San Francisco Village

COVID – 19
Research and Advisory Team:
Report and Recommendations #24
August 23, 2020

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This report contains a summary of the key updates on the status of Covid-19 that are more evident since our last report (June 14), along with our current recommendations for actions for SFV to consider taking. Sources include: CDC, WHO, SFDPH, CA DPH, Science Journal, Nature Journal, New England Journal of Medicine, Journal of the American Medical Association, Scripps Research Institute, Johns Hopkins Coronavirus Resource Center, UCSF Medical Grand Rounds, STAT, Institute for Health Metrics & Evaluation, the Covid Tracking Project, other clinical journals, reports from public health professionals, and news media.

RECENT FINDINGS

1) Scientists See Signs of Lasting Immunity to Covid-19, Even After Mild Infections *(note from Pat Tsang – this is research in process and findings may change over time)*
New research indicates that human immune system cells are storing information about the coronavirus so they can fight it off again.

Scientists who have been monitoring immune responses to the virus are now starting to see encouraging signs of strong, lasting immunity, even in people who developed only mild symptoms of Covid-19,
a flurry of new studies suggests. Disease-fighting antibodies, as well as immune cells called B cells and T cells that are capable of recognizing the virus, appear to persist months after infections have resolved — an encouraging echo of the body's enduring response to other viruses.

Although researchers cannot forecast how long these immune responses will last, many experts consider the data a welcome indication that the body's most studious cells are doing their job — and will have a good chance of fending off the coronavirus, faster and more fervently than before, if exposed to it again.

In discussions about immune responses to the coronavirus, much of the conversation has focused on antibodies — Y-shaped proteins that can latch onto the surfaces of pathogens and block them from infecting cells. But antibodies represent just one wing of a complex and coordinated squadron of immune soldiers, each with their own unique modes of attack. Viruses that have already invaded cells, for instance, are cloaked from antibodies, but are still vulnerable to killer T cells, which force infected cells to self-destruct. Another set of T cells, "helpers," can coax B cells to mature into antibody-making machines.
But even when not under siege, the body retains a battalion of longer-lived B cells that can churn out virus-fighting antibodies en masse, should they prove useful again.

Seeing antibodies this long after infection is a strong indication that B cells are still chugging away in the bone marrow. Multiple studies, including one published on Friday in the journal Cell, have also managed

to isolate coronavirus-attacking T cells from the blood of recovered individuals — long after symptoms have disappeared. When provoked with bits of the coronavirus in the lab, these T cells pumped out virus-fighting signals, and cloned themselves into fresh armies ready to confront a familiar foe. Some reports have noted that analyses of T cells could give researchers a glimpse into the immune response to the coronavirus, even in patients whose antibody levels have declined to a point where they are difficult to detect. This calls for some optimism about herd immunity, and potentially a vaccine.

2) Seven months later, what we know about Covid-19 — and the pressing questions that remain

To read the full article, use this link:
https://www.statnews.com/2020/08/17/what-we-now-know-about-covid19-and-what-questions-remain-to-be-answered/?utm_source=STAT+Newsletters&utm_campaign=ed4ca422f8-Daily_Recap&utm_medium=email&utm_term=0_8cab1d7961-ed4ca422f8-152518249

Covid and kids: It's complicated

Everything Covid is complex, and kids are no exception. While deaths among children and teens remain low, they are not invulnerable. And they probably contribute to transmission of SARS-CoV-2, though how much remains unclear.

We've learned younger children and teenagers shouldn't be lumped together when it comes to Covid. Teens seem to shed virus — emit it from their throats and nasal passages — at about the same rates as adults. Kids under 5 have high levels of virus in their respiratory tracts, but it's still not clear how much they spread it or why they don't develop symptoms as often as adults do.

There are safer settings, and more dangerous settings

Essentially, the closer you are to someone infectious and the longer you're in contact with them, the more likely you are to contract the virus, which helps explain why so much transmission occurs within households. Being indoors is worse, particularly in rooms without sufficient ventilation; the more air flow, the faster the virus gets diluted. Everyday face coverings reduce the amount of virus projected, but aren't total blockades.

