



San Francisco Village

COVID - 19
Research and Advisory Team:
Report and Recommendations #41
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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) Monoclonal antibodies: A Covid-19 treatment people might not know about

There are very few drugs that prevent people with early Covid-19 from progress to severe disease, but monoclonal antibodies may be among them. Early study results show they may reduce the rate of hospitalizations by up to 70% if they are taken in time, which can be life-saving, especially among people who are at high risk of getting very sick.

Eli Lilly's monoclonal antibody, called bamlanivimab, received an emergency use authorization from the US Food and Drug Administration in early November. Less than two weeks later, the agency granted an EUA to Regeneron's monoclonal antibody cocktail, made up of two monoclonal antibodies, casirivimab and imdevimab, and called REGEN-COV2. It was given to President Trump when he got infected at the start of October.

According to the FDA, monoclonal antibodies should be given as soon as possible after symptoms emerge and a person tests positive for infection. And, because of limited supply, the authorizations are limited to high-risk patients, such as people 65 and older, those who have a BMI (body mass index) of 35 or greater and those with other health conditions like diabetes, cardiovascular disease or chronic kidney disease. The monoclonal antibodies we've authorized seem to work best for preventing hospitalization in outpatients early in their disease - - typically within 10 days of the onset of symptoms, if you are a high-risk individual.

Monoclonal antibodies to treat coronavirus Covid-19 are intensely focused, lab-made versions of convalescent plasma. Scientists looked for the antibodies that best blocked infection by the SARS-CoV-2 virus. They picked a particular kind of antibody -- what they call a neutralizing antibody... and made a purified version of it to be used as a medicine. Eli Lilly's drug uses one particular antibody and Regeneron's drug uses a combination of two others. Early study results have shown they appear to reduce the chances of winding up in a hospital or the emergency room by between 55% and 70%.

One challenge with monoclonal antibodies is that they are not easy to administer, requiring a one-hour IV infusion and an hour observation period in an outpatient setting. So, any location that's going to administer these medications must be set up to keep Covid-19 patients isolated from their other patients during the two-hour infusion and monitoring process.

2) Virus mutations – what we know and don't know

The United Kingdom has identified a new, potentially more contagious coronavirus variant linked to a recent surge in cases in England.

A variant occurs when the genetic structure of a virus changes, according to the US Centers for Disease Control and Prevention. All viruses mutate over time and new variants are common, including for the novel coronavirus. As with other new variants or strains of Covid-19, this one carries a genetic fingerprint that makes it easy to track, and it happens to be one that is now common. That alone does not necessarily mean the mutation has made it spread more easily, nor does it not necessarily mean this variation is more dangerous. Chris Whitty, England's chief medical officer, said this particular variant "contains 23 different changes," which he described as an unusually large number. Whitty said the variant was responsible for 60% of new infections in London, which have nearly doubled in the last week alone. A mutation in the Covid-19 spike protein, the part of the virus that attaches itself to host cells, could increase its transmissibility.

That finding has immediate implications for virus control. More cases could place an even greater strain on hospitals and health care staff just as they enter an already particularly difficult winter period, and ultimately lead to more deaths. The variant has already spread globally. As well as the UK, the variant has also been detected in Denmark, Belgium, the Netherlands and Australia, according to the WHO. Australia has identified two cases of the variant in a quarantined area in Sydney and Italy has also identified one patient infected with the variant. A similar but separate variant has also been identified in South Africa, where scientists say it is spreading quickly along coastal areas of the country.

