HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

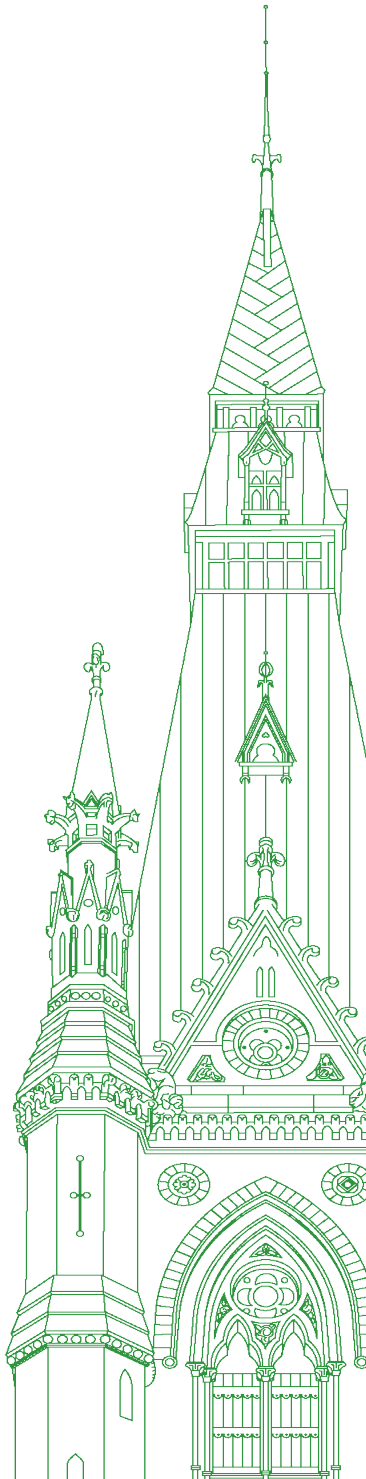
43rd PARLIAMENT, 2nd SESSION

Standing Committee on Transport, Infrastructure and Communities

EVIDENCE

NUMBER 011

Thursday, December 10, 2020



Chair: Mr. Vance Badawey

Standing Committee on Transport, Infrastructure and Communities

Thursday, December 10, 2020

● (1640)

[*English*]

The Chair (Mr. Vance Badawey (Niagara Centre, Lib.)): I call this meeting to order.

Welcome to meeting number 11 of the House of Commons Standing Committee on Transport, Infrastructure and Communities.

Today's meeting is taking place in a hybrid format, pursuant to the House order of September 23, 2020. The proceedings will be made available via the House of Commons website. So you are aware, the webcast will always show the person speaking rather than the entirety of the committee. To ensure an orderly meeting, I would like to outline a few rules to follow.

Members and witnesses, you may speak in the official language of your choice. Interpretation services are available for this meeting. You have the choice at the bottom of your screen of “floor”, “English” or “French”.

For members participating in person, proceed as you usually would when the whole committee is meeting in person in a committee room. Keep in mind the directives from the Board of Internal Economy regarding masking and health protocols.

Before speaking, please wait until I recognize you by name. If you are on the video conference, please click on the microphone icon to unmute your mike. For those in the room, your microphone will be controlled as normal by the proceedings and verification officer.

I remind everyone that all comments by members and witnesses should be addressed through the chair.

When you are not speaking, your mike should be on mute. With regard to a speakers list, the committee clerk and I will do the best we can to maintain the order of speaking for all members, whether they are participating virtually or in person.

Pursuant to Standing Order 108(2), the committee is meeting today to continue its study on the impact of COVID-19 on the aviation sector.

Before I introduce our witnesses, I want to ask you, members of the committee, how long, in fact, you want this meeting to be. It's up to you. It's your choice. Do you want to shut it down at 5:30, as we usually do, which is what we're scheduled to do, or would you like to go for the extra time, which we might be allowed since House resources are available to us?

Ms. Kusie, from the Conservatives, do you have a preference? I'll ask Mr. Bachrach and Mr. Barsalou-Duval the same question.

Ms. Kusie.

● (1645)

Mrs. Stephanie Kusie (Calgary Midnapore, CPC): Mr. Chair, I think we are considering an additional half-hour, so until 6 p.m. We did that format the other Tuesday, I believe, and it seemed to work well. I don't think we need to do the extended two hours.

I recognize, of course, that we're getting to the very end of this session today and tomorrow, and I'm sure members have things they need to wrap up both in their constituency office and for those of us in Ottawa, as well.

I think that going until six o'clock will allow us to get a good two rounds in for everyone and, hopefully, get the information we need from these witnesses here today. That's my suggestion, to extend the meeting by a reasonable half-hour.

Thank you, Mr. Chair.

The Chair: Thank you, Ms. Kusie.

Mr. Barsalou-Duval.

[*Translation*]

Mr. Xavier Barsalou-Duval (Pierre-Boucher—Les Patriotes—Verchères, BQ): Thank you, Mr. Chair.

I will just say that I am very comfortable continuing until 6 p.m. if that is the will of the committee. Otherwise, I will go with the flow. I have nothing particularly pressing. Of course, I have other commitments, but I will be able to adapt if necessary.

[*English*]

The Chair: Thank you, Mr. Barsalou-Duval.

Mr. Bachrach.

Mr. Taylor Bachrach (Skeena—Bulkley Valley, NDP): Mr. Chair, yes, 6 p.m. works well for me.

Thank you very much.

The Chair: That's wonderful.

Thank you for that, members.

Are all members fine with six o'clock?

Some hon. members: Agreed.

The Chair: It's my pleasure now to introduce our witnesses.

We have Dr. Isaac Bogoch, physician and scientist, Toronto General Hospital and University of Toronto.

Dr. Bogoch, I have to admit that you look kind of young to be a scientist and a doctor. You must have flown through school at a young age.

Dr. Isaac Bogoch (Physician and Scientist, Toronto General Hospital and University of Toronto, As an Individual): It's the lighting.

The Chair: Welcome, Doctor.

We also have Dr. Zain Chagla, assistant professor, division of infectious diseases, Faculty of Health Sciences at McMaster University.

From LuminUltra Technologies Ltd., we have Mr. Patrick Taylor, global business development director, new markets.

Gentlemen, welcome.

I'm not sure who wants to go first, but I was handed an order.

I think I'll start off with Dr. Bogoch first.

Dr. Bogoch, the floor is yours for five minutes.

Dr. Isaac Bogoch: Thank you so much.

Thank you very much for the invitation to speak at the House of Commons Standing Committee on Transport, Infrastructure and Communities to discuss the impact of COVID-19 on the aviation sector. I don't have a ton of time, so I'm going to jump right in.

Let's start with two key issues and then some solutions.

Issue number one is clearly the protection of travellers and personnel, which means crew and others who work in the industry, from COVID-19. Issue number two, of course, is the impact that national and international travel will have on the spread of infectious diseases, including COVID-19.

Let's start with the first one, which is the protection of travellers and personnel. In general, from an infectious disease transmission standpoint, flying is a pretty safe thing to do. There is a common misperception that people frequently get infections from air travel; however, the perception of risk is disproportionately high compared to the actual risk.

There are certainly cases of infections, especially respiratory infections, transmitted on planes, and there certainly are credible cases of COVID-19 transmitted on planes as well, but these are actually rare events, and they are especially rare when you consider the volume of people travelling. There is growing data, including Canadian data, to back this up.

Why is this the case? You would think that planes are exactly what we have been told to avoid. They're indoors and are close, crowded and confined spaces, and that's where the virus is most easily transmitted, but planes are engineered beautifully, and the ventilation systems, coupled with universal masking, make air travel much safer. There is good data demonstrating this nationally and internationally, and we can delve into that later if anyone wishes.

Number one, people need real protection from infection while flying. Number two, they need to understand how they're being protected and transparency on what and where the risks are, such that they can make informed decisions. This will build back confidence in the aviation sector.

