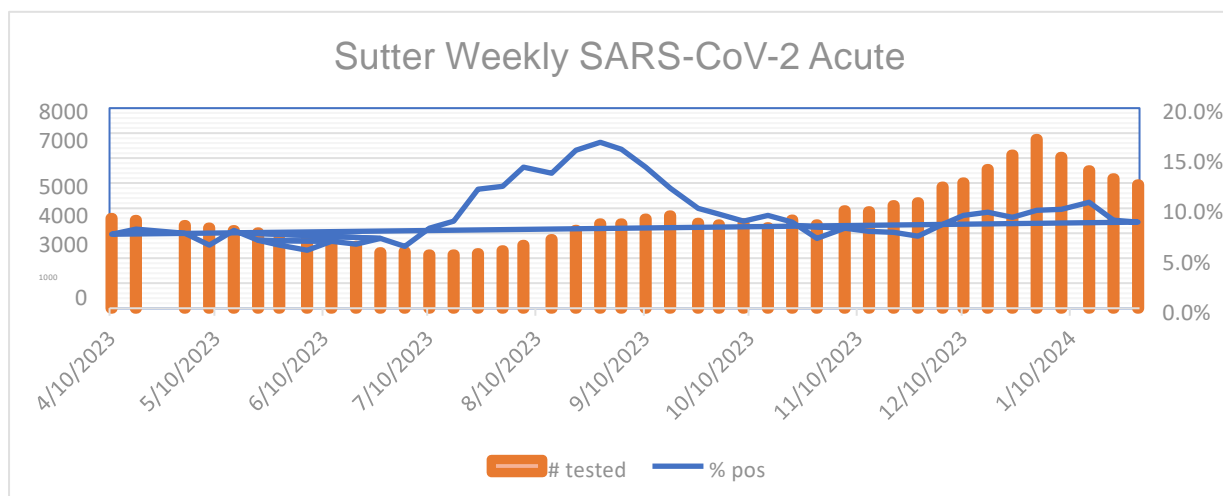


- SARS-CoV-2 wastewater levels are shown on the two [CDC](#) maps below. The top map was reported Jan. 22 and the bottom Jan. 29. Wastewater level has decreased in multiple states over the last two weeks but remains high to very high almost everywhere that it is measured. Eight states are at the highest black levels. Grey represents insufficient data. Multiple states now report moderate to low levels of SARS-CoV-2 in wastewater.

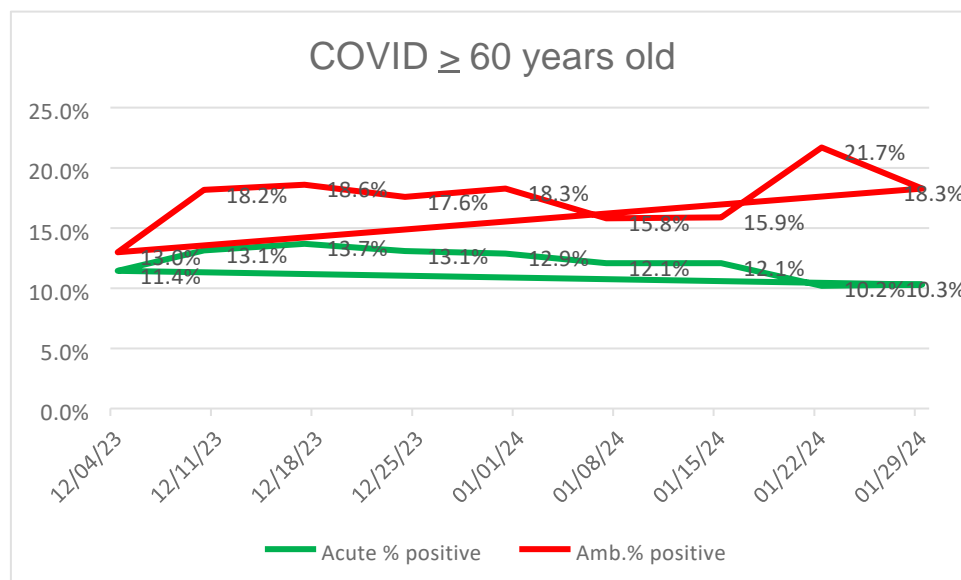


- Updated Sutter testing data below show stable, elevated, positivity rates but testing is decreasing. Rates are only a little higher than April through June of 2023.





- COVID test positivity rates in persons greater than 60 years old are being pulled out to analyze. Rates in this age group are higher than the total cohort of all ages. Notably, rates are reasonably stable.



COVID-19 Vaccine Effectiveness Against Long COVID in Children

[Pediatrics](#), Jan.16 published a retrospective, cohort study examining vaccine effectiveness (VE) in preventing long COVID in children aged 5-17 years within 12 months of completion of the primary series.

