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Select Committee
on Emergency Management
Oversight

COVID-19 modelling

Comité spécial de la
surveillance de la gestion
des situations d'urgence

Modélisation de l'évolution
de la COVID-19

1st Session
42nd Parliament
Friday 11 December 2020

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42^e législature
Vendredi 11 décembre 2020

Chair: Daryl Kramp
Clerk: Christopher Tyrell

Président : Daryl Kramp
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LEGISLATIVE ASSEMBLY OF ONTARIO

**SELECT COMMITTEE
ON EMERGENCY MANAGEMENT
OVERSIGHT**

Friday 11 December 2020

ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

**COMITÉ SPÉCIAL DE LA
SURVEILLANCE DE LA GESTION
DES SITUATIONS D'URGENCE**

Vendredi 11 décembre 2020

The committee met at 0930 in room 151 and by video conference.

COVID-19 MODELLING

The Chair (Mr. Daryl Kramp): Good morning, everyone. I call this meeting of the Select Committee on Emergency Management Oversight to order. We have the following members in the room: Tom Rakocevic and Ms. Hogarth—in addition to our guests, who will be introduced very shortly. We have the members participating on the screen, as you can see, and we've all been accordingly entered in properly.

We're also joined by staff from legislative research, broadcast and recording, and House Publications and Language Services.

As I mentioned earlier, to make sure that everybody can understand and hear what is going on, please speak slowly and clearly, and please speak into your microphones so that we can hear properly. Please wait until I recognize you before starting to speak, and remember as well, for those of you who are mobile, to unmute yourself before you begin speaking, unless the staff has been able to do it here. As always, all comments by members should be directed through the Chair. Are there any problems with that, colleagues?

Seeing none, pursuant to the order of the House dated July 15, 2020, this select committee has been appointed to receive oral reports from the Premier or his designate or designates on any extension of emergency orders by the Lieutenant Governor in Council related to the COVID-19 pandemic and the rationale for those extensions.

The Deputy Premier and Minister of Health, the Honourable Christine Elliott, who has been designated by the Premier, is here with us today to provide the committee with that report, and I will let her introduce our following guests when she has the floor.

Per the motion, this committee is empowered to meet as follows:

- up to 30 minutes for the Premier or his designates to make an opening statement;

- up to 60 minutes for members of the recognized parties to pose questions of the Premier or his designates in three rounds of 10 minutes for each party;

- up to 10 minutes for the independent member then to pose question to the Premier or his designates in two round of five minutes each.

As has happened in the previous meetings, the process will be as it has always been, which is, following the Deputy Premier's opening remarks, we will proceed in question rotation as follows: first round, 10 minutes to the official opposition starting off, followed by 10 minutes to the government, followed by five minutes to the independent member; and then we will do the same in the second round—10 to opposition, 10 to government, five to independent; and in the third and final round, it will be 10 minutes to the official opposition and 10 minutes to the government.

Are there any questions before we begin today's meeting? Seeing none, welcome to our guests as well. We're pleased to see you here today.

Deputy Premier, will you proceed with your introductory remarks? You have the floor. If you could introduce your guests, and please proceed. Thank you.

Hon. Christine Elliott: Thank you very much, Chair, and good morning, everyone. It's a pleasure to join the Select Committee on Emergency Management Oversight to share an update on the province's COVID-19 modelling. As you are all aware, the Solicitor General will be joining you on Monday to provide context around the emergency orders themselves. However, today's meeting is to provide a deeper understanding around the rationale guiding the government's decisions.

I'm joined by Dr. David Williams, Ontario's Chief Medical Officer of Health, and Dr. Steini Brown, dean of the Dalla Lana School of Public Health at the University of Toronto and co-chair of the Ontario COVID-19 Science Advisory Table. Throughout the COVID-19 pandemic, our government has been very fortunate to have received the advice of Dr. Williams and Dr. Brown, and we have benefited greatly from their expertise. I am thankful for their service and commitment to protecting the health and safety of all Ontarians during these very extraordinary times.

From the outset of this pandemic, our government has been committed to transparency so that people, businesses and local communities across Ontario have access to the key information they need to protect themselves, their loved ones and their communities. In alignment with this commitment, the Select Committee on Emergency Management Oversight plays a vital role in ensuring that our government is accountable to all Ontarians when emergency orders are extended by requiring us to provide the rationale for each extension.

As you have seen throughout the pandemic, the guidance and recommendations of the Chief Medical Officer of Health, the Public Health Measures Table and other public health experts, as well as the evidence stemming from modelling and ongoing monitoring of key indicators, have driven and continue to drive our decisions around the extension of emergency orders. Yesterday, we extended the emergency orders until January 20 to ensure that we have the tools to address urgent public health situations and support the delivery of health care and other critical services over the coming weeks. This extension was part of Ontario's multi-faceted response to the COVID-19 pandemic, which also included updating our framework to lower the thresholds for each level so that preventive measures and additional public health and workplace safety measures can be introduced earlier to help stop the spread of the virus.

Today, Dr. Brown and Dr. Williams will provide an update on our progress in controlling the spread of COVID-19 as well as an update on projections. As you will see, the modelling suggests that any relaxation of public health interventions will likely lead to even higher case growth.

As we head into the holiday season and prepare to implement a safe and effective immunization program, extending these orders will ensure that the necessary measures remain in place to address urgent public health situations until all Ontarians can be vaccinated.

So thank you, and I would now like to pass it over to Dr. Brown to walk you through the modelling in greater detail. Dr. Brown?

Dr. Steini Brown: Thank you, Minister. As I always say before these briefings, I'm proud to present this work but it's really the work of researchers and scientists based at McMaster University, the University of Toronto, Queen's University, Public Health Ontario, Ontario Health, the Ministry of Health, ICES, and several hospitals in Toronto and elsewhere in the province.

If we could go to the next slide, please. This is the key findings page that we talked about. Just to frame it again, we often talk about three indicators that we look at to try to get a general sense of the spread of the pandemic: the first is cases, the second is per cent positivity, and the third is the number of tests. When you see all three increasing, that is the sign of trouble. When you see them varying a little bit, that gives you an idea that you need to be looking more closely at other indicators to get a sense of the true direction of it.

What we have here, again, is essentially the same as when we presented publicly about two weeks ago: a bit of a precarious situation. Cases are rising; per cent positivity, though, appears to be flattening, despite very strong and very high testing numbers, relatively; and we have R, the reproduction number, fluctuating one side or the other of 1.

R, it's important to understand, is just the idea of how many people you infect if you yourself are infected. So if the R is 1, that means that you're only infecting one other person. Obviously, when it gets above 1, the pandemic is

increasing. Right now, our R is probably about 1.1. When it gets under 1, you're not increasing the pandemic; it's actually starting to shrink because it doesn't propagate forward.

Our R right now is fluctuating on either side of 1, which means that we're just kind of in this precarious or fragile situation where we hope that we can get the rates going down. Likely we're right now around this because of the interventions that have already been put in place. And now it's the time for whether or not you can push it further down.

Long-term-care and overall mortality continue to increase. They exceed 25 deaths per day within a month, which—again, it's often hard to put this into context, because 25 deaths in a province of 13 million people may seem like a small number, but it's a large enough number to make it among the most common causes of death. It's not as big as cancer or heart disease right now, but it is more common than virtually every other category that's reported by Statistics Canada on a regular basis.

ICU occupancy, which is a key indicator, is over 200 now, as we predicted in the earlier modelling, and it's likely to be over 200 for the rest of the month.

It's pretty much the same pattern that we see: access to suitable housing, and employment outside of essential, front-line services as being predictors of lower growth. But if you can't get suitable housing, if you have to be in an in-person job and can't work at home, we see much faster growth of the pandemic.

The current set of restrictions—and here I'm really talking about the restrictions that started in the middle of September—have not reduced mobility as much as we would have seen with the spring lockdown. That's understandable. The spring lockdown was a much more stringent set of restrictions. This is important to keep in mind, though, because it means that it's not reducing contacts down as fast. We're not going to see a reduction in the numbers with the current set of restrictions as quickly as we did in the spring. However, it looks—and I'm happy to present some other evidence later on—like they are having an impact. We'll talk a little bit about that as we go through.

If we could go to the next slide, please. As we see very much consistently through this second wave, there's really a huge degree of variation across public health units, a huge degree of variation across the geographies of Ontario in the spread of the disease. Here you can see that in cases per 100,000 residents: 197 in Peel down to about 30 in Ottawa. So a very, very different picture of spread across the province. This is an important note because it allows you to understand the relative trajectory of the disease in different regions. It also reinforces the importance of looking at this on a region-by-region basis, because it's not a consistent picture across the province right now.

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If you go to the next slide, you can see the new cases with no epidemiological link across public health units. Again, there's this very big variation, ranging from about 70%, where we're not able to say clearly where the

infection was contracted, down to about 6%—really, the high in Toronto and the low in London, in this case. It's not surprising to see a large number of cases without an epidemiological link at this stage in a pandemic with high case numbers and high case growth. Not surprisingly, you're seeing the highest percentages that are not linked in the two regions with the highest number of cases.

But this is a critical measure of public health capacity. As case numbers come down, it will be important to have this number very, very low so that you can work towards suppression of the disease. Identify every case, identify where it's come from, and try to keep that under control. This may not be that valuable to look at right now at a provincial level, but it's really important when we hopefully get into the declining phase of this second wave to be able to keep the disease under control.

We go to the next slide, please. Here, you can see the per cent positivity. Now, overall, the big picture here is that per cent positivity—this is the per cent of tests that come back with a positive result from COVID-19. Overall, it appears that test positivity is flattening. You can see this very clearly in Peel, where there was a spike. Although it remains the highest in the province, it's now at about 10.8% and relatively flat. You can see as well the flattening in Toronto.

I think it's important to look at Ottawa, Toronto and Peel here, the three regions that had to deal with some of the most explosive growth early on. They've started to flatten here, likely a sign of the effectiveness of the interventions, that they actually are having an impact. Some of the other regions continue to grow here. But again, it's this very precarious mixed picture that I want to talk about. Case growth is very clear; per cent positivity is starting to flatten; testing volumes are reasonably strong and consistent. So we're just at that place where we might actually be able to—as one of my mathematicians says, we're either going to lose control or gain control. We're either going to kill it or crush it, as we go along here.

If we could go to the next slide, please. This is the per cent of COVID test results returned within two days across public health units. This is a really important measure as well of public health capacity. As you can see here—I'm going to just make this clear—this is really just the interval between taking the test and getting the results. It's not the full journey of getting results. But you can see here that it ranges from about 90% of people in London will get their results very quickly—they will get it within two days of taking the test—and it goes down to about 40% in Brampton.

