

***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**

*June 28, 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.***

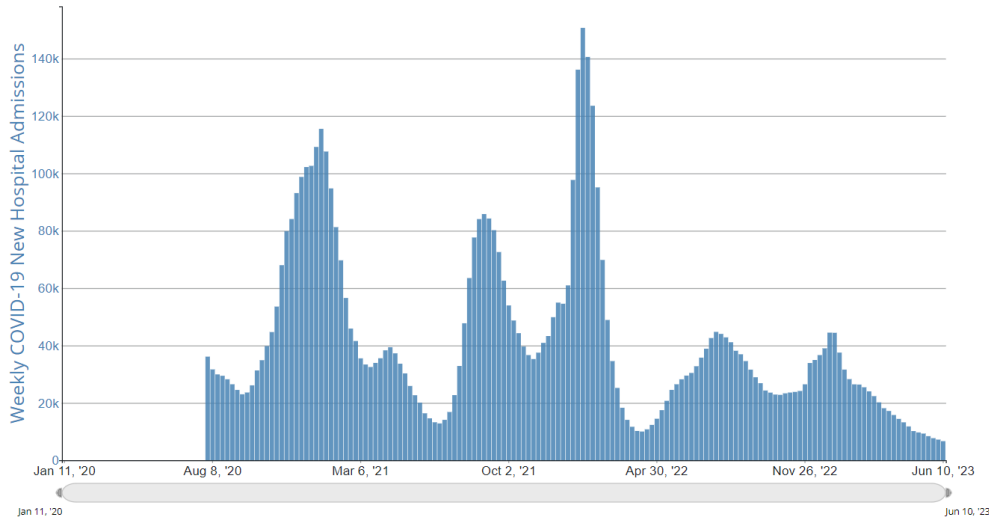
### **Topics**

1. COVID-19
  - a. United States hospitalization data
  - b. Wastewater surveillance trends
  - c. International genomic surveillance
  - d. United States genomic surveillance
  - e. Long COVID
    - i. The aftermath of the pandemic
    - ii. A branch of HHS publishes information on identification and management of mental health symptoms
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2. Influenza
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### **COVID-19**

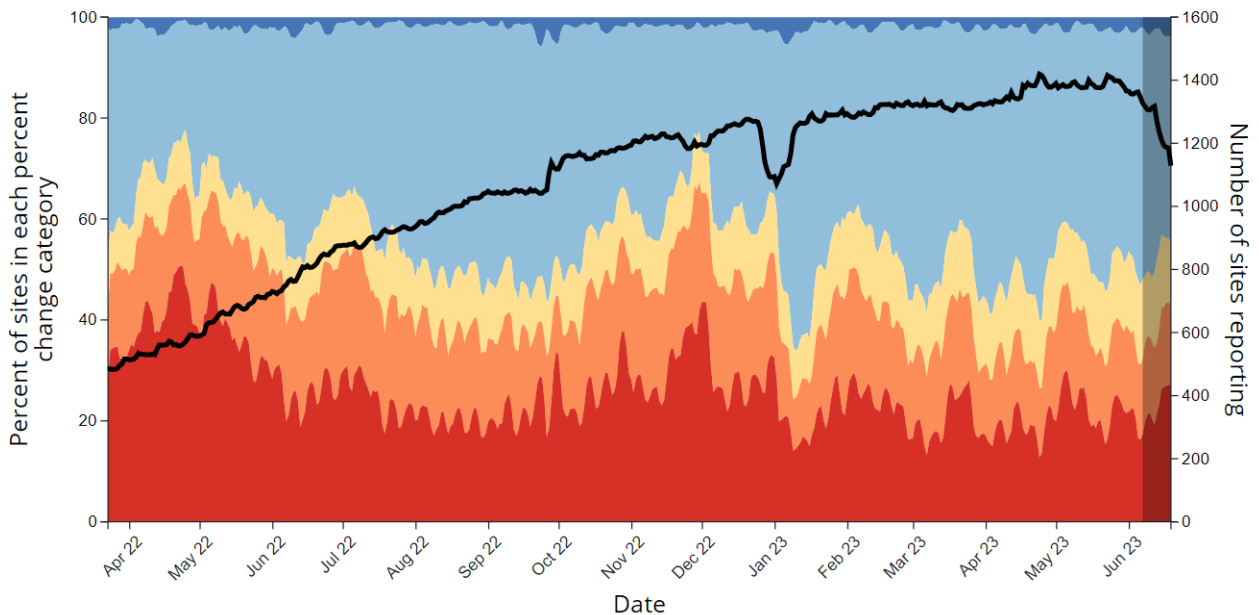
- [U.S. Hospitalization Data](#)
  - Hospitalizations in patients with a diagnosis of COVID continue to decrease nationally. In the week ending June 10, 6,649 patients were reported to the CDC. This compares to 150,674 cases the week of Jan.15, 2022. In addition, many of the newer reported cases are admitted for reasons other than COVID. The graph below shows weekly trends since data collection started August 2020. Hospitalization numbers have decreased by 96% from the high 18 months ago.

