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Chair

Mrs. Joy Smith

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● (1530)

[*English*]

The Chair (Mrs. Joy Smith (Kildonan—St. Paul, CPC)): Welcome, everybody. I certainly would like to welcome our witnesses.

With us today we have from the Health Technology Exchange, Mr. John Soloninka, president and chief executive officer. Welcome, we're very glad that you could make it.

From MEDEC, Canada's medical technology companies, we have Mr. Brian Lewis, president and chief executive officer. Welcome.

We have via video conference, from the MaRS Discovery District, Dr. Ilse Treurnicht.

Did I pronounce your name right, doctor?

Dr. Ilse Treurnicht (Chief Executive Officer, MaRS Discovery District): Ilse Treurnicht, thank you.

The Chair: Thank you. You'll help me out with this, right? Welcome. We're so glad to have you here. We're very interested in hearing what you have to say.

Dr. Fry, you had your hand up.

Hon. Hedy Fry (Vancouver Centre, Lib.): Yes, Madam Chair. I'm very sorry, but on a point of order, just before we ended the last meeting I asked that we discuss the motion that I sent four or five days ago to this committee. We didn't deal with it at the time because we thought we had to go for a vote. I would like to make sure that we deal with it, please, Madam Chair, because it has been five days now since I tabled it.

The Chair: Absolutely. We can go in camera now.

Dr. Carrie.

Mr. Colin Carrie (Oshawa, CPC): Do you want to go in camera?

The Chair: Did you want to go in camera now, or would you like to do it at the end, Dr. Fry?

Hon. Hedy Fry: If we make sure that at the end there is the time to do it.

The Chair: We will definitely do it.

Hon. Hedy Fry: Good.

The Chair: I think there are two more motions. I don't know whether they're going to be presented today or not, but we will allow time for that. Thank you.

Dr. Morin.

[*Translation*]

Mr. Dany Morin (Chicoutimi—Le Fjord, NDP): I would like to ensure that we will keep 15 minutes at the end to discuss the motion, instead of doing it now.

Thank you.

[*English*]

The Chair: Absolutely. Okay, so we'll make sure that you have plenty of time for that.

We'll start with our witnesses. We'll do our first and second rounds of Qs and As and then we'll go into our motions.

We're so happy that you're here. We have the most interesting study on technological innovation and we've been so excited to hear the witnesses who have been here. Every meeting seems to bring something new that we haven't heard before, so we're very pleased that you're with us.

Mr. John Soloninka, president and chief executive officer of Health Technology Exchange, if you would like to start, you have 10 minutes.

Mr. John Soloninka (President and Chief Executive Officer, Health Technology Exchange): Thank you for inviting me to speak to you today. It's a privilege and a welcome opportunity.

In my first 10 minutes I would like to discuss three main themes: first, that innovation and invention are different, and that difference matters; second, that Canada is in some ways well behind world leaders in medical technology innovation; and third, that there are solutions, we have made progress, and the federal government can play a critical role.

By way of introduction, my organization, Health Technology Exchange, or HTX, is a non-profit financing company managing a $21.4-million early-stage investment fund on behalf of the Ontario government. We have funded 26 medical technology, or med tech, companies aiming at global markets, facilitating about $80 million of investment in the Ontario med-tech ecosystem.

Over my career, I have been very fortunate to lead major health system transformation projects, creating three start-up companies of oncology, radiology, and Internet medical records. For the last two years I've been leading HTX as it assists med tech in Ontario to transform from an invention culture to an innovation culture.

The evaluation and promotion of medical technology innovation, the theme today, is what I and my colleagues, including my colleagues here, as witnesses, with whom I work regularly, do every day.

I'll move now to my first theme, that invention and innovation are different, and that difference matters. Invention is the creation of new knowledge through basic or clinical research, and innovation is transforming or commercializing an invention into something that can be used in clinical practice or sold as a product.

Without innovation, invention of new knowledge will have no impact and generate no return on the investment of public funds or philanthropic donations. We work every day with researchers who are fully committed to innovation, but not all of us in the R and D community share this view on the value of commercialization.

The 2011 five-year external review of CIHR included the rather shocking statement that CIHR-associated scientists' "attitudes toward industry building a commercial base from research funding almost suggested that this outcome was unseemly". It appears that our leading research institutions have not been incented to promote innovation, and in some unfortunate cases may belittle it.

This is also the case with our promotion of academic researchers. If there were two candidates for tenure, the first with 30 prestigious first-author papers, and the second, with 15 such papers, and $50 million in market capitalization of companies she helped found, the first candidate would likely get tenure.

Beyond a core of curiosity-based research, research for its own sake, without conversion to practice, is at best a waste of scare resources, and at worst, as I'll demonstrate, a subsidy of foreign commercial interests. Hospital procurement and health insurance systems that pay for technology also create barriers to innovation. Let me share an anecdote I often use.