This is another important measure of public health capacity, because it allows you to make sure that people find out the results, that they can self-isolate if they're positive. You can begin to do other types of tracing if it turns out they're positive. And, as importantly, for individuals, they can go back to work and they can go and engage in whatever they were doing before if they're negative. But again, there's a very big variation across the province, which remains one of the hallmarks of the second wave and an important issue to think about when you're looking at control of the pandemic.

If we could go to the next slide, please. This is weekly per cent positivity by age group across the province. We've presented this data repeatedly, but in the past, you remember, it was a large rectangle with a series of purple squares. The darker the squares, the higher the per cent positivity. We started where this was getting to be a bit of an eye test chart, that people were having trouble just getting the gestalt of it. So we want to show you here the line data that shows the differences between the first wave of the pandemic and the second wave of the pandemic. It gives you, again, an overall view of per cent positivity.

Let me talk first about the overall view. If you look at the far right-hand side of the chart, you can see that all of those lines—each line represents a different age group of about 10 years—are starting to flatten to a great degree, maybe with the exception of the youngest age group, the under-10s, which seems to be rising. But largely, we see this flattening, so this is a positive sign.

What you also see, though, which I think is important to emphasize, is a very different relative level of positivity between the first wave and the second wave. The first wave is the series of spikes on the left-hand side of the chart. You can see that very big dark-blue spike. That is the wave of the pandemic that went through long-term care in the first wave, and you can see it's very high, and relatively lower in other age groups. This is to reflect the fact there were very significant restrictions in the first wave. This reduced contacts among people who would be mobile, but unfortunately the pandemic did get into long-term-care homes and moved through there with tragic results.

You can see in the second wave really what looks like community spread here, with a distribution that's much more consistent across a series of different age groups without that spike in the oldest people, who would be likely in long-term care or in other types of congregate settings—who are likely to be in congregate settings. So you can see a very different picture of the pandemic here, this, sort of, community-based spread. The importance of emphasizing this bit about community-based spread still does come back to long-term-care homes and congregate settings, because the single most important predictor of an outbreak in a long-term-care home—and I'm building off of work by Dr. Nathan Stall, Dr. Kevin Brown, Dr. Paula Rochon and Dr. Michael Hillmer here, among others—the single biggest predictor is that you have an outbreak and that you have a high degree of spread in the community, which then leaks its way into the home. It's brought in from the community into the home, and then there are other predictors of mortality within the home, but it is really important for understanding what goes on in homes.

If you go to the next slide, you will see these consequences here of spread within long-term-care homes. It does look, overall, like cases in residents are somewhat flat. You can see that dark-orange line or kind of an amber-coloured line. That's that top line, the daily active cases in residents. It took a little bit of a dip after the—which really looks like around probably the response to some of the earlier restrictions; it came back up, but now again flat.

You can see the cases in staff following a little more of a trajectory upwards, but you can see the consequences of the cases among a very vulnerable part of our society to COVID-19. This is the cumulative deaths. It's 102 deaths in the past seven days. Really, this has been essentially an accelerating rate of death, for the most part, since the summer. When we look at deaths early on, it was relatively low. Just to sort of give you kind of an idea of the acceleration here, since August 1, we've had 496 deaths; 493—virtually all of those deaths—have occurred since September 1. In the last week, over a fifth of those deaths, getting close to a quarter of those deaths, have occurred. So it's really an increasing mortality curve.

The challenge of thinking about how to arrest this is that death is really a lagging indicator of the pandemic; so infection, symptoms, often hospitalization, and death follows. This is something that even if you break transmission now, you can expect deaths to continue on their trajectory, and it's really a function of the caseloads we have in long-term-care homes. So it doesn't change overnight. It takes a while to change.

If we could go to the next slide, please. Here is work by David Earn and his team based at McMaster University. This is a forecasting model looking at deaths overall, so this is total mortality in the province. You can see there is significant variation day to day in the overall level of mortality. That is maybe not surprising from a statistical perspective, but you can see that at least the trend or the forecast here is to over 25 deaths per day, on average, so between 25 and 30, which, again, as I said, is actually a significant number of deaths. Obviously, there are wide confidence intervals on this. When we put these intervals around it, we're saying, "Where do we think the real number will fall at any one point?" That's a wide band. And you can see it goes from just under 20 to just over 40. Going to over 40 deaths today would be a significant cause of mortality in the province—even more than it is already. But the centre point is about 25 to 30.

If we could go to the next slide, please. So we often start the modelling slides with a comparison of other countries to where Ontario is. Overall, we're lagging some of the European jurisdictions that we look at by about a month and a half to three months. Their second wave started earlier. We're sort of about a month and a half to three months behind where they are, but then we try to understand where we would go if we followed their trajectories.

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Looking here, you can see up until about the 9th of December that we have data, just shy of around 2,000 cases a day, and if we really flatten out, if we have 0% growth, we'll stay just shy of 2,000 cases a day. If we have about 1% growth, it will take us up over 2,000 to about 2,500 cases a day. If we see the type of growth that you see often in, say, the first waves of these sorts of pandemics, we'll go up closer to 10,000 cases a day by about the end of the first week or beginning of the second week of January. So there's a big range here, and this is why, when we talk about just being on the knife edge of this precarious position, keeping that R at 1 will keep us at

about the current case count; a little growth in that will actually start to increase the number of cases significantly.

If you want to get a sense of where we are, 1% would keep us under where France was at the same time in the growth of their pandemic, which would be a very good thing. But if we get up to 5%, we're above France, we're above the UK, we're above the Netherlands, who saw explosive growth—and we'll need to actually go with really very significant restrictions on movement.

Right now, just to give you a sense, we're fluctuating between about 0% and maybe 3%—a little bit of a drop today. That just gives you a sense of that kind of precarious back-and-forth nature of where we are with the spread of the disease.

If we could go to the next slide, please. This gives you an idea just overall. This isn't modelling; this is a presentation of where we are with the actual growth in hospitalizations. You can see here that we have about a 91% or 92% increase over the last four weeks. The last time we presented that increase, it was in the 60s, so we kind of had a takeoff and then a little bit of a diminution, and now we're back with an increasing rate of growth. You can also see the growth in ICU admissions here. That, again, is always a lagging indicator; remember, it's infection, symptoms, hospitalization, and then we're going to see ICU rates change. We're starting to see that change now, and you've got about 166% growth in ICU patients.

If we go to the next slide, this is the modelling of where we are with ICU admissions. I think the good story here is that had we kept on with some of the growth that we'd seen early on, before the new restrictions, ICU occupancy would be much worse. I think you see a little bit of a flattening here as the first bit of those restrictions starts to be felt down the pipe, which is a good thing. But what you also see here is that we are above 200 ICU beds now, and we're going to likely stay there for the next month, if we are able to control further spread of the pandemic. If we're unable to control it, if we do get up into that 1% range, we're up now closer to 300 ICU beds occupied; and if we get up north of that to 5%, we really see ICU rates around 500 or 550 beds occupied by the end of the first week of January.

It's really important to note, though, that this is not evenly distributed. This is heavily clustered in the regions with the highest case growth right now. You may think, "Oh, 200 beds—is that really a big issue?" It's much more a high concentration of ICU beds being used within a small number of communities. If you look at places like Peel right now, you're seeing significant challenges in staffing intensive care units. This is not the type of hospital unit where you can move nurses and physicians around. You need highly specialized people. You need respiratory technicians. Often, I think folks say, "Well, this isn't that big a total." Well, it's a fairly significant impact in terms of the number of beds and the small number of units, and it's a very significant impact in terms of health human resources: the doctors and the nurses who are working in this. It's maybe one thing to build beds easily; it's much harder to train and get nurses and doctors in place. And

you see in, say, Peel right now that they're having to go to alternate models of nursing in the intensive care units that may not be what we want to see.

It's also important to note that ICUs are now operating at a much higher occupancy rate than we would have seen before or that we'd like to see them operate at. Our hospitals operate at a high-occupancy rate, often 100%. ICUs, because of the intense nature of care, operate below that. When you lose spots in ICUs, you do cancel surgeries, you do delay surgeries, and I think it's important to maybe—I'm going to come to a couple of slides about the impact on access to care, which is what you're seeing.

Can we go to the next slide, please? This is work by my colleague Dr. David Fisman of the University of Toronto. This is a mathematical model that helps us understand what's going on with ICU admissions. We did see, thankfully, a really low level of ICU admissions during the summer. You can see that dip in the middle here. That's a very positive thing. With less spread of the disease, with lower case numbers, that is a positive thing. However, often I am asked questions like, "Really, is this second wave a case-demic, with a lot of cases, or is it translating into deaths and admissions to ICUs?" The short answer is yes, it is. It is doing it at a lower rate, which is excellent, but it is still translating, and as case numbers grow, the math drives higher numbers of cases here as well. So you'll start to see ICU admissions get even higher.

It may sound very technical, but I'm also a little worried that we have some censoring in our length-of-stay data in intensive care units. Because we're now seeing the second wave, we really don't know the full true, average length of stay or length of time that people spend in an intensive care unit, so occupancy may actually go up even higher. As admissions rise and people stay longer and longer—remember, these are critically ill people, often on ventilators—we may see even more crowding in our intensive care units.

If we could go to the next slide, please. This is a picture of what happens to people who do not have COVID, in many ways. I want to spend a little bit of time here, hopefully with the indulgence of the committee, to talk about what actually happens with access to care here.

You see a huge reduction in access to care in the first wave. That's understandable. We did not know what was happening with the disease. It was still a very novel disease. What we did see were the examples out of northern Italy, out of Spain, out of New York with field hospitals—really, a very quickly overloaded health care system. There was a decanting of the hospitals in a significant way.

You can see the readjustment as the pandemic lessens during the summer, but what's important to note here is that we're still moving below that red line, so we are not yet back to the level of care on a daily basis that you would have seen in 2019, which is critical, because we're not making up that deficit that we've had; we're actually slowly adding to that deficit. As we now get into this second wave with the impact on intensive care units, we're seeing an even more significant reduction. That access-to-care deficit is going to build.

It's important to note, too, that this is not care for elective procedures, things that would be nice to have but you don't need. This is going to start to delay things like cancer care. It is going to start to delay things like cardiac care. You think about the spare ICU capacity needed to be held onto for motor vehicle accidents or other sorts of emergencies. It will start to impact all of that, and all of that does have long-term health consequences.

The access-to-care deficit goes beyond hospital care, with shutdowns in primary care and so on. As people try to navigate and reduce the spread of the disease, you see declines in screening, you see declines in diagnostic imaging, you see declines in other areas. So if the pandemic continues to compromise all of these areas of the health system, you will see a significant access-to-care and health deficit build up.

