

PREPARING FOR THE INEVITABLE CORONAVIRUS DISEASE 2019 OUTBREAK

Jim here.

I am quite late to getting to a post on the new coronavirus, but headlines yesterday finally forced me to move ahead and gather info today. First, watch this incredibly informative video from the World Health Organization. It gives very good information on the biology of the virus and what's going on in the outbreak:

Although Donald Trump and his media partners have been denying that Coronavirus Disease 2019 (COVID-19) is a real cause for concern, there were multiple statements yesterday from US health officials that ranged from quite alarming to somewhat more reassuring. The announcements were summarized well by the Washington Post. Perhaps the most attention was paid to portions of what Dr. Nancy Messonnier provided in a telephone briefing yesterday morning. Dr. Messonnier is the Director of the National Center for Immunization and Respiratory Diseases. A recording of the briefing and a full transcript can be found [here](#).

Of most note from the briefing is when Messonnier stated:

Ultimately, we expect we will see community spread in this country. It's not so much a question of if this will happen anymore but rather more a question of exactly when this will happen and how many people in this country will have severe illness.

So, yes, spread of COVID-19 in the US is inevitable. Messonnier continued, discussing what can be done to try to contain the disease.

Because there's no vaccine or specific treatment for the virus, control has to be through what is termed non-pharmaceutical interventions or NPIs:

There are three categories of NPIs. Personal NPIs which include personal protective measures you can take every day and personal protective measures reserved for pandemics. Community NPIs which include social distancing measures designed to keep people who are sick away from others. And school closures and dismissals. And environmental NPIs which includes surface cleaning measures.

It's in the category of potential community NPIs where the biggest concerns start to appear:

Now I'd like to talk through some examples of what community NPIs look like. These are practical measures that can help limit exposure by reducing exposure in community settings. Students in smaller groups or in a severe pandemic, closing schools and using internet-based teleschooling to continue education. For adults, businesses can replace in-person meetings with video or telephone conferences and increase teleworking options. On a larger scale, communities may need to modify, postpone, or cancel mass gatherings.

Messonnier expanded on the disruptions:

Secondary consequences of some of these measures might include missed work and loss of income. I understand this whole situation may seem overwhelming and that disruption to everyday life may be severe. But these are things that people need to start thinking about now.

So, yes, there may well be significant

disruptions to everyday life in parts of the US. We of course don't know when this would occur, or where in the US it would be. But this is a good time to start thinking about how a disruption to moving around for a couple of weeks would affect you. Here in Florida, we regularly have to prepare for a week or more of loss of electricity during hurricane season. Preparing for community control measures would be a bit different. Right now, my thoughts for our household are that I will stockpile a few extra large cuts of meat in the freezer. These are things I'd eventually use anyway, so it won't hurt to have them around. I'll increase a few of the pantry items that I wouldn't otherwise increase until the start of hurricane season. I'll beef up my supplies for baking bread. If a disruption starts looking more likely locally, I'll even add some frozen veggies to my stockpile, but for now I'm going to rely mostly on my ongoing CSA supply.

But I'm not going to rush out and buy an N95 respirator facemask. The current recommendations from CDC do not recommend facemasks for the general public. They are only recommended for people who are sick or for those who are caring for someone who is sick. This and the other CDC recommendations for treatment and prevention can be found on this helpful page.

The key thing to remember in trying to avoid catching COVID-19, as described in the video above and on the CDC page linked just above, is to avoid being very close to sick people. The guideline mentioned is six feet. If you see someone who looks symptomatic, it shouldn't be too hard to stay six feet from them. Also, if the virus is known or suspected to be in the area where you are, be especially careful to keep your hands below your shoulders at all times and to wash your hands frequently if visiting public places. As CDC describes here, transmission is thought primarily to be through aerosol droplets such as sneezes and coughs, but it remains possible that the virus could be picked up by touching contaminated surfaces.

Finally, people are also quite concerned about the prediction discussed here by Professor Marc Lipsich, an epidemiologist at Harvard. He has stated that it's possible that a COVID-19 pandemic could result in 40-70% of people world-wide becoming infected. As Lipsich points out, however, that estimate must be coupled with the realization that we currently have no good estimate for what percentage of people who become infected develop few or no symptoms. In fact, moving out from his discussion, there currently are widely ranging estimates of what percentage of infected people die. Inside Wuhan, where the virus first emerged, estimates now are that 2.8% of those infected die. Outside Wuhan, however, that number drops to 0.18%, a difference of over 15-fold. For a discussion of how early we are in the process of understanding the epidemiology of this virus and why these numbers differ, see this paper.

For perspective, it appears that COVID-19 spreads far more efficiently than SARS and MERS, but conversely, SARS and MERS killed a higher percentage of those infected. We see more COVID-19 deaths because many more people have been infected.

The featured image for this post is in the public domain and comes from CDC. Here is the caption CDC provides: "This illustration, created at the Centers for Disease Control and Prevention (CDC), reveals ultrastructural morphology exhibited by coronaviruses. Note the spikes that adorn the outer surface of the virus, which impart the look of a corona surrounding the virion, when viewed electron microscopically. A novel coronavirus, named Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), was identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China in 2019. The illness caused by this virus has been named coronavirus disease 2019 (COVID-19)." Credit for the image goes to Alissa Eckert, MS, Dan Higgins, MAM.