Imagine a doctor and an engineer in a proverbial garage of a start-up company. They are building a prototype of what they believe is the greatest technology addressing an important problem. It's based on leading research funded by several million dollars of grants from CIHR. That is the Canadian Institutes of Health Research, in case you don't know.

They polish their prototype, get approval for human trials, and they take it to one of Canada's leading academic hospitals. They say, "We have the leading technology addressing a really important problem. It may cost your hospital $1,000 more per procedure, but it will save 10 times that amount in reduced community care, physician visits, and aftercare, and will dramatically improve patient outcomes. Will you be our launch customer?"

Hospital management responds, "None of our researchers are working on this. It's not really a priority for us. Even if it works, my hospital has no budget or mechanism for buying your innovation. We buy the minimum-cost products under large umbrella contracts in order to manage our input costs. No one rewards us for solving the broader health system problems."

A little while later, running out of cash and with few sources of local investment capital, the entrepreneurs go to Boston to try to pitch to a venture capitalist. After the pitch, the venture capitalist says, "Oh, you're from Toronto. I did my medical degree in Toronto. What did the Toronto hospitals say about your technology?" When the company reveals that they could not sell their technology into their own home market, the Boston venture capitalist immediately loses interest.

The technology is eventually sold to a multinational company for a song, commercialized, and sold worldwide. In fact, it's not even sold in Canada because there is no business model that can take advantage of that technology here.

What benefit did we get from our millions in CIHR research and development in this example? Academic papers, yes, but no impact on Canadian patients, no economic growth, and no savings to the health care system.

Admittedly this is a caricature, and I'll have another one later on.

● (1535)

I'll return to this with a more optimistic scenario later, but I think you understand the point.

My second theme is that Canada is well behind world leaders in medical technology innovation, even though we appear to score well on many innovation measures. Over the last decade, Canadians have been proud of several measures and statements about Canada's business environment. For example, we punch well above our weight and we're third to fifth in rates of academic publications and citations, sixth in U.S. patent awards, third in economic competitiveness, second in G-7 tax incentives, and so on. But these are not measures of innovation. They describe why we should be able to innovate but not what level of innovation we actually achieve.

Investment in research alone, without systematic translation to practice, has low value. Regarding patents, patents for non-commercial inventions obviously have little value, and software often can generate enormous commercial success with no patents at all. Measuring patents by itself is an indirect measure at best.

What are the direct measures? How about production and productivity?

The Canadian med-tech market is about $6 billion. We import $5.1 billion and export $2.1 billion. The total Canadian med-tech production is about $3.7 billion. Only one-third is sold in Canada, and two-thirds is exported. Canada's med-tech production per capita is on par with that in the U.K. and Italy, and is about 20% less than that of France. However, the United States' and Germany's productivity is about three times ours, and Switzerland's is 11 times ours. We need to evaluate our innovation not just on the inputs, like the quality of our academic research, but on our outputs, namely the production and global exports of our medical technology.

My third theme is that there are solutions. We have been making great progress. My colleagues in the room here were in Toronto, and they can attest to much of this as well. The federal government will play a critical role. Here are some highlights. In my global travels, Canadian IP and research outputs are as good as anywhere in the world. However, when you look at foreign start-up companies, they tend to differ in three ways from their Canadian counterparts. They have ready access to capital. That critical mass of capital allows them to attract very competent management. Their health systems are often able and willing to participate in innovation and have incentives to invest in bending the cost curve with homegrown technologies.

Now, a side note is that we should never promote homegrown products just because they're homegrown products. That will reward mediocrity and fail on the world stage. However, our serious competitors seek out and promote their world-class innovations at home.

The innovation clusters of Silicon Valley, Boston, Israel, and China were not created out of thin air. They had massive public sector investment priming the pump of an innovation culture. It is a myth that a can do attitude is all that is needed. I am the last person to recommend that throwing more government money alone is a solution, but I am here to applaud the federal government for its $400-million venture capital support plan, and other plans that fund organizations like ours and Ilsa's and so on. The key is to match with private sector investments and follow on. Helping the domestic market to be receptive to adopting homegrown innovations reduces risk and encourages private sector investment.

We are also very supportive of converting part of the SR and ED funding envelope into something like the U.S. SBIR program, along with a re-examination of the criteria for the remaining SR and ED funds. Canadian companies are at a severe disadvantage to U.S. and EU companies, where they have competitive SBIR and framework programs providing multi-million dollars of funding to early-stage companies.

On a different topic, EXCITE is a program in Ontario that is relatively new, globally unique, and generating tremendous excitement in the med-tech community.

Forgive me, Ilse, if I'm stealing a little bit of your thunder here; I hope I don't. It helps companies get to market faster and creates evidence that speeds the adoption of technologies in Ontario. With the Ministry of Health, industry, academia, and government at the table within EXCITE, it also opens the way for Ontario to act as the launch customer for local technologies that successfully meet EXCITE's objective, third party, globally respected analysis process.

