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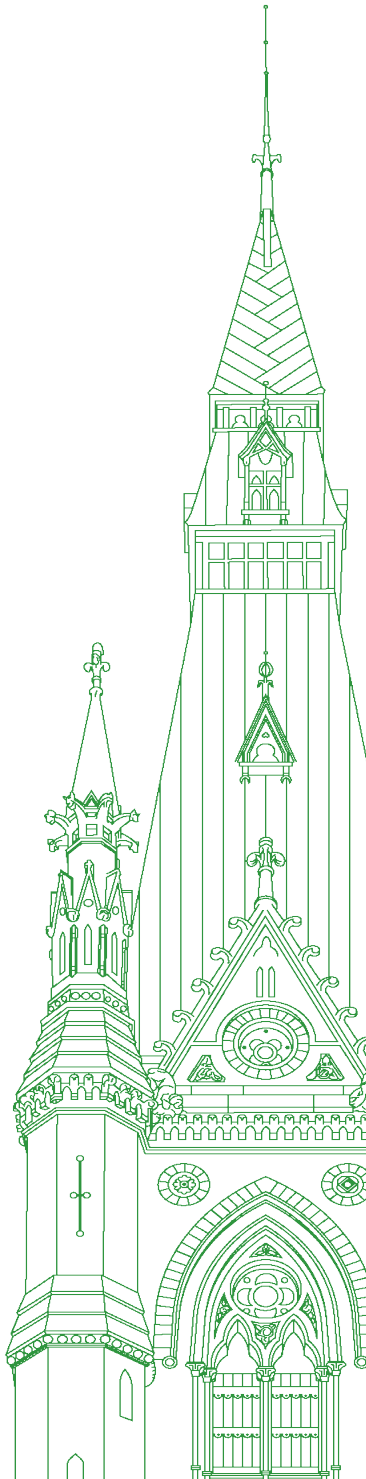

Chair: Mrs. Sherry Romanado

Standing Committee on Industry, Science and Technology

Tuesday, February 16, 2021

● (1105)

[*English*]

The Chair (Mrs. Sherry Romanado (Longueuil—Charles-LeMoyne, Lib.)): Good morning, everyone. I now call this meeting to order.

Welcome to meeting number 17 of the House of Commons Standing Committee on Industry, Science and Technology. Today's meeting is taking place in a hybrid format pursuant to the House order of January 25, 2021. The proceedings will be available via the House of Commons website, and the webcast will always show the person speaking rather than the entirety of the committee.

To ensure an orderly meeting, I'd like to outline a few rules to follow. Members and witnesses may speak in the official language of their choice. Interpretation services are available for this meeting. You have the choice at the bottom of your screen of floor, English or French audio. For members participating in person, proceed as you usually would when the whole committee is meeting in person in the committee room. Keep in mind the directives from the Board of Internal Economy regarding masking and health protocols.

Before speaking, please wait until I recognize you by name. If you are on video conference, please click on the microphone icon to unmute yourself. If you are in the room, your microphone will be controlled as normal by the proceedings and verification officer. I'll just give a reminder to all that comments by members and witnesses should be addressed through the chair. When you are not speaking, I ask that you keep your microphone off.

With regard to the speaking list, the committee clerk and I will do our best to maintain the order of speaking for all members, whether you are participating virtually or in person.

If you are joining us for the first time, as is my normal practice, I will hold up a yellow card when you have 30 seconds remaining in your intervention and a red card when your time for questions has expired. As we have a very full agenda today, I ask that you respect those timelines so that every member has a chance to have their questions asked.

Pursuant to Standing Order 108(2) and the motion adopted by the committee on Tuesday, December 1, 2020, the committee is meeting today to continue its study on the domestic manufacturing capacity for a COVID-19 vaccine. I'd now like to welcome our witnesses.

Today, from Providence Therapeutics, we have Ken Hughes, chair of the board, and Brad Sorenson, chief executive officer. From VIDO-InterVac, we have Volker Gerdts, director and chief executive officer. From BIOTECanada, we have Andrew Casey, president and CEO. As individuals, we have Professor Amir Attaran from the University of Ottawa; Professor Joel Lexchin from the University of Toronto's department of family and community medicine, emergency medicine division; and Professor Alain Lamarre.

Each witness will present for five minutes, followed by rounds of questions. With that, I will start with Providence Therapeutics.

You have the floor for five minutes.

Mr. Ken Hughes (Chair of the Board, Providence Therapeutics): Thank you, Chair and committee members, for the opportunity to join you today.

As the former chair of the aboriginal affairs committee of the House of Commons, I acknowledge with respect that we live on the traditional lands of indigenous peoples from sea to sea to sea.

My name is Ken Hughes, and I have served as chair of the board of Providence Therapeutics for about four years. As a country, we are not yet where we want to be in protecting Canadians from this pandemic, yet Canada has exceptional public and private sector scientific, medical and business expertise—among the very best in the world. Unfortunately, we have not marshalled that capacity effectively. Never again should we have to rely upon other countries for vaccines or the science behind them.

Providence can have millions of doses of messenger RNA vaccine by this fall, the goal being October. We're on that path now, having recruited leading development and manufacturing expertise.

Last summer, decisions were made to buy large orders of vaccines from outside of Canada. The received wisdom was that we did not have the capacity to do it in Canada. Unfortunately, at that time, people focused only on the supply of vaccines for Canada for the pandemic as we all knew it then. There was little focus on how we prepare ourselves for a world beyond the immediate pandemic. Let's not make that mistake again.

Things have changed. First, emerging variants may enable the coronavirus to stay with us for the foreseeable future. Second, messenger RNA has been validated as an agile, highly effective and responsive vaccine platform. There are other Canadian vaccine teams that can contribute as well. Canadians can develop vaccines and manufacture them here. We can even blunt emerging variants of the virus. We can do it, but we won't do it just by inviting in branch plants of foreign companies. We do it by building up the domestic talent we have here already.

As America's closest neighbour, we have learned never to bet against America when they put their minds to something. They put their minds and billions of dollars behind Operation Warp Speed and, among other things, validated the messenger RNA platform for vaccines.

In the future, I would like the world to look at Canada and say, “You know, those Canadians—never bet against them.” That could be our future. We are here today specifically to ask the Canadian government to invest in Canadian capacity and help realize that future.

Thank you. I am pleased to turn it over to Brad Sorenson, CEO and founder of Providence Therapeutics.

● (1110)

Mr. Brad Sorenson (Chief Executive Officer, Providence Therapeutics): Messenger RNA is the most effective vaccine technology on the planet. In the worldwide race for a COVID vaccine, messenger RNA was the fastest by months, and it was the most effective, at 95% efficacy. It will be the fastest to respond to the variants that are emerging now. It is the most scalable vaccine technology, having gone from novel technology to rolling out hundreds of millions of doses within six months.

The committee will recall that prior to November 2020, no mRNA drug, vaccine or otherwise had ever been approved for use in humans. In fact, prior to 2020, Moderna and BioNTech, the inventor of the Pfizer vaccine, had never even run a phase three trial, yet these untested and unproven companies are now Canada's lifeline to safety and economic stability.

In 2020, Providence designed a vaccine in under four weeks. We negotiated and paid for a licence to the necessary intellectual property, established productive collaborations with other companies across Canada and completed over five preclinical animal trials to establish the safety and efficacy of our vaccine. We qualified a “good manufacturing practices”—or GMP—manufacturing process and manufactured enough vaccine to complete all of our clinical trials. We prepared a successful clinical trial application, and we were given the green light, known as “authorization”, by Health Canada to proceed in phase one trials.

In 2021, Providence will manufacture and sell vaccines directly to Canada's provinces. It will build out manufacturing capacity covering the entire value chain of messenger RNA vaccine production, from the earliest raw material to the final formulation and fill finish. It will complete the clinical trial process with Health Canada and secure all the necessary approvals to enable the provinces to administer those vaccines to Canadians. Providence will accelerate its work on booster doses for variants and bring its second-generation vaccine, using both B- and T-cell mediated immune protection, into the clinic.

In short, Providence will do all that is necessary to ensure Canadians have the earliest access to the best vaccines.

I look forward to your questions.

The Chair: Thank you very much.

Our next witness is Mr. Gerdts.

You have the floor for five minutes.

Dr. Volker Gerdts (Director and Chief Executive Officer, VIDO-InterVac): Good morning, Madam Chair.

Good morning, members of the committee. Thank you for giving me the opportunity to address you this morning.

My name is Volker Gerdts. I'm the director and CEO of VIDO, the Vaccine and Infectious Disease Organization here at the University of Saskatchewan.

For those of you who may not be familiar with us, we are a research centre here at the university, and during this response to the pandemic we really have become one of Canada's go-to places for COVID-19 research. We were the first in the country to isolate the virus, the first in the country to establish an animal model that has been used to test vaccines and antivirals and so on, and since the beginning of last year, we have worked with more than 80 companies, half of them Canadian, on identifying vaccine therapeutics and antivirals.

We also have our own vaccine in the making. We were also able to design this vaccine and have it in the lab, produced and ready for immunization, within four weeks. We were one of the first in the world to have this vaccine in animals, and over the last year, similar to what you just heard, we also completed the necessary animal trials to get approval from Health Canada. Our vaccine is now also in phase one trials.

Our vaccine is a protein subunit vaccine, which is a well-known technology that has been in humans for many years. It offers many advantages in that it's more stable, easier to store and easier to transport. The adjuvant we're mixing with it gives a very broad immune response, which is great for these variants.

What we are also doing here at VIDO right now is building a manufacturing facility. This manufacturing facility is currently under way. It's a 10,000-square foot facility. It's called a pilot-scale manufacturing facility, and it will enable us to produce both human and animal vaccines here at VIDO-InterVac. It is also unique in that it is tied into the biocontainment facility that we operate here at VIDO, Canada's largest high-containment laboratory, and thus, will enable us to work on vaccines for emerging diseases as they emerge.

Construction is currently under way. By October this facility will be completed, and then there will be a phase of GMP certification, commissioning of the facility and so on. By next year our facility will be ready to produce vaccines here in Canada.

