



TRENDS-in-MEDICINE

BULLETIN: UPDATE ON CORONAVIRUS 3/24

March 24, 2020
by Lynne Peterson

Be careful, be safe, and be well.

There was a lot of coronavirus news on Tuesday, March 24 – again, enough to justify a new update. Here are the latest developments related to the SARS-CoV-2 virus and the disease it causes, Covid-19.

Worldwide Covid-19 Statistics									
Country	As of March 18			As of March 22 (just 4 days later)			As of March 24		
	Cases	Deaths	Fatality rate	Cases	Deaths	Fatality rate	Cases	Deaths	Fatality rate
Worldwide	217,242	8,704	4.0%	335,972	14,632	4.4%	417,582	18,612	4.5%
China	81,137	3,130	3.9%	81,407	3,265	4.0%	81,591	3,281	4.0%
Italy	35,713	2,978	8.3%	59,138	5,476	9.3%	69,176	6,820	9.9%
U.S.	9,249	145	1.6%	33,276	417	1.3%	53,660	703	1.3%
Spain	13,176	638	4.8%	28,768	1,772	6.2%	39,885	2,808	7.0%
Iran	17,061	1,135	6.7%	21,638	1,685	7.8%	24,811	1,934	7.8%
U.K.	>2,600	104	4.0%	5,741	282	4.9%	8,164	423	5.2%
Germany	12,327	28	0.2%	24,873	94	0.4%	32,986	157	0.5%

Source: <https://coronavirus.jhu.edu/map.html>

U.S. Covid-19 Statistics						
State	As of March 22			As of March 24		
	Cases	Deaths	Fatality rate	Cases	Deaths	Fatality rate
New York	15,168	114	0.8%	25,665	210	0.8%
Washington	1,793	94	5.2%	2,221	110	5.0%
California	1,554	29	1.9%	2,102	40	1.9%
New Jersey	1,914	20	1.0%	3,675	44	1.2%
Michigan	1,035	8	0.8%	1,791	24	1.3%
Florida	830	13	1.6%	1,412	18	1.3%
Louisiana	837	20	2.4%	1,388	46	3.3%
Illinois	1,058	9	0.9%	1,551	16	1.0%
Massachusetts	646	5	0.8%	1,159	9	0.7%

Source: <https://covidtracking.com/data/>

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Tidbits

- Republican and Democratic Senate leaders have finally agreed on a \$2 trillion **stimulus bill**. The Senate is expected to pass it March 25, but it still needs to get through the House.
- The U.K.'s **Prince Charles** tested positive for the virus and is in isolation in Scotland.
- **President Trump** said his hope is to **re-open the country for business** by Easter (April 12), but he got a lot of pushback for that comment.

- The President said, “You lose a number of people to the flu...but you will lose more by putting the country into a massive recession or a depression...You will have suicides by the thousands, instability...You can't just close up the USA... We have 36,000 deaths [a year] from the flu, and we never closed down the country for the flu... We never did anything like this before. It has been very painful for our country and very destabilizing...but you can go back to work and practice good judgement...This cure is worse than the problem...Many more people are going to die if we allow this to continue... We have to put our country back to work.”

He later clarified that this might not mean the entire country opens up at once but could mean “sections of the country, large sections.”

- Anthony Fauci, MD, director of the National Institute of Allergy and Infectious Diseases (NIAID), said lifting restrictions will be based on data, and different areas of the country may be different situations, adding, “It is a flexible situation.”
- Former FDA Commissioner Scott Gottlieb, MD, said the U.S. needs “several more weeks” before stringent mitigation measures are lifted.
- New York Governor Andrew Cuomo said, “My mother is not expendable, your mother is not expendable. And we will not accept the premise that human life is disposable.”
- White House economic advisor Larry Kudlow said he thinks there can be “an economic rebound later this year.”
- However, there are also people predicting that there will be **civil unrest** unless the country becomes “more functional.”