- Probable long COVID was defined as having a positive COVID-19 PCR test plus at least two long-COVID compatible symptoms following infection. Symptoms included brain fog, dyspnea, gastrointestinal dysfunction, generalized pain and fatigue.
- Diagnosed long COVID simply required two or more visits with diagnosis codes for long COVID during the vaccine eligibility period. (Jan.1, 2021-Oct. 29, 2022, for adolescents 12 to 17 years old and Oct. 29, 2021 to Oct. 29, 2022 for children 5-11 years old).
- Over 1 million child and adolescent immunization records were evaluated from 17 health systems.
- Among patients with COVID, the incidence of probable long COVID was 4.5% compared to 0.7% with diagnosed long COVID.

- Adjusted vaccine effectiveness within 12 months was 35.4% (95% CI 24.5 – 44.5) against probable long COVID and 41.7% (95% CI 15.0 – 60.0) against diagnosed long COVID.
- VE was higher for adolescents 12-17 years (50%) than children aged 5-11 (24%) but VE against long COVID waned over time in both age groups.

Paxlovid® Emergency Use Authorization (EUA) expiration

Paxlovid® is approved for treatment in adults with mild to moderate COVID, who are at high risk for progression to severe disease. To ensure that appropriate use of Paxlovid will continue for all ages, the EUA is still in effect for persons 12 to <18 years old, weighing at least 40 kg. The [FDA has announced](#) a revision to the emergency use authorization (EUA) that states **EUA-labeled** Paxlovid remains authorized for use until March 8 regardless of the labeled or expiration date.

COVID-19 Take-Home:

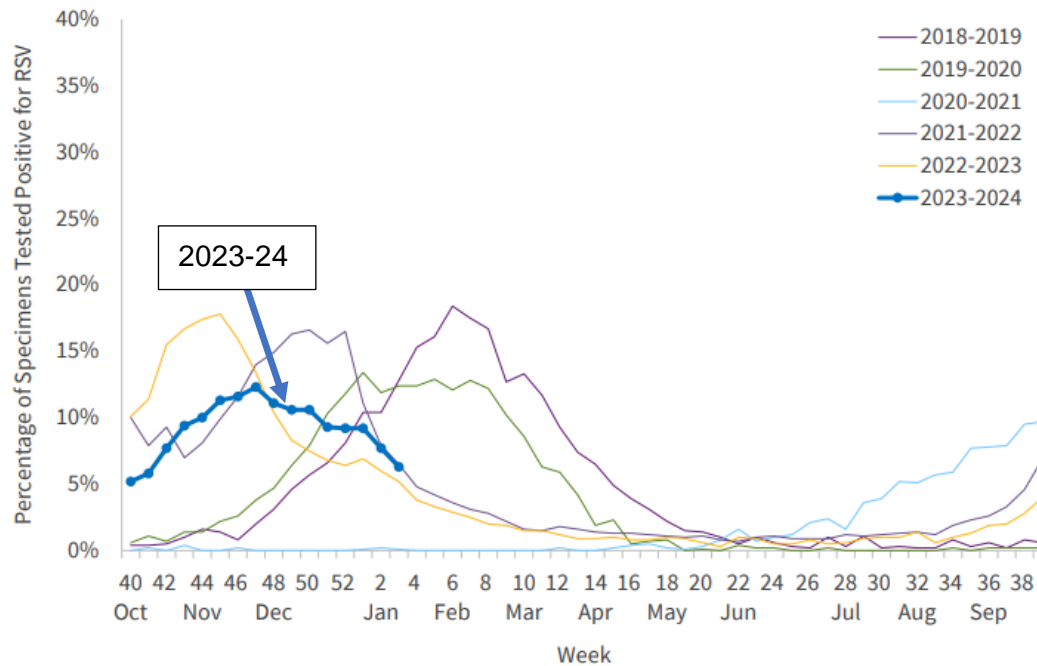
JN.1 dominates in the United States and in international travelers coming to the United States. Although disease levels are elevated, hospitalizations, wastewater rates, emergency department, ambulatory and persons 60 years and older positivity rates are stable or decreasing. This supports increased contagion of JN.1 but not increased virulence.

