NOVEL CORONAVIRUS:
What do we think and what do we know?
Updated – April 9, 2020 for President’s Council Virtual Meeting

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Novel Coronavirus – Technical name, SARS-CoV-2 (disease it causes is COVID-19)

*Image from the New York State Department of Health*
What do we know?

- **COVID-19 Disease**: mainly fever, cough, difficulty breathing, lower respiratory distress
- **Incubation period from infection to becoming ill**: A few days
- **Disease severity**: roughly 80% cases mild; roughly 15-20% more serious and need care (often including hospitalization); mortality rate maybe 1 to 2% (learning more about this as testing rolls out)
  - Very disproportionately impacts **older persons and persons with underlying medical conditions** but young persons can become infected, can become ill, and if infected can transmit the virus
  - **Compared to influenza**: Fewer cases and deaths than influenza, but probably a more severe disease than flu, and higher death rate than flu (lesser mortality rate than SARS and MERS)
- **Mode of transmission**: virus in droplets spread by coughing, touching surfaces (virus maybe present in fecal matter, but no reported cases of transmission via that pathway yet; new NEJM study also looked at virus surviving on variety of surfaces and in laboratory aerosol environments)
As of April 8, 2020 (but changing by the hour)...

- **Global Cases**: Over 1,504,971
- **Global deaths**: Over 87,984
- **Countries/territories with cases**: over 180 (in order of no. cases: US, Spain, Italy, France, Germany, China, Iran, UK, Turkey, Belgium, Switzerland, Netherlands, Canada, and many others)
- **# of cases in the U.S.**: over 424,945 (in all states)
- **# of deaths in the U.S.**: over 14,600
- **# of cases in New York**: 149,316 cases out of 365,153 tests for 40.1% positivity rate (81,803 in NYC out of 160,130 tests for a 51.1% positivity rate) (indicates diagnostic use of tests)
- **# of deaths in New York**: 6,268
- **New York community transmission**: Yes (also, NY has declared a “State of Emergency”)
- **New York number in quarantine/isolation**: several thousand (very hard number to pinpoint)
Persons Tested Positive by County

County Stats

<table>
<thead>
<tr>
<th>County Name</th>
<th>Number of Persons Tested</th>
<th>Tested Positive</th>
<th>% Positive Results</th>
<th>Persons Tested Today</th>
<th>New Positives Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>4,404</td>
<td>342</td>
<td>7.8%</td>
<td>74</td>
<td>9</td>
</tr>
</tbody>
</table>
Increase in Total Patients Hospitalized
Building Additional Capacity Worked

“Surge + Flex”
- 50% additional hospital capacity
- Sharing equipment

If new hospitalization rate keeps decreasing, system will stabilize – need minimized for relief.

JAVITS

USNS COMFORT

STAY HOME.  STOP THE SPREAD.  SAVE LIVES.
Number of Deaths

April 2: 562
April 3: 630
April 4: 594
April 5: 599
April 6: 731
April 7: 779

STAY HOME. STOP THE SPREAD. SAVE LIVES.
Why are more African-Americans and Latinos affected?

<table>
<thead>
<tr>
<th>RACE/ETHNICITY</th>
<th>NYC</th>
<th>NYS Excl. NYC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>34% of deaths (29% population)</td>
<td>14% of deaths (11% population)</td>
</tr>
<tr>
<td>Black</td>
<td>28% of deaths (22% population)</td>
<td>18% of deaths (9% population)</td>
</tr>
<tr>
<td>White</td>
<td>27% of deaths (32% population)</td>
<td>62% of deaths (75% population)</td>
</tr>
<tr>
<td>Asian</td>
<td>7% of deaths (14% population)</td>
<td>4% of deaths (4% population)</td>
</tr>
<tr>
<td>Other</td>
<td>4% of deaths (3% population)</td>
<td>3% of deaths (1% population)</td>
</tr>
</tbody>
</table>

