A Primer on COVID-19

The disease
Placing the disease in context
Information backing up present public health measures
Practical tips –beyond standard messages

To be updated periodically
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COVID-19

- Coronaviruses cause diseases in mammals and birds. Some cross species to humans causing zoonotic illness.
- In humans they cause respiratory disease. About a quarter of common colds are caused by Coronaviruses. More serious coronavirus diseases include SARS and MERS.

**Why are novel coronaviruses so dangerous?**
- Our bodies form antibodies to foreign invaders, such as bacteria or viruses.
- If we have antibodies from a previous exposure, then we can rapidly ramp up the production of those antibodies if we are infected by that same virus at a later date.
- COVID-19 is a severe respiratory illness caused by the virus named SARS-CoV2 *. It is a novel virus, which means that no one in the world has antibodies to it because no one has ever been infected by it before.

* The disease is COVID-19, the virus SARS-CoV-2)
Facts about COVID-19

What we know at the moment
Subject to updates as the science progresses

To see real time updates on how many cases by country:
https://www.worldometers.info/coronavirus/

Also https://ourworldindata.org/coronavirus
https://www.visualcapitalist.com/infection-trajectory-flattening-the-covid19-curve/?fbclid=IwAR04x5skmSuFwUQMh2ngq0RjMXslpGAedP2LQn3TcIW87EUvPGa1jdP7oJc#7s8d6f87


To see clinical updates:
https://covid.emrap.org/?fbclid=IwAR1fOrAu3qi1C2vdm9XKco-szla3x6N0ejo2J6vE9j9LkBeEL0cZskQMhc8

For more technical information:
https://www.youtube.com/watch?v=8We9m3egLbc&feature=share&fbclid=IwAR3btoZFfhBPMDvKdgI/MM- 9GBzxwUg_Lm-v3idEiFlqdMeCqi8Z3nufiiQ

From an ER doctor friend March 6th...basic information more or less the same...information in the PP gets into more detail
What are the symptoms and how does it affect my body?

Access information listed below (provide good summaries) in addition to CDC and WHO websites:


• Here’s what coronavirus does to the body: nationalgeographic.com/science/2020/02/heres-what-coronavirus-does-to-the-body

• CDC: https://www.youtube.com/watch?v=l-Yd__XIWjr&feature=share&fbclid=IwAR1g8OJPSInsSmPGdzAe6G8CIRJjtLQgUuVujJZkbdfPE8PQ9502QTtRo4 (good knowledge and recommended practice summary)****
Signs of illness may precede actual symptoms
Pay attention to your senses

- Sudden loss of smell and taste have been documented in approximately 30% of confirmed cases before notable symptoms occurred
- Reported in South Korea, China, and Italy as well as UK and France
- Self isolate as soon as you notice this whether you have other symptoms or not
- Younger patients in particular may demonstrate only a loss of smell or taste, without demonstrating the more commonly recognized coronavirus symptoms of high fever and persistent coughs

Severity: distribution

The Majority of Infections are Mild
Seriousness of symptoms

80.9%

MILD
Like flu, stay at home

13.6%

SEVERE
Hospitalisation

4.7%

CRITICAL
Intensive Care

The Bulk of People Recover
Of total worldwide confirmed cases...

40%

Currently Ill

56.6%

Recovered

3.5%

study of 44,620 confirmed cases in Mainland China
Sources: China Centre for Disease Control & Prevention, Statista

Source: Johns Hopkins University
For emerging data from the USA see:
https://www.cdc.gov/mmwr/volumes/69/wr/mm6912e2.htm?s_cid=mm6912e2_w&fbclid=IwAR0YHb-zMCdB-vvxNVnpUEyXCeoXel2rqlWWVvl0xv5wK0vPmuoy61Ppjok
Those Aged 60+ are Most At Risk

% infectees who die

0% 0.2% 0.2% 0.2% 0.4% 1.2% 3.4% 7% 10.5% 14.8%
0-9 10-19 20-29 30-39 40-49 50-59 60-69 70-79 80+