Weekly Trends in COVID-19 New Hospital Admissions in The United States Reported to CDC



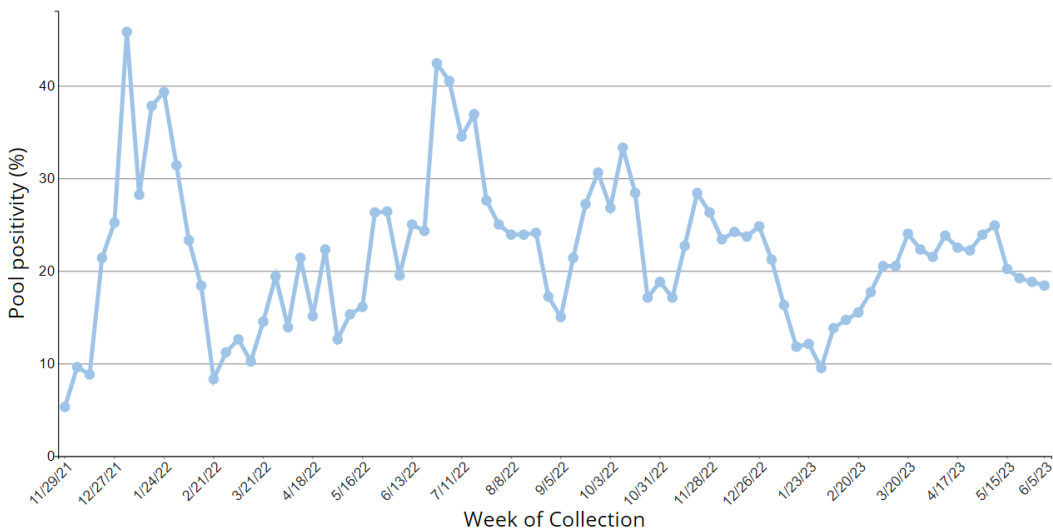
- [Wastewater surveillance](#) data shows changes in virus levels over time.
  - Each point in time represents the calculated percentage change over the prior 15 days.
  - The graph below can provide rough insight by looking at the color changes in the last 15 months. Shades of blue represent decreasing amounts of virus, yellow is unchanged and orange/red signify increasing amounts of SARS-CoV-2 virus.
  - On June 18, 2023, the blue shades represented 44%, orange/red 43% and yellow 9%.
  - Contrast this with Nov. 30, 2022, where the orange/red represented 68% of the change recorded.
  - A major limitation to interpretation of this data is that this graph does not measure levels of virus. When levels of virus in wastewater are low, a modest increase in virus level can appear much larger when looking at the percent change. Interpretation of this data must be combined with other information such as the weekly trends in hospitalizations discussed above.