STAY HOME. STOP THE SPREAD. SAVE LIVES.
We Must Learn and Be Better

• Learn the lessons now!
• Test / Research / Grow

SUNY Albany
Dr. Havidan Rodriguez
AND
NYS Dept. of Health / Northwell Health

More Testing + Research

STAY HOME.  STOP THE SPREAD.  SAVE LIVES.
Tools to Combat COVID-19

- **Test available?**: Yes (but very slow rollout in U.S. until now)

- **Treatment available?**: No (*but studies are underway, including rapid work at UAlbany in partnership with NYS DOH on hydroxychloroquine, azithromycin and chloroquine*)

- **Vaccine available?**: No (we are 1 to 1.5 years away)

Therefore, the only pathway to contain the disease is to disrupt the transmission using behavioral and social measures, and environmental cleaning.

These measures include the following…..

*Image from cdc.gov*
Individual behavior change

Proper handwashing and sanitizing, coughing into sleeve, avoiding touching of face, staying home if sick, CALLING doctor if you feel unwell.

- These are straightforward and should be done now (and always)
- Masks generally used for (a) health care providers, and (b) persons who have COVID-19 to avoid transmission to others. Now advice is emerging to encourage all to wear face coverings in particular to avoid asymptomatic (undiagnosed) transmission.

*Image from cdc.gov
Physical Distancing (sometimes called “Social Distancing”)

Goal: trying to keep everyone six feet or more apart, and avoiding interactions that could lead to the acquisition of novel coronavirus from mutually touched environmental surfaces

• These strategies can be more difficult than individual behavior change because we are social beings - highly interrelated to each other for education, business, social connection, etc

• In fact, while we need to maximize physical distance, we actually also should find creative ways to maximize social interaction (via videoconferencing and other methods)
Physical distancing continued

1. An array of terms being thrown about at this time….
2. **Quarantine** of persons who maybe exposed but not yet experiencing illness (self- or mandatory)
3. **Isolation** of persons who have contracted the novel coronavirus (self- or mandatory; home, hospital or other secured location)
4. Physical (or Social) distancing of many persons who may or may not have been exposed :
   A. China, Spain, France, and Italy closing entire geographic regions (**cordon sanitaire**)  
   B. Many, entire US States “closing” (but w/ a number of essential services exceptions) 
   C. SXSW music festival cancellation; NHL and NBA season cancellations 
   D. Teleworking 
   E. Teleschooling
Physical distancing examples

1. Travel restrictions to/from essentially every country (a global Level 4 travel advisory which includes the US)

2. Holding cruise ships with some ill passengers at sea until further testing can be done

3. **NY State Actions** (just a few highlights) ([https://coronavirus.health.ny.gov/home](https://coronavirus.health.ny.gov/home))
   1. Decrease in-office personnel by 100%; non-essential employees must work at home
   2. School districts engaged in teleschooling
   3. Closed shopping malls, amusement parks, bowling alleys, bars and restaurants (take out or delivery of food is allowed), and many other establishments
   4. Broadway closed
   5. Waiving all state, local and county park fees (but discouraging congregating in parks such as in pick-up basketball games…and closing playgrounds where this is not observed)
From NY Times, March 11, 2020 (updated March 17, 2020)
China and South Korea have shown it's possible to flatten the curve of the coronavirus outbreak. In many other countries, the number of known coronavirus cases is still growing rapidly.

See which countries have flattened their curve.