- A full primary series of vaccinations against SARS-CoV-2 was associated with a reduced risk of developing long COVID in children 5-17 years old.
- The indication and dosing of Paxlovid® has not changed. Packaging will be different than the EUA-labeled product. By March 8, all product dispensed will be the NDA-labeled product including product prescribed for pediatrics under the EUA.
- **Related Links**
 - [CDC Caring for Patients](#)
 - [CDC Data Tracker](#)
 - [CDC Latest Updates](#)
 - [CDC Vaccine Information](#)
 - [CDPH Tracking and Vaccination Updates](#)
 - [Sutter Health for Clinicians](#)
 - [Sutter Health for Patients](#)
 - [WHO Table of Contents](#)

RSV

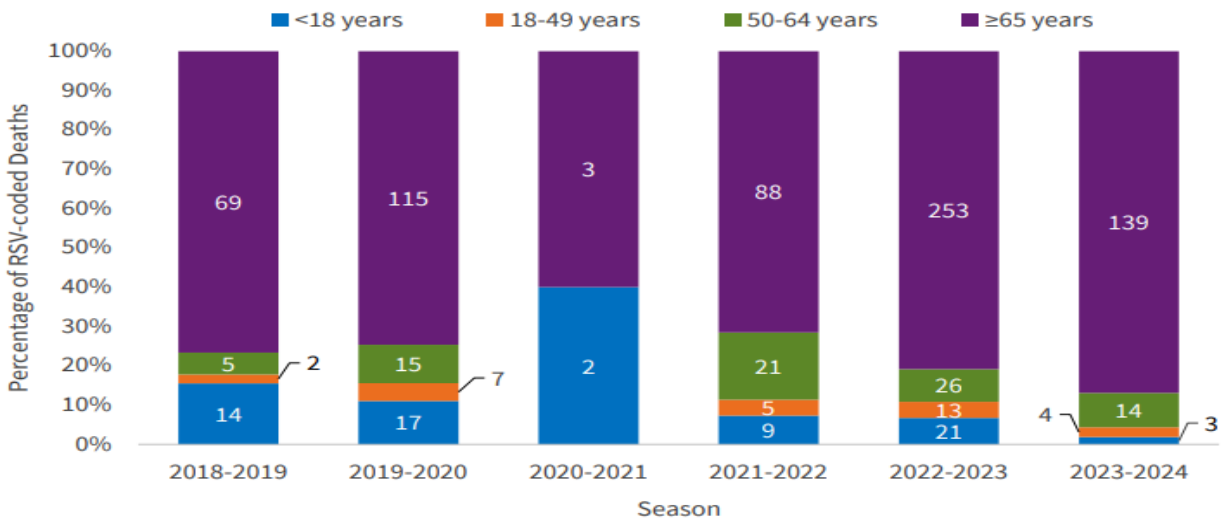
- [CDPH](#) reports RSV data weekly during the season. The CDPH graph below demonstrates the current California RSV season (blue arrow) compared to other seasons since 2018. RSV rates are still elevated, but they are progressively decreasing and are down to 6.7% for the last measured week.

Figure 12. Percentage of RSV Detections at Clinical Sentinel Laboratories, 2018–2024 Season to Date

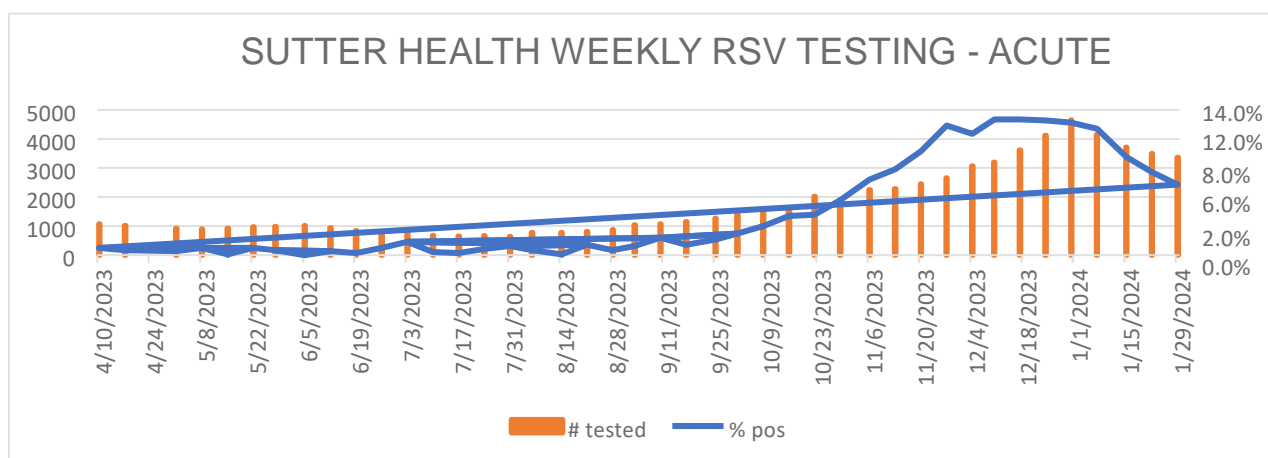
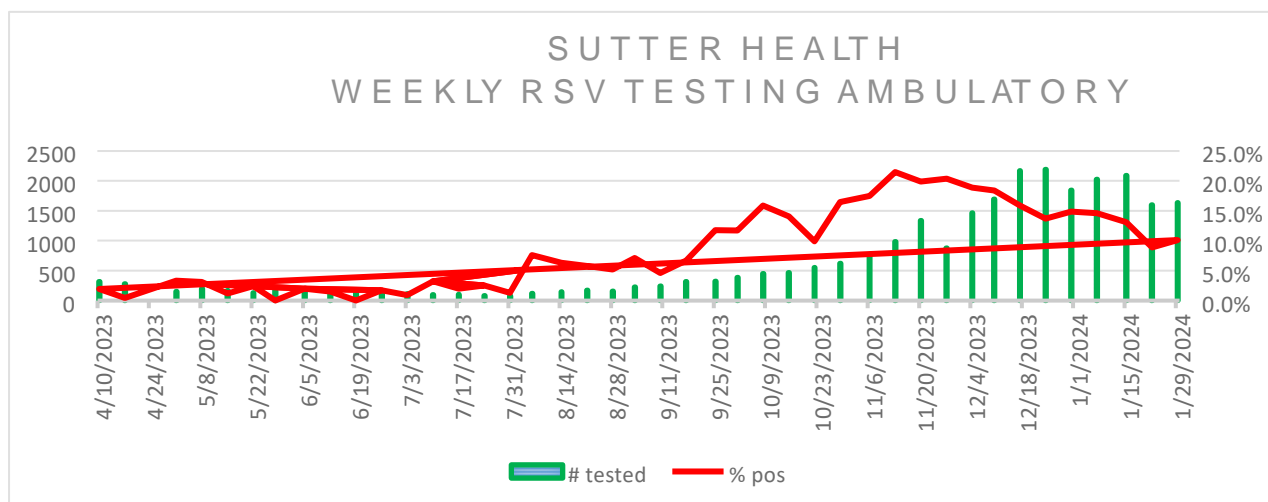


