



Sent on behalf of William Isenberg, M.D., Ph.D, Chief Medical & Quality Officer, Sutter Health, and Jeffrey Silvers, M.D., Medical Director of Pharmacy and Infection Control, Sutter Health

Emerging Infections Newsletter for Clinicians

Sept. 14, 2023

Written by Dr. Silvers with contributions from Dr. Joan Etzell (Lab), Lisa Rieg (Pharmacy), and Gordon Sproul (Pharmacy). Please use Google Chrome for the best experience.

Topics

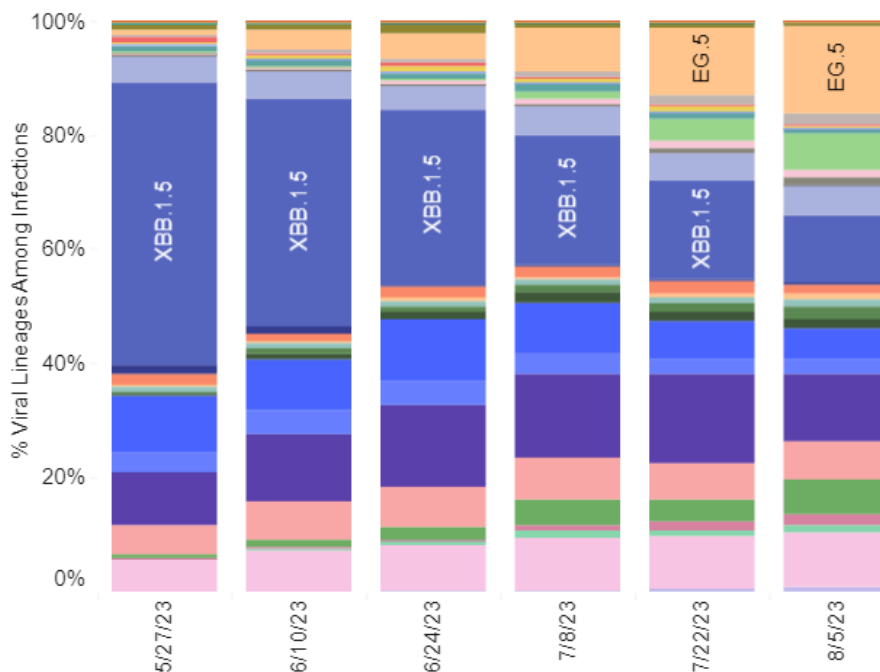
1. Triple endemic or Twindemic may have started in the Southeast.
 - a. Now is the time to get prepared
2. COVID-19
 - a. Genomic sequencing
 - i. Multiple strains co-circulating
 - ii. BA.2.86 remains less than 1%
 - b. New hospitalizations in the United States
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 - i. National data
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 - e. 2023-24 monovalent vaccine update
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3. RSV
 - a. RSV is starting to circulate
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 - a. Influenza detections remain at low inter-seasonal in most of the world
 - b. Influenza-like activity (ILI) increasing in multiple states, most notable in the southeast
 - i. This may not really represent influenza
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5. West Nile Virus (WNV)
 - a. Update on activity in California
 - b. Take-home WNV
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Twindemic or Tripledemic

Whether we will have a tripledemic with all three respiratory viruses (SARS-CoV-2, RSV, and influenza) co-circulating or just two at the same time (twindemic) poses similar risks. All three viruses are anticipated to circulate during this respiratory season, and we need to be prepared.

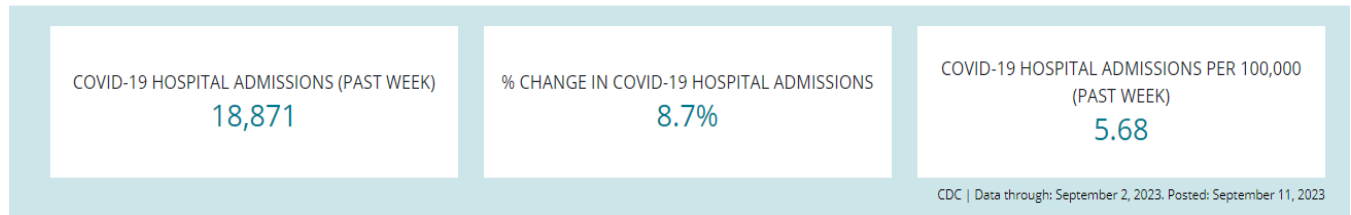
COVID-19

- Genomic sequencing was updated on Sept. 7 (shown below). EG.5 and FL.1.5.1 remain the most commonly sequenced isolates. Combined they comprise 36% of isolates. No evidence of single strain domination and XBB.2.86 remains off of the graph as it comprises less than 1% of isolates.



