

Good afternoon. I'm Commander Ibad Khan, and I'm representing the Clinician Outreach and Communication Activity, COCA, with the Emergency Risk Communication Branch at the Centers for Disease Control and Prevention. I would like to welcome you today's COCA Call: Coronavirus Disease 2019 (COVID 19) Update and Infection Prevention and Control Recommendations. For participants using the Zoom platform to access today's webinar, if you are unable to gain or maintain access, or if you experience technical difficulty, please access the live stream of the webinar on COCA's Facebook page at www.facebook.com/CDCClinicianOutreachAndCommunicationActivity. Again, that is www.facebook.com/CDCClinicianOutreachAndCommunicationActivity. The video recording of this COCA Call will be available immediately following the live call on COCA's Facebook page. The video recording will also be posted on COCA's webpage at emergency.cdc.gov/coca a few hours after the call ends. Again, that web address is emergency.cdc.gov/coca. Continuing education is not provided for this COCA Call. Please note that the audience will be in listen only mode during the presentation. At the conclusion of the presentation, there will be a Q&A session.

You may submit questions at any time during the presentation through the Zoom webinar system by clicking the Q&A button at the bottom of your screen and then typing your question. If you are unable to ask the presenters your question, please visit CDC's COVID 19 website at www.cdc.gov/covid19 for more information. You may also e mail your questions to coca@cdc.gov.

For those who have media questions, please contact CDC Media Relations at 404-639-3286, or send an e mail to media@cdc.gov. If you are a patient, please refer your questions to your healthcare provider. Also, please continue to visit emergency.cdc.gov/coca over the next several days as we intend to host COCA Calls to keep you informed of the latest guidance and updates with COVID-19. In addition to our webpage, COCA Call announcements for upcoming COCA Calls will also be sent via e-mail. So, please subscribe to coca@cdc.gov to receive these notifications. Please share the invitations with your clinical colleagues.

I would now like to welcome our three presenters to today's COCA Call. Our first presenter is Dr. Nathan Furukawa, an Epidemic Intelligence Service Officer at CDC. Our second presenter is Dr. Michael Bell, Deputy Director of the Division of Healthcare Quality Promotion at CDC. And finally, our third presenter is Captain Lisa Delaney from the Worker Health and Safety Team for CDC's COVID 19 Emergency Response. Please note that the only slide that will be displayed during today's webinar is the slide you're currently viewing titled CDC COVID-19 Resources. The slides will not advance, again, until we begin the Q&A portion of this call. And now our first presenter, Dr. Furukawa.

Dr. Furukawa, please proceed.

Thanks, Ibad. This is Dr. Furukawa. Good afternoon, everyone. So, I'll be presenting on the clinical aspects of COVID 19.

But first I want to start with a general situational update. So, at this time, there is increasing community spread being reported across the United States. And the states of California, Washington and New York are particularly affected. So, from data we have up to yesterday at 9:30 p. m., CDC is reporting 1,250 cases of COVID 19 in the U. S. , 36 COVID related deaths, and this is coming from 42 states in the District of Columbia. So, the situation is changing very rapidly. And more cases of COVID 19 are expected in the upcoming days.

We here at CDC are preparing for the possibility of widespread community transmission of COVID 19 here in the U. S. So, since there's no vaccine or treatment, non-pharmaceutical interventions are going to be the most important response strategy against COVID 19. And public health measures at this time are focused on both containing the spread of the virus and mitigating its impact on communities. Just this past Wednesday, CDC published guidance on the implementation of mitigation strategies for communities with local COVID 19 transmission.

And this guidance provides information on how individuals, workplaces and communities can act to prevent the spread of COVID 19. And this and other documents can be found on the CDC website. So, now let's talk about clinical risk factors for the disease. And I want to pause here and just note that most of the data at this point we have are coming out of China. And we still have a lot to learn about the U.S. context. But based on what we know so far, most, about 80% of people who are infected with COVID 19, they'll have mild and moderate illness. But older adults and persons with chronic medical conditions seem to be at higher risk for more serious COVID 19 illness. And certainly in the U.S. here, we've seen residents at skilled nursing facilities and long term care facilities with very severe illness. And sadly, several have died. At the other end of the spectrum, COVID 19 appears less likely to cause severe illness in children. Also, the clinical symptoms and courses illness appear to be similar among pregnant women as compared to non pregnant adults.

But we're looking forward to having more data on this. Regarding the clinical presentation of COVID 19, it appears that the median incubation period for COVID 19 appears to be about four or five days. But with a range of anywhere from two to fourteen days. And patients commonly develop fever, cough, myalgia, or fatigue, and shortness of breath at the onset of the illness. More recently, we've noted that some patients are experiencing GI symptoms, like diarrhea or nausea.