Especially Those with Existing Conditions

% with other serious ailments who die

- Cardiovascular disease: 10.5%
- Diabetes: 7.3%
- Chronic respiratory disease: 6.3%
- Abnormally high blood pressure: 6%
- Cancer: 5.6%
- No existing conditions: 0.9%
What about those aged 20-64 experiencing COVID-19

- 20% of COVID-19 deaths in the USA (first 4000 cases) as of March 16 were aged 20-64 years
- 20% of those hospitalized were aged 20-44 years.
- Compared with the under-19 year old group, patients aged 20-44 years appeared to be at higher risk for hospitalization and ICU admission

https://www.cdc.gov/mmwr/volumes/69/wr/mm6912e2.htm
Children do not seem to be dying, but can they get very sick

- Children are just as likely as adults to get infected*
- In general, children experiencing all coronaviruses do not become as ill as adults
  - During the previous outbreaks of Severe Acute Respiratory Syndrome (SARS) in HK and Middle East Respiratory Syndrome (MERS) in South Korean, very few pediatric patients were reported. Despite a high mortality rate of SARS and MERS in the adults, there were no fatalities in the pediatric patients. Children appeared to have a milder form of the disease caused by the coronaviruses, including Covid-19 (SARS-CoV-2).**
- There is a range of severity and symptoms of COVID-19 in children***
  - Infected children may be asymptomatic or have fever, dry cough and fatigue; some patients experience gastrointestinal symptoms, including abdominal discomfort, nausea, vomiting, abdominal pain and diarrhea. Most infected children have mild clinical manifestations and usually have a good prognosis. Usually they recover within 1–2 weeks after the onset of the disease.
  - The idea that this is no big thing for youth is misguided – children can still experience pneumonia and be sick for a few weeks

*https://www.medrxiv.org/content/10.1101/2020.03.03.20028423v2
**In China the median age of the infected children was 6.7 years. Fever was present in 41.5% of the children at any time during the illness. Other common signs and symptoms included cough and pharyngeal erythema.
some children develop viral pneumonia.***
- Prior reports suggested that 80% of people got only mild disease, it now appears that about half of these people, despite not needing hospital admission, have moderately severe pneumonia, which can take weeks or longer to recover
https://www.cnn.com/2020/03/20/health/coronavirus-response-must-adapt-frieden-analysis/index.html?fbclid=IwAR0b3_bcQtsdGQTQvwtZYrPzhWRpzi6NIRPKA6zwPGoXTj2TGw0QclvipC8

I have heard that the mortality rate for men is greater than women

- Data from China show that among the tens of thousands of people infected there, 2.8 percent of men died from the virus compared with 1.7 percent of women. The median age of the fatal cases among women was five years older than among men*
- The mortality rate is twice as high among men in Italy as it is among women in every age group **

**Why?**
- Could be many factors
  - Differences in rates of smoking by gender
  - Differences in rates of high blood pressure and heart disease by gender
  - Differences in the way that male and female immune systems respond, and/or as a result of hormonal changes***
    - Differences exist: For example, women tend to have more autoimmune disorders than men
    - Gender differences in the microbiota
  - Differences in medication use

**Note:** Differences in mortality do not hold true for morbidity and mild symptoms do not mean immunity

*http://weekly.chinacdc.cn/en/article/id/e53946e2-c6c4-41e9-9a9b-fea8db1a8f51  
*** nature.com/news/infections-reveal-inequality-between-the-sexes-1.20131
The median age in the country is 47.3, compared with 38.3 in the United States, the Times reported.
How serious is COVID-19 compared to the "flu"

<table>
<thead>
<tr>
<th></th>
<th>FLU</th>
<th>COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RO number</strong></td>
<td>1.3</td>
<td>2-2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bottom of the range, Top of the range</td>
</tr>
<tr>
<td><strong>Incubation time</strong></td>
<td>1-4</td>
<td>1-14</td>
</tr>
<tr>
<td><strong>Hospitalization rate</strong></td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percentage of total cases</td>
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<tr>
<td><strong>Case fatality rate</strong></td>
<td>.1% or less</td>
<td>1-3.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percentage of reported deaths among total cases</td>
</tr>
</tbody>
</table>

Sources: CDC, WHO, NCB

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15
How does it spread?

