**LONG TERM CARE: COVID-19 SERIES**

**Session 3: Infection Prevention & Control (IPAC) management control of COVID-19 in LTC – Questions & Answers**

**Disclaimer:** All information is provided by healthcare providers working in long-term care facilities across Ontario including those at Baycrest. All identifying information including names of individuals, organizations, or locations have been removed for privacy. **The answers below were provided by Dr. Jerome Leis, MD, MSc, FRCPC**

**Please note that ECHO Care of the Elderly Q&A information do not create or otherwise establish provider-patient relationship between any ECHO Care of the Elderly Hub team members, presenters and any situation or patient case presented in the ECHO® setting.**

**Question 1:** What PPE is appropriate to use when completing a nasopharyngeal (NP) swab to test for COVID-19?

**Answer:** If we're testing residents usually it's because we're concerned about symptoms of COVID19 or we're certainly concerned of whether or not they may be infected with COVID-19 and so in that situation it makes sense that we're going to be in close contact to that resident. In some instances during the process of collecting the specimen we might induce a cough so in that situation we want to make sure that we should already have our universal mask, as all healthcare workers should be masked in long-term care homes, but in addition we should add some eye protection. And so a mask and a visor or face shield would be the minimum PPE to be worn. **We do not need an N95 mask as this is not an aerosol generating medical procedure** when obtaining a test like this, but protecting our mucous membranes is most important and of course cleaning your hands.

**Question 2:** If a resident is known to cough a lot during feeding activities, should the caregiver wear N95, goggles and gown? Is this considered an aerosolized risk?

**Answer:** So when there is coughing during feeding activities again remember **coughing itself does not generate aerosols,** it's really the medical procedures that are listed, which are a very finite list that we can go over, and so at that point in time if you're expecting someone to be coughing in your vicinity, it's your **surgical or procedure mask and your eye protection which would be the most important.** This is really just a bit of an extension of your routine practices where you're going to do a point of care risk assessment and as you say, "I'm going to feed this resident and I am concerned they will be coughing as part of that", and so you'll don the appropriate personal protective equipment that is appropriate for that situation which is a mask and eye protection.That doesn't mean they're necessarily on additional precautions this is a one-off that's specific to the care that you're providing. **You do not need an N95 for feeding a resident that will be coughing with feeding.**

**Question 3:** In addition to residents who are known to cough, how about those residents who have behavioural symptoms of dementia who might be spitting as a part of the behaviours they have, what would be the appropriate PPE in that situation? How can we manage residents with dementia with wandering behaviour as this can also pose a risk to others?

**Answer:** That's an extension of routine practices as well. So a resident that is spitting, I think we should definitely ensure that we're using a mask, definitely a face shield and possibly a gown and gloves as well depending on the situation. I had a resident that was spitting when we were collecting a mid-turbinate (MT) swab last week and the clinician was wearing a gown and so I think that would be the appropriate PPE in that particular instance.

An extension to that question is how to manage those types of behaviours especially a resident that is wondering outside of the room and the risk that poses to other residents as well as healthcare workers. There are two big categories to consider: first are those that are known to have COVID-19, where you know due to the risk that they pose, if we're not able to keep them in their room in the additional precaution, they pose an increased risk to other residents. So unfortunately there's a need to protect the well-being of the broader unit and other residents and so I think whatever needs to be done medically to keep them in their room including methods that we normally would not consider, such as sedation, needs to be strongly considered in that situation. Although that's a difficult decision to make, but I strongly believe after having managed a number of outbreaks in chronic care and in long-term care units that this is a really important issue otherwise it can do a lot of harm for what could be a deadly virus, a deadly infection for some of the other residents.

If they don't have COVID-19, they still potentially pose a risk because of course they may just be one of those cases that is under the water in the larger section of the iceberg. Maybe they're incubating the virus and maybe some of their behaviour changes are actually related to early manifestations of COVID-19. So I think it's important that healthcare workers be using the appropriate PPE with a mask and also eye protection if they are going to be in close proximity to this resident as they are redirecting them to their room. And I think that's an important issue as well to make sure that residents have an area that they can wander where they are not in close proximity as much to other residents.

