

COVID-19 Learning Module

Students entering the field of medicine today are witnessing a transformative before-and-after moment in history. As the world searches for answers to the coronavirus pandemic, the speed and volume of medical literature on the subject has been unprecedented (some good, some not so much). The information contained in this COVID-19 learning module represents our best understanding of the coronavirus at this time. There is still not broad consensus among medical experts on many aspects of the coronavirus infection (infectivity, virulence, prevention, optimal management, etc.), so you will see varying reports in the literature. As we gain more insight into this virus, this information will be continually updated.

-- 5/13/2020 Dr. Larry Blumenthal

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A Brief History of Snot

To understand the risk of being infected with COVID-19 and the proper PPE needed for protection, it is important to understand how respiratory infections are spread.

Respiratory droplets of varying sizes (aerosols/droplets) are generated when a person coughs, sneezes, vocalizes (talks, shouts, or sings), or breathes. When respiratory droplets are expelled from a cough or sneeze, water evaporates from the droplets as they travel through space, making them smaller, lighter, travel farther, and remain suspended in the air longer. Lower humidity and higher temperature enhance this drying effect, whereas high humidity and cold air decrease this drying effect.

Large (> 20 microns) and intermediate (10 – 20 microns) sized droplets are heavy and do not travel far (< 6 feet). These larger droplets can spread infection directly by landing in the mouths, noses, or eyes of people who are in close proximity. These larger droplets are also deposited on nearby environmental surfaces and can cause indirect spread of infection by persons touching these contaminated surfaces and delivering this infectious material to their eyes, nose, or mouth.

Small droplets (< 10 microns) dry quickly when expelled, making them smaller and lighter, allowing them to travel farther and remain airborne for minutes. Small droplets (aerosols) are generated when air is expelled at a high velocity (sneeze, cough, or an *aerosol generating procedure*: intubation, bronchoscopy, CPR, obtaining a respiratory specimen, etc.). These small, light particles (< 5 microns) can penetrate deep into the airways all the way down to the alveoli. The small diameter of these droplets allows them to easily pass through the pores of standard face masks, as well as around poorly sealed N95 respirators.

What is my risk of getting infected from a patient with known COVID-19?

Risk of infection varies by the type and duration of exposure, use of preventive measures, and the stage of infection of the source patient.

- *Type of exposure*: Infected respiratory secretions are felt to represent to the main vehicle for infection and it is unknown whether non-respiratory body fluids can transmit infection. Direct exposure to respiratory droplets from an infected patient's cough or sneeze (or during an aerosol generating procedure) increases the risk of transmission of illness. Touching contaminated environmental surfaces without sanitizing hands increases risk.
- *Setting of exposure*: Exposure in a poorly ventilated space where there is less dispersion of infected droplets is higher risk than passing an infected person on the street.
- *Proximity to source patient*: When feasible, maintaining social distancing is important in work settings as well as community settings. If the source patient is not actively coughing or sneezing, the risk of infected respiratory secretions traveling > 6 feet is low. Risk increases as proximity to the infected patient increases. While most people think that only coughs or sneezes can generate the infectious droplets, studies have shown that talking for 5 min can generate the same number of droplet nuclei as a cough (~ 3000 droplet nuclei).
- *Duration of exposure*: risk increases with duration of exposure to the infected patient. A brief encounter (less than a few minutes) with an asymptomatic patient would be considered low risk, whereas being coughed on at close proximity (when no PPE worn by either party) would constitute a high risk regardless of the duration of exposure.

- *Source patient's stage of illness:* Patients are felt to be most infectious in the early stage of infection (the viral load in upper respiratory secretions progressively increases in the 48 hours that precede the onset of symptoms and reach their peak immediately prior and as the patient becomes symptomatic). While viral RNA may be detectable in respiratory secretions for longer periods of time, isolation of **infectious virus** from upper respiratory specimens 3 days after clinical recovery from illness is uncommon, and has not yet been documented more than nine days after illness onset. “Temporal dynamics in viral shedding and transmissibility of COVID-19” Nature Medicine | VOL 26 | May 2020 | 672–675
- *Personal Protective Equipment* - wearing proper PPE is effective in blocking transmission of infected secretions from the source patient. Failure of HCPs to wear proper PPE when around symptomatic patients increases risk of transmission (e.g. wearing a facemask rather than an N95 respirator during an aerosol generating procedure increases the risk by one level).

