Coronavirus: What You Need to Know

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No relevant financial relationships to disclose
We love acronyms. Don’t get lost:

<table>
<thead>
<tr>
<th>What I say</th>
<th>What I mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIIR</td>
<td>Airborne infection isolation room</td>
</tr>
<tr>
<td>PUI</td>
<td>Patient under investigation</td>
</tr>
<tr>
<td>COVID-19</td>
<td>Disease caused by novel coronavirus</td>
</tr>
<tr>
<td>ILI</td>
<td>Influenza-like illness</td>
</tr>
<tr>
<td>SARS-CoV-2</td>
<td>New name for the virus that causes COVID-19</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal protective equipment</td>
</tr>
</tbody>
</table>
Background

- An outbreak of respiratory disease caused by a novel (new) coronavirus that was first detected in Wuhan City, Hubei Province, China.
- The virus has been named “SARS-CoV-2” and the disease it causes has been named “coronavirus disease 2019” (abbreviated “COVID-19”).
- On January 30, 2020, the International Health Regulations Emergency Committee of the World Health Organization declared the outbreak a public health emergency of international concern. On January 31, 2020, Health and Human Services Secretary Alex M. Azar II declared a public health emergency for the United States.

Coronaviruses are a large family of viruses that are common in many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people and then spread between people.

- SARS-CoV, MERS-CoV, SARS-CoV-2

Early on, many of the patients in the COVID-19 outbreak in Wuhan, China had a link to a large seafood and live animal market, suggesting animal-to-person spread. Later, a growing number of patients reportedly did not have exposure to animal markets, indicating person-to-person spread.

Person-to-person spread has been reported outside China, including in the United States. Sustained person-to-person spread in the community is occurring in China and apparent community spread is occurring in other countries.

Some people have been infected who are not sure how or where they became infected.
Global Situation

Total Confirmed: 126,660
Total Deaths: 4,641
Total Recovered: 68,305
Situation in United States

Total Confirmed: 1,321

Total Deaths: 38
- 30 deaths, Washington US
- 4 deaths, California US
- 2 deaths, Florida US
- 1 death, New Jersey US
- 1 death, South Dakota US

Total Recovered: 8
- 2 recovered, California US
- 2 recovered, Illinois US
- 1 recovered, Arizona US
- 1 recovered, Massachusetts US
- 1 recovered, Washington US
- 1 recovered, Wisconsin US
10 COVID-19 cases in South Carolina

On March 6th, a confirmed case of COVID-19 was identified at MUSC. The patient had relevant travel history

- The patient was evaluated promptly for symptoms and testing specimens were obtained. There was initially a delay in approval for running the test but this was ultimately approved when the CDC broadened its PUI definition
- The patient has been compliant with self-quarantine and has been in regular communications with public health authorities
- Potential contacts, including healthcare workers, are being identified and informed of further instructions as directed by public health

MUSC has admitted 5 patients where COVID-19 was being considered, all have been tested, 2 were negative, 2 are pending, and one is being sent to DHEC PHL
How Coronavirus Spreads

Current understanding about how SARS-CoV-2 spreads is largely based on what is known about similar coronaviruses.

The virus is thought to spread mainly from person-to-person:
- Between people who are in close contact with one another (within about 6 feet).
- Through respiratory droplets produced when an infected person coughs or sneezes (droplets are inhaled).

The virus may spread from contact with infected surfaces or objects (touching own mouth, nose, or eyes), but this is not thought to be the main way the virus spreads.

Can someone spread the virus without being sick?
- People are thought to be most contagious when they are most symptomatic.
- Some spread might be possible before people show symptoms; but this is not thought to be the main way the virus spreads.

How easily does the virus spread?
- SARS-CoV-2 seems to be spreading easily and sustainably in the community (“community spread”) in affected geographic areas.

Viral load detected in nasal and throat swabs from 14 COVID-19 patients in Guangdong Province, China.

