Emerging Infections Newsletter for Clinicians

Feb.8, 2024

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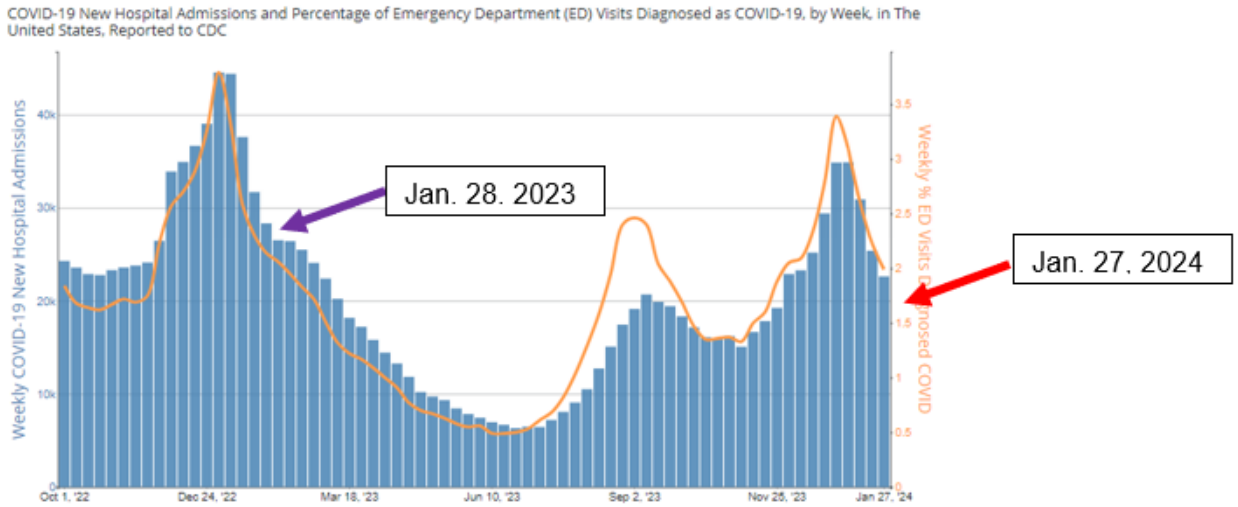
The Tripledemic

- JN.1 remains dominant over other SARS-CoV-2 strains. JN.1 is not more virulent than other strains. Nationally, hospitalizations continue to decrease. The trend is similar to one year ago at this time.
- Weekly hospitalizations with COVID as a diagnosis (severity not indicated) are lower than the same time last year.
- 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.
- Influenza testing for all three respiratory infections is decreasing consistent with less illness in the communities.
- Influenza is in a transition phase in the United States. A H1N1 has been dominant thus far but A H3N2 (which is the most common strain being reported in the world at this time) is increasing and now comprises 40% of influenza A isolates. This suggests that influenza rates may increase again.
- Influenza vaccine matches circulating strains in the world.

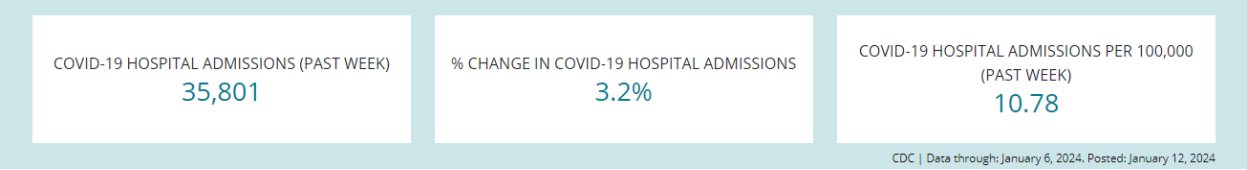
COVID-19

- JN.1 has established itself as the most dominant strain in the world. The good news is that the virulence of this strain is less than some previous strains.
- Hospitalizations in the U.S. 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 new hospitalizations per week and the orange run line demonstrates the percentage of patients being diagnosed with COVID in emergency departments.
- Looking at the trend of the blue bars, the recent drop in hospitalization rates is similar to one year ago. The week of Jan. 27, 2024 had 22,636 hospitalizations (red arrow) compared to 28,338 during the week ending Jan. 28, 2023 (purple arrow). Both were declining at that time. Emergency room positivity rates were about the same during that 1-year comparison.