People can test positive for a long time after they recover. It doesn't matter

It turns out it is an issue of testing. Most testing is conducted using a platform called PCR — polymerase chain reaction — that looks for tiny fragments of the SARS-CoV-2 virus. But the test can't tell if those sections of genetic code are part of actual viruses that can infect someone else, or fragments of viruses that are absolutely no threat.

After the storm, there are often lingering effects

Name a body part or system and Covid-19 has left its fingerprints there. We know this: Unusually sticky blood can clog vessels on the way to the heart and inside the brain and lungs of infected people, causing heart attacks, strokes, and deadly pulmonary embolisms. There are growing worries that these and other health effects will be long-lasting.

'Long-haulers' don't feel like they've recovered

The "long-haulers," are people who have survived their Covid-19 infections but feel a long way from normal. We know they're out there, but we don't know how many, why their symptoms persist, and what happens next.

In July, a survey conducted by the CDC found that 35% of people who tested positive for SARS-CoV-2 and had symptoms of Covid-19 — cough, fatigue, or shortness of breath — but were not hospitalized had not returned to their previous health two to three weeks later. Among those between 18 and 34 years old who had no previous chronic conditions, 20% felt prolonged signs of illness.

Vaccine development can be accelerated. A lot

An extraordinary amount of progress toward Covid-19 vaccines has been made, in record time. Trials have been compressed and overlapped, with manufacturers running Phase 1/2 trials in some cases and Phase 2/3 trials in others.

People without symptoms can spread the virus

Some percentage of infected people — roughly 20%-40%, though other studies have produced higher estimates — do not show symptoms at all. And two: Whether or not someone is asymptomatic or presymptomatic, they can still spread the virus

Mutations to the virus haven't been consequential
Coronaviruses in general do not mutate very quickly compared to other viral families. The leading vaccine candidates, for example, are based on SARS-CoV-2's genetic sequence, so theoretically a major change in that lineup could hinder the effectiveness of any vaccine. So far, that doesn't seem to have happened.

Viruses on surfaces probably aren't the major transmission route
The general consensus now is that "fomites" — germs on surfaces — aren't the major transmission route for Covid-19. Van Kerkhove of WHO said there hasn't been a case recorded where it's clear someone was infected by fomites alone. But it's clear from lots of studies that surfaces around infected people can be contaminated with viruses and the viruses can linger. Cleaning surfaces and being prudent about hand hygiene is a risk-lowering step people can take, public health officials agree.

People seem to be protected from reinfection, but for how long?
The thinking is that a case of Covid-19, like other infections, will confer some immunity against reinfection for some amount of time. But researchers won't know exactly how long that protection lasts until people start getting Covid-19 again.

What happens if or when people start having subsequent infections?
Given that most respiratory viruses are not "one-and-done" infections — they don't induce life-long immunity in the way a virus like measles does — there is a reasonable chance that people could have more than one infection with Covid-19.

How much virus does it take to get infected?
Whether you become infected or not when you encounter a pathogen isn't just a question of whether you're susceptible or immune. It depends on how much of the virus (or bacterium) you encounter. How big a dose of SARS-CoV-2 does it take to infect most people? It's one of the burning questions in SARS-CoV-2 research, said Angela Rasmussen, a coronavirus expert at Columbia University. "We don't know the amount that is required to cause an infection, but it seems that it's probably not a really, really small amount, like measles."

How many people have been infected?

There have been 21 million confirmed cases of Covid-19 around the world, and 5.3 million in the United States. Far more people than that have actually had the virus.

Problems with testing, and its limited availability, have contributed to that gap, as has the fact that some people have such mild or no symptoms that they don't know they're infected. But researchers don't know just how big of a gulf they're dealing with — how much spread they've missed. A recent CDC study of 10 cities and states estimated that in most places, the true number of infections was some 10 times higher than the number of confirmed cases.