- This virus is spread in large droplets by coughing and sneezing.
- You are at risk if a person coughing is close to you as droplets descend to surfaces; that is why it’s best to remain 6 feet or more from others.
- All the surfaces where droplets land are infectious for 24 hours to a week depending on what the surface is made out of:
  - A recent study finds that the virus can survive on hard surfaces such as plastic and stainless steel for up to 72 hours and on cardboard for up to 24 hours.

CORONAVIRUS LIFESPAN ON SURFACES

- Airborne: 30 minutes to 3 hours
- Cardboard: 24 hours
- Stainless Steel: 2 days
- Plastic: 3 days
How does it spread?
Protect your nose and mouth

• The virus infects you through your nose or mouth via your hands or an infected cough or sneeze onto or into your nose or mouth
• This virus only has cell receptors for lung cells (it only infects your lungs)
Can the virus remains in the air in aerosol form for some time?

• The primary point of contact appears to be the virus on surfaces
  • At present the biggest concern is the surfaces you touch
• However, some research suggests that the virus may remain in the air for some time
  • For minutes up to three hours, depending on environmental conditions
  • A Chinese, 48-seat bus study found that the virus infected people in a closed environment with air-conditioning up to 15 feet, suggesting that in some environments the transmission distance of this coronavirus exceeds the commonly recognized safe distance of 6 feet.
• Is it wise to wear a mask if riding on a bus? In China, scientists think so.

Asymptomatic & mildly symptomatic in relation to disease transmission

- It appears that a Massachusetts coronavirus cluster with at least 82 cases was started by people who were not yet showing symptoms.
- Several studies have shown that people without symptoms are causing substantial amounts of infection.
- For example, between 48% and 66% of the 91 people in the Singapore cluster contracted the infection from someone who was pre-symptomatic.
- Of the 135 people in the Tianjin cluster, between 62% and 77% contracted the infection from someone who was pre-symptomatic.
- In the U.S., gov’t officials have emphasized that asymptomatic transmission can happen, but that it is not a significant factor in the spread of the virus.
- They also emphasize that among young people, social distancing is crucial to flattening the curve of infection and keeping elders safe—which is an indirect nod to the importance of social distance for all.

* Hence the importance of social distancing
* The > 60 group must distance themselves to youth. Someone you know, even your grandchild may be asymptomatic.
* Engage in safe forms of social interaction with loved ones such as sociality through social media and the phone.

https://www.medrxiv.org/content/10.1101/2020.03.05.20031815v1

Asymptomatic cases were found on the Diamond Princess cruise ship: 322 of 621 people tested positive but showed no symptoms.

See also: New data suggests that for some asymptomatic cases might be contagious for up to 24 days:
Incubation period

- 5.1 days appears to be the median amount of time but the range is much larger.
- Existing data suggests that about 97.5 percent of people who develop symptoms of COVID-19 infection will do so within 11.5 days of exposure.
- The researchers estimate that for every 10,000 individuals quarantined for 14 days, only about 101 would develop symptoms after being released from quarantine.**
- Chinese health officials who previously estimated that the incubation period for the virus ranged from one to 14 days, now suggest it could be as long as 24 days.***

**https://www.medicalnewstoday.com/articles/sars-cov-2-study-confirms-previous-incubation-period-estimates


*** https://www.sciencealert.com/researchers-confirmed-patients-can-transmit-the-coronavirus-without-showing-symptoms?fbclid=IwAR2DWhIb7KLShVyP3tb-KyrybIEZbnNO_mbdtz_rr-D9SFlzQH5ruJ_PEE
When are you most contagious if you have a mild to moderate illness

• In COVID-19 peak shedding occurs from the upper airways early on in the infection, which makes for a virus much harder to contain than another coronavirus like SARS (where peak shedding occurs deep in the lungs).

• At peak shedding, people with COVID-19 are emitting more than 1,000 times more virus than was emitted during peak shedding of SARS infection.

• This most likely explains the rapid spread of the virus. The SARS outbreak was contained after about 8,000 cases; the global count of confirmed COVID-19 cases has already topped 110,000.

https://www.medrxiv.org/content/10.1101/2020.03.05.20030502v1
How many people will a sick person infect? Estimates for COVID-19 will no doubt be subject to revision over time.
Note: Average case-fatality rates and transmission numbers are shown. Estimates of case-fatality rates can vary, and numbers for the new coronavirus are preliminary estimates.
How long do people shed the virus and how does this relate to being contagious?