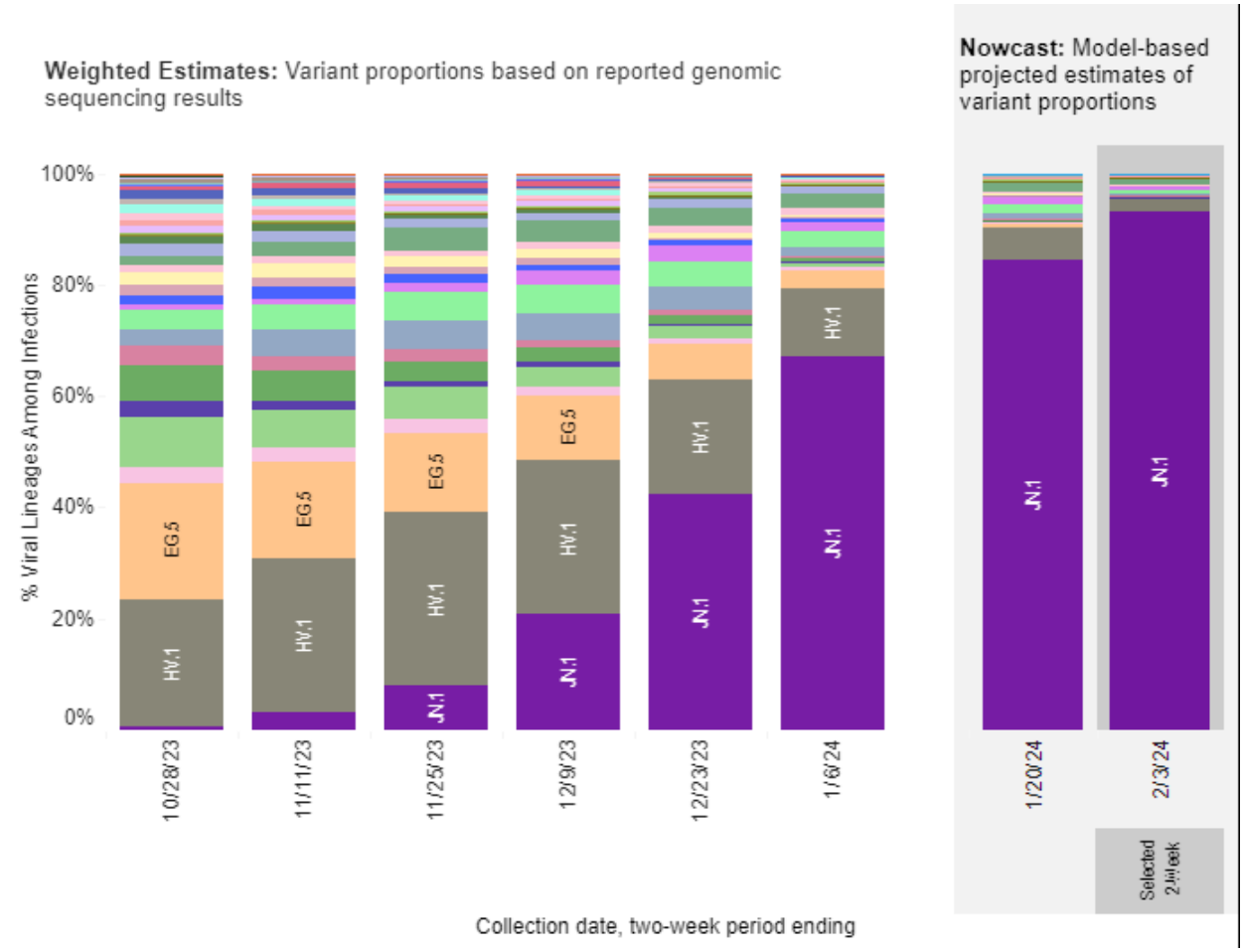


- The CDC tracks hospital admissions per 100,000 county population. Less than 10/100,000 is considered a low number of new hospital admissions. National rates have substantially declined and are down to 6.8/100,000. The two tables below show the significant decrease

in hospitalizations since JN.1 became dominant. The first table shows 35,801 hospitalizations the week ending Jan. 12. The second one shows that number decreased by 37% in 3 weeks, down to 22,636.

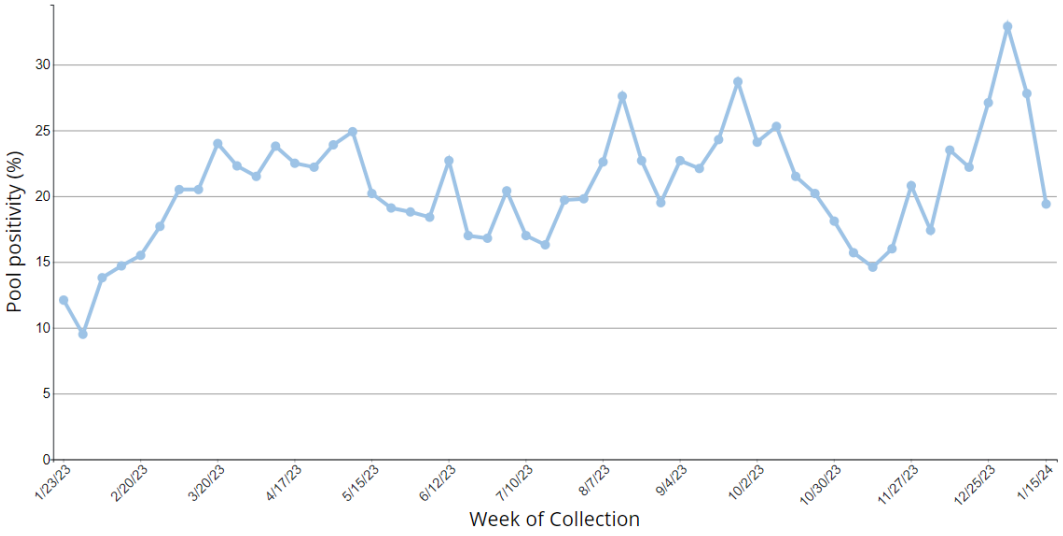


- National genomic sequencing was updated by the CDC on Feb. 2. JN.1 now comprises 93% of sequenced isolates.

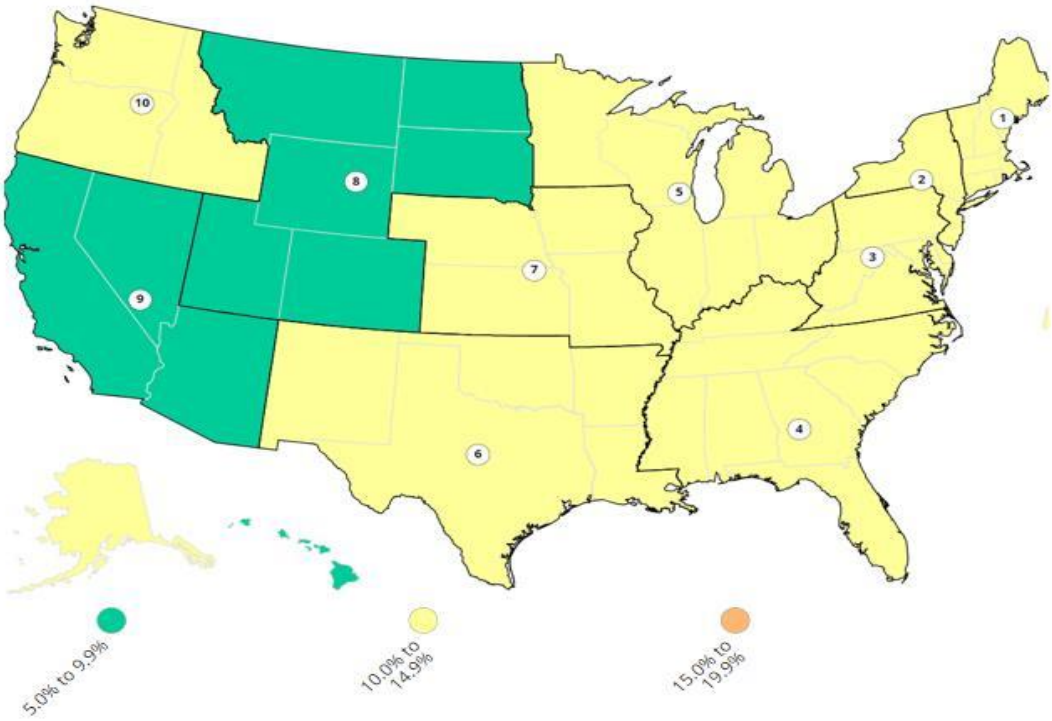


- Surveillance of international air travelers is conducted at several major U.S. airports as an early warning system and to fill gaps in worldwide genomic surveillance. It covers flights from more than 135 countries.