I'd like to briefly touch on another important area, and that's the impact national and international travel has on the spread of infectious diseases, including COVID-19. This is a problem.

I've been studying this for years and have evaluated how other infections move regionally and globally through human mobility patterns, including via air travel: diseases such as Ebola, Zika, chikungunya and, more recently, COVID-19. We actually even looked at the international spread of this infection in early January, before we knew it was a coronavirus.

As people move, they bring infections with them, and if the aviation sector is to be up and running at full tilt, this has to be acknowledged and addressed. How can we facilitate safe and ethical travel and allow the general population to have confidence that their safety needs are being met? I think we can do this with six big steps.

Step number one is that we have to expand the focus of safety beyond the airplane itself. We should focus on travel, beginning from the time one leaves their home to the time they arrive at their final destination. Attention to each step of travel, such as public transit to the airport, checking in at the gate and lining up to get on the plane, will provide incremental safety to travellers and build confidence in travel, which will help the aviation sector.

Number two is public education, which is directly related to the point above. It's one thing to expand the scope of safety, but this has to be meaningfully communicated to potential travellers to ensure it is realized and operationalized.

Number three is integration of rapid diagnostic tests. There are increasing numbers of products and improving characteristics of these tests. They can be extremely helpful in the aviation sector, and they could be mobilized to tremendous capacity.

Number four is vaccination in Canada. The vaccine rollout in Canada is probably starting next week, and this will clearly provide significant protection and confidence for Canadian travellers. We will likely see public health measures slowly lift as 2021 moves on and more and more Canadians are vaccinated. With more Canadians vaccinated, there will be confidence in air travel, because there will be less fear of people getting this infection.

Number five is global vaccination. We have to support global vaccination initiatives, and we do. There's a program called Covax, which is an international collaborative effort to secure vaccines for low-income countries, and Canada is participating in it. This is clearly the ethical thing to do, but it will also make for safer air travel and build confidence.

Lastly, number six, we really need the active participation of the aviation sector in national and global infectious diseases surveillance activities. This can come in many forms in terms of screening passengers, screening waste water on airplanes, swabbing surfaces, etc., but participation in this process can help national and global efforts to combat the spread of emerging infectious diseases such as what we've seen with COVID-19.

I thank you for your time.

● (1650)

The Chair: Thank you, Dr. Bogoch.

We're now going to move to Dr. Chagla for five minutes.

The floor is yours.

Dr. Zain Chagla (Assistant Professor, Division of Infectious Diseases, Faculty of Health Sciences, McMaster University, McMaster University): Thank you, everyone, and thanks for inviting me here today. I will say that Dr. Bogoch stole a bit of the thunder here, so I'm going to follow up with a couple of points, really focusing on some of the infection control implications of flying, to expand on a couple of Isaac's points.

As Dr. Bogoch mentioned, airplanes seem like a terrible idea. They're hollow tubes in which people are stuck together for a significant amount of time, but airplanes do have a specific ventilation system that is incredibly efficient. Air travels up from the ceiling, down around passengers and down through the floor in a laminar direction. It's mixed with external air. There are HEPA filters and there's an air exchange every two to three minutes. To compare that to typical settings, a typical household setting has two to three air exchanges per hour. Most hospitals aim for 15 to 20 air exchanges per hour, so this is in the ballpark of what would be in an operating room in terms of the air exchanges, air filtration and mixing with external air.

It does show in multiple studies. There was a large study done by the Department of Defense in the United States in which they essentially had mannequins with fluorescent tagged aerosols that were kind of spewing out on the flight. There were sensors set up around all the mannequins. They repeated the experiment 300 times in different positions along the plane. It was a Boeing, a typical jumbo jet, and essentially we saw 99.99% of the particles filtered. They lasted in the environment and in any detectable quantity for six minutes, which is again extremely remarkable and is considered to be in line with what we would expect in health care settings.

Add to that that we still have these universal controls on airplanes in terms of masking and other screening, and some airlines even require testing as part of their entry criteria. There are a number of different things that make air travel relatively safe.

I will speak from my real-world experience. I work at McMaster. We've done an interesting study of airline travellers coming off an Air Canada flight at Pearson where they were invited to self-directed nasal and oral testing as part of their epidemiology look. About 0.7% were positive on entry. A good number of those were actually probably people who had acquired it at their location, likely had cleared and had travelled, but there are a significant number, probably in the 0.5% range, that are actually truly infectious on those flights.

Considering that, if you had a flight of 200 individuals, which is not that dissimilar to what you would have on some of the large aircraft, you would have one person per flight who was positive. We see so many exposure notices out there. In the literature there are a couple of dozen case reports of people who truly acquired it on flights, particularly in that early part where we weren't masking, where things were still uncontrolled, and where people weren't necessarily getting it from their destination. Their only exposure would be on the flight. There were very few cases documented in that sense. It really is a good proof of principle that the flying experience is relatively safe given all the controls and the ventilation associated with it.

These studies are very hard to perform now, clearly, because we have such global transmission. If I get on a flight in India and end up in Canada positive, is it from being in India? Is it from being on the flight? It's very hard to detect now because of the global penetrance of this disease.

That really is my two cents' worth. I think from the infection control standpoint, flights are relatively safe, as long as these controls are in place. There's good experimental evidence to suggest that everything in place to go on a flight, as Dr. Bogoch mentioned, everything prior to the flight and everything after the flight, presents a probably much higher risk than the actual flight itself does, as long as the ventilation systems are working.

I think this is going to be part of the safety plan for opening up flying going forward, being transparent about this type of information, particularly with regard to conveying the risks. We're hearing exposure notifications every day for flights into and out of Canada, as well as for regional flights, and when we really put that into a context of the number of travellers who have truly tested positive, their attribution is truly secondary to the flight, which is fairly minimal considering the global literature around global flying even during the pandemic.

● (1655)

The Chair: Dr. Chagla, thank you.

I'm now going to Mr. Taylor.

Welcome, Mr. Taylor. I understand that you're working off your laptop mike, so the closer you can get to that mike or to whatever you're working with, the better. If the interpreters have any problems, they'll notify me and I'll notify you.

You have five minutes. The floor is yours.

Mr. Patrick Taylor (Global Business Development Director, New Markets, LuminUltra Technologies Ltd.): Thank you very much, Mr. Chairman, for the opportunity to speak at the committee today.

LuminUltra Technologies Ltd. is a wholly Canadian-owned company headquartered in Fredericton, New Brunswick. We were founded 25 years ago and have an extensive history of rapid, portable molecular biology-based diagnostic testing solutions. We are a Canadian success story and a growing company. In 2018, we acquired InstantLabs of Baltimore, Maryland, and just last month we acquired Source Molecular of Miami, Florida.

Prior to the pandemic, we were an internationally focused business with 90% of our customers outside of Canada. We were primarily focused originally on water-related industries, serving the sectors of drinking water, aviation and oil and gas.

I am based in the U.K. and joined LuminUltra in August 2019 as the director of global business development. Today I join you from Mexico, where I've been speaking at the annual conference of the Latin American and Caribbean Air Transport Association.

On March 20, LuminUltra responded to a call from Canada to help build a domestic testing supply for COVID-19. On April 9, we began delivering 500,000 test equivalents per week to the federal government and each of the provincial governments through a contract with the Public Health Agency of Canada. We continue to be the key supplier of COVID-19 testing reagent for Canadian governments.

The daunting challenge of the pandemic has also created economic opportunity. By working with a Canadian company to build this supply, government has enabled us to create the further growth of jobs and economic impact right here in Canada. Since the pandemic, we have hired over 60 additional personnel, have grown our workforce to over 140 and have constructed and opened a new multi-million dollar state-of-the-art production facility in Fredericton.

In May we launched a complete environmental surveillance test for COVID-19. Environmental surveillance testing includes testing of surfaces and waste water for the presence of the virus. By testing for the virus, it's possible to identify if an infected person has interacted with any space, be that a waiting room or an aircraft considered as a possible point of transmission. This surveillance testing is non-invasive and can produce important insight into the health of the population interacting with these spaces.