First case of COVID-19 in US

First case of COVID-19 in US

Table 2. Results of Real-Time Reverse-Transcriptase–Polymerase-Chain-Reaction Testing for the 2019 Novel Coronavirus (2019-nCoV).*

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Illness Day 4</th>
<th>Illness Day 7</th>
<th>Illness Day 11</th>
<th>Illness Day 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasopharyngeal</td>
<td>Positive (Ct,18–20)</td>
<td>Positive (Ct,23–24)</td>
<td>Positive (Ct,33–34)</td>
<td>Positive (Ct,37–40)</td>
</tr>
<tr>
<td>Oropharyngeal</td>
<td>Positive (Ct,21–22)</td>
<td>Positive (Ct,32–33)</td>
<td>Positive (Ct,36–40)</td>
<td>Negative</td>
</tr>
<tr>
<td>Serum</td>
<td>Negative</td>
<td>Negative</td>
<td>Pending</td>
<td>Pending</td>
</tr>
<tr>
<td>Urine</td>
<td>NT</td>
<td>Negative</td>
<td>NT</td>
<td>NT</td>
</tr>
<tr>
<td>Stool</td>
<td>NT</td>
<td>Positive (Ct,36–38)</td>
<td>NT</td>
<td>NT</td>
</tr>
</tbody>
</table>

* Lower cycle threshold (Ct) values indicate higher viral loads. NT denotes not tested.
Case series of 18 patients diagnosed in Singapore: Duration of Shedding

4/8 patients tested (50%) had detectable virus in stool, too

Air, Surface Environmental, and Personal Protective Equipment Contamination by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) From a Symptomatic Patient

Table 1. Sampling Time Points in Relation to Patient Illness and Clinical Cycle Threshold Values

<table>
<thead>
<tr>
<th>Patient</th>
<th>Days of illness when samples were collected</th>
<th>Presence of symptoms during sampling</th>
<th>Symptoms</th>
<th>Disease severitya</th>
<th>Before/after routine cleaning</th>
<th>Cycle threshold value from clinical samplesb</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4, 10</td>
<td>Yes, both days</td>
<td>Cough, fever, shortness of breath</td>
<td>Moderate</td>
<td>After</td>
<td>31.31 (day 3); 35.33 (day 9)</td>
</tr>
<tr>
<td>B</td>
<td>8, 11</td>
<td>Yes on day 8; asymptomatic on day 11</td>
<td>Cough, fever, sputum production</td>
<td>Moderate</td>
<td>After</td>
<td>32.22 (day 8); not detected (day 11)</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>Yes</td>
<td>Cough</td>
<td>Mild</td>
<td>Before</td>
<td>25.69 (day 4)</td>
</tr>
</tbody>
</table>

a Disease severity was considered moderate if there was lung involvement (opacities on chest radiograph) and severe if patient required supplemental oxygen therapy.

b Clinical samples were either nasopharyngeal swabs or sputum samples if patient could produce sputum. The most recent result prior to the environmental sampling was recorded. Cycle threshold refers to the number of cycles required for the fluorescent signal to cross the threshold in reverse transcriptase-polymerase chain reaction; a lower cycle threshold value indicates a higher viral load.

Air sampling: 4 hours at 5L/min in room and anteroom
1 room sampled before, 2 after cleaning with 5000 ppm sodium dichloroisocyanurate

Air, Surface Environmental, and Personal Protective Equipment Contamination by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) From a Symptomatic Patient

All air sampling was NEGATIVE inside and outside room
All post-terminal clean samples NEGATIVE

<table>
<thead>
<tr>
<th>Staff PPE sites</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper front part of gown</td>
<td>0/2</td>
</tr>
<tr>
<td>Lower front part of gown</td>
<td>0/2</td>
</tr>
<tr>
<td>Front surface of face visor mask</td>
<td>0/2</td>
</tr>
<tr>
<td>Front surface of N95 mask</td>
<td>0/2</td>
</tr>
<tr>
<td>Surface of front of shoes</td>
<td>1/2</td>
</tr>
</tbody>
</table>