**Question 4:** There's a memo from the Ministry of Health (April 15, 2020 – situation 2 on page 4) for guidance on mask use in long term care homes and retirement homes and they directly mention that they want masks removed after caring for a resident with COVID-19 as part of doffing. There is a video from Sunnybrook Hospital that is really well done and shows how to properly don and doff PPE after exposure to a patient with droplet contact precautions. However I understand that some institutes, such as my own, are promoting continued use of our masks after contact with residents. Is it safe to continue to wear the same mask after caring for residents?

**Answer:** I'm going to answer this a few different ways. So let's recognize first of all that in the context of this pandemic where multiple healthcare sectors and multiple countries have all needed personal protective equipment and there have been shortages and that sometimes the ideal isn't always possible. So I'll say that certainly if you had an unlimited supply of masks and

PPE is not of concern then I certainly would agree with that ideal recommendation that you're quoting which is that masks would be doffed after droplet contact and never reused.

The unfortunate issue is that the majority of homes and hospitals have had to resort to an allocation of masks per day or per shift and so at our hospital we give two surgical masks and that includes people that are working in critical care areas. You'll ask, "well how could that possibly be safe"? Well I'll say there's a few important mitigations that are in place to allows us to be able to do that. The first is that we use a face shield that actually covers our mask and so that if we are in a situation where we are seeing a resident who is coughing, and who is in droplet contact precautions, then actually we're protecting our mask from becoming contaminated by wearing that face shield.

In fact some hospitals, such as my own, have gone a step further and are using face shields universally along with our universal mask even for residents not in droplet contact precautions again due to the risk or pre-symptomatic droplets. So in that situation the mask is kept clean or at least non-contaminated, which allows us to not doff it after seeing a resident and of course to remove it in a way that is explained in the video to prevent self-contamination.

So I think it can be safely done and I completely understand where that directive is coming from because in an ideal state we wouldn't be doing that. But I think we can safely do it in a situation where we require mask allocation.

**Question 5:** I have heard of cases where long- term care workers are unable to move residents who have tested positive for COVID-19 quickly as we would like into a private room or elsewhere. How do you manage with PPE use when you have two residents in the same room, one with COVID-19 and one without?

**Answer:** So this is of course not the ideal. I think it goes without saying that someone would go to a private room location immediately and hopefully minimize the risk of further exposure to the roommate. And so just in the ideal circumstance first they would be in a private room. The roommate though would be considered a contact to that case and placed under droplet contact precautions as well for 14 days and observed for any signs of symptoms and of course tested.

In the situation where we are not able to move the COVID-positive resident at that point of time they both need to be in droplet contact precautions. It is also important to note that you should not use the same PPE on these residents living in the same room. Just because they are cohorted together does not mean you can use the same PPE across residents. We should of course never do that for non-COVID residents and so there it would be very important to don and doff the PPE, perform hand hygiene and have a completely separate PPE to go back into see the non-COVID contact to that case.

It's definitely not ideal, but I think the longer time that the resident spends in a shared accommodation with a known COVID case, the higher the likelihood they will convert and so anything that can be done to help the situation to prevent this should be done. So for example, one way that we have dealt with this in the past is moved the resident who is the contact (who is asymptomatic) move them to a shared room. This is on a temporary basis for a day or two,

again the minimum incubation period is really two days. So I think that is safe to do while you sort of block the second bed with the COVID-positive resident and make that a private room for the symptomatic resident. You then still need to find a private room, but that can be just sort of a temporary solution until you are identifying that private room.

The other possibility is that if you have another COVID-positive resident on the unit, you can potentially do a swap and maybe cohort the two COVID-positive residents together and place the resident that was in contact with the COVID-positive resident in a private room for observation.

**Question 6:** What are your recommendations around asymptomatic staff in long-term care who test positive for COVID-19 then the re-test result is negative within 24 hours?

**Answer:** So this is a becoming one of my favourite questions. Let's remember first of all what PCR positivity means. It means that you're identifying genetic material of covid-19 and it does not tell you about whether or not the virus that you are picking up on the test is dead or alive. And we know for a number of viral respiratory infections that you can shed virus long after your illness has resolved and that does not pose a risk of infectivity. So having said that, we relied heavily on repeat swabs early in the pandemic where we didn't have enough data around the period of communicability of covid-19.