### Percent of sites in each percent change category over time, United States\*

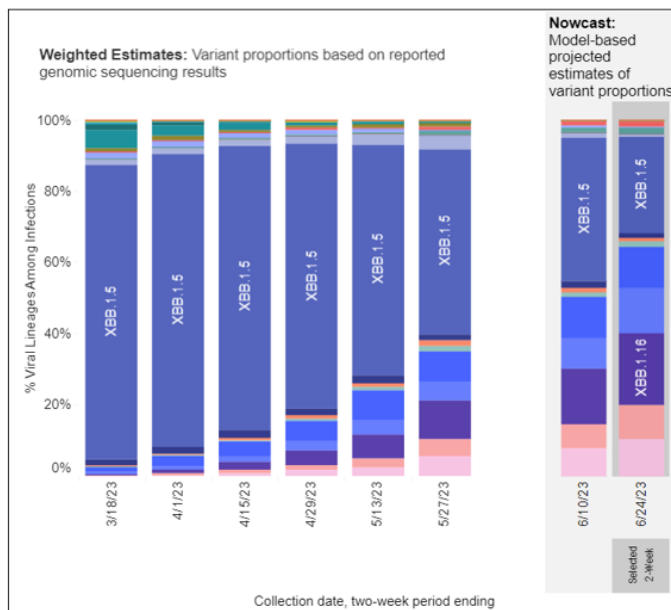


- [International genomic surveillance](#) is performed by sampling international air travelers from more than 25 countries at several major U.S. airports
  - All positive isolates are sequenced.
  - Week of June 5, XBB.1.5 was identified in 27.6% of isolates, but XBB.1.16 is continuing to be more frequently identified and comprised 24.1% of isolates. The only non-XBB derivative was CH.1.1, which makes up less than 1% of all sequenced international isolates. [CH.1.1](#) is a variant under monitoring but there is no evidence that it has an impact on transmissibility, immunity or severity of disease.
  - The graph below shows the positivity rate of pooled samples by collection week. The week of June 5, the positivity rate was 18.4%. This is well below the peak of 42.4% the week of June 27, 2022, but still twice the nadir that was measured this last Jan.30 at 9.5%.

Positivity Rate for Pooled Samples, by Collection Week

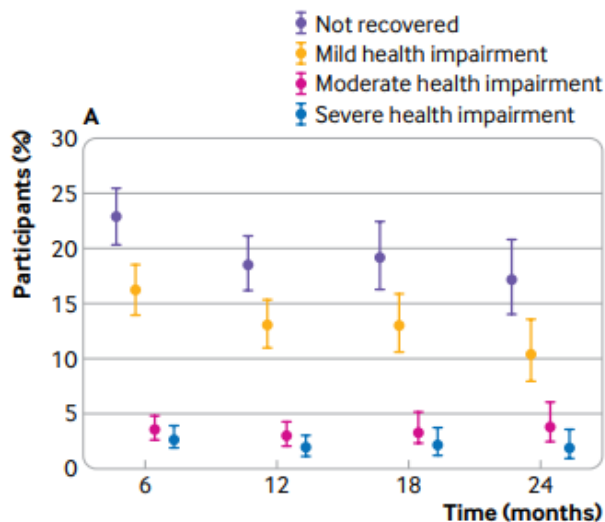


- [National genomic surveillance data](#) for March 5 to June 24 is below.
  - About 96% of isolates are from the XBB recombinant and the others are likely from an accumulation of mutations.