We also have put forward a proposal to the federal government with support from the provincial government as well as, hopefully, from private donors and the municipal government, for VIDO really to become Canada's centre for pandemic research. We have currently the largest infrastructure for high containment research right here in Saskatoon, which is based on previous investments by governments. That includes Canada's largest high-containment laboratory, the International Vaccine Centre.

We are now building an in-house GMP manufacturing facility. What we think is needed to really become one of those centres that can help the country in better preparing for the next emerging disease is having an animal facility that allows us to work with a wide range of animals including bats, insects, ticks, reptiles and so on. That's a proposal we put forward, but if we as a country want to be self-reliant and self-sufficient in terms of domestic manufacturing and research capacity, we think it is necessary to have these national centres that are specifically focused on emerging diseases.

Thank you.

● (1115)

The Chair: Thank you very much.

We now turn to Mr. Casey.

You have the floor for five minutes.

[*Translation*]

Mr. Andrew Casey (President and Chief Executive Officer, BIOTECanada): Thank you, Madam Chair.

[*English*]

Thank you very much for this important, and obviously, very timely opportunity to provide some perspectives from BIOTECanada.

By way of introduction, BIOTECanada is the national association representing Canada's biotech sector. Our members are 240-plus. They are across the country in every single city and province. They include all the small, early-stage companies that are developing new solutions for the world. You've heard about some of them during the COVID crisis. They include AbCellera, Precision NanoSystems, Medicago and VIDO-InterVac. They are all emerging technologies.

Our membership also includes the large multinational pharmaceutical companies that are developing the vaccines, so the big brand names that everybody has become familiar with over the past several months. Both of those groups come together and present the BIOTECanada voice. What we talk about is a world that's moving to 10 billion people and the types of solutions that biotechnology represents in getting us out of some of the problems and challenges that we face as a global society.

The COVID crisis has greatly underlined just how critical these types of solutions are going to be for society, obviously now, and then going forward. If you think back to just a little over a year ago, when the first case was diagnosed in Canada, it was hard to imagine then that we would be where we are right now. It was very difficult to foresee where this was going to go.

We now have the benefit of some hindsight and some opportunity to plan going forward. The government did some very strategically smart things in terms of looking at the technologies that were out there, investing in some of the Canadian technologies and trying to advance them a bit more quickly than they would have normally advanced, as Volker just enunciated, but also looking out and seeing which of the vaccine technologies showed the greatest promise for delivering solutions in the immediate future.

We now sit in a situation where vaccines are going into the arms of Canadians. More vaccines are going to come online. It's an important time to take some stock and learn some lessons. We've been through this before in other crises, like SARS. There were warning signs. We were all told we should prepare for a pandemic. We now have to prepare for a COVID-30. Pick your year, pick your virus, but there's going to be another challenge like this. What are we going to do to prepare for that, so we're not back in a situation where we're cobbling together a solution?

Canada has an enormous opportunity to build on its biotech ecosystem and the solutions that are coming out of the industry, but also the international players that are present in this country. They are a big part of the solution as well in terms of partners and investors in this country.

A strategy that would bring all that together, build on the collaboration that existed to this day, would be a wise thing to do, and certainly, as we think about going forward, it's something we should plan for.

Thank you.

The Chair: Thank you very much.

We now go to Professor Attaran, for five minutes.

Professor Amir Attaran (Professor, Faculty of Law and School of Epidemiology and Public Health, University of Ottawa, As an Individual): Thank you.

I'm Professor Amir Attaran. By way of background, I'm a scientist. My Ph.D. is in cell biology and immunology from Oxford. I'm a lawyer. I've worked in the pharmaceutical industry, including on a project where we had to increase production 6,000% in one year, so I feel the pain of those in industry who have to step up to this right now.

I want to talk about what has brought us to this point. I'm going to list eight things.

The first is that Canada was slow when competition for vaccine purchases and partnerships was intense last spring and summer. We were weeks or months slower off the mark than peer countries. Who has ever heard of the last-mover advantage? It doesn't exist.

The second point is that we did not manufacture the only vaccine that we could have done, which is the Oxford-AstraZeneca one, and which was available to us and other countries under a licence. Since that time, the Prime Minister has oddly blamed this on Brian Mulroney. That isn't really true, because a careful study shows that Britain itself did not have as much vaccine manufacturing capacity at the beginning of 2020 as Canada did. Canada had more.

They stepped on it. They built capacity in months. They are now nearly the best in the world at vaccination. We are around 40th place, and that's a big problem. Every day, the British vaccinate a huge number of people that we don't. The Americans vaccinate more people every day than Canada has in the last two months combined.

Third, compared with those countries, our vaccine task force is shockingly secretive. As late as July last year the government would not even release the names of the participants on the vaccine task force, much less the work plan, much less the minutes of their meetings, which are still secret. We now see the result of that. Unfortunately, the co-chair, Dr. Joanne Langley is now embarking on a media tour to rewrite history and say that the task force did a good job. It patently didn't, given where we are today.

Fourth, our government put the wrong ministry in charge. Every single successful country at this—the United States, the United Kingdom, Israel, Chile—put the health ministry in the lead, but in Canada, vaccines have been led by the industry ministry and procurement, as if we are building a bridge or procuring toilet paper, which is not the case. The health ministry in Canada is conspicuous in its absence.

Fifth, when all this was realized, Anita Anand, apparently with PMO approval, ran around in agitated anguish trying to sign any vaccine deal she could. We've signed more than any other country in the world, yet some of the deals we've signed are with companies that can't deliver in 2021. Some of them won't be able to deliver in 2022. Some of them, and we've heard from one this morning, perhaps will never deliver. It seems that in panic what we did was become less strategic rather than more.

Sixth, much of this institutional failure I've outlined is because Canada's science establishment—and I underscore this—is plain inferior to our peer countries. We have no Tony Fauci, not even close. On the contrary, the Prime Minister's chief science adviser, Dr. Mona Nemer, has issued three statements, precisely three, since coming into the office years ago. Two of the three are on election financing and Canada Day. That's not science. She has, with the help of outside committees during COVID, issued three fairly low-quality reports on COVID science. In contrast, little Switzerland has issued over 70 reports from its COVID task force.

Seventh, these indications of disaster were just not heeded. Journalists have been writing about this for a long time. I wrote a desperate warning last August in Maclean's that we were heading for vaccine failure and I was quite ignored, as were the journalists' warnings. I even personally wrote to the Prime Minister's Office in August. There was no dialogue set up with that until November, so we have an insular government as well that is hurting us here.

● (1120)

Here is my final point. Even today, I'm not confident that good ideas are being heard, and that's critical to our security and I'll explain why in questions.

Thank you very much.

The Chair: Thank you very much, Professor Attaran.

We now go to Professor Lexchin. You have the floor for five minutes.

● (1125)

Dr. Joel Lexchin (Associate Professor, Department of Family and Community Medicine, Emergency Medicine Division, University of Toronto, As an Individual): Thank you very much, Madam Chair, and thanks to the committee for inviting me to speak.

My name is Joel Lexchin. I'm an emergency physician in downtown Toronto. I've been one for the past 39 years, and I taught health policy for 15 years at York University.

A lot of the points that I'm going to make have been made in one form or another already, so I'll just emphasize a few.

One of them is that when we came into the COVID pandemic, we lacked any manufacturing capability. This was partly because of the sale of Connaught to Mérieux, which is now part of Sanofi, in the late 1980s, and then the sale of Biochem Pharma in 2006, which was based in Quebec, to GlaxoSmithKline. While Sanofi and GlaxoSmithKline continue to make vaccines here in Canada, they have decided not to make the COVID vaccine that they are jointly working on in Canada. Although they have plants here, they are not going to utilize them to make the vaccine if and when it gets approved.

We also had warnings about the need for a vaccine policy and domestic vaccine manufacturing. This came about through SARS in 2003. After SARS, David Naylor wrote a report emphasizing the need for a vaccine strategy and for a secure supply of vaccines. We seemed to ignore that. We had the H1N1 pandemic in 2009. The vaccine production in the plant in Sainte-Foy was delayed. We seemed to ignore that. Then we had ebola in 2014. Fortunately it didn't arrive in Canada, but we ignored that too.

We come to early 2020. We've ignored warnings, and we don't have any domestic capability to make a COVID vaccine. As a result, we ended up relying on a number of foreign-based companies manufacturing vaccines outside Canada, and we've seen currently what the results of that have been with Pfizer's delays and Moderna's delays.

In view of that, I offer four recommendations to the committee.

The first one is that we need to develop a national vaccine strategy that will consist of a strong and enduring financial commitment to publicly funded and publicly run vaccine research. As I said, this has been recommended before and largely ignored.

Secondly, we need to invest in a domestic, publicly owned vaccine manufacturing facility so that we can avoid the situation of a privately owned Canadian company being sold to foreign interests at some time in the future and, therefore, removing control from Canadian hands. That's what we have with the situation with Sanofi and GlaxoSmithKline: manufacturing facilities based in Canada, decisions made outside Canada, and the decision not to manufacture their vaccine here in this country.

Thirdly, if we can't guarantee domestic vaccine production, Canada should issue compulsory licences to increase vaccine production.

Finally, in the future, if we're going to grant money for vaccine research and manufacturing to private companies or sign contracts for vaccines with private companies, we need to make those deals publicly known with the details so that we can understand what's happening and what's not happening in the country.

Thank you very much.

The Chair: Thank you very much, Professor.

[*Translation*]

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

Mr. Alain Lamarre (Full professor, As an Individual): Thank you, Madam Chair.

First of all, I would like to thank the committee for inviting me to participate in this meeting. I believe this is a topic of paramount importance to national security and to dealing with this pandemic, but more importantly to better prepare us for possible future pandemics.

It's also a topic that concerns me personally, having been involved at all levels in the vaccine development chain during my career, from vaccine design to clinical trials.

I'm a professor at the Armand-Frappier Santé Biotechnologie Research Centre of the Institut national de la recherche scientifique, on the campus of the former Institut Armand-Frappier.

Dr. Armand Frappier was a pioneer in public health in Quebec and Canada. He participated in the development and manufacturing of numerous vaccines. At that time, Canada was a world leader in vaccine production, but its production capacity gradually eroded with the globalization of this industry. Canada's small share of the international market certainly also contributed to the exodus of vaccine manufacturers as early as the 1980s.