- Traveler-based genomic surveillance positivity rates are on the graph below. Positivity rates for the latest week reported (ending Jan 15) dropped from 28% to 19%. Remember that international testing data is at least 2 weeks from collection until reported on the graph.
- Their data is similar to national data with JN.1 represents 89% of sequenced international isolates (data not shown).

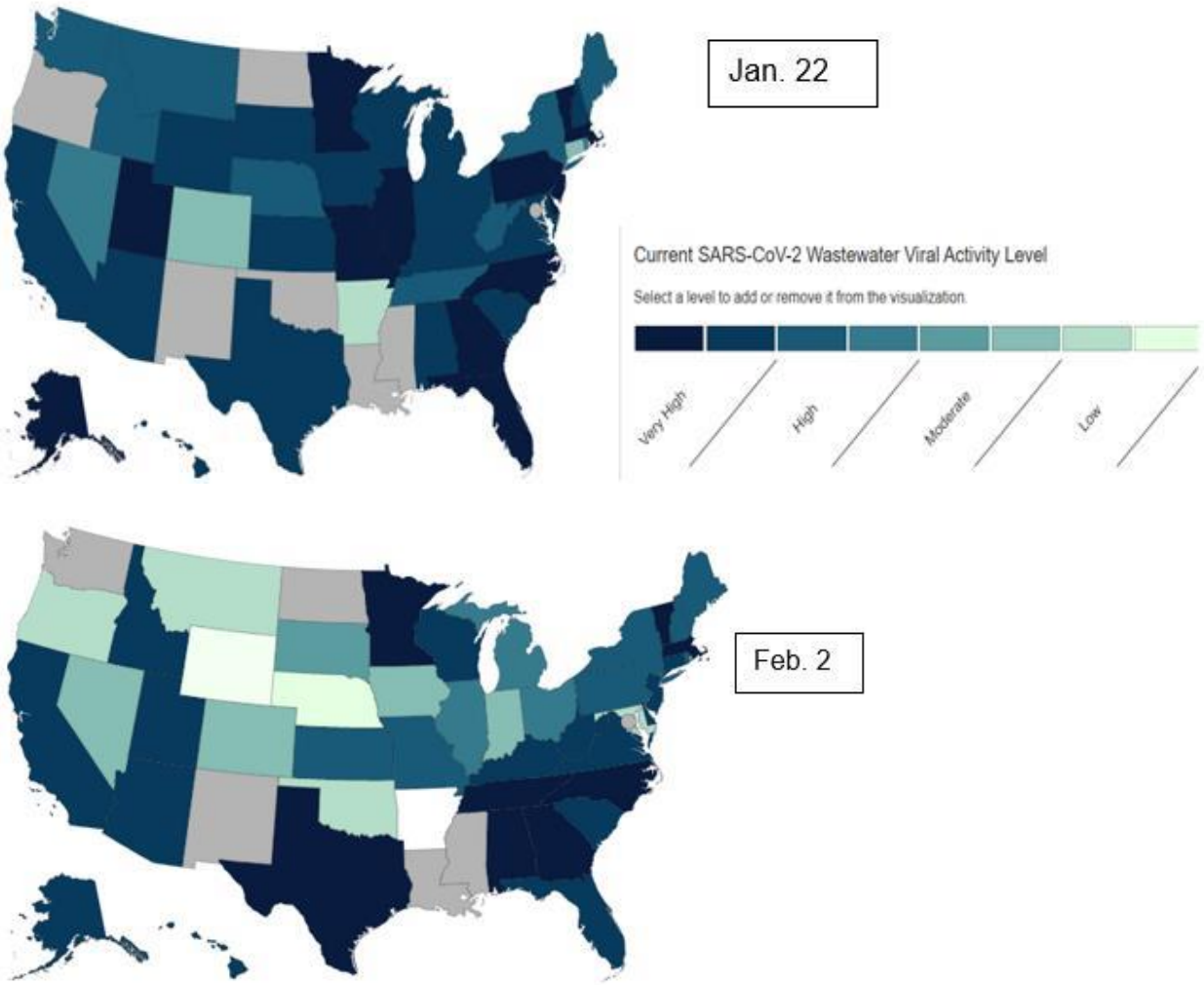


- The map below shows national molecular test positivity rates by region (updated Feb. 2). The only change is that region 4 in the south is now yellow instead of green. Despite the rapid rise of JN.1, none of the regions have testing positivity rates > 15%.

