

Post #631: Wear a mask at work: Short-range aerosol spread by pre-symptomatic individuals in the workplace

I just had an exchange with a friend on Facebook. The upshot is that my friend is personally aware of a case of infection that appears to meet the definition of “short range aerosol transmission of COVID-19 by pre-symptomatic individuals, while at work”.

I’m now going to do five things.

1. Please read the front page of this website, where that is explained. The important point here is that all public guidance talks about is public spaces. You need to mask up in any space outside the home that is shared by multiple individuals. That includes work.
2. If you still “go to work” in the physical sense, wear the best mask you can get, the entire time you are there. Why? See 1. If you don’t have a mask, make one. If you can’t make one, I’ll be putting up a Google Form today so if you live in the Town of Vienna (ZIP 22180), you can ask me for a few of my cheap disposable masks (via US Mail, or you can pick them up off my front porch).
3. I am going to spend the day making high-filtration “mask liners” that you can use, with your existing cloth mask, to increase its performance. And for those who literally have no masks, I’m going to make a version of that that can, in a pinch, be worn as a stand-alone mask. But should not. I’ll post the location of my Google Form for that later today.
4. I’m going to repeat the text of an email that I just sent to a member of Vienna Town Council.

Dear ____,

I am sorry to be late in saying this. If you read my website, you already know it, but I thought I’d be sure I got you this message.

My best guess is that COVID-19 can be readily spread by “short-range aerosol transmission”. The upshot of that is that if you are still “going to work” physically, say, to be in an office setting, you should wear the best mask that you can get, for the entire time

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that you are in that enclosed space.

Read the article reference on the front page of my website.

That's not what CDC says, but CDC was wrong from day one. Sure, this can be and is spread by "droplet transmission" from sick individuals. Somebody coughing or sneezing near you. Traditional way that flu is spread. And that's what the initial CDC guidance to the public was based on.

But in addition, the only way I can reconcile the facts is that this can also be spread at least by short-range aerosol transmission. CDC will not explicitly acknowledge that. But they implicitly did, when they changed their guidance from "cough or sneeze" to "cough, sneeze, or talk". The "talk" part is about aerosol emissions. If you're in a place where people are talking to you, in person, you need to be masked, for sure.

It's not clear that long-range aerosol transmission is a risk anywhere outside of the hospital. But it's not clear that it's not, either. I've written up the Mount Vernon, Washington choir practice event on my website. The only plausible explanation for that is long-range aerosol transmission. Now we have multiple meat packing plants where a huge fraction of the workforce has gotten infected in a short period of time. Most recently, 300 out of a 3000 person workforce in a pork-processing plant somewhere in the Midwest. I don't for an instant think that's because they had multiple workers coughing and sneezing on the assembly line. And in a place like that, they maintain rigid discipline about clean hands. I think that's because a) you have to shout to be heard (high rate of aerosol emissions) and the air is already aerosol-dense due to the heavy use of water spray to keep the equipment clean. (Those additional droplets can then become "virus carriers" if and as they contact droplets emitted by infected individuals.)

Wear a mask. If I thought the Town was capable of such an action, I'd say, please institute a mandatory public mask ordinance. As DC, PG county, and Montgomery County have done. So far. I didn't ask for that because I didn't want to hear the town lawyer say that you didn't have the authority to do that.

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If you have in an with the Board of Supervisors, start calling for a mandatory public mask policy.

Definitions:

- 1 Droplet transmission, larger drops (above 5 microns), they rapidly fall out of the air. The rationale for “social distancing”.
- 2 Aerosol transmission: tiny drops (under 5 microns), they float in the air for a long, long time. The ride air currents.
- 3 Short-range aerosol transmission: See picture on front page of my website. Some infected-but-not-yet-visibly-sick individual talks at you from 6’ away, and you get sprayed with aerosol droplets.
- 4 Long-range aerosol transmission: You fill the room with aerosol — like by singing for a couple of hours — and one infected person can infect the whole room.

CDC initial guidance was based solely on 1. Now it implicitly acknowledges 3, I think, but they won’t say that. I also think 3 is why so many famous people are still getting sick, i.e., Boris Johnson didn’t go near anyone who was coughing or sneezing. But I bet he spent a lot of time in face-to-face meetings in stuffy little meeting rooms.

Option 4 is how measles spreads, and likely how Ebola spreads. Hope to God that Option 4 only occurs in the hospital setting. The US Army Corps of Engineers produced plans for setting up large numbers of expedient negative-pressure rooms, presumably because option 4 is a real possibility in the hospital setting (very sick individual — high virus-shed rate — and people have to be in the same room as the sick for long periods of time).

Please pass the word.

Thanks

Chris