As a result, we are now faced with a national vaccine production capacity that is insufficient for our needs and that leaves us at the mercy of vaccine “protectionism”, as we see it at work today. Canada has begun to make substantial investments to restore its domestic vaccine production capacity, but an even greater effort should be made in the coming years to rebuild a rich and diverse ecosystem at all levels of the vaccine development chain.

In order to contribute to thinking about these strategic issues, I would like to propose three areas where Canada will need to consolidate its investments to maximize the potential benefits of vaccine production.

First, federal investments in basic research in Canada must be continued and increased. Basic research is an indispensable component in the development of new technologies related to immunization. For example, the messenger RNA technology, which is the basis of the new Pfizer-BioNTech and Moderna vaccines, is the result of developments in the design of new approaches to cancer treatment. This means that the development of innovative approaches does not always require targeted, problem-specific investments, but often emanates from overall investments in basic research, the potential benefits of which were often unsuspected at the outset.

While the government's allocation of funds to the federal granting agencies, such as the Canadian Institutes of Health Research, or CIHR, and the Natural Sciences and Engineering Research Council of Canada, or NSERC, has increased over the years, the growing number of applicants and the rising costs of research have meant that the success rate for research grants has declined significantly in recent years, putting at risk the operation of many university laboratories. It will therefore be important to increase research grants to maintain our place on the world stage.

Second, continued and increased federal investment in leading-edge research infrastructure through the Canada Foundation for Innovation. New advances in basic research, particularly in vaccine development, require state-of-the-art infrastructure. The creation of the Canada Foundation for Innovation has placed Canada in an enviable position in this regard relative to some other countries. However, this new infrastructure entails significant operating and maintenance costs for researchers and universities. Continued and increased investment in infrastructure, as well as funding for its long-term operation and maintenance costs, will be critical in the coming years to maximize the benefits of these investments.

Finally, a funding structure needs to be put in place at the interface between academic research and the pharmaceutical industry for vaccine development. Canada has several world leaders in vaccine development in its universities. These researchers are designing and developing new, innovative and diverse vaccine approaches. However, the costs associated with vaccine development are often too great for universities or small biotechnology companies to carry out. As a result, many candidate vaccines developed in universities never reach the market.

Government investment in the commercialization of innovations emerging in universities could help advance the industrial and clinical development of promising vaccine candidates until they are sufficiently advanced and mature to attract the interest of large pharmaceutical companies and invest heavily in their large-scale production and distribution.

● (1130)

The presence of these vaccine development accelerators in Canada could also encourage these same pharmaceutical companies to build vaccine production facilities nearby and therefore complete the vaccine production chain. As a professor at the INRS, I would be the first to want to participate in the operation of this type of accelerator with my students.

In conclusion, it isn't too late for Canada to better position itself in vaccine production so that it will be better prepared to fight COVID-19 and other pandemics in the future.

Thank you. I am available to answer any questions you may have.

● (1135)

The Chair: Thank you, Professor Lamarre.

[*English*]

We'll now go with our round of questions.

Our first round of questions goes to Monsieur Paul-Hus.

[*Translation*]

You have six minutes.

Mr. Pierre Paul-Hus (Charlesbourg—Haute-Saint-Charles, CPC): Thank you, Madam Chair.

I'd like to thank the witnesses for their testimony today.

Day by day, week by week, we're learning just how incompetent the federal government is and how much it has improvised.

My first question is for Mr. Sorenson of Providence Therapeutics.

A leading scientist, Dr. Gary Kobinger of the Infectious Diseases Research Center of Laval University, who is also a departing member of the COVID-19 Vaccine Task Force, said out loud what the scientific community is thinking, that federal support for science-based companies like yours has been lacking.

Could you tell us about the impact of the government's failure to manage the situation from the beginning?

[*English*]

Mr. Ken Hughes: Madam Chair, I will start.

I would not say this is the failing of one government. This is the failing of Canada and our ability to focus and develop strategic capacity over many governments. It's easy to point fingers, but as kids we all learned that when you point a finger, you have three fingers pointing right back at you.

We all know it doesn't take us anywhere to worry about how we got here. We got here because people were not completely informed. We got here because of mistakes in judgment. However, in my experience people in public life have good intent and try to do their very best with the information they have.

If we look back at how we got here over the last several decades, we haven't invested enough. We haven't used our strategic capacity to figure out what we really need and don't need in preparing for a crisis like the one we have. This was not a complete surprise. People like Bill Gates made it quite clear, if people had been listening.

[*Translation*]

Mr. Pierre Paul-Hus: Thank you.

Mr. Sorenson, Gary Kobinger mentioned that Minister Anand's remarks insulted him. She told the *Journal de Montréal* that “to set up a new vaccine plant, you need expertise, you need to be able to get resources from suppliers”. He said it was an insult that the minister would say that we don't have the expertise in Canada to produce vaccines.

What do you think about that?

[*English*]

Mr. Brad Sorenson: If the question is whether we have the production to make all the different vaccine technologies that are being pursued across the entire platform, the answer is no. We don't. We have production in Canada that's committed to other essential vaccines that still need to be produced. COVID isn't the only problem across the world.

My only complaint isn't necessarily with the work of the task force or the government in casting a very broad net early on. My frustration is that as data rolled in and as we saw technologies that were effective, I didn't see any adaptation to that additional knowledge.

Again, I agree with my colleague, Ken Hughes, that it's not about pointing fingers. No government had the experience of dealing with a pandemic prior to this, but the question is what we are going to do with the information that we have now and how we are going to apply that information on a going-forward basis.

[*Translation*]

Mr. Pierre Paul-Hus: Thank you, Mr. Sorenson.

This leads me to my next question, which is for Prof. Attaran.

I have an example of the disconnection of ministers or cabinet staff. I have here an exchange of e-mails between Minister Anita Anand and Honeywell. As early as the beginning of March 2020, Honeywell mentioned having the capacity to supply the N95 masks. E-mails from political staff indicated that they weren't needed and that it wasn't necessary.

Do you think that this problem in assessing the situation was generalized from the beginning? Were staff and ministers lacking in skills or information? Did a lack of information lead them to make poor decisions, such as those we're seeing today? For example, the government decided to do business with CanSino Biologics Inc. when it was clear that it wasn't the best idea to negotiate with the Chinese communist regime, and to reject companies like Honeywell and others out of hand.

Prof. Attaran, do you have something to tell me briefly about this?

● (1140)

Prof. Amir Attaran: That's a good question.

In reality, the problem is that the Canadian government lacks scientific expertise. Our federal institutions aren't as aware of the importance of this expertise as those in other countries, including the United States and England.

[*English*]

The problem is simply scientific illiteracy.

I am trained in the United States. I did my graduate work in the United Kingdom. I worked in Europe at a pharmaceutical firm and then I came to Canada. I love Canada. It's where I've chosen to raise a family. However, it is simply the least scientifically competent country I've ever come across.

That is a much larger discussion—perhaps not for today, but it is one on which our lives depend. Why are we, as a government, so institutionally weak on science?

[*Translation*]

Mr. Pierre Paul-Hus: Thank you very much.

[*English*]

The Chair: Thank you very much.

Our next round of questions goes to MP Ehsassi. You have the floor for six minutes.

Mr. Ali Ehsassi (Willowdale, Lib.): Thank you, Madam Chair. Thank you to all the witnesses for appearing before committee.

As you know, Mr. Casey, since our early days of COVID-19, the government was focused on a three-pronged approach. First was to try to secure leading international vaccines. Second was to invest in the most promising Canadian manufacturers of therapeutics and vaccines. Third was to develop biomanufacturing capacity. Central to that strategy was the establishment of a vaccine task force.

Could you share with us your opinion of the vaccine task force? After all, leading scientists and industry experts sit on that committee. They've been doing their due diligence. Could you tell us whether that was an effective approach or not?

Mr. Andrew Casey: Thank you, Mr. Ehsassi, for the question.

I do. I actually think it was a very strong approach. The government recognized early on that this was going to be a very fast moving space and that it did not have the expertise and the depth to quickly identify where the really promising technologies were going to be. It understood very well that it had to move quickly.

If I look at that task force both for the vaccines and also for the therapeutics.... If you recall back in the early days, some of the main thinking was that therapeutics were going to be the first things that would help us and the vaccines would come later—maybe three to five years later. Therapeutics were actually one of the first steps they moved into.

On both, they put together panels of experts that spread across a fairly wide and diverse areas of expertise. I think that was the prudent thing to do. You get not only expertise from a number of different key communities, but you also get the connections that a lot of those individuals bring to the table, particularly when you're dealing in a global context. It's the ability to reach out to other parts of the world and to other companies to connect and understand where things are moving and where the puck is going. I think that was absolutely critical.

Mr. Ali Ehsassi: They had to review data from over 300 vaccine manufacturers and they ultimately settled on seven as perhaps being the most promising. How do you think they did with respect to the seven that were identified as companies that Canada should attempt to enter into contracts with? Was that a good bet?

Mr. Andrew Casey: It sure seems to be.

Look at how many potential candidates were out there and the new types of technologies. I understand that the contracts we signed are with the seven that showed the greatest promise, not the least of which are the Pfizer and Moderna vaccines. Coming shortly thereafter is going to be the AstraZeneca vaccine and Novavax. Those were all identified by the group. I think figuring that part out was absolutely critical.

● (1145)

Mr. Ali Ehsassi: Thank you.

Now I will go to Mr. Lexchin.

You obviously come at this with many years of experience. You touched upon how there was an exodus of vaccine manufacturers from Canada, starting in 2007, which was AstraZeneca, then in 2010 Johnson & Johnson, in 2011 Teva, and in 2013 Boehringer. It's also important to bear in mind that the previous government did not understand the significance of investing in life sciences.

How critical were these developments in terms of hollowing out our capacity to develop vaccines here at home in Canada?

Dr. Joel Lexchin: I don't think it was just the Conservative government that is to blame for this. When the Chrétien government came into power, I think in 1993, it did not engage in any investment. The government seemed to ignore the recommendations of the Naylor report, which was commissioned in 2003 after SARS. In fact, Harper didn't do anything and neither did Trudeau. In fact, they let the PHAC early warning system deteriorate such that we were taken, more or less, by surprise by the pandemic.