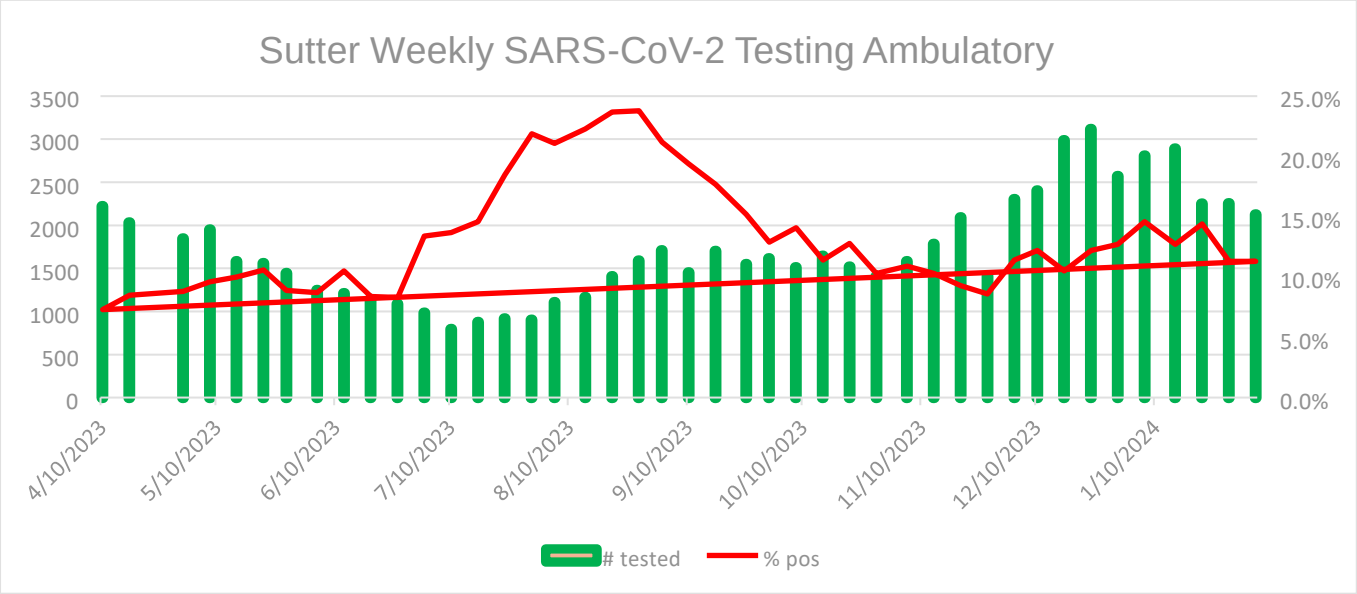


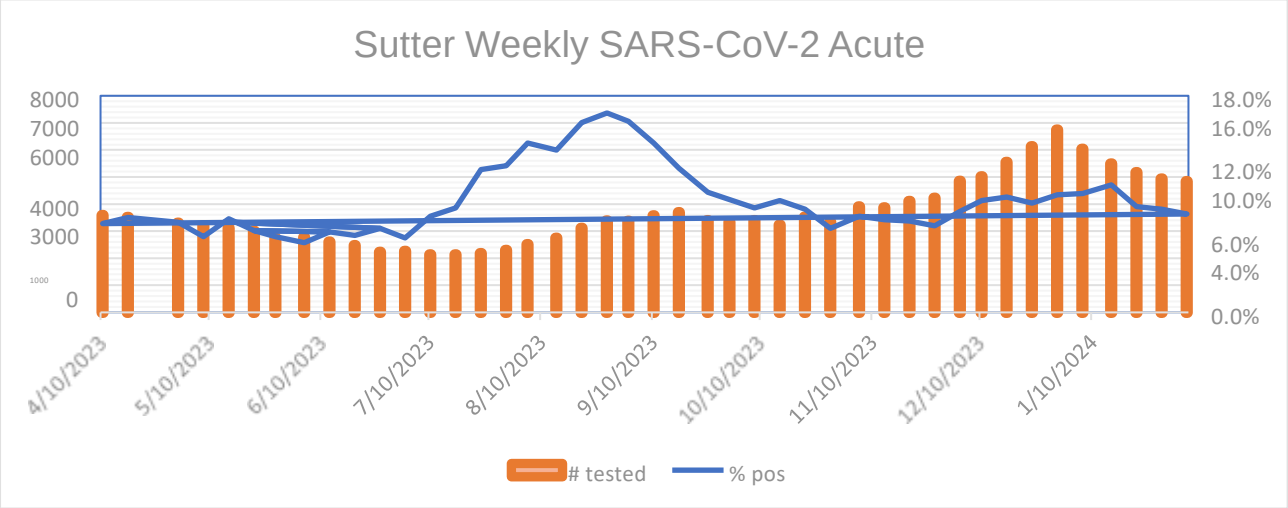
- SARS-Co-V-2 wastewater levels are shown on the two CDC maps below. The top map was reported Jan. 22 and the bottom Feb. 2. Wastewater level has decreased in multiple states over the last two weeks but remains high to very high almost everywhere that it is measured.

Grey represents insufficient data. Eleven states now report moderate to minimal levels of SARS-CoV-2 in wastewater.

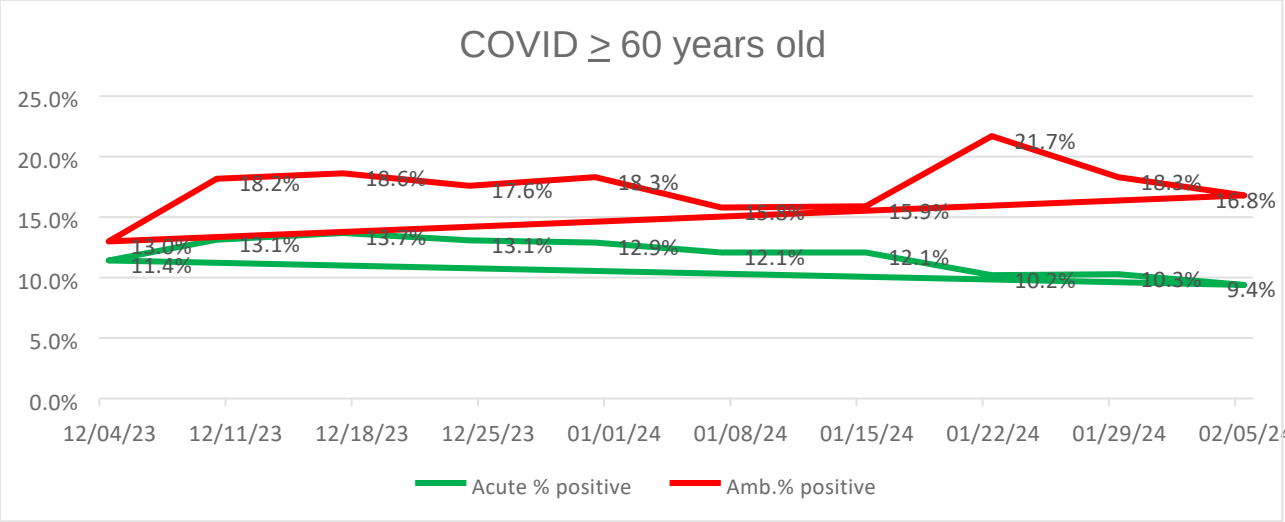


- Updated Sutter testing data below show stable, elevated, positivity rates but testing is decreasing. Rates are only a little higher than April through June of 2023.





- 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 JN.1

On Feb. 1, the CDC published their latest *MMWR* evaluating Monovalent XBB.1.5 COVID-19 vaccine effectiveness (VE) against symptomatic COVID infection caused by co-circulating Omicron variants in immunocompetent adults.

- The report compared VE (receipt of updated XBB COVID-19 vaccination versus no receipt) against infection from Sept. 21, 2023 to Jan. 14, 2024. This is the first study to evaluate VE in both XBB-based lineages and the emerging JN.1 virus (a BA.2.86 lineage) in the U.S. Testing was conducted among adults who reported ≥1 symptom of COVID-19 as part of a test-negative study design.
- Among 9,222 eligible patients, 3,295 tested positive for SARS-CoV-2 and 5,297 test-negative patients served as controls.
- Overall, VE among persons ≥ 18 y/o was 54% (95% CI 46-60%).
- Because of the timing of collection of this data and the concurrent rise in JN.1, evaluation of VE against JN.1 was limited to 61-119 days post vaccination. VE was 49% among tests where screening revealed the *S*-gene target failure (SGTF) surrogate for JN.1 infection.
- This study was based on identifying persons tested for SARS-CoV-2 and the results. Vaccination status, previous SARS-CoV-2 infections and comorbidities were self-reported and subject to recall or reporting bias. The actual impact of these factors could not be reliably determined.
- Despite these limitations, these results are very encouraging that the updated XBB vaccine provides protection against mild, symptomatic disease due to the dominant JN.1 strain as well as previous XBB strains.