If you'd go to the next slide, please. We started to present work on this at the last briefing. This is work out of St. Michael's Hospital, ICES and the University of Toronto looking at where our cases are and the community factors that are associated with these cases. I really want to make the point here that these are long-standing structural factors that are driving higher rates. This is about people who are at greater risk of exposure, and so it's important that when we think about controlling the pandemic, it is test, trace, isolate and also support, because these are factors that drive exposure that are beyond people's control.

If you look here, the red line is the people who have the lowest access to what we call "suitable housing." There's a very complicated Statistics Canada definition as to suitable housing, but basically, it means, "Do you have a bedroom in which you can isolate?" It's much more complicated, and I could spend a long time talking about it, but basically, are these people who are crowded in homes or not crowded? You can see that the growth in cases is highest in those communities with the least access to suitable housing.

What's interesting to note here is when you look at the green line, which is the middle tertile, or the blue line, which is people who have the best access to suitable housing, it actually starts to flatten with some of our restrictions. The restrictions probably do have an effect here, but it's heavily dependent on your ability to adhere to those restrictions.

Now, again, you can't limit infectious diseases to communities. It is spreading again throughout the entire province. Unless we're able to support within these communities, you will see this continue to propagate forward.

If you go to the next slide, you can see the same pattern on multi-generational housing. Of course, this has an important health impact. If you have older people in the house living with families, you're going to see spread into the community or the proportion of our population which is the most vulnerable.

If you look here again, on the next slide, this is communities where there is a high number of people working in non-health-care essential work. These are the people who make sure there's food in the grocery store.

These are the people who make sure you can purchase your groceries. These are people working in manufacturing and a variety of trades, so critical things to making sure that the province continues to work and to run. These are the people who cannot isolate at home; they need to actually work, and often face a very difficult decision of whether to go to work or not, or whether to get tested or not.

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You see this very similar pattern. In these communities, where there's a high degree of this work, the risk of exposure is just higher, and you see that dramatic increase in the pandemic that really doesn't break with anything. But in communities where people can work from home—I'm fortunate enough to be able to do so—you actually see this dip, so the restrictions have an impact. They actually do shift. But the structural factors that drive high rates in these communities really make it hard for them to take effect unless it is a complete lockdown.

Last slide before maybe just considering a little bit in the appendix: This is a look at mobility in the greater Toronto area. This is the per cent of devices left home. What I want to show here is that prior to the pandemic—say, in February, which is the left-hand side of the chart—very few people are leaving their mobile devices, like their phones, at home. They're out. They're moving around. You see with the first set of restrictions a dramatic reduction in the per cent of devices at home. As those restrictions start to ease, you see a return not to full mobility—lots of people are obviously still staying at home more—but a reasonably high level, and then you see a little bit of effect of the—well, it's hard to say—

The Chair (Mr. Daryl Kramp): Excuse me, Dr. Brown.

Dr. Steini Brown: Yes?

The Chair (Mr. Daryl Kramp): You only have a minute left; however, I'm going to ask the indulgence of the committee. I'm not sure how much time you have left, but if you need to go a couple or three minutes extra, if the committee is comfortable, then perhaps in the second round of questioning I can reduce it by a minute from each, which would be balanced if we're fair.

Please carry on. Your presentation is important to this committee.

Dr. Steini Brown: Thank you.

You can see the early restrictions—say, the ones around September 19—not changing mobility that much. We don't yet have as up-to-date data as we'd like here; I was able to look yesterday morning at preliminary data that would take us a week further, so really over to about November 22 or 23: a little bit of a reduction, about 1%, and so we're not seeing that reduction in mobility that you'd want to see as much.

If you want to have a good example of just practical reduction in mobility, where it is or not, stand out on Queen's Park Crescent. I live in an apartment on Avenue Road; it was very quiet at the beginning, and now we have—well, not a pileup, but traffic jams at the traffic light in front of our apartment. And so you can see that people

are still moving around, and mobility is a very good predictor of the amount of contacts that we're going to see.

That's all of the slides that I have. The only thing that I could maybe ask for two seconds of the indulgence of the committee for: If you go to the first slide in the appendix, it says "projections of ICU occupancy." I wanted to show what we might have been in had we seen the really explosive growth that we saw at the beginning of the pandemic. The reason that we continually show these European jurisdictions is that a number of them intervened later, and they saw that explosive growth that we also saw in our first wave. Had we seen that explosive growth—that, say, 0.5 or 0.9 growth—we would be looking, by the first week of January, at up to 1,100 ICU beds occupied.

Now, obviously at some point the models don't mean much and we get to a place where we have more ICU beds occupied than we have ICU beds, but it gives you a sense of the relative magnitude of what would have happened had we seen that type of explosive growth. We've seen repeatedly across jurisdictions that earlier and stronger intervention really breaks the course of the pandemic, and this may be one of the reasons why we continue to lag some of the other jurisdictions. It may also just be the course of the pandemic here.

If we could go to figure 7 in the appendix, it's one that talks about estimated effective reproduction numbers. Perfect, thank you. This gives you an idea, as well, about the relative impact of different interventions. This is by Jianhong Wu and colleagues at York University. This is what happened with our reproduction number in Ontario at the beginning. You can see that phase 1 is really the slight reduction in the reproduction number, with the delays in school openings and the extended March break. You can see phase 2, and then, really, following that, that very big reduction in the effective reproductive number with the strict lockdown. So light lockdowns do have an effect, and light restrictions do have an effect. You can see that it progresses through, and this maybe gives you an idea of why, when we look back at the first wave, we are seeing some impact this wave but not as much as we'd like to see.

And then, this is the last one I wanted to look at: This is work by Professor Kumar Murty and his team at the Fields Institute of mathematics. It's a mathematical model, not an epidemiological model, but what you have here is if R stays above 1.1, you lose control.

The Chair (Mr. Daryl Kramp): Could you back up one more slide, please?

Dr. Steini Brown: Oh, thanks. Great. I was trying to do the right order.

If R stays at 1.1, you very quickly lose control. This is just a simple mathematical model to show you. An epidemiological model would have a much more sophisticated perspective. You'd see a lot more variation in the lines as we take into account different factors and phenomena. But at 1.1, you've got a huge increase over a short period of time. It really does take off.

If you go to the second one, please—oh, maybe go forward one. There we go. If you keep it at 0.9, you have

a huge reduction in a short period of time. So it's really this issue of this precarious place where we are balancing one side or the other. If we can keep it in one side, on the good side, you'll actually see very significant control quickly.

Thanks for the extra time, Chair.

The Chair (Mr. Daryl Kramp): Thank you very much. Certainly, the time of your presentation was exceeded a little bit but it was certainly necessary given the content of what you had there. Thank you very kindly for that.

We will go to questioning now. We will start off with 10 minutes to the official opposition. Mr. Rakocevic?

Mr. Tom Rakocevic: Good morning, Minister. Good morning, doctors. Thank you for being here this morning. My questions will mostly focus on vaccination and vaccines, and so I'll be beginning the first block.

I guess the first question is, how long does the health table estimate that we will reach herd immunity across Ontario, and will people who have received the vaccine still be required to wear masks and follow a lot of those rules?

Hon. Christine Elliott: It really depends on when you receive the vaccines and in what quantities. We are going to be receiving the Pfizer vaccines first, which have recently been approved by Health Canada. There will be a small shipment that will be coming at some point in the next few days, and that will be a chance for us to test our system to make sure that we are ready to receive the larger quantities. We expect to receive a larger quantity of Pfizer vaccines before the end of December.

After that, it will be the Moderna vaccines coming onto the market. They have not been approved by Health Canada as yet, so it really depends on when that approval happens, because they don't get shipped, of course, until they're approved, and that's something over which we don't have any control. I did have a discussion last night with the federal Minister of Health, Minister Hajdu, about it and she is of the same view: that it depends. The regulatory agency has to do its due diligence to make sure that the product is going to, first of all, work, but more importantly, be safe for all Canadians to take. So I can't give an exact date line—

Mr. Tom Rakocevic: But could you estimate? You do a lot of forecasting. Let's say things go as expected right now, based on the numbers you've said. If all of this rolls out as anticipated, when would you expect us to reach that herd immunity?

Hon. Christine Elliott: Well, they don't even know if there is a herd immunity at this point, so perhaps I could refer that over to Dr. Williams or Dr. Brown, to speak to that point.

Dr. David Williams: Thank you. These are all good questions, and we're asking ourselves the same things you've asked. A couple of questions: one is, after immunization, while it does give an immune response, does it stop the actual transmission or not? That's going to be determined, so we're going to follow up some of the individuals, even during the time of vaccination, and after

vaccination. If they develop signs or symptoms, we'll still swab them and that will help us to assess in our own Canadian data how effective it is in disrupting transmission.

The disruption of transmission then gives merit to the herd immunity-type aspect, so we may have people who are not getting impacted as much by the disease, people who are not impacted at all by the disease, and people who are totally immune as in they are not acquiring or transmitting the disease. All these things are to be determined. The clinical trials didn't do the actual last one. They dealt more with who developed immunity in there and did they acquire the disease during that time.

As far as when we get to a critical mass, as the minister said, it depends on all the new products in the queue to be licensed. They're going through that right now. We have the Moderna coming shortly, but both Moderna and Pfizer are not large volumes for Canada thus far. And then we have other ones such as Johnson and Johnson and AstraZeneca. They're in the queue as well, but further back behind. And we have four or five others behind those ones.

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It's an amazing trip, with how much is getting done in that short a time. It seems like a long time to the public, but in the world of vaccinology, it's a pretty rapid pace. I'm not sure about the "warp speed" term, but that's how it goes.

We'll have a better idea, I think—we'll get into the more mass numbers, I would say, by the summer. We should have a fair volume of products, permitting no disruption in production and failures etc. There is a lot of uncertainty yet, but we are optimistic.

Mr. Tom Rakocevic: Thank you. The next question I have is with regard to what your plans are around vaccine hesitancy for individuals.

Hon. Christine Elliott: I would say there are really two categories that we're speaking about here. There are people who won't have the vaccine under any circumstances, and that's their right. It's not going to be mandatory. It will be voluntary.

But there's another group of people who want to have the vaccine but don't want to be in the first group because they want to see the effects it has on other people first. We are very aware of this concern. The task force is working on that issue, because there's the issue of communication, but there's also the issue of community involvement.

We are catering responses for different groups, for some of our Indigenous neighbours who may have some issues about that. We need to make sure that we have all of our communications translated into three languages there. We also want to make sure that we can work with people who are, perhaps, new to Ontario, again remembering that there may be language difficulties. We're going to have to connect directly with large groups of people in different ways, but that is something that we know is absolutely necessary, because we want to calm people's anxieties in the group of people who want to receive it but are a little bit nervous about receiving the

Pfizer vaccine first. It's something that the task force is quite heavily engaged in right now.