Examples of Exposure Risks (from CDC)

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html>

High-risk exposure – refers to HCP who have had prolonged close contact with patients with COVID-19 who were not wearing appropriate PPE. This includes being present (but not wearing PPE) during procedures that generate aerosols (e.g., cardiopulmonary resuscitation, intubation/extubation, bronchoscopy, nebulizer therapy, sputum induction).

Medium-risk exposures - include HCP with no facial mask (exposed nose and mouth) who had prolonged close contact with a COVID-19 infected patient who was wearing a cloth face covering or facemask. Some *low-risk* exposures are considered *medium-risk* depending on the type of care activity performed. For example, HCP who were wearing a gown, gloves, eye protection and a facemask (instead of a respirator) during an aerosol generating procedure would be considered to have a medium-risk exposure. If an AGP had not been performed, they would have been considered *low-risk*.

Low-risk exposures generally refer to brief interactions with patients with COVID-19 or prolonged close contact with patients who were wearing a cloth face covering or facemask for source control while HCP were wearing a facemask or respirator. Use of eye protection in addition to a facemask or respirator would further lower the risk of exposure. HCP not using all recommended PPE who have only brief interactions with a patient regardless of whether patient was wearing a cloth face covering or facemask are considered low-risk. Examples of brief interactions include: brief conversation at a triage desk; briefly entering a patient room but not having direct contact with the patient or the patient’s secretions/excretions; entering the patient room immediately after the patient was discharged.

How is COVID-19 transmitted?

Spread of COVID-19 infection is spread through virus-laden respiratory droplets that come in contact with the mucous membranes that line the body (nasal mucosa, oral mucosa, eyes, and airways).

If I’ve been exposed to COVID-19, when do symptoms usually appear?

Most persons with coronavirus infection will have onset of symptoms within 4-5 days of becoming infected, though some can take as long as 14 days to exhibit symptoms. 97.5% of persons with COVID-19 who develop symptoms will do so within 11.5 days of becoming infected.

General Protective Measures

The coronavirus, like most respiratory viruses, is spread from person to person, often from persons who don't know they are sick. Transmission occurs from contaminated respiratory droplets that are produced when an infected person coughs, sneezes, or talks. These droplets can land in the mouths/noses/eyes of nearby persons, as well as nearby environmental surfaces (where they can be inoculated by touching your mouth/eyes/nose). **The best way to avoid infection is to avoid being exposed to the virus.** Measures to prevent getting sick or getting other persons sick include:

Hand Hygiene – respiratory viruses (including the coronavirus) can survive for hours on environmental surfaces like doorknobs, counter surfaces, stairway railing, elevator buttons, etc. Since it is impossible to avoid touching environmental objects during the course of a day, it is necessary to wash your hands frequently. Sanitize your hands by washing with soap and water for at least 20 seconds or by using a hand sanitizer that contains at least 60% alcohol. Make sure you cover all surfaces of your hands when cleaning and drying.

Avoid touching your eyes, nose, and mouth with unwashed hands. Studies show that the average person touches their face 16 or more times an hour. A *study from 2015 showed medical students touched their face an average of 23 times per hour (confirming that medical students are over-achievers at bad habits as well). Most of us touch our face without thinking about it when we rub our eyes, scratch, or rest our hands on our face when studying. Measures to help keep your hands away from your face include keeping your hands folded in your lap during meetings and using a scented hand soap/sanitizer where the smell will alert you to the location of your hands. **Face touching: A frequent habit that has implications* Y.L.A. Kwok et al. / American Journal of Infection Control 43 (2015).