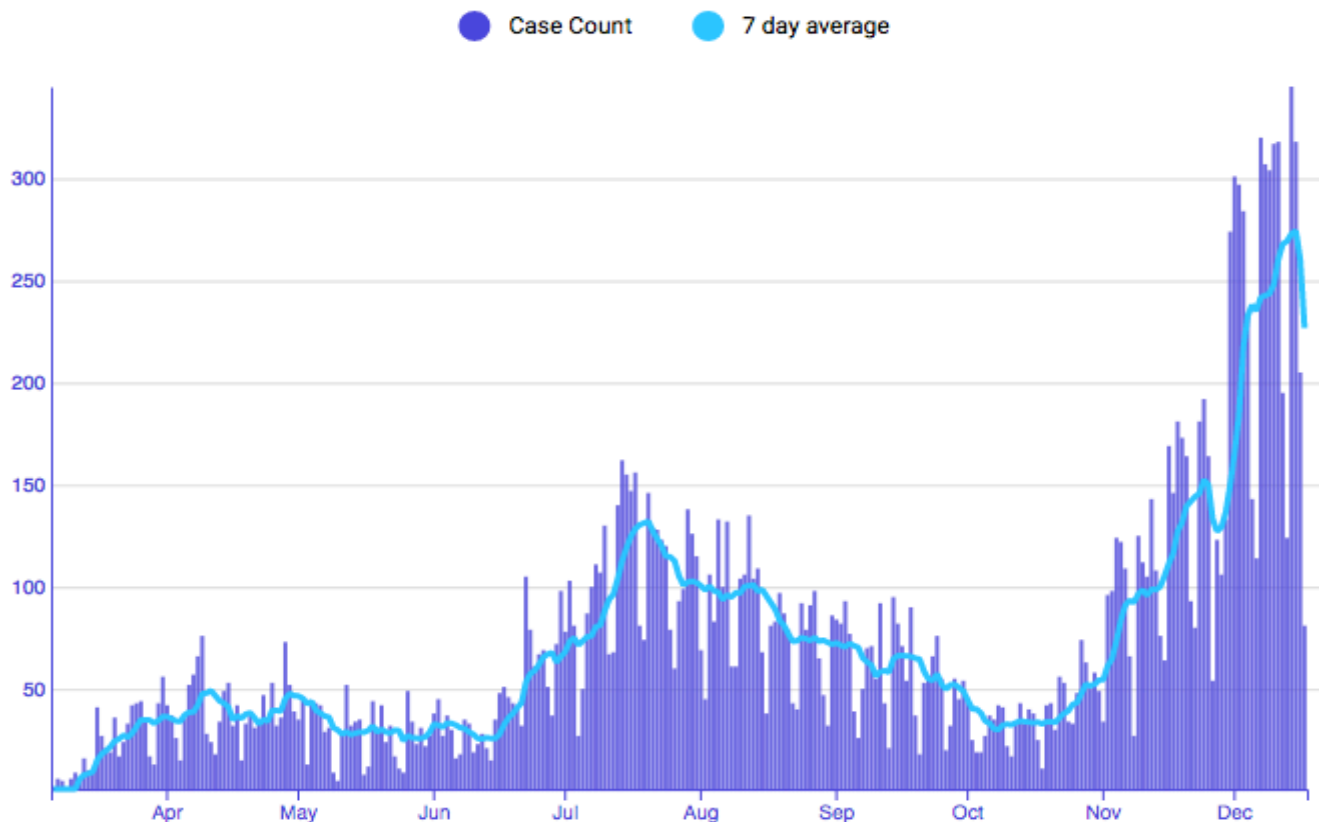
There is no evidence to suggest that the new variant is more deadly as of now. Multiple experts have pointed out that for some viruses increasing transmissibility can accompany decreasing virulence and mortality rates. This may mean that the variant is less lethal, though it's currently too early to tell. Current vaccines should still work against the new variant. The head of Operation Warp Speed, Moncef Slaoui, said, "Up to now, I don't think there has been a single variant that would be resistant to the vaccine. We can't exclude it, but it's not there now."

