



San Francisco Village

COVID - 19
Research and Advisory Team:
Report and Recommendations #37
November 22, 2020

SFV Members:
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This report contains a summary of updates on the status of Covid-19 that are more evident since our last report. 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. This report is not intended to provide personal advice – for that please consult with your health care providers.

RECENT FINDINGS

1) Moderna's vaccine has a significant advantage over Pfizer's

Moderna's coronavirus vaccine is 94.5% effective against the virus, making it the second vaccine in the United States to have a stunningly high success rate. Last week, Pfizer announced that early data show its vaccine is more than 90% effective against the disease.

While the two vaccines appear to have very similar safety and efficacy profiles, Moderna's vaccine has a significant practical advantage over Pfizer's. Pfizer's vaccine has to be kept at minus 75 degrees Celsius — or about minus 103 degrees Fahrenheit. No other vaccine in the US needs to be kept that cold, and doctors' offices and pharmacies do not have freezers that go that low. Moderna's vaccine can be kept at minus 20 degrees Celsius, which is about minus 4 degrees Fahrenheit. Other vaccines, such as the one against chickenpox, need to be kept at that temperature.

That means Moderna's vaccine can be kept in "a readily available freezer that is available in most doctors' offices and pharmacies," said Dr. Tal Zacks, Moderna's chief medical officer. "We leverage infrastructure that already exists for other marketed vaccines." Another advantage of Moderna's vaccine is that it can be kept for 30 days in the refrigerator, the company announced Monday. Pfizer's vaccine can last only five days in the refrigerator.

2) Coronavirus immunity can last more than six months, study suggests

Early research suggests immunity to the coronavirus that causes Covid-19 can last for at least six months -- and possibly much longer, perhaps even years, when all components of the body's immune memory are taken into consideration. The pre-print paper adds to the body of research on immunity to the novel coronavirus. Several studies have focused on antibodies, or protein components of the immune system, and some suggested immunity could wane over just a few months.

Yet the new study, which has not been peer-reviewed or published in a scientific journal, involves analyzing multiple compartments of immune memory over time: antibodies, B cells and T cells, among other features of immune memory. The study included 185 adults, ages 19 to 81, in the United States who had recovered from Covid-19. Most of the adults had mild disease.

The researchers -- from the La Jolla Institute for Immunology, University of California, San Diego, and Icahn School of Medicine at Mount Sinai -- analyzed blood samples collected at various points following the onset of symptoms, with some collected more than six months later. In the blood samples, the researchers examined components of immune memory. They found that antibodies "were durable" with only "modest declines" emerging at six to eight months, but noted that there was about a 200-fold range in the level of antibody responses among the adults.

The researchers also found that memory B cells were detected in almost all Covid-19 cases, and there appeared to be an increase in memory B cells over time. "B cell memory to some other infections has been observed to be long-lived, including 60+ years after smallpox vaccination, or 90+ years after infection with influenza," the researchers wrote in their study. The researchers identified two types of T cells and their data suggest that "T cell memory might reach a more stable plateau, or slower decay phase, later than the first 6 months post-infection," they wrote. The study comes with limitations, including that more research is needed to determine whether similar findings would emerge among a larger group of people across more time points.

3) WHO recommends against using remdesivir to treat Covid-19

The World Health Organization has updated its ongoing guidance on Covid-19 medications to advise against using the antiviral drug remdesivir to treat hospitalized patients, no matter how severe their illness may be. According to the update, published in the medical journal the BMJ on Thursday, current evidence does not suggest remdesivir affects the risk of dying from Covid-19 or needing mechanical ventilation, among other important outcomes.

WHO convened an international panel of 24 experts and four survivors of Covid-19 to review data and make recommendations. The recommendation against remdesivir was based on data from four randomized trials including 7,333 people hospitalized with Covid-19. Any beneficial effects of remdesivir, if they do exist, are likely to be small and the possibility of important harm remains

WHO's new update comes about a month after the company Gilead Sciences, the maker of remdesivir, announced that the US Food and Drug Administration approved remdesivir for the treatment of coronavirus

infection. The drug became the first coronavirus treatment to receive FDA approval. On Thursday, FDA gave emergency use authorization to a combination of remdesivir and the rheumatoid arthritis drug baricitinib to treat suspected or confirmed cases of Covid-19.