We now have a bit of a better understanding than before and we know that the majority of viral shedding based on actual viral culture is finished by 10 days from onset of symptoms. Virtually all of it and out to 14 days is already quite conservative in terms of a risk of infectivity. So what happens is that in most institutions, they have moved to not repeating swabs on staff and just considering 14 days from onset of symptoms with complete symptom resolution for 24 hours so the so called "non-testing approach" to being able to get people to return to work.

In instances where we are repeat swabbing, when that's either a resident or a staff member (if that is still being done) the issue becomes the $C_t$ (cycle threshold) values of the (PCR) assay as those change you might be at the very cut off of what is considered positive or negative so that on any given test, you might actually be sort of between the positive and negative range. If you repeat the test three times you can get one positive and two negatives or two positives and one negative and it doesn't mean, especially within days, that that particular person is becoming re-infected or something like that is happening, it just relates to the natural history of lower detectable levels of virus. And again an arbitrary cut off for what is considered positive or negative.

I think this is why the two negatives within 24 hours is where that came from. It's just being sure the result truly is below that level of detection, but we've seen examples of there being two negatives within 24 hours and they have another positive a few days later and when you look at their $C_t$ values you can see they are just at the sort of threshold of positivity and most likely this is just a little bit of residual, especially if its beyond 14 days, a dead virus with difference just at the level of detection.

**Question 7:** Is it fair then to say that after 14 days, the likelihood of a resident or staff member infection somebody else is low enough that we don't have to maintain isolation at that point?

**Answer:** That is definitely the predominant view and I want to remain humble in that because there are things that we are constantly learning about COVID-19. There is definitely a whole separate discussion we can have around reinfection and what evidence if any there is on situations where people are way out from their first infection and we need to be thinking about risk of re-infection. But, yes, I definitely think that we can safely discontinue isolation or return people to work after 14 days of isolation with complete symptom resolution. I think that is the predominant view and practice and the Toronto Public Health guidelines highlight the ability to return healthcare workers back to work on that basis.

**Question 8:** How can you keep face shields and goggles clean? Are they disposable and if you're going to clean them and maintain them, how can we do that?

**Answer:** There's a lot of variation in practice on this issue and I'm not sure there is a right answer. It depends on your supply chain, what type of face shields you have, and whether they are disposable or can be reprocessed. There are goggles that can be reprocessed and so I think some of the principles should be this: I think that eye protection is intended to be used for a single use and so because of supply we might introduce extended use, which would mean that we use it between residents and then some common areas before doffing that eye protection. As long as it doesn't become visibly soiled, wet, or damaged that we would continue to do so, but once it needs to be removed for one of those reasons or for example to go off on a break or to eat or drink, like with our mask we would doff it and then the question just becomes are you going to reuse that mask? Either through reprocessing if that's been set up at your institution and depending on the type of face shield that you're using. Or is it left to the individual healthcare worker to clean it properly before reusing it so again.Tthere might be variation on how that's done but what needs to happen is definitely there needs to be a clean area where it can be safely stored and there needs to be a protocol in place for cleaning and disinfecting those face shields or that eye protection before it is put back on . Fortunately all of the hospital grade disinfectants are effective as I mentioned earlier, but it does need to be done properly. All of the areas including the inner and the outer surface needs to be cleaned by the healthcare worker before putting it back on. And that would be essential to being able to reuse eye protection in that fashion.

**Question 9:** Any preference for goggles versus face shields?

**Answer:** That's a great question and I could talk about the pros and cons. The pros of the goggles of course is that they are very easy to clean and reprocess so in fact from a supply perspective if you've got a good supply of goggles you can put those into circulation and they can either be dropped off to be reprocessed or you can establish a cleaning process where the healthcare worker on the unit is disinfecting them and reusing them and so in fact from an institutional perspective it works quite well.

There is data actually, there was a paper about a month ago with a cohort of healthcare workers that had goggles and were reusing them and it seemed to not lead to any risk of infection. So I think that supports that particular approach. On the flip side of that I talked briefly about how face shields and visors can help protect the mask. Again this is a bit more theoretical because the paper I just cited suggested that it may not be necessary, but in theory that offers that additional protection of the whole face and the mask. Whereas the goggles obviously don't so there remains the risk that the mask in theory could become contaminated and that we're donning and doffing. On the down side again for the face shields and visors is they are not as easy to reprocess and more expensive actually to reprocess and also to disinfect and store it. They are large and bulky so there can be issues related to that so goggles are a lot more practical in that way.