Mr. Tom Rakocevic: Okay. Do you have an idea of what percentage of our province's population are clinically ineligible for vaccination? What's the percentage, and what's the plan for those who want to receive a vaccine, but for different reasons will not be able to get it?

Hon. Christine Elliott: We are still exploring that with Pfizer, understanding if there are groups of people who might not be able to have the vaccine because of comorbidities. We do know that women who are pregnant should not receive the vaccine, or anyone under 18 as well. Although there is some suggestion that maybe that age could go more to 16 for the Pfizer vaccine, that hasn't been determined yet.

As to any other comorbidities, I will ask Dr. Williams if he could please speak to that, in terms of any other knowledge that we have at this point about any other groups of people who might not be able to receive the vaccine.

Dr. David Williams: The minister has covered most of the categories there. As you can see, as the companies come out, they're trying to keep expanding their clinical trials to get to different age groups. Some of the other products coming out are hoping to go to the pediatric age group, as well, but they haven't released their monographs yet. Even Pfizer hasn't got their final monograph out which has all the stipulations in there.

Our national committee on immunization is reviewing the products to ascertain if there are other aspects in there. If you have any allergies to known products or you are very prone to anaphylaxis, then you're obviously going to be careful and not take it unless you're really monitored very carefully. There are still some things we do know and some we don't in there. There are some people with such severe immunosuppression that it would be risky for some of them to take it or not take it, or less effective.

We don't have the list yet, and this is going to be very much learn-as-we-go on that and being informed, and we're going to be taking it on a cautionary basis. As we do get more and more information from the companies and we get the release of the monographs, we will be much more adequately apprised of any of the ones that we cannot do. Right now, we're going on that we can do pretty well most, but we're watching the developments that we and other countries will be experiencing. We're going to learn from each other as we go through this process.

Mr. Tom Rakocevic: How much time do I have?

The Chair (Mr. Daryl Kramp): Two minutes.

Mr. Tom Rakocevic: Thank you.

Thank you very much for that. I know the government has said that they will be prioritizing long-term-care staff and residents. What's the plan in ensuring they get that? Some of the things we've been hearing about the vaccine—will that require transportation of individuals in LTC to hospitals or other sites to administer? Is there a plan around that?

Hon. Christine Elliott: Yes, there is. You're absolutely right: The Pfizer vaccine is one that we have been told

needs to stay at the place where it's delivered, and that will be delivered by Pfizer to the locations we have requested. At that point, we will be asking for staff from long-term-care homes to come in to the location to receive the vaccine.

But it's more likely for residents of long-term-care homes, because it's so difficult to transport them and it's risky in itself to do that in winter months, that they will be receiving the Moderna vaccine, which is much more easily transportable. It still needs to be kept cold, but not deeply cold, as the Pfizer vaccine has to stay at minus 80.

Mr. Tom Rakocevic: Okay.

How much time, a minute?

The Chair (Mr. Daryl Kramp): Yes, one minute.

Mr. Tom Rakocevic: Just to go back to the last question: Is there a specific plan for children and students with regard to vaccination? Because again, there are those limitations. Are you going to be waiting for Moderna for them, or what's the situation?

Hon. Christine Elliott: Well, at this point, neither the Pfizer nor the Moderna are to be used on children. There are five or six others that are in the pipeline coming forward that hopefully can be used by children.

Perhaps, Dr. Williams, would you like to comment on that as well?

Dr. David Williams: We're going to get more information as it comes forward. The priority was, of course, for the highest-risk; that means more of the adults, and the older adults are the ones suffering morbidity and mortality, not children and young people. But we're anticipating that companies will come out with products.

The Chair (Mr. Daryl Kramp): Thank you very much, Dr. Williams. Thank you, Mr. Rakocevic.

We will now go to the government for 10 minutes. Ms. Hogarth.

Ms. Christine Hogarth: Thank you, Mr. Chair. I'll be sharing the first round with my colleague from Eglinton-Lawrence, Robin Martin.

My first question, actually, would be for Dr. Brown or Dr. Williams. First of all, I want to thank the minister and both doctors for all the work you have been doing to help save lives in our province.

One of the things, being a member from a Toronto riding, is that we have a lockdown, so my questions are around the lockdown and small businesses and how they are affected. We get calls and emails every day of, "Why can't I be open and big-box stores can?" I'm hoping that from a medical science point of view—if you can explain to some of the people out there why they can't go shopping store to store along the Queensway, the Kingsway or the Lakeshore and how this is affecting our overall numbers.

Dr. David Williams: Well, I'll start. I know Dr. Brown has some data in his appendix from some studies in the States; he may want to speak to that with some of the other settings and what they've experienced in other jurisdictions in there. I'll preface that while he finds the deck. You may want to get the right sheets that slide up.

The aspect around retail stores in particular—as you saw with the mobility one, our mobility is not down where

it is—we need it down a lot further. People are out and around for various reasons. While they may go on their early-morning walks with a dog, if they're going for retail purposes, they're congregating in large centres, malls or other places like that to do that. That means they're in close contact.

Retailers have attempted to restrict and ask people to space and take their turns. They're having great difficulty controlling that, as people will stand right next to each other and talk about stuff and that, so you're in very close. All you need is a super-spreader in that place and you've carried it through the whole setting.

We know that in the congregate settings, especially in the lockdown zones where your per cent of positivity is well over 2%, as you go up in there, in your area around you, it becomes very much 80% or 100% that there's someone in your midst who you're going to be exposed to in that. Even if you wear a mask, you may not be at six-foot distance all the time, and in some other settings, I see people with the mask down under the nose. They're not adhering to standards, and so it becomes very much how to control that crowd. I've seen sometimes and I've heard of managerial people yelling at people to take their turn and space out the line for the queue, and they're not doing it. So it's very hard to control the public in those settings at that time.

Maybe Dr. Brown would like to give you some data from the American sector, I believe.

Dr. Steini Brown: Thanks. This is a really hard question because it requires weighing so many things. We all have places we like to go and places that are part of our neighbourhood.

I'm going to show a little bit of data that is US data. It's always fair to say that the US is different from Canada, but we're always kind of struggling to find as much as we can on a pandemic like this.

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If you go to, say, slide 21, please, in the appendix. The data is from Chicago for the period of March 1 to May 2, 2020, so it's really in that first wave of the pandemic in Chicago. It's from a paper in Nature, which is one of the top journals in science overall, by Chang and colleagues. They used mobile phone data to link who you are or where you live to where you've been, and then they go through a complex process of mapping this and a variety of very complicated algorithms to see what seems to be associated with more infection. We're not talking about outbreaks here; we're talking about places where we can actually figure out where the infection likely happened.

If you look here on slide 21, if we can get that one up—additional infections associated with opening venue. Okay, great. Sorry, I should have given you a better heads-up. It's the slide that looks like this.

While we're waiting for that, I'll give you what the top-level message is. It's very, very clear that restaurants, gyms, snack bars and limited service restaurants have a significant risk of increased infection. It does come down with different types of stores to much lower.

Now, I want to put this into three pieces of context. As Dr. Williams said, if you have a store open and adherence to public health interventions is low—and it's very hard to govern and discipline that—and you have some crowding, you could easily get this super-spreader event, where the R starts to look like the number of people in the store, at least for that individual who is the index case. So it's not that these places are safe by definition—they actually can create super-spreader events—but they are, relatively, lower contributors to the overall level of infection.

The second thing I note is that depending on where you are in the growth, it's hard to pick and choose what's going on, and it's always hard to pick and choose when you're trying to share messages about public health interventions that we face a lot of fatigue over. There's a very challenging set of judgments here. As you can see from—maybe go to—not that slide. No, keep on going. It's in the appendix, please, slide 21. Yes, thank you. There.

You can basically see the top of that chart is—we'll get there in a second. The top of that chart is restaurants and gyms and places of eating. You see places of worship about a third of the way down. One more, please. One back. It looks like this. It's just got orange bars on it. There we are. Perfect. Then you can see things like gas stations, pharmacies, convenience stores and new car dealers at the bottom. So relatively lower contribution, but they're still places where there's risk, and if there's poor adherence to public health interventions, as Dr. Williams has said, you can see a super-spreader event.

Ms. Christine Hogarth: Chair, how much time is left?

The Chair (Mr. Daryl Kramp): You have three and a half minutes.

Ms. Christine Hogarth: I'll pass it off to my colleague Robin.

The Chair (Mr. Daryl Kramp): Okay. Ms. Martin, you have the floor now. You have three and a half minutes.

Mrs. Robin Martin: Thank you again for all the work you're doing, Dr. Brown and company.

I just wanted to look at slide 3, I think, where we have new cases with no epidemiological link across public health units. Toronto is an outlier in an extreme way. We could say it's because they have more cases, but Peel also has a large number of cases. You said that the important things are test, trace, isolate and support, so what is going on with Toronto, where I know—maybe this is for Dr. Williams—we have put money into extra contact tracers, and yet Toronto has never been better than 50% on this score, and it's so important. What is going on?

Dr. David Williams: Thank you for the question. Yes, we've added a lot of case contact tracers. What we're finding even when we do our own testing is we'll get one of two or three answers when you ask someone. One is, "Have you had any significant contacts in the last five to seven days?" The answer is no, and we say, "Oh, okay. Have you been out and around?" "Yes." "Did you go anywhere?" "Yes." But they either don't recall or they don't want to share that they've had some contacts. So the biggest lead is no contact at all.

The other thing is that when you're dealing with Toronto, with a lot of people, "Were you in a crowded place for a period?" "Yes, I was on the elevator. It took us about four minutes to get down from the 24th floor of the condominium." They're out on the street, then they went to the restaurant for breakfast, then they went to the store. They went to another restaurant, then a meeting. Every day is like that, so they've had about 200 or 250 contacts. Therefore, you lose control. Especially in the Toronto setting, which is more the high-rise type locations, they have multiple high-contact risks all the time that they have very little control over, whereas in Peel, it tends to be much more of a suburbia-type thing with some apartments and that—not the same intensity. And the others are following suit lower down in there.

We have added a lot more case contact people. We continue to build up our central resource for that. Under ADM McMichael, we are moving a lot more staffing out to assist all the health units as they start to get overwhelmed. We always see a magical number, around 40 to 50 per 100,000, where it just shifts over and you get a whole group of people that have multiple contacts, but they can't recall anything significant. Therefore, your ability to do contact tracing becomes defeated because the public, in the end, has to recall. If they can't recall, we can't do much about it.

The Chair (Mr. Daryl Kramp): One minute left. Ms. Martin.

Mrs. Robin Martin: I have another quick question, if I have time.

