



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

Aug. 23, 2023

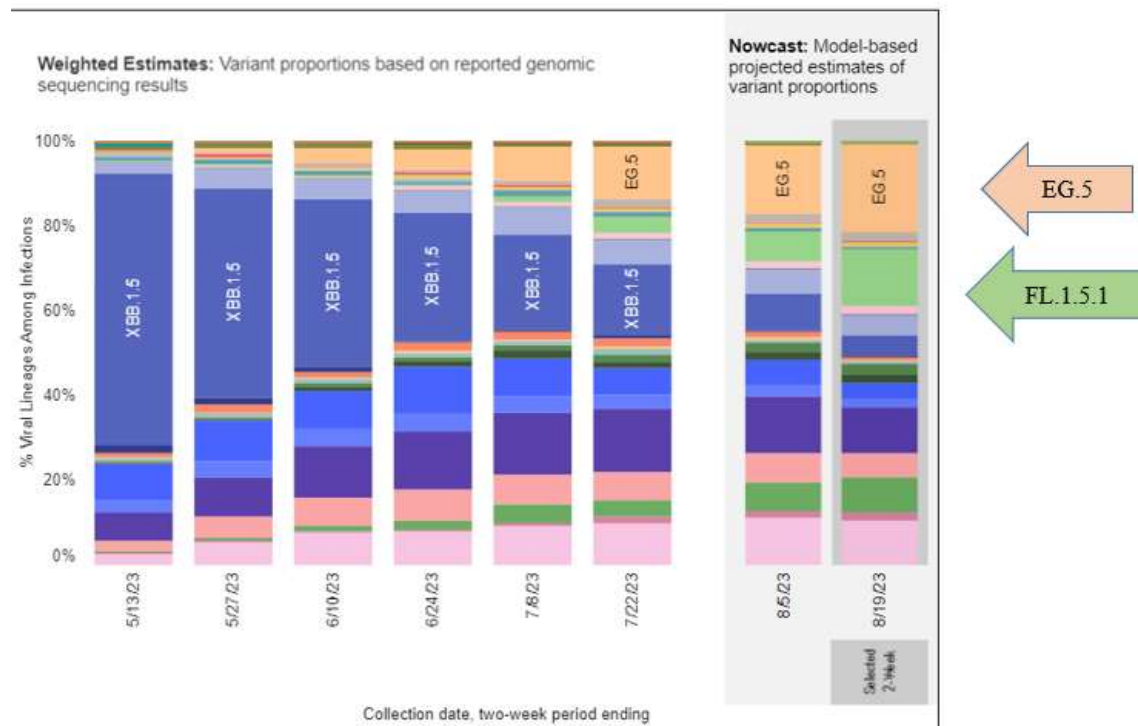
Written by Dr. Silvers with contributions from Dr. Joan Etzell (Lab), Lisa Rieg (Pharmacy), and Gordon Sproul (Pharmacy). Please use Google Chrome for the best experience.

Topics

1. COVID-19
 - a. The variants are continuing to get more complicated
 - i. Genomic sequences in United States updated
 - ii. Seven different strains with a frequency of 5% or higher
 - iii. EG.5 (nickname Eris)
 1. Dominant or just the most frequently sequenced isolate
 - iv. FI.1.5.1 (nickname Fornax) is now a close second
 - v. BA.2.86
 1. New, highly mutated variant under monitoring
 - b. Hospitalizations and ED visits
 - c. Testing results
 - i. National rate
 - ii. Sutter data
 - iii. What do people do with home-test positive results
 - d. Vaccine update
 - e. Take-home COVID
2. Influenza
 - a. WHO update
 - b. Sutter testing results
 - c. Take-home influenza
3. RSV
 - a. FDA approval of vaccination during pregnancy
 - b. Take-home RSV
4. West Nile Virus
 - a. Uptick in reported cases in humans in California
 - b. Take-Home WNV
5. MPOX
 - a. Co-infections
 - b. Take-home MPOX
6. Share the newsletter