SAN FRANCISCO

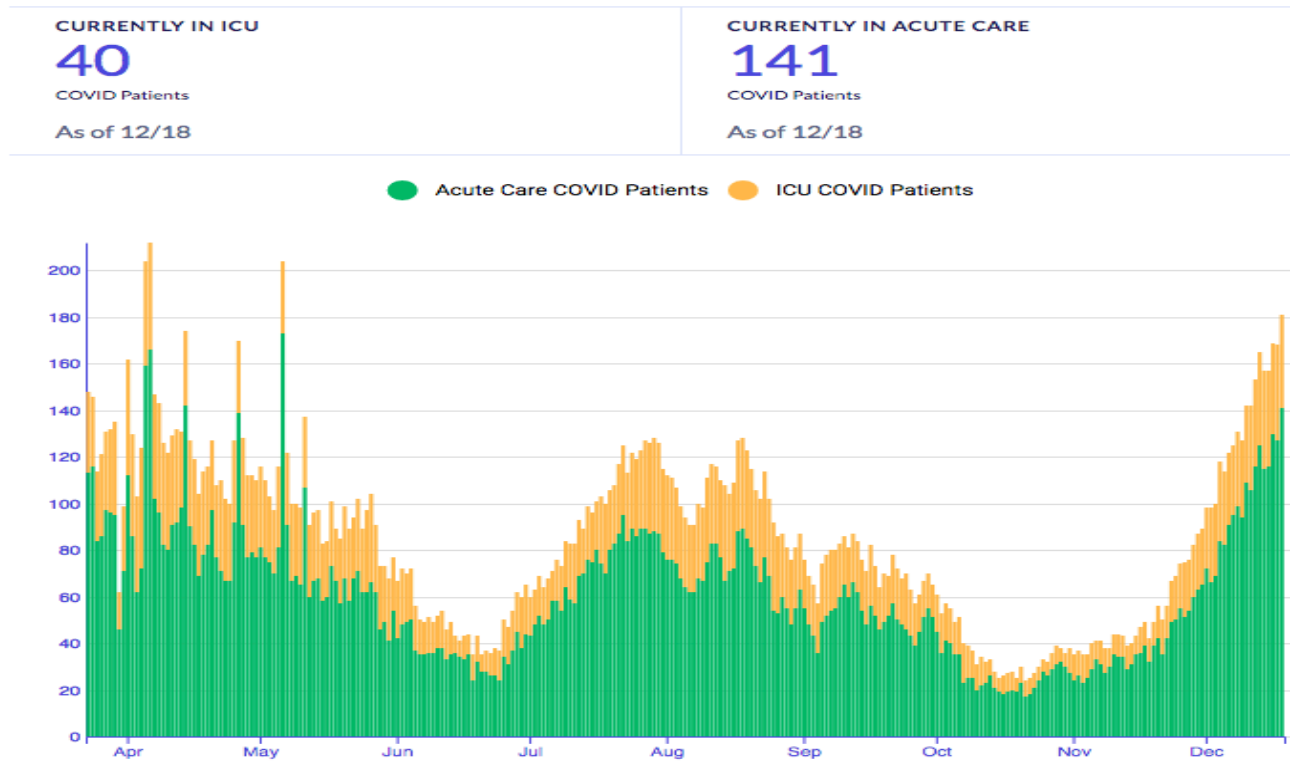
Total Positives: 20,455

Total Deaths: 176

Estimates for San Francisco's R number range from 1.14 to 1.44, with an average of 1.25. R Number refers to the reproductive rate of a disease. To control and eliminate the spread of a disease, an R Number of <1 is required.



SF COVID Hospitalizations



1) San Francisco surpasses 20,000 coronavirus cases, health officials report. Increases throughout the Bay Area

Alameda County recorded its highest-ever number of new coronavirus cases on the same day that San Francisco health officials reported that the city had surpassed 20,000 cases of the deadly virus, a grim milestone for a region beset with a health crisis unlike any other. Vaccines for the virus are already being administered to healthcare workers across California, but health officials are continuing to battle a third deadly surge in the virus that has been far more difficult to deal with than the previous two.

In the Bay Area, 216,530 people have contracted the disease — 4,188 of whom were reported infected Saturday — and 2,267 people have died, including 18 new deaths. On Saturday, Alameda County health officials recorded 1,767 new cases of the virus, the most since the start of the pandemic. The county's closest recent figure was on Dec. 8 when 1,111 infections were reported. On Saturday, Alameda County stood at 42,029

total cases of the virus and 585 deaths. Eleven deaths were reported Saturday.