I don't think we can blame this on any one government. I think it's been a failure to look at things in a future sense and take action.

Mr. Ali Ehsassi: Excellent. Thank you.

I will follow up with the same question I asked Mr. Casey. If you could provide your insights with respect to the vaccine task force, and how crucial and critical it has been to our overall effort as a country, how would you rate it?

Dr. Joel Lexchin: There are a number of problems with the vaccine task force. As Professor Attaran pointed out, the names of the people were kept secret. The conflicts of interest were kept secret. The advice they've given to the government has been kept secret. There aren't any minutes of the meetings, so we don't know if the advice that they were giving was influenced by the conflicts of interest on the committee.

Mr. Ali Ehsassi: Thank you.

The Chair: Unfortunately, that's all your time, MP Ehsassi.

[*Translation*]

Mr. Lemire, you have six minutes.

Mr. Sébastien Lemire (Abitibi—Témiscamingue, BQ): Thank you, Madam Chair.

I'd like to thank the witnesses for their presentations.

Mr. Lamarre, you mentioned several things in your speech. I'd like to follow up on certain elements.

What concrete measures need to be taken within our pharmaceutical ecosystem, from basic research to bio-manufacturing, so that Quebec and Canada have the necessary means to ensure the success of their investments?

Mr. Alain Lamarre: Thank you for your question, Mr. Lemire.

Indeed, we heard today from other stakeholders that Canada's entire ecosystem is in bad shape and lacking. Massive reinvestment is needed at all levels of vaccine development. It starts at the grassroots, at the basic research level. This would ensure that new technologies can always emerge and be supported in their maturation towards eventual commercialization.

We also need to solidify our technology and infrastructure capacity. In addition, we need to develop clinical trials or good manufacturing practices to ensure that our technologies that are developed in universities can mature into biotechnologies that will be commercialized.

Mr. Sébastien Lemire: In your opening remarks, you mentioned that the Government of Canada needs to make investments to maximize the potential benefits of vaccine production.

What are the benefits of these investments?

Mr. Alain Lamarre: This would put us in a situation that would be much more comfortable than the one we're in right now. Indeed, we are at the mercy of foreign partners who can decide overnight to favour their population over exports.

This would give us greater autonomy and more domestic production capacity. It would allow us to keep our researchers at home, to prevent the exodus of our best researchers to foreign countries. It would also allow us to create new jobs here in Canada. So there are many benefits to this strategy.

● (1150)

Mr. Sébastien Lemire: Currently, there are delays in the supply of vaccines in Canada. Having missed the boat for the past 20 years and more, according to Mr. Lexchin, has meant that the pharmaceutical industry hasn't been up to date and hasn't been able to meet the demand for mass vaccination against COVID-19. We are dependent on other countries. This is what I understand from your intervention.

Mr. Alain Lamarre: That's basically it.

Mr. Sébastien Lemire: When Minister Champagne appeared before this committee, he talked about rebuilding the biomanufacturing base. We want to invest in research, and that's new, but what are the pitfalls to avoid?

Mr. Alain Lamarre: We shouldn't put all our eggs in one basket and bet on a single technology or particular manufacturer.

The vaccine manufacturing industry needs to be as diverse as possible with all kinds of technologies. The technology that's prevailing today may be quite different 10 years from now. We need to have a slightly more global picture and invest massively at different levels to be ready and flexible for future pandemics.

Mr. Sébastien Lemire: The pharmaceutical industry was a flagship, particularly in Quebec and Canada, until the 2000s, when the Liberal government under Paul Martin suspended Technology Partnerships Canada on risk sharing. Another program was also abolished by Mr. Harper's Conservative government.

Should the government invest in similar programs to provide confidence and predictability to the pharmaceutical industry?

Mr. Alain Lamarre: This is one possibility among others in terms of incentives.

What is most important to the pharmaceutical industry when it comes to choosing one country over another is the research ecosystem, in other words, equipment, ideas and people. Canada needs to invest heavily in all of these aspects to rebuild that ecosystem and eventually attract pharmaceutical giants to settle here permanently.

Mr. Sébastien Lemire: The ecosystem also includes infrastructures. Could you explain in detail the importance of investing in infrastructure for the development of new technologies and clinical trials?

Mr. Alain Lamarre: Vaccine development is a special industry. I could include all biological products in this category. It's already very expensive to market or scale up technologies using good manufacturing practices. You also have to get enough products to be able to conduct clinical trials, which are also very expensive. Facilities are needed for immunomonitoring vaccines. All of these things take a lot of money, and Canada will need to invest in all of these areas.

Mr. Sébastien Lemire: Thank you very much, Mr. Lamarre.

The Chair: Thank you very much.

[*English*]

Our next round of questions goes to MP Masse.

You have the floor for six minutes.

Mr. Brian Masse (Windsor West, NDP): Thank you, Madam Chair.

Thank you, witnesses.

Mr. Lexchin, my first question will be for you. I come from a manufacturing base in Windsor, Ontario, and we remember during the election when Prime Minister Trudeau said that we needed a transition out of manufacturing. We had a collective gasp down here, because we've been fighting for our auto industry. Meanwhile across the river in Detroit, they've put $16 billion into auto in the "platinum age" as I call it, with new electrification and so forth. We are slowly catching up, with only a few billion dollars across our entire country.

Our tool and die mould-making industry almost went bankrupt, but we transitioned into aerospace from auto, and we keep auto and also medical devices.

My question specifically to you is this. Do you think there is still capacity in our country to build a manufacturing facility, as you have advocated for? I see it plain and simple down here that we can still do this. We switched to PPE at Ford and Hiram Walker distillery switched as well, but we have to have the political will to do so.

● (1155)

Dr. Joel Lexchin: Thanks very much for the question.

I think there is a capacity in Canada to build a publicly owned manufacturing facility. As people have pointed out, there are multiple different technologies to make vaccines. I don't think we can invest in all of them. That's why I think we also need to invest heavily into research and development in vaccine technology and more broadly in medical technology, so that we can look into the future, see what the emerging techniques are for making vaccines and, if necessary, use that to change the production capabilities of any publicly owned plant.

Right now in Canada, CIHR invests about a billion dollars a year in medical research. Compare that to what happens in the United States. It has ten times the population, but the NIH invests $40 billion, so that's four times as much per capita as Canada does. I think we need to go a long way to correct that imbalance.

Mr. Brian Masse: Thank you very much.

Mr. Attaran, I want to come to your testimony with regard to Britain and what they did.

There seems to be somewhat of a disconnect—and it's an unfortunate one—with our scientific community. It seems that we don't have the bridge necessary or the confidence in the structural components of the scientific community to move it towards manufacturing. Perhaps you can reflect on what they did differently and better there, because they also had a decline in manufacturing, but they've reclimbed that ladder.

Prof. Amir Attaran: It proves that Canada could have done it last year and Canada failed.

I'll just quote from a report by the British biotech industry advocates, similar to BIOTECanada. Mr. Casey will know that Britain has an organization very similar to his.

Last year, they wrote that "the UK has limited or no vaccine manufacturing capability". What did they mean by that?

They meant that the U.K. had only the capacity of 200 litres of cell culture growth capacity to make the Oxford-AstraZeneca vaccine. Two hundred litres isn't a lot, but at the end of 2019, the National Research Council had 500 litres capacity. We had more capacity in this country going into COVID than the British did, yet the British stepped up. They made use of their limited capacity in 2020. They really expanded it quickly.

That's what their vaccine task force did that ours failed to do, and now look where they are. They're manufacturing, and soon they'll be exporting. That was done in one year, and it was able to be done because there are single-use bioreactor technologies around the world that Canada just hasn't adopted. We blew it—and our vaccine task force blew it—in not doing that.

I want to add one last thing to this answer. At the end of 2019, when COVID hit, there was only one facility in the world that had ever made an adenovirus-based vaccine and commercialized it. That's the technology used by Johnson & Johnson and AstraZeneca. That laboratory was Canada's NRC. We were the only ones in the world to ever commercialize that vaccine. We got there first, yet that capacity was unused in 2020, and today it's still unused.

Mr. Brian Masse: That's disappointing to hear.

With regard to our current task force, the secrecy around some of the decisions and the process seems to be undermining the public. There's no doubt about it. How does that translate to the scientific community, especially as we're looking to grow our own talent for the future out of this? I'm just wondering about that aspect, because I know the public is very concerned about the fact that there are no clear answers for even the contracts, for example, let alone the operations of the task force.

Prof. Amir Attaran: This is just it. We are in the current predicament because two Canadian inferiorities have collided. We are inferior in science. Our government particularly is scientifically inferior, but we're also more secretive. When you take the scientific backwardness combined with the secrecy that didn't allow outsiders to detect our missteps in 2020, you end up with the disaster we have in 2021.

● (1200)

Mr. Brian Masse: Right now, our minivan plant is down for three weeks because we're dependent upon a small part from....

Thanks, Madam Chair. I see the card. I'm red-flagged. I'm finished.

The Chair: Thank you.

We'll now go to our next round.

[*Translation*]

Mr. Sébastien Lemire: Madam Chair, I would just like to point out that the interpreters have had difficulty. There was no break in the interpretation, but at times it was difficult to hear Prof. Attaran.

The Chair: Okay. Thank you.

[*English*]

Professor Attaran, I'm just going to remind you, if it's possible, to get the microphone close to you so we can make sure we have good translation. Thank you.

We'll now go to MP Rempel Garner.

You have the floor for five minutes.

Hon. Michelle Rempel Garner (Calgary Nose Hill, CPC): Thank you, Madam Chair.

To the CEO of Providence, it's my understanding that there are concerns about the efficacy against variants of some of the adenovirus-based vaccines, such as Novavax and AstraZeneca. Is that your understanding?

Mr. Brad Sorenson: Yes, that is what's been reported in the literature.

Hon. Michelle Rempel Garner: Mr. Sorenson, it's my understanding as well that mRNA-based vaccines are becoming the gold standard, if you will, with early data with regard to efficacy against the variants. Is that correct?