- Presence of the virus does not necessarily indicate level of contagion
  
  What do we know so far?

- Wuhan data: Median duration of viral shedding was 20.0 days (IQR 17.0–24.0) in survivors.
  - The longest observed duration of viral shedding in survivors was 37 days

- A small but important German study found that people with mild infections can still test positive by throat swabs for days and even weeks after their illness.*

- However, those only mildly sick are most likely not still infectious by about 10 days after they start to experience symptoms, and moderately sick by days 10-11.
  - The scientists could not grow viruses from throat swabs or sputum specimens after day 8 of illness from people who had mild infection.
  - The researchers found very high levels of virus emitted from the throat of patients from the earliest point in their illness—when people are generally still going about their daily routines. Viral shedding dropped after day 5 in all but two of the patients, who had more serious illness

* https://www.medrxiv.org/content/10.1101/2020.03.05.20030502v1
Re-infection? We do not know, but so far it is rare

- Reports of patients testing positive for the coronavirus a second time have come out of China, Japan, and South Korea.
- But some health officials argue with these conclusions, saying they may be the result of relapses or errors in testing.
- Animal studies (rhesus macaques) have not documented cases of re-infection.**
- Dr. Anthony Fauci, thinks it’s likely that someone who gets infected once is actually immune.
- However, much remains unknown about the virus.
- Reports of re-infection have health experts worried that the illness could remain dormant after an apparent recovery.
- “Once you have the infection, it could remain dormant with minimal symptoms,” Philip Tierno Jr., professor of microbiology and pathology at New York University, told Reuters. “And then you can get an exacerbation if it finds its way into the lungs.”

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https://www.biorxiv.org/content/10.1101/2020.03.13.990226v1?fbclid=IwAR3toap3HNstI8YTEn-GR9zp05zYSwcUT_RRj_oCUScG-AnGFF73MxIkxpo
How fast does this virus escalate?

Depends on steps taken during trajectory of illness
**Exponential spread:** For every six days that we delay engaging in social distancing, the number of infections doubles.

**Official line:**
- Every person with the COVID-19 virus infects approximately two to four people.
- The infection rate doubles every six days (there is a range depending on what policies/programs different countries are implementing).
- That means that if 50,000 people have the virus today, then in 6 days, 100,000 people will have it.
- In another 12 days it’s 400,000 and less than two weeks later it’s over a million people.
- We have 330 million people in the US. The experts expect that 40-70% of people will be infected.

Exponential growth: get educated  [https://www.youtube.com/watch?v=Kas0tIxDvrg](https://www.youtube.com/watch?v=Kas0tIxDvrg)
Total confirmed cases of COVID-19

The starting point for each country is the day that country had reached 100 confirmed cases. This allows us to compare the trajectory of confirmed cases between countries. Because of limited testing the number of confirmed cases is lower than the number of total cases.

Source: WHO COVID-2019 Situation Reports OurWorldInData.org/coronavirus • CC BY
New coronavirus
Most estimates put the fatality rate below 3%, and the number of transmissions between 2 and 4.

Note: Average case-fatality rates and transmission numbers are shown. Estimates of case-fatality rates can vary, and numbers for the new coronavirus are preliminary estimates.
Exponential spread

Total number of confirmed U.S. coronavirus cases at each Tuesday: January to March 10
Jan. 14 — 0
Jan. 21 — 1
Jan. 28 — 5
Feb. 4 — 11
Feb. 11 — 14
Feb. 18 — 25
Feb. 25 — 59
Mar. 3 — 125
Mar. 10 — 1,004
Exponential Spread, USA

New coronavirus cases announced in the U.S. each day

Source: C.D.C., state and local health agencies, hospitals.
Most western countries are on the same coronavirus trajectory. Hong Kong and Singapore have limited the spread; Japan and S Korea have slowed it.

Cumulative number of cases, by number of days since 100th case.

