

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. 3, 2023

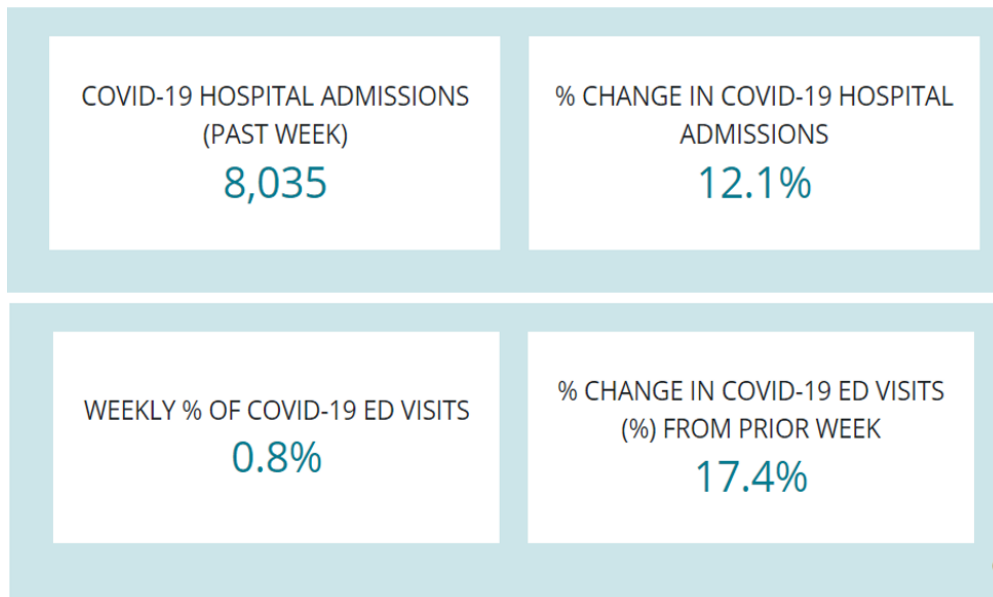
Written by Dr. Silvers with contributions from Dr. Joan Etzell (Lab), Lisa Rieg (Pharmacy), and Gordon Sproul (Pharmacy). Please use Google Chrome for the best experience.

Topics

1. COVID-19
 - a. Rates are increasing
 - i. Increase testing
 - ii. Consider masking for all patient encounters
 - b. Take-home COVID
2. Influenza
 - a. Circulating levels
 - b. Vaccine
 - i. Start administering in September
3. Multi-drug resistant gonococcal infections (GC)
4. Share the newsletter