And this is prior to developing fever and respiratory symptoms. As mentioned earlier, older age is a risk factor for severe illness. And it's really important to note here that not all adults present initially with fever. And this might be particularly true in older, more vulnerable adults, including those who reside at long term care facilities. And really symptoms in these patients might be vague, such as a change in mental status, or non specific general malaise.

So, clinicians in this setting might consider COVID 19 testing for these older adults who lack a typical, like a fever and respiratory prodrome. Another really important point I

really want to mention here is that we're hearing of a few patients who have moderate symptoms that persist, but then rapidly progress to severe disease after about a week of symptoms. So, clinicians should be aware that for their hospitalized patients who aren't improving after a week, they may be at risk for acutely decompensating. In terms of laboratory findings, it looks like lymphopenia seems to be the most common abnormality in clinically ill patients. We're also seeing that elevated serum AST and ALT have been noted. And, you know, they might be a sign of more severe illness. Also, most patients on admission have a normal procalcitonin. For imaging, patients might have a consolidation or ground glass opacities on chest CT. But many patients with COVID 19 infection have normal imaging early on in their illness. And so CDC does not recommend chest CTs for diagnostic purposes.

In terms of complications, we're seeing that some patients develop pneumonia and ARDS and may progress to then septic shock or multiorgan failure. For treatment, currently there's no licensed anti viral drugs for COVID 19. And management is supportive. At this time, corticosteroids should not be used and should be avoided unless indicated for another reason, maybe a COPD exacerbation or stress [inaudible] in the setting of septic shock as present in surviving sepsis guidelines. And we recommend this because we're noticing that there's a potential for prolonged viral replication.

And that's something that's been observed with the Coronavirus. In terms of investigational therapies, you know, right now, only intravenous remdesivir is the only investigational drug being studied in the U. S. in the treatment of COVID 19. And the clinical efficacy of remdesivir remains unknown.

So, there's one adaptive NIH trial, and then two open label investigational new drug trials of remdesivir that are underway. And remdesivir is also currently available from the manufacturer for compassionate use. For more information about these trials and the compassionate use of remdesivir, you can go to clinicaltrials.gov, or CDC's Clinical Care Guidelines webpage. And please note right now CDC does not recommend for or against the use of any investigational therapies.

So, to summarize, I really want to emphasize that our understanding of the nature of the clinical progression and course of infection of COVID 19 is still evolving. And CDC will continue to share additional information relevant for clinical management as it becomes available. Thank you. And I'll pass it now over to my colleague, Dr. Bell.

So, hello, everybody, and thank you for joining the call. I'm going to speak a little bit about how these infections are transmitted, and what we can do to prevent that transmission in the context of infection control. Respiratory viruses of this sort are generally transmitted across fairly close ranges. And for close range, we talk about, within about six feet. This is essentially indicating that that's a radius beyond which most sneezes and coughs are unlikely to reach.

The arrival of a new virus in our community is something that we address with extra precaution. And so just as we've done for SARS in the past, MERS, and even H1N1, we recommend, in addition to what we normally do for respiratory viruses, a little bit of extra precaution. But we observe what's happening during the outbreak very closely to try and update you as frequently as we can when there's a need for change or an ability to alter what we're doing. We're in the midst of that process right now. For normal respiratory virus transmission, we ordinarily use what people refer to as droplet precautions.

And for droplet precautions, we ask that patients be kept in a single patient room, that they keep a mask on if they're leaving the room. And I'll come back to the mask on the patient in a moment. And then the individuals going into the room cover their mucous membranes, their eyes, nose, and mouth, with eye protection, like goggles or face shields, as well as a mask or other, other covering of the nose or mouth. And the reason for this is that these viruses enter the body either through direct contact with mucous membranes, in other words, a splash or spray from a coughing person, or a couple of other modalities, one being if someone else has coughed and left virus laden secretions on a surface and you touch that surface, if your hands aren't cleaned, you can bring those viruses in contact with your own mucous membranes. So, we ask that people remember to try not to touch your faces.

And really adhere, as intensely as possible, to keeping your hands clean. For hand hygiene, we recommend alcohol based hand rubs and soap and water. Alcohol based rubs are easy on your hands when you're having to use them frequently. They don't dry your hands out as much. And they are much more easy to keep at hand nearby where you're delivering care.

I think many of us recognize that crossing the room or the other side of a building to find a sink for handwashing can sometimes be very difficult to do when you're in the middle of caring for patients. The other way that I want to highlight in terms of how people can become infected is not well proven, but is an important possibility. We don't worry too much about it for things like seasonal flu and other respiratory viruses because we have good treatments available and the ability to provide care for somebody who might become sick is reasonably well established. However, when there's a new or emerging pathogen, we also take into consideration the possibility that when you're nearby a coughing person or a sneezing person, you could also inhale small droplets, because droplets that don't shoot across the room and land on your eyes, nose or mouth, but instead float around the person who's coughing. And it is conceivable that you can inhale infectious material that way.