- RSV mortality is highest in persons ≥ 65 years, followed by persons 50-64 years old. The graph below shows the RSV-coded deaths by season from 2018 to present. The 2020-21 RSV season was essentially non-existent secondary to the COVID pandemic. The current season data is incomplete but the pattern is the same.

Figure 17. Age Distribution of RSV-coded Deaths from Death Certificates, 2018–2024 Season to Date



- RSV identification rates remain elevated in both the ambulatory (10.1%) and emergency departments (6.8%) in Sutter, but again testing numbers are also decreasing. See two graphs below.



- RSV results by age are in the following table for the week ending Jan. 29. Positivity rates at all ages are decreasing significantly. Children less than 6 years old still dominate.

Location	<6 years old		6 to < 12 years old		≥ 60 years old	
	Number Tested	% Positive (number)	Number Tested	% Positive (number)	Number Tested	% Positive (number)
Acute (ED)	598	18.7% (112)	171	4.7% (8)	1,679	4.3% (73)
Ambulatory	472	16.3% (77)	197	7.1% (14)	271	8.9% (24)

- On Jan. 30, CDPH provided helpful tips to remind health systems about the upcoming seasonal administration windows for when to administer RSV therapeutics.
- Administration of Abrysvo RSV vaccine to pregnant persons ended on Jan. 31.
 - Based on declining RSV positivity rates, and the 2-week gap after vaccine administration before efficacy, the benefit of prenatal immunization against RSV is expected to diminish when administered during February or later.
- Continue to administer RSV vaccines to adults 60 years of age and older year-round, based on shared clinical decision making.

- RSV disease was being identified in the South and within Sutter Health starting in late July. Actual season onset can be difficult to predict.
- RSV vaccines appear to protect older adults for at least 2 years based on available clinical trial data.
- Continue to administer remaining doses of nirsevimab to eligible infants and children through the end of March.

RSV Take-Home:

- RSV positivity rates remain elevated, but the season is approaching the end in California. It is difficult to predict when the 2024-25 season will start.
- Persons ≥ 65 years old have the highest mortality from RSV and the vaccine is anticipated to be effective for at least 2 years.
- RSV vaccination of adults ≥ 60 years old is recommended year-round with shared decision making.
- RSV vaccine administration to pregnant persons is anticipated to end Feb. 1. The vaccine takes 2 weeks to stimulate adequate antibodies and disease rates are expected to continue dropping.
- Continue with nirsevimab for appropriate candidates through the end of March.