On November 27, Health Canada approved our complete clinical test. We now provide a complete end-to-end solution for human testing, including consumables, testing devices and testing chemicals. Unlike other rapid tests, our test is built on PCR technology. PCR testing is the gold standard test, providing rapid, accurate results, and unlike antigen testing, it has proven to be much more effective, particularly in identifying asymptomatic or presymptomatic carriers.

Our PCR testing devices range from a small, portable point-of-need device capable of running up to 16 samples in under two hours to a high-capacity unit capable of running 96 samples in under two hours. This is fully scalable as a solution and multiple machines can be run in parallel to run as many samples as needed, again with results in under two hours.

LuminUltra has spent many years working with the aviation industry to understand the unique challenges and opportunities the industry faces. We are seeing the industry use testing to respond to the significant challenges of COVID-19, including in countries throughout Europe where PCR tests are done at airports as the passengers land, requiring passengers to self-isolate while waiting only a few hours for their results.

● (1700)

Supporting investment in additional PCR testing capacity will allow Canadians to complete essential travel more safely by allowing multiple types of testing, including surfaces and waste water, for a more complete and non-invasive insight into the health of interactions; providing opportunity to reduce long self-isolation periods by providing measurable, reliable clinical testing; and establishing best practices as we head into greater vaccine availability, ensuring testing protocols are in place, understood and complied with before travel commences.

The aviation industry has been deeply affected by the global pandemic. While news of a vaccine is promising, there will be a continued need for ongoing testing to ensure that we do not leave our communities open to potential risk.

We are proud to have been part of Canada's COVID-19 testing solution since the beginning of the pandemic, and we hope that we are able to use our made-in-Canada solution to help Canada survive through the balance of the pandemic and thrive and recover as Canada returns to normality.

I look forward to your questions.

Thank you, Mr. Chairman.

The Chair: Thank you, Mr. Taylor.

We're now going to start our first round of questions.

For six minutes each, we have Ms. Kusie, followed by Ms. Jaczek, Mr. Barsalou-Duval, and lastly, Mr. Bachrach.

Ms. Kusie, you have the floor for six minutes.

Mrs. Stephanie Kusie: Thank you, Chair.

Thank you to all our witnesses who are here today.

Dr. Chagla, further to your McMaster study, in having met with your colleagues I understand there were two objectives. The first was to see infection rates upon arrival after seven days and after 14 days. The second was to see, given this information, if it was possible to reduce quarantine as we have seen done in other nations.

In your opinion, after the testing was completed and the data you have seen, is it possible to reduce quarantine?

Dr. Zain Chagla: Yes, so they've released about a month of data from their initial pilot. They are still looking at the October data from their pilot.

The rate of people who test positive at day seven who don't test positive on the day of arrival is still not insignificant. It's small, but I think it's 0.2% or 0.3% who don't test positive in that first batch, 0.3% exactly.

I think if you capture most of the people in that range, you obviously cut off the people who test positive immediately. That would be the bulk of people who are infectious coming in. It's probably related to their days of experience prior to coming into the country. Then you again have a period of seven days post to deal with people who may have been exposed in transit in airports, people who may have been exposed along their path who should be PCR positive.

You would get the bulk of people if you test them on day seven. Is there a chance of 1% or 2% sneaking out? For sure, but at the end of the day, even the CDC has updated their guidelines for people who are exposed to COVID-19, not in the airline travel but just generally exposed to someone who is probably of the highest risk people out there. That day seven with the test is enough to release someone from quarantine in that sense. So realistically, it should be the same post-flight because the risk is much smaller in that sense. It's not an exact exposure; it's a random chance in that sense.

● (1705)

Mrs. Stephanie Kusie: My understanding is the one they think it might be, people who are breaking the quarantine due to human nature of course.

Dr. Chagla, why do you think it's taking the airport authorities so long to implement this rapid testing process that other airport authorities across the country...given the relative success we saw normally with that pilot in my hometown of Calgary? Given the success we're seeing there with this operation, why do you think it's taking so long for the government to implement it?

Dr. Zain Chagla: It's a good question. I know the people whom I work with intimately at the lab at McMaster are very innovative. They have a lot of capacity to deal with this type of testing. The reality is there's a hierarchy of needs. The highest priority in the hierarchy of needs currently is people who are symptomatic with COVID-19, people who are exposed to COVID-19, long-term care outbreaks and hospitalized patients. With turnaround time still not being adequate for many individuals, it's a question of whether or not you want to expand capacity without the ability to expand and flex that capacity in that sense.

But I agree. There are lots of different ways to innovate it. My colleagues at McMaster whom you just chatted with have looked at different mechanisms in pooling, in robots, in other methodologies to get testing scaled up to a quantification that—

Mrs. Stephanie Kusie: Sorry, Dr. Chagla, I'll get to this one quickly.

You mentioned something important that I know we're looking at as we are prioritizing the most vulnerable for the vaccine. Would you say that pilots, flight attendants, etc., should be placed in this first group since they have this exposure on a regular basis? Based on your information—I've done the math too. That's like one person every flight, so I see what you're saying.

Dr. Zain Chagla: I'd also ask Dr. Bogoch to weigh in here because he also sits on a fairly large provincial vaccine committee.

Mrs. Stephanie Kusie: I'm aware. Yes.

Dr. Zain Chagla: I think from my standpoint, in the NACI recommendations, which are our federal recommendations, there is a recommendation for front-facing individuals like firefighters, teachers, police officers, but not in the first wave of vaccination. That is down the list after health care workers, long-term care residents, vulnerable individuals.

Mrs. Stephanie Kusie: Thank you, Dr. Chagla.

I have a minute left, so I'm going to Dr. Bogoch, now.

Could you comment, please, on priority? You talked about surveillance. I'm wondering what entity would be responsible for that internationally. Would it be the IATA? Would it be the World Health Organization? Finally, as we see inequality within vaccination, perhaps you could comment on immunity passports, in 50 seconds, Dr. Bogoch.

Dr. Isaac Bogoch: That shouldn't be a problem at all.

Let's start with immunity passports. I think we need to poll the Canadian public, because there are very polarizing thoughts on this. I can certainly see some benefits and obviously some clear drawbacks, and especially some major equity issues with that.

With regard to surveillance on airplanes, I would see this as a public-private partnership. That's essential. We know that human mobility is responsible for so much of the transmission of infectious diseases nationally and internationally. Look at our non-existent influenza season we're having so far. I don't want to get too overconfident, because it's just the beginning, but we can see how human mobility significantly contributes to the spread of infectious diseases. Public-private partnerships, through some formal program that we can think of, be it the IATA or whatever, need to happen.

In terms of priority populations, I completely agree with Dr. Chagla. While front-facing individuals who are part of the essential functioning of society should be prioritized—that includes teachers and other members that Dr. Chagla mentioned—that certainly could include crew. That would be below the priority of people at risk of severe infections such as those in long-term care facilities, indigenous populations and other groups that were mentioned in the NACI guidelines as the first tier of people who should be vaccinated.

● (1710)

The Chair: Thank you, Dr. Bogoch.

Mrs. Stephanie Kusie: Thank you, Chair.

I was going to ask Mr. Taylor if he is staying at the Four Seasons in Mexico City. It looks familiar, but I'll save that for another round. Thank you.

The Chair: Thank you, Ms. Kusie.

We're now going to Ms. Jaczek for six minutes.

Ms. Jaczek, the floor is yours.

Ms. Helena Jaczek (Markham—Stouffville, Lib.): Thank you so much.

Thank you to all the witnesses for being here and giving excellent testimony. In particular, to the two physicians, thank you for what you've been doing in the news media. I've heard you both and I think you're really helping Canadians to interpret the situation with COVID-19.

Dr. Bogoch, certainly you referenced the precautions that are being taken on airlines. You know that Canadian airlines did follow IATA recommendations. They were instituted in July. You and Dr. Chagla both mentioned the filtration system and masking. There are also temperature checks.