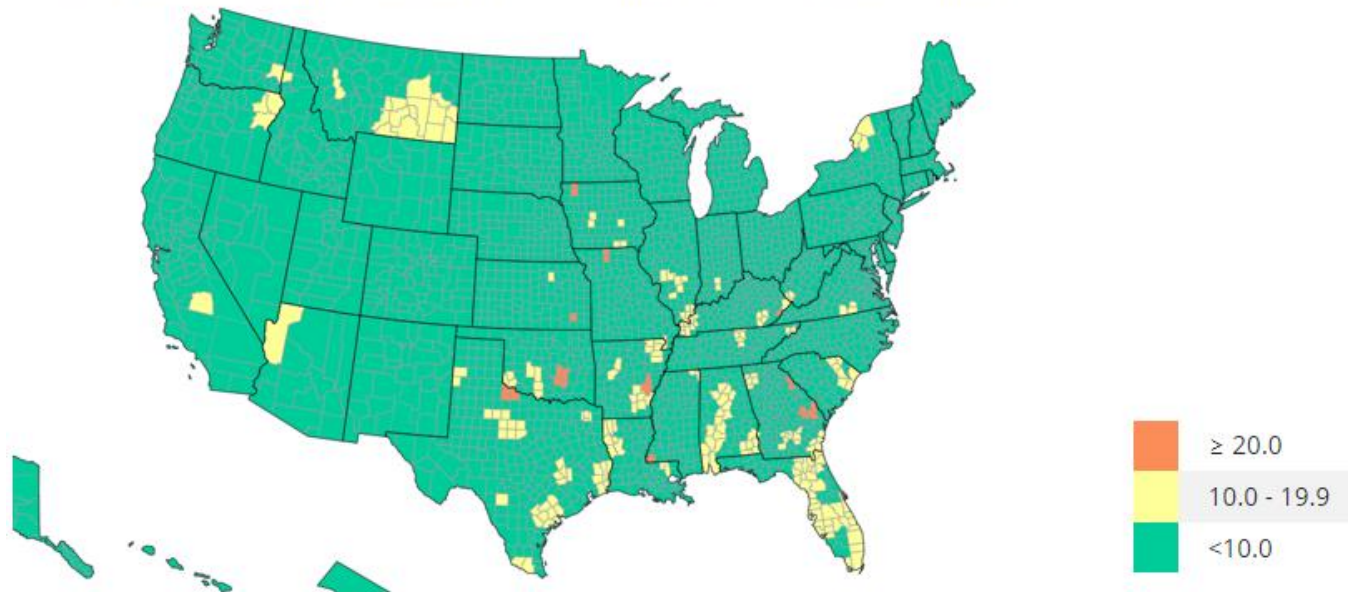
Omicron	EG.5	21.5%	19.0-24.3%	
	FL.1.5.1	14.5%	10.5-19.6%	
	XBB.1.16.6	9.2%	7.6-11.0%	
	XBB.1.16	8.9%	7.8-10.3%	
	XBB.2.3	8.1%	7.0-9.2%	
	HV.1	5.1%	3.3-7.9%	
	XBB.1.16.1	5.0%	4.2-6.0%	
	XBB.1.5.70	3.5%	2.6-4.7%	
	XBB	3.3%	2.7-4.1%	
	XBB.1.5	3.1%	2.6-3.7%	
	XBB.1.9.1	3.0%	2.5-3.5%	
	XBB.1.16.11	2.8%	1.8-4.5%	

- The CDC tracks hospital admissions per 100,000 county population. Less than 10/100,000 is considered a low number of new hospital admissions. The table below shows that nationally we are continuing to increase, now up to 5.68/100,000. The percent change has dropped and is now down to 8.7%. If the rate of increase continues to slow, this might suggest that we are near the peak of our present outbreaks.



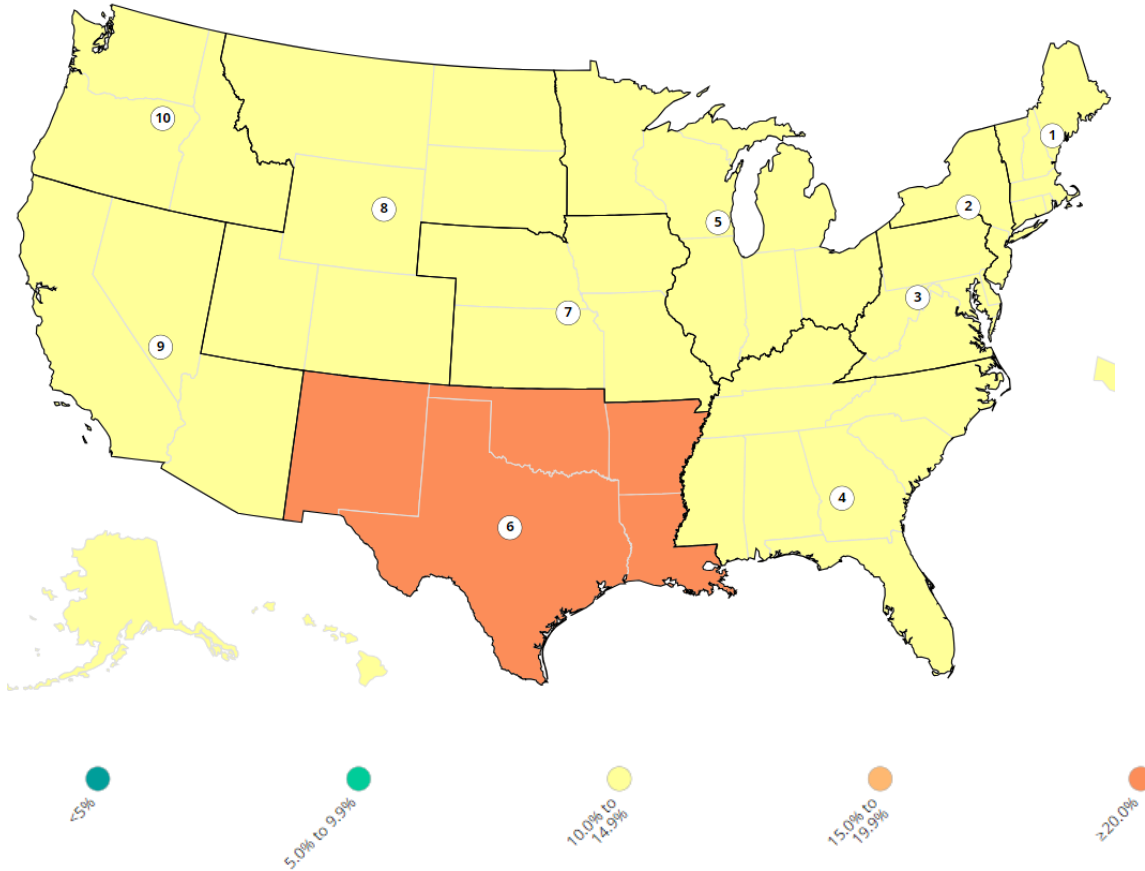
- Although most counties still have low hospitalization rates (<10.0 per 100,000 population), the [updated map](#) below shows more locations with moderate or high rates.
- Tulare county is the only moderate rate (yellow) in California.