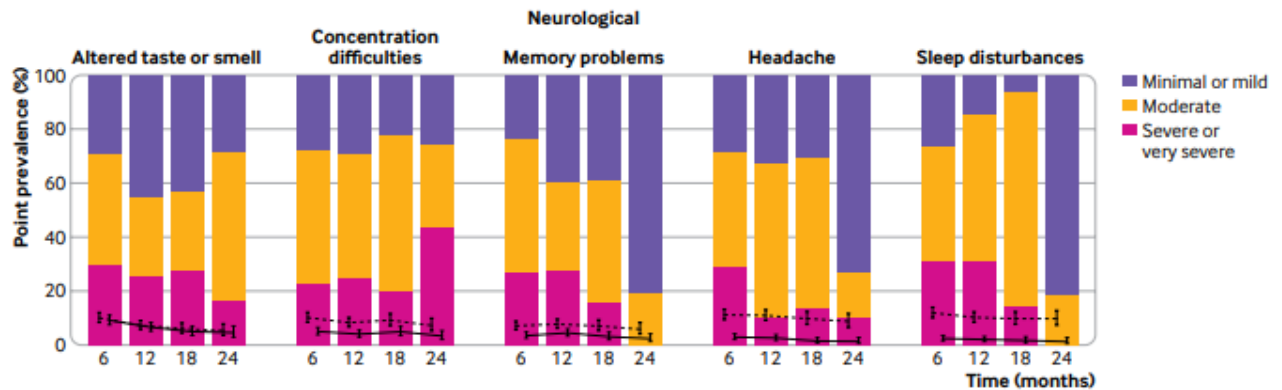


USA			
WHO label	Lineage #	%Total	95%PI
Omicron	XBB.1.5	27.0%	23.8-30.5%
	XBB.1.16	19.9%	17.1-23.0%
	XBB.1.9.2	13.0%	7.9-20.4%
	XBB.1.9.1	11.4%	10.0-13.0%
	XBB.2.3	10.6%	7.7-14.4%
	XBB.1.16.1	9.5%	7.7-11.8%

- Long COVID
  - Long COVID is recognized as a major complication of the COVID pandemic. In addition to affecting the quality of life for millions of persons, this is a substantial burden on the healthcare system.
  - The British Medical Journal recently published a prospective, population-based cohort, [study](#) looking at recovery and symptom trajectories for two years after COVID.
    - The study group consisted of 1,106 unvaccinated adults with a confirmed SARS-CoV-2 infection compared to 628 unvaccinated, uninfected adults.
    - Study patients were enrolled between August 2020 and January 2021 (pre-omicron, pre-vaccine roll-out).
    - Out of the original 33,162 persons who met infection criteria for randomization, 90% were excluded secondary to study capacity. Of the 3,185 invited participants, 1,106 agreed to participate.
    - Only 4.3% were hospitalized secondary to COVID.
    - Over 50% reported complete return to normal health within 1 month after infection.
    - By six months, 23% still remained symptomatic. The recovery trajectories for up to 24 months after initial infection showed continued improvement, with 17% still symptomatic two years after COVID.
    - Below is a graph showing the progressive decrease in the numbers of patients with unresolved Long COVID. Patients with mild health impairment had the best recovery rate but even patients with severe health impairment appeared to show improvement (changing from severe to moderate).



- The following graph demonstrates that the severity of Long COVID neurological symptoms diminished over time (stacked bars). Overall, the number of persons still experiencing these symptoms also decreased (solid black line). Dotted lines refer to all reported symptoms regardless of whether they were reported to be related to COVID-19.



- [Lancet](#) in June 2022 published a case-control, observational study comparing the development of Long COVID when omicron was the predominant variant versus delta. The odds ratio of developing Long COVID from omicron compared to delta ranged between 0.25 and 0.5. The risk of developing Long COVID after an omicron infection is at least 50% less compared to the delta variant infection.
- A branch of Health and Human Services (HHS) that oversees substance abuse and mental health services (SAMHSA) recently released a comprehensive [document](#) on identification and management of mental health symptoms and conditions associated with long COVID.
  - Estimated incidence of long COVID
    - Vaccinated: 10-12%
    - Non-hospitalized: 10-30%
    - Hospitalized: 50-70%
  - The key messages include:
    - ✓ There are a wide range of mental health conditions that are being associated with a diagnosis of Long COVID, including depression, psychosis, obsessive compulsive disorder and post-traumatic stress disorder.
    - ✓ More commonly, cognitive impairment, sleep disturbances, fatigue and headaches are ascribed to Long COVID.
    - ✓ It may be difficult to determine if a person's mental health conditions are actually due to Long COVID, pre-existing conditions, pandemic-related challenges or broader social/ethnic/racial issues.
  - Mental health conditions associated with Long COVID are more common in the following populations:
    - ✓ Hospitalized for COVID
    - ✓ More severe COVID illness
    - ✓ Longer duration of COVID symptoms
    - ✓ Pre-existing/comorbid psychiatric conditions
    - ✓ Black, Hispanic/Latino, or American Indian/Alaska Native people
    - ✓ Women
  - Appendix A in this document provides information on the evaluation of cognitive symptoms including:
    - ✓ Diagnoses other than COVID
    - ✓ Laboratory work-up to consider
  - Appendix B describes strategies to utilize to address and treat the different patient concerns
- As mentioned in earlier issues of this Newsletter, treatment with metformin or nirmatrelvir/ritonavir lowers the risk of developing Long COVID.