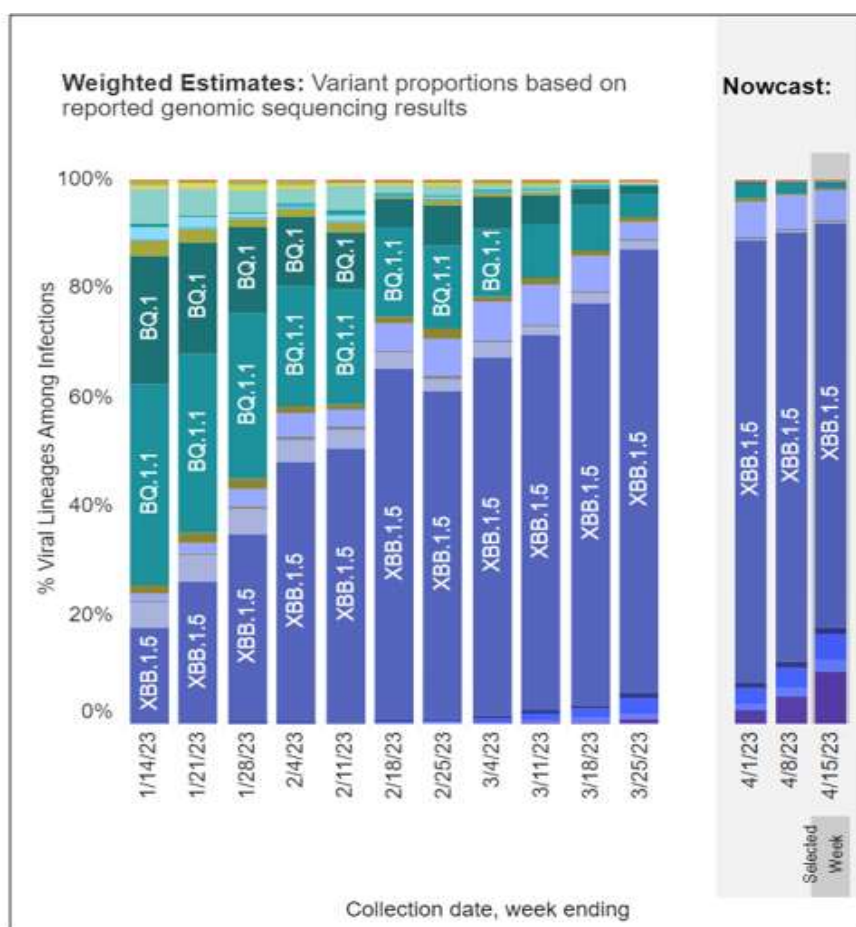
COVID-19

- EG.5 continues to increase in frequency. It is now 20.6% of all sequenced isolates in the United States. It developed from the XBB.1.5 recombinant strain.
 - Although it is the most frequent strain being identified, it is one of seven different strains with a frequency of at least 5% of sequenced isolates.
- FL.1.5.1 is now second, representing over 13% of isolates.
- EG.5 and FL.1.5.1 have the F456L mutation, which is associated with increased disease transmission.
- CDC updated genomic sequencing data below.



Omicron	EG.5	20.6%	17.8-23.8%	
	FL.1.5.1	13.3%	9.4-18.4%	
	XBB.1.16	10.7%	9.2-12.4%	
	XBB.2.3	10.6%	8.6-13.0%	
	XBB.1.16.6	8.0%	6.4-10.1%	
	XBB.1.16.1	5.9%	5.1-6.9%	
	XBB	5.1%	4.0-6.4%	
	XBB.1.5	4.7%	4.0-5.6%	