It's not clear why some people get really sick, and some don't

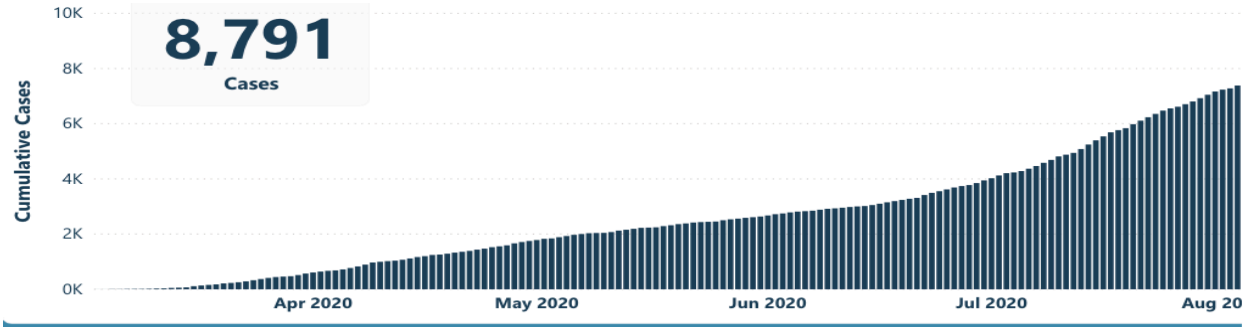
The sheer range of outcomes for people who get Covid-19 — from a truly asymptomatic case, to mild symptoms, to moderate disease leading to months-long complications, to death — has befuddled infectious disease researchers.

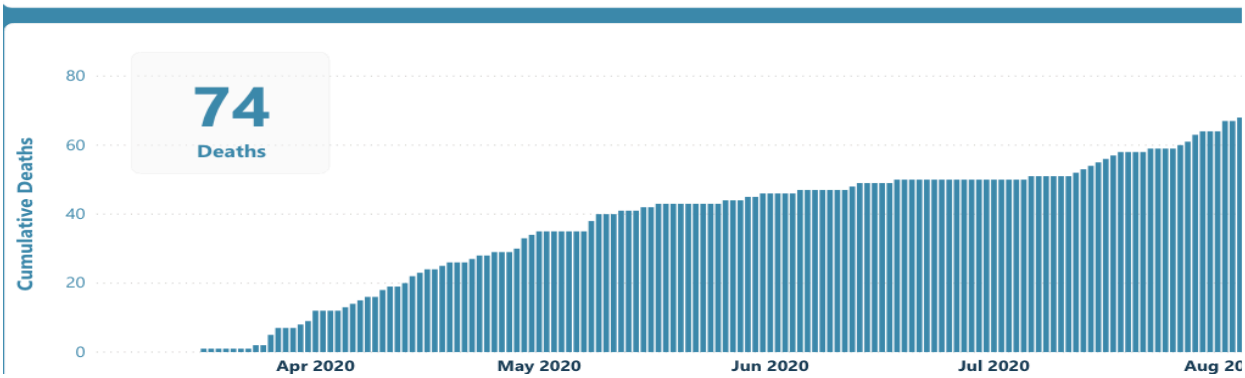
There are some clear factors for who faces higher risks of getting severely ill: older people, as well as people with conditions ranging from cancer to obesity to sickle cell disease.

