

## **Infectious Questions Ep. 17: Infection Prevention and Control of 2019-nCoV**

Shivoan Balakumar: Welcome to Infectious Questions, a public health podcast produced by the National Collaborating Centre for Infectious Diseases. I am Shivoan Balakumar. In this episode, we continue our look at the 2019 Novel Coronavirus.

In our last episode, we spoke with Dr. Jared Bullard about testing and diagnosis for the virus. Today, we will be speaking about infection prevention and control in Canadian healthcare settings with Dr. John Embil, an infectious disease consultant at the University of Manitoba and the medical director for the Infection Prevention and Control Program at the Winnipeg Regional Health Authority and the Health Sciences Centre Hospital.

Here is Dr. Alexandra Wierzbowski to ask some questions of Dr. Embil.

Dr. Alexandra Wierzbowski: What do healthcare practitioners in Canada need to know about infection prevention and control in healthcare facilities?

Dr. John Embil: So really, what we need to know as healthcare providers, infection prevention control practitioners, public health officials, is that we're dealing with a microorganism that is a respiratory virus that can cause respiratory infection, and that can be spread by droplet contact transmission. This of course is somewhat problematic because in close quarters, those droplets containing the virus can easily be coughed on or sneezed onto persons in close proximity. Therefore, ease of transmission in crowded settings.

So, when we think about what happens in a healthcare facility, we've got patients and healthcare providers all more or less in close proximity, but thankfully in Canada we've had just a few cases in the major places that we would've anticipated, in Vancouver and Toronto. Who knows where others will appear?

Based upon our experience with SARS in 2003 and with H1N1 in 2009, 2010, we certainly have an idea of how germ transmission occurs and how to prevent the

transmission in healthcare facilities. Then, the Novel Coronavirus became known to us and we were able to quickly jump into action and proceed with the creation of protocols for protecting healthcare providers and protecting patients in healthcare settings.

So what do we need to know? Well, we know that it's spread by droplet contact. We know that gowns, gloves, eye protection and regular surgical masks are all that healthcare providers need. But, if aerosol-generating procedures, such as intubation, bronchoscopy and other procedures that create aerosols are performed, then the N95 mask is required. Thankfully, it doesn't get more complicated than that.

Dr. Alexandra Wierzbowski: Are Canadian healthcare facilities prepared for the 2019 Novel Coronavirus?

Dr. John Embil: The only way we'll know whether Canada is prepared is once we're truly facing a crisis situation. Thankfully, in Canada we've only had a few patients that have been identified as having the virus. Maybe over the course of the remainder of the winter we'll see more cases. But, I think from our experience with SARS, we're proactive in terms of initiating appropriate measures to stop this before it actually begins.

I think we're in a very good position given that we haven't had transmission of the cases that we've seen, and we've brought our citizens back. They're going to be in isolation for 14 days, and many returned travelers are aware that they should self-isolate for that 14-day period.

So, it's impossible to answer the questions of whether we're over or under-prepared. I presume we're adequately prepared. You can never be prepared enough, so we're certainly not over-prepared and I don't think we're under-prepared.

Dr. Alexandra Wierzbowski: How effective do you think the international infection prevention and control measures of mass quarantine and travel restrictions are for this virus?

Dr. John Embil: What we've seen on television is truly astonishing. What we've read in the newspaper is the things of mystery novels. Being able to quarantine a community of 12 million people is truly amazing. To be able to quarantine a cruise

ship with nearly 4,000 people in a harbour is also amazing. These are aggressive control measures.

The problem however, with any agent that's transmitted by the respiratory means, is that the horse is long out of the barn. When the measure to isolate or quarantine the community with 12 million people was undertaken, many people had already been to that community and left and gone to their respective communities where they started spreading the virus once they became ill.

So, the international measures of mass quarantine, although it may lead to decrease in transmission, the transmission had already occurred by the time that those measures were instituted. As we can see in the news, there's been massive transmission in the endemic area. So, the massive quarantine measure may provide some benefit, but unfortunately the horse is out of the barn.

Other measures, such as preventing global travel – humans are smart, and instead of leaving from one location, we just leave from another location, or they'll travel from one location to another and then ultimately to their final destination – so some of the travel bans may not achieve the desired result.

The measures taken by Australia to quarantine their citizens on Easter Island might appear Draconian, but it's certainly quite clever because you've got people isolated far from the major population base.

Returned travelers at CFB Trenton, again it may seem Draconian but from our experiences with SARS, better not to allow these organisms to enter our healthcare facilities in the community to prevent transmission.

Dr. Alexandra Wierzbowski:

How does Canada's infection prevention and control response to this virus compare to previous infectious diseases of international concern, such as SARS in 2003?

Dr. John Embil:

Well, if we go back to the turn of the century with pandemic influenza, I think we're miles ahead of that situation, and the same thing with SARS. We were all caught off guard with SARS, and we started preparing to intervene with SARS when SARS was already in our presence.

With the 2019 Novel Coronavirus, the preparations in Canada, and I suspect in all of North America, began when we got wind that this virus existed. So, we were already on the ground with our interventions by the time that there was transmission or there were cases identified in North America.

See, one of the problems with SARS is that it got into healthcare facilities, and then it spread within the healthcare facilities. We had healthcare workers and patients getting ill from SARS. So, the goal here would be to try and keep as many people who have the Novel Coronavirus out of healthcare facilities unless they absolutely have to be here. If they have to be there, we have heightened awareness and aggressive isolation practices to prevent transmission in a hospital.

I think a lot of our panic arises from our experience with SARS and how it basically crippled the healthcare system in Toronto. We'll never, ever do that again. We just can't; we can't cripple a major centre.

And in Winnipeg, our trauma, burn, neurosurgery hospital is our major referral centre and we can't shut down a major referral centre for having hospital transmission of a virus. So, we have to be very cautious. We have to stop this in its tracks before it gets into a healthcare facility.

Shivoan Balakumar:

That concludes our conversation with Dr. John Embil.

At NCCID, we want to provide information that is important to our listeners, so if you have other public health questions on the 2019 Novel Coronavirus, please reach out to us.

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