That's the reason why, as opposed to simply using droplet precautions, we currently recommend that people use a respirator, respirators like disposable N95 filtering facepieces, or other respiratory protection. Some facilities are using PAVERs and so on. These are important devices to be using on the off chance that near the patient, you might inhale infectious material. What we're not seeing, and the reason we're not using airborne precautions, is any evidence that this virus is transmitted over long distances the way Measles or Tuberculosis can be. Those are diseases that we often see

affecting populations all at once in large groups, because the efficiency of transmission is so great.

What we're seeing with this virus to date still reflects the close contact required for transmission that is in line with other respiratory viruses. For that reason, we don't recommend the use of a negative pressure isolation room. As you probably recall, negative pressure rooms are to protect the facility from infectious material. The air goes from the hallway into the room and out through a filter so that people down the hallway don't have to wear respiratory protection or other PPE. In this case, we don't see a need for that.

But we do continue to remind people to use a negative pressure room if you can for aerosol generating procedures. The procedures that are in particular of note are things like induced sputums for specimen gathering and so on. One thing that has become very clear in the recent several weeks is the fact that our supply chains are heavily dependent on parts of the world that have been affected by the virus. For that reason, many facilities and health systems are noticing important supply limitations in terms of respiratory protection, respirators, as well as other PPE. Because of that, we want to make sure that there is a remaining supply of respiratory protection, respirators, for individuals who still have to perform high risk procedures like aerosol generating procedures, or provide care for patients for whom you really do want to have a respirator.

In other words, a person caring for a person with multidrug resistant Tuberculosis would definitely want to wear a respirator. And we want to make sure that that continues to be possible. So, we are now recommending that we focus the available supply of respiratory protection on procedures and activities that have the highest risk for the healthcare personnel, and ensure that we maintain that supply. In the interim, we have enough evidence to suggest that surgical masks or other face masks provide some level of protection. Certainly, it blocks direct exposure of the nose and mouth through respiratory secretions.

In addition, studies have compared the impact on healthcare personnel infections with the use of surgical masks versus respirators, and to date have not demonstrated a major difference. This is something we continue to look at carefully. For the time being, we're saying that that is enough to give us comfort in terms of making use of face masks for lower risk practices, routine assessment of patients, general evaluation of somebody who's coming into an acute care setting. We don't want that to be the case, however, for aerosol generating procedures, or other high risk care. The most important thing to remember in terms of PPE use is the protective equipment is by no means the most important thing when it comes to preventing transmission of infections.

PPE is great, but it is much better if there are ways to make sure you don't need PPE. For example, having patients evaluated remotely through telemedicine, by phone, and so on, is one way to reduce reliance on protective equipment. Another way is to use barriers like Plexiglas partitions so that individuals performing triage don't need to wear

personal protective equipment and can instead assess people without any risk to themselves. And then lastly, I'll say a word about masks on patients. The most effective thing you can do when it comes to the use of a mask is to put it on the person who's coughing.

There are good demonstrations that show that the impact of covering the mouth and nose of the ill individual is much greater than putting protective equipment on someone else. You can reduce the amount of infectious material shed into the environment significantly. And that, in turn, reduces the risk to everybody working in that area. So, just to recap then, we are at a point where we have made permissive recommendations to say that in times of shortage, it's okay to perform routine care using a face mask, along with eye protection, and ensure that you reserve respiratory protection in the form of N95s or other devices for high risk procedures. Once the supply chain resolves itself, and we're hoping that this will happen in the coming several weeks, then we recommend resuming use of a respirator for care of these COVID patients.

I'm going to stop there and hand it over to Captain Lisa Delaney.

Great. Thank you for the opportunity to speak today. The outbreak of COVID 19 reflects a disruption in the global supply chain of personal protective equipment like N95 respirators, face masks and gowns. CDC recognizes that healthcare facilities may experience temporary shortages, even if they do not care for patients with COVID 19. We are hearing from frontline healthcare providers, like many of you on this call, who are sharing stories of challenges that they are facing in placing orders for critical protective equipment and expressing concerns on how they can protect their healthcare providers.

We know many of you are facing unprecedented challenges around these shortages. And CDC is working around the clock to help provide guidance and other information on how to address these challenges. A coordinated U. S. governmental agency effort is underway to work with key partners, including PPE manufacturers and distributors across the global supply chain to evaluate and respond to reported shortages and personal protective equipment.

