

# SARS-CoV-2 Update

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# What is COVID-19?

- A novel coronavirus and specifically a betacoronavirus similar to the SARS-CoV virus seen in the 2003 outbreak.
- Genetically very similar several bat coronaviruses.
- The first case of zoonotic transmission was identified in Wuhan China in December 2019.
- It is unclear if this transmission occurred directly from bats to humans or if there was an intermediary host.
- Given the similarities with the original SARS-CoV virus this virus has been designated SARS-CoV-2.

# Is there more than one type of SARS-CoV-2?

- Yes, although the exact number and clinical significance is unclear.
- There are currently two designated strain "types".
- "L", accounting for 70% of strains and "S" accounting for 30%.

# How is SARS-CoV-2 Transmitted?

- This is not completely understood but at the time of this town hall person to person transmission is thought to occur mainly through respiratory droplets which are expelled when someone coughs or sneezes.
- It's important to remember that you can't necessarily see these droplets with your naked eye. Droplets generally are expelled less than 6 feet.
- You can also transmit the virus by touching a contaminated surface and then touching mucous membranes like your mouth, eyes, nose.
- In some cases the virus can be aerosolized and might remain in the air for up to 3 hours. Aerosolizing procedures include intubation, NIV, CPR, BVM, Trachs.
- Lastly, virus has been identified in stool but it is unclear if fecal oral transmission is occurring.

# How long is someone contagious?

- There is a range. The median duration of virus shedding is 20 days with a range of 8-37 days.

# Can someone be contagious without showing symptoms?

- This is not clear and is hotly debated.
- There may be transmission from asymptomatic individuals.
- At this time best practice is to assume that anyone is infectious and take the appropriate precautions.

# Can I get infected again if I already had the virus?

- Again this isn't clearly understood.
- There does appear to be immunity.
- Some institutions are treating patients with plasma from recovered patients with early reports of good outcomes.
- Non-human primates infected with the disease who recovered and were re-challenged appear to have immunity.
- It's unclear if the severity of the infection determines the subsequent level of immunity or if infection can occur with a different strain.

# Is there a vaccination for SARS-CoV-2?

- Not yet approved for mass use but several trials are underway in human subjects.



# What is the incubation period of SARS-CoV-2

- The median is 4 days but can be up to 14 days.

# What are the symptoms of SARS-Cov-2?

- The most common symptoms include fever, cough, SOB, fatigue, myalgias.
- Atypical symptoms such as abdominal pain, HA, diarrhea, sore throat, pleurisy, congestion, nausea and vomiting have also been reported as have disturbances in taste and smell.
- Some people may remain asymptomatic.

# What's the breakdown of how sick people get?

- 81% have mild disease which means no, or mild pneumonia.
- 14% have severe disease which means pneumonia with SOB, hypoxia, or >50% lung involvement on imaging within 24-48 hrs.
- 5% have critical disease with respiratory failure due to ARDS, sepsis, MOF, arrhythmias, myocarditis.
- Mortality 2.3%. This number varies greatly by age.

# What contributes to someone's risk of getting really sick with SARS-Cov-2?

- There are several risk factors including age, male gender, CVD, diabetes, HTN, chronic lung disease, cancer, CKD, obesity, liver disease.
- While people with these risk factors are higher risk anyone at any age and without underlying health issues can still become very sick.

# What labs might be abnormal in SARS-CoV-2?

Lymphopenia

Elevated LFTs

Elevated LDH

Elevated CRP

Elevated Ferritin

Elevated D-dimer

Elevated PT

Elevated Troponin

Elevated CK

Elevated Creatinine

# What are the imaging findings in SARS-CoV-2

- CT and CXR commonly show air space opacities such as ground glass opacities plus or minus consolidation.
- Generally these findings are bilateral and peripheral and involve the lower lobes.
- Pleural effusion and thickening are less common.
- Findings of ARDS are present in critical patients.

# How long does it take to get better?

- For mild infections it appears to be 2 weeks with a 3-6 week recovery for severe infections.

# How do you treat SARS-CoV-2?

- There is as of yet no specific treatment.
- There is anecdotal or limited evidence that perhaps azithromycin plus hydroxychloroquine may be beneficial.
- Steroids do not seem to be beneficial.
- Plasma from recovered patients (convalescent plasma) may be beneficial.
- LMWH may be beneficial.
- Several anti-virals like Remdesivir may also be helpful.
- IL-6 pathway inhibitors have also been suggested as a treatment.
- Ascorbic acid (vitamin C) may have some benefit
- Otherwise treatment is supportive and in most patients no care beyond oral fluids and oral acetaminophen are necessary.
- In sicker patients supplemental oxygen may be required.
- In critically ill patients intubation and mechanical ventilation as well as vasopressors, hemodialysis, or ECMO may be required.
- There is some suggestion that IVF's should be limited.



# Why are people saying I should avoid Ibuprofen and some other common medications?

- The virus uses an enzyme called ACE-2 on the surface of the cell to enter the cell.
- These drugs increase expression of this enzyme and it's theorized that because of this the virus may have an easier time infecting cells.
- There is no clinical data that this is true however.

# How do I avoid getting sick or contaminating others?

Avoid unnecessary contact with others and maintain a distance of at least 6 feet.

Wash your hands.

Avoid touching your face.

Wear appropriate PPE based on your exposure risk.

Launder your clothes after work and shower.

Cover your mouth when you cough or sneeze.

Clean and disinfect frequently touched objects.

# Questions?

Please use the Zoom Q&A function if you have any questions!

Several questions that were sent in ahead of time.

- 1) How many ventilators does NIH have?
- 2) Can I get a COVID-19 test?
- 3) What are the hospital and county doing to prepare for a surge?
- 4) How many cases can NIH handle?