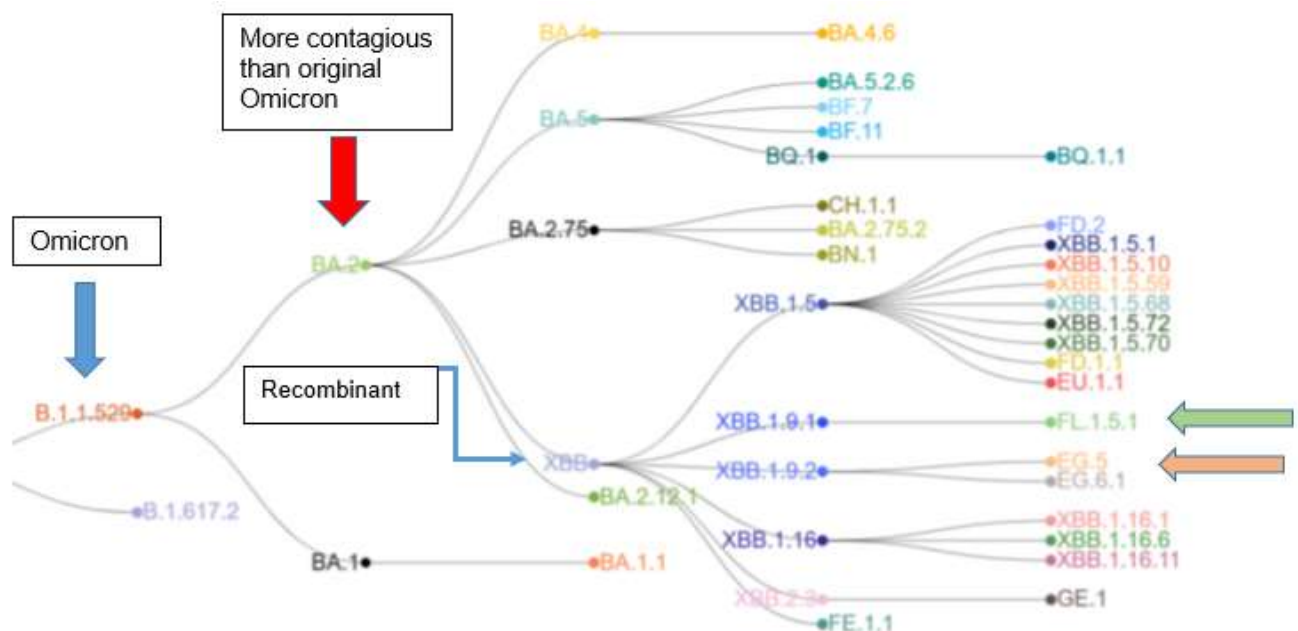
- Compare this to the CDC data from April 20 (graph below). At that time, XBB.1.5 was clearly the dominant strain comprising 74.4% of isolates. Only two other strains were found in a frequency of 5% of higher.



WHO label	Lineage #	US Class	%Total	95%PI
Omicron	XBB.1.5	VOC	74.4%	69.7-78.6%
	XBB.1.16	VOC	9.8%	5.1-17.4%
	FD.2	VOC	5.8%	2.9-10.9%
	XBB.1.9.1	VOC	4.7%	3.0-7.1%
	XBB.1.9.2	VOC	2.1%	1.0-4.3%