4) New study shows when you're most likely to be infectious

People with COVID-19 are most likely to be highly infectious in the first five days after they develop symptoms, a new study confirms, highlighting the need for abrupt isolation. The research, published in the Lancet journal, also suggests asymptomatic individuals may clear the virus faster from their body, and might be infectious for a shorter amount of time.

In the first systematic review of its kind, researchers analyzed data from 98 previous studies on coronavirus infection transmissions. They found that the viral load of SARS-CoV-2 (the virus that causes COVID-19) peaks in the upper respiratory tract early in the disease course, between the onset of symptoms and day five. This is significant, because virus in the upper respiratory tract is thought to be the main source of transmission. However, more research on the shedding of infectious virus in asymptomatic people would be needed before any policy change on quarantine duration could be considered

5) Reports of two promising covid-19 vaccines don't mean we 'magically,' quickly return to normal

The return to many of our old familiar ways will take time, and how much time remains unclear. The answers await more research into the vaccines, how they can be distributed and how many people are willing to get them. "A vaccine won't be available immediately for everybody," says Arthur Reingold, a professor of epidemiology at the School of Public Health at the University of California, Berkeley. "It probably will take four to six months," he says. "What that says to me is that people will have to keep wearing masks at least until spring. We won't be in a magically different situation by February or March.

Equally important are the unknowns about the vaccines themselves. Scientists still don't know how long vaccine-induced protection will last, for example, or whether inoculations can block actual infection, or only prevent the onset of disease. If the latter turns out to be the case, meaning the vaccines keep us from getting sick, but not infected, we still could be infectious to others. "The bottom line is that although an effective vaccine will certainly diminish greatly

the relative risk of transmission, we still should not completely abandon basic public health measures, including the wearing of masks,” said Dr. Anthony S. Fauci. The return of any normal activities depends on numerous factors, including how many people get vaccinated.

The two leading vaccine candidates were developed by Moderna Therapeutics, which reported 94.5 percent efficacy, and Pfizer partnering with the German company BioNTech, which demonstrated a 95 percent success rate, including 94 percent among those 65 and older. Preliminary findings about their efficacy were based on the number of people who became ill, not on whether the vaccines prevented infection. It is conceivable that the vaccine would protect you against clinical disease, but not necessarily protect you against infection. We still don’t know the durability yet, referring to how long protection will last or the level of protection of different subgroups of people at risk, such as the elderly or those with underlying medical conditions. People who are at risk of dying if they get infected may want to wear a mask for a really long time — remember, people who are older and have underlying conditions, and are at the greatest risk for getting sick — may be least likely to robustly respond to the vaccine. We will learn more as more data come out.

But even if the vaccines prove fully effective, they won’t do much to curb the spread of infection and disease if people refuse to get the shots. Polls suggest that 40 percent or more of Americans will not get a covid-19 vaccine, a statistic that greatly worries public health officials about the prospects of developing herd immunity. This results after a vast majority of the population has achieved protection, giving the virus many fewer people to infect, thus reducing transmission and illness.