The Chair (Mr. Daryl Kramp): You still have a minute left, yes.

Mrs. Robin Martin: Thank you. Dr. Brown mentioned that we're at an R rate of approximately 1.1, fluctuating above and below that level, and this is a critical juncture. He said that it was likely because of interventions put in place that we got there.

I take it that what you're saying, Dr. Brown, is if we didn't have these interventions, then our R rate would go up significantly, and that would lead to all kinds of problems. Is that correct?

Dr. Steini Brown: Yes, I believe so. We're really in a situation where we saw very rapid growth, and now that has actually come down. That's likely the impact of the interventions that we have in place. As we've tried to model out what it would look like, had we not had those in place, with the type of explosive growth we saw in the spring, you could have seen ICUs very quickly overwhelmed and a much higher mortality—

The Chair (Mr. Daryl Kramp): Thank you, Dr. Brown. We're finished our time with that now. We'll certainly have some time at the end, I know, to follow up on some of this.

We'll go back now. Five minutes to the independent member. Oh—Ms. Gélinas, you have five minutes, please.

Mme France Gélinas: No, I'm not an independent member; I'm a member of the NDP.

The Chair (Mr. Daryl Kramp): The independent member—we have no one here from the independent

members? Okay. Then we go to 10 minutes to the official opposition. Ms. Gélinas.

Mme France Gélinas: Okay. So I have 10 minutes?

The Chair (Mr. Daryl Kramp): Yes, you have 10 minutes.

Mme France Gélinas: Okay. My first question is to Dr. Brown. I was just curious to see, Dr. Brown: Do you think that public health interventions like paid sick days would have made a difference in the number of cases, especially when you showed us the non-health care essential workers and how they spike above everything else? Do you know if paid sick days could have made a difference?

Dr. Steini Brown: I don't know the answer to that question. I believe that comprehensive packages of interventions that allow people to stay at home safely, like sick days, like protection against eviction, very strong engagement with community leaders so that those ways that the wraparound case management happens are all supported—that comprehensive approach is critical to supporting those sorts of people.

I wish I could give trial-based evidence or the highest level of evidence, but I strongly believe that's the case.

Mme France Gélinas: And do you know if this is being looked at anywhere, as to other groups of workers that do have sick days versus those that don't? Do we look at this at all?

Dr. Steini Brown: We don't have data on that right now to analyze. We don't, I believe, collect information that could be linked like that. So we're not looking at it. There may be work in the United States on this, but I don't know about work here.

Mme France Gélinas: Okay. My next question has to do with—you talked a lot about the need to control the spread and went into some detail as to how Ontario is doing this. But we all know that Christmas is coming, the biggest holiday. Is it safe to say that we can expect a bump following the holidays? And then are we starting to look at some of the worst-case scenarios that you had projected or that you had presented?

Dr. David Williams: We'll talk about the modelling on that. Each one of these holiday sessions where people normally congregate and like to do gatherings is always a risk. We had Thanksgiving, then we had Diwali, and now we're into both Hanukkah as well as coming into the Christmas season. It really is on the mobility that Dr. Brown alluded to. Have people learned the lesson? Will they stay in and will they limit to household contacts? It's a little bit uncertain. I didn't see a big blip after Diwali, which maybe is a credit to the community which took it seriously and handled some things there. We'll have to see how the rest of our public responds in that. We will continue to do the messaging on how they can continue to work virtually and handle that. But it is a risk and we are monitoring that situation.

If you have any comments, Dr. Brown.

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Dr. Steini Brown: Yes. As we've tried to model this through—we've got competing forces on this. On the one hand, people are at home more, stores are closed,

businesses are closed, children are home from school. On the other hand, there are families that may want to get together. It really comes down to how big that impact of private gatherings will be during a period like this. If there is no traffic outside of the home and no intersection of homes, you would probably see a reduction in cases.

If there were significant gatherings, private gatherings in a house, remember, likely with the windows closed, with not a lot of air exchange, you could see a series of events where you have a spread across a whole room pretty quickly. Again, the person who has walked in as the index case could have an R of 10, 12, 15, 20, which starts to look like our super-spreader events.

M^{me} France Gélinas: Okay. Thank you.

My next question has more to do with some of the sobering information you shared with us about the vaccine, as in we know how it could help the person who receives the vaccine not get sick, but we don't know a whole lot about transmission. It seems to me that we use "the light at the end of the tunnel," that the vaccine will bring us out of this pandemic, but there's still a whole lot we don't know about how true those will be. If it protects us but doesn't protect against transmission, it's very different than if it protects us and also keeps us from transmitting the disease. Is it fair to say that the vaccine is not necessarily the end of the pandemic?

Dr. David Williams: The key thing with the vaccine is to reduce morbidity and mortality, so the effects of the invasiveness of the disease. The vaccine trials are based on evidence of that. We're looking for that vaccine—that may be why you may be able to get it, and it enters your nasal pharynx and that, but it doesn't invade and cause any disease, including in all age groups. Then if we have no morbidity and mortality, we've pretty well reduced it down to a common cold-type thing in there.

The fact is, does it stop transmission? Even as we're doing some swabbing of people, we understand that some people pick it up and get rid of it very fast, as in the children. Some others pick it up and they seem to harbour it and get large volumes in reproduction, the so-called super-spreader-type person who may not be ill enough to stay at home but had enough in their nose to go around and spread it in a large group. People's immune systems and that mucosal barrier seem to be a factor that is variable, so how much that will affect that. Our main concern with the vaccine is to stop people from getting very ill and to stop them from dying or getting admitted to hospital. That's our main focus in the vaccination program.

M^{me} France Gélinas: So am I understanding you right, Dr. Williams, that the vaccine is not the only public health intervention we will need in the coming months? We still need to know a whole lot more about the effectiveness before we can link the two together.

Dr. David Williams: It's especially true in the next three months. While we're getting the vaccine, we're getting it in small allotments. That means the whole aspect of getting these numbers down, which we talked with Dr. Brown about, is still the public health measures. We still have to do the stay at home and the limitations and the framework.

The numbers that we're bringing out in the first two months or so are not going to have a huge impact on the overall population. We're going to try and go at our highest-risk people as best as possible, and that's why we're prioritizing those in the health care field who really have contact with patients at risk. We're dealing with the staff who go into long-term-care homes. Then we start to deal with some of the—first, our First Nation and Indigenous communities in remote settings. We're going to try to get all those high-risk ones down, but on the population writ large, we're still going to have to be focusing on public health measures for January, February and March, well into April-May. That's just the way it has to be.

M^{me} France Gélinas: Maybe back to you, Dr. Brown. When you talked, again, the slide really hit me when you showed us the non-health-care essential workers and the rate of transmission and the number of cases in all this. Is it fair to say that if we were to provide a place for those workers to self-isolate, it could help?

Dr. Stein Brown: Yes. Camille Orridge put this very clearly for me in a speech she gave a little while ago. We're really talking about factors that drive higher levels of exposure, so they contract it because of that and they pass it on to more people because of that. Providing a safe place to isolate, whether it be a quarantine hotel or any number of different things like that, really could help a lot. The more we can do to support people—provincial, but also local-level engagement is really critical. This can't be a one-size-fits-all solution. The more we can do that, the greater the chance we will have of not only closing the prevention gap that happens in those communities, but we'll actually reduce the impact across the entire province, as well.

M^{me} France Gélinas: From my understanding, we only have two of those places, funded by the federal government. Why aren't we putting in more of those safe places for people to isolate?

The Chair (Mr. Daryl Kramp): Two minutes.

Hon. Christine Elliott: Hi, France. We actually are. We have identified 14 neighbourhoods within the lockdown zones that do require extra help, so we have done some things already, but there's more to be done in terms of making sure that we have pop-up assessment centres. We can go to where people are rather than expecting them to come to us.

We want to have some of those other wraparound supports, so I have had several conversations with the federal minister to obtain some assistance with more quarantine isolation zones, as well, so that we can start getting the numbers down, because we know that in many of these communities, it's very difficult. When you have a number of people living together, you can't isolate yourself within your own home. So we know that we need more of those centres to provide those kinds of supports, and we are doing that now.

M^{me} France Gélinas: Would Ontario be willing to invest some of its own money if the feds are not? I mean, from what Dr. Brown just said—

The Chair (Mr. Daryl Kramp): One minute.

M^{me} France Gélinas: —it seems like this is something very practical that could be done that will help them and the entire community. Is the province willing to put up the money to do that?

Hon. Christine Elliott: We have found that the federal government has been a very willing partner in all of this. My conversations have gone well with the federal minister. But if, for whatever reason, the money is not coming from the federal government, absolutely, it's something we would consider doing as a provincial government.

M^{me} France Gélinas: In all 14 of the neighbourhoods that have been identified?

Hon. Christine Elliott: I can't name them all, but some are in northwestern Toronto, some are in northeastern Toronto, and parts of Scarborough that have been raised by MPP Hunter, as well. Those would be the major locations of those neighbourhoods.

The Chair (Mr. Daryl Kramp): Thank you. That's the end of questioning for that round, then.

Without the independent member here now, we will go back to the official opposition again for 10 minutes. Now we get full time.

Interjection.

The Chair (Mr. Daryl Kramp): Oh, no. Did I miss you? Oh, my goodness. I guess we should allow the government to have a few words here. Absolutely, Ms. Triantafilopoulos. My apologies.

Ms. Effie J. Triantafilopoulos: Thank you, Chair, and thank you, Minister Elliott, Dr. Brown and Dr. Williams, for joining us today.

Since the pandemic first arrived here in Ontario, I know our government has been working day and night to ensure the health and well-being of all Ontarians. We have also consistently been following the advice of Dr. Williams and his team in order to limit the spread of COVID-19.

Many of my constituents just don't understand and have been asking why larger retailers are allowed to open to customers while smaller stores are restricted. Could you, Dr. Williams, elaborate on the reasons why, so we can share this information with our constituents? As well, could you please discuss some of the current challenges our province is facing as we head into the holiday season?

Dr. David Williams: Okay. The aspect around the larger retailers is that we were trying to make sure that essential services stayed open, and that's mostly for the acquisition of necessities of life such as food and materials there. Some of the larger stores, besides having food products, have other things that seem essential—it seems like the popular choice is toilet paper and paper towels, but other things that they might need and acquire, including some hardware facilities and that as well. These tend to be the larger ones that sometimes have other things as well in their stores, so they're seen as large retail. That's been an issue of some contention among some groups.

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We know our medical officers of health out in the areas have required some extra section 22 orders to limit and to make sure that the retailers, along with our inspectors from MLTSD, are maintaining the proper protocols in these

settings with the crowds outside as well as the people coming in, and then basically supervising the shoppers inside to maintain distancing and the various components.