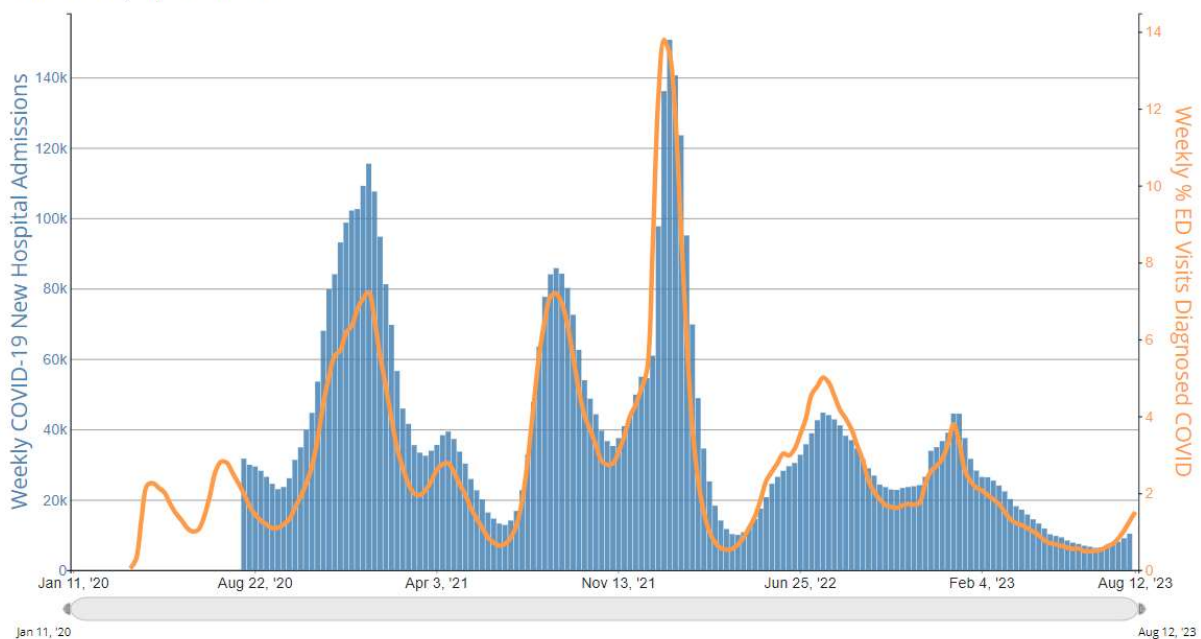
- [BA.2.86](#) is a recently identified new variant. Although infrequently identified thus far, it has been rapidly escalated to a variant under monitoring by the WHO.
 - Identified in multiple countries including the United States, Denmark, Israel and the United Kingdom.
 - Over 30 mutations on the spike protein compared to BA.2 (its putative ancestor).
 - Over 30 mutations different from the upcoming vaccine strain, XBB.1.5
 - Believed to have developed in an immunocompromised person with chronic COVID.
 - It is very different than currently circulating strains and was a surprising finding, similar to how Omicron first appeared.
 - It is not clear whether this combination of mutations will result in increased transmissibility or virulence.
 - It will not be separated out in the CDC genomic variants data until it becomes more than 1% of identified isolates.
 - Awaiting assessment of efficacy of antibodies from older variants/vaccines, more recent XBB exposures, plus upcoming vaccine.

- The [Pangolin lineage](#) is below. Arrows and information were added to show the original Omicron, the BA.2 that followed Omicron, the XBB recombinant and where EG.5 and FL.1.5.1 fit into the present scheme.



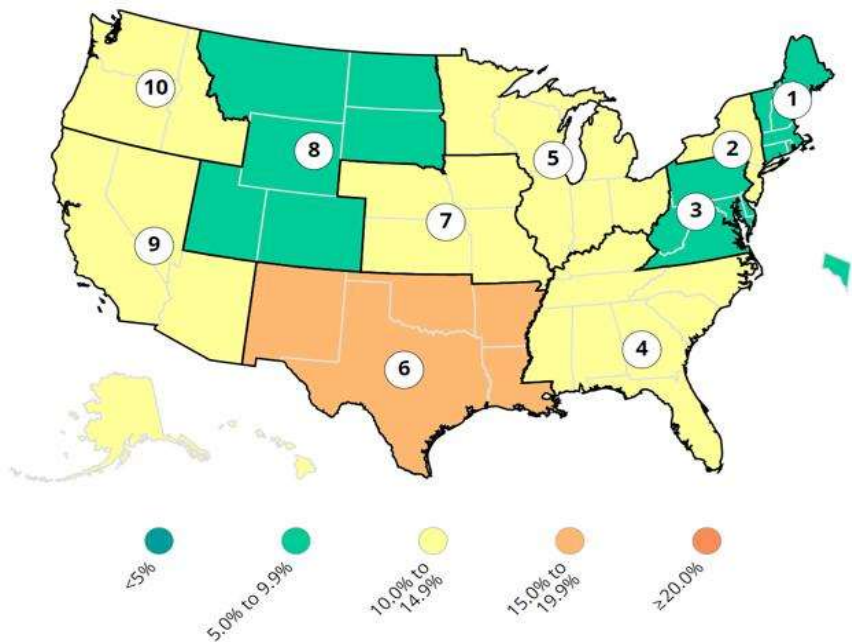
- [Hospitalizations](#) and emergency department visits in the United States secondary to COVID continue to increase, as shown in the following graph. As expected, ED visits are increasing week-to-week faster than hospital admissions. Importantly, rates remain low and do not suggest a rapid surge. The slopes continue to suggest a gradual ascent to the peak.