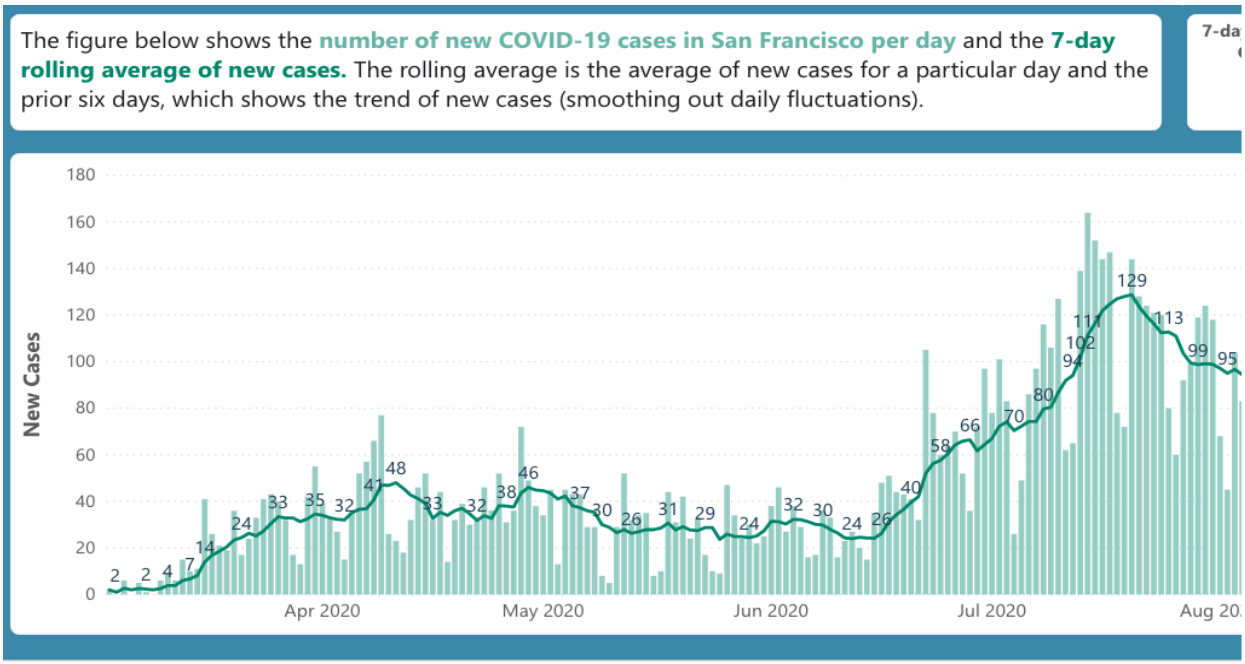
Researchers are studying genetic differences in patients, while others are looking at blood type. Recent studies have pointed to another potential player. Perhaps up to half the population has immune-system T cells that were initially generated in response to an infection by one of the common cold-causing coronaviruses but that can recognize SARS-CoV-2 as well. These "cross-reactive" T cells could help give the immune system the boost it needs to stave off serious symptoms, but researchers don't know for sure what role, if any, they actually play.

