

What I think about COVID-19 this morning  
March 5, 2020

Maybe I'm the closest thing you personally know to an infectious disease epidemiologist. Maybe not--I'm not an expert on this virus by any stretch, but I have general knowledge and training from studying epidemics that is applicable, so here are my thoughts.

First and foremost: we are going to see a tremendous increase in the number of US cases of COVID-19 in the next week. This is not necessarily because of some new pattern in the spread of the disease, but rather due to a major change in the requirements to be tested. Until yesterday, if you had flulike illness but had *not* recently traveled to China, Italy, South Korea, or Iran, you could not be tested. This is just the way healthcare works, you get tested if you meet the case definition and the case definition included travel.

As of yesterday, you can be tested if you are sick and have a doctor's order to be tested. So expect things to feel a lot more panicky all of a sudden. We will see hundreds or thousands of new cases as a result of testing increases.

Second: is that panic legitimate? Sort of. This is not the zombie apocalypse. The death rate of 30 deaths per 1000 cases is probably a wild overestimate. (The denominator is almost certainly wrong because it is confirmed cases--and we only confirm cases when we test for them). That said, even at 3 per 1000 cases, this would be a big deal. A very big deal. By way of comparison, the death rate for influenza is between 1 and 2 in 1000 cases. So, yeah. Roughly 0x to 30x worse than a bad seasonal flu year? That's a problem.

Unlike flu, COVID-19 is not *particularly* dangerous for children, so that's some happy news. It *is* dangerous for older adults and those with lung conditions, so we need to be extra careful to protect those populations from exposure.

Also, for millions of Americans, getting any serious illness requiring a hospitalization is a major problem because they can't pay for it. And our health care system is probably going to struggle to keep up with it all. And with China basically closed, our global economy is going to take a huge hit and we'll feel the shockwaves for years. Those are real concerns.

What can we do? Our focus should be on *\*slowing down the spread\** of this disease so that we have time to get caught up. We have a limited healthcare system and this disease is spreading very quickly right now. We need to slow it down so that we have time to deal with new cases within the capacity of the system. Here is my advice:

1. Wash. Your. Hands. Wash them so much.

The current best guess is that coronavirus is transmitted via close contact and surface contamination. I have started washing my hands each time I enter a new building and after being in shared spaces (classrooms especially), in addition to the standard practice of washing after using

the bathroom and before eating. Soap and water. Hand sanitizer also kills this virus, as does rubbing alcohol (the main ingredient in hand sanitizer).

There is no need to be obsessive about this. Just wash your hands. A little bit more effort here goes a long way.

2. Don't pick your nose. Or put your fingers in your mouth, on your lips, or in your eyes. Surface contact works like this: you touch something dirty. Maybe it's an elevator button. Virus sticks to your hands. Then you rub your eye. Then you touch your sandwich, and put the sandwich in your mouth. Now there is virus in your eyes and mouth. See?

You may be thinking, but I don't pick my nose because I am an adult! An observational study found that people sitting at a desk working touched their eyes, nose, or lips between 3 and 50 times per hour. Perfectly normal grown-ups, not lowlifes like my friends.

2a. There was one note that came out suggesting that face masks actually promote surface contamination because you're always adjusting them--i.e., touching your face. I don't know if that's true. But face masks should not be worn by the healthy public right now, unless you are the person who is sick and you're on your way to or actually at the doctor's office. The mask's function is to prevent spit from flying out of your mouth and landing on things when you cough or sneeze. It flies out of your mouth and is caught in the mask instead. If you are the person who is sick and not on the way to the doctor, go home. Let the people who really need them have the masks. Like doctors, nurses, and people who are sick.

[Edited to add on 3/6/2020 honestly people I am getting so much push back on the mask recommendation!! The world is running low on masks. If everyone wants a mask so they can feel ok about keeping their Daytona Beach Spring Break plans and then hospitals in India can't buy them anymore, shame on us.]

Coronavirus does not appear to be airborne in the sense that it doesn't remain floating around freely in the air for a long time, like measles does. You are probably not going to breathe it in, unless someone is coughing in front of you. If someone is coughing in your face, feel free to tell them to get their ass home and move 6 feet away from them. (Yeah I know, if you have a toddler, you're screwed.)