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



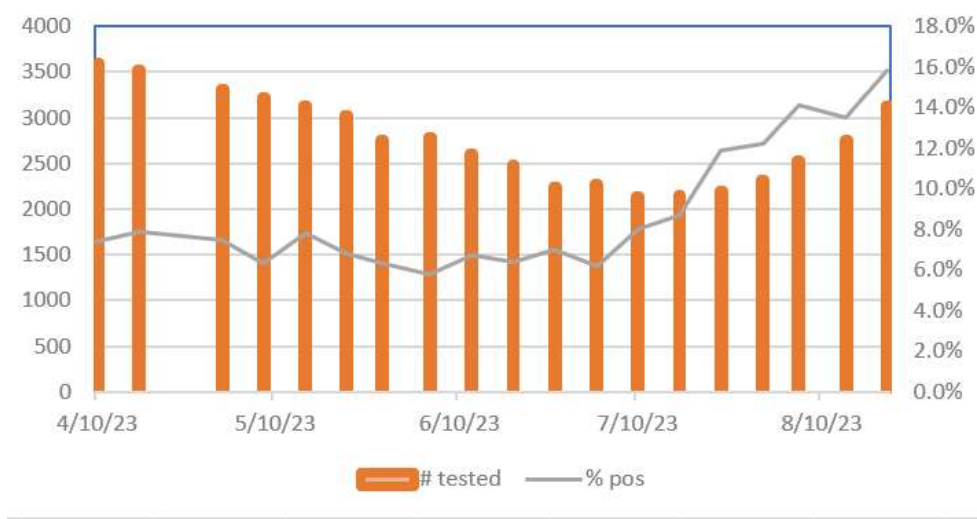
- [National](#) molecular test positivity rates by region are shown on the map below. Most of the United States is experiencing NAAT (Nucleic Acid Amplification Test) COVID test results above 10%.

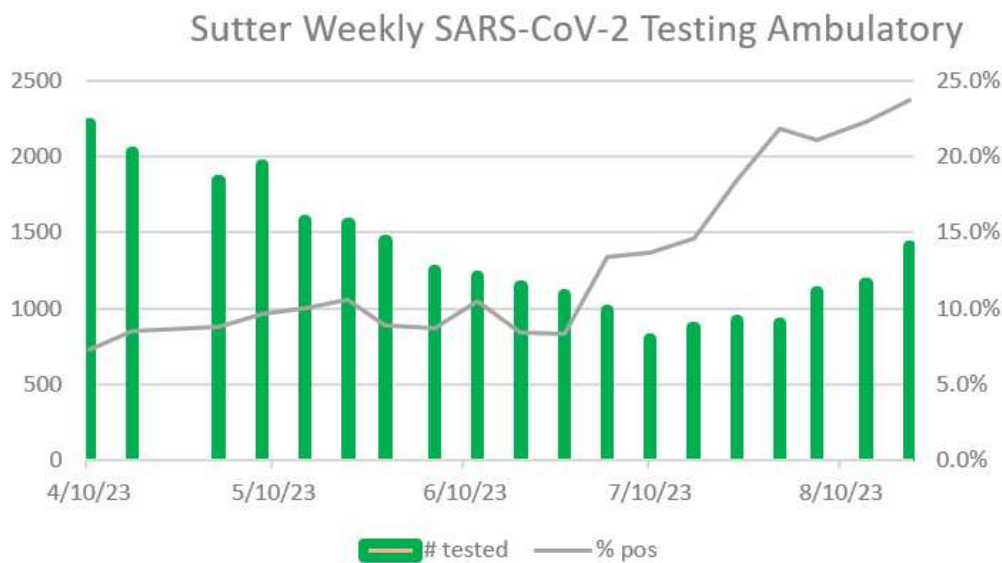
Percent Positivity of COVID-19 Nucleic Acid Amplification Tests (NAATs) in the Past Week by HHS Region – United States



- Updated Sutter data below continues to demonstrate that increased testing is being performed, now up over 50% compared to one month ago. Test positivity rates continue to increase. This supports that patients are becoming more symptomatic with newer strains and are seeking medical care.