Just across the Bay in San Francisco, health officials noted a grim milestone for the city as coronavirus cases surpassed the 20,000 mark. San Francisco health officials said 20,152 people have been infected with the virus, including 289 who were reported positive Saturday. A total of 176 people have died in the city, three of whom were reported dead Saturday.

San Mateo County — which had relaxed its coronavirus restrictions based on low case and death numbers — also noted a grim milestone as 15 people were reported dead of the virus on Saturday, the most since the start of the pandemic. In total 20,479 people have contracted the virus in the county, with 390 new cases reported Saturday. One hundred and ninety-eight people have died of the virus in San Mateo County so far.

Officials in Santa Clara County, which has long been a hotspot for the virus based on its population, recorded 1,020 new cases for a total of 54,905 cases. No new people were reported dead from the virus, keeping the total number of dead at 198.

In Contra Costa County, officials said 503 people contracted the virus for a total of 34,216 cases. Officials added that 298 people have died of the virus, seven of whom were reported dead Saturday. North Bay officials in Napa, Solano, Sonoma and Marin counties reported 219 new cases of the virus and three new deaths for a total of 44,749 cases and 427 deaths.

2) San Francisco mandates 10-day quarantine for travelers from outside Bay Area

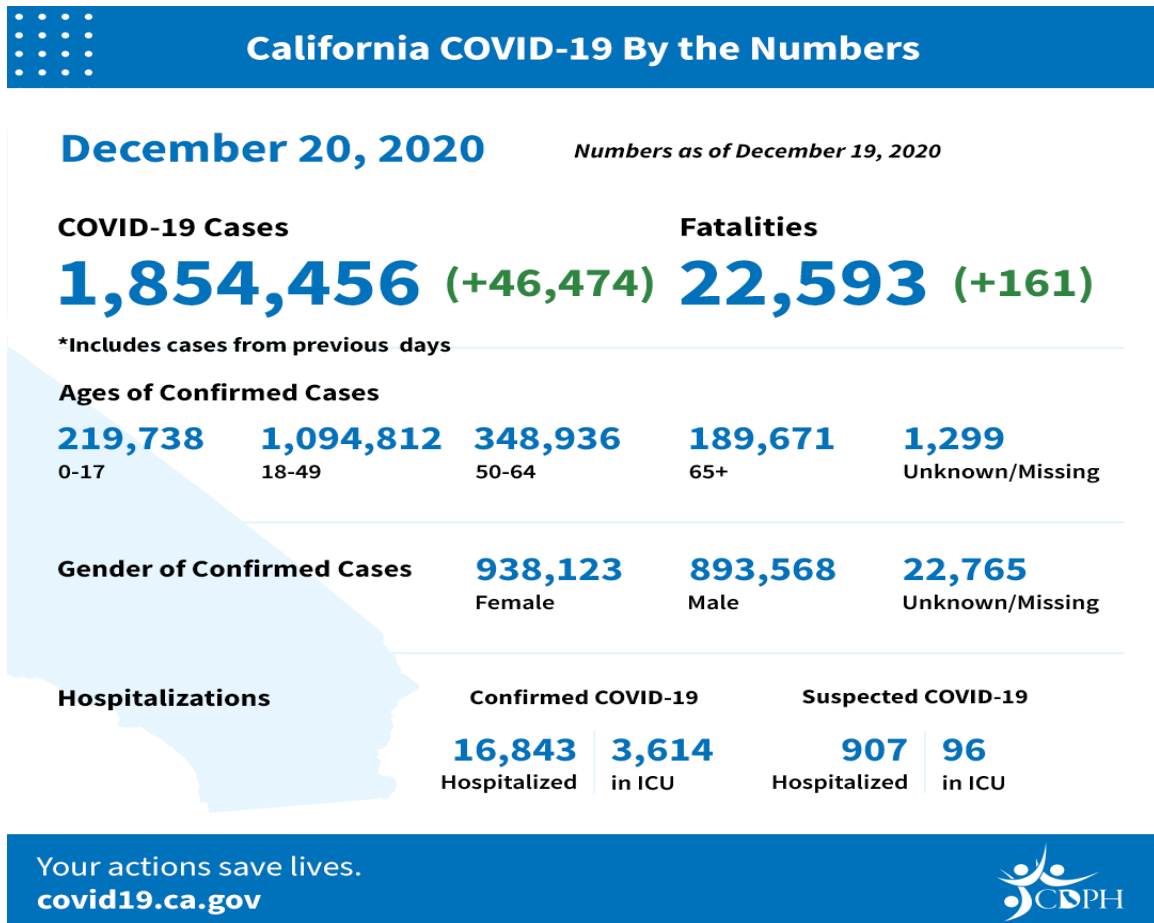
San Francisco's Health Director Dr. Grant Colfax announced Thursday a new travel order requiring a mandatory quarantine of 10 days for anyone traveling, moving or returning to the city from anywhere outside the Bay Area. The order goes into effect on Friday and applies to both visitors and residents.