Trajectories by Intervention Approaches

China had 68,357 cases at 28 days

S Korea: huge testing programme, stringent case isolation

Japan: strong social norms around obedience and mask-wearing

Hong Kong: school closures, quarantine, community response

Singapore: strict quarantine rules & contact tracing

Source: FT analysis of Johns Hopkins University, CSSE, Worldometers. Dates updated March 20, 19:00 GMT © FT

https://www.ft.com/coronavirus-latest?fbclid=IwAR0cINvM4solcvg4gHnfKAjZlvBrixklzaabojezllqVXcVh1rwCrgeY4P4
Where are we in the disease trajectory?

Based on the trajectory of other types of pandemic influenza
PANDEMIC INFLUENZA PHASES (2009)

PHASES 1-3
- Predominantly animal infections; few human infections

PHASE 4
- Sustained human-to-human transmission

PHASES 5-6 / PANDEMIC
- Widespread human infection

POST PEAK
- Possibility of recurrent events

POST PANDEMIC
- Disease activity at seasonal levels
When will COVID-19 peak in the USA?
Depends on our actions NOW.

It left unmitigated, some epidemiologist-modelers anticipate a peak sometime mid-summer with different peaks for different states.

*The figure is but one estimate ... it may well change.*

Trajectory
Italy: projected

1. Daily new cases begin to decline after the peak. Hospital load will still increase for another 10-15 days.

2. Epidemic peak: new cases begin to decrease compared to daily cases with an outcome. Maximum hospital load.

3. New cases trend towards zero. SIR high hospital load.
Herd immunity

And the COVID-19 infection curve that everyone is talking about
Herd immunity is key to control in an epidemic like this

- Herd immunity (also known as community immunity) is defined by the CDC as “a situation in which a sufficient proportion of a population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely.”

- The theory behind herd immunity is that when someone gets vaccinated, it’s not only that person who is protected from infection—they can’t transmit the disease to other people.

- Herd immunity protects people who cannot be vaccinated because their immune systems aren’t strong enough and are therefore the most vulnerable to serious illness.
An example of herd immunity via vaccination is the measles outbreak among preschool-age children in the United States

- In the late 1980s, the attack rate of measles decreased faster than an increase in the rate of vaccination coverage
- Researchers who examined the association between incidence of measles and immunization coverage among preschool-age children concluded that immunization coverage of about 80% may be enough to stop sustained measles outbreaks in an urban community
COVID-19 is different from measles as there is no vaccine: So the herd immunity situation is different

- There’s no vaccine for COVID-19 yet—there will probably not be one available to the public for a year.
- The only option is recovery, which means letting the majority of people catch the virus at some point.
- **But not at the same time or the health system gets swamped**
- The curve everyone is talking about = spreading out rate of infection to reduce case load
Adapted from CDC / The Economist
Proactive measures taken early in an epidemic reduce burden on the healthcare system and slow the spread of disease.
Why is testing so important?

• It is important to diagnose people quickly and to prevent spread of COVID-19 to the community through isolation of infected people and contact tracing when feasible.

• Effectiveness seen in South Korea
  • Used the WHO validated test and made a simple decision: Test as many people as possible even with minor suggestive symptoms and get results back quickly
  • Contact trace
  • Isolate

• If we only wait until one is very ill to administer a test—those with minor or no symptoms spread the disease
The only way of slowing down the number of cases and serious cases needing hospitalization in the USA at this time

Social distancing
Now
Not when there are many cases in your community
THE POWER OF SOCIAL DISTANCING

NOW
1 PERSON
INFECTS
2.5 PEOPLE INFECTED
406 PEOPLE INFECTED

50% LESS EXPOSURE
1 PERSON
INFECTS
1.25 PEOPLE INFECTED
15 PEOPLE INFECTED

75% LESS EXPOSURE
1 PERSON
INFECTS
0.25 PEOPLE INFECTED
2.5 PEOPLE INFECTED

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@garywarshow
How do we know social distancing and (when warranted) quarantine work?