COVID-19 Take-Home:

JN.1 dominates in the United States and in international travelers coming to the U.S.

- The updated XBB monovalent vaccine decreases the risk of symptomatic disease by over 50% compared to nonvaccinated persons. Although not part of this study, it would be anticipated that the updated XBB vaccine would also provide protection against hospitalization due to severe COVID from both XBB and JN.1 strains.
- While not to be directly compared, influenza VE estimates in past U.S. seasons have often measured between 30-50% for reference—considered a good match for the given year.
- Although disease levels are elevated, hospitalizations, wastewater rates, and emergency department patients, ambulatory patients and persons 60 years and older positivity rates are stable or decreasing. This supports ongoing contagion of JN.1 but not increased virulence.
- All persons aged ≥ 6 months should stay up to date with COVID-19 vaccinations, including receipt of an XBB monovalent vaccine this year.

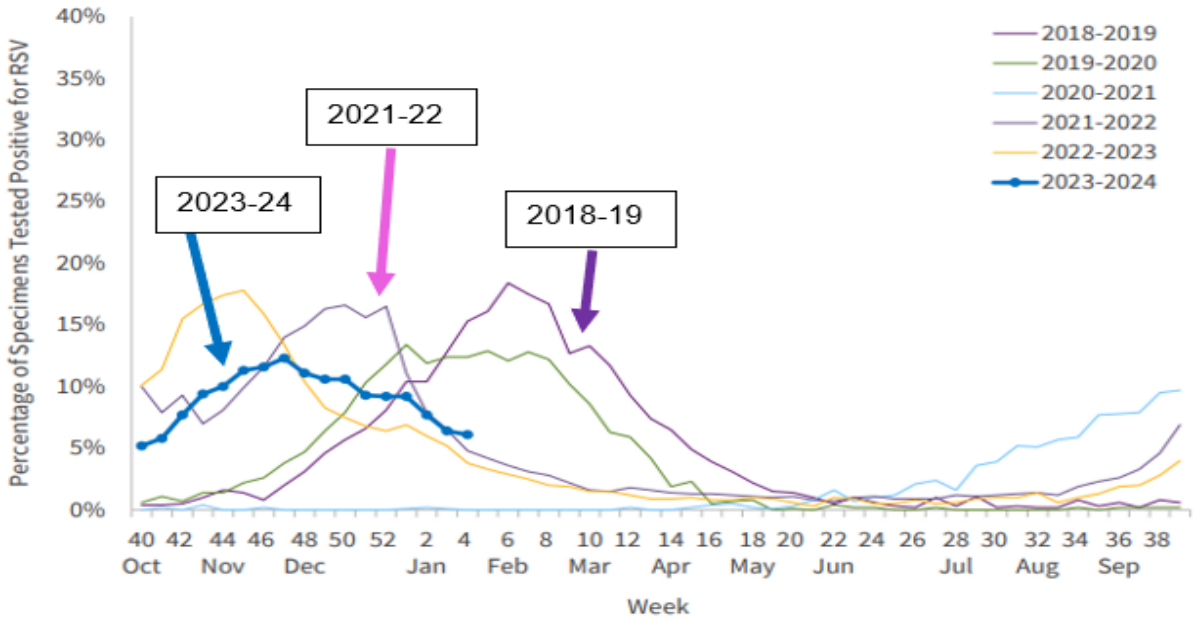
Related Links

- 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

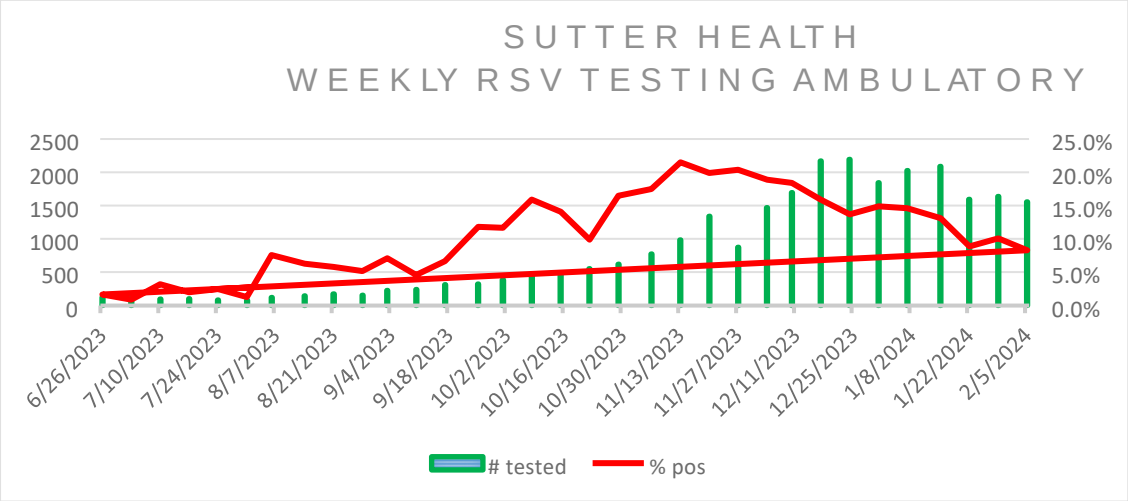
RSV

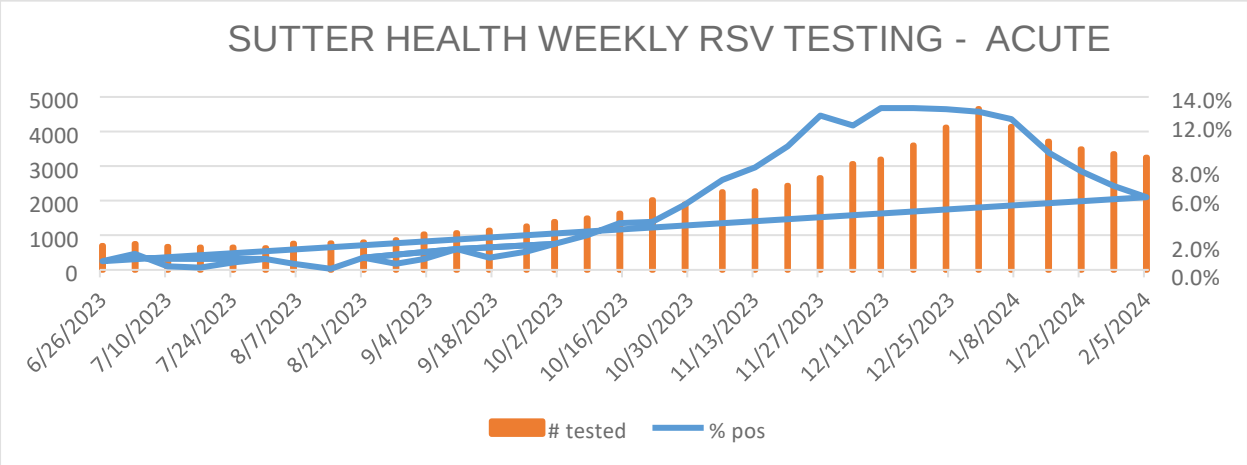
- CDPH reports RSV data weekly during the season. The CDPH graph below demonstrates the current California RSV season (blue arrow) compared to other seasons since 2018. RSV rates are still elevated, but they are progressively decreasing and are down to 6.1% for the last measured week.

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



- RSV identification rates remain elevated in both the ambulatory (8.3%) and emergency departments (5.9%) 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. Although children less than 6 years old still dominate, they are well off the 40% peak positivity rates seen earlier in the season.

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)	602	15.8% (95)	185	4.9% (9)	1,541	3.0% (46)
Ambulatory	426	10.6% (45)	191	9.4% (18)	235	8.9% (21)