Mr. Brad Sorenson: Yes. Again, if you're looking at reported data, the messenger RNA vaccines are responding to the variants the quickest.

Hon. Michelle Rempel Garner: In terms of Canada's ability to respond to variants with our existing vaccine purchase strategy, do you have confidence that we would be able to deal with efficacy concerns related to the variants as our current plan currently stands?

Mr. Brad Sorenson: The adenoviruses are not effective against the variants. They also have a challenge because of the vector delivery system. They have to adapt to the actual design of the vaccine itself and the delivery system in order to accommodate, so they are going to be slow to respond.

Hon. Michelle Rempel Garner: An mRNA technology could technically—to put it simply—turn on a dime faster than the adenovirus-based platform. Is that correct?

Mr. Brad Sorenson: The mRNA vaccines have the ability to be redosed, so they do not have that same challenge as the viral vector deliveries.

Hon. Michelle Rempel Garner: With regard to the platform you're building, would you be in a position, should you be able to scale up, to potentially respond to variants with boosters or a redesigned formula, if you will?

I'm sorry. I'm an economist, not a virologist. Is that something you could do?

Mr. Brad Sorenson: Absolutely.

Hon. Michelle Rempel Garner: What I'm not understanding here is the problem with scale-up.

Maybe I'll back up. What does the industry need in Canada and what do you need to develop enough capacity for us to be able to produce domestically on an mRNA platform in the medium term—let's say, within a year?

Mr. Brad Sorenson: We've already taken steps to accommodate for that. With the capacity at the Northern RNA facility in Calgary partnered with the capacity of the Emergent BioSolutions facility in Manitoba, we have the ability to produce over 120 million doses of vaccine.

Hon. Michelle Rempel Garner: Did the federal government reach out to you all to offer assistance in this process?

Mr. Brad Sorenson: No.

Hon. Michelle Rempel Garner: Did anyone take your call?

Mr. Brad Sorenson: No.

Hon. Michelle Rempel Garner: Do you have any suspicion as to why that would be?

Mr. Brad Sorenson: That's a question for the federal government.

Hon. Michelle Rempel Garner: What do you need from us? We need your vaccines. What do you need?

Mr. Brad Sorenson: Quite frankly, I already have the discussions going on with the provinces. We're now filling orders. I would welcome support from the federal government and the NRC as we advance the clinical trial forward.

Hon. Michelle Rempel Garner: What about special help from Health Canada with regard to certification?

Mr. Brad Sorenson: We're not looking for any exceptions. We want to make sure this is done properly.

Hon. Michelle Rempel Garner: What about timelines, though? Are you worried about pedantry within the ministry or within the process, like roadblocks?

Mr. Brad Sorenson: I don't believe Health Canada functions that way. Our experiences with the bureaucratic functions of the federal government—NGen, NRC, Health Canada—have all been fantastic to date. We have no reason to believe that would not continue on a go-forward basis.

● (1205)

Hon. Michelle Rempel Garner: Good. What about resourcing?

Mr. Brad Sorenson: It would be important as Health Canada continues to review additional technologies—and not just Providence's—that they have the resources at their disposal to be able to review those technologies on a rolling basis.

Hon. Michelle Rempel Garner: That's what I was getting at. What kinds of improvements would you recommend to the committee so that we get to that point in a short period of time?

Mr. Brad Sorenson: Quite frankly, that's beyond my expertise to advise.

Hon. Michelle Rempel Garner: Great. Is there anybody you could point us to that the committee could bring on for that?

Mr. Brad Sorenson: I'll give that some consideration and provide some follow-up.

Hon. Michelle Rempel Garner: Thank you.

The Chair: Thank you very much.

Mr. Sorenson, if you do have some additional information you'd like to provide to us, please send it to the clerk so that he can circulate it to the members. Thank you.

With that, we now turn to MP Erskine-Smith.

You have the floor for five minutes.

Mr. Nathaniel Erskine-Smith (Beaches—East York, Lib.): Thanks, Madam Chair.

I want to start with you, Mr. Gerdts. There have been significant investments to build up domestic manufacturing capacity. We won't see that turn into capacity in the short term, I don't think, but we will in the medium term, hopefully, including at your centre.

Do you have any other recommendations on what the government ought to be doing to make sure we are leaving no stone unturned and doing everything we can to ensure that we have that capacity going forward?

Dr. Volker Gerdts: There are a couple of recommendations. Number one, I think we need to invest in clinical trials for those candidates that are going forward right now. That includes our own candidate. We really didn't talk much about it. We're working on a protein vaccine here. We're at the same stage as Providence. It's critical for not only ours but also for these other vaccine companies that were mentioned earlier, the seven, to have a good path forward in terms of clinical development. Phase three trials are very, very expensive.

In the long term, though, I think what you're referring to is how we can better prepare for the future. It's critical that the government consider funding into these organizations and into these centres that are specifically focused on emerging diseases and can address emerging diseases affecting both humans and animals. We've talked a lot about human diseases today, but currently there are animal diseases circulating that represent a great threat to our livestock industries. This includes a disease called African swine fever.

We need to have departments in the country that are almost like fire departments, that are able to tackle immediately any emerging diseases. That means immediately. It doesn't mean start to hire people and train them and so on. Just to give you an idea, it takes about four to five months to get a person fully comfortable working in a high-containment lab with a potentially deadly virus. When a disease emerges, you don't want to start recruiting new people. You need to have them ready and in place.

Part of our strategy for the country needs to be investing in capacity, in building centres that are specifically focused on emerging diseases, and in continuing to fund them so that you have these people in place and you don't start looking for people or handing out money when a disease has emerged.

Mr. Nathaniel Erskine-Smith: That all makes sense. I would add that we ought to think about pandemic risk as a matter of prevention also—outside of your area of expertise—as it relates to food system transformation and climate action. We should have a "one health" approach. The experts seem to be universal in calling for a one health approach, but governments haven't yet gotten there.

Mr. Gerdts, in terms of the current crisis we are living through and the continued development, I suppose, of vaccine technology, you talked about your own efforts. Mr. Sorenson talked about his efforts, yet there are candidates already with existing technology that we know work. Why would we not focus our efforts on domestic manufacturing and licensing of vaccines that have already been successful? Why reinvent the wheel here?

Dr. Volker Gerdts: It's because in the long term, that's the wrong strategy. In the long term, you want to build domestic capacity. You want to develop domestic expertise and manufacturing capacity. If you always rely on other countries, or companies from other countries, to sign a licence with you, you will always be in the position of competing with other countries for the same technology. This time—

Mr. Nathaniel Erskine-Smith: I don't mean always. I just mean right now, in the crisis we're living through, but I do take your point.

Dr. Volker Gerdts: I think that's what the government is doing right now.

● (1210)

Mr. Nathaniel Erskine-Smith: I suppose I mean in terms of building the supply here, but in relation to technology developed elsewhere.

Dr. Volker Gerdts: There's the Novavax deal that was signed by the facility in Montreal. They're doing already what you just said.

Mr. Nathaniel Erskine-Smith: Right.

Dr. Volker Gerdts: As soon as our facility is up and running, we can do the same here.

Mr. Nathaniel Erskine-Smith: Mr. Attaran, I wondered about that, because I take it that this was your point fundamentally. Your main recommendation, from what I understand from your writing...and I think you're too pointed at times, if I'm being honest with you. I took your recommendation to be that licensing ought to have occurred with, say, AstraZeneca, and that we could have, through NRC, been building that out.

I did put that question to the deputy minister as it relates to the U.K. He in fact pointed to pre-existing investments. I didn't know enough about this, so I went back and looked. In 2018 there was an investment of 66 million pounds into the U.K.'s first dedicated Vaccines Manufacturing and Innovation Centre, their first vaccine manufacturing research centre. Yes, we were behind the eight ball in some ways and were maybe ahead of the U.K. pre-2018, but did the 2018 investment change that?

Prof. Amir Attaran: That 2018 investment in the U.K. is the sort of thing we need to do in Canada, but it is not yet operational so it hasn't been a factor in this pandemic.

Mr. Nathaniel Erskine-Smith: I had read that it's not fully operational, but it's still pumping out millions of AstraZeneca doses.

Prof. Amir Attaran: No. Actually, the AstraZeneca doses are being arranged through a consortium out of Oxford Biomedica and Cobra Biologics, separate from that 2018 investment.

Sir John Bell, the Regius professor of medicine at Oxford and the developer of the vaccine, spoke on this—he's Canadian, by the way, from Alberta—to Evan Solomon. I highly recommend that you watch that interview. That is what we should have done.

The Chair: Thank you, Professor Attaran.

This is just a gentle reminder to members and witnesses. Please make sure to not cut each other off because the translators have trouble keeping up and hearing what you're trying to say if you're talking over each other.

[*Translation*]

Mr. Lemire, you have five minutes.

Mr. Sébastien Lemire: Unfortunately, I only have two and a half minutes, I think.

My question is for Mr. Lamarre.

Can you tell us how important it is to generously fund research funds, particularly for basic research, in order to develop a quality ecosystem that will once again attract multinational pharmaceutical companies?

Mr. Alain Lamarre: Thank you, Mr. Lemire. That is an excellent question.

I believe that it was Mr. Lexchin who said earlier that the investments from the Canadian Institutes of Health Research, the CIHR, amount to $1 billion per year. On a per capita basis, medical research in Canada is funded four times less than in the United States. The same goes for research in the natural sciences and engineering.

For decades, investments in basic research have plateaued, while more and more researchers in Canada are attracted by the very good working conditions and access to infrastructures in the Canadian Foundation for Innovation, the CFI, and in the Canada Research Chairs program. So we have more and more researchers and less and less funding. Consequently, success rates have dropped dramatically in recent years.

In order to keep our good researchers, we have to keep investing and doing so massively. We have been falling behind for 20 years and we must catch up.

Mr. Sébastien Lemire: Your strategy is certainly very long term. We must invest in order to be prepared for pandemics to come. That will be the key in the future.

Can you give us some more details about your proposal to speed up the development of vaccines?