Social Distancing – since virus can be spread from infected persons who are pre-symptomatic or asymptomatic, it is necessary to maintain at least 6 feet from other people whenever possible. Since this distance is impossible to achieve in some settings, it is best to avoid crowded public places and group gatherings whenever possible.

Personal Respiratory Hygiene

- Cover coughs and sneezes with a tissue or inside your elbow. Throw used tissue immediately into the trash and do not stuff it back into your pocket.
- Then immediately **wash your hands** with soap and water for at least 20 seconds or use hand sanitizer.

Environmental Cleaning and Disinfection - frequent disinfectant cleaning of high touch surfaces (doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, etc.). This is important in workplace settings, public spaces, and households with multiple inhabitants.

Face Masks

- *Cloth Face Coverings* - when out in public spaces (grocery store, etc.) where social distancing cannot be achieved, cloth face coverings help prevent the wearer from broadcasting infected respiratory secretions

and getting other people sick. They have not been proven to prevent the wearer from becoming infected.

- **Medical masks** (surgical/isolation masks) - loose fitting masks that cover the mouth and nose, designed to stop large droplets and splashes/ sprays. **They are not designed to seal tightly to the face or filter small airborne contaminants.** As part of the MUSC re-opening process, clinical and administrative staffs are required to wear provided masks when in the medical facility. See PPE (below) when taking care of suspected or confirmed COVID-19 patients.

- **N95 Respirator Masks** - designed to reduce exposure to > 95 % airborne contaminants (N95). To be effective they must be individually selected to fit the wearers face and provide a good seal. A respirator should be worn when caring directly for COVID-19 patients, especially when performing aerosol generating procedures (bronchoscopy, intubation, etc.).

Protective Measures When Caring for Suspected/Confirmed COVID-19 Infected Patients

Hand Hygiene

- HCP should perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and after removing PPE, including gloves. Hand hygiene after removing PPE is particularly important to remove any pathogens that might have been transferred to bare hands during the removal process.
- HCP should perform hand hygiene by using alcohol-based hand sanitizer (60-95% alcohol) or washing hands with soap and water for at least 20 seconds. If hands are visibly soiled, use soap and water before returning to hand sanitizer.

Personal Protective Equipment

- **Face Mask (Respirator)** - should be worn for the care of patients with known or suspected COVID-19 or other situations (airborne precautions) where a respirator is warranted. An N95 respirator (or higher level respirator) should be donned before entry into the patient room or care area. Higher level respirators include other disposable filtering facepiece respirators and powered air-purifying respirators (PAPRs). N95 respirators or respirators that offer a higher level of protection should especially be used when performing or present for an aerosol generating procedure. If reusable respirators (e.g., PAPRs) are used, they must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use.
- **Eye Protection**
 - Put on eye protection (e.g. goggles or a disposable face shield that covers the front and sides of the face) prior to entry to the patient room or care area, if not already wearing as part of extended use or reuse strategies to optimize PPE supply. **Personal eyeglasses and contact lenses are NOT considered adequate eye protection.**
 - Remove eye protection before leaving the patient room or care area.
 - Reusable eye protection (e.g., goggles) must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use. Disposable eye protection should be discarded after use unless following protocols for extended use or reuse.
- **Gloves** - put on clean, non-sterile gloves prior to entry into the patient room or care area. Keep in mind that gloves protect the underlying skin, but you can still transfer infected secretions to your

face, mask, gown, etc. while wearing them. Remove and discard gloves when leaving the patient room or care area, and immediately perform hand hygiene.

- **Gowns** - Put on a clean isolation gown prior to entry into the patient room or care area. Change the gown if it becomes soiled. Remove and discard the gown in a dedicated container for waste before leaving the patient room or care area. Disposable gowns should be discarded after use. Gown use is especially important when involved with certain activities which include:
 - Aerosol generating procedures
 - Patient care activities where splashes and sprays are anticipated
 - High-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP (which include: dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, and wound care).