SAN FRANCISCO

Total Positive: 14,438

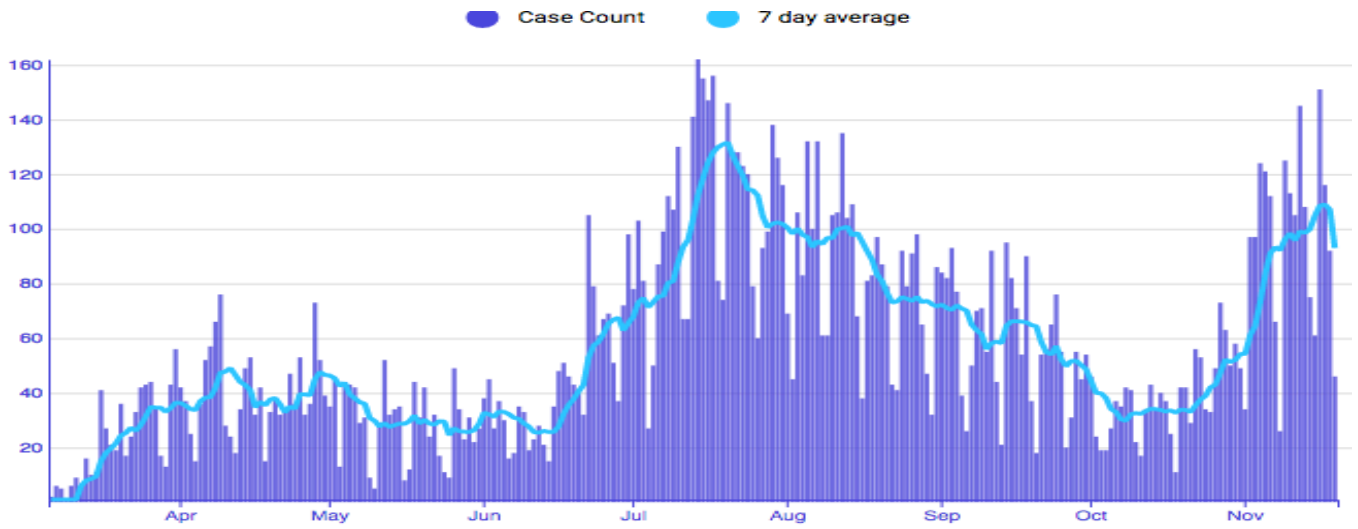
Deaths: 158

Total Tested: 821,663

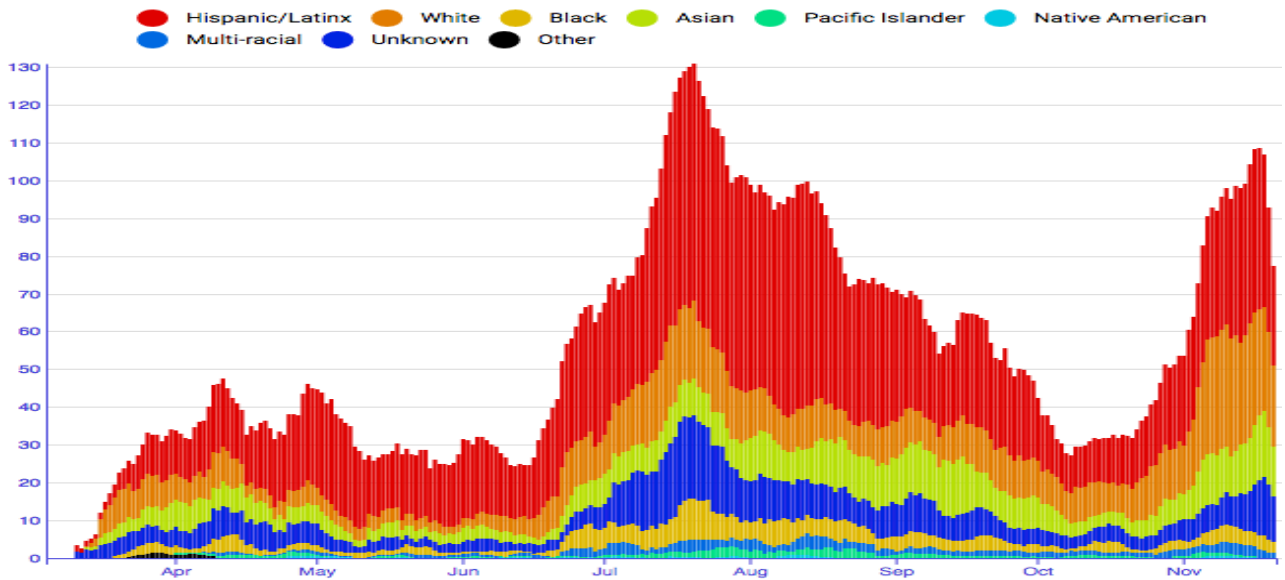
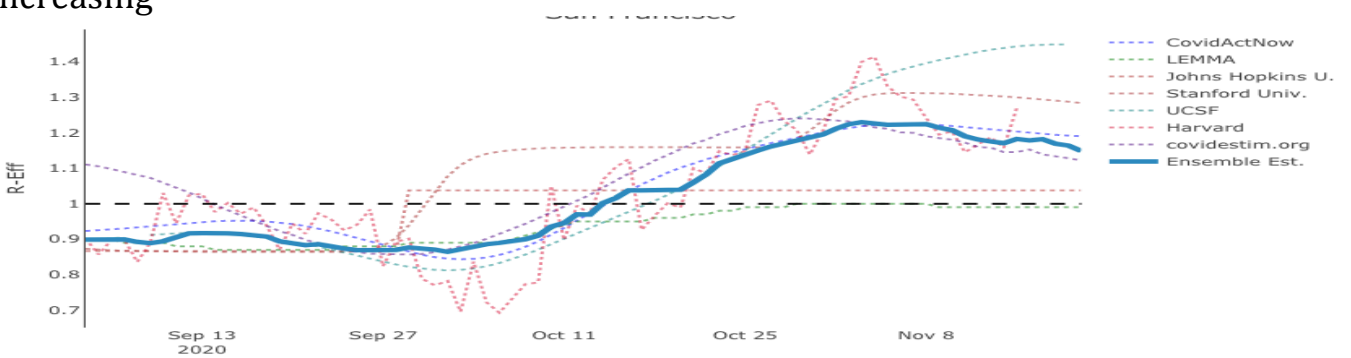
From the SF Department of Public Health:

Due to a surge in COVID-19 cases, the Health Officer ordered suspensions or restrictions on capacity limits of the activities as shown in the table below. These suspensions or restrictions amend any related orders, directives, or guidance. All impacted people and entities are required to adhere to these new limits and must otherwise continue to monitor and comply with all applicable Health Orders and Directives.

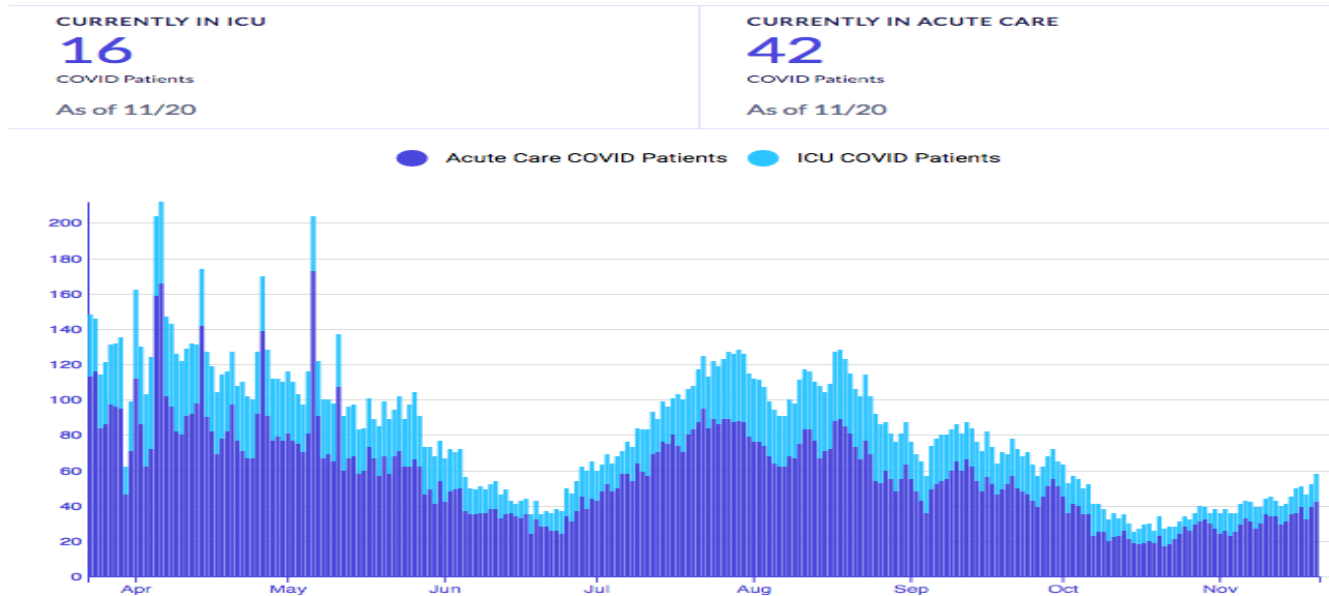
Activity	Affected Groups	Change
Office Facilities Directive 2020-18	Nonessential Offices	RESTRICTED as of Nov 17, 2020 Nonessential offices may continue with Minimum Basic Operations as outlined in the Health Order, but are otherwise suspended.
Gyms and Fitness Centers Order C19-07 Appendix C-1 Directive 2020-31	Gyms Fitness Centers	RESTRICTED as of Nov 17, 2020 Total Capacity Limits reduced to 10% or 50 people, whichever is fewer. The total number of people includes Personnel and all other people in the facility,
Indoor Dining Order C19-07 Appendix C-1 Directive 2020-16	Restaurants Bars with food Shopping malls with food Hotels with restaurants Museums, Zoos and Aquariums with restaurants Gyms with food Office Cafeterias	SUSPENDED as of Nov 14, 2020 No Indoor Dining allowed. Suspended until further notice.
Indoor Movie Theaters Order C19-07 Appendix C-1 Directive 2020-35	Indoor Movie Theaters	RESTRICTED as of Nov 14, 2020 For indoor movie theater complexes with multiple individual theaters, the capacity limit for the entire complex is 25%, and the limit for each individual theater or auditorium is 50 people.