Mr. Alain Lamarre: The structure would be public, not private. We would therefore not be dependent on one company that might decide overnight to close its doors and set up elsewhere. The structure would be public and not-for-profit. The objective would be to push technologies forward in terms of industrial capacity and clinical trials. All clinical development could be done within that structure. Of course, the same would go for the funding. That's kind of the way I see things.

Mr. Sébastien Lemire: It would be important to diversify the sources of technology in that situation.

● (1215)

Mr. Alain Lamarre: Yes, it would.

The Chair: Thank you very much.

[*English*]

Our next round of questions goes to MP Masse.

You have the floor for two and a half minutes.

Mr. Brian Masse: Thank you, Madam Chair.

I'm going to return to Mr. Lexchin.

With regard to your recommendations and the current construct of the task force, are you confident that we could see our way through the future with the current task force and the structure it has, or do we need some revamping there with regard to getting to a position of less dependency in our country?

Dr. Joel Lexchin: Let me refer you to recommendations from the United States, from what used to be called the Institute of Medicine; now it's the National Academy of Medicine. It came up with recommendations with regard to constructing political practice guidelines. These are sets of recommendations for doctors as to how to diagnose and treat conditions.

Two of the recommendations are relevant to the task force that we have. The first one is that the chairs of any clinical development guideline committee should not have any conflicts of interest. Both of the chairs of the vaccine task force have significant conflicts of interest. We need to worry about that. Secondly, it said that at least half of the members of any committee should not have conflicts. I think that around half of the members of the current task force have conflicts.

Again, we are not complying with those guidelines. Those are American guidelines, but they're recognized in many countries. Continuing with a task force is a good idea, but we need to restructure the task force to remove the conflicts of interest. It will create trust in the recommendations they are making.

Mr. Brian Masse: Mr. Attaran, we have to look toward the future here. Do you have any comments about improving the task force, or a revamp on the entire model?

Prof. Amir Attaran: Disband it and start over. It clearly made fundamental mistakes. We're living with them right now.

Disband it. Reappoint it. Make everything transparent: the meeting minutes, the agendas of the meetings, the conflicts of interest.

If I publish a paper in the lowest-grade medical journal, I have to disclose all my conflicts of interest. These people are making the highest stakes decisions in the country right now, and they haven't fully disclosed their conflicts of interest. Something's wrong there.

The Chair: Our next round of questions goes to Mr. Dreeshen

You have the floor for five minutes.

Mr. Earl Dreeshen (Red Deer—Mountain View, CPC): Thank you very much, Madam Chair.

I certainly wish we could have had these witnesses here prior to our meetings with the ministers. That would have certainly helped us focus our discussions.

I was going to ask about the vaccine task force, but the comments Mr. Attaran just made and having those on the record is probably good enough.

My next question will be to Mr. Attaran. We recently heard that the member for Thunder Bay—Rainy River, who is a medical doctor, sent a message to his colleagues, indicating that the Liberal government's pandemic response has been so secretive that it's hard to have faith, and it's difficult to accept reassurances that Canada's doing all the right things.

My question has to do with the secrecy. It has to do with the reason why Canada can't seem to find its way to discuss contract information with suppliers, yet other countries can.

You also mentioned, at the end of your presentation, that you're not confident that good ideas are even being heard by the government, which is critical for our security. Could you expand on those comments?

Prof. Amir Attaran: The fundamental failure of this government is that it has the wrong people in charge. I mentioned in my testimony the folly of putting a vaccine strategy in the hands of the industry minister and the procurement minister, not the health ministry where the scientists are. Across the board, this government doesn't utilize the people it has well. I'll point to some stars. There is Kirsty Duncan on the Liberal side of the House. She did a Ph.D. on pandemics. She's not involved. It's absurd.

Ms. Jaczek, you were a public health officer for many years. I don't see you directing, and I kind of wish you were.

● (1220)

The Chair: Professor Attaran, I ask that you put your questions through the chair, please.

Prof. Amir Attaran: It wasn't a question; it was a comment.

Anyway, your point on secrecy is very well taken. The United States, Brazil and the 27 European Union countries have, to some extent, disclosed their contracts with vaccine manufacturers. Canada hasn't. One of those—the one with Moderna—will eventually become public because of U.S. disclosure to the Securities and Exchange Commission. It's absurd that we're relying on American law and American regulatory mechanisms to get us transparency about what's happening in Canada.

It's very simple. If you take high stakes decisions secretly, behind closed doors, without peer review, without peers in the field able to view what's happening and offer constructive criticism, you end up in a dead end after bad decisions are made. Science turns on peer review. That is its lifeblood. In this life-saving moment, or not, peers are not entitled to review what the government is doing. It is shocking. It is negligent, and it is the result of our failure in very considerable part.

Mr. Earl Dreeshen: Thank you.

I'd like to talk now to both Mr. Sorenson and Mr. Gerdts because, of course, we're in this situation where the provinces are saying, “Let us get engaged here.” Of course, if they don't know what is in a contract between the federal government and the various manufacturers, it makes it very difficult for them, and for your organizations as well, to get there.

Mr. Gerdts, I probably know a lot more veterinarians than I do doctors, so I'm curious to have you talk somewhat about the significance of the research you've done—African swine fever and other types of issues—and how quickly you've been able to gear up to handle those other types of clinical issues as well.

Dr. Volker Gerdts: We've been working on animal diseases for 45 years and we made a number of coronavirus vaccines that were licensed and commercialized for other species. When SARS-1 came, we were part of the Canadian accelerated vaccine initiative at the time. We were just doing research on MERS before the pandemic hit, so we have a lot of expertise in working on these viruses. As you know, they affect animals and humans. We live in a one health world. We have a lot of expertise working with these, and that was really the reason our vaccine went forward so quickly.

Mr. Earl Dreeshen: Thank you.

Mr. Sorenson, you've mentioned that Providence has the ability to scale up manufacturing, but again, you're looking at arrangements that you would have with the provinces. Is there any hope of co-operation?

The Chair: I apologize. You've gone a little over time. Hopefully in the next round we'll be able to get that answer.

We now go to MP Jaczek. You have the floor for five minutes.

Ms. Helena Jaczek (Markham—Stouffville, Lib.): Thank you, Madam Chair.

Thank you to all the witnesses. This is certainly a stimulating committee meeting.

My first question is for Mr. Sorenson.

Mr. Sorenson, could you detail to us the funds you've received from the federal government?

Mr. Brad Sorenson: As of December 31, 2020, Providence had received $878,182 from NRC and $350,000 from NGen. Thus far in 2021, we have received an additional $907,648 from the NRC. All told, Providence has received just over $2 million, cumulatively and as of today, from the federal government.

Ms. Helena Jaczek: You didn't receive any funding from the strategic innovation fund.

Mr. Brad Sorenson: No.

Ms. Helena Jaczek: I have some information that apparently you received some $4.7 million at some point.

Mr. Brad Sorenson: That is a commitment through the National Research Council. I just articulated how much we have received of that commitment to date.

Ms. Helena Jaczek: You were committed a sum of some $4.7 million.

Mr. Brad Sorenson: That was committed through the National Research Council. That is correct.

Ms. Helena Jaczek: Following that commitment, what sort of data have you been required to submit to the National Research Council?

● (1225)

Mr. Brad Sorenson: We provide the National Research Council regular updates on our progress with regard to the phase one clinical trial. We provided them the full package that was also submitted to Health Canada, in which we received our authorization to proceed, and we provided them full access to all our preclinical data.

Ms. Helena Jaczek: As you progress through the various clinical trials, potentially or whatever, will you be submitting data as it comes in?

Mr. Brad Sorenson: Yes.

Ms. Helena Jaczek: Would you anticipate, then, further funding from the federal government?

Mr. Brad Sorenson: It is our intention to proceed with the National Research Council and with the strategic innovation fund to invite them to participate in sponsorships of phase two and phase three clinical trials. However, that is not necessary for us to proceed.

Ms. Helena Jaczek: It seems like a responsible process to me. In other words, you submit data and then there is a further commitment of funding. It seems to be decision-making based on science, which I am sure is music to Professor Attaran's ears.

I would like now to turn to Dr. Lexchin.

Dr. Lexchin, you mentioned compulsory licensing. Could you please explain exactly what you mean by that and how it would work?

Dr. Joel Lexchin: First of all, let me point out that back in the early days of the pandemic, Parliament passed Bill C-13, which allowed compulsory licensing for a period of time. However, that expired at the end of September 2020.

Compulsory licensing, in essence, means that the government can issue a licence to another company to make a product that is still under patent. In that way you can expand the production capability and you also perhaps can get competition in terms of price.

Ms. Helena Jaczek: Thank you for that.

Mr. Casey, perhaps you could give us your opinion on compulsory licensing. I presume this has been a discussion with the many members of your organization.

Mr. Andrew Casey: It has. I think Canada has to recognize that it's in a globally competitive industry, so it has to adopt policies that are actually going to allow the industry to compete globally and to also participate here.

It's part of why we have seen a little bit of the industry disappear in Canada. We have adopted pricing policies that make it somewhat inhospitable for a lot of those companies to be here. If we think about going forward, we have to figure out how to get through the immediate period ahead with some of the challenges that are coming with the variants and mutations.

Looking ahead, I think the large multinationals are going to be an absolutely critical part of partnering with companies like VIDO-InterVac, Medicago and other Canadian entities that are here in this country. That partnership is going to be absolutely critical going forward.

Ms. Helena Jaczek: I'll go back to Dr. Lexchin.

I just want to confirm with you. When you were calling for domestic, publicly owned manufacturing facilities, would the biologic manufacturing plant being built by NRC in Montreal fit the bill for you?

The Chair: Answer very quickly.

Dr. Joel Lexchin: I'm sorry. I don't have enough details to say whether or not it would fit the bill.

The Chair: Thank you very much.

We will now start our third round of questions.

With that, I'll turn to MP Baldinelli.

Welcome to INDU. You have the floor for five minutes.

Mr. Tony Baldinelli (Niagara Falls, CPC): Thank you, Chair.

Thank you to the witnesses for appearing today. It's my pleasure to be on the committee for my first day.

I'd like to pose a question quickly to Mr. Sorenson.