Sutter Weekly SARS-CoV-2 Acute





- Self-administered, home-based testing became a critical approach to controlling COVID during the pandemic. Testing materials were available for free with [CDC guidance](#) about quarantine or isolation, based on exposure and test results.
- [Emerging Infectious Diseases](#), September 2023, published a probability-based survey that compared home-testing with provider-administered testing on outpatients and their decisions to isolate, notify contacts and adhere to CDC isolation recommendations.
 - Data was collected from Jan. 1, 2021 to March 31, 2022.
 - Estimated that over 48 million persons tested positive during the data collection interval.
 - Estimated that 24% adult testing was home-based and 76% provider administered.
 - Controlled variables included age, sex, race/ethnicity, household size/income, urbanization and state of residence.
 - Persons who performed home testing were 29% less likely to institute any isolation or to follow contemporary isolation guidelines at that time. Isolation was maintained for an average of 2 days less in home-tested persons. These were statistically significant results.
 - On the positive side:
 - Persons who performed home-testing did follow contemporary isolation guidelines an average of 64% of the time.
 - Self-reporting of results to contacts were statistically the same, regardless of the site of testing.
 - Weaknesses of this study included:
 - Survey was only in English and Spanish
 - Self-reported survey bias
 - Self-selected against most marginalized communities
 - Asymptomatic and minimally symptomatic persons probably less likely to test
- The upcoming monovalent vaccine versus EG.5 and FL.1.5.1.
 - [Pfizer](#) reported the ability of the new monovalent vaccine to stimulate neutralizing antibodies against EG.5 in mice.
 - [Moderna](#) reported increased post-vaccination, neutralizing antibodies in humans against both EG.5 and FL.1.5.1.
 - Details are limited now. No information on the actual titers and how they compare to the neutralization titers against XBB.1.5.

- **COVID Take-Home Message:**

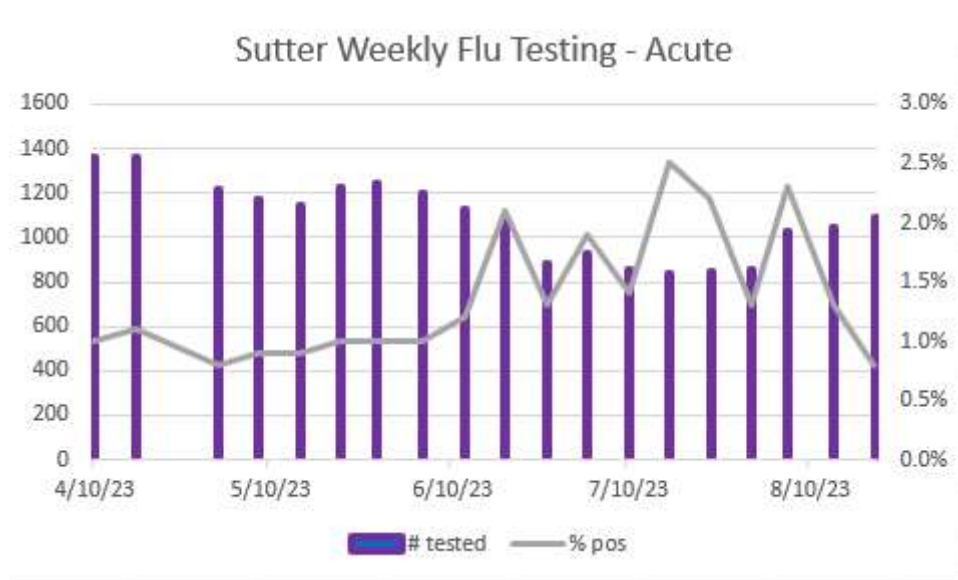
- SARS-CoV-2 appears to have made another major shift. Previously, a wave was caused by a variant (examples include Alpha, Delta, Omicron, BA.1, BA.2 and XBB.1.5). SARS-CoV-2 now has multiple competing strains circulating at one time.
 - Although EG.5 is the most frequently sequenced isolate, it may not truly become “dominant” compared to the pattern previously exhibited by earlier variants.
- [BA.2.86 is concerning](#) because it differs from both the recombinant XBB and the omicron derived BA.2. BA.2.86 has the highest number of new mutations on a strain since Omicron. Clinical impact remains uncertain, but data are being collected.
- Hospitalizations and emergency department visits have continued to increase for six weeks now. Slopes suggest a gradual ascent in cases will continue.
 - This trend could be influenced by another new variant (such as BA.2.86), social distancing, use of masks and hand hygiene and the arrival of the new monovalent vaccine.
- Testing positivity rates continue to increase.
 - National molecular testing positivity rates are more than 10% in most of the country.
 - Sutter ambulatory and emergency departments have increased testing by about 50% in the last month and positivity rates have continued to rise.
 - ✓ Ambulatory and emergency department positivity rates are 24% and 16% respectively.
 - During the 15 months of the COVID pandemic after home-testing became available for free, persons who tested at home were less likely to isolate and typically shortened isolation by 2 days compared to provider administered testing. However, the rates of notifying contacts of their results were statistically the same and 64% of home-tested patients followed contemporary isolation guidelines.
 - ✓ Home testing, although not as effective as provider-administered testing, provided public health benefit.
 - ✓ With the declaration of the end of the pandemic, and the elimination of free testing materials, the future impact of home-testing is unclear.
- According to the manufacturers, the upcoming monovalent vaccines have lab data supporting efficacy against the XBB subvariants, including EG.5 and FL.1.5.1. Awaiting release of the actual neutralization titers.
- **Masking** – Appropriate use of PPE is a highly effective and crucial tool.
- **Sutter-provided procedure masks are strongly recommended and will continue to be readily available for all workforce members, patients, and visitors.**