**Question 10:** In my facility there is very limited number of visors and I believe what folks are doing is using sterilizing wipes after use, hanging it back up in the room to be available for reuse. Do any long term care facilities have policy to clean visors/goggles? What has been workable?

**Answer:** I think that sounds very reasonable. For the person who is going to pick up the next visor it's a good practice for them to clean it again because it should've already been cleaned before donning that visor so it would get two cleans from the last user to the next user and I think that is a system that can work quite well.

**Question 11:** To my understanding from Public Health, there is high risk exposure to staff if they only have a surgical mask on. How can we protect our staff from high risk exposure 48 hours prior to symptoms?

**Answer:** That's an excellent question! We have gained quite a bit of experience especially across the hospitals that we looked at some of our data across, I want to say about 8 or 9 hospitals, to look at the different levels of exposure as defined by the CDC and the risk that they become infected and we don't have final data on that, but what I can say is there's definitely a few instances where with masks alone, individuals have become infected following that kind of exposure.

So not just excluded from work as a high risk exposure and then some of them have gone on to develop COVID-19 that we believe to be related to that exposure rather than from the community which of course remains a possibility. The mechanisms are probably from individuals that were in contact and may not have cleaned their hands adequately and subsequently touched their face to their mask or it could've been direct inoculation into the eyes which are important mucous membranes so I think the best protection there is around the more liberal use of face shields to protect the eyes and to protect the mask as we mentioned earlier. Good hand hygiene and all of the routine practices I was talking about in terms of all the things I mentioned (in my presentation). So I think this is why institutions have gone to more liberal use of eye protection and that's how you can understand that justification.

**Question 12:** What is the sensitivity and specificity of swabbing for COVID-19?

**Answer:** I think there are a few things we know, which is that there is reduced sensitivity of throat swabs as compared to mid turbinate (MT) or nasopharyngeal (NP) swabs so hence we are not doing throat swabs anymore. You may recall earlier in the, I guess back when it was an epidemic, that we were doing throat swabs and so that has fallen out of favour.

The sensitivity of NP swabs or MT swabs seems to be the same. There doesn't seem to be one advantage versus the other and of course MT is probably more comfortable for residents than NP which are deeper swabs. And with regards to that thought, neither is 100% sensitive at all and so there is for sure risk of false negatives and in fact the Public Health of Ontario laboratory team looked at some data recently just looking at repeat swabs and looking at conversion to positives and the negative predictive value (NPV) ended up being around 95-97%, which is actually quite good, but not perfect and so what happens in fact is that you'll see that if a swab is sent and the diagnosis of COVID-19 is felt to be quite likely - so a high pretest probability with a single negative - it may be appropriate to leave that resident in droplet contact precautions with the presumptive diagnosis. Consideration can be given for repeating that swab to see if it can be confirmed but even if negative with a high pretest probability we may not be able to discontinue those precautions.

Of course if the probability is moderate or even low then I think a single negative should be enough to discontinue but that's unfortunately one of the limitations and this is no different than literature on other novel coronaviruses where we've always known that it can become a lower respiratory pathogen when we are sampling the upper respiratory tract there's going to be limitations in sensitivity. The Middle East Respiratory Syndrome (MERS) is a great example of that where the sensitivity was even lower and so you needed to proceed to bronchoscopy or collection of lower respiratory tract specimens to improve your sensitivity. Not something that we do routinely for COVID-19.

**Comment:** So I guess if you have a situation where there is high prevalence, a negative result is not necessarily going to help. You might challenge yourself in why bother doing the test in that case and continue to treat them as positive. Just like with any test that we do, if you're not going to act on the result, don't do the test.

**Answer:** 100% well said, in fact you're right. Prevalence will affect the NPV and the positive predictive value (PPV) so you're absolutely right as prevalence is increased -- I'll give you an example in a home that I'm working in now, we have a bunch of negatives but there is so much COVID in the home and those individuals that have compatible symptoms we're just counting them as COVID and that makes sense. I mean that's what the Chinese did eventually it was just these are clinically diagnosed. The PPV of the syndrome based on its presentation becomes extremely high when that is what is circulating.