Reported COVID-19 New Hospital Admissions Rate per 100,000 Population in the Past Week, by County - United States

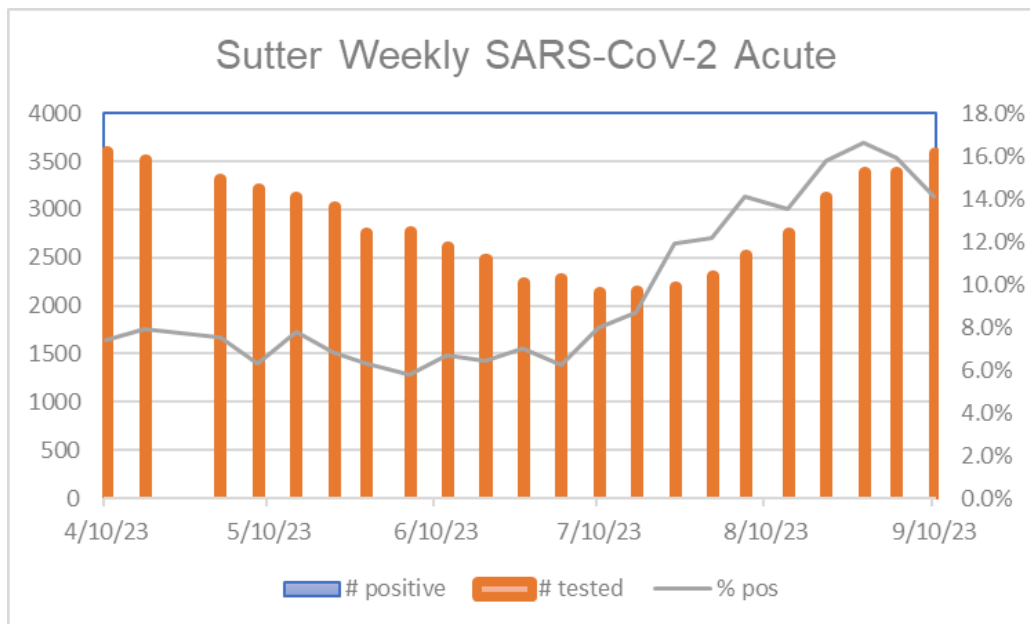


- [National](#) molecular test positivity rates by region are shown on the map below. All of the United States is experiencing NAAT (Nucleic Acid Amplification Test) COVID test results above 10%. Texas and the four surrounding states are all above 20% now.