We know from both history and what other countries have done already.
There is a reason for canceling public gatherings. In a pandemic, don’t be Philadelphia (held a parade in 1918 when cases started to come up, downplayed cases), be St. Louis (canceled gatherings). [https://www.pnas.org/content/104/18/7582](https://www.pnas.org/content/104/18/7582)

See also the story of Gunnison Colorado: [https://getpocket.com/explore/item/gunnison-colorado-the-town-that-dodged-the-1918-spanish-flu-pandemic?utm_source=pocket-newtab&fbclid=IwAR18il6dkpg_UgrZ8Q_hEUwDS_CdQzkdW0hBPHUYchrQodDrmxWsOD6AMY5g](https://getpocket.com/explore/item/gunnison-colorado-the-town-that-dodged-the-1918-spanish-flu-pandemic?utm_source=pocket-newtab&fbclid=IwAR18il6dkpg_UgrZ8Q_hEUwDS_CdQzkdW0hBPHUYchrQodDrmxWsOD6AMY5g)
Lessons learned from Asian countries doing the best to contain the disease

• What has worked the best in Asia:
  • Early travel restrictions
  • Aggressive testing and screening of contacts
  • Strict quarantine rules

• Which countries:
  • Taiwan, Hong Kong, Singapore

  ➢ What they have in place enabling them to do so
    • Universal healthcare
    • Clear management structures for the public health response
    • Proactive communication protocols to get the population on board
    • Experience with containing SARS

https://www.ft.com/content/e015e096-6532-11ea-a6cd-df28cc3c6a68
Hong Kong and Singapore have limited the spread of coronavirus; S Korea is slowing the rate of infection. Most western countries show a similar trajectory.

Cumulative number of cases, by number of days since 100th case.

Source: FT analysis of Johns Hopkins University, CSSE. Data updated March 13, 16:00 GMT.

© FT
Chart 3: Infections and Deaths If We Do Nothing in the US

Transmission Dynamics
- Population inputs
  - Size of population
  - Number of initial infections
- Basic Reproduction Number $R_0$
- Transmission Times
  - Length of infection period
  - Duration patient is infectious $T_{inf}$

Clinical Dynamics
- Mortality Statistics
  - Case fatality rate
- Recovery Times
  - Length of hospital stay
- Care statistics
  - Hospitalization risk
  - Time from end of isolation to death
  - Recovery time for mild cases
  - Time to hospitalization

Chart 8: Suppression Strategy According to the Imperial College

What to do at home

What not to do
Beyond obeying social distancing mandate

WHO advice (general) https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public?fbclid=IwAR0AvXtOzh_6nSD9K7YK0OuGsdfsfw_fvJFGHyrlSnkMA0fOC0727b-nuVM
Wash your hands: learn how and with what

- Standard message: Wash your hands with soap thoroughly for 20 seconds and/or use a greater than 60% alcohol-based hand sanitizer
- **Soap and water is more effective than hand sanitizers**
  - Use hand sanitizer when no soap and water alternative
  - Baby wipes are not effective
- Whenever you return home from ANY activity that involves locations where other people have been, wash your hands with soap
- Money exchange is a possible route of transmission
  - Wash hands afterward
  - Do not try to launder money by microwave—it does not work

Humor—but right on and good for children to turn hand washing into a game:
https://www.facebook.com/1laww/videos/556395585081332/?t=2
Clean surfaces you routinely touch – or that are touched by others – often

- Counters, door knobs, steering wheel, bathroom
- Cell phones, computer keyboards
- Use appropriate cleaning products (look up approved list cited in notes)***
  - An effective bleach solution can be made by mixing 1/3 cup or 5 Tablespoons per one gallon of water or 4 teaspoons or 20 cc per quart.
- How about ultraviolet light devices?
  - Only type C are effective and only for smooth surfaces (think cell phone or a screen). UV-C penetrates superficially, and the light can’t get into nooks and crannies. It also irritates skin (not to be used on hands or face)

***For example what cleaning products are effective for cleaning counters: https://www.americanchemistry.com/Novel-Coronavirus-Fighting-Products-List.pdf
Should we disinfect the air periodically? No

• Although COVID-19 is spread by the airborne route, air disinfection of cities and communities is not known to be effective for disease control and needs to be stopped.
• The widespread practice of spraying disinfectant and alcohol in the air and on roads has no value and may actually be harmful to our individual and community health microbiota.
To mask or not to mask