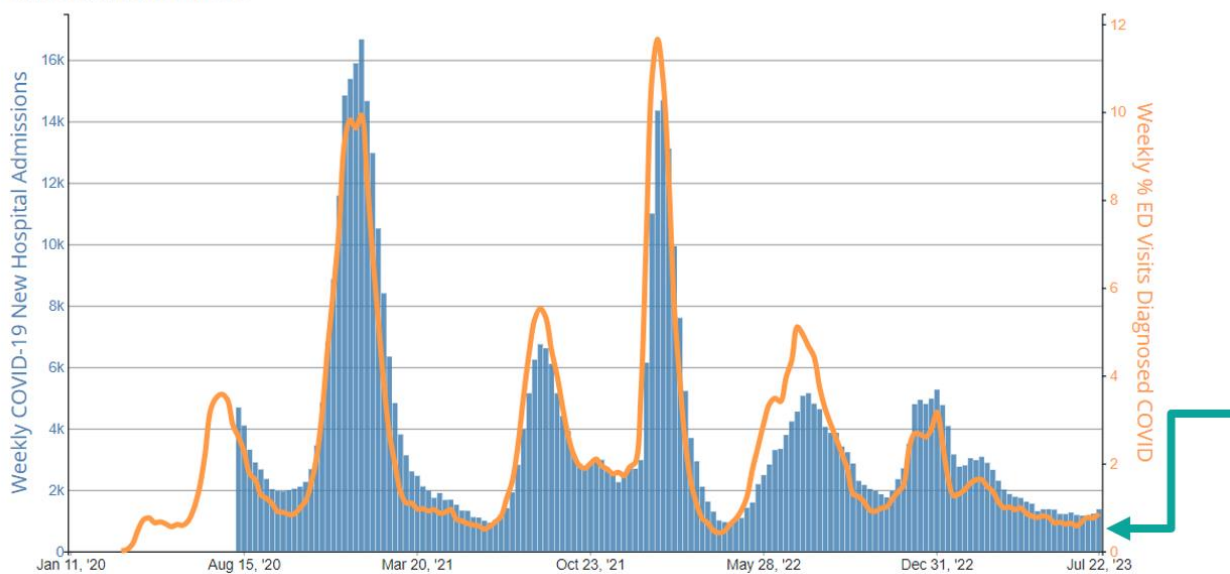
COVID-19

- Hospitalization rates and emergency department visits secondary to COVID are increasing. Below is a graphic showing the most recent CDC weekly data (through July 22).
 - Note the double-digit percentage increase in weekly hospital admissions and visits to emergency departments.

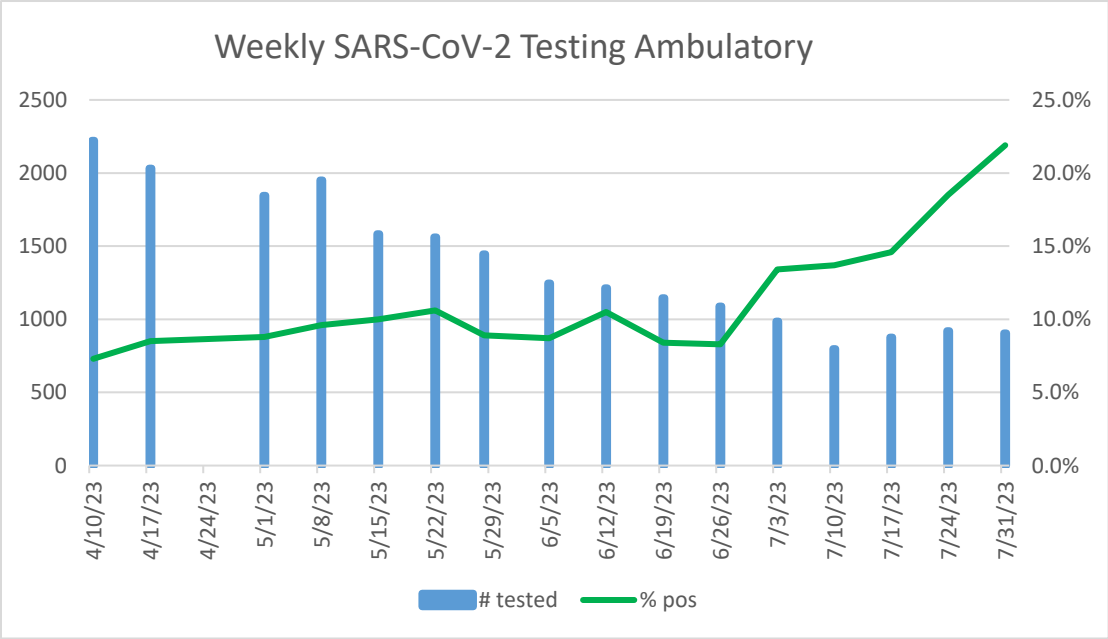
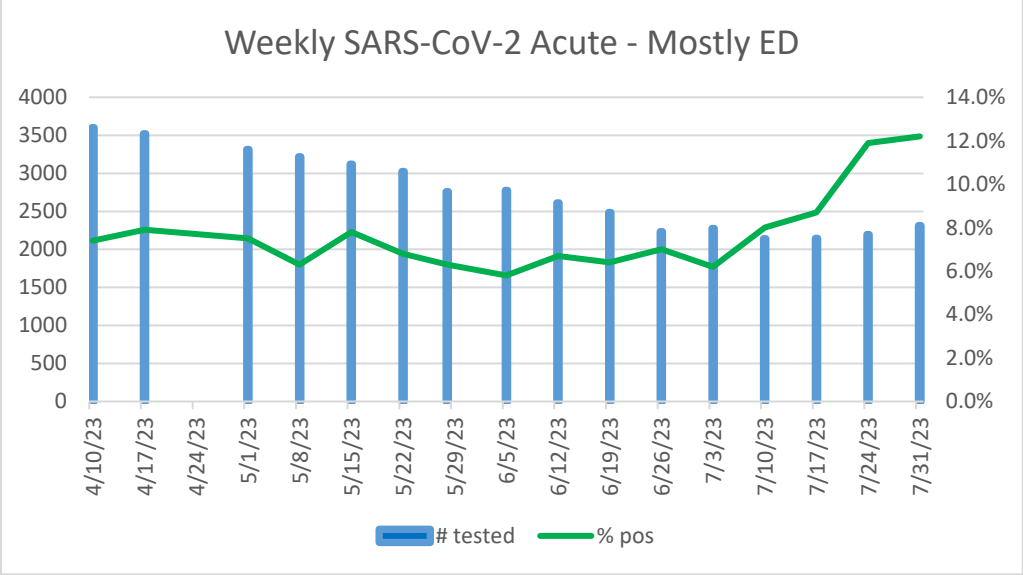