A key area of focus is to stimulate domestic production capacity and understand international capacity to resupply this scarce resource. One step that we've taken here at CDC is to develop strategies or options on how to optimize supplies as disposable N95 respirators in healthcare settings when there is limited supply. This guidance is titled Strategies For Optimizing the Supply of N95 Respirators and is posted on our website, along with the companion checklist, which is intended to help healthcare facilities prioritize the implementation of the strategies outlined in the primary guidance. Healthcare organizations should plan for increased demand and decreased supply of PPE. Organizations should use existing preparedness plans, plus knowledge about current PP inventory at your facility.

Also, assess the ability of your vendors to fill orders. And local conditions as they pertain to COVID 19 when making decisions about which options and the strategies to use. Controlling exposures to occupational hazards is a fundamental way to protect personnel. While we prefer to implement the most effective solutions like eliminating the hazard and substituting for less hazardous materials, we know these are not typically options in the healthcare setting. However, exposures to transmissible respiratory pathogens can often be reduced or possibly avoided through engineering controls, which isolate people from the hazard, and administrative controls, which are practices that change the way people work.

Finally, our last choice is to rely on personal protective equipment, because its effectiveness involves a high level of worker involvement and commitment, and it's highly dependent on proper fit and use. While the strategies described in the CDC guidance are targeted for optimizing the supply of N95 respirators, some of these strategies may be applicable to optimizing the supply of other personal protective equipment, such as gloves, gowns, and eye protection. In times of scarce resources and demand for healthcare services, surge capacity must be implemented along a continuum. On one end of this continuum is conventional care, which consists of providing patient care without any change in daily practices. This set of control should already be implemented in general infection prevention and control plans and healthcare settings.

In the middle of the continuum is contingency care, which provides care that may change daily practices, but may not have significant impact on the care delivered to the patient or the safety of healthcare provider. And at the far end of that continuum is crisis care, which is not commiserate with current U. S. standards of care, but can be considered when supplies at your facility are running low. So, I'd like to use the rest of my presentation to describe options across this continuum that can be implemented at your facilities.

Those conventional capacity strategies, that includes using physical barriers, as Dr. Bell mentioned earlier, such as glass or plastic windows at reception areas and curtains between patients, properly maintaining ventilation systems to provide air movement in a clean to contaminated flow direction, limiting the number of patients going to hospital or outpatient settings, excluding all healthcare personnel not directly involved in patient care, excluding visitors to patients with known or suspected COVID, implementing source control, which, again, was mentioned earlier, by placing a face mask on the ill patient. And cohorting patients. For example, housing patients with COVID in the same hospital unit. Strategies for conserving respirators include limiting respirator use during training so that you're not consuming supplies outside of patient care, and using alternatives to N95 respirators were feasible that provide equivalent or higher protection.

These could include other types of disposable respirators, elastomeric respirators, which can be cleaned and reworn, or PAPRs, the powered air purifying respirators. As we move along that, the continuum into contingency capacity, actions include

decreasing the length of hospital stay for medically stable patients, using N95 respirators after their manufacturer designated shelf life for training and fit testing, and extending the use of N95 respirators. And what we mean by that is for repeated close contact encounters with several patients, the same respirator can be worn when caring for multiple patients without taking off that respirator between those encounters. Lastly, for crisis capacity, which are implemented when N95 supplies are low, or are simply not available, using N95 respirators beyond their manufacturer designated shelf life for care of patients with COVID 19, we recognize that respirators beyond just shelf life may not perform to the requirements for which they were certified. Over time, components, such as the straps and nose bridge material, may degrade, which can affect the quality of the fit and feel.

However, many models found in national or and local stockpiles, and stockpiles at healthcare facilities, have been tested and were found to continue to perform in accordance with NIOSH performance standard. Limited reuse of N95 respirators when caring for patients with COVID might become necessary. And what we mean here is that the respirator would be put on or taken off between patient encounters. And we recognize that this presents challenges in handling a potentially contaminated device. It's unknown what the potential contribution of contact transmission is for SARS CoV 2, and caution should be used.

Reads should be implemented according to CDC guidance. Read has been recommended as an option for conserving respirators during previous respiratory pathogen outbreaks and pandemics. But it may be necessary to reuse N95 when caring for patients with Varicella or Measles, although contact transmission poses a risk to healthcare personnel who implement this practice. So, it should be implemented with caution. And, again, prioritizing the use of N95 respirators and face masks by activity type for healthcare providers with the high potential exposures, including being present in the room during aerosol generating procedures performed on symptomatic persons.

So, I'll now turn it over to Commander Khan for the Q&A session.

Presenters, thank you for providing your audience with such useful information on this rapidly evolving pandemic. We appreciate your time and value your clinical insights on this matter. We will now go into our Q&A session. Audience, please remember, you may submit questions through the webinar system by clicking the Q&A button at the bottom of your screen and then typing your questions. We have received multiple questions about testing.