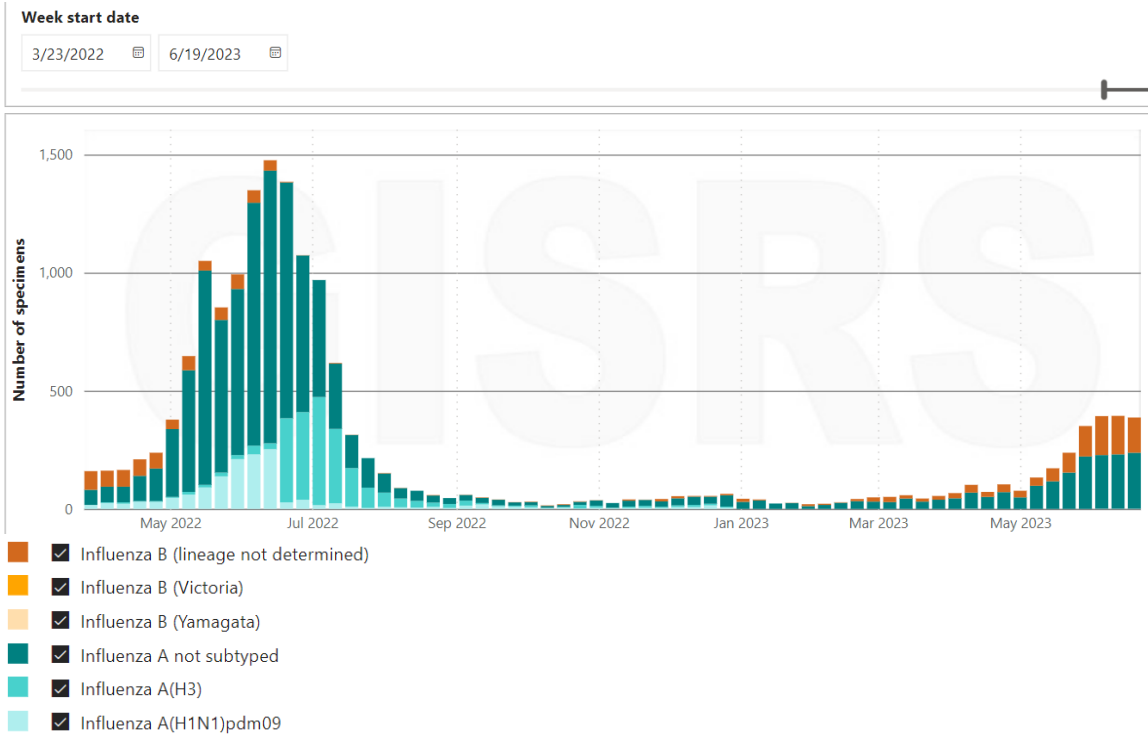
- **Related Links**

- [CDC Data Tracker](#)