38.96

Preliminary conclusions from viral dynamics and field studies

- COVID-19 is not likely spread by airborne route strictu sensu
- Surface contamination related to aerosols, droplets and stool = widespread in patient rooms
- NP swabs are superior to throat swabs and saliva for clinical diagnostics
- Like other +ssRNA enveloped viruses, SARS-CoV-2 is readily inactivated by most disinfectants used in hospitals and ethanol hand sanitizer
- Risk to HCWs is probably more from:
  - fomite contamination
  - errors in doffing
  - inoculation of mucus membranes (eye protection)
  - And NOT from inhalation of infectious virions more than 6 feet from patients
- The significance of prolonged RNA shedding detectable by PCR after recovery = unknown (common in other RNA viruses like influenza)
How Infectious is Coronavirus?

- $R_0$ describes the **average number of new infections that an infectious person can generate** in a population that was not previously exposed to the virus.
  - $R_0$ estimates, however, can vary depending on numerous biologic, social behavioral, and environmental factors, and must be interpreted with caution.

- WHO estimates the global $R_0$ associated with **Coronavirus at 1.4 to 2.5**.
  - Some studies for the virus in China have suggested $R_0$ ranges from 1.4 to 6.49, an average of 3.28 and a median of 2.79.

- WHO estimates the annual epidemic $R_0$ for **Influenza is 1.3**.

- WHO estimates MERS-CoV $R_0$ ranges from 0.45 (Saudi Arabia) to 8.1 (South Korea).

- WHO estimates SARS-Co-V $R_0$ ranged from 2.0 to 4.0.
Illness and Severity

The complete clinical picture with regard to COVID-19 is not fully understood.

**Median Incubation period remains short** (3 to 5 days) but symptoms may appear 2 to 14 days after exposure.

Illness has ranged from mild (80%) to severe, including illness resulting in death.

- **Mortality rate for COVID-19 has been 2.0% to 3.0%**, with higher risks among the elderly and those with chronic medical conditions.
- MERS-CoV mortality 30%, SARS-CoV mortality 10%, Influenza mortality <1%

Incubation period: 5.2 days (95% CI: 4.4, 6.0)

Lauer SA, Grantz KH, et al. The incubation period of 2019-nCoV from publicly reported confirmed cases: estimation and application. Pre-peer review medRxiv doi: https://doi.org/10.1101/2020.02.02.20020016
Absence of fever in COVID-19 is not uncommon

Clinical Characteristics of 1099 COVID-19 patients in 552 hospitals in 30 provinces in mainland China through Jan 29, 2020

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All patients n=1099</th>
<th>Death, ICU admission or mechanical ventilation N=67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median, IQR)</td>
<td>47.0 (35.0-58.0)</td>
<td>63.0 (53.0-71.0)</td>
</tr>
<tr>
<td>Current smoker</td>
<td>108/913 (11.8 %)</td>
<td>17/66 (25.8 %)</td>
</tr>
<tr>
<td>Fever on admission</td>
<td>975/1099 (88.7%)</td>
<td>59/67 (88.1%)</td>
</tr>
<tr>
<td>Median highest temperature</td>
<td>38.3 (37.8-38.9)</td>
<td>38.5 (38.0-39.0)</td>
</tr>
<tr>
<td>&lt;37.5 °C</td>
<td>92/926 (9.9%)</td>
<td>3/54 (5.6%)</td>
</tr>
<tr>
<td>37.5-38.0 °C</td>
<td>286/926 (30.9%)</td>
<td>20/54 (37%)</td>
</tr>
<tr>
<td>38.1-39.0 °C</td>
<td>434/926 (46.9%)</td>
<td>21/54 (39%)</td>
</tr>
<tr>
<td>&gt;39.0 °C</td>
<td>114/926 (12.3%)</td>
<td>10/54 (19%)</td>
</tr>
</tbody>
</table>

### Influenza-like illness vs just another URI?

Presenting symptoms of 1099 COVID-19 patients in 552 hospitals in 30 provinces in mainland China through Jan 29, 2020