How can clinicians figure out how to get the tests for COVID 19?

Sorry, it was on mute. So, yeah, definitely testing is a huge priority for us. And right now, there's two pathways that you can access testing. So, currently, clinicians are able to access laboratory testing through a network of state and local public health laboratories across the country. And I'll list some available public health laboratories as provided on the Associations for Public Health Laboratories website.

And clinicians can direct their testing questions through the State Health Departments. Other pathways with several clinical laboratories, they're receiving authorizations for testing from the FDA under an EUA, Emergency Use Authorization, as they're expected to be able to offer a larger volume of testing for COVID 19 students. The best way to figure out when this test will be available is to contact your existing laboratory center.

Thank you for your response. Our next list of questions are around the use of personal protective equipment. And the questions are that if an institution is running short on the supply of PPE, where can they obtain more?

This is Captain Lisa Delaney. If your facility is concerned about a potential or eminent shortage of PPE, CDC recommends that you alert your State Health Department and work with your local healthcare coalition, as they are best positioned to help facilities troubleshoot through temporary shortages.

Thank you. We have received multiple questions about surface contamination in healthcare settings. Can you please talk about the risk of transmission due to surface contamination?

Hi, this is Mike Bell. So, surface contamination is something that can result in the spread of many different infections. This is something we're concerned about in healthcare systems, or healthcare settings, rather, all of the time. This is the reason why we are very clear about the importance of environmental cleaning and environmental hygiene. Currently, we recommend using an EPA registered hospital disinfectant.

There is good evidence now, according to the EPA website, that these chemicals do a good job of inactivating this virus, along with all of the other many pathogens that can affect you or patients in the healthcare environment. As I mentioned earlier, if you were to touch a soiled surface, you could end up with infectious material on your hands. If you then touch your eyes, nose or mouth without washing your hands first, then you could deliver the infectious material to yourself. So, from a self inoculation perspective, the hands are the key. And hand hygiene, either in the form of alcohol based hand gel, or soap and water, is the key to breaking that transmission.

Simply walking into the room that might have something on a surface is not associated with any recognized risk of transmission. Thank you.

Thank you for your response. Our next question is about therapy. And the inquirer asks, do you recommend empiric antibiotic therapy for patients suspected of having COVID 19?

Yeah, hey, this is Nate Furukawa again. That is a great question. Interestingly, we've seen, it's actually not that common that patients who have COVID 19 present with a bacterial superinfection, like we would see in flu. And so I would say in a patient with either respiratory symptoms and an infiltrate on imaging that might be suggestive of the pneumonia, antibiotics could be considered unreasonable in that situation. But really the

decisions about antibiotics should be made taking into account the clinical suspicion, how severe the illness is, and then also antimicrobial stewardship.

Thank you for your response. We have another question about patient exposure and patient rooms. Do you have any recommendations for how long to shut a patient room down if you were after seeing a COVID 19 patient being discharged?

Oh, hi, this is Mike Bell again. So, depending on your facility, your air handling system can vary. So, it's important to understand the location where you're working. Most modern healthcare facilities are designed to have multiple exchanges per hour in most clinical settings. If that's the case, leaving the room empty for 30 minutes or so should get you very close to where you need to be.

There's no magic number. But there's a balance to be found between completely airing out a room, and also being able to use it for the next patient. And so that 30 to 40 minute range is something that, for most modern facilities, should be appropriate. If your facility is older or has fewer air exchanges per hour, then you might want to let it go a little bit longer. This is important, not so much because of risk, as because of the ability to clean appropriately and safely without wearing respiratory protection after that time has passed.

Thanks.

Thank you for that clarification. We've received multiple questions about the extended use of respirators. And I was wondering if you could please elaborate or clarify.

So, as Captain Delaney mentioned, there are, there are some strategies that we have published on the CDC website. There's a document entitled Optimizing Use of Protected Equipment. And in that, we describe extended use. And what we mean by that is if you are seeing a series of patients for whom you need to be wearing a respirator, a mask, eye protection, a respirator or a mask and eye protection, it's possible to deliver care from room to room without taking off all of the equipment on your head. The reason we say this is that the likelihood of your used protective equipment on your head delivering infectious material to the next patient is pretty low.

In particular, we ask that you not touch the equipment that's still on your head. And you do still have to change your gown and gloves from room to room. But it would be okay to leave the eye protection and mask or respirator in place. The important piece here is that if you're cohorting patients, and that is certainly a strategy that we can use if we are faced with large numbers of ill individuals with the same diagnosis, cohorting refers to having them all in one area or in a series of shared rooms, that can also be an effective way of providing care and reducing the amount of protective equipment that gets used. But it is crucial that for COVID patients, only confirmed infected individuals are held together.