■ New York

- Gov. Cuomo again urged President Trump to utilize the **Defense Production Act** to force companies to make needed medical supplies, but the President and other White House officials insisted companies are voluntarily stepping up to produce the needed items, so it is not necessary to use the Defense Production Act.
 - He called New York the “canary in the coal mine [about the virus],” saying the virus is “spreading like a **bullet train**.”
 - Gov. Cuomo estimated that Covid-19 cases won't **peak in New York for 14-21 days**, and at the peak they will need 140,000 beds (though they only currently have 53,000 beds), 40,000 ICU beds, and 30,000 ventilators. [At ≥\$20,000 each, that many ventilators would cost \$800 million.]
 - He said **28% of patients being tested are positive**, which is 4-5 times more than in other parts of the country where the rate is <10%. Asked why the New York positivity rate is so high, Ambassador Deborah Birx, MD, the White House Coronavirus Response Coordinator, said, “Part of it is density...and part of it may be metal surfaces like the subway...and people coming back [from China and Europe]...I think the virus was probably quietly expanding. Until it gets to the older population, you don't really see it.”
 - Dr. Birx said that **anyone leaving the greater New York City metro area** and going somewhere else – Florida, Long Island NY, or anywhere – may already have been exposed and should self-isolate for 14 days because of the risk of spreading the virus. Dr. Fauci called the New York situation “very serious,” adding, “One in a thousand is infected. That is 8-10 times more than in other areas. When they go elsewhere, they have to monitor themselves...and the idea of self-isolation for two weeks is important...We don't want that to be seeding.”
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- New York City Mayor Bill de Blasio predicted that the situation in his city **will not be over quickly**, “I believe fundamentally April will be tougher than now, and May will be tougher than April...There will be at least two tough months and then several months trying to get back to normal. It will be nothing like back to normal until after the summer...Everyone wants to get back to work, but we don’t have a cure. We don’t have a vaccine. We don’t know for sure if people can get it again.”
 - **Florida:** The governor asked President Trump to declare the state a major disaster area because of Covid-19.
 - **China** lifted its lockdown in Hubei province except for the city of Wuhan.
 - The **Summer Olympics** in Japan are officially postponed until 2021.
 - Doctors are starting to talk about **what happens to Covid-19 patients on ventilators**, and it isn’t great news. In Wuhan, China, only ~60% of ventilator patients survived, which is in line with U.S. numbers for acute respiratory distress syndrome (ARDS) patients who require a ventilator. One U.S. doctor has predicted, “Anyone on a ventilator will have problems later on.” Remember, a virologist earlier this month predicted many Covid-19 ventilator patients will later develop pulmonary fibrosis. *More reports on ventilator survivors are sorely needed.* Pulmonary fibrosis drugs to watch include:
 - **AstraZeneca’s saracatinib**, a Src kinase inhibitor that was recently granted orphan drug status by the FDA as a potential treatment for idiopathic pulmonary fibrosis.
 - **Boehringer Ingelheim’s Ofev (nintedanib)**, a TKI, was granted expanded approval by the FDA to treat chronic fibrosing interstitial lung diseases (ILD) with a progressive phenotype. This is the first drug approved for patients with this type of lung disease.
 - **Can you get Covid-19 again once you have it and recover?** Dr. Birx said, “It is an RNA virus, and it can mutate, and it constantly mutates...but the coronaviruses keep their structure similar. The inside part of the virus has stayed very similar. What has been picked for the sites for vaccines and antibodies are those constant sites. We think anyone who is infected and makes effective antibodies – and not everyone does – shouldn’t get reinfected.”