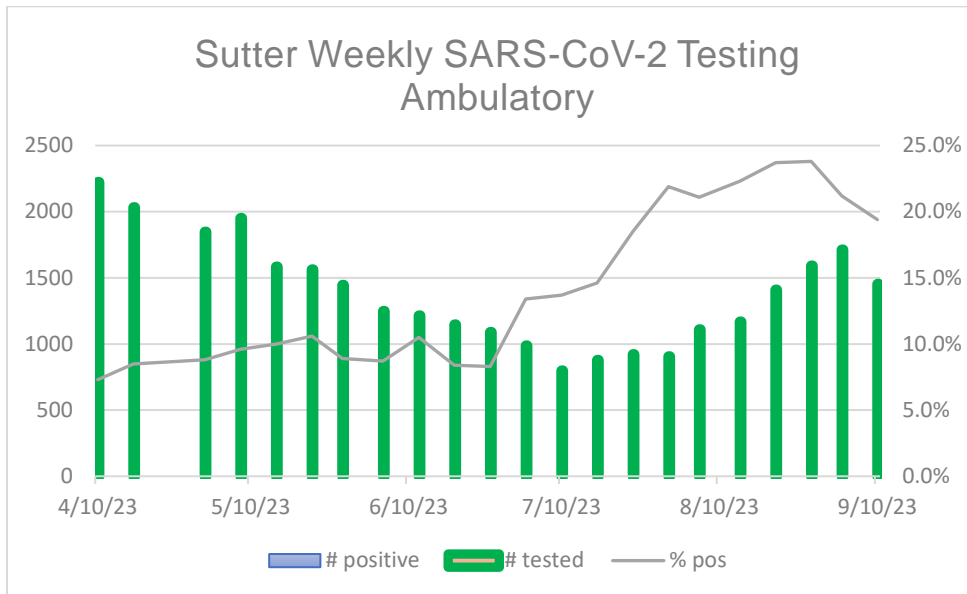
Percent Positivity of COVID-19 Nucleic Acid Amplification Tests (NAATs) in the Past Week by HHS Region - United States



- Updated Sutter testing data below shows unchanged positivity rates with significant levels of testing. COVID is actively circulating, patients are becoming more symptomatic with newer strains and are seeking medical care.



- The Sutter Health graph below shows that ambulatory positivity rates dropped a little in the last week, still elevated but down below 20% for the first time since the week ending July 24.

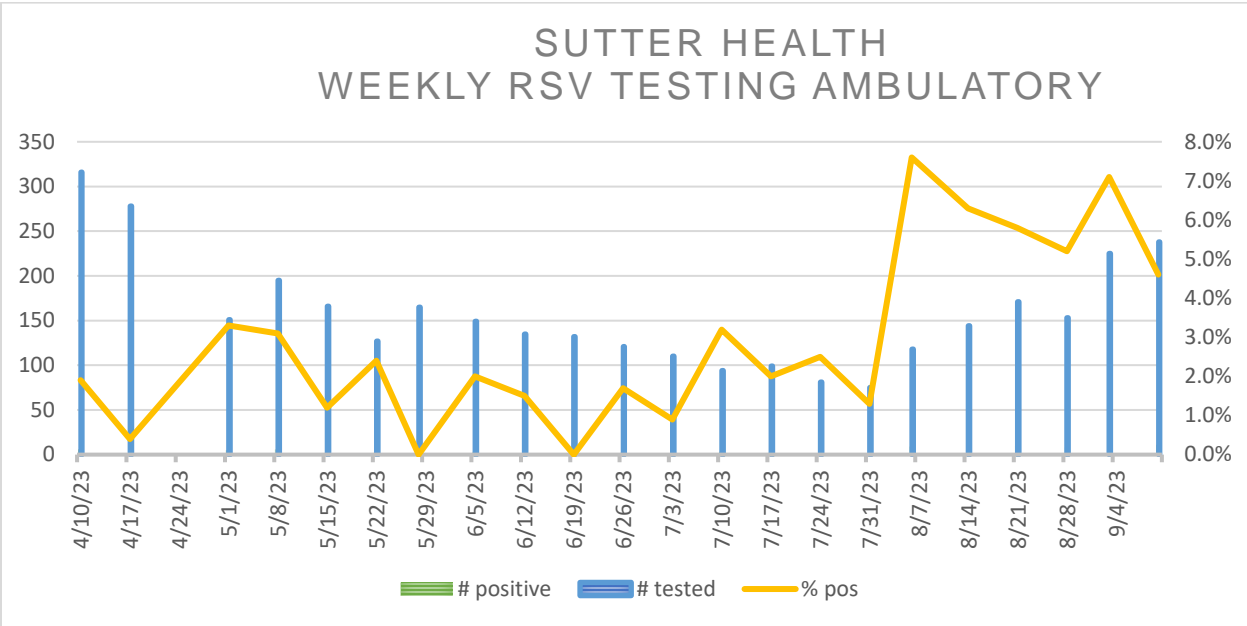


- A newly [published](#), large multicenter (11 hospitals in the NY Health and Hospital System), retrospective, cohort study compared outcomes in patients who received either tocilizumab or baricitinib. Evaluation occurred at multiple time points and breakdown of results was performed during periods of different circulating SARS-CoV-2 (Alpha, Delta, Omicron).
 - The primary outcome was improvement in respiratory status at day 7 and up to day 28. Secondary outcomes included mortality, disposition, deep vein thrombosis, pulmonary embolism or positive blood culture at day 7 to day 28.
 - Overall, 921 patients received tocilizumab and 638 received baricitinib. A propensity-matched cohort included 597 patients in each group. Average hospital stay was 13 days.
 - Results were dependent on the circulating variant. Baricitinib was never inferior to tocilizumab.
 - At day 7 in the overall and propensity-matched cohorts, significantly more patients had improvement in respiratory status in the baricitinib group compared to tocilizumab.
 - Seen in patients requiring supplemental oxygen and noninvasive ventilation/high-flow oxygen but not in patients requiring mechanical ventilation.
 - The baricitinib advantage was not sustained at 28 days.
 - No differences were seen in mortality, disposition, development of deep vein thrombosis/pulmonary embolism, or bloodstream infections.
- Baricitinib is an oral formulation versus tocilizumab requiring intravenous administration.
 - Baricitinib can be dose-adjusted for renal impairment and treatment can be shortened if patient develops an opportunistic infection or if they improve in less than 14 days.
 - Baricitinib is significantly less expensive than tocilizumab.
- **COVID-19 Vaccine:**
 - On Sept.12, the CDC’s Advisory Committee of Immunization Practices unanimously recommended the [FDA’s authorization](#) of the 2023-2024 (monovalent, XBB containing) COVID-19 vaccine for use in individuals 6 months of age and older.
 - Everyone ages 5 years and older is recommended to receive one dose of this monovalent mRNA COVID-19 vaccine at least 2 months after receiving their last COVID-19 vaccine.
 - Children ages 6 months – 4 years should complete a multi-dose initial series (two doses of Moderna or three doses of Pfizer BioNTech mRNA COVID-19 vaccine) with at least one dose of the new monovalent vaccine.