With the smaller retailers, because you're dealing with a large, bigger number totally across the board, the problem is that where they're found, usually on streets and storefronts and that, means more and more public are out and around in the general area. Some stores are of very small square footage, and can you have one person or just two people in there at a time, and how do you maintain that? And if you've got, say, 100 or 200 large stores, you have 4,000, 5,000 or 10,000 small ones, how does one maintain a proper supervision of that? That's more public out and around. We've emphasized the order: It's curbside pickup and the delivery to the home site being a preferable source. It's again the crowd control issues that we're dealing with there. We're still concerned about the large retailers in that.

Going into Christmastime and the Christmas season, we've put a lot of runway up ahead. A lot of people are ordering more and more online. We tried to do the messaging that you don't always have to order from the large, big companies. I'm not going to quote who they are; you know who they are. A lot of people have become very adept at that. Some are using some new methods and some of the retailers have gotten very creative. It's that kind of aspect of people getting out and around, doing the socializing and that—try and set those things ahead of time so you do your virtual visiting and you build up on those aspects of maintaining in the household, and keeping that number down. This will be our challenge.

We're going to have to keep the messaging going out because people always want to go back to the old memories of the old style they want to do and, as I said, the different version of the Christmas song yesterday is there's no place like home for the holidays. So you should stay home in your household and not bring everybody to your home. Just stick to your home physically and with your family members. We'll keep that messaging going. It's a different Christmas.

Ms. Effie J. Triantafilopoulos: Indeed. Also, Dr. Williams, many people in my community, which is in the red level, are concerned about people from the lockdown areas coming into our region to shop and to dine. What guidance do you have for these people and for the business people in my community?

Dr. David Williams: We're telling people that that we have not put any real barriers about intraprovincial travel. We have said people from high-risk zones should not go to low-risk zones, much like we did in the summer with the cottage lands, where they go out to those outer settings. If you do, you bring all your resources with you; you don't go to stores and that.

The risk there is that, while they may soup up some of the health care services in the summertime with locums and that, they certainly do not have those at this time of year. In fact, they're at an all-time low. Therefore, those smaller health care facilities are not equipped to take a large number of people from the dense urban areas out

there, especially if they get ill and sick. You should stay close to where you are. Even though our systems are pressed here, we have much more available and many more to go to in our zones.

We're going to try to discourage people from going from high-risk to low-risk, except for essential reasons. There may be really urgent and essential needs, and you need to go, but maintain precautions and be respectful to the local community issues at that time.

The shopping one, we're going to have our groups continue to use their enforcement, as well as limiting crowds and numbers there and see if they can manage that. But again, if people do their planning ahead of time, that crush for the shopping should not occur. You have to just do a bit more planning in how to carry out your processes.

Ms. Effie J. Triantafilopoulos: I know, Dr. Williams, in some international jurisdictions, there have been limitations such as curfews and other measures taken. Would you be in a position at some point to put in some further restrictions if asking people to respect the rules doesn't happen?

Dr. David Williams: So far, like even what we did in the summer when we asked people to restrain, well, not everybody did. We found most of the time people did respect that.

So far, even with the curve where Dr. Brown showed people staying at home, it was interesting. When we didn't put down really harsh rules and just talked to the public, Ontario outdid some of the other provinces and territories with their willingness to participate and co-operate. So while we have some people not willing, a small percentage, a large part of our public is staying the course, and we want to build on that.

But actual curfews and things like that, like in Melbourne, we haven't gone there yet. Some of the other countries that have much more of a police-state thing like, say, in Wuhan, where they kept everybody at home—they even had some where they welded the door shut so that people couldn't get out—that kind of stuff we have not entertained at all.

We're hoping to still build on the public's co-operation, because when it gets down to it, we're seeing our big issue is personal behaviour around the home with our friends and family, not out in the large areas. We're trying to keep that coming down, so we really need to emphasize that. We need the co-operation rather than to have to police it, because we can't watch everywhere, every person, every moment. We need them to participate.

Ms. Effie J. Triantafilopoulos: Thank you. I'd like to pass this on to my colleague Mr. Oosterhoff.

The Chair (Mr. Daryl Kramp): Two and a half minutes, Mr. Oosterhoff.

Mr. Sam Oosterhoff: My thanks to the doctors and to the Minister of Health for being here today. My question could go to either Dr. Brown or Dr. Williams. It's with regard to the rationale behind restrictions, specifically around smaller retailers. One of the things I hear is people saying, "Okay, well, wouldn't it actually be better if we had fewer people in more places as opposed to more

people in a few places, given the proximity?" I'm wondering what your rationale behind specifically smaller retailers is versus larger retailers, and if that impacts the spread and what that impact would look like.

Dr. David Williams: So I think—and Dr. Brown may want to comment, because we have the data from the US showing that these are settings where there is that congregation of people. I alluded, again, with the larger ones, to where you're going to be asking them to really limit, because they have bigger square footage to spread the people out. There have to be rules around the direction of flow. A lot of that is in our grocery or food retail outlets that the public have to go to.

Again, we're asking, as you go there, that you don't say, "Well, in the old style, I went out. I'll go tomorrow and I'll go in the afternoon; I forgot this and I forgot that." We really want that discouraged. That means get your list together; plan your time when it's not busy. Limit the people inside the store. That means you have to have supervision at the door; some have gotten lax in that since our first wave. Follow the rules in the aisles. I know one of my daughters, who is quite strong, I will say, meets people coming the wrong way and she'll stand there. They'll say, "Can I get by?" and she'll say, "No, you can't. You're going the wrong way. Turn around." They say, "But I want"—just follow the rules. You have to really be strict with that.

And don't bring the whole family. It's not a family outing. One person can go and do the job to get essential things and get it done. It's not a social event; it's a task and a pragmatic event. We have to say, with the retailers and the small ones, when you have everybody out on the street going back and forth, even if they're wearing masks, as you're seeing happening today, I find one of the things people do—everybody brings their drink and their water with them, so they take their mask off, they're drinking and talking, and it just seems to be the style today—or they're having a cigarette or they're doing whatever; they're eating food out in the crowds, in public. When you have that, you can't control that.

You can put real rules that have better supervision on some of the large retailers—and we have to get stronger at that. Some of my counterparts in the MOH in the field have put section 22s out. They have much more enforcement to make sure they're going to have to stick to the rules and limit the number of people in those centres.

Mr. Sam Oosterhoff: Thank you.

The Chair (Mr. Daryl Kramp): Thank you, Dr. Williams. Your time is up now, Mr. Oosterhoff.

We now have—the opposition member has joined. Mr. Fraser, you are in Ontario, I'm assuming?

Mr. John Fraser: Yes, I am in Ontario. Just a sec here. Hold on. I am in Ontario and I apologize for being late. There was a mix-up in the input in my schedule. I'd appreciate it if I could get a chance to ask some questions.

The Chair (Mr. Daryl Kramp): No problem. As a matter of fact, Mr. Fraser, those things happen. The Chair will allocate your first five minutes onto your second as well, so we'll give you 10 minutes.

Mr. John Fraser: That's great. Thank you very much, Chair.

The Chair (Mr. Daryl Kramp): You have the floor.

Mr. John Fraser: I have the floor?

The Chair (Mr. Daryl Kramp): Yes.

Mr. John Fraser: Okay, great. Thank you very much.

Well, I want to thank the minister and the Chief Medical Officer of Health for being here. Right now, we're at a very critical phase: the rollout of the vaccine in Ontario.

One of the questions that I had was—we've seen the vaccine task force, and I think it was good that the government established that and made that public. My question, really, is around regional structures. Now, I know here in Ottawa, that public health is leading the vaccine rollout management here. That's a bit of flip from what the pandemic management was, where it was very hospital-centric or hospital-driven. I think that's a good thing—

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The Chair (Mr. Daryl Kramp): Mr. Fraser, I'm going to interrupt you just for one second. My apologies. Rather than give you the 10 minutes now, we'll give you the five minutes now and then we'll give you the other five in the final round. That way it'll give you an opportunity to collect some thoughts in between too. Carry on with your five minutes, sir.

Mr. John Fraser: As long as I get a little extra time for this.

The Chair (Mr. Daryl Kramp): You do.

Mr. John Fraser: Okay, thank you. I really appreciate that. My question is, is public health leading the vaccine distribution in the regions?

Dr. David Williams: Minister—

Mr. John Fraser: Minister?

Dr. David Williams: Did you say minister first?

Mr. John Fraser: Yes, anybody who can answer that, that would be great.

Dr. David Williams: The minister is indicating I would answer.

We have, all the way through this whole aspect—and that's why I wouldn't say that the hospitals led the pandemic in the first phase. It's a partnership, and we've been emphasizing that. We have our medical officers of health and the health units that were leading the case contact management in the first phase, as well as identifying the long-term-care homes in outbreaks. We're wrapping that up as the Ministry of Long-Term Care got into more coordination on that. Then we had Ontario Health weighing in, and then we had our IMS structure. So we keep building these structures up, because as the task gets larger and larger, you only have so many resources at each centre to deal with that, and so you have to focus.

Public health has and continues to be the lead on case contact management, supplemented by the IMS structure and the work of the Ministry of Long-Term Care, and then supplemented by the hospitals that are helping the long-term-care homes that need the further work to assist them when they're in outbreak mode through the OH structure.

It's a team effort at the regional tables and taking responsibility.

The vaccine one at this stage, in the first one, while we have to allocate certain sites that could put the ultra-low freezers in, we can only have so many. First, we're only allowed to give to two sites. The company said they would give us two, and so we chose two sites. We chose hospitals to be those sites for that, because they have the facility we can put the ultra-low freezers in, as well as then it allows us to bring people to those sites to get that done. It's led by the vaccine task force, not necessarily by public health or OH or by hospitals. The task force then will allocate more and more. As it gets out wider and wider, it'll change.

Mr. John Fraser: Well, yes, I can appreciate that, but each region has a public health unit that does vaccine campaigns. In Ottawa, in terms of the way they've structured their vaccine task force, they've said, "Public health, you're going to be the lead on this and we're going to feed into you." I think that's important, because in Ottawa, anyways, you need to have a trusted voice regionally. I think you would agree as the Chief Medical Officer of Health that we have got a lot of things to address for the vaccine program, and that trusted voice, that one voice or two voices—around the table, but also publicly—are critical.

I would just like to suggest that I think the government needs to consider that, because I know that you're not only tasked with the vaccine, but you're tasked with everything else that's going on.

The Chair (Mr. Daryl Kramp): One minute.