We don't want to have a situation in which undiagnosed respiratory infection patients and confirmed COVID patients are mixed in a single room. On the other hand, you can actually dedicate a hallway, for example, to the care of patients with respiratory symptoms. And if they're all in individual private rooms, you could go from room to room and leave your mask or respirator and eye protection on to go from a COVID patient to a non COVID respiratory patient along that hallway. Thanks.

Thank you for elaborating on that. We seem to be getting a lot of respirator questions. So, the next question is similar to it, but perhaps there's a distinction that you would like to elaborate on, is do you recommend, or what are your recommendations for respirator reuse?

Sure. So, the concept of reuse is then that provides a little more risk associated with it, because this concept is where you wear the respirator with a, while you're treating a patient, but then you remove it, and then you would use it in the day. So, it requires more handling.

And as Dr. Bell mentioned, the respirator itself may be contaminated. And so then if you touch that respirator without performing proper hand hygiene, and then you touch your face and mucous membranes, that you may then either self inoculate, or you may transmit to another patient. So, again, this is one of the more I think extreme recommendations we are using. But for a setting where we have very limited supplies, it may be your only option.

And so when you practice reuse, it's very important that you don and doff your respirator properly, that you store it properly between usage, and that you perform hand hygiene.

Thank you for that distinction. Our next question is about therapeutics. And the inquirer wants to know, can you please give more details on how to obtain remdesivir?

Hey, this is Nate Furukawa again. So, yeah, as I mentioned, intravenous remdesivir is being offered by three clinical trials in sites all around the country. And the first one is an NIH adaptive trial. So, that's the trial meaning that new investigational drugs are added to different investigational arms as more evidence becomes available about what works in the treatment of COVID 19 in labs or early study. And currently, this adaptive trial includes intravenous remdesivir.

There's two other trials that are investigational new drug trials, like Gilead Sciences. These are either open labeled trials testing different dosages of remdesivir for either moderate or severely ill hospitalized patients. And, you know, really the best place to figure out the inclusion and exclusion criteria and then how to contact the study coordinator is found at [clinicaltrials.gov](https://www.clinicaltrials.gov). So, for clinicians that might not be in an area that has a trial site, you can get compassionate use remdesivir from Gilead, the manufacturer, on a case by case basis.

And, you know, I think one important thing to note is that for pregnant women and children, they're excluded from these clinical trials. But they can get compassionate use remdesivir in this manner. So, there's a dedicated team of physicians that handle requests for remdesivir at Gilead. And the best way to contact them is compassionateaccess@gilead.com.

Thank you. We have a follow up question on that. Are you aware of any other investigational therapies that are being tested that you can elaborate on?

Hey, Nate Furukawa here again. So, yeah, we mentioned those remdesivir trials. But outside the United States, there is different clinical trials using, for instance, Lopinavir/Ritonavir. But really these trials have not been published. Those anecdotal reports of using Chloroquine or Hydroxychloroquine just showed activities against other Coronaviruses, you know, training the guidelines to use other medications like if you're on inhibitors.

But in the absence of the comparison group, there's really no way of knowing if this provides any clinical benefits.

Thank you for that. Our next question asks, what do you recommend, or at what point would you recommend outpatient clinics looking to cancel routine visits, such as say non sick visits, et cetera, to help reduce the possible spread of COVID 19 within office settings?

So, some of this is a little this is Mike Bell again. This can depend a little bit on the extent to which your community is affected. And there's a role for assessing the localized risk where you are. That means the timing of what you do might look a little bit different depending on your location. Nonetheless, it is definitely now the time to be thinking through perhaps larger sized prescription refills to reduce frequency of visits for chronic medical conditions.

I would certainly be examining your ability to do telephone or text based follow up and check ins. And then deciding for your patient population which types of visits would be okay to postpone for two months or even a little bit longer, trying to shift that back a little bit for the patients and conditions for which that would be appropriate I think is the right thing to be doing now. I wouldn't wait very long. But I would also keep an eye out on your local community. Most large urban areas I think are now starting to see cases.

Forty nine of our states and jurisdictions have now reported cases. So, I don't think there are very many locations that are completely without concern. With that said, if your area is still not recognized as having, you know, direct involvement, then you might be able to wait for a few more days. But I'm not sure you're going to wait much more than that. Thanks.

Thank you for that. Our next question is around the topic of clinical sample collection. Can you please share with us what clinical samples are best when testing for COVID 19?

Yeah, hey, this is Nate Furukawa again. So, this is definitely an ever changing situation, as we're getting more information really daily. But right now for the initial diagnostic testing of COVID 19, CDC is recommending collecting, testing upper respiratory tract specimens, and then lower respiratory tract specimens if they're available. Right now, CDC is recommending collecting both the nasopharyngeal and an oral pharyngeal swab for standard size CoV 2 testing. So, that means you can collect one from the NP, one OP, you can put them in the same tube, and then send it for a single test.