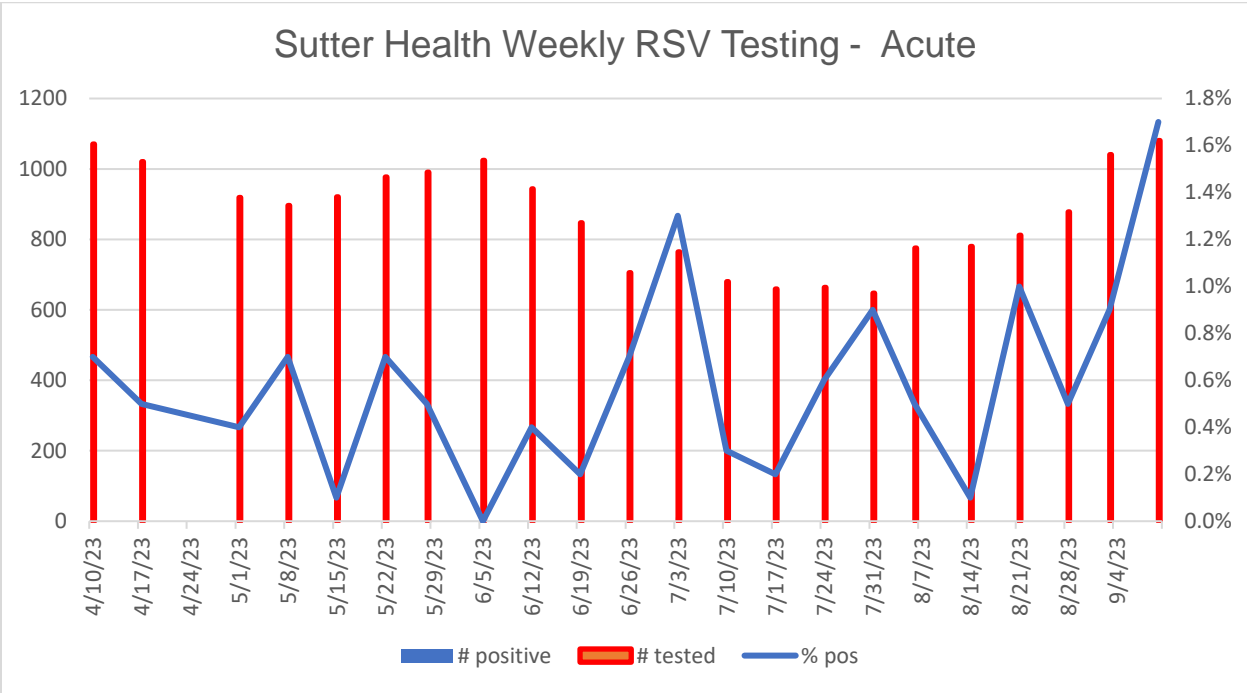
- If previously completed, they should receive one dose of the new monovalent vaccine.
 - People who are moderately or severely immunocompromised should complete a three-dose initial series with at least one dose of the new 2023-2024 COVID-19 vaccine.
 - If previously completed, they should receive one dose of the new monovalent vaccine.
 - Previously vaccinated persons should wait two months from the last prior dose before receiving the monovalent vaccine.
 - Persons with recent COVID should wait 90 days from the infection before being vaccinated with the monovalent vaccine.
 - More information is in the official [CDC announcement](#).
 - The COVID-19 vaccines will be offered in various ambulatory care and employee health settings once available.
 - Sutter Health is offering the new COVID vaccine to all employees and providers free of charge once supplies become available.
- **COVID-19 Take-Home:**
 - Multiple strains of SARS-CoV-2 are widely co-circulating, but BA.2.86 remains less than 1%.
 - Hospitalizations and testing positivity rates continue at high levels but are showing some signs of a plateau.
 - Sutter ambulatory and emergency department positivity rates are 19% and 14% respectively.
 - Another study has demonstrated that baricitinib is not inferior to tocilizumab. Baricitinib has the advantage of being dosage adjustable for renal impairment and can be discontinued during the treatment course if patient condition improves or if concerned about opportunistic infections.
 - The long awaited, monovalent, XBB-based, 2023-24 COVID vaccine is now FDA approved with accompanying CDC guidance for use.
 - This is a new vaccine formulation and not just a booster.
 - Availability will now depend on release and distribution of product by Pfizer and Moderna.
- **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

- RSV is still being identified in the ambulatory setting. The amount of testing in ambulatory is gradually increasing and positivity rates are well above the 3% threshold for 6 weeks now. The week ending July 31 saw only 75 tests ordered in the ambulatory offices with a 1.3% positivity rate. The week ending Sept.10, had three times the number of tests ordered with triple the positivity rate. See graph below.