- Clinical Infectious Diseases Jan. 22 published a phase 3 efficacy and safety study looking at two RSV seasons comparing a single dose of the RSV vaccine (Arexvy®) versus revaccination 1 year post-dose 1. Both were compared to placebo. A total of almost 25,000 participants were divided into three groups at a ratio of 1 (RSV 1 dose):1 (RSV revaccination) :2 (placebo). Revaccination had the same reactogenicity and safety as the single dose. The table below shows the efficacy data against lower respiratory tract disease (LRTD)

Group	One RSV Season		Two RSV Seasons	
	Mild-Mod. LRTD	Severe LRTD	Mild-mod. LRTD	Severe LRTD
One Dose	82.6%	94.1%	67.2%	78.8%
Revaccination			67.1%	78.8%

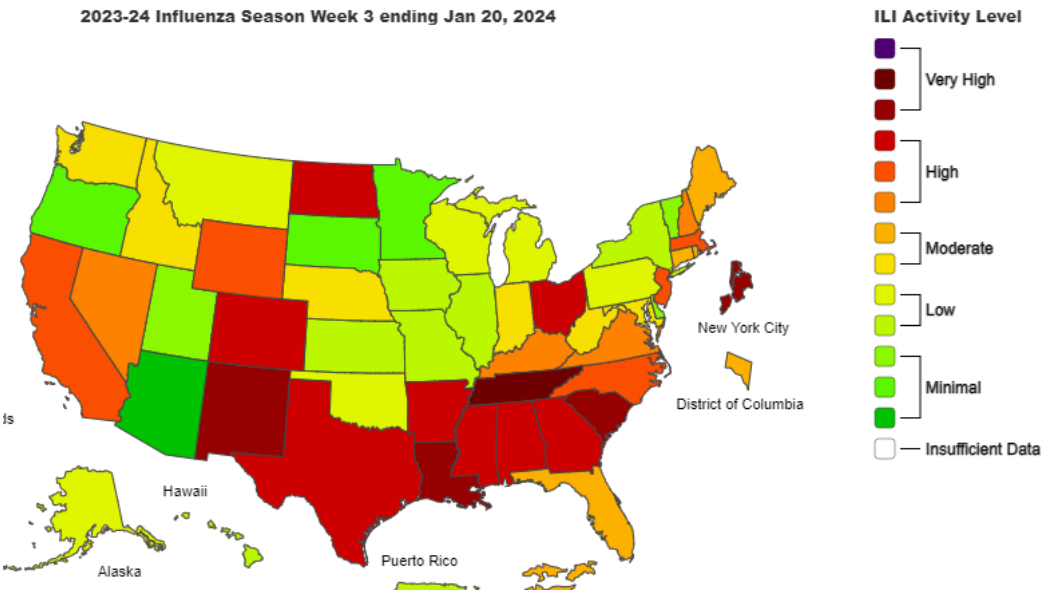
- The study conclusion is that RSV vaccine was efficacious against RSV-LRTD in persons ≥60 years old for two RSV seasons. A second dose 1 year after the first dose did not provide any additional benefits.

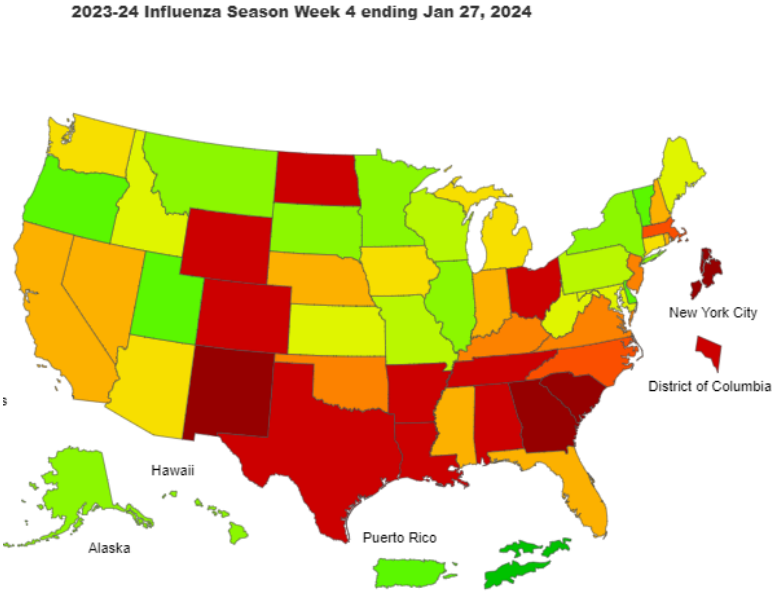
- On Jan. 30, CDPH provided helpful tips to remind health systems about the upcoming seasonal administration windows for when to administer RSV therapeutics.
- Administration of Abrysvo RSV vaccine to pregnant persons ended on Jan. 31.
    - Based on declining RSV positivity rates, and the 2-week gap 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.
- 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 data supports that the vaccine is effective for at least 2 years I person ≥ 60 years old.
- RSV vaccination of adults ≥ 60 years old is recommended year-round with shared decision making.
- RSV vaccine administration to pregnant persons should have stopped for this season on 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 weekly CDC Influenza Surveillance Report was released on Feb. 2.
- After a 38% decrease in hospitalization rates over three weeks, the rate remained stable last week.
- About 20% of influenza isolates in the United States are influenza B.
- More important is the report reveals that AH3N2 now makes up 40% of the influenza A isolates. This is a change from the 12% in the Jan. 5 report.
- 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. 20 and the second has data ending Jan. 27. Notice the color difference between the states on the two maps. This shows variation between states and regions. Remember that this does not measure influenza but measures fever plus either sore throat or cough.