- Next is a graph demonstrating five weeks of progressive rate increases in the same two measurements.
 - Notice that the slope of orange run line appears to be getting steeper.

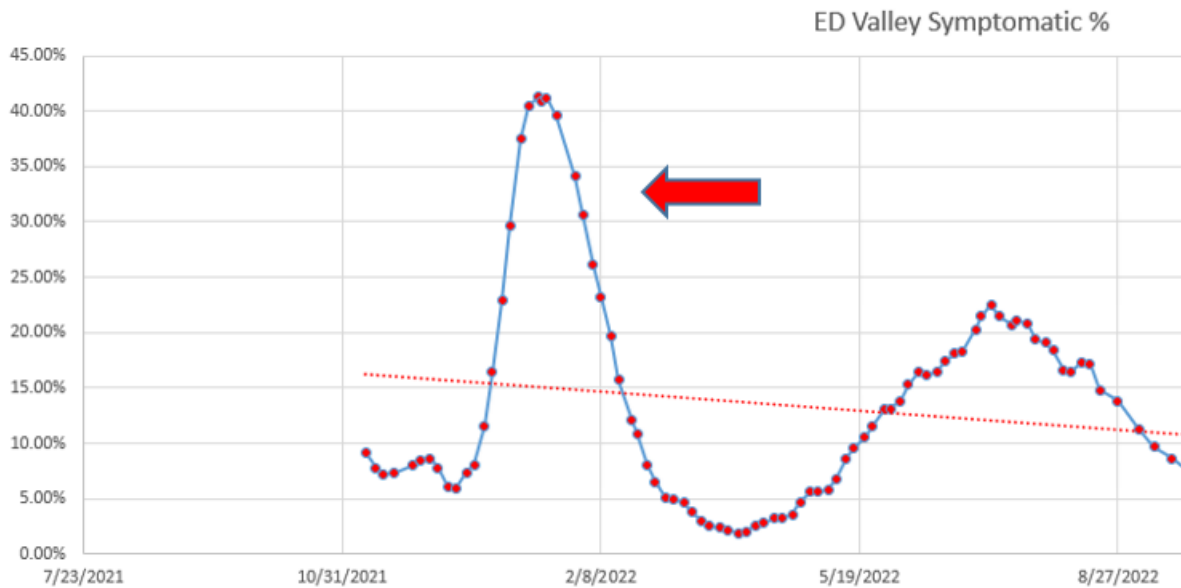
COVID-19 New Hospital Admissions and Percentage of Emergency Department (ED) Visits Diagnosed as COVID-19, by Week, in California, Reported to CDC



- This reflects a small percentage of persons who develop infections as this only includes patients who require hospitalization or seek care in an emergency department.
- Four months of weekly testing through Sutter is presented on the two graphs below.
 - Positivity rates are increasing faster than the number of people being tested.
 - The actual numbers of tests being performed remain well below April data.
 - It is likely that many people with COVID are not being tested. It is very important that persons with COVID be identified, and appropriate treatment and isolation are ordered.



- During the peak of Omicron (late 2021-early 2022), symptomatic persons tested in emergency departments had positivity rates of 35-40%
 - Close to 5,000 tests per day were being performed.
 - The graph below shows the end of 2021 through October of 2022.