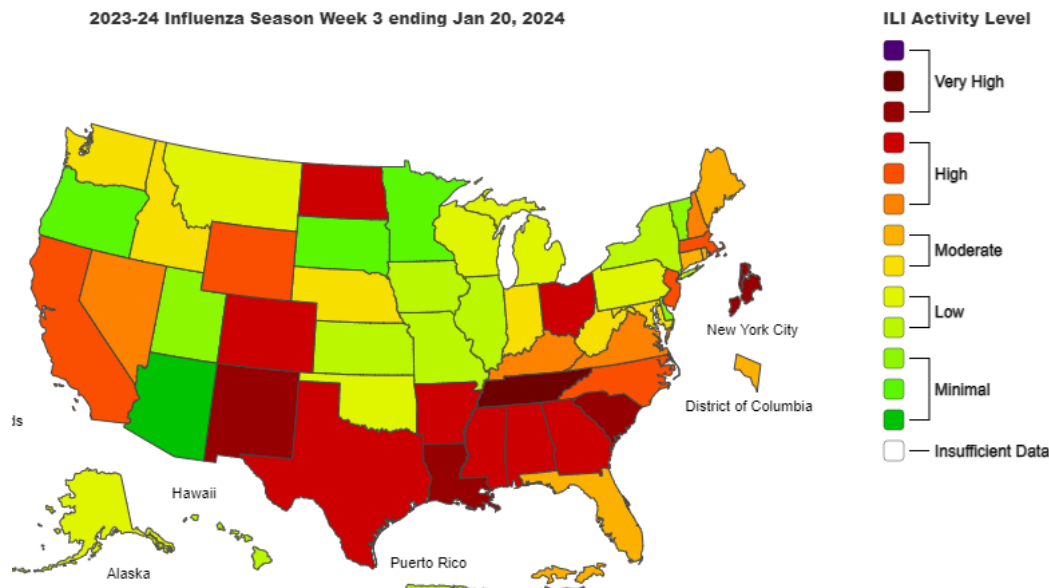
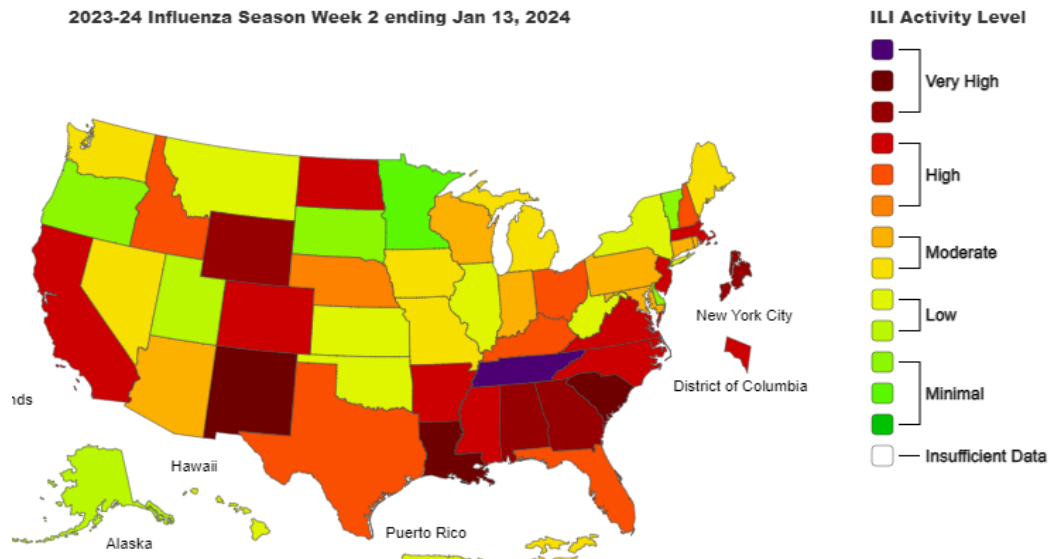
Influenza

- The [WHO](#) released its biweekly global influenza update on Jan. 25. This includes the most recent two weeks of data, but it is only up to Jan. 7.
 - Influenza A H1N1 is the dominant strain in Europe and the United States.
 - In Europe, hospitalizations including ICU admissions increased sharply.
 - Influenza activity in North America remains typical for this time of year.
 - Influenza activity in Asia is still elevated, but generally decreasing. A H3N2 dominates with some areas having increased *Influenza B*.
 - From Dec. 25 to Jan. 7, 323,975 specimens were tested with 67,212 positives. Although testing decreased compared to the previous 2-week report, the positivity rate increased from 17 to 21%.
 - 84% were influenza A with a continued gradual increase in influenza B, now comprising 16% of all isolates. Interestingly, A H3N2 still remains three times as common as H1N1 worldwide, whereas A H1N1 dominates in North America and Europe.
 - The [table](#) below shows influenza activity in the Northern Hemisphere. The number of tests performed and positivity are twice as high compared to the same time last year.