- Wearing a mask will probably make little difference if you’re just walking around town.
- If wearing a mask is the only way to keep from touching your nose and mouth in public they serve that purpose – but they are not comfortable.
  - They are symbolic – psychologically comforting - a form of harm reduction rendering a feeling you are doing all you can do.
- If you are likely to be in close contact with someone infected, a mask cuts the chance of the disease being passed on.
- If you’re showing symptoms of coronavirus, or have been diagnosed, wearing a mask can also protect others.
- Masks are recommended for family members who need to care for someone who is ill – ideally both the patient and caretaker should have a mask.
- If you wear a mask, then you must know how to use it and dispose of it properly.***

https://time.com/5794729/coronavirus-face-masks/
But they wear masks in Asia and...

- **Civic responsibility**: Wearing a mask is not just for protecting yourself from getting infected, but also minimizing the chance of potential infection harboring in your body from spreading to people around you.
- In some Asian countries, this is a sign of health citizenship *
- **Note**: If you are asymptomatic and contagious, masks might reduce the spread of disease...at present this is being played down but in Asia there is an opinion that this slows down the spread of the virus in public
  - Refer to slide on how long the virus may remain in the air in enclosed air-conditioned environments like a bus**
  - More data is needed on distance and duration of viral spread in the air

*https://time.com/5799964/coronavirus-face-mask-asia-us/ also
https://www.sapiens.org/culture/coronavirus-mask/
Surgical vs. N95 masks

- N95 masks are to protect YOU from the secretions of others, and the surgical mask is to protect others FROM you.
- Although surgical masks are in widespread use by the general population, there is no evidence that these masks prevent the acquisition of COVID-19, although they might slightly reduce the spread from an infected patient breathing in your face.
  - Cloth masks (bandanas, etc.) are not effective*
- A well-conducted, large, cluster randomized trial, undertaken largely in US primary care settings, did not identify a meaningful benefit from N95 respirators when compared to surgical masks for the prevention of influenza among staff.**
- N95 masks are most needed by those in hospital settings and are in short supply.

Masks are in short supply for health care workers

- Do not stockpile and use only when sick
- Conserve them so those who work in health care settings have adequate protection until the supply is plentiful
Food or food packaging has not been identified as a risk factor for COVID-19 transmission

- Currently there is no evidence to support transmission of COVID-19 associated with food (food itself – not packaging or handling).
- There is likely very low risk of spread from food products or packaging that are shipped over a period of days or weeks at ambient, refrigerated, or frozen temperatures.
- There is also no evidence to support transmission of COVID-19 associated with imported goods and there have not been any cases of COVID-19 in the United States associated with imported goods.
Do not engage in diagnosis by treatment

Do not take left-over antibiotics you have at home to see if your respiratory illness is bacterial or viral.
Get a flu buddy and prepare your home

• Get a flu buddy (aka “pandemic pal”) and make back-up plans for care of children, pets, and those in need of special assistance
• Prepare a hot zone in your home just in case someone falls ill
• Stock up on essential foods and medicines, etc.

Young Kids and COVID-19 spread

- Data from the epidemic in China: kids get infected at the same rate as the population average
- Kids are less likely to get severely sick than adults, but are just as contagious
- Parents and grandparents can get very sick from children
  - Limit contact with *grandparents > 60 years of age, especially if suffering from a chronic disease like diabetes or respiratory problems or if a smoker
- Play: Form a small playgroup and play outside. Adults should stand > 6 feet away from children other than their own
  - Don’t go into each other’s homes
  - Playgrounds: COVID-19 virus can live on surfaces for hours or days in a laboratory environment, but there are no data that I am currently aware of regarding survival of the virus on playground equipment.

Why schools have to be closed
What if I have symptoms and am concerned I might have COVID-19?

• If you high fever, a persistent cough, or signs of respiratory distress such as shortness of breath you need to seek medical attention.
• What to do: Call ahead to your doctor or emergency care facility. Do not just walk in or you risk other lives.
  • Waiting rooms are often full of older patients with heart disease, cancer, and other conditions for whom the coronavirus could be fatal
• Call ahead and receive instructions.
• If symptoms are not severe you will be given instructions on how to self treat and monitor your symptoms and if a test is necessary and available at the time of assessment by phone.

https://www.statnews.com/2020/03/20/self-triage-tool-covid-19/?fbclid=IwAR12HgTJ-HtkV1Ws_KBqHzLpjQYNmq2vD9Cn__2L_CctmLVwpb_MzFrLo4
What if I suspect my child has COVID-19?