COVID Take-Home:

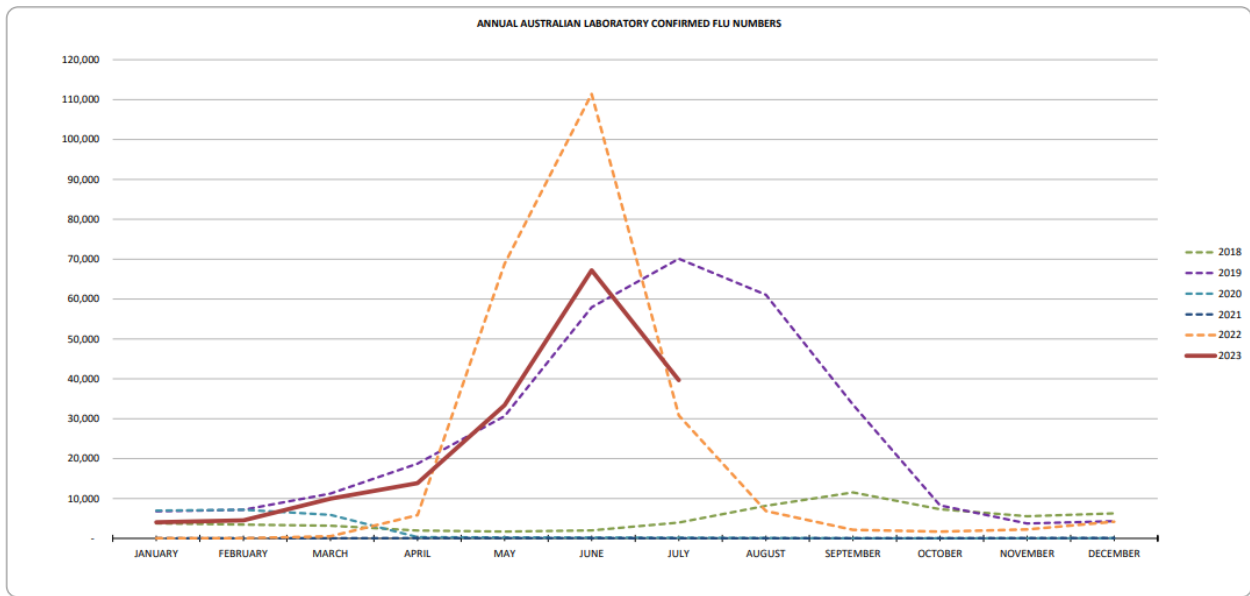
- COVID is increasing again. It is once again proving that it doesn't always follow our usual respiratory season.
- Omicron only took 4-6 weeks from initial identification to the peak. BA.4/.5 took 4 months. Although it is too early to know, the slope of the present uptick suggests that the peak may be closer to four months. There are multiple variables that can easily affect this slope:
 - The impact of students returning to classrooms
 - Timing of release, uptake, and effectiveness of the monovalent vaccine
 - Weather
 - The number of circulating strains, mutations between them, and how easily people get re-infected
 - Treatment of high-risk persons with mild to moderate infection
 - Social distancing and masking
- During times of increased community transmission:
 - Individuals should continue to self-screen and test when symptomatic
 - Individuals should not work when ill and follow CDPH return-to-work guidance for healthcare workers
 - Masking is strongly recommended during all patient encounters
 - ⊖ Ensure that symptomatic patients also mask
 - ⊖ Healthcare workers should use a lower threshold for testing symptomatic people.