If you look at data, are you able to...? Obviously none of these things, such as doing temperature checks, is in any way harmful. Are you able in any way to quantify the most valuable type of intervention? It sounds as though filtration and air turnover and so on are the most important? Would you confirm that?

Dr. Isaac Bogoch: Sure.

There are a couple of things to note. I helped with those IATA recommendations. A lot of those were conjured up in March in Singapore, which was my last trip before everything shut down, so I'm aware of those and I think they're pretty strong because there was broad consultation with the World Health Organization and ICAO as well.

The second thing is that I don't think there's going to be one step to make things safe. It's really a bundle of measures taken together that will make airline travel safer. As I mentioned, I really think we have to focus on the point of origin to the point of destination and everywhere in between. That will really ensure proper safety. Of course, there are only certain things that are under the control of the aviation sector, but if we really focus on a more holistic approach including education, we can make travel safer and instill greater confidence.

Directly related to the plane itself, the air filtration system and ventilation system on the plane are spectacular. If we couple that with universal masking, which is also extremely helpful, and really crowd control as best you can getting on and off the plane while that ventilation system might not be functioning, those are all very high-yield components. Of course, hand hygiene is also important and all the other public health measures that we've been discussing, but those would be the highest yield, in my opinion. Again, it's a bundle.

On the last point, temperature checks, it was really interesting—and don't laugh me off this call—that initially they weren't being done at Canadian airports and everyone said, “Whoa, we're not doing temperature checks. We need to do them.” Then they were doing temperature checks, and everyone was saying, “Whoa, they're useless. We don't need to do them.” It's optics. You're not going to get.... With this infection, you have to have the right fever at the right place and the right time, and there are a lot of optics. I don't think that's bad. It might give some people a little more confidence in travelling, but that in and of itself isn't going to make air travel safe.

Ms. Helena Jaczek: Thank you.

Now, turning to rapid testing, certainly in early days I think there was a lot of questioning around the reliability.

Dr. Chagla, could you inform us of what's being used now and what are the sensitivity specificities—false negatives, false positives—that you know of at this point in time?

Dr. Zain Chagla: The major rapid test that's available on the Canadian market right now is the Panbio by Abbott. This is a lateral flow assay. It looks very much like a pregnancy test. People get a nasopharyngeal swab. From what I understand, Health Canada is looking at approving nasal swabs to make it a little more tolerable. It's put into a tube; the tube is dropped onto a pregnancy test, basically, and you wait 15 to 20 minutes for a result.

Sensitivity—and again, this is approval, as compared to PCR—in people who are symptomatic is about 75% and specificity 95%. That being said, the sensitivity improves in people who have very high levels of circulating virus. One of the things that got discovered in the McMaster study...as we know, PCR tests tend to stay positive in some individuals for some time. It's not a reflection of their infectivity. It's a reflection of shedding virus.

That is a double-edged sword, in that sense, whereby if you PCR everyone who comes back, you may have a wait time, and you may get data that might not actually be usable. Dr. Smieja, who was part of that study, really did pick up a lot of people with what we call high-cycle thresholds of very low levels of virus. These rapid tests may pick up the people who are more clinically relevant, the people who are actually infectious and a threat to people, rather than picking up the people at the very early ends of their disease and at the very non-infectious late ends of their disease.

We are looking at these tests in long-term care and we're looking at these tests for surveillance for other populations, recognizing that in someone who's symptomatic, I don't want to give them this test necessarily on its own. But if it's someone who's asymptomatic and who's feeling fine and I get a positive, I'm treating that person as if they're positive, because they're probably asymptomatic, infectious and walking around.

It's a double-edged sword. I think these tests, as Dr. Bogoch mentioned, actually do have a role in this type of testing just for rollout, for lowering laboratory requirements. Again, if you use them serially, they're effective, too, as long as they're done properly. Plus, again, the training can be done outside of a laboratory, not in the laboratory.

● (1715)

Ms. Helena Jaczek: From previous testimony, we have heard of a role for potentially pre-travel testing. Perhaps, Dr. Bogoch, you could comment as to how you might see that we refine what we're doing now.

The Chair: A quick answer, please.

Dr. Isaac Bogoch: Absolutely.

For rapid testing, I think we're just using that as an umbrella term. There are certain products available and there are going to be more that are going to come onto the market soon.

We have to remember that the goal here is not to detect infection. We're trying to detect people who are at risk of transmitting infection. That's the goal. It's slightly different. It's who is going to transmit, not who is infected. That's a separate question to ask, but that's the important question to ask, and that's what rapid tests are addressing.

The next thing is that I think there would be a role for them. They're not going to be perfect. Of course, they're not going to be perfect. It's not a foolproof, safe and perfect solution. It will just incrementally add safety to air travel if it is done pre-travel.

The Chair: Thank you, Dr. Bogoch and Dr. Jaczek.

We've now heard from the Conservatives with Ms. Kusie and the Liberals with Dr. Jaczek.

Dr. Jaczek, when you were speaking and asking those questions, I was thinking that in your former capacity as the minister of health for the Province of Ontario you would be tackling some of these issues. I'm sure you think about that often.

Now we're going to the Bloc Québécois, with Mr. Barsalou-Duval.

Mr. Barsalou-Duval, you have six minutes.

[*Translation*]

Mr. Xavier Barsalou-Duval: Thank you, Mr. Chair.

My first question goes to Mr. Bogoch.

When answering a question just now, you said that the principle transmission vector of the disease is human mobility.

You also said—I don't know whether it was you, but I'm sure that Mr. Chagla mentioned it—that the air filtration systems in aircraft and the wearing of masks make it quite unlikely that you will catch COVID-19 in a plane.

However, despite everything, if people move around—before or after flights—the risk of transmission is higher.

Would you agree with me on that?

[*English*]

Dr. Isaac Bogoch: Yes, I would certainly agree with that.

I can go on, if you would like.

Yes, as for the the flight itself, you certainly can transmit on an airplane. There have been credible cases of COVID-19 being transmitted on planes. We have to come away from this acknowledging that. It's just much less likely than what people would think.

Certainly, the other components of travel are also very important to address. We shouldn't just focus on that tiny part of the puzzle, which is the airplane itself. If we think more holistically, we can improve travel safety and instill greater confidence in the aviation sector by looking at every aspect of travel: getting to the airport, getting on the plane and going from the airport.

We can break it down—if everyone has time later—into each one of those components and how to make each one of those safer. I've thought it through with my colleagues, and we've written papers on this as well.

[*Translation*]

Mr. Xavier Barsalou-Duval: Thank you.

Under those circumstances, we gather that, even though the planes and the airports are extremely safe, the risk is ever-present when travelling, because people are moving around.

My other question is about the reliability of the tests. I understand that rapid tests are going to detect some. It is like a filter, but the mesh on the net is of a certain size. As I understand it, cases where people have no symptoms or are in the early stages of infection will not be detected by rapid tests.

Are you at all concerned that a lot of people may slip through the net?

● (1720)

[*English*]

Dr. Isaac Bogoch: No. What I was mentioning before is that we're really looking for multiple tiers of protection, and the rapid test is just one of many levels of protection there. It will certainly provide incremental safety, but by itself, it's not going to be the saviour and make airline travel perfectly safe. It will certainly add incremental safety, though.

[*Translation*]

Mr. Xavier Barsalou-Duval: I completely understand that it is an advantage to have it, because the test could well detect certain cases.

As for the reliability of these tests, data on false negatives and false positives from Quebec show possible errors in 20% to 30% of the cases. That is actually one of the reasons why the government is not using them at the moment.

Given such a high error rate, can we consider those tests to be reliable? I would like to hear Mr. Chagla's comments afterwards.