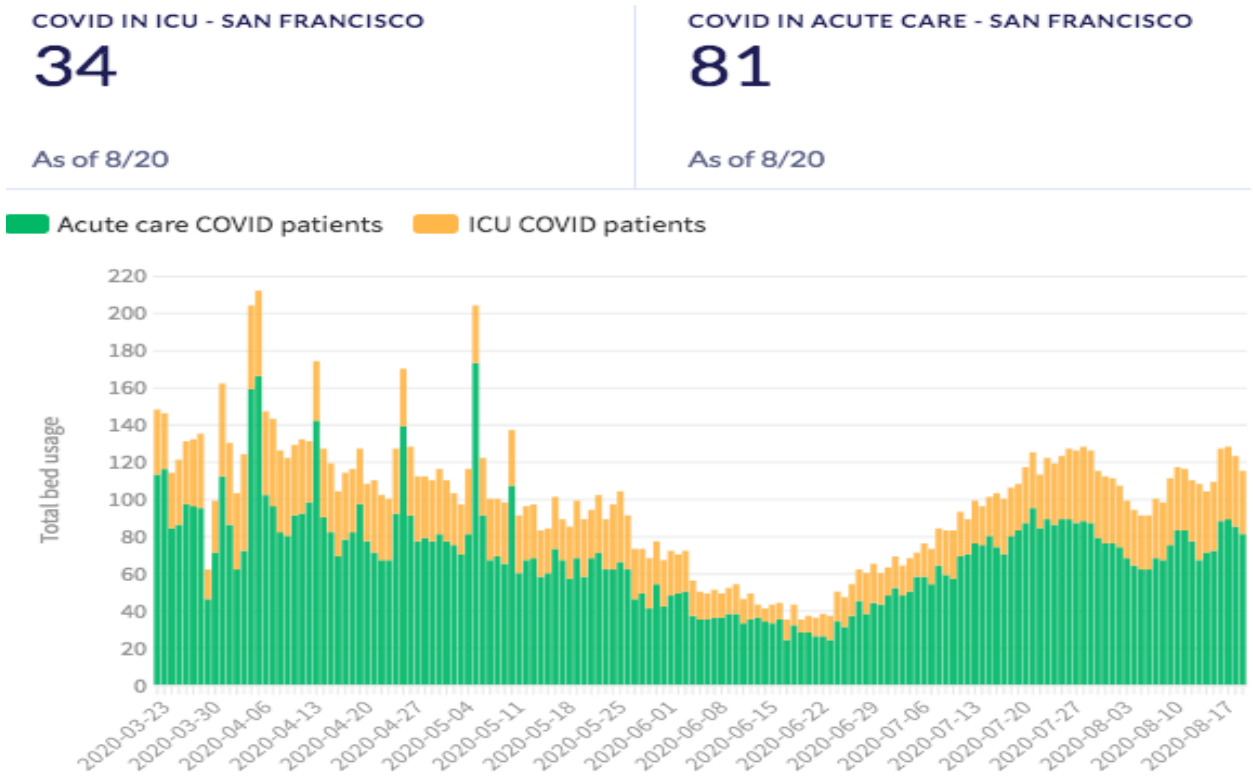
SAN FRANCISCO

Total Positive: 8,791
Total Deaths: 74

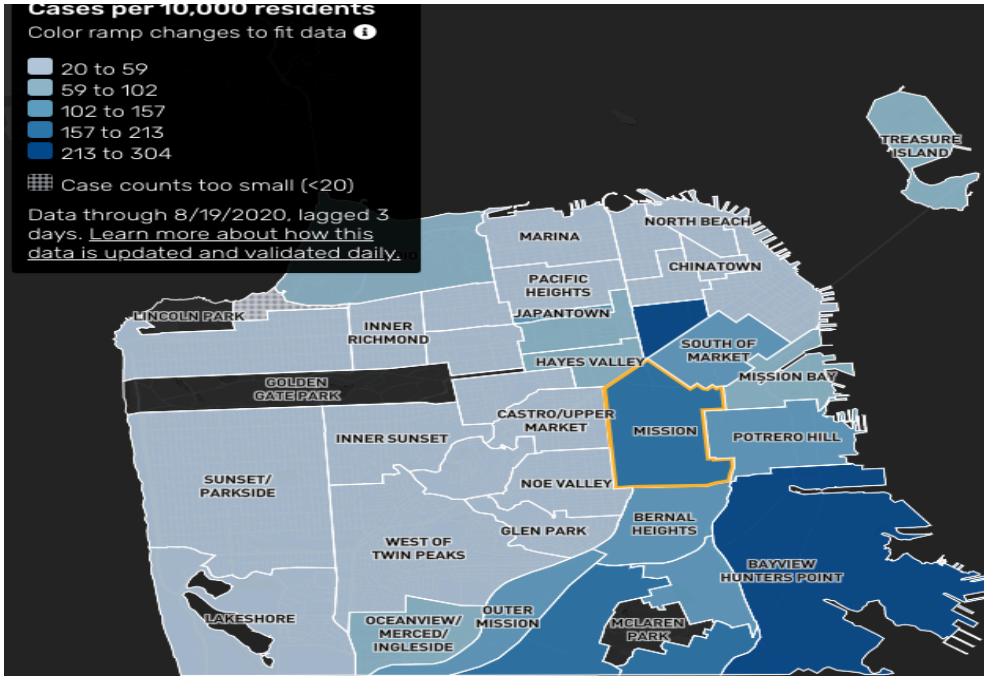








The Mission, the Tenderloin, Bayview/Hunters Point, Excelsior, Visitation Valley have the highest number of cases per 10,000 residents.



1) Failure to meet state benchmarks has put San Francisco County on the State's watchlist.