Colfax didn't give details on how the city will enforce the order but said anyone failing to comply could be hit with a misdemeanor. "This is truly not the time to travel," Colfax said at the press briefing. "The consequences are severe. We just ask that people understand that and

comply with the health order because it's the right thing to do. The city can take additional enforcement steps if the situation demands. In violation or failure to comply with this order is a misdemeanor."

The order also requires anyone who comes to San Francisco to quarantine for 10 days if they spent any time outside the following nine Bay Area counties: San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Sonoma, Napa, Marin and Santa Cruz. The new order also includes stronger language discouraging any nonessential travel, even within the Bay Area. Essential workers such as medical professionals and those providing essential infrastructure work are exempt.

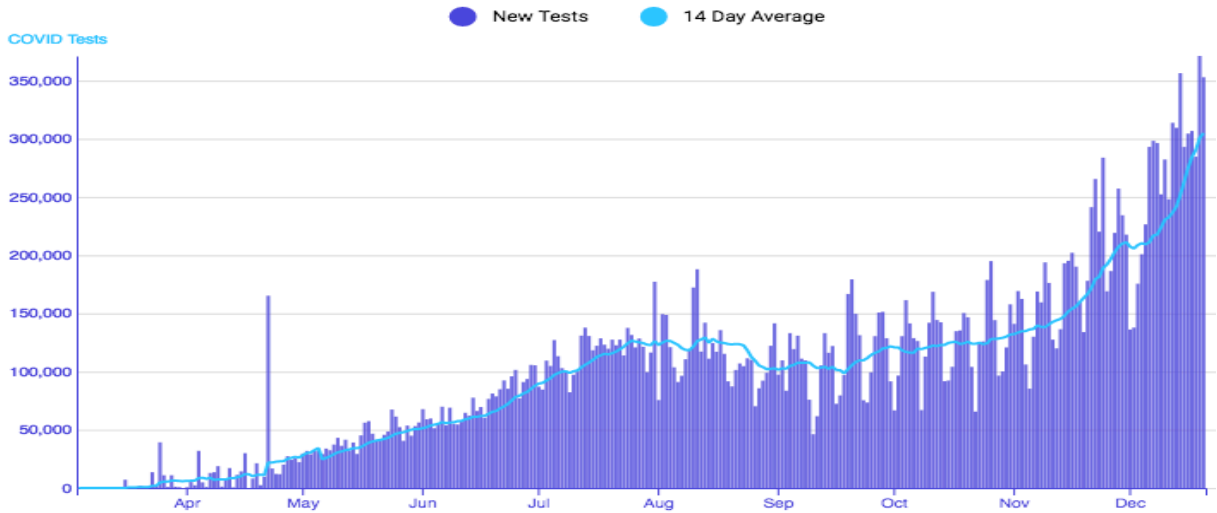
CALIFORNIA



California COVID Testing

Data Updated Sunday 12/20 at 5:27 PM PST

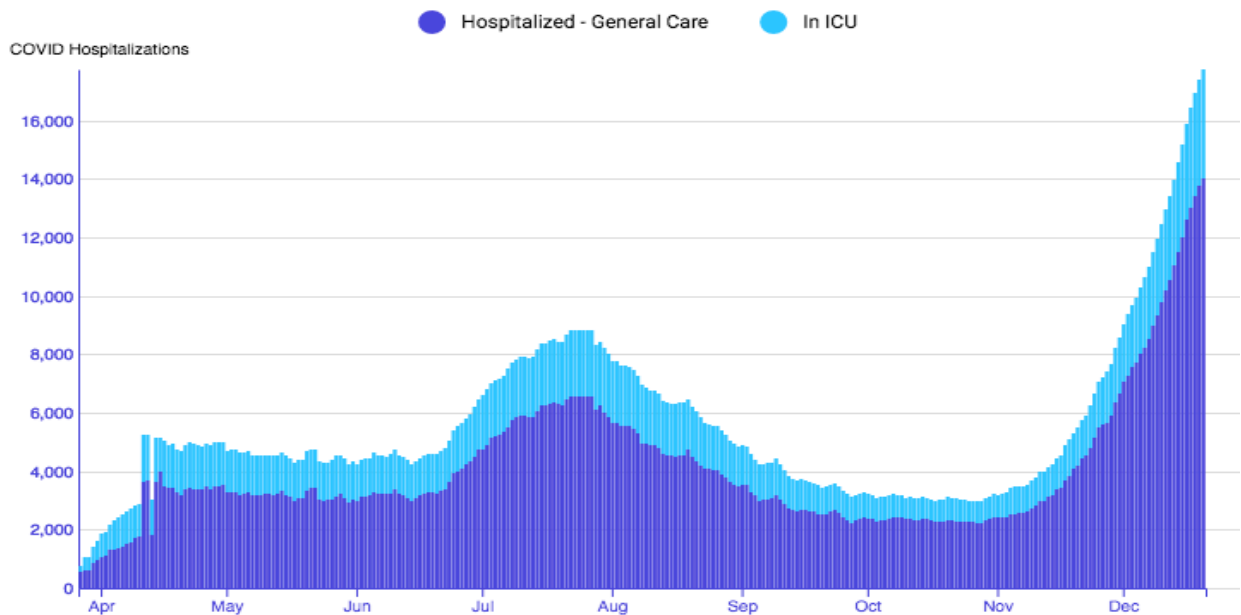
NEW TESTS 353K On 12/20/20	TOTAL TESTS 29.5M +353K Since 3/4/20	14 DAY POSITIVITY RATE 12.0% +0.2% On 12/20/20
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California COVID Hospitalizations and ICU Usage

Data Updated Sunday 12/20 at 5:13 PM PST

TOTAL HOSPITALIZED 17.8K On 12/20/20 ↑ 352	TOTAL IN GENERAL CARE 14K On 12/20/20 ↑ 262	TOTAL IN ICU 3,710 On 12/20/20 ↑ 90	PERCENT IN ICU 20.9% On 12/20/20 ↑ 0.1%