Asked about Singapore suggesting there may be a second wave there, Dr. Birx said, “Remember, Singapore executed guidelines early, implemented guidelines so very few people became infected...so you don’t have herd immunity. If it has seasonality – which we hope and believe it could – if they get through this season it will be good...Then we can work on vaccines and prophylactics – pre-exposure prophylactics [a new PrEP?]. We are focused today on getting through the current epidemic and preparing in case it comes back in Fall 2020 or Fall 2021.”
 - **Testing.** Dr. Birx said 370,000 Americans have been tested for the coronavirus so far, including 220,000 in the last 8 days, which she said is more than South Korea did in 8 weeks.
 - **Transmission.** The FDA issued a warning that SARS-CoV-2 can be transmitted through the use of fecal microbiota for transplantation (a [fecal transplant](#)).
 - **Treatments:**
 - **Hydroxychloroquine and chloroquine** – In at least four states – Idaho, Nevada, Ohio, and Texas – the [pharmacy board](#) has limited who can be prescribed these malaria drugs. Texas also limited prescribing of azithromycin and mefloquine (another anti-malarial).
 - **Convalescent plasma** – The FDA asked investigators wishing to try this investigational [approach](#) – collecting plasma from recovered Covid-19 patients and using it to treat current Covid-19 patients – should submit a request to the FDA for investigational use under the traditional IND (investigational new drug) pathway. The FDA noted that this approach “has not been shown to be effective in every disease studied.”
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The FDA said donors should meet a number of criteria, including: Laboratory confirmed Covid-19 positive, complete resolution of symptoms 14 days prior to donation, confirmation of negativity by testing, male donors (or females if negative for HLA antibodies), and, if possible, defined SARS-CoV-2 neutralizing antibody titers.

The FDA said it will use multiple pathways to support these efforts, including a single patient emergency investigational new drug application (NDA) for an individual patient (an N of 1 study).

Unanswered questions (*Items will remain on this list until answered. The newest question is at the end because it is long and complicated.*)

- ? What do we know about Covid-19 patients who are put on a ventilator and recover?
- ? Are there long-term effects from getting Covid-19, even mild Covid-19? Will there be long-lasting lung abnormalities or pulmonary fibrosis?
- ? Will companies that have boosted production of medical supplies, particularly big-ticket items like ventilators get caught at the end of this with products that have no buyers – unsold inventory?
- ? Can people get Covid-19 more than once? There are still conflicting reports on this.
- ? Is the blood supply safe? This question looked like it was answered with a Yes, but that may not be true.
- ? **New York City projections:** The projections for cases in New York raise a number of questions. The math is a little complicated, but consider these numbers:
 - Italy has three times the population of New York State (roughly 60 million vs. 20 million).
 - Italy has roughly 70,000 cases and ~6,800 deaths, so roughly 10% of cases become fatalities. New York currently has ~26,000 cases and 210 deaths, a 0.8% fatality rate.
 - In Italy, ~23% of the population is age ≥ 65 , which is often cited as a reason for the high mortality rate from Covid-19 in Italy. In New York State, U.S. Census Bureau data show 16.4% of the population is age ≥ 65 , so New York has a lower percentage of the people most likely to get serious Covid-19 and need hospitalization. This suggests that fewer New Yorkers should be hospitalized or die vs. Italians.
 - Nationally in the U.S. 10%-13% of people testing positive are being hospitalized. In New York that rate is 28%. Why?
 - Gov. Cuomo said 35% of the New York City hospitalizations were in people age >70 , even though they are only 10% of the New York City population.
 - Gov. Cuomo is projecting a need for up to 140,000 beds, with the peak expected in 14-21 days. If New York had that many hospitalizations, it would mean far more than 140,000 positive cases. That would mean 0.7% of the entire population of the state would need to be hospitalized at the same time for the virus. Why should New York have more than twice as many cases as Italy, when it has one-third the population of Italy?
 - Gov. Cuomo said the state may need 30,000 ventilators for Covid-19 patients. That assumes 21% of the 140,000 hospitalized patients would need a ventilator.
 - The expectation is generally that ~30% of patients on a ventilator for acute respiratory distress syndrome – which is roughly what Covid-19 causes – die. If that held true, it could mean 9,000 deaths in New York (which compares to $<9,000$ for all of Italy through this whole outbreak and with three times the population). One of Italy's issues was a shortage of ventilators, so how is it possible that New York could have that many deaths with more ventilators?

None of this is to question that New York has a problem, but the numbers don't seem to add up. Why?