Proper Donning/Doffing of Personal Protective Equipment

Proper Donning (Placement) of Face Masks (surgical, isolation, N95 Respirator)

- Sanitize your hands before drawing the mask from the box. The color side of the mask should be facing out and ensure the nosepiece is at the top.
- Open the pleats and form the nosepiece lightly across the nose and cheekbones. Note that for dye-free masks (often white on both sides), the layer grasped to pull the mask from the box should be facing out once donned.
- Once the nosepiece is formed, pull the ear loops behind your ears.
- If donning a surgical mask, pull the top ties to the crown of the head and tie, followed by tying the bottom ties at the base of the neck.
- Ensure the mask pleats are opened enough to fully cover the nostrils and mouth.
- Once the mask is on comfortably, press along the nosepiece to form a snug fit against the face.
- If donning a visor mask, slide the index fingers between the mask and the bottom of the visor and press along the nosepiece to create the final fit.
- Sanitize your hands again after donning the mask.

Proper Doffing (Removal) of Face Masks

- Sanitize your hand again before removing mask. To remove, grasp the ear loops and pull outward/laterally to clear the ears.
- When taking off a surgical mask, tightly grip the ties at the base of the neck and pull outward to break ties, followed by breaking the ties at the crown of the head.
- After ear loops have been removed or ties have been broken, discard according to hospital policies ensuring not to touch the front of the mask as this should be treated as contaminated after use.
- Sanitize hands again after removing mask.

WATCH THIS IMPORTANT VIDEO: NETEC Video for donning and doffing PPE for COVID:

<https://www.youtube.com/watch?v=bG6zISnenPg>

Proper Donning/Doffing of Complete Personal Protective Equipment

How to Put On (Don) PPE Gear

1. **Identify and gather the proper PPE to don.** Ensure choice of gown size is correct.
2. **Perform hand hygiene using hand sanitizer.**
3. **Put on isolation gown.** Tie all of the ties on the gown. Assistance may be needed by other healthcare personnel.
4. **Put on Facemask:** Mask ties should be secured on crown of head (top tie) and base of neck (bottom tie). If mask has loops, hook them appropriately around your ears.

N95 filtering facepiece respirator or higher. If the respirator has a nosepiece, it should be fitted to the nose with both hands, not bent or tented. Do not pinch the nosepiece with one hand. Respirator/facemask should be extended under chin. Both your mouth and nose should be protected. Do not wear respirator/facemask under your chin or store in scrubs pocket between patients. For other **respirator:** straps should be placed on crown of head (top strap) and base of neck (bottom strap). Perform a user seal check each time you put on the respirator.

5. **Put on face shield or goggles.** Face shields provide full face coverage. Goggles also provide excellent protection for eyes, but fogging is common.
6. **Perform hand hygiene before putting on gloves.** Gloves should cover the cuff (wrist) of gown.
7. **Healthcare personnel may now enter patient room.**

How to Take Off (Doff) PPE Gear

1. **Remove gloves.** Ensure glove removal does not cause additional contamination of hands. Gloves can be removed using more than one technique (e.g., glove-in-glove or bird beak).
2. **Remove gown.** Untie all ties (or unsnap all buttons). Some gown ties can be broken rather than untied. Forceful removal of PPE can result in shedding contaminated droplets onto the HCP, so remove PPE in a gentle manner. Reach up to the shoulders and carefully pull gown down and away from the body. Rolling the gown down is an acceptable approach. Dispose in trash receptacle.
3. **Healthcare personnel may now exit patient room.**
4. **Perform hand hygiene.**
5. **Remove face shield or goggles.** Carefully remove face shield or goggles by grabbing the strap and pulling upwards and away from head. Do not touch the front of face shield or goggles.
6. **Remove and discard respirator.** Do not touch the front of the respirator or facemask.

- **Respirator:** Remove the bottom strap by touching only the strap and bring it carefully over the head. Grasp the top strap and bring it carefully over the head, and then pull the respirator away from the face without touching the front of the respirator.