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1) California Grapples With Dangerously Low 3% ICU Capacity Amid COVID-19 Surge

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ICU capacity by region:

- Bay Area: 13.1%
- Greater Sacramento Region: 11.3%
- Northern California: 25.8%
- San Joaquin Valley: 0.7%
- Southern California: 0.0%

The numbers are staggering. California reported 52,000 new cases on Thursday, about the same number the entire country was averaging in mid-October. More than 16,000 people statewide have been hospitalized with the coronavirus or suspected cases of it, with more than 3,000 of them in the ICU. There were 393 deaths recorded Wednesday, setting a new single-day record in the state.

2) California Hospitals Struggling As Coronavirus Cases Explode

California hospitals are battling to find beds to house patients amid fears that the exploding coronavirus infection rate will exhaust resources and health care workers. As of Friday, nearly 17,000 people were hospitalized with confirmed or suspected COVID-19 infections — more than double the previous peak reached in July — and a state

model that uses current data to forecast future trends shows the number could reach an unfathomable 75,000 by mid-January. More than 3,500 confirmed or suspected COVID-19 patients were in intensive care units. As of Friday, the nation's most populous state recorded more than 41,000 new confirmed cases and 300 deaths, both among the highest single-day totals during the pandemic. In the last week, California has reported more than a quarter-million cases and 1,500 deaths.