Certain patients who develop a productive cough, sputum should, can be collected for a lower respiratory tract specimen and be tested for COVID. But I really want to emphasize here that we are not recommending induction of sputum because this can cause a lot of aerosolization and put people at risk. For patients who are incubated, certainly you can get a bronchoalveolar lavage or tracheal aspirate sample and send that in for testing. You can get more information on the specimen collection, storage and the shipping all on the CDC website. And I think it's also important to note, just for occupational exposure here, really, you know, as was mentioned by my colleagues, wearing a respirator as much as you can when possible.

But when not possible, to resort to face masks. But we really want to reserve those respirators for aerosolizing procedures. So, that can include endotracheal intubation [inaudible] BiPAP or CPAP, giving them nebulizers, doing airway suctions, chest [inaudible] therapy, or bronchoscopy.

Thank you for sharing that information. Our next question, the inquirer asks, different facilities have different resources. But if the resources are available, is it sensible to isolate patients in a private room who may have fever and respiratory symptoms regardless of travel history at this point in time?

Hi, this is Mike Bell. Yes, I think that we're at a point where if you have the resources and can do so, taking a cautious approach to anybody with unexplained fever and respiratory symptoms while they're being evaluated is a sensible thing to do. Clearly, you still want to rule out all of the other potential causes of respiratory symptoms, including influenza, the latter being particularly important because they are treatable. And you would not want to miss that diagnosis. Nonetheless, given that there is increasing recognition in multiple communities, it would be very reasonable to take a cautious approach to those patients.

Thank you for that. We have a follow up question for one of our presenters where they mention donning and doffing. And the question asks, can you please elaborate and explain donning and doffing?

Sure. This is Lisa Delaney. So, donning and doffing refers to how you put on your respirator or PPE and how you doff or take off. We often see that practices of people not properly wearing the respirator, and so that donning is very critical. We have guidance on our website for how to properly put on and take off respirators.

Typically, the respirator, for N95 respirators, the disposable respirators, the proper placement of head straps is important. And that means that the lower straps should be worn around the neck and below the ears. And the top strap should sit above the ears and around the crown of the head. Should also secure the filter part portion of the mask around the user's face. The facepiece should feel snug.

If there is a nose clip at the top of the respirator, you should pinch that to kind of get that good feel around your nose. Believe it or not, sometimes we've actually seen respirators worn upside down where that nose clip covers the chin. So, be sure that you don't put it on upside down. On most N95 respirator models, that nosepiece needs to be molded. And you also can do what's called a user seal check where you put your hands around the respirator and take a deep breath so that you can feel if there's any air coming in and then do that readjustment.

I also like to recommend, if it's possible, to do some training and practice before so that you're familiar. And even using a mirror to look and see if the respirator is on properly could be an option, especially during training. Maybe not as practical during patient care.

I'll chime in also. This is Mike. Donning and doffing also applies to gloves, gowns, and other protective equipment. And one thing that we've seen in previous outbreaks is that people are really prone to self contamination when they're removing their protective equipment. And so part of safe doffing is ensuring that you do so in a way that doesn't lead to contaminating your hands, which could then contaminate your eyes, nose or mouth.

And also making sure that you don't generate splashes if you have wet gunk on your gloves. You don't want to fling them off in a messy way. You want to do so in a very controlled way. Doing the removal process in a slow, thoughtful, deliberate manner is probably the best general advice we can give. It's when things are done chaotically and in a rush, the risk to both the person who's been using the equipment and the people around them goes up.

And so having sufficient space and easily accessed waste receptacle, and again, slowly and deliberately making sure that you take your equipment off. Gloves, gowns, face shields, masks, respirators, all of the above, in a way that doesn't self contaminate is very important. Not just for this infectious disease, but for all use of PPE. Thanks.

Thank you for that. Our next question asks, do you have recommendations for how I should prepare my clinic to handle patients with COVID 19 symptoms?

Hi, this is Mike Bell again. So, I'm going to reiterate a little bit of what I said about how outpatient clinics can start to think about changing how they care for patients. I think, you know, I would underscore here exploring the use of telehealth modality. Many patient populations and clinical facilities have at least some ability to do this. I would be thinking a lot about nurse information lines and other triage lines where questions can be addressed without the need to have a patient come in.

I would do anything you can to reduce the amount of time people spend in waiting rooms with other patients. If there is a way to have people wait in their cars and call them in by cell phone, that might be one strategy. The other thing is if you do have to have people in a waiting area, optimizing the space between them. We really do want a couple of yards in between each person waiting and recognizing that many places are stuck with their, their built environment, and don't have that luxury, again, it may mean that having them wait outside of the clinic facility, and then get called in, could end up being the best option. Depending on your climate, this sort of practice is either impossible if you're living someplace with snow drifts at the moment, then this is probably not going to work for you.