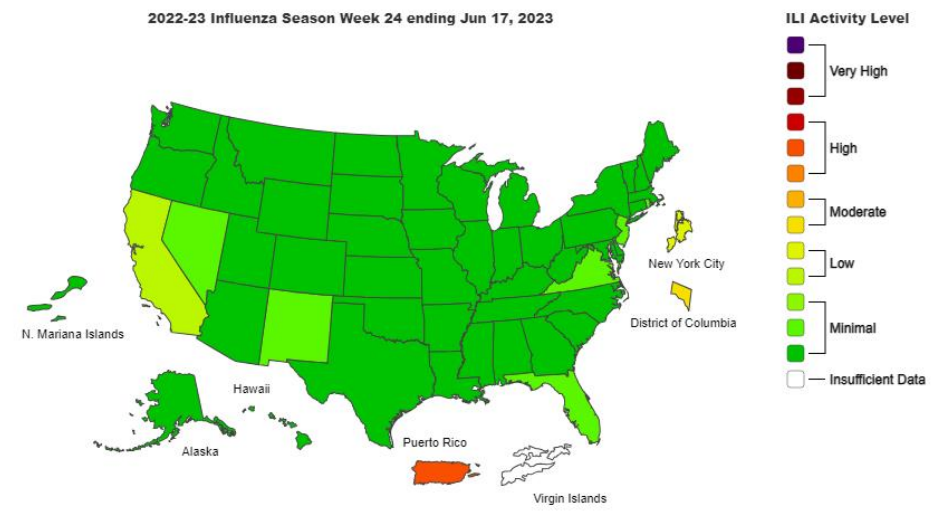
- [CDC Latest Updates](#)
- [CDC Vaccine Information](#)
- [Sutter Health for Clinicians](#)
- [Sutter Health for Patients](#)
- [WHO Table of Contents](#)
- **Take-Home on Long COVID-19**
  - Long COVID is a cluster of symptoms and conditions that requires a comprehensive evaluation and treatment plan.
  - The risk of Long COVID is determined by the variant causing the infection, severity of illness, vaccination history and treatment of the disease.
  - Omicron appears to have a 50-75% lower risk of being associated with Long COVID compared to delta.
  - Vaccinated persons infected with an omicron variant have the lowest risk, estimated to be about 10%.
  - Long COVID symptoms can persist for years but most diminish in intensity over the 24 months post-infection.
  - Although multidisciplinary clinics that specialize in care for patients with Long COVID are being recommended, the SAMHSA documents note that only a little more than 40 clinics have been established nationally. These are mostly in academic settings with limited capacity to see patients.
    - This strongly suggests that this is not a viable model for caring for these patients.
    - Primary care practices will need to be the resource for most patients.
  - The risk of Long COVID after asymptomatic through moderate infection ranges from 10% to 30% of patients.
  - Even accepting that the risk of Long COVID is less with the omicron variant, a 10% complication rate can result in an enormous number of persons who have or are at risk of developing Long COVID in the future.
  - Prevention is the best approach. This may be the most crucial point for getting otherwise healthy, low-risk persons to accept the upcoming monovalent vaccine.
  - Prevention of Long COVID through vaccination is anticipated to decrease the development and/or morbidity of Long COVID.
  - Treatment with metformin or nirmatrelvir/ritonavir also appears to decrease the risk of Long COVID.

## **Influenza**

- [Globally](#), influenza detections remain low. The only place in the Southern Hemisphere reported to have an increase in cases is Australia. The graph below shows that weekly detections in Australia remain well below the numbers seen at the same time-period in 2022. Although predominantly influenza A, influenza B comprises a significant percentage of cases.