[*English*]

Dr. Zain Chagla: Yes, it's a single test, so you take the results along with the type of patient you are testing. If the probability of that person's having COVID is low—the person is asymptomatic and is feeling fine—and the test is negative, yes, the sensitivity says that we might miss a few of them and that that negative might actually be a positive, but the probability of that person going in being positive isn't that high to begin with.

You have to combine those things. There is also the use of serial testing, similar to what they're doing in Calgary—day two and day seven. That also helps with increasing that sensitivity. Even if you got caught too early on that first test, you still have time to get a viral load that's higher on the second test and get picked up.

Again, these aren't perfect tests. You'd treat them as positives, but you'd still do a PCR on them. We have other models of infectious diseases where we do a screening test and a gold standard test for positives. There certainly are ways to make it work such that you don't necessarily overcall positives.

In terms of the negatives, yes, it is the right context. Serial testing helps, but you could certainly miss a couple of positives here and there. It's much less likely in people whom you don't suspect as being positive to begin with, though. If I'm in an emergency room testing people and I get a negative for someone who has a fever and a cough, I'm not going to rely on that result. If I'm walking out on the street and I swab someone and it is a negative, and their probability of having COVID is zero and they're feeling fine, then, yes, I'm going to rely on that negative as a real result.

[*Translation*]

Mr. Xavier Barsalou-Duval: In an ideal world, how would you make sure that you don't really miss any positive cases?

Just now, you talked about a period of seven days for isolation and tracking. In Quebec, the public health recommendation is often that people isolate for 14 days.

How do you explain that difference?

[*English*]

Dr. Zain Chagla: Most individuals who are positive, who have been exposed, show up with their symptoms early, in the first three to five days, post exposure. You can track people in terms of, “My family member was positive. I was exposed.” Their detectable viral load is often 48 hours to 72 hours before symptom onset, so you can kind of map out, from the gross majority of individuals, that they will show up positive by day 10 and they will have detectable virus by day seven. That's where that consolidation comes out and where the CDC guidelines have changed in the sense that you might miss 1% in that tail between 10 to 14 days, but it's very unclear if that's even clinically relevant in most individuals. If you release people by day 10 who are asymptomatic, you probably have caught most of your individuals there. If you want to release them earlier, by day seven most of those people who are symptomatic by day 10 should probably have a detectable PCR or molecular result at that point.

That's where that advice has come from. It's an evolving field. Again, 14 days was the standard from the beginning, but again, knowing the natural history studies of people after exposure, it's much more likely that the gross majority of individuals will be PCR positive by day seven and positive for symptoms by day 10.

● (1725)

The Chair: Thank you, Dr. Chagla, and thank you, Mr. Barsalou-Duval.

We'll move to Mr. Bachrach from the NDP for six minutes.

Mr. Bachrach, the floor is yours.

Mr. Taylor Bachrach: Thank you, Mr. Chair.

Thank you to all of our witnesses for appearing today.

Dr. Chagla, continuing the conversation around rapid tests, I'm really interested in this idea of comparing the risk between the current 14-day quarantine and what's being proposed under these rapid-test pilot projects. If you were advising a decision-maker, and the decision-maker wanted the lowest-risk approach to international travel, which approach would you recommend?

Dr. Zain Chagla: If you were looking for an outcome to have zero cases show up that could be infectious to the community, then, yes, you would go with the 14-day approach. You would miss one of 100, going down that road.

You know, when the CDC focused on shortening the quarantine period, it was accepting that a 14-day quarantine is hell for a lot of people. It is very difficult. You want to incentivize people to do the seven days properly rather than doing seven, taking a quick trip to the grocery store at day 10, and then.... You know what I mean.

If you were going for just numbers, then, yes, the 14 days would be adequate. If you were going for practical compliance of a population to adhere to a quarantine period, then day seven would present a whole better opportunity to get people out earlier and adhere to those first seven days, when they're critical, more than anything else.

Mr. Taylor Bachrach: Thanks for that.

From the results of the McMaster study here at Pearson, it looks like of the 1%, 0.7% were caught in the first test and 0.3% after seven days. Those seem like really small numbers when they're expressed as percentages, but doesn't that essentially tell us that fully a third of the positive cases were missed in the first test?

Dr. Zain Chagla: Yes. Absolutely. On the 0.7%, some of it was related to people who were positive, who were non-infectious but still shedding, who went on a flight and got back to Canada, and who probably got infected in their place of origin, in that sense. Some who were caught there were actually infectious. Yes, that 0.3% got caught a little bit later. These people were incubating on that flight, were negative when they showed up, but after a couple of days back in Canada tested positive.

Yes, there is a part that's missed, which is why you do have to institute some period. Again, with day seven, if you're going to catch most of them, that's probably a much more tolerant period for everyone else. Plus, you're going to catch people who might even be symptomatic day nine or 10, because we know they start shedding on day seven in that sense too.

Mr. Taylor Bachrach: Right. Okay.

I'd like to shift a little bit to the cost of rolling out these rapid tests across airports in Canada. I'd like to know from Dr. Chagla, Dr. Bogoch or perhaps even Mr. Taylor, if we were to cover a percentage of international flights, whether we have some sense of the investment that would be required to roll this out in the way in which the major airlines would like to see it implemented.

Dr. Isaac Bogoch: I could take a quick stab at that.

I think the important thing to consider here is what we have available now, but that's rapidly evolving too, like inexpensive, easy to use, rapid screening tests. They're not diagnostic tests; they're screening tests. They are cheap, easy, point-of-care tests.

Are they going to be perfect? Of course not. We're talking about adding another layer of protection, and obviously, when purchased in bulk, it seems it would be a very feasible thing to do. That doesn't exist just yet, but it will shortly.

● (1730)

Mr. Taylor Bachrach: Do you have any sense around the cost? My understanding is that what's being called for is something that will reduce or even eliminate the requirement for a quarantine.

Dr. Chagla is talking about reducing the quarantine from 14 to seven days. That doesn't eliminate the inconvenience of quarantine altogether. I'm just wondering if it's worth this investment, because we have scarce resources and we want to invest them in the areas where we can have the best impact on reducing transmission and addressing the overall pandemic.

Is it worth investing, as a country, if we can only get the quarantine down to seven days?

Dr. Isaac Bogoch: I'd mention two quick points. First, we're talking about pre-travel testing and post-travel testing. We're now talking about post-travel testing, just to clarify things. Second, we don't necessarily need rapid diagnostic tests for that. You can use conventional diagnostic tests and bring people into a conventional diagnostic testing centre to do that.

It would be very helpful to have a health economist look at it, and look at the cost-effectiveness and cost savings of having people potentially out of the workforce, or whatever inefficiencies you have by working from home over a 14-day period of time versus a seven-day period of time.

That's an answerable question, and it could be done; however, I can't do that on the back of an envelope here though.

Mr. Taylor Bachrach: I appreciate that.

Dr. Bogoch, your point around international vaccination, global vaccination, really interested me. You mentioned Covax. What have Canada's funding levels been for Covax, if you know, over the past decade or so? Have we been adequately funding that agency to ensure that countries with more scarce financial resources than ours are able to vaccinate effectively?

Dr. Isaac Bogoch: Certainly Canada has been very good on the international front, but Covax is interesting, because it was just...I was going to use the words “cobbled together”, but those are probably not the most appropriate terms. It's through an alliance with the WHO and Gavi, which is a big international vaccine institute. The whole point was to gather a bunch of countries together to get buying power for COVID-19 vaccinations, so that they weren't muscled out of this by high-income countries.

I think it's going to be successful. It's clear that they're going to be later on. Lower-income countries and low middle income countries will be vaccinated, certainly not any time soon, but they will get access to vaccines. Many countries, including Canada, have paid into this. I'm very happy we're supporting it.

The Chair: Thank you, Dr. Bogoch, and thank you, Mr. Bachrach.

We're now going to move to our second round.

For the Conservatives, we have Mr. Shipley, followed by Mr. Sidhu for the Liberals, for five minutes each. Then we will have Mr. Barsalou-Duval from the Bloc Québécois and Mr. Bachrach from the NDP, for two and a half minutes each.