R-Effective Trend for SF is 1.15, which means the spread of Covid-19 is likely increasing



SF COVID Hospitalizations



1) SF shuts down non-essential offices after state reimposes tougher COVID-19 restrictions

San Francisco jumped Monday from the least restrictive COVID-19 state tier to the second highest, joining some 40 counties moving backwards as cases increase at record rates statewide. San Francisco jumped two tiers from the least restrictive yellow tier, which The City celebrated achieving on Oct. 20, to the second highest red tier. The City has seen its new cases jump from an average of 29 cases daily to 97, between Oct. 10 and Nov. 10. In response, Mayor London Breed announced The City will roll back its reopening further than last week, when The City shut down indoor dining. Non-essential offices can no longer remain re-opened. Those offices will have to return to remote working. Fitness centers, like gyms and climbing walls, will have to reduce capacity from 25 percent to 10 percent capacity.

“Right now, we do not have any immediate plans to place further restrictions,” Grant Colfax (Director of SF DPH) said. “We are emphasizing the fact that people should not travel during the holiday season. We hope that this is enough to beat back the surge.” Amid the “explosion of new cases throughout The City,” Colfax recommended no one travel for the Thanksgiving holiday. “Please do not travel,” Colfax said. “Stay at home with your immediate household.”

CALIFORNIA

California COVID-19 By the Numbers

November 22, 2020

Numbers as of November 21, 2020

COVID-19 Cases

1,102,033 (+14,319)

Fatalities

18,676 (+33)

Ages of Confirmed Cases

121,574
0-17

657,635
18-49

206,897
50-64

114,971
65+

956
Unknown/Missing

Gender of Confirmed Cases

558,242
Female

535,242
Male

8,549
Unknown/Missing

Hospitalizations

Confirmed COVID-19

5,170 Hospitalized
1,282 in ICU

Suspected COVID-19

748 Hospitalized
108 in ICU

Your actions save lives.
covid19.ca.gov



1) California's new stay-at-home order now in effect: What you need to know

For the seven-day period that ended Friday, an average of 10,981 people in California were reported to be infected daily — a number that has more than doubled in just the last two weeks. That is even worse than the peak in the summer, which until now had been California's worst spike of COVID-19, according to a Times data analysis. For the first time, California has recorded three days in the last week when more than 13,000 new infections a day have been recorded.

A modified stay-at-home order goes into effect for much of California as of Saturday morning, part of a new effort to slow the rapid spread of the coronavirus.

