

Dr. Delgado COVID-19 Update 3-30-20

How many people will acquire the new coronavirus?

Genetic analysis of the virus circulating on the West Coast suggests that COVID-19 has been spreading since early to mid January. This community spread was not detected earlier for several reasons. First, about 80% of cases were not of clinical significance and many of the early vectors did not seek medical care, according to data from the outbreak in China and likely mimicked here. In addition, physicians in our country were not yet considering this alternative diagnosis for those who presented and were experiencing symptoms such as a mild fever, cough and congestion and may have tested negative for influenza. Second, Centers for Disease Control and Prevention (CDC) protocol limited testing at the onset to only those with symptoms and a history of travel to an affected region. Finally, due to the lag between virus infectivity and the subsequent respiratory ramifications, hospitalizations and fatalities, it entered an acceleration phase before we even suspected any community spread. A WHO report in regards to China found that it took 3-6 weeks for critical cases to be resolved, either when the patient died or recovered.

Tracking people with symptoms — whether mild, moderate or severe — is only the beginning, however. One big question about the new coronavirus is how many people transmit COVID without showing symptoms at all, or showing so few symptoms they remain unaware they have acquired it. This cohort of patients is

and will be hard to detect, but they're very important for modeling how the disease will likely spread.

When we model transmission and project how many people are going to get infected, the models don't know how many people are sick, were sick or are can calculate those infected regardless of severity. By looking retrospectively at other countries, we can surmise an educated guess as to the rate of transmission, but too many confounding variables exist currently to accurately address this as to our specific outbreak. This research will take time, but the more researchers know about the speed of the disease's spread, the more they'll be able to say about the likely length of the outbreak. Ultimately, what brings an epidemic under control is when most people in the population become exposed and subsequently immune.

Can people spread coronavirus after they recover?

A small study out of China suggests that the new coronavirus can persist in the body for at least two weeks after symptoms of the infection clear. This sort of persistence isn't unheard of among viruses and the patients are most likely not very contagious in this post-symptom period while continuing to shed the virus.

The findings may even be good news. The viruses that tend to hang around in people's systems also tend to be the viruses that the body develops a strong immune response against. If the virus is staying in people's systems, then they are likely not to be reinfected.

There are many questions about how long immunity would last, though. For example, the body maintains immunity against the

coronaviruses that cause the common cold for only a year or two. And there is always the possibility that the new coronavirus would mutate as it moves through populations, changing into a version that already-exposed immune systems can't recognize. The challenge is, how fast could it mutate?

The WHO reports that a whole genome sequencing analysis of 104 strains of the COVID-19 virus isolated from patients in different localities with symptom onset in China between the end of December 2019 and mid-February 2020 showed 99.9% homology, without significant mutation. Essentially, the virus appears static to mutating which bodes well for those previously exposed to not reacquire the infection and hence slowly extinguish its spread. This will need to be followed closely and may not be modeled here in our country.

How long the coronavirus will last on surfaces?

The short answer is, we don't know definitively. In a study published in *The Journal of Hospital Infection*, they analyzed several dozen previously published papers on human coronaviruses (other than the new coronavirus) to get a better idea of how long they can survive outside of the body. They concluded that if this new coronavirus resembles other human coronaviruses, such as SARS and MERS, it can stay on surfaces — such as metal, glass or plastic — for as long as even nine days. This does not imply nor clear the question as to whether it would remain infectious for that time frame.

A lot of information as to this issue is circulating and no definitive recommendation can be made at this juncture. What is certain is that these coronaviruses can be effectively wiped away by household disinfectants and transmission is reduced almost

completely by following current recommendations as to hygiene and distancing.

Information from China

Several remarks from a recent Zoom session with Dr. WenHong Zhang, the chair of the Society of Infectious Diseases of the China Medical Association.

- Feels key to mitigating spread in China was testing every suspected Covid case, regardless of symptoms, and subsequently admitting all those positive cases to designated Covid hospitals regardless of their level of illness.
- > 50% of Covid patients were positive for co-infections with other respiratory organisms and imaging by CT could not exclude Covid
- The false negative testing for a Covid PCR diagnosis, even with two nasal swabs, was up to 30%. In China, they would take four samples, including molecular gene sequencing and additional swab locations, before they would rule out a Covid infection.

- He reiterated his belief that strict social distancing and aggressive testing likely led to a significant impact on the rate of exponential growth expected in China
- Every recovered patient was found to have antibodies, but it remains unclear if this confers true immunity
- Lastly, he stated that hydroxychloroquine studies continue and results will be forthcoming, but made no specific recommendation as to its use

Serologic testing

A serologic test to determine exposure and confirm immunity remains vital, but we must overcome a multitude of logistical and clinical hurdles.

Logistically, creating protocols for testing, addressing availability and distribution, and lastly resulting these tests will be a massive undertaking when they start to become available. In addition, trying to navigate this launch while concomitantly addressing the acute phase of this pandemic and the continued need for prioritizing testing to confirm infections and initiate treatment, will need to be coordinated at every level of government.

From a clinical aspect, many companies, both private and public, are actively trying to bring serologic testing to fruition. Extolling that such a test will suddenly appear and allow those who show immunity back to work is likely premature.

The test will still require proper vetting for its accuracy (which is vital) and a comprehensive clinical protocol will need to be instituted as to how to proceed with positive results that suggests immunity. A uniform and well communicated strategy to this point will be vital to minimize conferring additional risk to those not exposed. Lastly, we need to continue to investigate the risk of reinfection as we ease any restrictions.

Treatments

No new research data has come forth since my last communication which appears clinically consequential in regards to treatment, as expected at this early date. Trials remain underway with multiple treatments considered including antivirals, hydroxychloroquine/chloroquine and an HIV medication combination with and without interferon therapy.

If any new conclusion/recommendations becomes available, I will certainly forward them if they appear relevant or merit distribution.

Of note, the FDA has approved, on an emergency basis, the use of chloroquine and hydroxychloroquine as of 3/29/2020. The Department of Health and Human Services stated that these products “may be distributed and prescribed by doctors to hospitalized patients with Covid, as appropriate or feasible”. The medications continue to show activity in laboratory studies against the coronavirus and studies for confirmation of clinical benefit are ongoing.

Local update

The hospital remains closed locally. As to when it might reopen is unknown, but my assumption is it will be for those whom suggest a negligible risk for Covid. Any suspected cases continue to be transferred to other facilities in the region. The volume and capacity remains manageable as of today.

My recommendation continues to stress limiting exposure and therefore risk. I was glad to see the federal response and new recommendation to extend social distancing through April 30 made yesterday.

The sheer amount of information available during this pandemic is unprecedented. In conjunction with social media, it creates an overwhelming cacophony of opinions, alarm and in many cases unsubstantiated claims which rapidly disseminate without any rigor as to their validity. It is my hope I can continue to offer guidance through this period for all of you.

Be sensible and adhere to the simple principles which we know have been true and reproducible during previous pandemics. Avoidance, hygiene and prompt clinical queries if you suspect you may have been exposed.

My staff and I remain available though our office remains closed.

R. Delgado, MD & staff