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>All patients n=1099</th>
<th>Death, ICU admission or mechanical ventilation N=67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjunctivitis</td>
<td>9 (0.8%)</td>
<td>0</td>
</tr>
<tr>
<td>Rhinorrhea</td>
<td>53 (4.8%)</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Headache</td>
<td>150 (13.6%)</td>
<td>8 (12%)</td>
</tr>
<tr>
<td>Cough</td>
<td>745 (67.8%)</td>
<td>46 (69%)</td>
</tr>
<tr>
<td>Sore throat</td>
<td>153 (13.9%)</td>
<td>6 (9.0%)</td>
</tr>
<tr>
<td>Sputum production</td>
<td>370 (33.7%)</td>
<td>20 (30%)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>419 (38.1%)</td>
<td>22 (33%)</td>
</tr>
<tr>
<td>Hemoptysis</td>
<td>10 (0.9%)</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>205 (18.7%)</td>
<td>36 (54%)</td>
</tr>
<tr>
<td>Nausea of vomiting</td>
<td>55 (5.0%)</td>
<td>3 (5%)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>42 (3.8%)</td>
<td>4 (6%)</td>
</tr>
<tr>
<td>Myalgia or arthralgia</td>
<td>164 (14.9%)</td>
<td>6 (9%)</td>
</tr>
</tbody>
</table>
## Baseline characteristics

<table>
<thead>
<tr>
<th>Age, years</th>
<th>Confirmed cases, N (%)</th>
<th>Deaths, N (%)</th>
<th>Case fatality rate, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>44,672</td>
<td>1,023</td>
<td>2.3</td>
</tr>
<tr>
<td>0–9</td>
<td>416 (0.9)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>10–19</td>
<td>549 (1.2)</td>
<td>1 (0.1)</td>
<td>0.2</td>
</tr>
<tr>
<td>20–29</td>
<td>3,619 (8.1)</td>
<td>7 (0.7)</td>
<td>0.2</td>
</tr>
<tr>
<td>30–39</td>
<td>7,600 (17.0)</td>
<td>18 (1.8)</td>
<td>0.2</td>
</tr>
<tr>
<td>40–49</td>
<td>8,571 (19.2)</td>
<td>38 (3.7)</td>
<td>0.4</td>
</tr>
<tr>
<td>50–59</td>
<td>10,008 (22.4)</td>
<td>130 (12.7)</td>
<td>1.3</td>
</tr>
<tr>
<td>60–69</td>
<td>8,583 (19.2)</td>
<td>309 (30.2)</td>
<td>3.6</td>
</tr>
<tr>
<td>70–79</td>
<td>3,918 (8.8)</td>
<td>312 (30.5)</td>
<td>8.0</td>
</tr>
<tr>
<td>≥80</td>
<td>1,408 (3.2)</td>
<td>208 (20.3)</td>
<td>14.8</td>
</tr>
</tbody>
</table>

What Might Happen

“More cases are likely to be identified in the coming days, including more cases in the United States. It’s also likely that person-to-person spread will continue to occur, including in the United States. Widespread transmission of COVID-19 in the United States would translate into large numbers of people needing medical care at the same time. Schools, childcare centers, workplaces, and other places for mass gatherings may experience more absenteeism. Public health and healthcare systems may become overloaded, with elevated rates of hospitalizations and deaths. Other critical infrastructure, such as law enforcement, emergency medical services, and transportation industry may also be affected. Health care providers and hospitals may be overwhelmed. At this time, there is no vaccine to protect against COVID-19 and no medications approved to treat it.” - Centers for Disease Control and Prevention
MUSC has been actively preparing for several weeks to evaluate and care for patients with COVID-19

- Three-times-weekly operational meetings are held with leadership and representation from key departments and areas
- Policies in place to guide preparation, numerous communications, training modules, and educational materials
- MUSC offering free virtual health screening for COVID-19. All patients, employees, and students who are symptomatic should visit the MUSC Health Virtual Urgent Care for screening and medical advice
  - Will allow patients to receive care without exposing themselves or others
  - Referral for testing for those at high risk, based on CDC recommendations, or those sick enough to need inpatient care will be determined based on the consultation
- MUSC is testing off-site individuals deemed at risk for COVID-19
  - Designed for mildly-ill patients who do not require medical assessment or care in the ED but are deemed at risk for COVID-19
  - Will profoundly prevent unnecessary exposure to others, including health care workers and other patients
  - Will relieve the ED of high patient volumes
  - Will allow us to preserve our limited supply of PPE
- As a reminder, the state lab still only has the capacity to run about 100 COVID-19 tests a day
Process for the evaluation of a patient under consideration for testing for COVID-19:

- The physician must notify MUSC Infection Prevention on Call of the intent to test with the patient’s identifying information.
- The physician must document the history and screening, including the travel history if applicable, using the .COVID-19 SmartPhrase in EPIC.
- For inpatients, an Infectious Diseases consult must be requested.
- The ordering physician must establish that a safe space (AIIR) for RVP testing is available using appropriate PPE (including an N95 respirator on a fit tested collector). RVP must be collected along with other indicated testing.
- The ordering physician must call the DHEC on-call phone number (843-441-1091) to request a COVID-19 test.
- Patients must be advised that testing means they will be considered a PUI and will be required to isolate at home (if not hospitalized) until results return. DHEC will contact them to collect information about possible exposures.
We have a diminishing supply of N95 respirators. MUSC will follow updated WHO guidance regarding the care of patients with suspected or confirmed COVID-19. This includes use of appropriate PPE (gowns, gloves, eye protection) with a surgical mask for routine care, reserving the use of N95 respirators for aerosol generating procedures.

Policies regarding N95 respirator fit testing, wearing of beards by frontline personnel, and use of PAPRs are currently under review. Meanwhile, the CDC has released a guide to facial hair styles that are N95-compatible (and incompatible).

MUSC is identifying a group of high-risk frontline providers who will be fit tested for N95 respirators. Our supply of N95 respirators will be centralized and monitored closely. To further conserve our supply of N95 respirators, PAPRs will be available for use for patients on airborne isolation for tuberculosis. This is because the PAPR styles currently available at MUSC are ideal for use among patients with suspicion of or diagnosis of tuberculosis but not suitable for use among patients in precautions for COVID-19.

In order to conserve our supply of PPE, we ask care teams to comply with the following principles:

- Limit the number of providers who enter the room to those who are essential.
- Wear a surgical mask instead of an N95 respirator for routine care of a suspected or confirmed COVID-19 patient.
- It is not recommended that you don an N95 respirator in non-airborne isolation areas of the hospital or in the community, and certainly, please do not take PPE supplies out of the hospital for home use.

A COVID-19-specific SmartPhrase (.COVID19) has been devised in the MUSC Epic electronic health record and is now available system-wide for use by frontline providers.

Due to the high risk to healthcare workers, we have begun to require training of the front-line MUSC workforce in proper donning and doffing of PPE. A MyQuest module has been created.
MUSC Interim COVID-19 Travel Policies

Effective March 10, 2020

International Travel
All MUSC-sponsored international travel is prohibited until further notice. This guidance now includes all university faculty and staff and all MUSC Health employees, in addition to students, residents, and fellows.

Domestic Travel
All MUSC-sponsored out-of-state travel is strongly discouraged. We strongly encourage you to consider alternative methods to communicate and hold meetings, such as teleconferencing.

Visitors to Campus
MUSC strongly discourages any non-essential visitors from traveling to campus, especially those who have recently traveled from overseas or from an area in the United States with widespread transmission.

Campus Events & Conferences
MUSC is suspending all group events whose audiences or attendees include high-risk or vulnerable populations to COVID-19.
What You Can Do to Prevent Illness and Spread

Take steps to protect yourself

Clean your hands often
- Wash your hands often with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
- If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
- Avoid touching your eyes, nose, and mouth with unwashed hands.

Avoid close contact
- Avoid close contact with people who are sick
- Put distance between yourself and other people if COVID-19 is spreading in your community. This is especially important for people who are at higher risk of getting very sick.

Take steps to protect others

Stay home if you’re sick
- Stay home if you are sick, except to get medical care. Learn what to do if you are sick.