Here are the details of the order:

- Prohibits most nonessential activity outside the home from 10 p.m. to 5 a.m. in purple tier counties. Activities banned include all gatherings with members of other households and all activities conducted outside one's residence, lodging or temporary accommodation with members of other households.
- Allows people to leave home to walk their dog or take walks with people they live with, buy groceries or pick up drugs at the pharmacy late at night, pick up or receive takeout food, travel to the emergency room or urgent care or for other essential purposes;
- Lasts through Dec. 21, though it could be extended.
- Does not apply to people experiencing homelessness. Nothing in the order prevents any number of people from the same household from leaving their residence, lodging or temporary accommodation, as long as they do not engage in any interaction with (or otherwise gather with) any number of people from any other household, except as specifically permitted by the order.
- The restrictions are different from the statewide stay-at-home order Gov. Gavin Newsom issued in mid-March, in that they focus more on curbing late-night drinking and group gatherings.
- Californians in the affected counties will still be allowed in the overnight hours to buy groceries, walk the dog, pick up restaurant takeout orders, visit doctors or other healthcare providers and other providers of essential services.
- The order covers roughly 94% of Californians — 37 million people — who live in counties that are in the purple tier, the most restrictive in the state's reopening plan. In purple tier counties, the restrictions have forced many businesses to suspend or severely restrict the number of customers allowed indoors.

2) California sees surge in infections and hospitalizations

Just as the state surpassed a million infections last week, the governor warned the seven-day average of cases was higher than it had been in weeks and health officials said both hospitalizations and ICU admissions were up. Last week also marked the first time since California counties began moving forward in the state's tier system that no county moved to less restrictions.

And this week came more bad news, with the governor announcing he was pulling the "emergency brake" on reopening amid a surge in infections. "California is experiencing the fastest increase in cases we have seen yet -- faster than what we experienced at the outset of the pandemic or even this summer," Gov. Gavin Newsom said in a news release.

Daily cases in the state doubled in just the last 10 days. The first week of November, Newsom said, saw a more than 51% increase in new cases. The previous highest rate increase the state experienced was 39.2% in June, he added. The state saw a 48% increase in Covid-19 hospitalizations over the past two weeks, according to the governor, which now make up about 5% of the patients in the state's health care system he added. Over the same time frame, ICUs saw more than a 38% increase. 40 California counties also moved backwards in the state's tier system this week, the governor announced Monday, meaning they'll now face more restrictions. A total of 41 counties are now in California's purple, most restrictive tier, which indicates a widespread risk level -- up from just 13 counties that were in the tier last week.

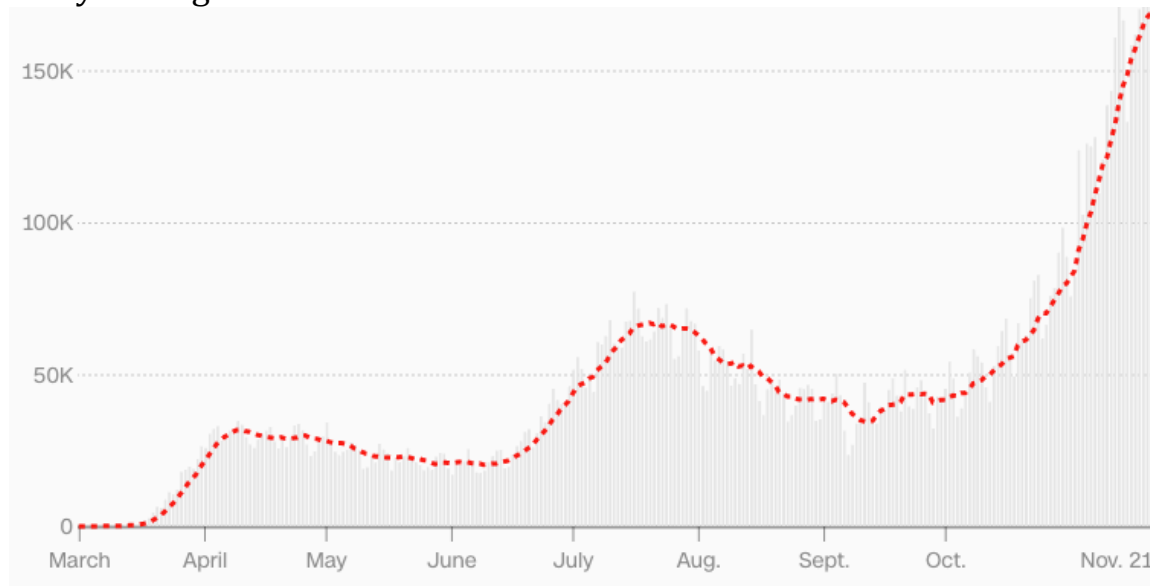
That means more than 94% of the state's population is now in the purple tier, where many non-essential indoor business operations are closed. Among the counties that are in the purple tier are Los Angeles County, San Bernardino County, Santa Barbara County, San Diego County, Riverside County, Orange County, Fresno County, Sacramento County, Santa Clara County and Santa Cruz County. In the purple tier, bars, breweries and distilleries that don't offer food are ordered closed, while restaurants, wineries, movie theaters, places of worship, museums and gyms are outdoor only. Gatherings are only permitted outdoors with a maximum of three households.