- ED positivity rates, although still well below 3%, tripled in the last 2 weeks from 0.5% to 1.7%. The number of tests being performed has also continued to increase.



- The following table breaks down the RSV testing results by age in the week ending September 10. Although testing numbers remain relatively small, children less than 6 years old have the highest positivity rates.

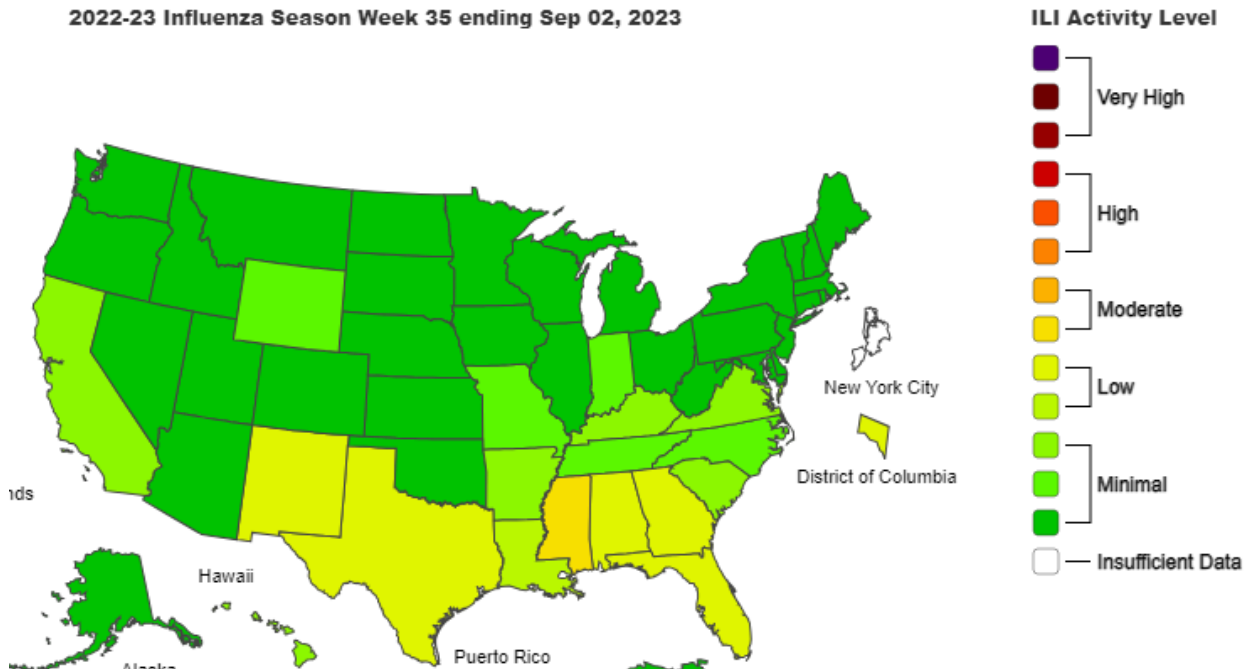
Location	<6 years old		Less than 18 years old		18 years old and older	
	Number Tested	% Positive	Number Tested	% Positive	Number Tested	% Positive
Ambulatory	113	6.2%	156	5.8%	82	2.4%
Acute (ED)	383	3.4%	477	2.7%	604	0.8

- Most of the increased RSV activity being identified is in children less than 6 years old in the ambulatory environment and probably reflects mild disease.
- RSV vaccines for persons 60 years and older is approved and are available in some Sutter ambulatory settings.
- RSV vaccine for pregnant individuals is not available until CDC guidance is approved and released.
- Nirsevimab is not available yet. It will be offered in acute and ambulatory settings once the product is released.
- **RSV Take-Home:**
 - RSV is being identified in Northern California in small numbers, mostly in outpatient children less than 6 years old.
 - Rates in that population continue to exceed 3%.

Influenza

- The [WHO influenza](#) update on Sept. 4 noted that influenza cases were at low inter-seasonal levels in most of the world.
 - WHO data lags 2 weeks behind and then gets released an additional 3 days after the dating of the report.
 - In effect, this data is 17 days old when first published. That doesn't discount the value of this information. It must be recognized that the report doesn't reflect present findings.
 - The [CDC](#)-generated map below shows influenza-like activity (ILI) in different states. With influenza levels actually being low in most of the United States, this map probably doesn't truly represent predominantly influenza at this time.