- **Related Links**

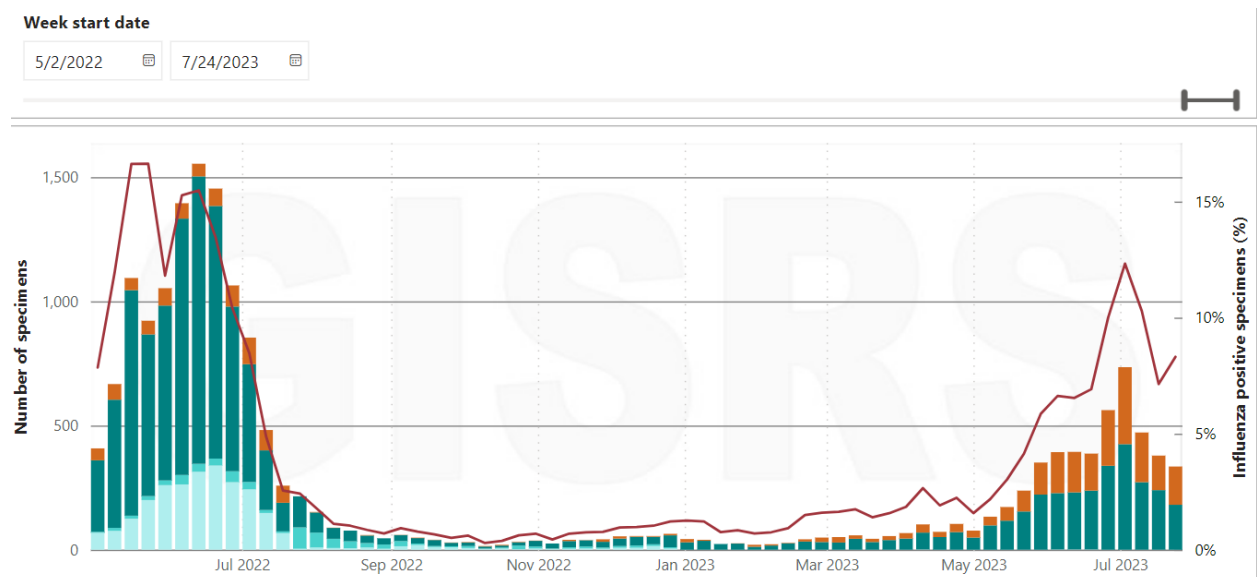
- [CDC Caring for Patients](#)
- [CDC Data Tracker](#)
- [CDC Latest Updates](#)
- [CDC Vaccine Information](#)
- [CDPH Tracking and Vaccination Updates](#)
- [Sutter Health for Clinicians](#)
- [Sutter Health for Patients](#)
- [WHO Table of Contents](#)

Influenza

- Globally, influenza rates remain low although it has been increasing in some areas in the Southern Hemisphere. Australia flu season has been less severe compared to 2022 and in general appears to be a mild season. The [graph](#) below shows run charts of laboratory-confirmed influenza in Australia. The time of onset was about the same as last year, but the peak number of cases was only about 60% of the 2022 peak.



- The following [graph](#) shows that isolates in Australia are now almost evenly split between influenza A (not subtyped) and B. The legend is just below the graph. The number of specimens tested remains low, which is also consistent with a mild season.



- Influenza B (lineage not determined)
- Influenza B (Victoria)
- Influenza B (Yamagata)
- Influenza A not subtyped
- Influenza A(H3)
- Influenza A(H1N1)pdm09

- [Immunization rates](#) in Australia need to be considered when evaluating this data. Table below.

AGE	% Vaccinated
6 months to-<5 years old	25.5
5 to <15 years old	15.0
15 to 50 years old	21.3
50 – to <65 years old	35.6
65 years or older	62.4

- Most reported [cases](#) have been in persons between birth and 14 years of age, with a countrywide median age of 16 years old. Vaccination rates are especially low in that population.
- Although it is too early to assess vaccine effectiveness in the southern hemisphere for this season, vaccine match to circulating strains can provide important information.
- Influenza A H3N2 is typically the most difficult to match.
- The [current match](#) is estimated to be about 80%, which is still very good for A H3N2. Influenza A H1N1 and B, which comprise over 90% of isolates, have excellent vaccine match. The Total A versus B percentage of isolates does not add up to 100% because some patients have simultaneous dual influenza infections, and some isolates were not evaluated even though scheduled to be tested. See table below.

Influenza Strain	Total A versus B	Vaccine Match
A H1N1	56.3%	97.5%
A H3N2	6.7%	81.2%
B Victoria	35.2%	99.2%

- A mild season does not mean that morbidity and mortality will be insignificant. In Australia, 7% of persons admitted to their hospitals with influenza required admission directly to intensive care units.