Which Country Has Flattened the Curve for the Coronavirus?
These charts show the trajectory of the coronavirus pandemic in each country. New cases have dwindled in China and South Korea, but the vir...
Cumulative number of cases (by number of days since 10,000 cases)

Cumulative number of cases, by number of days since 10,000 cases

Source: Worldometer - www.worldometers.info
• Saying “self-quarantine” at home implies you have a home
• Saying “stock up on supplies for two weeks” implies you have the resources to do so
• Saying “stay at home if you are ill” implies you have paid sick leave (or can afford to miss the pay)
• Saying “don’t come to school” implies you have somewhere else to go and food to eat

• For reasons of justice, and because anyone of us is only as well as are the rest of us, we must find ways to ensure that all can take these key preventive measures in our community

• Further, we must fight stigma wherever we find it
In closing:

- At the end of February, I spoke of this in terms of a hurricane watch vs. a hurricane warning...and said at that time I thought we were in “watch” phase; now we are in “warning” mode and the hurricane is now on shore….question now is how we are close to the eye of the hurricane and which way the hurricane drifts
- The time to act is right now (Dr. Tony Fauci of NIH is now quoted as saying it has become time for “all hands on deck”; many mathematical modellers say that now literally everyday counts)
- On March 31, 2020, Dr. Tony Fauci said that while we have to be prepared for 100,000 or more COVID-19 deaths in the US we should not be prepared to accept it. I agree, every moment matters and we have to save every single life that we possibly can, reduce morbidity to the maximum extent possible, and address social injustices evident in this pandemic.
Resources

Coronavirus information from the New York State Department of Health (NYSDOH):

Coronavirus information from the Centers for Disease Control and Prevention (CDC):

Coronavirus information from the Albany County Department of Health (ACDOH):

For Immediate Assistance
New York State Coronavirus health hotline:
1-888-364-3065
Call with questions or concerns about travel and symptoms

Note: The NY State Coronavirus health hotline can be used for any questions about COVID-19, including what to do if you or a team member becomes ill and you need to find local clinical resources

*Updated March 7, 2020*

SARS-CoV-2 Stability Similar to Original SARS Virus

March 17, 2020

The virus that causes coronavirus disease 2019 (COVID-19) is stable for several hours to days in aerosols and on surfaces, according to a new study from National Institutes of Health, CDC, UCLA and Princeton University scientists in The New England Journal of Medicine. The scientists found that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was detectable in aerosols for up to three hours, up to four hours on copper, up to 24 hours on cardboard and up to two to three days on plastic and stainless steel. The results provide key information about the stability of SARS-CoV-2, which causes COVID-19 disease, and suggests that people may acquire the virus through the air and after touching contaminated objects. The study information was widely shared during the past two weeks after the researchers placed the contents on a preprint server to quickly share their data with colleagues.

The NIH scientists, from the National Institute of Allergy and Infectious Diseases’ Montana facility at Rocky Mountain Laboratories, compared how the environment affects SARS-CoV-2 and SARS-CoV-1, which causes SARS. SARS-CoV-1, like its successor now circulating across the globe, emerged from China and infected more than 8,000 people in 2002 and 2003. SARS-CoV-1 was eradicated by intensive contact tracing and case isolation measures and no cases have been detected since 2004. SARS-CoV-1 is the human coronavirus most closely related to SARS-CoV-2. In the stability study the two viruses behaved similarly, which unfortunately fails to explain why COVID-19 has become a much larger outbreak.

See also -- https://www.statnews.com/2020/03/16/coronavirus-can-become-aerosol-doesnt-mean-doomed/
What do we know?

- Virus: newly known to humans since very late 2019
- Called SARS-CoV-2
- Disease it causes is called COVID-19
- In media, often called “new coronavirus” or “novel coronavirus”
Environmental cleaning and sanitizing surfaces

- Guidance from NYS Department of Health for cleaning schools maybe relevant for other entities, too
  - Available at the following website:
  - These cleaning strategies are straightforward and emphasize frequently touched surfaces, but may require further resources and staff to implement
- EPA list of registered antimicrobial products for SARS-CoV-2:
- An important example: new schedule for subway sanitization/cleaning in New York City
Cumulative number of deaths (by number of days since 100 deaths)

Cumulative number of deaths, by number of days since 100 deaths

Source: Worldometer - [www.worldometers.info](http://www.worldometers.info)