7. **Perform hand hygiene again immediately after removing your respirator.**

Use Personal Protective Equipment (PPE) When Caring for Patients with Confirmed or Suspected COVID-19

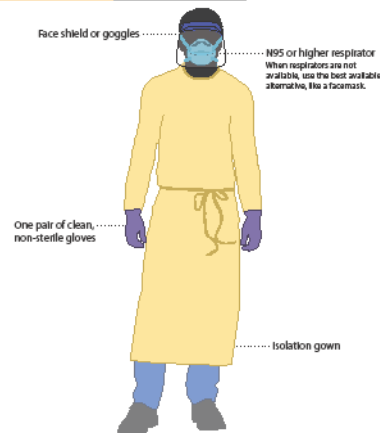
Before caring for patients with confirmed or suspected COVID-19, healthcare personnel (HCP) must:

- **Receive comprehensive training** on when and what PPE is necessary, how to don (put on) and doff (take off) PPE, limitations of PPE, and proper care, maintenance, and disposal of PPE.
- **Demonstrate competency** in performing appropriate infection control practices and procedures.

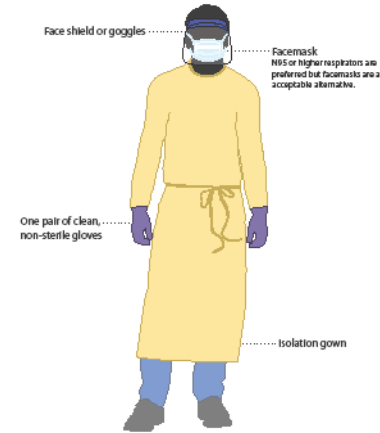
Remember:

- PPE must be donned correctly before entering the patient area (e.g., isolation room, unit if cohorting).
- PPE must remain in place and be worn correctly for the duration of work in potentially contaminated areas. PPE should not be adjusted (e.g., retying gown, adjusting respirator/facemask) during patient care.
- PPE must be removed slowly and deliberately in a sequence that prevents self-contamination. A step-by-step process should be developed and used during training and patient care.

Preferred PPE – Use N95 or Higher Respirator



Acceptable Alternative PPE – Use Facemask



Donning (putting on the gear):

More than one donning method may be acceptable. Training and practice using your healthcare facility's procedure is critical. Below is one example of donning.

1. **Identify and gather the proper PPE to don.** Ensure choice of gown size is correct (based on training).
2. **Perform hand hygiene using hand sanitizer.**
3. **Put on isolation gown.** Tie all of the ties on the gown. Assistance may be needed by another HCP.
4. **Put on NIOSH-approved N95 filtering facepiece respirator or higher (use a facemask if a respirator is not available).** If the respirator has a nosepiece, it should be fitted to the nose with both hands, not bent or tented. Do not pinch the nosepiece with one hand. Respirator/facemask should be extended under chin. Both your mouth and nose should be protected. Do not wear respirator/facemask under your chin or store in scrubs pocket between patients.*
 - » **Respirator:** Respirator straps should be placed on crown of head (top strap) and base of neck (bottom strap). Perform a user seal check each time you put on the respirator.
 - » **Facemask:** Mask ties should be secured on crown of head (top tie) and base of neck (bottom tie). If mask has loops, hook them appropriately around your ears.
5. **Put on face shield or goggles.** Face shields provide full face coverage. Goggles also provide excellent protection for eyes, but fogging is common.
6. **Perform hand hygiene before putting on gloves.** Gloves should cover the cuff (wrist) of gown.
7. **HCP may now enter patient room.**

Doffing (taking off the gear):

More than one doffing method may be acceptable. Training and practice using your healthcare facility's procedure is critical. Below is one example of doffing.