- **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](#)

Influenza

- The WHO released their updated [influenza report](#) on Aug. 22. Levels throughout the world remain at inter-seasonal lows.
 - In the two weeks from July 24 to Aug. 6, a total of 208,169 specimens were tested and reported. Only 5,261 were positive (2.5%).
 - 73% were Influenza A and 27% were Influenza B.
 - Of the subtyped Influenza A viruses,
 - A H3N2 comprised 62% and A H2N1 38%
- Testing from Sutter emergency departments is in the graph below.
 - This testing is on a molecular platform.
 - Additional testing has been performed over the last few weeks and positivity rates remain low.
- Ambulatory testing results are not shown because false positive results are more common with some of the non-molecular diagnostic assays. Those test results sometimes require a confirmatory molecular test.



- **Influenza Take-Home Message**
 - Influenza virus is circulating at low inter-seasonal levels throughout the world.

Respiratory Syncytial Virus (RSV)

- On Friday Aug.17, the FDA [expanded approval](#) for use of the Abrysvo® RSV vaccine in pregnant individuals to prevent lower respiratory tract disease (LRTD) and severe LRTD caused by RSV in infants from birth through 6 months of age.
- The FDA approved gestational age to administer Abrysvo® is between 32-36 weeks of pregnancy. The Advisory Committee of Immunization Practices (ACIP) still needs to weigh in on the FDA's decision and provide clinical considerations for use before the vaccine can be administered in this population. An official ACIP meeting date is pending.
- Abrysvo® has already been approved in May for use in older adults ≥60 years of age. Recommendations for this age group are published in the [latest MMWR](#).
- **RSV Take-Home Message**
 - Multiple options will be available this year to prevent severe RSV infections in children and older adults.

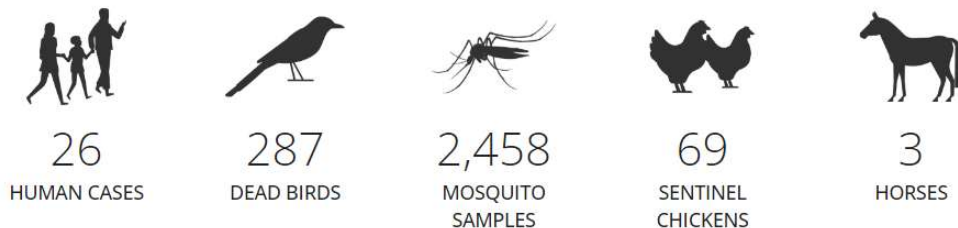
- Abrysvo® now has FDA approval for administration during the third trimester of pregnancy.
- Availability will after the ACIP/CDC publish clinical considerations for use.