2022-23 Influenza Season Week 35 ending Sep 02, 2023



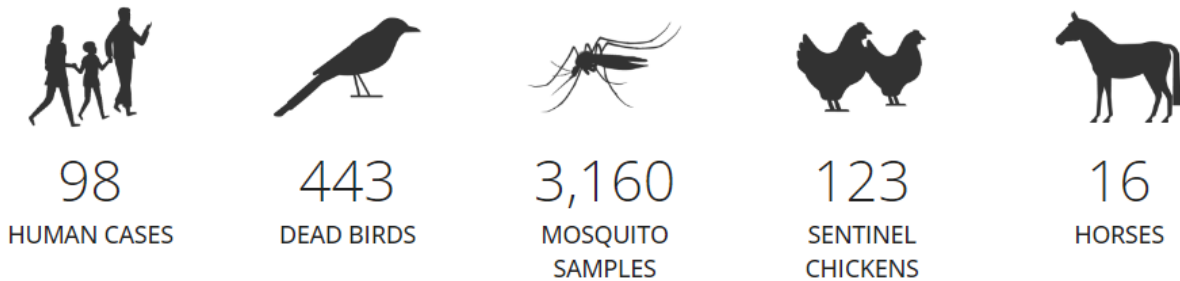
- Vaccine is anticipated to be a good match this season. The CDC [MMWR](#) dated Sept. 8 reported influenza effectiveness data from the Southern Hemisphere March-July 2023. Based on data from five countries in South America, the flu vaccine prevented severe acute respiratory infection resulting in hospitalization in high-risk groups by 52%.
 - Patients with co-infection with SARS-CoV-2 were excluded.
 - Inclusion groups included young children (45%), pre-existing conditions that increase the risk of severe disease (14%) and older adults (41%).
 - 90% of the patients had influenza A with 99% of those being A H1N1.
 - Vaccine effectiveness could only be determined for A H1N1.
 - Vaccine effectiveness was 70% in young children and only 38% in older adults.
 - Standard vaccines were provided to older adults. Enhanced vaccines were likely not administered.
 - A H1N1 and B Victoria have been the predominant isolates identified in the United States recently. This is similar to what was seen in the Southern Hemisphere.
 - The A H1N1 strains in the Northern Hemisphere vaccine are identical to the Southern Hemisphere.
- **Influenza Take-Home:**
 - ILI, used as a surrogate for influenza activity, is increasing in some parts of the United States, especially in the Southeast.
 - Influenza test positivity rates of about 1% suggest that this map surrogate may be representing viruses other than influenza at this time.
 - Vaccine effectiveness estimated by information from the recent season in South America showed 52% effectiveness in preventing hospitalization from severe Influenza respiratory illness.
 - Effectiveness could only be determined for A H1N1 because it predominated.
 - Vaccine effectiveness was only 38% in older adults but that was likely after a standard dose vaccine.
 - This supports the importance of adults 65 years and older preferentially receiving an enhanced vaccine.

West Nile Virus (WNV)

- WNV activity in California continues to increase, with 23 new WNV positive human cases in the most recent week (ending Sept. 8).
- In the last 2 weeks, year-to-date totals for reported cases in humans in [California](#) increased 78% from 55 to 98 (pictograph below). This is twice the five-year state average looking at calendar week 1- week 36 (graph below pictograph).

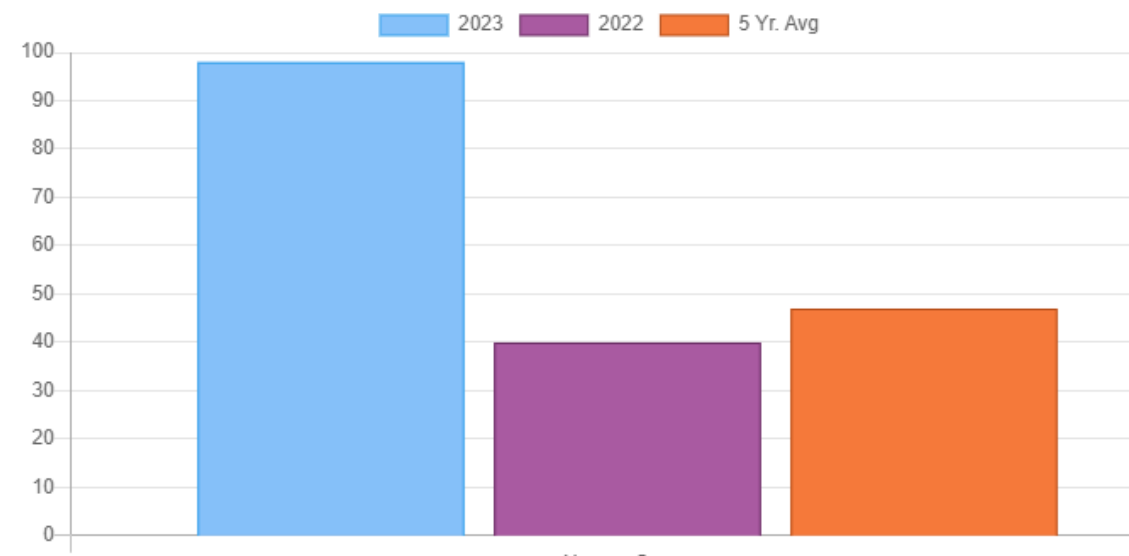
2023 WEST NILE VIRUS ACTIVITY IN CALIFORNIA