Cover coughs and sneezes
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
- Throw used tissues in the trash.
- If you and your household members are well, immediately wash your hands with soap and water for at least 20 seconds. If soap and water are not readily available, clean your hands with a hand sanitizer that contains at least 60% alcohol.

Wear a facemask if you are sick
- If you are sick: You should wear a facemask when you are around other people (e.g., sharing a room or vehicle) and before you enter a healthcare provider's office. If you are not able to wear a facemask (for example, because it causes trouble breathing), then you should do your best to cover your coughs and sneezes, and people who are caring for you should wear a facemask if they enter your room. Learn what to do if you are sick.
- If you are NOT sick: You do not need to wear a facemask unless you are caring for someone who is sick (and they are not able to wear a facemask). Facemasks may be in short supply and they should be saved for caregivers.

Clean and disinfect
- Clean AND disinfect frequently touched surfaces daily. This includes tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, and sinks.
- If surfaces are dirty, clean them: Use detergent or soap and water prior to disinfection.

To disinfect:
Most common EPA-registered household disinfectants will work. Use disinfectants appropriate for the surface.
The course of an epidemic is defined by a series of key factors (some not known for COVID-19):

- $R_0$: If current estimate of $R_0$ holds true, without mitigation, COVID-19 would affect 60% of population
- Speed of spread (time it takes for an infected person to pass on infection to others): for COVID-19 is 4.4 to 7.5 days, seems more like SARS than flu (few days)
- Case fatality rate: denominator not fully known
- How infectious is COVID-19 before symptoms develop: incubation period is 5 to 6 days. Taking into account the speed of spread, there might be considerable pre-symptomatic spread (1.4 days?)
- How many asymptomatic cases are there of COVID-19?
- How long is the duration of the infectious period for COVID-19?

Social distancing measures reduce $R_0 \sim 60%$

- Avoiding large gatherings will reduce instances of superspreading events
- Will flatten the epidemic curve

CDC Recommendation: Social Distancing

Figure: Illustrative simulations of a transmission model of COVID-19
A baseline simulation with case isolation only (red); a simulation with social distancing in place throughout the epidemic, flattening the curve (green), and a simulation with more effective social distancing in place for a limited period only, typically followed by a resurgence epidemic when social distancing is halted (blue). These are not quantitative predictions but robust qualitative illustrations for a range of model choices.
# Exposed Healthcare Workers

### Epidemiologic Risk Factors

<table>
<thead>
<tr>
<th>Prolonged close contact with a COVID-19 patient who was wearing a facemask (i.e., source control)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HCP PPE:</strong> None</td>
</tr>
<tr>
<td><strong>HCP PPE:</strong> Not wearing a facemask or respirator</td>
</tr>
<tr>
<td><strong>HCP PPE:</strong> Not wearing eye protection</td>
</tr>
<tr>
<td><strong>HCP PPE:</strong> Not wearing gown or gloves</td>
</tr>
<tr>
<td><strong>HCP PPE:</strong> Wearing all recommended PPE (except wearing a facemask instead of a respirator)</td>
</tr>
</tbody>
</table>

### For Patients with COVID-19 Under In-Home Isolation:

- The decision to discontinue in-home isolation for patients with COVID-19 should be made on a case-by-case basis in consultation with clinicians and public health officials. This decision should consider disease severity, illness signs and symptoms, and results of laboratory testing for COVID-19 in respiratory specimens. Guidance for discontinuation of in-home isolation precautions is the same as to discontinue Transmission-Based Precautions for hospitalized patients with COVID-19. Considerations to discontinue in-home isolation include all of the following:
  - Resolution of fever, without use of antipyretic medication
  - Improvement in illness signs and symptoms

### Footnote

*Footnote: Initial guidance is based upon limited information and is subject to change as more information becomes available. In persons with a persistent productive cough, SARS-CoV-2-RNA might be detected for longer periods in sputum specimens than in upper respiratory tract (nasopharyngeal swab and throat swab) specimens.*
Questions

- We can’t promise we will know all the answers
- Maybe you can help