- The CDPH map below of influenza (last updated through Jan. 27), shows that influenza rates have decreased to low everywhere except the lower southern region where the level, although lower, is still moderate. The state influenza positivity rate decreased from 12.3%.to 9.8% in the last week.

Minimal Low Moderate High

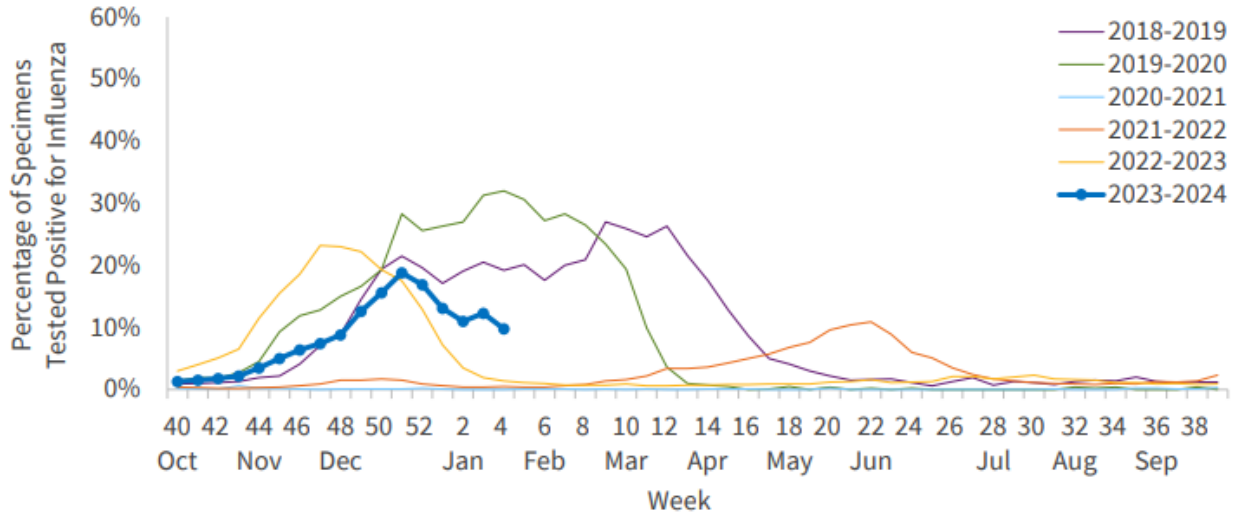
Geographic Area	Activity Level
California Statewide	**Low**
Northern Region	Low
Bay Area Region	Low
Central Region	Low
Upper Southern Region	Low
Lower Southern Region	Moderate

CDPH Influenza Activity Levels*

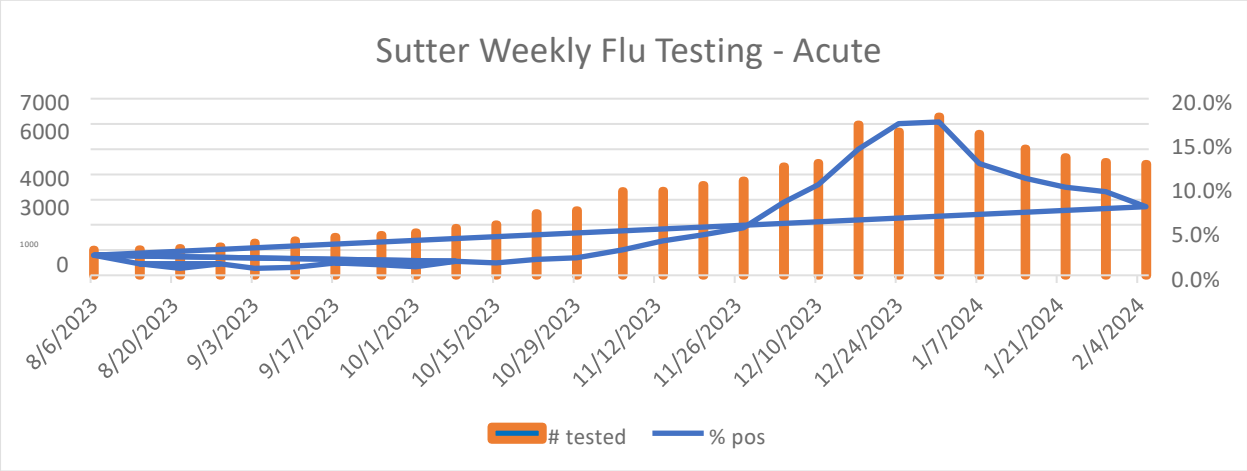
- **Minimal:** The percentage of specimens positive for influenza is <2%.
- **Low:** The percentage of specimens positive for influenza is between 2% and <10%.
- **Moderate:** The percentage of specimens positive for influenza is between 10% and <20%.
- **High:** The percentage of specimens positive for influenza is between 20% and <40%.
- **Very High:** The percentage of specimens positive for influenza is ≥40%.