Mr. John Fraser: I noticed that on the vaccine task force, there is not a public health person specifically who is, say, retired, who has had experience with vaccine rollout or had to go through that process of taking care of vaccine hesitancy, who knew those populations that were more at risk for not taking the vaccine and all the other things that went on. I think public health is a really important component. I'm not leaving you much time to answer a question; I just would like to suggest that I think that the government needs to consider that going forward on the vaccine task force and regionally.

The Chair (Mr. Daryl Kramp): Twenty seconds left, if you wish.

Mr. John Fraser: I won't ask for an answer.

The Chair (Mr. Daryl Kramp): Fine, thank you very much then, Mr. Fraser.

Mr. John Fraser: Thank you, Dr. Williams.

The Chair (Mr. Daryl Kramp): We'll put five minutes on. You'll be on the last round, just so you know, sir.

Mr. John Fraser: I really appreciate it, Chair. Thank you.

The Chair (Mr. Daryl Kramp): Okay, now we will go back to the official opposition again for 10 minutes. Ms. Gélinas, you have the floor.

Mme France Gélinas: I will share my time, but I would like to start—I guess the question will be for Dr. Brown. You talked about occupancy in our intensive care units.

You talked about not knowing the exact length of stay, so the number of patients who could stay there. When I talk to people who work in an ICU in areas of COVID, they're all telling me that they are working really hard. The ICU is not like what it used to be, where you're waiting for a few patients to be discharged to a ward and a few patients who are getting better. They are acutely sick in some areas, and certainly at William Osler their ICU is full.

What will it look like when Toronto's ICUs are full? What's the next step?

Dr. Steini Brown: I'll just talk about what we're hearing and what we're seeing within the data, and then Dr. Williams may want to talk about what happens if the ICUs are full.

You're quite correct in what you're saying. These are very ill patients who are being transferred out for ECMO, which is a very advanced technique to make sure they can actually get air into their body. It's only available at a very small number of organizations. They are very, very ill, and on top of it there's the added stress on the doctors, nurses and therapists working who have to go through particular procedures: gowning, de-gowning and making sure that they maintain infection prevention and control. So I think it is a very, very challenging situation for those people inside of intensive care units.

On top of it, the way that we try to make sure people don't spread infection, if they're at risk for an infection, is that they stay home, which creates further problems and challenges in staffing. It is very, very challenging, and these are very sick people.

What happens when it gets full, at least in a modelling perspective, is that you would see challenges in other types of care. You would see people having to skip things like cancer and cardiac surgeries. You would see motor vehicle accident victims having great difficulty getting care. You would see overall growth in death, not just growth from COVID-19.

Maybe, Dr. Williams, you want to talk about plans if ICUs are full.

Dr. David Williams: Even right now, if we have some issues in and around the Peel and Toronto area, Ontario Health deals with that sometimes through direction of movement of certain cases and patients around to deal with it.

As Dr. Brown noted and we've noted, the impact is not homogeneous throughout the province. It's clustered in areas, so we'll have to deal with that, to try to keep all those other cases still coming in. That means ones that are coming in, for example, with cardiac issues acutely; they may need ICU beds as well, and they're still taking up the majority of these other patients. Right now, of the 1,745, there are 247 that are COVID ones, but that means they're full already, and more are coming in.

If there are elective procedures, they may be in there for 24 to 48 hours; you have to start deferring those elective procedures. They can't be done, so you push those out a little further and further. You can't move people hundreds of kilometres. You have to deal with it within your jurisdiction. It's a very important issue to deal with. As the

demand comes in, those beds are taken up and that means that surgeon has nowhere to put that patient after the surgery, and they have to defer the surgery, if they can.

But then there's that backlog. Some of those semi-elective ones become more urgent or become urgent and you have to bring them in anyway. It is an issue we have to address right now.

The other challenge we're facing is that we're still getting some of the staff getting infected out in the community. When one of the staff gets infected, then that means sometimes 12 or 14 staff around them are in quarantine, and you start to lose your human health resources as well. So the community impact has major issues with us, not only in the ICU but as they come into the job and get ill from the community contact.

M^{me} France Gélinas: When we talk about ICU beds, I often hear that we have 350 ICU beds, but I also know—I'm from northern Ontario—that some ICUs are level 2. They are not all created equal. How is this taken into account?

Dr. David Williams: I think we would have to ask our people, like ADM Heenan and others, who deal with it all the time.

You are correct. As Dr. Brown alluded to, not all ICUs have the facilities such as ECMO and other ones with sophistication, so they can do up to a certain level in there. It tends to be okay most of the time for COVID, but some really severe ones can't be handled there and they have to be, through the system with IMS, transferred out and moved to other centres, as they do already if they have to have that kind of facility. You're correct: They are not all created equal and they have different levels.

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M^{me} France Gélinas: I represent a riding in the north. Some of us rely on Toronto hospitals for care that we cannot provide, but now, am I right in thinking that a Toronto hospital may not be able to take northern patients because they are full with patients of their own?

Dr. David Williams: That would be how the system starts backing up. So if your referral for your tertiary or quaternary care is to the Toronto centres and they're backed up, they can go to their second choice as to other ones, say, for example, London Health Sciences Centre—but it has an outbreak right now and they're backed up with that, not due to the load, but due to the staff shortage. That's backing into other communities as well. Then you have other ones such as your centres in Kingston or Ottawa and others you may go to. So you start to try and use around the province, but it becomes more and more stressed. You've got to keep that under control. That's why we're trying to tell the public that while these numbers don't seem big at the moment, they are having an impact, because they will back up the system and that. So we have to get the public's attention on this matter.

M^{me} France Gélinas: Okay. I have to give time to Tom, but just one quick—are we keeping track of the surgical backlog as to—I know we have the numbers, but are we looking at who dies from not getting their surgery?

Are we keeping track of the health effects of those delays, of those long lists?

Dr. David Williams: Dr. Brown.

Dr. Steini Brown: There are two studies under way right now, one looking at cancer care and one looking at cardiac care. The results are preliminary right now; I expect we'll see those very shortly. But yes, there is analysis looking at those two specific areas.

I expect you'll see further analysis as well, looking at things like immunization for diseases other than COVID over time, that will be able to shed some light.

M^{me} France Gélinas: Thank you. MPP Rakocevic had questions.

The Chair (Mr. Daryl Kramp): Just a little over three minutes, Mr. Rakocevic.

Mr. Tom Rakocevic: Thank you. Again, I want to thank both doctors, Dr. Brown and Dr. Williams, for your work and for being here. Based on conversation, we're certainly not out of the woods yet and there is still time we'll have to take.

I'm going to ask two quick questions. With regard to targeted resources, this is something that health organizations in my community—we're in northwest Toronto and we have certainly been very hard hit. The Premier's riding is actually next to mine and his riding is in a similar situation. The first question is, there was mention around isolation centres. Can you give a timeline as to when communities like mine will receive additional isolation options?

Hon. Christine Elliott: I can tell you that we are working on that right now. There have been discussions with Minister Hajdu for some federal assistance. I can't give you an exact timeline, except to say that this is an item of priority for us because we know that communities such as yours need extra help, and if we want to get the numbers down, those are the extra resources that we are going to need to bring in to allow that to happen.

Mr. Tom Rakocevic: Thank you. I'm going to ask a question that I mentioned last time in this committee. Part of those targeted resources would be with regard to buses. Again, we have very packed buses in my community and other communities, and these are certainly—I'm sure the doctors can attest to this—places where people are at risk of catching COVID, if they are standing shoulder to shoulder in a place with high case counts. Will you commit to providing additional funds to help the TTC with these buses, to provide additional ones?

Hon. Christine Elliott: Well, I can certainly tell you that I can take that back. I can discuss it with Minister Mulroney and Minister Surma. That would be something within their area of jurisdiction. But I will take it back and discuss it with them.

Mr. Tom Rakocevic: Has it been discussed at the health table? I mean, I would presume that you are looking at places where people could contract COVID. Isn't this something that you would have discussed, places like this?

Hon. Christine Elliott: We have been looking at places where people do congregate. We haven't had that

specific discussion with respect to buses, but we can certainly do that.

The Chair (Mr. Daryl Kramp): One minute.

Mr. Tom Rakocevic: Okay. I hope you would do that.

The last question: I believe the first batches are not going to Peel, although I think they have some of the highest per capita case counts. Is there a reason as to why Peel has been excluded from the first batches?

Hon. Christine Elliott: We will be announcing the exact locations, but we are certainly looking at including the areas that are in lockdown, because we know that those communities need extra help and we of course want to protect the long-term-care residents. But as I said, that will likely be with the Moderna vaccine because of the difficulties in transporting the Pfizer vaccine.

Mr. Tom Rakocevic: Thank you, Minister, for your time here and again to the doctors for being here today.

The Chair (Mr. Daryl Kramp): Thank you very much. We will now go to the government for 10 minutes. A government member for 10 minutes: Who do we have? I see Mr. Bailey with his hand up. Mr. Bailey, you have the floor, sir.

You're on mute, Mr. Bailey.

Interjection.

The Chair (Mr. Daryl Kramp): Mr. Bailey, you're still muted. We have a problem. We'll come back to you in a second, Mr. Bailey.

We'll go to Lindsey, and then come back to Mr. Bailey when we get that one figured out. Go ahead, Lindsey.

Ms. Lindsey Park: Very good. Thank you, Chair. One of the questions I often get, just speaking on the phone with my constituents during this time—they read a lot in the papers about the approaches in different places in the world to public health measures, and often, I think, are just comparing what we're going through with trying to relate to other jurisdictions and assess what's working and what's not working. I don't know who's best-placed to answer this, whether it's Minister Elliott or Dr. Williams, but if you could just kind of share with the committee how you go about comparing and what some of the lessons learned have been, maybe from other jurisdictions that have used public health measures in a similar way that we have.

Dr. David Williams: I'll start off. I know what we've been doing on this one here is we have our national federal/provincial/territorial committee, and then we have our people with PHAC, the Public Health Agency of Canada, as well as Health Canada. They're doing lots of jurisdictional scans with other areas, looking at different comparisons of what's succeeding and not succeeding.

We map some of those back through the scientific table that Dr. Brown co-chairs and we ask some questions on that: If there are other new initiatives that are being undertaken, should we emulate those? Yes or no? What's a success? Because sometimes you hear they're touted as being successful, and yet when you go back in the details and analysis, it's not quite as it's presented, and maybe the context is so different that it may not be applicable in our setting.

So we're continually looking, comparing, sharing and seeing how we can do that, and then trying to assess and ask our scientific experts to say, "Is this something that we should consider? And could you critically appraise that and review it, and see how it might fit?" Then we take it to our table to say, "Is it something that's valid in our setting? And could we undertake that and ask our other provincial and territorial partners, 'Are you doing that? And what are you undertaking?'" It's an ongoing process, a long learning one.