3. Sanitize the objects you and lots of other people touch, especially people outside your family--like door handles, shared keyboards at schools (brrr), salad bar tongs, etc. Best guesses are that the virus can live on surfaces for 2-48 hours, maybe even longer, depending on the surface, temperature, and humidity.

Many common household cleaning products will kill this virus. However, white vinegar solution does not. You can make your own inexpensive antimicrobial spray by mixing 1 part household bleach to 50 parts cold tap water. Spray this on surfaces and leave for 10-30 minutes. Note: this is bleach. It will ruin your sofa.

4. "Social distancing." You're going to get so sick of this phrase. This means keeping people apart from one another (preferably 6 feet apart, and sanitizing shared objects). This public health strategy is our next line of defense, and its implementation is what will lead to flights and events cancelled, borders closed, and schools closed.

For now, you could limit face-to-face meetings, especially large ones. Zoom is an excellent videoconferencing option. If you spend time in shared spaces, see #1. Ask your child's school about their hygiene plan, if they haven't already told you what it is. Keep your child home if they are sick. I am planning to email our school nurse right after this to ask if they need my volunteer help cleaning surfaces.

If you can telecommute, do that a little more. If you are someone's boss and they could do their job remotely, encourage them to do that.

Avoid large gatherings of people if at all possible, especially if they are in an area with cases OR places that lots of people travel to. If you attend group events and start to feel even a little bit sick within 2 to 14 days, you need to self isolate immediately. Like for a tiny tickle in your throat.

5. All your travel plans are about to get screwed up. If you are considering booking flights right now, get refundable tickets. Most trip insurance will not cover cancellations due to a pandemic. Look for "cancel for any reason" trip insurance.

Considerations for risks related to that trip you're planning: how bad would it be if you got stuck where you are going for 3 to 6 weeks? How bad would it be to be isolated at home for 2-3 weeks upon your return? Do you have direct contact with people who are over 70 and/or have lung conditions? Are there cases in your area that you might be carrying to new places and groups of people? If those seem really bad to you, rethink your trip, especially if it is to a location where there are confirmed cases.

6. If you are sick, stay home. Please! For the love of all that is holy. Stay at home. Your contributions to the world are really just not that important.

7. There is a good chance some communities will see school cancelled and asked to limit non-essential movement. If someone in your family gets sick your family will almost certainly be isolated for 2-3 weeks (asked to stay at home). You could start stocking up with essentials for that scenario, but don't run out and buy a years' worth of toilet paper. Again, not the apocalypse. 2 weeks' worth of essential items. Refill any prescriptions, check your supply of coffee, kitty litter, and jigsaw puzzles.

8. I do want to remind everyone that when public health works, the result is the least newsworthy thing ever: nothing happens. If this all fizzles out and you start feeling like 'Wah, all that fuss for nothing??' Then send a thank-you note to your local department of public health for a job well done. They are working very, very hard right now. Fingers crossed for that outcome.

9. Look, I think there are some positives here. All this handwashing could stop flu season in its tracks! We have an opportunity to reduce our global carbon footprint by telecommuting more, flying less, and understanding where our stuff comes from. We can use this to think about the problems with our healthcare system. We can use this to reflect on our positions of privilege and implicit biases. We can start greeting each other using jazz hands. I'm genuinely excited about those opportunities.

There is a lot we don't yet know about this virus. It didn't even exist 90 days ago. So stay tuned, it is an evolving situation. The WHO website has a decent FAQ. Free to email or text with questions, and you can forward this to others if you think it's useful.

May the force be with you.

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I'm a social epidemiologist and demographer by training. I have a master of public health and a doctorate in public health from UCLA Fielding School of Public Health. I work as an Assistant Scientist in Health Geography at the Applied Population Laboratory at the University of Wisconsin-Madison. I study social contact of humans, and spatial patterns of infectious disease, among other things.

[Edit on March 7, 2020: I didn't write this for professional purposes, so I didn't put my work email on it. It was really just meant to be an email to my friends and family in advance of what I expect to be an escalation in the panic level. But it was apparently welcome information and went viral on FB. I've decided not to edit out the swears, even though I wrote this with a much smaller audience in mind.]

[Edit on March 9, 2020: I am not updating this document with new information. It is still a rapidly evolving situation. Please check more current sources for updates!]

Thanks for checking your facts! Go science!