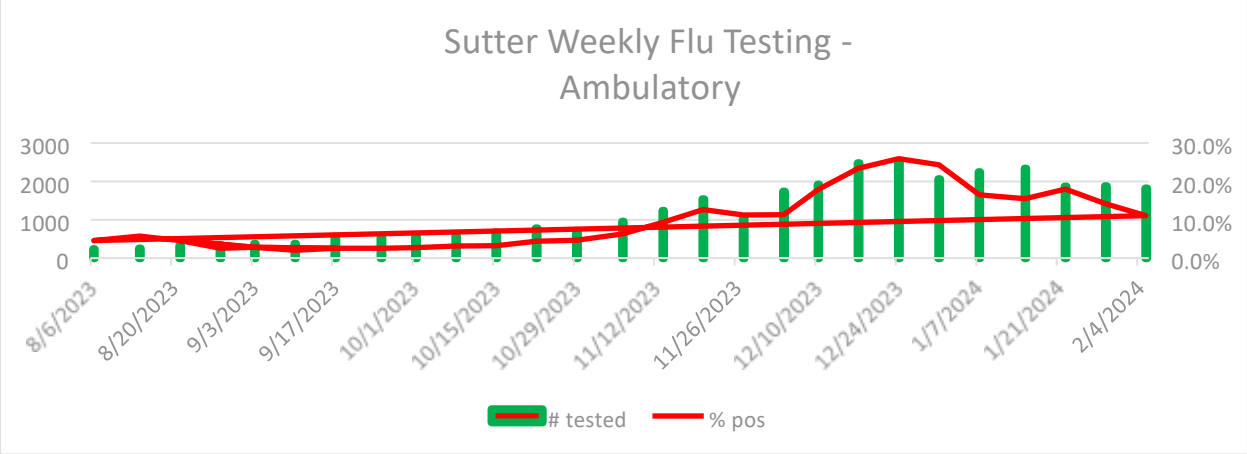
- The CDPH graph below demonstrates that present influenza activity continues to drop (blue arrow). However, increasing identification of AH3N2 suggests that a second period of increased cases of influenza may still occur.

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

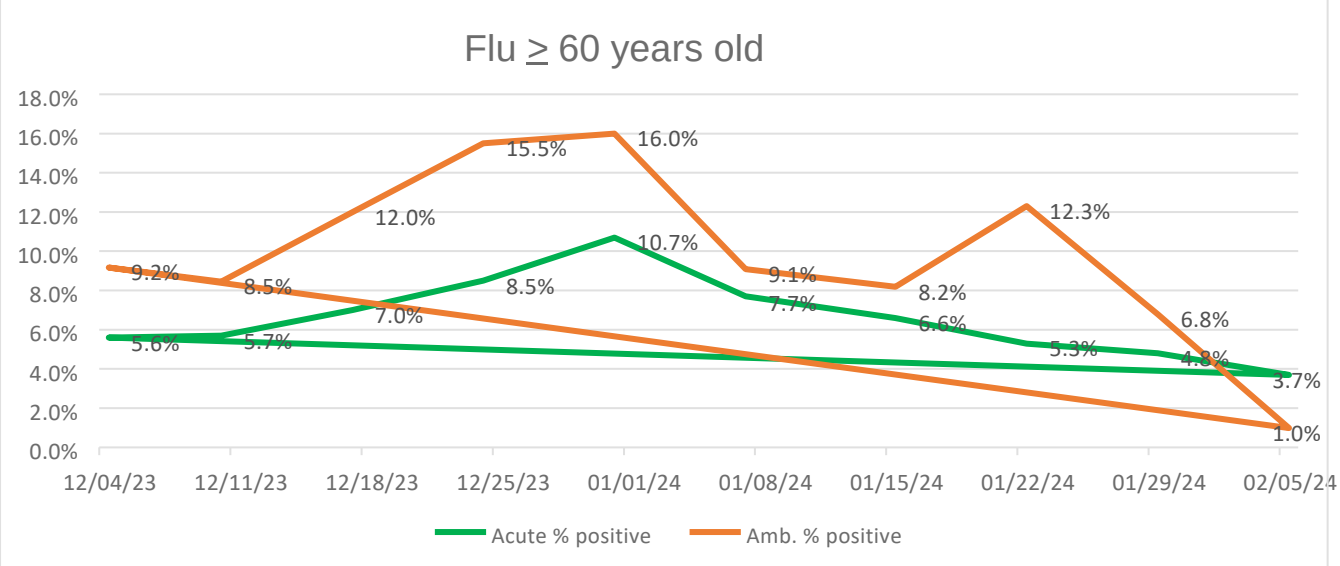


- The graphs below show Sutter emergency department and ambulatory influenza positivity rates. In the acute setting (emergency departments), positivity rates decreased to 9.5% in the last week, and the ambulatory setting decreased to 14.2%. These are similar to state rates. Testing numbers have been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

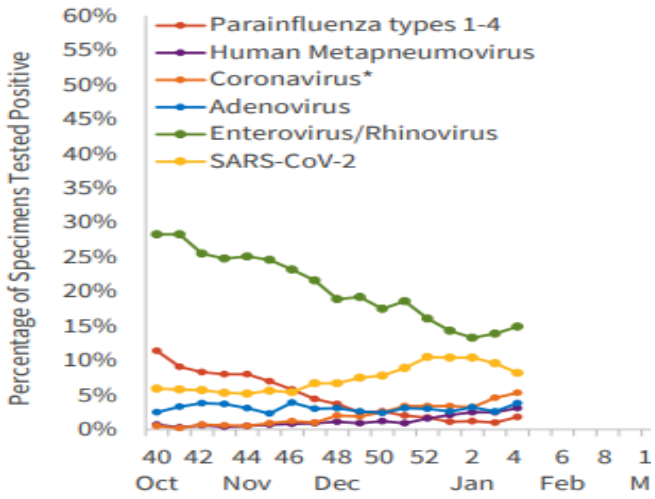


Take-Home Influenza:

- Influenza A H3N2 is quickly becoming more frequently identified. In 4 weeks, it has increased from 12% of influenza A isolates to 40%. A H3N2 has been identified in Asia as the predominant strain this season but up until now it has been A H1N1 in the United States.
- Although influenza rates are progressively decreasing, a rebound in disease may occur as AH3N2 continues to circulate and becomes the dominate strain.
- Influenza-associated hospitalizations have decreased significantly from the season peak.
- The influenza vaccine is a good match to circulating strains. Vaccination of everyone 6 months and older should continue to 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 run line), included in the graph below, has reached a plateau and is decreasing as shown by other data earlier in this report. All of the other respiratory viruses are showing a small uptrend of uncertain significance.
- Enterovirus/Rhinovirus (green run line) remains the one most commonly identified as a percentage of positive tests.



California Immunization Coalition (CIC)

- Thursday Feb. 22 at noon PST, the CIC is presenting a free webinar titled: Everything Old Is New Again: The Return of Vaccine-Preventable Diseases
  Registration Link:
  https://us02web.zoom.us/webinar/register/2017067644805/WN_satcz_J2S7aNPnWwY4TFyQ#/registration :

There will not be a newsletter the week of Feb. 11-17