San Francisco has not met state thresholds on two key indicators, case rate and percentage of ICU beds currently available. Over the past two weeks, the county has reported 1,376 new cases, above the standard for disease transmission. The number of hospitalizations has been steady. There are now 125 patients with a confirmed or suspected case. 16% of ICU beds are open, which falls below state standards. The county has enough available ventilators to satisfy official guidelines. In order to be removed from the watch list, a county must meet state thresholds on these key indicators for three consecutive days.

2) An excellent article about San Francisco's preparedness for covid-19:

San Francisco Was Uniquely Prepared for Covid-19

Why did an American city beset by inequality and dysfunction face the onset of the pandemic so well? Because history left it ready for this moment.

https://www.wired.com/story/san-francisco-uniquely-prepared-covid-19/

3) It Took Three Months for the Bay Area to Reach 25,000 Covid Cases, and Six Weeks for That Number to Triple

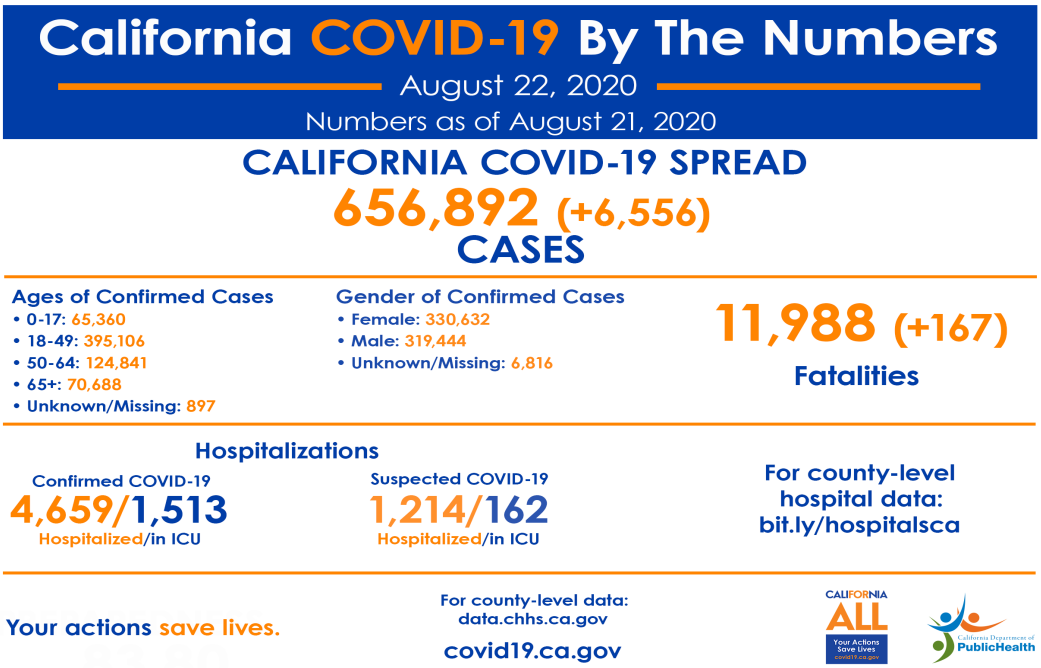
San Francisco's has been adding an average of 105 new cases per day since July 31. But throughout the month of June, when the picture across the Bay Area and the state was looking better, SF was adding an average of only 35 new cases per days.