Week Ending	Influenza A	Influenza B	Flu A plus B
	# specimens	# specimens	Total % Pos.
Jan. 9, 2023	7,654	3,421	8.0%
Jan. 8, 2024	19,416	7,129	18.3%

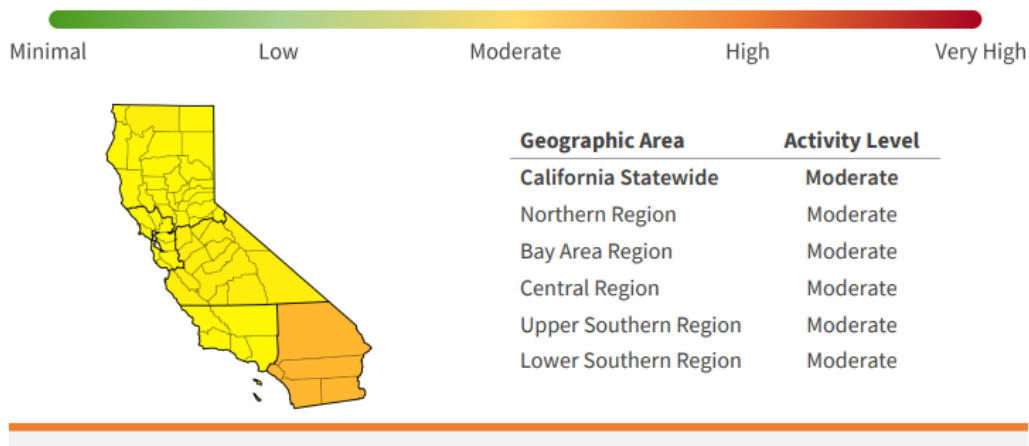
- The weekly [CDC](#) Influenza Surveillance Report was released on Jan. 26.
- In the last three weeks, influenza-associated hospitalizations have progressively decreased from 20,066 to 14,874 to 12,382. That is a 38% decrease over three weeks.
- Although influenza A continues to dominate throughout the United States, influenza B identifications are increasing. Rates vary by state and region.
- Influenza-like illness (ILI), the surrogate for influenza used by the [CDC](#), is represented by the 2 consecutive-week maps below. The first one shows data for the week ending Jan. 13

and the second has data ending Jan. 20. Notice the color difference between the states on the two maps. This shows variation between states and regions.



- The [CDPH](#) map below of influenza (last updated through Jan. 20), shows that influenza rates are moderate throughout the state. The state influenza positivity rate was 12.3%.