Mr. Shipley, the floor is yours for five minutes.

Mr. Doug Shipley (Barrie—Springwater—Oro-Medonte, CPC): Thank you, Mr. Chair.

Our committee has been talking a lot about the impacts of COVID on the aviation sector. There have been a lot of questions so far about rapid testing.

I'm going to key in more on the vaccine aspect of it, because to get the airlines and aviation sector back to normal—which is an interesting word being bantered around these days—we need to deal with the pandemic itself and that's obviously through the vaccine, we hope.

Dr. Bogoch, I'm going to be asking you many questions, and I have to admit I'm looking forward to having a discussion with you.

Dr. Bogoch, you've become a bit of a COVID star in the news media. I knew I'd make you smile there a bit. You're almost a bit of a COVID celebrity, and I'm sure you're lots of people recognize you, because I definitely do.

I watch the news a lot. I'm a bit of a news junkie, and I definitely knew the name right off the top, and was looking forward to talking to you. You've done a great job over the last many months. You've kept a lot of people informed.

Once people have successfully had both vaccines—when I say both, the ones we're getting right now that require two doses—will they be able to travel without quarantine restrictions?

Dr. Isaac Bogoch: That's a great point. The short answer is I don't know. I just don't know, because we don't actually know yet about.... What we do know about these vaccines is that to date if someone gets the vaccine they're much less likely to have symptomatic COVID-19, significantly less likely to get symptomatic COVID-19.

Some people still get COVID-19 with the vaccines, but it's likely—I have to be careful with my words—that even if you do get COVID-19 with the vaccines, you're probably going to have a less severe course of illness. But you still can get infected and you can still transmit it to others.

I would imagine that the quarantine would be lifted when significant proportions of the Canadian population are vaccinated, such that if someone did introduce a case, it would not start tearing through communities like we're seeing it do now.

That's the best I can do for now. As we understand more about how this vaccine impacts transmission and infection, which we'll learn more about very closely over the coming months, I think I'll be able to have a much better answer for you.

● (1735)

Mr. Doug Shipley: All right. Thank you very much.

You actually led right into my second line of questioning on the vaccine. What kind of vaccine adoption rate do you think the general public would need to have before you could see a significant impact on the COVID infection rates?

Dr. Isaac Bogoch: I think we're going to see a significant impact way earlier than what people think. If we get through our nasty level one group, which is indigenous populations, those who live or reside in long-term care facilities and front-line health care providers, we're going to alleviate so much death from COVID-19.

We know that long-term care facilities account for about 80% of the deaths in the country. By protecting them, we are obviously helping to save lives, but we're also taking a tremendous pressure off our health care system, which has tremendous ripple effects and benefits for everybody else.

There are a lot of benefits that we'll get early on when they're rolled out, so perhaps by February. Interestingly, even after the first dose of those vaccines, we are starting to see evidence that you have some pretty significant protection against getting this infection. It's not as good as two doses, but it's certainly a lot better than nothing, so we might see some early benefits with this.

Really, we want to have an uptake of about 60% to 70% of the Canadian population to really have something close to what we would call herd immunity, where if the virus were introduced, it would not start spreading through the community very easily.

Mr. Doug Shipley: I like your quote about how alleviating death is good. I definitely agree with that one, Doctor.

I have another couple of questions about the vaccine. I know that it has been rolled out. It's coming out next week here in Canada, and that's great news. We're all looking forward to that. There is nothing negative about that at all.

I know that they have started it in the U.K. a bit ahead of us, and I know there have been a couple of glitches. I'm hearing from a few of my constituents about allergic reactions. Do you have any concerns about these allergic reactions? I have no concerns at all about the vaccine. I'll be one of the first in line to get it when it's our turn, but have any concerns been raised to you due to the couple of reactions that seem to be getting a lot of publicity right now?

Dr. Isaac Bogoch: Yes, I'm not surprised that it's getting a lot of publicity, because the world is watching closely. I'm not really concerned about these allergic reactions. We just have to be open, honest and transparent about what we know and what we don't know.

We're going to see some things like this happen. We know that the two people who had allergic reactions both carry EpiPens and have severe allergies to certain things. We have to learn more about this, but in the end, I think, we pivot to where it looks like people who have severe allergic reactions to any component of the vaccine will not be eligible for vaccination. That's kind of obvious, and that's a smart thing to do.

Also, of course, we know there are other vaccines in the pipeline, whereby people who might have an allergy to components of this vaccine will be able to use other vaccines that are not too far behind. We might hear from the Moderna vaccine very shortly here in Canada as well.

Yes, it's a small bump on the road, but by no means is this catastrophic. I think we're going to see the rollout of the Pfizer vaccine and other vaccines in Canada.

The Chair: Thank you, Dr. Bogoch.

Thank you, Mr. Shipley.

We're now going to the Liberal Party, with Mr. Sidhu for five minutes.

Mani, the floor is yours.

Mr. Maninder Sidhu (Brampton East, Lib.): Thank you, Mr. Chair, and thank you to all our witnesses for being with us today.

I want to take a moment to say thank you to all of our health care professionals who are working day and night.

Dr. Bogoch, it's nice to see you again. In your opening remarks, you provided some great insights, and I really appreciate your clarity. My wife and I watch you on the news. As Mr. Shipley was saying, it's just awesome.

Would you personally feel safe travelling by air for non-essential reasons? If not, what would need to change before you did? I know you mentioned professionally....

Dr. Isaac Bogoch: Yes, I certainly would. I wouldn't do it now because the public health guidance is to stay at home. I think the fundamental principle is to adhere to federal, provincial and local public health guidance, so I certainly would mention that, but if I had to travel, I would, and I wouldn't have an issue with it.

I know what to do to stay safe. I would make sure that I have a mask on and that my family has masks on. I would be very careful in getting to the airport and working my way through the airport and the various junctures along the way where there is potential for crowding. I have confidence in the filtration systems, the systems on the airplane. I'd keep my hands clean. I'd have situational awareness to make sure I didn't get too crowded. I'd get off the plane in a careful manner as well.

I would personally have no issues with travelling, but I can appreciate that the general public does have some concerns. I think that perhaps with some educational campaigns and also by decreasing the COVID rates in the community through a variety of mechanisms—vaccines included, but also through strong public health measures—we can certainly boost transportation and instill greater confidence in people's travelling.

● (1740)

Mr. Maninder Sidhu: Thank you for that.

Dr. Chagla, you provided information in regard to air exchanges and mentioned that flights are relatively safe. You also spoke about international flights.

Would you personally feel safe travelling by air? Would you say the risk increases on longer flights, for example, a 12-hour to 16-hour flight versus shorter flights?

Dr. Zain Chagla: That's a good question.

Again, as Dr. Bogoch said, I would be happy to fly at this point, recognizing the other features. The biggest risk factor to flying right now is your destination, particularly knowing what's happening in other parts of the world, rather than necessarily the flight experience and being mindful of the other parts.

That Department of Defense study was interesting because it kept talking about fluorescent particles and that measurement, the filtration and the amount of time they stayed in the air to a detectable quantity. It was about six minutes or two air exchanges.

If you take that on a probability map then, yes, the longer you're on a flight and beside someone who is actively infectious, the longer you may start seeing that exposure. As their burden and their shedding keeps going and going, the air exchanges keep going and going.

The DoD study suggested 54 hours beside a contagious person. I think it is probably dependent on the viral load of the person, the context, how close you are to them, if they're masked or not masked and that type of thing. Certainly, there is a dose relationship. Shorter flights are probably less risky than longer flights where you just have more particle exposure, even with the air exchanges.

Mr. Maninder Sidhu: Thank you for that, Dr. Chagla.

Mr. Taylor, did you want to weigh in here?

Mr. Patrick Taylor: Yes. I'm delighted to be more specific.