Corona Regional Medical Center southeast of Los Angeles has converted an old emergency room to help handle nearly double the usual number of ICU patients. It's using space in two disaster tents to triage ER patients because the emergency room is filled with patients who need to be hospitalized. Ambulances can sit for two hours unless they are bringing in patients with critical, life-or-death emergencies.

It's a scene playing out across California. According to state data Friday, all of Southern California and the 12-county San Joaquin Valley to the north had exhausted their regular intensive care unit capacity and some hospitals have begun using "surge" space.

In hard-hit Fresno County in Central California, a new 50-bed alternate care site opened Friday near the community Regional Medical Center. The beds for COVID-19-negative patients will free up space in area hospitals, where just 13 of some 150 ICU beds were available Friday, said Dan Lynch, the county's emergency medical services director. Lynch said he expects they will have to use the Fresno Convention Center, which can accommodate up to 250 patients, given current demand. Fresno and three neighboring counties also have taken the unprecedented step of sending paramedics on emergency calls to evaluate people. They won't be taken to the emergency room if they could go to an urgent care facility or wait a few days to talk to their doctors, Lynch said.

Some hospitals have canceled non-essential elective surgeries, such as hip replacements, that might require beds that may soon be needed for COVID-19 patients. Others are increasing staff hours or moving patients to free up space.

California has begun receiving new COVID-19 vaccines. But the available doses are too scanty and too late to have any immediate impact on the soaring infection rate. The latest explosion of cases has been tied to people ignoring social-distancing rules during the Thanksgiving holiday. Health care officials and workers expressed frustration that many people aren't following state-mandated safety rules designed to slow that rate.

UNITED STATES

Total Cases: 17,820,477

Deaths: 317,656

1) FDA authorizes a second vaccine as average daily cases and deaths hit records

The US Food and Drug Administration on Friday night authorized a second coronavirus vaccine for emergency use as Covid-19 hospitalizations rose to another record and cases and deaths are piling up in unprecedented ways. The FDA had signaled it would issue the authorization quickly for Moderna's vaccine candidate, after the agency's vaccine advisers voted Thursday to recommend approval. "The emergency use authorization allows the vaccine to be distributed in the U.S. for use in individuals 18 years and older," the FDA said in a tweet.

In the US, average daily cases, total hospitalizations and average daily deaths are still rising to levels not previously seen, as hospital staff around the country warn they're running out of space and energy to provide sufficient care:

- **Cases:** The country's average number of daily cases across a week was 216,674 on Thursday -- a record high, John's Hopkins University data show. That's more than three times what the daily case average was during a summer peak in July. More than 1.51 million new coronavirus cases were reported in the US this past week -- the most ever for one week, according to JHU. That means new infections were reported in roughly 1 in 216 people in the US this week alone.

- **Hospitalizations:** The number of Covid-19 patients in US hospitals was 114,751 on Friday -- the most recorded on a given day for the 13th straight day -- according to the COVID Tracking Project.