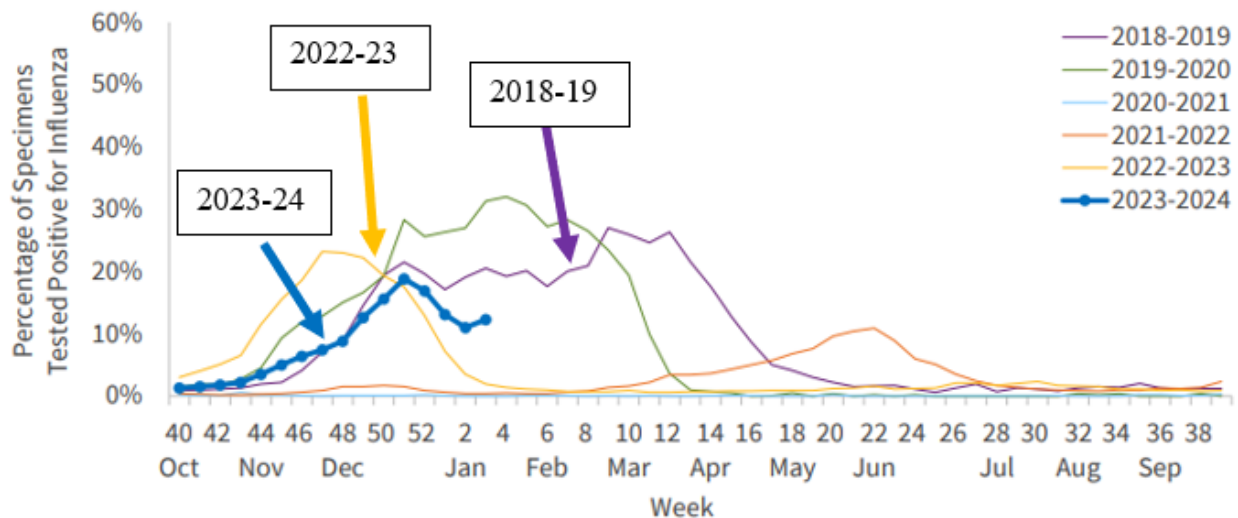
Influenza Activity Levels*



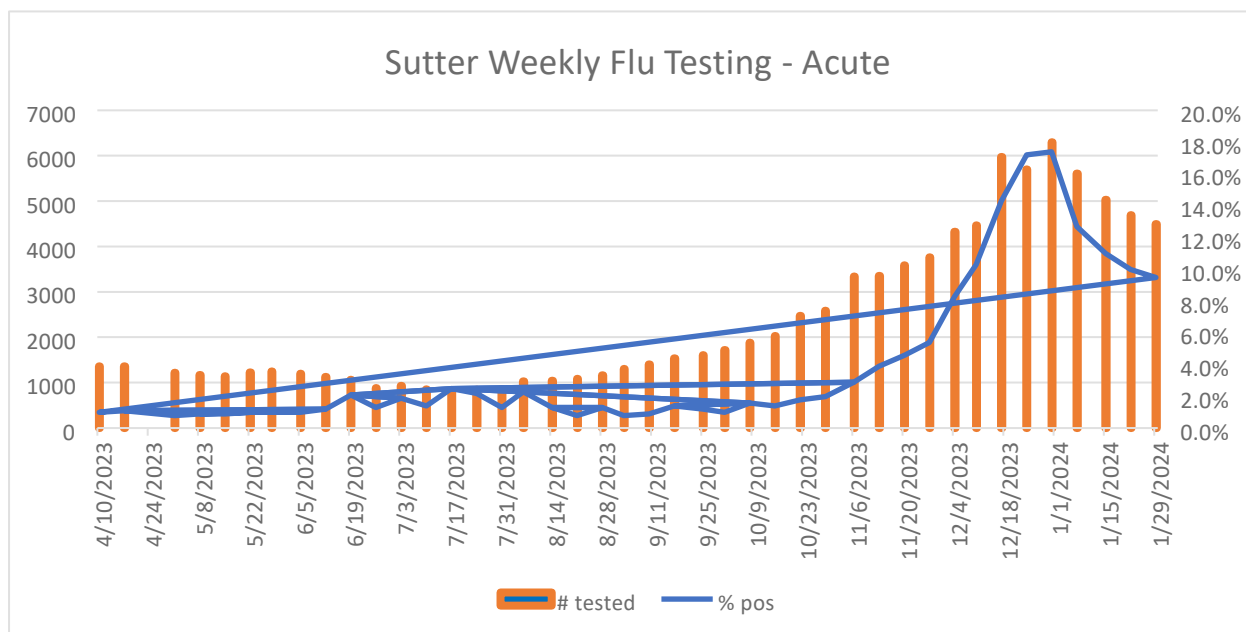
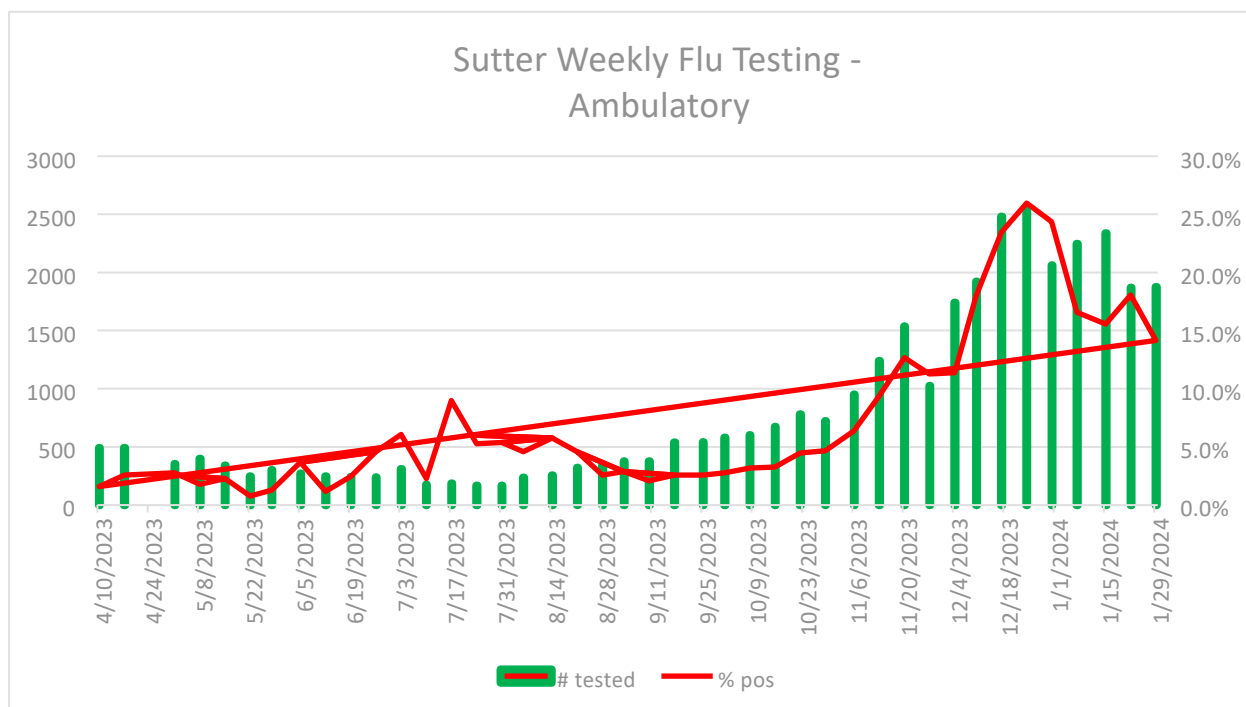
CDPH Influenza Activity Levels*