- If you think symptoms are serious enough to see a doctor, call your doctor
- If your child has the virus, clinicians will provide supportive care to children with COVID-19
- No special antiviral drugs have been approved for treatment

What else can I do if I feel I am “coming down with something”

- There are additional measures that **may reduce** the risk of infection and the severity of this disease:

- **Care for your throat and engage in practices that support the self-cleaning powers of the respiratory tract**
  - Like what? Gargling with salt water or antiviral mouthwash, steam inhalations...true for all types of influenza

- Zinc supplements **may reduce the duration of the illness** and are available in capsule, tablet, and lozenge form. One review of seven studies showed that zinc lozenges containing 80-92mg of zinc may reduce common cold duration by up to 33%. Zinc-containing nasal sprays should be avoided. *****


**[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5418896/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5418896/)**
Personal Notes

- We need to get past fear-based messaging to community-based messaging and messaging that appeals to our sense of global as well as local health citizenship.
- COVID-19 needs to be treated as a family and community disease — if it is, the pandemic will be controlled faster — We learned this with Ebola. We need to provide those who need to self-quarantine with the resources to enable them to do so.
- We need to get into the weeds with a “devil in the details” approach to keeping ourselves safe.
- **Above all else: stay put, cocoon**
- Social distancing does not mean social disconnection — this is a time for community building, not social isolation at the personal or country level. We are in this together.
This is a test of family and cultural values as well as political responsibility.

- It is also a time for thinking about serious health care reform and the need for safety nets enabling public health recommendations to be implemented quickly by the average citizen = sustained economic support during the crises for all, especially the most vulnerable
- We must be prepared for periodic pandemic and reemerging disease threats. They are really not all that uncommon!!!!
Major Emerging and Re-emerging Infectious Disease Outbreaks, 2002-2020

Data Source: World Health Organization
SARS, severe acute respiratory syndrome; MERS, Middle East respiratory syndrome
Your responsibility as a university professor

• Aside from staying safe yourself, making sure your students are not compelled to be in spaces where they are going to be exposed
  • For example, university students without internet who may go to coffee shops to get online
  • Provisions for them to get internet to complete classes
• Educating youth about why their social distancing is so important to containing this disease and preventing the swamping of our health care system which is ill prepared for a large surge
  • Making this an ethical and citizenship issue
• Dispelling the impression that “youth will only get a mild case with flu-like symptoms which is no big deal”
  • Note: More young people are being admitted to hospital in Italy with coronavirus, as the outbreak continues...this follows a first wave of the elderly being hit hard


What can you do as an engaged anthropologist

Action items: here are a few examples

- Social determinates of health: Beyond looking at rates of disease by group, consider the ability of specific groups in specific home, community, and work environments to adhere to public health social distancing guidelines
  - Identify constraints and opportunities for reducing risk
    - What may be done to reduce risk of contagion that is feasible
    - What resources would make a big difference
    - Move the discussion from groups at risk and risky behaviors to environments of risk

- Identify what information sticks and does not stick, given all that is out there and changing on a day by day basis — Participate in translational research efforts and identifying/supporting local spokespeople who are trusted and can act as filters of information.

- Remind everyone that the household is an important unit of analysis: the families of both the ill and health care providers whose families themselves may be seen as dangerous to interact with and be indirectly stigmatized

- Consider opportunities for social connection and support for different types of people at this time of high risk contagion so social distancing does not become social isolation over what is likely to be a several-month social isolation trajectory
Concerns

> Political partisanship may be our undoing if it undermines public health dictates

- Youth will blow this illness off and not socially isolate
- Elders will not self isolate because they want to be close to their families and grandchildren
Bottom line:
Stay put, cocoon.
Check in on your family, friends, neighbors. Don’t just think of yourself.

Your grandparents were called to war. You’re being called to sit on your couch. You can do this.
COVID-19 response will require adaptation over time
On several different levels