West Nile Virus (WNV)

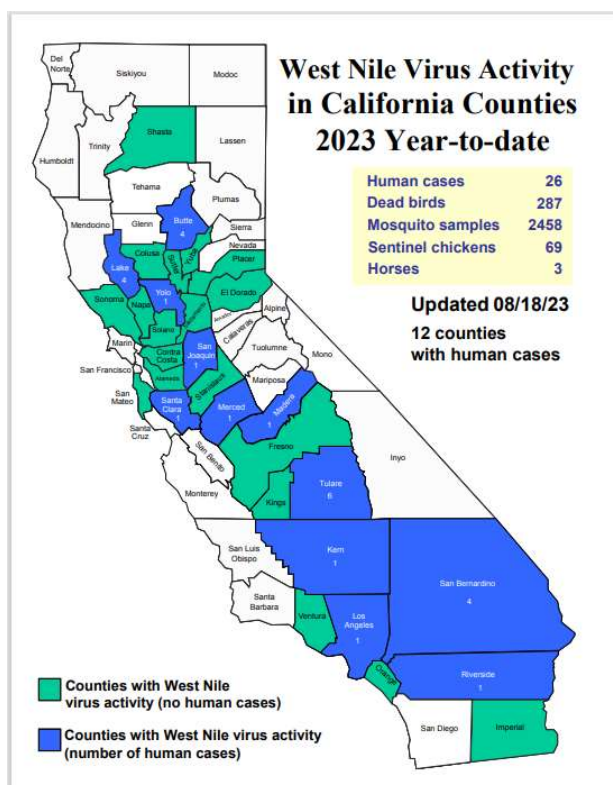
- Last week's newsletter discussed that the number of cases of WNV in dead birds was more than twice the average over the prior 5 years. The case number reported in humans was average year-to-date through Aug. 11, but six of the reported 14 cases were in the prior week.
- The updated number of human cases in California has increased by 46% this week, with 12 new cases.

2023 WEST NILE VIRUS ACTIVITY IN CALIFORNIA

LAST UPDATED: AUG 18, 2023 4:42PM PST



- [Alameda](#) and [El Dorado](#) counties just reported their first human infections on Aug. 18. Additional prevention advice is provided in their guidance.
- Identified cases of WNV in humans have been increasing recently. Consider in the differential for aseptic meningitis, encephalitis, or flaccid paralysis.
- The map below shows updated WNV activity in 2023, year-to-date through Aug. 18.



- **West Nile Virus in California Take-Home Message**
 - Reported cases of WNV in humans has increased significantly in the last 2 weeks.
 - This is much higher than the year-to-date average seen over the prior 5 years.
 - Alameda and El Dorado counties both just reported their first case this season.
 - Numbers are anticipated to continue to increase.

Pharyngeal Co-Infection with MPOX and Group A Streptococcus

- [Emerging Infectious Diseases](#), September 2023 published two case reports of individuals with oral MPOX disease presenting with pharyngitis symptoms before a rash developed. Both patients also had group A streptococcus identified on pharyngeal culture and one was also positive for *Neisseria gonorrhoeae*.
- The clinical courses were described. Both were notable for the complex decision making that was needed to appropriately address all of the identified organisms.
- Persons at risk for sexually transmitted infections (STIs) should be screened for multiple co-infections.
- **Pharyngeal Co-Infections Take-Home Message**
 - The [differential diagnosis of acute pharyngitis](#) includes multiple viral and bacterial pathogens.
 - Persons at risk for MPOX are typically also at risk for other STIs. Co-infections can occur, especially in this high-risk population. Acute HIV, herpes simplex, gonococcal infection and EBV are just a small part of the differential diagnosis. MPOX needs to be added to the evaluation. Oral-pharyngeal ulcerations may be seen, sometimes with substantial corresponding edema. Enlarged cervical lymphadenopathy is frequently identified. The MPOX cutaneous rash may be delayed, minimal or widespread.
 - Group A Streptococcus may also be found as a bystander, co-contributor or the main etiology in patients with MPOX pharyngeal symptoms.

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.