UNITED STATES

Total Positive: 12,177,301

Deaths: 256,442

7-day average:



1) US coronavirus cases top 12 million. The spread is now faster and broader than ever

The number of US coronavirus cases surpassed 12 million Saturday -- an increase of more than 1 million cases in less than a week. At least 12,177,301 cases have been confirmed, according to Johns Hopkins University data, and 256,442 Americans have died. It's another horrific milestone in a month full of devastating Covid-19 records in the country. November already accounts for almost a quarter of all Covid-19 cases and 9% of deaths.

Almost every state has reported a rapid surge in cases, and nationwide numbers have been climbing much faster than ever before -- with the country reporting a staggering 2.9 million infections since the beginning of the month. On Friday, more than 195,500 new infections were reported -- the country's highest for a single day, and far beyond what the nation was seeing just weeks ago. The highest number of single-day cases during the country's summer surge was a little more than 77,100 in July, Johns Hopkins University data shows. The US on Friday also recorded its highest number of Covid-19 patients in hospitals on a given day: just over 82,100 -- according to the COVID Tracking Project. Rising death rates typically follow rising hospitalizations. In

just the past week, more than 10,000 US deaths have been reported -- nearly double the weekly death toll of just a month ago.

The numbers offer just a glimpse at the devastation the pandemic has unleashed across American communities, with some cities ordering mobile morgues to handle the excess deaths, while hospitals in other parts have reported overwhelmed ICUs and exhausted staff. At least 24 hospital leaders warned the American Hospital Association they are experiencing staffing shortages, Nancy Foster, the association's vice president for quality and patient safety policy, said. Those concerns have been raised in states including Texas, Wisconsin, Illinois, Minnesota and North and South Dakota, all of which have recently seen infections climbing, she added. Of about 2,000 hospitals considered to be rural, about 1,700 have 50 beds or fewer and about 1,300 of them have 25 beds or fewer,

2) The FDA has authorized the first home COVID-19 self-testing kit

The Food and Drug Administration (FDA) issued an emergency use authorization on Tuesday for the first COVID-19 self-test that you can take at home, a potentially major breakthrough in helping fight the pandemic. This approval represents the first of what we hope will be a new class of widely-available, rapid, accurate, affordable and easy to use, in-home Covid tests that will fill a critical 'testing gap' and add materially to the nation's testing capacity.

The test, known as the Lucira COVID-19 All-In-One Test Kit, allows users to collect nasal swab samples in their homes, swirl them in a vial and put them in a hand-held testing device. Within half an hour, a light on the device will inform users of whether they have tested positive for SARS-CoV-2, the novel coronavirus that causes COVID-19 infections. Its accuracy will certainly depend on the home user's ability to collect the sample correctly and follow the enclosed instructions. Its accuracy in a real world setting remains unknown, and clinicians may want to repeat positive tests in a health care facility.

Dr. Naomi Rogers, a professor of the history of medicine at Yale University, said that there are concerns about the efficacy of this test, "especially as the FDA's current politicized decisions have threatened its reputation as an eminently reliable regulator of things medical. An Emergency Use Authorization is not the same thing as FDA approval, nor it is saying the

product is safe and effective. Simply, an EUA signifies that there is a serious or life threatening condition for which no approved or adequate alternative exists (in this case, a home testing kit) and that there is reason to believe the product may be effective and that the risks of using it most likely outweigh the benefits. In addition, we know that the virus incubates over several days, so a negative test 2 days after exposure to someone with COVID-19 does not rule out the possibility of developing the illness – and having a positive test – several days later.

RECOMMENDATIONS

We have no new recommendations at this time.