- **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%.
- The [CDPH graph](#) below demonstrates that our present influenza season (blue arrow) continues to be similar to the pre-COVID 2018-19 season (purple arrow).
- The trend remains uncertain. In general, testing rates are decreasing for all three viruses, suggesting less illness being transmitted despite all three viruses circulating at increased levels.

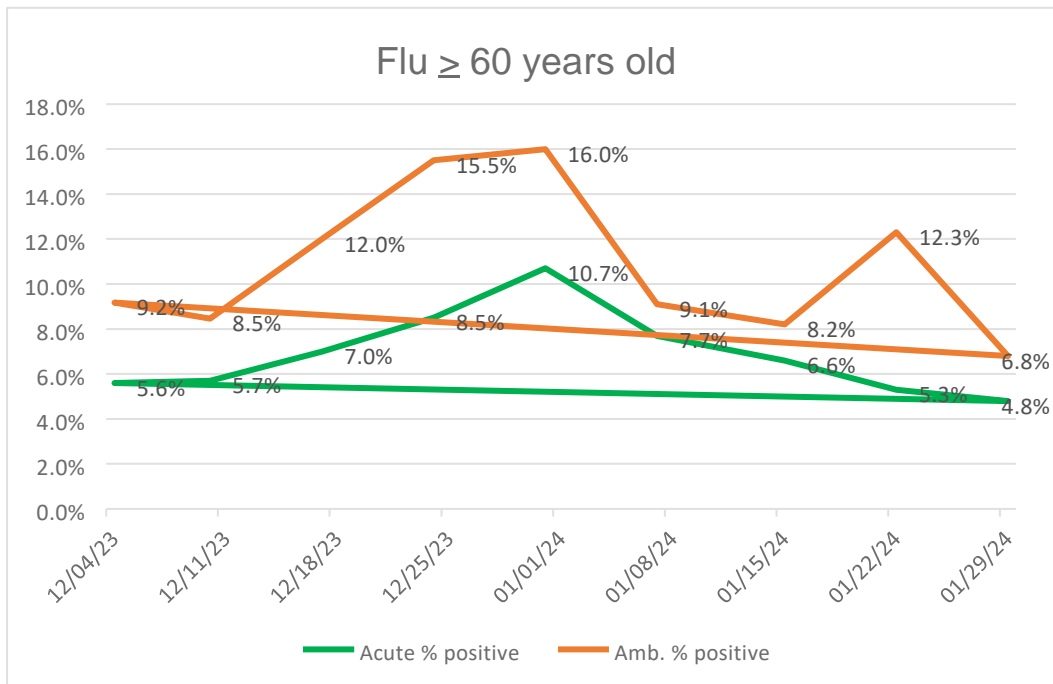
Figure 1. Percentage of Influenza Detections at Clinical Sentinel Laboratories, 2018–2024 Season to Date



- The graphs below show Sutter emergency department and ambulatory influenza positivity rates. In the acute setting (emergency departments), positivity rates decreased to 9.5% in the last week, and the ambulatory setting decreased to 14.2%. These are similar to state rates. Testing numbers have been decreasing.



- The positivity rate in persons ≥ 60 years old is shown on the following graph. Rates are decreasing in ambulatory and in the ED. This is consistent with mild disease in the older age group, likely because of increased vaccinations in this population, and the good vaccine match to circulating strains.



Take-Home Influenza:

- International Northern Hemisphere seasonal influenza levels remain high, but they appear to be decreasing in significant parts of the U.S.
- Influenza A is still most commonly identified but influenza B varies by state and region.
- Influenza-associated hospitalizations have decreased significantly for three consecutive weeks.
- The influenza vaccine is a good match to circulating strains. Vaccination of everyone 6 months and older still should be recommended.

Other Respiratory Viruses

- [CDPH](#) tracks respiratory viruses beyond SARS-CoV-2, influenza and RSV. They started reporting again in October. SARS-CoV-2 (yellow arrow), included in the graph below, remains the main virus that is increasing. Human Metapneumovirus is at low levels but appears to be slowly increasing (purple arrow).
- Enterovirus/Rhinovirus (green arrow) remains the one most commonly identified as a percentage of positive tests, but positivity rates between SARS-CoV-2 and rhinoviruses continue to converge.