1. **Remove gloves.** Ensure glove removal does not cause additional contamination of hands. Gloves can be removed using more than one technique (e.g., glove-in-glove or bird beak).
2. **Remove gown.** Untie all ties (or unsnap all buttons). Some gown ties can be broken rather than untied. Do so in gentle manner, avoiding a forceful movement. Reach up to the shoulders and carefully pull gown down and away from the body. Rolling the gown down is an acceptable approach. Dispose in trash receptacle.*
3. **HCP may now exit patient room.**
4. **Perform hand hygiene.**
5. **Remove face shield or goggles.** Carefully remove face shield or goggles by grabbing the strap and pulling upwards and away from head. Do not touch the front of face shield or goggles.
6. **Remove and discard respirator (or facemask if used instead of respirator).*** Do not touch the front of the respirator or facemask.
 - » **Respirator:** Remove the bottom strap by touching only the strap and bring it carefully over the head. Grasp the top strap and bring it carefully over the head, and then pull the respirator away from the face without touching the front of the respirator.
 - » **Facemask:** Carefully untie (or unhook from the ears) and pull away from face without touching the front.
7. **Perform hand hygiene after removing the respirator/facemask** and before putting it on again if your workplace is practicing reuse.



*Facilities implementing reuse or extended use of PPE will need to adjust their donning and doffing procedures to accommodate those practices.

www.cdc.gov/coronavirus

What are the most common COVID-19 symptoms?

Covid-19 symptoms are similar to the flu with the most common symptoms being cough (dry or productive), muscle aches, headache, fever, chills, runny nose, and sore throat. Since the initial symptoms were reported from China at the beginning of the pandemic, newer symptoms have been reported with increasing frequency (e.g. anosmia or loss of smell reported in 53 % at MUSC, 64% in Italy). See clinical features below:

Clinical Feature	MUSC Experience*	CDC**	China ***	Italy ****
Cough	81 %	59 - 82 %	68 %	60 %
Myalgia	69 %	11 – 35 %	15 %	45 %
Headache	67 %	< 10 %	14 %	43 %
Measured T° > 99°	65 %	83 – 99%	89 %	56 %
Measured T° > 100.4°	41 %			
Subjective T°	64 %			
Chills	56 %		11 %	
Rhinorrhea	55 %	< 10 %	5 % (nasal congestion)	36 % (nasal congestion)
Anosmia	53 %			64 %
Sore Throat	45 %	< 10 %	14 %	31 %
Shortness of Breath	40 %	31 – 40 %	19 %	41 %
Diarrhea	33 %	< 10 %	4 %	44 %
Nausea/Emesis	25 %	< 10 %	5 %	20 %
Abdominal Pain	15 %			12 %
Anorexia		40 – 84 %		54 %

* Curry SR, MUSC Infection Prevention, unpublished data

** CDC <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html>

*** Clinical Characteristics of Coronavirus Disease 2019 in China. NEJM 382;18 nejm.org April 30, 2020

**** Alterations in Smell or Taste in Mildly Symptomatic Outpatients With SARS-CoV-2 Infection. JAMA April 22, 2020

I've been exposed to a COVID-19 infected patient but I don't have any symptoms?

For students who remain asymptomatic after a medium to high risk exposure, there are 2 acceptable protocols they can follow, depending on how your college wishes for you to be regarded (essential versus non-essential healthcare personnel):

1. Non-essential Healthcare Personnel who have had a **medium to high risk exposure** (including the 48 hours prior to that patient developing symptoms):

- Exclude from school or clinical activities for 14 days after last exposure.
- Self-quarantine at home for 14 days following the last exposure, with maintenance of at least six feet (two meters) from others at all times.
- Twice-daily temperature checks.
- Monitoring for signs/symptoms of illness: fever, cough, or dyspnea. If they develop such clinical manifestations, they should continue to stay at home away from other household members and contact their medical providers.
- Avoiding contact with individuals at high risk for severe illness (unless they are household members with the same exposure).
- Current guidelines do not recommend COVID testing for exposed HCP's who remain asymptomatic.

2. Essential Healthcare Personnel who have had any type exposure OR Non-essential Healthcare Personnel who have had a low risk exposure: Continue working and self-monitor daily for signs/symptoms of infection.

The COVID module addresses protocol for students who have been exposed to COVID-19 positive patients. The Ralph H. Johnson VA Medical Center has a different policy and requires asymptomatic students who were exposed to a positive COVID-19 patient to self-quarantine for 14 days, monitor for COVID-19 symptoms, and/or have 2 negative COVID RT-PCR tests prior to returning to their designated clinical rotation.

