

Dr. Delgado COVID-19 Update 6-26-20

Vaccine Update

Many world leaders have called for vaccines to be treated as a public good, but some countries are striking agreements with pharmaceutical firms, raising the possibility of poorer nations missing out.

Several vaccine candidates have reached the final phase of human trials and others are not far behind, but who will benefit from them once they are ready for general distribution remains to be seen.

One of the vaccines near the head of the pack, developed by researchers at the University of Oxford and licensed to AstraZeneca, could be available for emergency use in Britain by September. The British government struck a deal with the developer last month to have 30 million doses available by then, with a further 70 million to come later. The United States government also helped with development funding for the product, and in return for that will receive 300 million doses of the

vaccine.

If each country rushes to sign bilateral agreements with all manufacturers, it will inevitably lead to a situation where low-income countries, or countries without resources, will be unable to access vaccines, especially the earlier versions. This is being termed as “vaccine nationalism”. Just today, The World Health Organization unveiled a plan to purchase 2 billion doses of Covid-19 vaccines for the highest risk populations of the world. They are partnering with the Coalition for Epidemic Preparedness Innovations (CEPI) and Gavi, the vaccine alliance.

The plan anticipates that by the end of 2021 it can deliver the vaccinations. The plan currently is estimated to cost \$18.1 billion and will necessitate commitments for higher income countries to raise the \$11 billion still needed over the next 6 months.

Those countries contributing will be offered “shares” in the pool of the nine candidate vaccines that CEPI is supporting as well as any other vaccines the alliance may end up purchasing. The way it will work is that — because it remains unclear which vaccine will be efficacious — purchasing shares in this pool will broaden a country’s chances of having access to vaccines. It is expected that

those charitable donors will help support shares for lower income countries.

This approach is novel and could protect those countries that have already committed to several candidate vaccine projects if they were to ultimately fail. This “shared-risk” would provide alternatives in the early days of vaccine availability when demand and supply will be a monumental challenge.

Vaccines inherently are a risk and historically more likely to fail than succeed. It is estimated only 7% of vaccines make it through preclinical development, and maybe 15% of those that enter clinical trials are eventually successful.

According to the WHO, there are currently 16 Covid-19 vaccines in clinical trials already, and at least another 125 in earlier stages of development.

Time to reconsider “pool testing”

If a country wants to increase its Covid-19 testing capacity into the millions — the range that could be required for safer reopenings of businesses and universities — it could quickly accelerate to those figures using a

technique known as “pool testing.”

It’s a simple construct: combine — or pool — samples from multiple people and test them as a group for the coronavirus. It’s a way to dramatically and efficiently increase volume, to churn through what you expect to be a lot of negative samples at a fast clip.

Take a facility with 100 employees. Every so often — experts are still weighing how frequently this testing should occur — the company could test the staff, and instead of running 100 separate analyses, it could group 10 samples into a pool and only run 10 analyses. If one of those pools came back positive, those 10 employees could be retested individually to see who was infected and could remain out of work in the interim. The 90 other employees, in the pools that tested negative, wouldn’t need to be retested. The goal would be to try to detect a case before the person potentially spreads the coronavirus to others.

Scientists are increasingly finding that large-scale super spreading events at workplaces, restaurants and bars, and places of worship are driving a large amount of transmission. Identifying asymptomatic and pre-symptomatic people could also enable a more aggressive

contact tracing approach. Lastly, regularly testing groups of people in a given community could also provide a harbinger of increased spread if suddenly a higher portion of pools came back positive. That could serve as an early signal to local officials that they may need to increase distancing strategies, before hospitalizations started to increase.

Pooling only makes sense in places with low rates of Covid-19 where you expect the large majority of tests to be negative; otherwise, too many of the pools would come back positive for it to work as a useful surveillance tool. It would be prudent to use this in states where the current trend of cases is downward and avoiding states that are current hot spots until that occurs.

For all the advantages in efficiency that pooling offers, there is a downside: It increases the risk of a false negative. That is, if someone does have the virus, the viral level in that individual sample will be diluted when combined with other samples, perhaps to the point where the machine can no longer detect it. One way to compensate for that risk of false negatives is to conduct testing more frequently, experts say.

The Food and Drug Administration recently released guidance describing what labs need to do to validate

their pooling strategies and is sponsoring its own validation studies at this time.

Stay steadfast

Rates of infection continue to rise in our state and Blaine County. This is likely driven by “pandemic fatigue” and the belief that the initial wave had passed. With more interaction amongst people due to the summer season and without the continued compliance to appropriate distancing, avoidance of large gatherings and other proven protective measures it was inevitable.

Please continue to follow the current guidelines and recommendations as they have been proven to be effective.

Lastly, if you have an exposure to a known positive case you must quarantine for 14 days. Please notify our office if this occurs for further guidance.

R. Delgado, MD &
staff