I recently took a 13-hour flight from Germany to Mexico and felt completely comfortable in the aircraft. The crew were incredibly well disciplined in enforcing the masking and, as best they could, social distancing. The hygiene of the aircraft was excellent. Obviously, knowing the industry intimately, the protocols that are now in place and implemented by the airlines helped to reduce the risk for all travellers.

However, as my two colleagues have said, the risk exists based on exposure, on concentration and a luck factor of how many people on that particular flight are infected. Many factors determine how high the level of risk is on a particular journey.

Mr. Maninder Sidhu: Thank you.

Very quickly, Dr. Bogoch, you briefly mentioned quarantine for international travellers. Would you recommend Canada shorten its mandatory quarantine period?

Dr. Isaac Bogoch: If we had good data demonstrating a negative test on arrival and a negative test at seven days, we are going to have very few slip through the cracks. I think it would be completely reasonable.

The Chair: Thank you, Dr. Bogoch.

Thank you, Mr. Sidhu.

We're now going to move to the Bloc Québécois with Mr. Barsalou-Duval for two and a half minutes.

The floor is yours.

[*Translation*]

Mr. Xavier Barsalou-Duval: Thank you, Mr. Chair.

Dr. Chagla, if I understand correctly, you were involved in the tests conducted in the pilot project in Calgary. There is a pilot project in Toronto and another one was announced for Montreal three days ago.

Are you able to explain to me the difference between the pilot projects in those three cities?

[*English*]

Dr. Zain Chagla: McMaster has been involved in the Pearson study; that's travellers coming off Air Canada flights voluntarily at Pearson airport. The Calgary pilot is being run in that sense by the health authorities provincially.

Part of the McMaster study was point-of-entry testing and then day seven testing. It doesn't change quarantine; it's essentially a data-finding expedition in that sense. There is no public health advice tied to it.

Calgary is different in the sense that they're using day two testing to release people from quarantine and then using a day seven test as a follow-up for those people. They're contracted to do the test, day two and day seven, but they're using the day two rapid test to take people out of quarantine and then using the fail-safe of day seven, telling those people to be very careful about their interactions. They are not necessarily imposing a strict quarantine, just masking and minimizing interactions, not going to public places, and not seeing vulnerable individuals. Day seven would be getting a secondary test and if the secondary test is negative, then they can go about their business as normal.

I have to apologize. I don't know what's going on in Montreal. You're probably the first one to mention it to me.

● (1745)

[*Translation*]

Mr. Xavier Barsalou-Duval: Thank you, Dr. Chagla.

This question is for Dr. Bogoch. Some countries are considering requiring medical proof of a negative test before allowing a person entry into their territory.

Do you think that it would be good for us to look at doing the same?

[*English*]

Dr. Isaac Bogoch: Oh my God, that's the hardest question.

I really have been thinking about that a lot over the last couple of days. I honestly can't give you a good answer just yet. We definitely need documentation. We need to ensure public health and public safety. We need to know if people are infected and pose a risk to the Canadian public. However, there certainly are major ethical issues. To really delve deep into that, I would love to speak with medical ethicists and also to really have a good understanding of what the values are of the Canadian population.

I don't mean to punt this one. I just really don't have a good answer for this question, unfortunately.

The Chair: Thank you, Dr. Bogoch.

Thank you, Mr. Barsalou-Duval.

We're now going to move to the NDP.

Mr. Bachrach, you have the floor for two and half minutes.

Mr. Taylor Bachrach: Thank you, Mr. Chair.

Dr. Chagla, I'm wondering if you can comment on this idea of travel corridors. I know that other countries, such as the U.K., are using this idea of travel between countries with low case counts as a way to eliminate the quarantine requirement. Can you comment on the efficacy of that or on any issues from your perspective?

Dr. Zain Chagla: Yes.

The concept is that you go to lower-epidemiology or lower-instance countries, and therefore your risk is not dissimilar to my risk of driving to Toronto and then driving to Hamilton on a daily basis in that sense.

Certainly, with regard to countries like New Zealand and Australia, I think there's some validity there. The problem is that you have to be very in tune with the epidemiology of what's going on. There are regional outbreaks that occur in many different places. There are countries where we just don't know the epidemiology. It's interesting; some of the work from the McMaster study is starting to reveal some of these travellers coming back from countries that claim very low incidence but that are actually probably higher than we expect.

The reality, as well, is that I can't fly to New Zealand on my own from Pearson. I have to hop off at an airport, probably in Hong Kong or Dubai or somewhere along those lines. Fine, you were in a low-incidence country, but you stepped into a high-incidence country in an airport and hung out there for 12 hours and then came back.

Mr. Taylor Bachrach: My next question, Dr. Chagla, just very briefly, is on temperature checks.

Airlines have been doing temperature checks for quite a while now. Do we have any data on the efficacy of those temperature checks? Are they effective at identifying people who are carrying the virus?

Dr. Zain Chagla: One study that I know of that was done in the United States did temperature checks and symptom screens of everyone entering from the airport. Its estimate of effectiveness was 83,000 temperature checks and symptom checks to identify one individual that was positive.

Yes, they will pick up people, but you have to consider what the risks are. To me, also, having a lot of people standing in line waiting to get a symptom screen and a temperature check from an infection control perspective is like, “Oh, God, what is going on here,” right?

Mr. Taylor Bachrach: It's a risk itself.

I want to try to fit in one more question if I could, Mr. Chair. Am I out of time?

He's giving me the hook.

He's on mute, though, so I am just going to go rogue here and ask Dr. Bogoch about the types of aircraft.

The Chair: Go ahead, quickly.

Mr. Taylor Bachrach: Right on.

I'm wondering about the air exchanges. Those are some pretty impressive numbers that you cited—I believe it was you, Dr. Bogoch. Do those run across a range of different types of aircraft?

I fly a lot on small turbo props, and I'm wondering if those airplanes have similar conditions. Sometimes I feel pretty packed in there with a lot of other people.

● (1750)

Dr. Isaac Bogoch: Yes, it's actually pretty interesting. It's going to be different for different planes. It probably won't be as good on the smaller planes that you're flying on, unfortunately. Sorry.

Mr. Taylor Bachrach: Thanks for the answer.

Thank you, Mr. Chair.

The Chair: Thank you, Dr. Bogoch.

Thank you, Mr. Bachrach.

We're now going to move to the Conservatives.

Mr. Soroka, you have the floor for five minutes.

Mr. Gerald Soroka (Yellowhead, CPC): Thank you, Mr. Chair.

Dr. Bogoch, when you started talking about your trip right from home to the airport and how you were wearing your mask and everything.... Do you think that face masks and temperature control are going to become standard features now at airports and on planes, or is this not an option yet?

Dr. Isaac Bogoch: I really think this pandemic is going to wind down. It's going to take some time, but if we just look at the Canadian perspective, as 2020 rolls on, and as more and more people get vaccinated, we will see less and less of this, and less of an impact on the health care system and in the community at large. I really think we're going to start to see the lifting of many of our public health restrictions, including probably allowing larger gatherings, loosening up at the border and lifting mask mandates. It's going to get better.

It stinks right now, and January is going to be ugly, for lack of a better word, but this will get a lot better as soon as vaccines start to roll out.

Mr. Gerald Soroka: I'm just concerned with public perceptions now. As you said, a lot of this that we're doing is just to make sure that people feel safe. It's not necessarily helping as much as you'd think, which surprises me about wearing a mask in a seat. You're right in that there are different planes and different ideas, but the mask probably isn't beneficial if you don't have anyone sitting close to you, and that really, the odds of getting an infection are very slim.

Dr. Isaac Bogoch: I would say that the masks are certainly helpful, but I really like to think of this as a bundled approach. The use of masks, distancing when possible, the ventilation system on the plane and hand hygiene are really parts of a bundled approach.

It's hard when you start teasing it apart and saying, “Well, I can eliminate this, but I'm going to keep that.” I think it starts to fall apart. If we just keep it bundled together, we'll be as safe as possible.

Mr. Gerald Soroka: Okay.