I have developed symptoms that are concerning for COVID-19 infection?

At this stage of the pandemic, the appearance of any new, unexplainable symptoms should be taken seriously and acted upon immediately. In the pre-pandemic period, healthcare workers with cold and flu symptoms often soldiered through the illness and continued to work. This behavior was never okay, because it exposed classmates, colleagues, staff, and vulnerable patients to infection. Spreading COVID-19 infection to colleagues and patients can have lethal consequences, and at minimum, can cause illness that removes valuable healthcare workers from the frontline. If you develop signs/symptoms of infection, it is your ethical and professional duty to:

1. Don a mask
2. Leave school/clinical site or remain home
3. Notify your college.
4. Contact MUSC Virtual Urgent Care ([musc.care](http://musccare.com)) for evaluation (and to arrange testing if indicated).
5. Social distancing is important regardless of your infectious status, but especially important when you are sick. These measures include keeping a distance of at least 6 feet from others, avoiding public transportation and crowded public places (and making sure to wear a mask when this is unavoidable).

I have symptoms of an infection, but my COVID-19 test was negative. When can I return to school?

You may return to school if:

1. 72 hours after complete resolution of symptoms (including resolution of temperature without the aid fever-reducing medications).
2. If non-fever symptoms persist (cough, sore throat, etc.) after 21 days, you may return to school while wearing a mask.
3. If COVID-19 testing is negative, but infectious symptoms are worsening (fever, shortness of breath, etc.) over 24 - 48 hours, consideration for re-testing should be given.

I tested (+) for COVID-19 and have home isolated. When can I return to school/ clinical activities?

Symptom based protocol for returning include all the following (whichever is longer):

1. At least 14 days have passed since your symptoms first appeared.
2. You have had no fever for at least 72 hours (that is 3 full days of no fever **without** the use of medicine that reduces fevers).
3. You have gone over **24 hours** without ANY other symptoms (cough, sore throat, etc.).
4. If non-fever symptoms persist after 21 days, students may return to school/clinical activities while

wearing a mask. This means that if it has been > 14 days since your symptoms began, and you have been afebrile > 72 hours, but you continue to have other symptoms (cough, etc.), then you may not return while still having these symptoms until it has been over 21 days.

What Are The Risk Factors For Having A Severe Illness?

Age - mortality increases progressively with age (> 65), with the highest risk of death in those 85 or older. 8 out of 10 deaths reported in the U.S. have been in adults ≥ 65 .

Long-term care facilities/nursing homes- due to communal living arrangement and population of residents with underlying medical conditions.

Underlying medical conditions place all persons at increased risk, regardless of age.

Chronic lung disease (emphysema, cystic fibrosis, pulmonary fibrosis) and moderate to severe asthma (especially if poorly controlled).

Heart conditions (heart failure, coronary artery disease, congenital heart disease, cardiomyopathies, and pulmonary hypertension).

Obesity with (body mass index [BMI] of 40 or higher).

Diabetes – including diabetes type I, diabetes type II, and gestational.

Chronic kidney disease undergoing dialysis.

Chronic liver disease (including cirrhosis).

Immunocompromised persons due to underlying condition or medication – because persons with these conditions have higher mortality with other respiratory infections (influenza, etc.), it is inferred that they are at higher risk for complications from COVID-19. These conditions include cancer treatment, smoking, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS (CD4 cell count < 200/mL or uncontrolled viremia), and prolonged use of corticosteroids and other immune weakening medications.

Students with underlying medical conditions that place them at increased risk for having a complicated COVID-19 infection are encouraged to discuss their concerns with their treating provider and/or Student Health Services.

Students with any of these underlying health conditions who are **uncomfortable participating on clinical rotations, but do not wish to disclose their illness to their college, may contact Student Health Services to discuss.**

With the student's permission, Student Health may contact their college dean (without revealing the student's specific health condition) to see what arrangements can be made for an alternate assignment that may place them at lower risk for exposure to infection or modified academic plan including leave of absence.