

Covid 103

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Celebration of our success in Fall 2020!

Success up to a point

Covid Fatigue among Wes students. Half of cases were in the last 2-3 weeks. We can't start our new semester that way.

But the challenge is much greater now:

First, because the background rate of infection in the surrounding Middletown community is so much greater now.

Cautions about travel and even travel to downtown Middletown.

Second, rates of transmission are higher now:

1) We spend more time indoors

2) Greater dispersal of virus aerosols in low humidity; also, in humid air, aerosols accumulate water and drop to the ground.

(Lemon 2020)

<https://envirobites.org/2020/04/06/the-viral-threat-of-cold-dry-weather/>

3) Reduced ability of antiviral interferon in nose to defend against virus when cold
(Foxman et al. 2015, Kossakovsky 2020)

<https://www.nationalgeographic.com/science/2020/12/coronavirus-why-cold-winter-weather-makes-it-harder-to-fight-respiratory-infections/>

<https://www.pnas.org/content/112/3/827>

4) When mucus is dried by cold, dry, winter air, it is less able to physically clear viruses
(Kudo et al. 2019)

<https://doi.org/10.1073/pnas.1902840116>

5) An early mutation in the pandemic increased transmissibility; now at least one of the new mutations (the UK mutation) is much more contagious

(Hou et al. 2020) ("Changing with the Times" synopsis)

<https://science.sciencemag.org/content/370/6523/1464>

(Lauring and Hodcroft 2021)

<https://jamanetwork.com/journals/jama/fullarticle/2775006>

Note that a more transmissible virus is more deadly than one that causes a higher mortality rate per case.

(Wilson 2021)

https://www.medscape.com/viewarticle/943936?src=mkm_covid_update_210113_MSCPEDIT&uac=311187PN&impID=2963071&faf=1

6) Transmission rates within households are high.
(Madewell et al. 2020)
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2774102>

7) Semen has tested positive for SARS-2 in recovering patients, but there has been no evidence of sexual transmission.
(Salam and Horby 2017, Li et al. 2020)
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2765654>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5652425/>

8) Vaccine may not prevent infection and transmission (we don't yet know). The vaccine may then give false sense of security and increased transmission.
Precedent from Polio vaccines: Both Salk and Sabin vaccines prevented illness, but only the Sabin prevented infection and transmission.

The superspreading capability of the SARS-CoV-2 virus

Similar *average* transmission as Influenza (as quantified by R_t), but with many individuals who transmit to zero people and some individuals who transmit to 20 or more.
(Enserink et al. 2020)
<https://vis.sciencemag.org/covid-clusters/>

How to #StopTheSpread

Avoid the three C's
Evaluate spaces for human density, ventilation, and yelling/LOL
(Dhaniyala and Erath 2021)
Cautions re Super Bowl!

Flash points of infection from Fall 2020 at Wesleyan:
Large gatherings
Travel

Seriousness of the disease

More news on long-haulers: Losing teeth (maybe), clots everywhere, messed-up smell.
(Carfi et al. 2020, Otman 2020, Witviet 2020, Cortinovic et al. 2021)
<https://theconversation.com/im-a-covid-19-long-hauler-and-an-epidemiologist-heres-how-it-feels-when-symptoms-last-for-months-143676>
<https://jamanetwork.com/journals/jama/fullarticle/2768351>
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)00039-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00039-8/fulltext)
<https://labblog.uofmhealth.org/lab-report/new-cause-of-covid-19-blood-clots-identified#:~:text=Blood%20clots%20continue%20to%20wreak,%2C%20veins%2C%20and%20microscopic%20vessels.>

Mortality of young adults increased by 20% during the pandemic, implicating more Covid deaths than had been thought.

(Lorenz 2020)

<https://www.contagionlive.com/view/trump-administration-recommends-wider-vaccine-eligibility-and-vaccinating-all-over-65>

The communitarian ethics of Covid

Keep ourselves healthy (by avoiding the three C's and getting vaccinated)

Keep your germs to yourself (again, avoiding the three C's)

Vaccination: to yield herd immunity and to lower the global population size of the virus so adaptive mutations become less likely.

Contribute to social justice by not spreading a disease that ends up killing minorities disproportionately

Hopefulness!

And we know how to do this, we know how to prevent transmission, how to control (and maybe even eradicate) the virus, and we can do it!

(Mattis 2021)

<https://theconversation.com/5-strategies-for-cultivating-hope-this-year-152523>

(Najam 2021)

https://theconversation.com/i-spoke-to-99-big-thinkers-about-what-our-world-after-coronavirus-might-look-like-this-is-what-i-learned-146986?utm_medium=email&utm_campaign=Daily%20newsletter%20from%20The%20Conversation%20for%20January%2012%202021%20-%201832117824&utm_content=Daily%20newsletter%20from%20The%20Conversation%20for%20January%2012%202021%20-%201832117824+CID_fa54e6b040df28d2c5b1d16c0f804820&utm_source=campaign_monitor_us&utm_term=I%20spoke%20to%2099%20big%20thinkers%20about%20what%20our%20world%20after%20coronavirus%20might%20look%20like%20%20this%20is%20what%20I%20learned

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