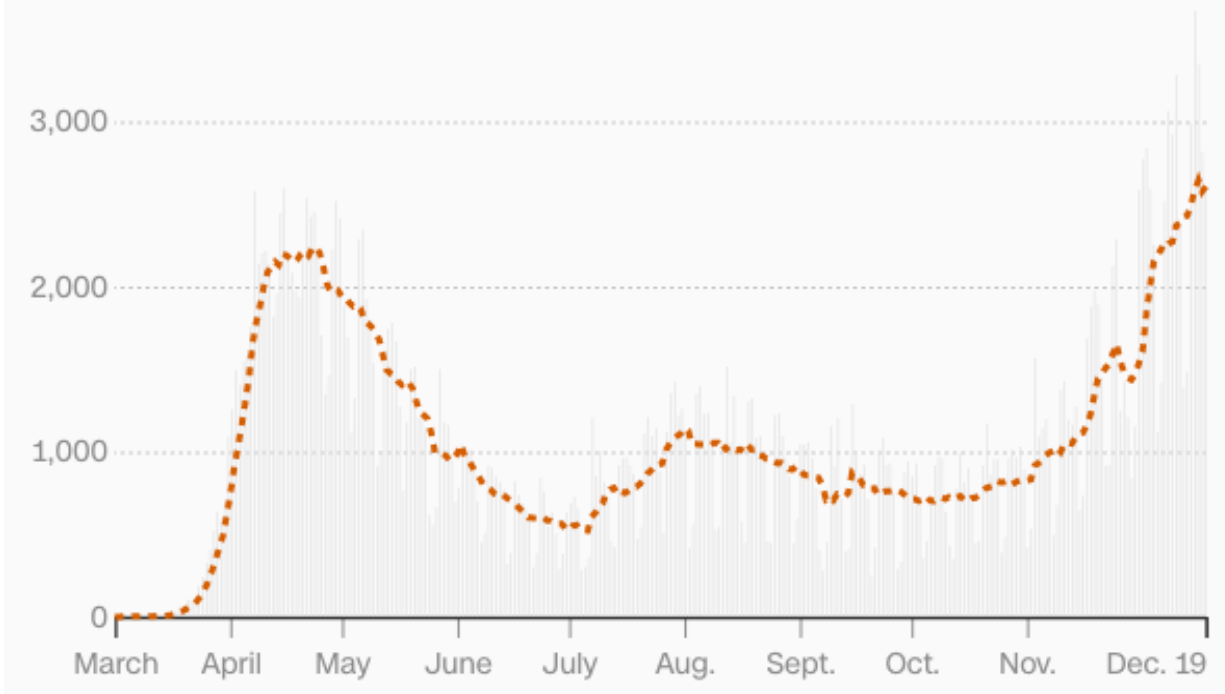
- **Deaths:** The nation averaged 2,633 Covid-19 deaths daily across the last week -- the highest average yet. The total reported Thursday, 3,270, is the third-highest daily total on record.

2) Model raises prediction for number of deaths by April

An influential coronavirus model at the University of Washington on Friday projected that a total 562,000 people in the US will have died from Covid-19 by April 1 -- up significantly from the prediction it made last week, when it forecast 502,000 deaths by that date. The increase is due to surges in cases and deaths, with particularly large increases in the nation's most populous state, California, the model from the Institute of Health Metrics and Evaluation says. The US could see more than 3,750 deaths reported daily in mid-January, the IHME predicted. The country so far has reported more than 311,000 total Covid-19 deaths.

US Covid-19 deaths over time

Gray bars represent the number of new deaths reported each day. The **dashed orange line** shows the seven-day moving average.



3) FDA investigating allergic reactions to Pfizer vaccine reported in multiple states

The Food and Drug Administration (FDA) is investigating allergic reactions to the Pfizer coronavirus vaccine that were reported in multiple states after it began to be administered this week. Peter Marks, director of the FDA's Center for Biologics Evaluation and Research, told reporters late Friday that the reactions had been reported in more than one state besides Alaska and that the FDA is probing five reactions. Marks said the FDA was not certain what caused the reactions but indicated a chemical called polyethylene glycol, which is present in the vaccines produced by Pfizer and BioNTech as well as by Moderna "could be the culprit." He added that the reaction some people have experienced could be more common than once thought.

"We'll obviously be monitoring very closely what's going on. We're working very closely with the CDC on these, and there have been meetings between the CDC and FDA pretty much every day this week making sure we're keeping very close track of what's going on," he said.

The FDA's current guidance says that most Americans with allergies should be cleared to take the vaccine but that people who've had severe reactions to other vaccines should not get vaccinated. It also said Friday that people with a history of severe allergic reactions to any components of the Moderna shot should avoid getting that vaccine.

RECOMMENDATIONS

We have no new recommendations at this time