You've already announced plans to produce 50 million doses of your vaccine by the end of 2021. You just mentioned you have the ability to produce up to 120 million doses. If you had received significant federal support earlier, is it reasonable to assume that you would have been able to produce enough doses for most Canadians even earlier in 2021?

Mr. Brad Sorenson: Thank you for the question.

With the Northern RNA and the Emergent BioSolutions facilities, we have the capacity, beginning in July, to produce 50,000 vials a day. Each vial contains 10 doses of the vaccine. That is half a million doses per day beginning in July.

The total capacity that we could produce in 2021 would be 50 million doses. We are now receiving orders from provinces. We are going to set that production limit. We are going to produce what has been ordered.

If you include necessary downtime on the facilities, on a full-year basis we have the ability to produce up to 120 million annually with the current infrastructure.

● (1230)

Mr. Tony Baldinelli: I'll follow up on a question that was asked by one of my colleagues on the amount of money that was provided. In terms of federal support to date, is it the provincial funding—in terms of contracts—that is taking you through those stage two and stage three clinical trials?

You indicated you no longer need federal support. Is it because of the provincial funding?

Mr. Brad Sorenson: We would welcome the federal support, but being at the point of being able to do the production and have the offtake agreements with the provinces, we now have the ability to go to the capital markets and to raise sufficient capital funds to carry forward our plan, regardless of whether or not we have support from the federal government.

Mr. Tony Baldinelli: How much have the provinces ordered?

Mr. Brad Sorenson: That will be disclosed in the coming 10 days.

Mr. Tony Baldinelli: Okay. Thank you for that.

I'd like to follow up with a question for Mr. Gerdts.

You indicated your vaccine production facility is slated to be operational in 2022, if that's correct. Is there anything that could have been done to speed up this process? Could more funding or an expedited certification process be used to support it?

Dr. Volker Gerdts: More funding at the moment wouldn't really have made much of a difference. We're hoping for an expedited certification and commissioning process. We're working on that right now with the regulators—to recognize that we are in a pandemic and that it's important to do this as quickly as possible without compromising on safety.

Mr. Tony Baldinelli: If we had negotiated the right to manufacture vaccines like AstraZeneca in our contracts with them, would you have been able to manufacture them in your facilities?

Dr. Volker Gerdts: Yes. We would have been able to make all vaccine technologies with the exception of RNA or DNA vaccines.

Mr. Tony Baldinelli: Would it have taken you and your company an inordinate amount of time to scale up to do so?

Dr. Volker Gerdts: Just to clarify, we're a university. We're a public research organization here. It always takes some time to transfer the technology and adapt to a new facility, but as we heard earlier, our facility is using what is called single-use. Essentially what that means, to make it very simple, is that you have very large plastic bags that you put in these stainless steel bioreactors and it allows you to make a certain vaccine product, take the bag out, harvest the vaccine and in the meantime you can put a new bag in for a different kind of vaccine.

Our facility is designed to make different vaccine technologies in the same facility both for humans and animals.

Mr. Tony Baldinelli: Thank you for that.

I have a quick question for Mr. Casey.

The government has recently updated the Pfizer labels to require six doses to be extracted. The problem is that it requires specialized syringes that are in short supply. Does Canada have the capacity to produce these syringes domestically?

Mr. Andrew Casey: That's beyond my expertise.

It points to the bigger question, though, in terms of fill and finish and distribution. Getting all those logistics in order is going to be absolutely critical. We can have the science, we can have the technology and we can develop the vaccines, but the ability to get it out and into arms is always going to be a fairly significant challenge, to try to put them into eight billion arms around the world.

Mr. Tony Baldinelli: Thank you.

The Chair: Thank you very much, Mr. Casey.

We now go to MP Jowhari.

You have the floor for five minutes.

Mr. Majid Jowhari (Richmond Hill, Lib.): Thank you, Madam Chair.

Thank you to all the witnesses. It's quite clear that we are all passionate about serving Canadians and quite proud to be Canadian.

Let me start with Providence and Mr. Sorenson.

Mr. Sorenson, in your opening remarks you talked about the fact that you were in a position to be able to design the vaccine in four weeks. Can you give us a timeline as to when that design was completed?

● (1235)

Mr. Brad Sorenson: The design was completed in March of 2020.

Mr. Majid Jowhari: I also understand, based on the comments you made, that you do have the capacity, or in early March you had the capacity, to be able to develop this vaccine. Is that correct?

Mr. Brad Sorenson: That is correct. We had a GMP facility at Sunnybrook Research Institute.

Mr. Majid Jowhari: Great.

Can you help us understand what transpired in the time between mid-March when you developed that vaccine to December 4, 2020, when you submitted your clinical application? Was there anything the Government of Canada could have done to be able to expedite that?

You would be a prime candidate, having developed a vaccine in less than four weeks, and then having the capacity to be part of the 76 companies or organizations that were evaluated.

Can you help us understand what happened during those times?

Mr. Brad Sorenson: Certainly.

In the second half of April, we were formally invited by the strategic innovation fund to make an application for their review. We were told at that time that, of all of the applications, there would be a short list and that the short list would be contacted within a week, or two weeks tops, and then they would move forward with those that were short-listed.

We followed up in a week and we were told that they were still receiving applications. We followed up in another week and we were told that we would need to wait another two weeks. We followed up in two weeks and we were told that we needed to wait because they were structuring the vaccine task force and they needed to have the guidance of the vaccine task force before they could begin their work. We kept waiting throughout the entire summer—

Mr. Majid Jowhari: Thank you for that, but from the point of development of the vaccine, you had the design, and in what you're trying to do, what would be the next step in that?

You have a formula, I believe you manufacture a batch, and then you start doing a clinical trial or animal trial. That's the path I'm really interested in to get an idea of what you went through.

Mr. Brad Sorenson: Certainly.

We designed the vaccine. We took that vaccine into animal trials where we tested safety and we tested efficacy. We did two efficacy trials: one in mice and one in hamsters. We did a number of safety trials.

Mr. Majid Jowhari: Can you help us with the timing on that?

Mr. Brad Sorenson: Certainly. We did an initial safety trial with the University of Toronto, and that would have been conducted in April. We published that data, I believe it was in June, and we did additional follow-up safety trials that summer with Charles River Laboratories in Quebec. In conjunction with the University of Toronto, we also did our efficacy trials over the summer in mice and in hamsters.

You asked if we could have done it more quickly with support. Yes, we could have done it more quickly with support. One of the biggest challenges we faced was that we were in lockdown and we had limited access to our own facilities because of the lockdown criteria and we could not be designated an essential service.

Mr. Majid Jowhari: Had it not been in a lockdown and you had access to the facility, you could have shortened your test cycle, but when it opened up, you were approved. You made an application on December 4. It was approved on the 23rd. Then your first trial was on January 26.

In the last 15 seconds I have, can you give me your perspective of government response, at least Health Canada's response, in being able to get you where you need to be?

Mr. Brad Sorenson: Health Canada has responded very quickly with regard to reviewing and giving us the authorization to proceed with our clinical trial.

Mr. Majid Jowhari: Thank you.

The Chair: Thank you very much.

We now turn to MP Lemire.

[*Translation*]

You have the floor for two and a half minutes.

Mr. Sébastien Lemire: Thank you, Madam Chair.

My question is for Mr. Attaran. I was interested in his comments on the lack of transparency and the conflicts of interest.

I would like to know whether he is aware of the ranking in *The Economist* that compares countries. In it, we see that Canada's strategy will not place us among the three countries that will complete their vaccination in 2021. Canada will only get there towards the middle of 2022.

Mr. Attaran, do you feel that all Canadians will be vaccinated by September 2021, as the Prime Minister and his ministers have been constantly telling us for weeks?

● (1240)

Prof. Amir Attaran: I really do not know, because there is no transparency. The Prime Minister says that the entire population will be vaccinated by September. Maybe it will, maybe it won't.

If we can't see the contracts and the precise planning, how can we know?

Mr. Sébastien Lemire: I completely share your opinion on that. The strategy in Canada probably costs much more than in other countries.

Do you think that a vaccine that we paid for in the final quarter of 2020 will cost a lot more than a vaccine that we get next summer, for example?

[*English*]

Prof. Amir Attaran: It's not even a question of the price. We shouldn't be worried about this. What I'm worried about is that, even right now, the government is failing awfully at advancing manufacturing plans. We are doing it in the slowest possible way we can. What happens if in the next 12 months evolution gives us a new variant that is highly resistant to existing vaccines? Then we are cooked.

I want to see vaccine manufacturing in this country moving at a British speed so that by summer, like the British, we have manufacturing under way. This idea of letting the manufacturing come at the end of the year or next year is simply asking to put our lives at risk if a nasty surprise is given to us by evolution.

[*Translation*]

Mr. Sébastien Lemire: On a scale from 1 to 10, what mark could you give to the Government of Canada in terms of its entire strategy since the beginning of the pandemic and its huge purchase of 400,000 vaccines?

[*English*]

Prof. Amir Attaran: You're asking a professor to do that? It's close to a failure.

[*Translation*]

Mr. Sébastien Lemire: Thank you very much.

[*English*]

The Chair: Thank you very much.

Our next round of questions goes to MP Masse for two and a half minutes.

Mr. Brian Masse: Thank you, Madam Chair.

I had another question, but I'm going to go back to Professor Attaran with regard to capacity.

Here's the reality. The vaccine promise is starting to roll in there with child care, pharmacare, electoral reform, Bill C-51, climate change, fossil fuel subsidies, a whole series of things that have been promised and never acted upon. However, this one is really dangerous in particular. The other ones are equally difficult to deal with as well, but this one's really bad.

I want to know. If we are able to ramp up and catch up with what's going on, do we have the infrastructure for the administration of the vaccine? Do we have the physical capacity being put in place right now by the task force to make sure that, if we are going to play catch-up, we can do so with the proper administration of the vaccine to our population?

Prof. Amir Attaran: Before I answer that, I'll comment on what you just said.

There's something different about a pandemic and vaccination from all the other challenges you listed. A government's highest moral priority is protecting the life of its citizens. There is nothing above that. If a government can't do that effectively and convincingly, with transparency, it is not fit.