Influenza Take-Home

- Australia is experiencing a mild influenza season with predominantly A H1N1 and B circulating.
- The younger age groups are experiencing more disease. That may be partially due to the much higher vaccination rates in persons 65 years and older.
- Seasonal influenza immunizations should not begin until September.

Multi-drug resistant gonococcal infections (GC)

- *N. gonorrhoea* antimicrobial resistance has progressively developed against every antibiotic ever used to treat it.
 - Sulfonamides used in the 1930s quickly became resistant in the 1940s.
 - During the 1980s, strains that were resistant to penicillin and tetracycline became widespread.
 - Fluoroquinolone treatment recommendations for gonorrhoea treatment were stopped when national susceptibility fell below 95% (in 2007) and has continued to fall.
 - Azithromycin resistance is increasing.
 - Decreased susceptibility or resistance to cefixime has been reported for more than 10 years on multiple continents.
 - Patients with ceftriaxone treatment failure are now being identified.
- In 2010 the “doomsday scenario” for untreatable GC infections was reported by [NBC news](#).
- The CDC last published its Sexually Transmitted Infections (STI) [treatment guidelines](#) in 2021.
- Nearly all circulating strains in the United States remain susceptible to ceftriaxone, the primary recommended treatment for uncomplicated gonorrhoea.
 - Treatment dosages have been adjusted upwards through the years as the minimum inhibitory concentration (mic) has gradually increased.
 - Ceftriaxone and cefixime are the only antimicrobials recommended for gonococcal infection treatment. Cefixime is an alternative but not the primary recommended medication.
- The [WHO](#) recently published an updated information sheet on July 23.
- Extensively drug-resistant GC with high-level resistance to the currently recommended treatment regimen of ceftriaxone is called the ‘gonorrhoea superbug.’
- Strains resistant to ceftriaxone and with high azithromycin resistance have been reported in multiple countries including the United Kingdom, Japan and Australia.
- Very little surveillance data is available from countries with less resources and the actual extent of spread of the ‘gonorrhoea superbug’ is unknown.
- The first cases of the ‘gonorrhoea superbug’ identified in the United States were reported by the [Massachusetts Department of Public Health](#) January 2023.
- Most cases of treatment failure are in persons with asymptomatic pharyngeal carriage.
- CDC treatment guidance is below

STI	2021 CDC Guideline	Changes from 2015 CDC Guideline
Gonorrhoea (cervical, urethral, rectal or pharyngeal)	<p><u>For Adults up to 150 kg:</u> Ceftriaxone 500 mg IM as a single dose</p> <p><u>For persons weighing > 150 kg:</u> Ceftriaxone 1 gm IM as a single dose</p> <p><u>Alternatives*:</u></p> <ul style="list-style-type: none"> • If Ceftriaxone not available or IM injection not feasible: Cefixime 800 mg PO as a single dose • Cephalosporin allergy: Gentamicin 240mg IM plus azithromycin 2 gm PO as a single dose** 	<ul style="list-style-type: none"> • Increased Ceftriaxone dose: further dose increase to 1 g IM for > 150 kg • Routine dual therapy with azithromycin no longer recommended • Higher dose of cefixime

* Test of cure should be performed in one week if patient receives an alternative.

**Gentamicin monotherapy is inadequate.

- Gonococcal infections can have critical implications to reproductive, maternal and newborn health.
 - Infertility
 - Inflammation leading to acute and chronic lower abdominal pain in women
 - Ectopic pregnancy
 - First trimester miscarriage
 - Severe neonatal eye infections that can lead to blindness

Multi-drug resistant gonococcal infections (GC) Take-Home Message:

- *N. gonorrhoea* antimicrobial resistance has progressively increased.
- 'Gonorrhoea superbug' is still infrequently identified in the United States, but the risk continues to increase.
- Asymptomatic pharyngeal colonization is the most common reason for treatment failure.
- Inadequate treatment of gonorrhoea can have lifelong implications as well as increase the risk of development of resistance and spread of disease.
- A test of cure is recommended 7-14 days after initial treatment for:
 - pharyngeal gonorrhoea
 - all cases where any alternative to ceftriaxone was used
- Follow [CDC guidance](#) for treatment and retesting of pregnant persons or infected neonates.

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.