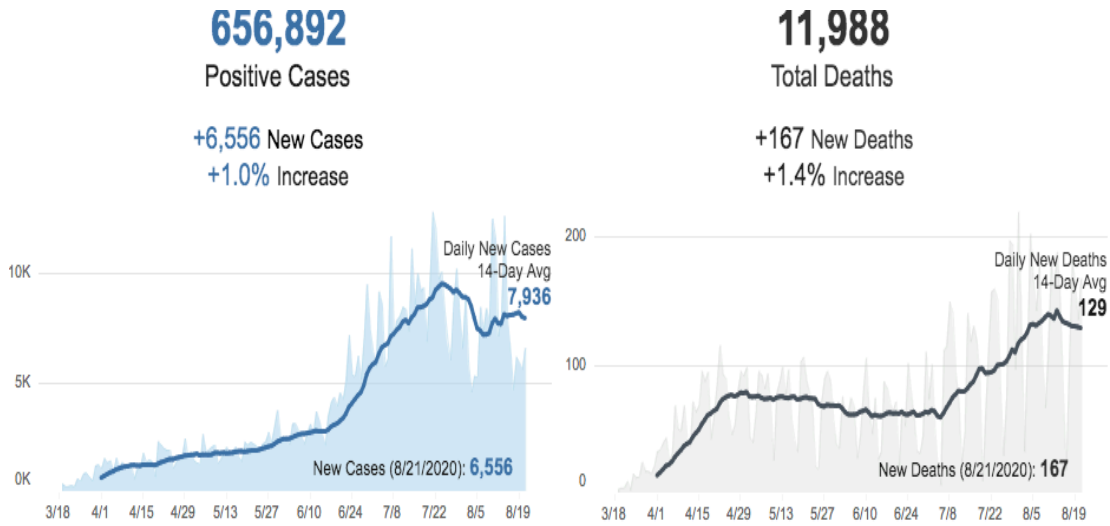
On June 30, more than three months into the pandemic, the total number of COVID cases across the nine-county Bay Area was 25,252. But things quickly shifted in July after more people went back to work and more businesses opened — and as the virus made it into corners of the Bay Area where it perhaps hadn't reached yet. By July 31, just over four weeks later, the regional total had more than doubled to 53,205. And on August 18, just over six weeks later, the number has just about tripled to 74,000.

Going by weekly averages, the Bay Area was adding just under 1,600 new cases per week between early March and the end of June, and

we've added an average of 7,000 new cases each week since July 1 — a quadrupling of the local rate of infection, at least based on confirmed tests. There are currently around 857 seriously ill COVID-19 patients in Bay Area hospitals (with confirmed and suspected infections), with 111 of those in San Francisco as of Monday (including two transfers from other jurisdictions).

CALIFORNIA





UNITED STATES

1) FDA clears saliva test for Covid-19, opening door to wider testing

The Food and Drug Administration on Saturday authorized emergency use of a new and inexpensive saliva test for Covid-19 that could greatly expand testing capacity.

The new test, which is called SalivaDirect and was developed by researchers at the Yale School of Public Health, allows saliva samples to be collected in any sterile container. It is a much less invasive process than the nasal swabs currently used to test for the virus that causes Covid-19, but one that has so far yielded highly sensitive and similar results. The test, which also avoids a key step that has caused shortages of chemical reagents used in other tests, can run approximately 90 samples in fewer than three hours in a lab, although the number can be greater in big labs with automation.

Moreover, Yale intends to provide its "open source" testing protocol to laboratories around the country. Other labs can now adopt the method while using a variety of commercially available testing components that can reduce costs, speed turnaround times and increase testing frequency, according to the FDA. And because the reagents for the test cost less than $5, the Yale researchers estimated labs should charge about $10 per sample, although that remains to be seen. The testing method is available immediately, but the researchers added it can be scaled up quickly for use in the coming weeks.

2) F.D.A.'s Emergency Approval of Blood Plasma Is Now on Hold

Last week, just as the Food and Drug Administration was preparing to issue an emergency authorization for blood plasma as a Covid-19 treatment, a group of top federal health officials including Dr. Francis S. Collins and Dr. Anthony S. Fauci intervened, arguing that emerging data on the treatment was too weak, according to two senior administration officials.

The authorization is on hold for now as more data is reviewed. Clinical trials have not proved whether plasma can help people fighting the coronavirus. Several top health officials — led by Dr. Collins, the

director of the National Institutes of Health; Dr. Fauci, the government's top infectious disease expert; and Dr. Lane — urged their colleagues last week to hold off, citing recent data from the country's largest plasma study, run by the Mayo Clinic. They thought the study's data to date was not strong enough to warrant an emergency approval.
(Note from Pat Tsang: the Covid-19 manual disseminated by researchers in China at least 4-5 months ago did have a protocol that said blood plasma should be used when after a designated number of weeks, an acute patient did not have antibodies of his own.)

RECOMMENDATIONS

We have no new recommendations at this time