On the other hand, if you're in a temperate location where waiting outdoors is possible, that's something to think about as well. Lastly, there are strategies like scheduling visits for respiratory symptoms, acute respiratory symptoms, to the end of the day is something worth thinking about. Thanks.

Thank you for that. Our next question asks, do you have guidance for what we can do with expired respirators?

Sure. This is Lisa Delaney. I mentioned in my portion of the webinar that we do, in our strategies, document, outline cases where you can use respirators that are beyond the manufacturer's shelf life. We say that they can be used with caution, and really should be in the context of your own facility's supplies and ability to replenish those supplies. Two considerations would include a visual inspection of those respirators.

The filter material, we've done some research here at CDC NIOSH, and it seems that the filter material still performs well, but the concern is the straps. So, they might degrade over time, especially if the stockpile or the storage conditions aren't climate controlled. So, that can impact the quality of the respirator. So, we recommend, as a first half, that you'd consider using them for training or fit testing. And then really only if you're in very extreme supply challenges would you consider using them for patient care.

And again, those should be done within the context of a visual inspection and proper donning. If you want to learn more about study that we had underway at NIOSH where we actually collected respirators from various states and local and national stockpiles and evaluated those respirators, we have that information posted on the COVID site. It's along the same page as our strategies document. So, that can give you more information in you want to learn more about the study.

Thank you for that. Our next question states, do you have data on how long the virus survives on surfaces?

Yes, so, this is Mike Bell. We have preliminary information about persistence on surfaces. These are laboratory assessments. And so there are artificial environments where we control the humidity and temperature. And in those controlled environments, we can see that for surfaces like stainless steel, these viruses can persist for a couple or three hours, sometimes longer.

It's important to remember that those numbers don't translate directly to the normal environment. But they do serve as a way to frame how we think about viral persistence. It's important to remember also that when we're looking at plain viruses in the laboratory, they are generally not covered in protein and mucous and other material that we would expect them to be in a real clinical setting. And so that behavior is different as well. The bottom line, though, is that it's certainly on the order of hours.

And this underscores the importance of environmental cleaning and disinfection.

Thank you for that. We have time for one last question. And it's sort of a follow up on the information you just shared. And that is do you have recommendations from the agency for cleaning surfaces in clinics?

So, yes. Environmental cleaning and disinfection is part of the basics of infection control and patient safety. We recommend both routine daily cleaning, as well as cleaning between uses of patient care rooms and surfaces and any shared equipment. First, a word about cleaning. Cleaning is necessary to remove the protein and other organic material that can get in the way of a disinfectant working chemically if it's not cleaned first.

Disinfectants are assessed by EPA, the Environmental Protection Agency, to be effective on certain types of pathogens. And in the broad category of EPA registered hospital disinfectants are the products that can be used in a clinic setting. Those products are formulated in a variety of ways. It's important to be sure that they are used according to the label instructions, including correctly mixed and safely handled. The products that are available today come in various packagings, ranging from old fashioned concentrated liquids that you have to dilute to much more convenient pre saturated wipes.

If you're using wipes, it's important to understand how long the surface needs to stay wet for the disinfectant to be effective. There are some products that are also a combined cleaner/disinfectant. And those products can be used as well. The overarching message here is that they need to be used according to the manufacturer's label instructions for them to be as effective as they intend to be. In terms of the things that need to be cleaned, anything that's going to be reused from one patient to the next, if it's not in the critical category that requires either high level disinfection or sterilization, should be cleaned and disinfected.

You don't want to transfer skin bacteria from one person to another. It's important to remember bloodborne pathogens can contaminate things like glucometers. And so only glucometers that are designed to be reprocessed between patients should be used in a multipatient setting. Otherwise, it should be the patient's own glucometer that they carry with them that gets used for checking blood sugars. The other types of cleaning disinfection, in addition to routine daily cleaning of floors and walls and so on, are the frequent cleaning of surfaces that are touched by patients.

And so exam, exam tables and so on should be wiped down between every patient. I know that that is not always being practiced, but it is something that we do recommend. That will reduce the likelihood that organisms that might be carried by one person or transmitted to another. I won't go into all the details about appropriate management of injection material and multidose vials, but that's a related topic. And all of this information is available on the CDC website.

If you basically Google CDC and disinfection, you should end up with our guidelines that have a great deal of details on the subject.

Thank you for that. And on behalf of COCA, I would like to thank everyone for joining us today. But a special thank you to our presenters; Dr. Furukawa, Dr. Bell, and Captain Delaney.

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