LAST UPDATED: SEP 08, 2023 10:29AM PST

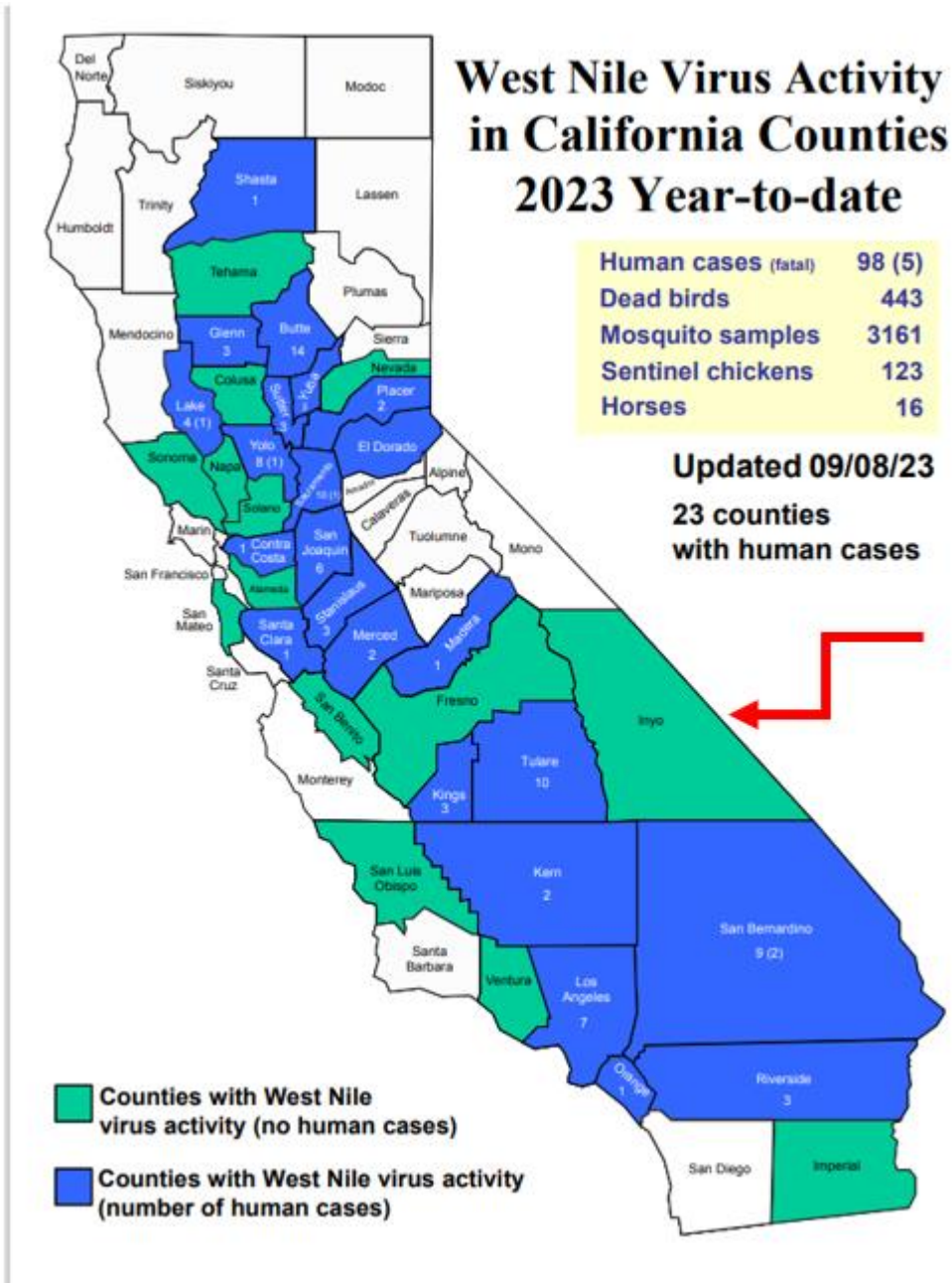


WEEK 1 - WEEK 36 AS OF SEP 08, 2023

Tip: Hover over or click on graph bars for details



- The latest CDPH map below demonstrates the widespread distribution of WNV activity. The main difference compared to the map from 2 weeks prior is the increased number of counties that have documented WNV in humans and the identification of WNV activity in non-human samples in Inyo County (red arrow).



- **West Nile Virus in California Take-Home Message**

- Reported cases of WNV in humans have continued to increase significantly in the last 2 weeks.
- Twice the number of cases were identified in humans compared to the year-to-date average seen over the prior 5 years.
- Numbers are anticipated to continue to increase through September.

Share the Newsletter

Anyone who would like to be added to the Emerging Infections newsletter should send a request to bryan.gardner@sutterhealth.org

This communication is intended for clinicians caring for Sutter patients. If you have questions, please reach out to us at clinicians@sutterhealth.org.