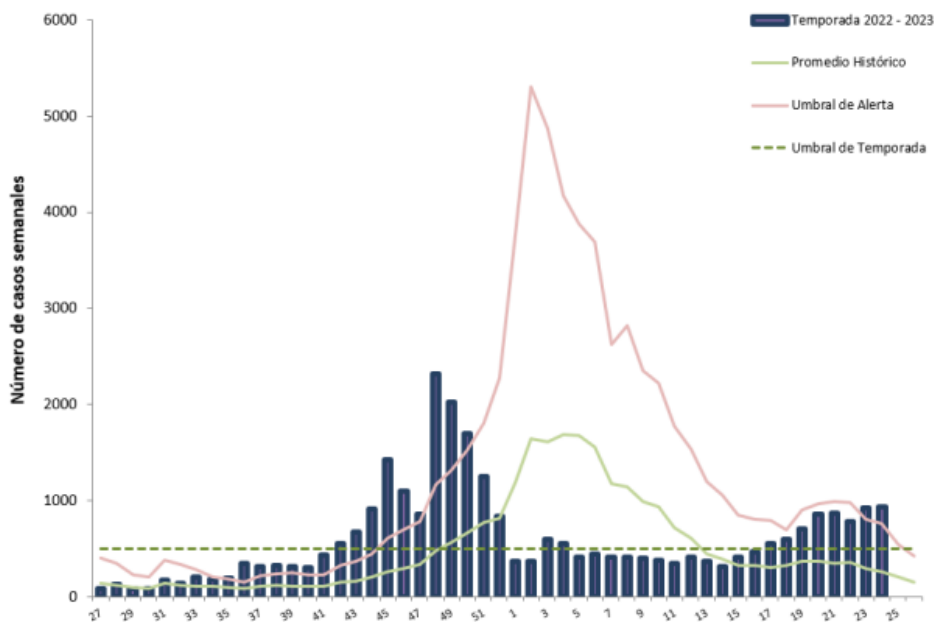


- [Nationally](#), influenza activity remains at inter-seasonal low levels. During the week ending June 17, 24,040 specimens were tested. Only 261 were positive (1.1%). Influenza A was predominant at 58%. The map below shows Influenza Like Illness (ILI) in the United States. ILI is a surrogate for influenza.



- Note that Puerto Rico is reporting a high level of ILI. [The Puerto Rico Health Department](#) report from June 23 provides more details. The graph below shows that there is a non-seasonal uptick in cases of influenza in the last 6 weeks, 79% of which are influenza B. Cases have been above historical averages (Promedio Histo'rico) for about 10 weeks. Similar to what has been reported in [Australia](#), the cases in Puerto Rico are predominantly in the pediatric population.

**Gráfica 1. Casos de influenza reportados por Semana Epidemiológica, Temporada 2022 – 2023.**



- **Influenza A H5N1**
  - In response to the ongoing global avian outbreak of A H5N1, multiple agencies including CDC, [CDPH](#) and the [European CDC](#) are requesting submission of specimens this summer from all patients who are either hospitalized in intensive care units due to severe influenza A or develop influenza A with a known exposure to wild birds, poultry or swine. This recommendation is for the time period of June through September 2023.
  - A molecular test should be used for diagnosis. Molecular tests used at Sutter facilities for influenza should detect the A H5N1 virus as “Influenza A” and will not separately identify the specific subtype.
  - Influenza A subtyping is performed at local public health laboratories or CDPH. Notify your local public health department for submission of specimens.
  - Collect the following two specimens:
    - Upper respiratory: Nasopharyngeal (preferred) or nasal swab using a flocked swab placed in viral (VTM) or universal transport media (UTM).
    - Lower respiratory: Endotracheal aspirate, bronchoalveolar lavage (BAL) or sputum.
  
- **Take-Home on Influenza**
  - Overall, reported influenza rates remain low throughout the world. The Southern Hemisphere season has been mild thus far.
  - The United States is not experiencing many cases of influenza.
  - Puerto Rico is reporting a small, nonseasonal outbreak affecting predominantly children.
  - It is still early to draw final conclusions but there is no evidence yet that typical seasonal influenza (A H3N2, A H1N1, B) will be a large threat this winter.
  - The risk of sustained transmission from avian H5N1 to humans remains small, but it is critical that vigilance be maintained. Notify your local public health department for submission of specimens from any patients hospitalized with a diagnosis of Influenza A or test positive and have a history of exposure to wild birds, poultry or swine.

**Mpox**



- Los Angeles County Health Department reported on June 23 that six new cases of Mpox have been identified in the county during the prior week. This is an increase from one new case per week for the prior month.
- Japan identified four cases in January and February of 2023. [Lancet](#) published a correspondence June 10 expressing concern that Japan and subsequently Asia could have an elevated risk of Mpox becoming established in Asia. The Jynneos Mpox vaccine is in short supply in Asia, including Japan.
- **Take-Home on Mpox**
  - As expected, small non-sustained outbreaks of Mpox are anticipated to increase through parts of the summer.
  - Continue to promote vaccination for the at-risk unvaccinated or incompletely vaccinated population.
  - Cases may increase in Asia and could lead to a sustained outbreak because of the shortage of Jynneos vaccine.

### **Share the Newsletter**

Anyone who would like to be added to the Emerging Infections newsletter should send a request to [bryan.gardner@sutterhealth.org](mailto: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](mailto:clinicians@sutterhealth.org).*