As I see it right now, to answer your question, we do not have the transparency on the implementational side of what will happen when vaccines come. In other countries mass vaccination campaigns are the norm. I have not heard plans in Canada for the development of mass vaccination campaigns, and there need to be.

I'll give you an example. Bangladesh vaccinated over 50 million children in three weeks—one of the poorest countries on earth. Why am I not hearing a Canadian plan to vaccinate millions in a few weeks? Why isn't that transparent? Either it doesn't exist or it's hidden. Either way, I'm not given to good sleep at night.

Mr. Brian Masse: I guess the question for us is going to be this. If we finally actually do get the vaccines, and we need foreign help to do so, are we going to need foreign help to administer them to our own citizens as well? This is what it's coming to.

I really worry that there doesn't seem to be a plan. You can check out what Australia is doing and what's going on in other places. Across from me, in Detroit, Michigan, they are doing them right now through the drugstores. That's two kilometres from where I am right now, where they have drugstores, chain stores, grocery stores, hospitals, massive clinics. This is how real it is. I know Canadians are flying to Alaska and Florida, but right now you can get in your car and be over to a place and get vaccinated, if you could cross the border, in less than, I guess, 10 minutes. That's really what it would take to get across there. This is very difficult for people to accept.

Thank you, Madam Chair.

● (1245)

The Chair: Thank you, MP Masse.

Our next round of questions goes to MP Rempel Garner.

You have the floor for five minutes.

Hon. Michelle Rempel Garner: Thank you, Chair.

Look, this has been a disaster. We are not in a great situation. I'm concerned about how we move forward as a country. There will be time for finger pointing and partisan politics later. We need to move forward and we need a plan.

From what I've heard today from witnesses, I've been trying to summarize some recommendations on how we can move forward. I'd like to put them out there and I'd just like the witnesses to indicate general agreement or disagreement with them. If what we're managing is to build enough domestic manufacturing capacity for, I'll say specifically mRNA vaccines by the end of 2021, this is what I've heard to date.

We need to disband the vaccine task force and reconstruct it with people who do not have conflicts of interests, that is, personal or commercial interests in any specific vaccine.

We need to ensure that the certification process for domestic manufacturing capacity doesn't sacrifice scientific review quality, doesn't happen slowly but quickly, and is adequately resourced. We would need some administrative oversight of that immediately.

We probably need some sort of special cabinet committee or some sort of direct link into the cabinet process for manufacturers who are undergoing this process, so that they're not experiencing the type of political inertia that Mr. Sorenson's company did.

We need to structure our manufacturing capacity not just around one type of vaccine platform, but around the clinically proven capacity to respond to variants in a quick period of time.

We should be undertaking an expedited, right-now review process to eliminate unnecessary red tape around increasing production capacity, as well as a review of Canadian-made products, and institute a fund to expedite infrastructure and certification with a quick yes-or-no process for eligible Canadian manufacturing capacity.

Does that sound right?

I will start with Mr. Sorenson.

Mr. Brad Sorenson: Yes, I agree with those recommendations.

Hon. Michelle Rempel Garner: Thank you.

Mr. Lexchin.

Dr. Joel Lexchin: Yes, with the exception that if we're going to expedite the approval of vaccines, we need to also ensure that post-market testing is done to ensure at least short-term safety.

Hon. Michelle Rempel Garner: Absolutely. I want to be very clear that I don't think we should sacrifice safety at all or the review process. I just think we can probably have our cake and eat it too, and do it quickly and safely.

Mr. Lamarre.

[*Translation*]

Mr. Alain Lamarre: I agree with all your suggestions.

Hon. Michelle Rempel Garner: Thank you.

[*English*]

Mr. Casey.

Mr. Andrew Casey: I seem to be alone. I think the task force was strong. I think they did great work. I'm not convinced we need to amend it. I don't think the pool is deep and wide enough in Canada to avoid some of what are perceived to be conflicts of interest. But—

Hon. Michelle Rempel Garner: Surely we could bring international experts in—

Mr. Andrew Casey: Can we add more? Absolutely, but I think your focus is entirely correct. We have to start to look forward in the immediate future with the variants and the mutations, and then prepare for the longer term, and—

Hon. Michelle Rempel Garner: Mr. Attaran.

Prof. Amir Attaran: I love your plan. I'd make two changes.

One, do not bet on mRNA vaccines only—danger, danger, danger. By the way, I personally don't—

Hon. Michelle Rempel Garner: But we shouldn't be betting on just adenovirus either. Isn't that right? We need to have—

Prof. Amir Attaran: We need all three—protein subunit as well.

Hon. Michelle Rempel Garner: Absolutely.

Prof. Amir Attaran: I do not think there's a chance. Providence has been through a bad experience. I do not think there is a snowball's chance they'll have a vaccine commercialized by the end of the year. That's a separate discussion.

The other thing I would change is this: Why must we review everything for safety ourselves at Health Canada? The European Union has one regulatory agency for 27 countries. I would be fine almost automatically approving any vaccine that the European Union does or that the U.S.A. does, because—

Hon. Michelle Rempel Garner: The subamendment to what I was suggesting was to also look at ways in the certification process to import data from other jurisdictions that—

Prof. Amir Attaran: That's a great idea. I'd go a step further. Just grant automatic recognition to what the Europeans approve and register or what the Americans approve and register. They are technically competent—more competent than Health Canada. There's no need to reinvent the wheel. If we're trying to save time, just recognize their approval as good enough.

● (1250)

Hon. Michelle Rempel Garner: Thank you.

To anyone else who's here, did I miss anything? I'm so tired of us sitting here finger pointing. We need a way forward. Is there anything else that we need to do?

Dr. Volker Gerdts: I have two comments.

I would also recommend not focusing only on mRNA vaccines. We see a huge amount of vaccine hesitancy right now. Forty per cent of Canadians do not want to get vaccinated right now, and that is because everything, including your strategy, is focusing on a new vaccine, on a new technology—

Hon. Michelle Rempel Garner: We need education on vaccines as well for the Canadian public. That's excellent.

Dr. Volker Gerdts: That's right. We need to have multiple technologies and better education, and we also need to have, which we didn't have, research capacity. You can't just start vaccinating or manufacturing a vaccine without understanding the disease, so we need that research capacity. At the moment, we're relying on other countries. We need to have that in Canada too.

The Chair: Thank you very much.

Our next round of questions will go to MP Lambropoulos.

You have the floor.

Ms. Emmanuella Lambropoulos (Saint-Laurent, Lib.): Thank you, Madam Chair.

I'd like to begin by thanking all the witnesses for being here today to answer our questions.

I think, Mr. Gerdts, you hit the nail on the head with regard to vaccine hesitancy. I think we speak a lot about production and about procurement, but we are not talking enough about the people who refuse to get a vaccine and who will continue to spread the virus as we go on. Education is key there.

With regard to what Mr. Attaran said, I agree. We can't bet on only one type of vaccine and hope that it is more effective than anything else, considering we're so early on in the game.

Mr. Sorenson, I know you recently wrote to the federal government for extra support—I believe the ask was for $150 million—in order to help with the vaccine production and in order to quicken things up, but would you not agree that with regard to such things and with regard to the fact that we have to procure enough vaccines to get us through the current wave that we're in and also invest in research, that it would be unwise of us to just give a lump sum in one shot?

I know that we've already invested $4.7 million, as my colleague Ms. Jaczek mentioned, and I know that our government also, through the NGen supercluster, in order to scale up manufacturing capacity, committed to another $5 million. What are your thoughts on this?

Mr. Brad Sorenson: We were not seeking a $150-million grant. We were seeking a $150-million deposit so that we could engage our manufacturing plant and purchase the required raw materials in order to make 50 million doses of vaccines in 2021. The Canadian government chose not to respond to that, so we are now doing that with the provinces.

Ms. Emmanuella Lambropoulos: I believe you wrote to them on February 5, 2021. Is that correct?

Mr. Brad Sorenson: That is correct.

Ms. Emmanuella Lambropoulos: Haven't you heard back yet?

Mr. Brad Sorenson: I received a phone call from Minister Champagne on Saturday, and that was the first contact we received. We did not discuss that particular letter. We discussed other infrastructure dialogue.

Ms. Emmanuella Lambropoulos: Thank you very much.

Mr. Attaran, you made reference to a national vaccination campaign, so my question is for you. Currently provinces and territories are in charge of managing their own vaccination rollouts, as we know. However, some Canadians are preoccupied about this, worried about some of the decisions being made by certain provinces.

How do you think the federal government can work with the provinces and territories, considering that it's their jurisdiction, to help with this type of national vaccine rollout?

Prof. Amir Attaran: First of all, your question has an incorrect prima facie. Health is a shared jurisdiction under the Constitution, both federal and provincial. With continued sedulous attention to the myth that it's provincial only, simply, you are getting off on the wrong foot as a government with that.

What we should be doing is using a campaign-style model to administer the vaccines that will come and that are not quite as thermo unstable as the mRNA ones. That will allow us to take vaccines wherever you can take a cooler of beer. That's what you can do with the adenovirus ones. It's what you can do with the Moderna ones to some extent too—the Novavax. When we get to that point, we should be having vaccination clinics across this country, in schools, recreation centres, churches, mosques, city halls, what have you, and those should be organized with very strong federal and provincial co-operation.

I would recommend working with the Canadian Red Cross on that, which is a national organization with provincial presence. It has experience in hundreds—perhaps several hundreds—of vaccine campaigns around the world that have been highly successful. Where are they on this? Why aren't they being used? Why can't we use them to coordinate this, and by the way, also the Canadian Forces? Vaccine campaign administration is what we need.

● (1255)

Ms. Emmanuella Lambropoulos: All right. Thank you very much.

I have no further questions.

The Chair: Thank you very much.

That wraps up our time for today.

I'd like to thank the witnesses for being here. I found today's testimony very helpful, and I appreciate your time.

With that, I'll remind the members that we will have the vaccine task force with us this Thursday. I'm sure that some of the questions that came up today we can make use of on Thursday.

I'd like to thank everyone again for their time.

[*Translation*]

Thank you very much to the interpreters, the technicians, the analysts and the clerk.

[*English*]

Thank you so much. I call this meeting adjourned.