You also mentioned about getting to that herd immunity, that 70% of testing, but until we get to that stage, do you think we'll have some type of vaccination passport that says that I've been vaccinated and I can now travel or that I don't have to have these kinds of restrictions? Is that a possibility?

Dr. Isaac Bogoch: I certainly think it's a possibility. I just think we really have to have a firm understanding of what the values of Canadians are concerning that.

Certainly, we know people who are vaccinated are very unlikely to get this infection, and if they do get this infection, they're probably—and I have to be careful with my words—less likely to transmit it.

I think we have to gauge the value of Canadians to see if that's something they would be amenable to, because there certainly are equity issues with that. Not everyone can travel and not everyone might have access to a vaccine. We're prioritizing the vaccines with different groups. There are going to be enormous equity issues with passports, which would have to be addressed.

Mr. Gerald Soroka: Thank you.

Mr. Taylor, you haven't had many questions, so maybe I'll ask you one.

When it comes to your PCR test, you're saying that it is the gold standard. Would you mind telling me the accuracy of your gold standard test of the PCRs?

Mr. Patrick Taylor: Accuracy is built upon historic use, and it's the principal product used globally.

The actual accuracy is more a question for Dr. Bogoch, to be perfectly honest.

The efficacy of the test is well established. If I could hand that to Dr. Bogoch or Dr. Chagla, they will give you a more incisive response to this, but we build the most commonly accurate test globally.

Mr. Gerald Soroka: Okay. Either can answer.

Dr. Zain Chagla: The problem with saying an exact number is that PCR is the gold standard, so it's hard to compare a gold standard with a gold standard.

Some of the early Chinese data suggested 70% to 80% accuracy. Those were really poorly constructed tests, with lots of different reagents and lots of different parts. They were not great. Better accuracy is probably at 90% to 95%. Again, it depends on where you're getting them and the context of their infections. Very early or very late, you can still miss people.

Looking at data from the Ontario public health labs, when people are tested, in the few tests that are done serially—I think there were about 8,000 cases, or something like that, where people were tested twice, which we often do in hospitals when we are very suspicious—there were about 2.5% that flipped over from negative to positive on the next test, so you do miss people.

Again, this is the gold standard, so it's hard to say what's better than this in that sense.

● (1755)

Mr. Gerald Soroka: Yes, that's fair enough.

Mr. Taylor, you test various surfaces. Have you discovered how long COVID lasts on certain surfaces, where it lasts the longest, or anything like that?

Mr. Patrick Taylor: Yes, Mr. Soroka, there is plenty of data on this.

One example of this is one of the cruise ships that was held in Japan for some time. Post the evacuation of the ship, after 17 or 18 days, the residents' material was there and it was on multiple types of surfaces, whether it was steel, plastic.... However, the substrate does affect the length of the dwell time. Plastics tend to hold the viral material longer.

The Chair: Thank you, Mr. Taylor.

Thank you, Mr. Soroka.

We're now going to move to the Liberal Party.

Mr. Rogers, the floor is yours for five minutes.

Mr. Churence Rogers (Bonavista—Burin—Trinity, Lib.): Thank you, Mr. Chair.

Welcome to our guests.

Mr. Taylor, first of all, with your vast knowledge and experience in the area of testing technology, I want to ask you a question.

It's my understanding that the federal government distributed millions of rapid tests across the country, but the provinces have been reluctant to actually use them. I'm wondering if you could give me some insight into why that might be the case.

Mr. Patrick Taylor: I can answer that quite simply, Mr. Rogers.

LuminUltra is not a policy-maker. We don't advise on policy. We develop the most accurate test of its type with the PCR program. The decision on that is firmly with the policy-makers, not with the manufacturer.

Mr. Churence Rogers: Thank you very much.

Dr. Bogoch, do you have an opinion or comment on that?

Dr. Isaac Bogoch: I honestly think the medical and health care professionals are our own worst enemies. I sit on some of these committees and we hear some of the debates about how and where we should use this. From a medical standpoint, we have to be extremely careful. From a public health standpoint, of course you still need to be careful, but there's a little bit more wiggle room in how you can use these tools. You can certainly set up protocols to use them.

Unfortunately, I think we're perhaps treating a screening tool more as a diagnostic tool. The question we're answering with these is: “Is the person at risk of transmitting the infection?” not “Is this person infected?” It sounds similar, but it's actually quite a different question.

We have ourselves to blame for a lot of this.

Mr. Churence Rogers: Dr. Chagla, I've heard from many people in the airline industry that we should be using rapid testing to get people back in the aircraft. Do you have a comment?

Dr. Zain Chagla: I agree. There's a creativity issue, unfortunately. I think there's a risk tolerance issue in the medical community for not using these tests. Again, people are not getting tested as appropriately as possible. We're seeing people quarantine, going through that devastation of having to stay in the house for 14 days and not being able to isolate properly.

There are so many good use cases for these tests. The federal government bought them for people to be creative and use them. Unfortunately, the medical community and the microbiology community have been a bit more hesitant.

Dr. Bogoch and I have talked about this at length a number of times in terms of our own personal stance. Certainly they have a role. In Calgary, they're used for getting people out of quarantine, and we're getting the data for that. If it's looks successful and that use case is good, that's a great scenario to use them.

Mr. Churence Rogers: Thank you very much.

Mr. Chair, I have one final question.

The Atlantic bubble has been a unique approach we've used here in Atlantic Canada, which of course has been really positive for helping to keep the numbers down and for controlling the spread of the virus. However, it has a significant impact on the airline industry, which has cancelled many of the routes in Atlantic Canada. It's also has had a major impact on the tourism industry.

I'm wondering if any of you could provide your thoughts on this bubble and whether it's been successful and the biggest challenges faced. There are lessons from this, of course, that we could take to Canada or internationally. I just want to get your take on it.

Dr. Isaac Bogoch: Really quickly, congratulations. I think it was largely successful. I appreciate there have been some hiccups; however, with good leadership and good public health, the Atlantic bubble has essentially been able to harness its demographic and geographic advantage.

I think it would be extremely hard to replicate that in other parts of the country. I could list off 20 reasons why. It's not impossible; it's just much harder. It's easier to do in the Atlantic bubble.

I'll give credit where credit is due. It worked very well.

● (1800)

Mr. Churence Rogers: Dr. Chagla, do you want to comment?

Dr. Zain Chagla: Again, I echo everything Dr. Bogoch has said. Both of us have talked extensively about the Atlantic bubble and what's worked and what hasn't.

There are downstream effects, as you say, such as the tourism industry's importance on other people's livelihoods. However, at the end of it, the Atlantic bubble had a geographic advantage over the rest of Canada. It was exploited and it was the right approach. It took a lot of leadership. I think much of the country is envious that it worked that well.

Good for you for that.

Mr. Churence Rogers: Thank you very much. I appreciate your comments.

The Chair: Thank you, Mr. Rogers.

I want to take this opportunity to thank Dr. Bogoch, Dr. Chagla, Mr. Taylor and all members.

It was a very good meeting with a lot of great questions and a lot of great information. Hopefully for those who are watching, a lot of insight was given, as well as a lot learned.

This is our last meeting before we enter the holiday season. Tonight is the beginning of Hanukkah. Before we adjourn, I want to wish all those celebrating Hanukkah a happy Hanukkah, those celebrating Christmas a merry Christmas, and of course to all a happy holiday.

To all of you, although sometimes politically we see different ways and have different ideals and different manners, we're still all Canadians, and being Canadian we still have Canadian values. Of course those values attribute themselves to good people, good friends, good neighbours. I always say politics is secondary. Our being friends and fellow Canadians is primary.

With that, I wish all of you a very happy holiday with your families, a safe holiday. By all means get some rest and get a breather. It's been a long haul since we came back in September. I very much look forward to seeing all of you when we return in the latter part of January. To all of you, have a great holiday. We look forward to seeing each other in a few weeks.

The meeting is adjourned.