I'm not sure if there are any other comments on that, but I hope that touched your question.

Ms. Lindsey Park: Yes, and then just a quick follow-up: We're obviously at a place right now where we have some significant public health measures in place in large parts of the province, but I guess there's a spectrum of public health measures, where maybe we're not on the most severe end of that spectrum, but we have significant public health measures in place. I wanted to know what we've learned looking at other jurisdictions when cases have gotten out of control, which is what we're trying to avoid in the province of Ontario, and what public measures they have had to resort to when that happens.

Dr. David Williams: I think Dr. Brown, in the past, has looked at comparing some other countries. It's not on this deck; he has presented previous decks on different countries, and he'll speak to that now. When you undertake interventions, the sooner, the better. Sometimes people want to wait until the last moment, and sometimes I know we're asked at the public measures table, "Why are you going and restricting now to this level or this level, when it's not as bad as it could be?" The impacts of that—maybe Dr. Brown would like to comment on some of the things I know he has mentioned before to us.

Dr. Steini Brown: As Dr. Williams was saying, you either have to do the work early or you have to do it late, and if you do it late it's a lot harder and it requires a much more strict impact. If you look at what happened, say, in parts of Australia or in other places, as the cases got really out of control, they truly saw spread that was like wildfire. It went to curfews, it goes to police on the streets, it goes to travel restrictions and it goes to exactly the type of strict, strict, strict stay-at-home orders that you saw us not even get to with our first-wave activities. So it's either early or late. There's a variety of jurisdictions, including Canada, who delayed and delayed and delayed, and then it takes you to a place that is much stricter and much harder.

Then, after that, the only sort of thing that you see in other jurisdictions is that the more that you can do that support part of the work, the better it goes, as well.

The Chair (Mr. Daryl Kramp): Thank you, Dr. Brown.

Mr. Bailey, we'll try you again now. Go ahead, sir. We still have a problem here. Can you unmute at your end, or do we have a technical problem on our end here? You're unmuted, but unfortunately, Mr. Bailey, we have a difficulty. We cannot hear you. All we see is that smiling, friendly face, but we have no connectivity. We're very

sorry, Mr. Bailey. We're going to have to pass on you today.

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We will go back to the government. Mrs. Martin, you are up for a little over four minutes.

Mrs. Robin Martin: Okay. I'm sorry this can't come from Mr. Bailey, but let me just ask something I know he's interested in. Ontario was one of the first provinces to release modelling data, and Dr. Brown now provides bi-weekly updates on the modelling projections. Could someone please tell us if any other province does this with the modelling data, and why that might be important to our response?

Dr. David Williams: Some of the other provinces have released their modelling data at different times and in different ways. We know that farther east of us and west have done so. We observe, and I know that Dr. Brown and the team do monitor and watch those types of modelling ones to see if there are any differences. They're fairly similar in a number of ways, but of course the data collection and different issues are different from province to province to some extent.

I don't know if, Dr. Brown, you want to comment on the variations between the models across Canada?

Dr. Steini Brown: Sure. I think, just to echo part of the question there, releasing data and providing that sort of transparency out is really critical, because it tells people where things are going. Modelling is always inexact. It always is an effort to look forward, so it does change as we get more and more data. But I think the more that you can release, the better it is.

Members of our team actually do model progress and look at progress in a number of different provinces. So we do have a look into all those other provinces. It's really important for us, though, to see where other provinces are landing on this when we do see the data, because it gives us a sense of both, first, how we can advance our methods, but also, second, how we're doing relative in terms of the predictive efficacy of our models—but also what the impacts are in those other jurisdictions. I tend to think that the more that you can have strong, independent modelling, the stronger position you are in to respond, because it's just one of the inputs. I would hate to ever have to be in the place of having to make decisions about a pandemic where you have to weigh so many very different things.

The Chair (Mr. Daryl Kramp): We have two minutes left. Yes, Mrs. Martin, go ahead.

Mrs. Robin Martin: Dr. Brown, we talked about the per cent positivity in your presentation and that it appears to be flattening. Can you explain why that is an important metric for us to pay attention to?

Dr. Steini Brown: Sure. Dr. Williams may want to comment on it as well.

If you see growing testing and you see growing cases, the question always comes up: Are you just finding cases because of the testing or are you actually seeing the spread of the disease? If you see testing going up and cases going up, but the per cent of tests that are positive going down, what you're probably doing is finding more cases. It's not

that you're actually seeing spread, necessarily. But if you see cases going up, the tests at the same level or also going up, and the per cent of those tests being positive, it tells you that you're looking at spread. It's a really important way to look at those three things together to understand the actual course of the pandemic.

The Chair (Mr. Daryl Kramp): A little over a minute left, Robin.

Mrs. Robin Martin: I know that local public health officers are allowed to tailor restrictions under section 22 of the Health Protection and Promotion Act. I'm just wondering if someone could speak to how important that might be to Ontario's response framework, that ability for local officials to tailor restrictions.

The other thing I wanted to ask about was the COVID framework we put out. How does that help people to anticipate where their area might be going? Because I'm not sure people realize how to use it.

Dr. David Williams: Okay. I will say that the ability of the framework gives you the platform at each level, what from the public is expected.

The Chair (Mr. Daryl Kramp): Thirty seconds.

Dr. David Williams: Medical officers can add above that. They can't reduce it, so they can't go below that. They may see certain targeted areas that they have to deal with that is not in that framework. It may be similar to what's in the next higher level, but they're not ready for that yet. They can put those orders in where it may not be addressed, and it's very unique to their jurisdiction.

The framework, I think, is very important because it gives the public the sense of saying, "This is how you close us down, but if you get numbers down"—if they say, "How do we go back down?" It's the public's response. If you get your numbers down, you will go down to the next level, and they know what those are. So the public are going to have to take ownership in saying, "Well, it's not because Dr. Williams and his table is magically turning some ball and doing it." You can actually see the metrics in front of you. It's your ownership, it's your data and you have to deal with that. So I think that's there.

The Chair (Mr. Daryl Kramp): Thank you, Dr. Williams.

Now, Mr. Fraser, you have five minutes, please, sir.

Mr. John Fraser: My questions are for the minister. Thank you very much for being here, Minister. It's very helpful to all of us. My first question is around public reporting of the progress of the vaccine campaign. Are there plans in your ministry to do the same kind of things that you've been doing with other, for instance, outbreaks and other metrics that exist right now in the pandemic?

The Chair (Mr. Daryl Kramp): Mr. Fraser, the minister just had to be excused for another situation outside the door, so perhaps we can address that question to Dr. Williams. Could he answer that for you? He has to be going too—a quick answer, please.

Dr. David Williams: A quick answer: We are putting in systems that we will be collecting and seeing to collect the information on individuals—who is vaccinated—because we need it for monitoring. There are two doses;

you've got to make sure you get the right two, and when you're going to get them, as well as any adverse events.

Mr. John Fraser: So public reporting. I do have a quick comment for you—and you don't have to answer this—that I have a particular situation in Ottawa South where there are 120 long-term-care beds in Perley and Rideau Veterans' that are single-bed ward rooms. They have been empty for some time. And because the institution may have one person who is off sick, there are no admissions. So because there's this very strict—Dr. Williams?

Dr. David Williams: I'm listening.

The Chair (Mr. Daryl Kramp): Go ahead. Dr. Williams is still listening, but he has to be leaving. Dr. Brown will still be staying here with you for a moment.

Mr. John Fraser: Well, then Dr. Brown. Okay, thank you, Dr. Williams.

During outbreaks not in this pandemic, there are provisions inside the public health act to have admissions to long-term care. There is some very good capacity that is existing in long-term-care homes—in fact, I think there's a lot of capacity; not all of it's appropriate. So I'm just asking that the minister, the Chief Medical Officer of Health and the table consider what we can do to utilize this capacity, because it's putting pressure on our hospitals and it's putting pressure on our community, and there are provisions in public health under other circumstances to admit people during an outbreak given certain conditions. That is not happening right now. So I'm just asking for that consideration or asking if that is being considered.

The Chair (Mr. Daryl Kramp): Dr. Brown, do you wish to comment?

Dr. Steini Brown: I can't comment on the public health measures table or the government. I'm just a university professor at the end of day. What I will say is, one of the things we do see—and I don't know the specific situation in Ottawa—outbreaks in a nursing home are largely determined by the level of infection in the community. Mortality within the nursing home is largely determined by the age of the home, whether or not it's crowded and whether or not it's in chain ownership. I can't comment specifically but we do know some of the predictors of mortality in these cases.

Mr. John Fraser: I'll just tell you the situation here. They're single-bed rooms in a place that was built to be a hospital—and we have low community transmission—except they're not being utilized. And even if half of them can be utilized—it's something that needs to be considered. And I really just wanted Dr. Williams—if you can transmit this to him, it needs to be considered. Because it's going to be helpful. And so—so I guess the minister—so it's just you, Dr. Brown, that's left.

Dr. Steini Brown: Yes.

Mr. John Fraser: Well, I want—

Dr. Steini Brown: I will pass on your note to Dr. Williams, though.

Mr. John Fraser: I do really appreciate that because I think it's important that we do that, and that I understand we're going to—the last thing I wanted to mention, unfortunately the minister is not here, was the public

education campaign during the vaccine rollout. It's critical because of vaccine hesitancy, and we know that there are populations that are more likely to have vaccine hesitancy, especially around some groups of health care workers. So it's important to build trust. I am wondering, Dr. Brown, if you know when the public information campaign is going to start or how we're going to roll that out.

Dr. Steini Brown: I don't know the answer to that question. That would be a question best for Dr. Williams, but I agree entirely on the importance of public education.

The Chair (Mr. Daryl Kramp): Thank you, Mr. Fraser.

Mr. John Fraser: Perfect. Thanks, Doctor.

The Chair (Mr. Daryl Kramp): Your time is basically up today.

I believe we have a quick question. France, you had a quick question for clarification you were looking for. Go ahead, France. You have the floor.

M^{me} France Gélinas: I was just wondering if it would be possible to share with us a copy of the slides that were used during the presentation.

The Chair (Mr. Daryl Kramp): Dr. Brown?

Dr. Steini Brown: Yes, it's entirely possible. Yes.

M^{me} France Gélinas: Thank you.

The Chair (Mr. Daryl Kramp): That was a quick response and an affirmative response. A good question, France. Thank you very kindly.

I would certainly like at this time to thank not just the members of the committee, but our witnesses Dr. Brown, Dr. Williams and the minister for coming here today. Really, this is one of the most critical times in the history of our Parliament and possibly our province, so thank you very kindly for your work during all this period, and you may now be excused before we go into the closed session. Thank you very kindly.

The committee continued in closed session at 1122.

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