HTX is extending EXCITE through our so-called Harmony project. Harmony will enable small Canadian companies to anticipate regulatory and market requirements for multiple export markets simultaneously. This reduces the risk for these companies, attracts capital, speeds the products to export markets, and accelerates revenues.

EXCITE and HTX are worthy of expansion nationally and ongoing support, as well as of having more formal program linkages with federal programs such as IRAP, SR and ED, CIIRDF, and so on, and we're building those bridges.

● (1540)

So let me return to my small company under a different scenario, under a more ideal scenario.

Based on the quality of their research, that same MD and engineer who are in a garage building their prototype with several million dollars of research funding receive $2 million in a competitive Canadian SBIR grant, and bring on an expert med-tech CEO. They are accepted into a competitive EXCITE program, and EXCITE generates evidence that this is the best technology of its type globally. On the strength of that evidence, the Ontario Ministry of Health funds the technology's implementation at an academic hospital and creates a plan for Ontario-wide adoption. With rapid clearance in three other countries, based on EXCITE and Harmony evidence, customers in three different countries express interest to implement.

The little company now goes down with a local Toronto venture capitalist to syndicate financing with a Boston venture capitalist, and the Boston venture capitalist asks, "What does Toronto think of your technology?" They answer, "They proved it was the best in the world, and are implementing it across a 13 million person province. We comply with and have requests from three other major world markets."

What a dramatically different story. The company then grows to 100-plus people, becomes internationally successful, selling CIHR-funded technology internationally, improving the health system for Ontario, generating economic wealth in Ontario and Canada.

By the way, I just read in the paper today that Epicel was sold for $245 million to a company right near where we're sitting right now, and it's a story not unlike this.

The scenario is optimistic, but with your support and the rest of the country's support, I think it's very realistic.

Thank you very much, and I look forward to your questions.

● (1545)

The Chair: Thank you very much for your presentation. It was very insightful.

We'll go to Mr. Brian Lewis.

Mr. Brian Lewis (President and Chief Executive Officer, MEDEC - Canada's Medical Technology Companies): I would like to thank the committee and the federal government for inviting MEDEC to present today. It was very much appreciated by our entire membership.

I want to give you a little background on MEDEC and the medical technology industry in Canada. John covered some of it already, but I'll go into a few more facts and then talk about your committee and give you the med-tech industry's perspective on a number of elements.

Let's talk about MEDEC. MEDEC is the national association representing the Canadian medical technology industry. We're funded by membership dues. Although we're a national association, we also have three regional offices or presence in Quebec, Ontario, and the west, as well as having our national office.

I think you might know already that the medical device and technology industry in Canada is composed of multinational enterprises and the very important small and medium enterprises that tend to be local Canadian companies as well as being small organizations.

Medical technology encompasses a wide range of health care products; it's very diverse. They're used to diagnose, monitor, or treat diseases or medical conditions affecting humans. There are so many different types of products in the medical technology industry. There are things such as pacemakers, scalpels, and synthetic skin. There are information and communications systems as well that allow medical devices to communicate with host centres. This really does build the possibility for support for community medicine.

It is estimated there are well over 1,000 medical device and technology companies in Canada; the vast majority—we estimate 60%—are small, Canadian-owned companies with fewer than 25 employees, so the ability of these companies to be in many different communities is quite realistic. The industry employs over 35,000 people in Canada, with over 1,500 corporate facilities, and as John talked about earlier, with sales of $6 to $7 billion.

Innovations, enhancing patient care, improving patient access to medical technology, and driving medical economic growth are priorities of MEDEC. MEDEC and our members are committed to being an integral partner in the delivery of high quality and sustainable health care in Canada. It is beneficial for us as Canadians, as patients, and as industry as well in terms of job creation.

We really want to make sure that our industry is there for sustainable health care in Canada and a strong contributor to the Canadian economy, ultimately providing patients with access to proven safe medical technologies. It's the driving factor behind everything we do.

MEDEC also includes a small to medium-sized business division called the Canadian MedTech Manufacturers' Alliance. As well as being regionally focused, we also have a division that is focusing on the unique needs of small organizations. We also partner regularly with other organizations, such as HTX and MaRS, because it is the only way of truly meeting the needs.

The Canadian MedTech Manufacturers' Alliance, or CMMA as we call it, is the affiliate within MEDEC whose members include small to medium companies that have up to $30 million in revenue. CMMA is dedicated to advancing the health care opportunities for Canadian med-tech companies domestically and internationally.

CMMA members are drivers of medical innovation, economic growth, and job creation. We, the broader MEDEC, with the MNEs, multinational enterprises, as well, are committed to ensuring their perspective is always heard by policy-makers in the marketplace.

Let's talk about some of the contributions of med tech in Canada. The medical technology industry not only creates jobs, but it creates good, high-paying, and highly skilled jobs in Canada. At the same time as creating these jobs, we produce products that improve the lives of patients and/or can save lives through higher quality health outcomes.

Medical technologies can also make a large contribution to the sustainability of the health care system. Better patient outcomes or diagnoses often lead to savings in the health care system, because if we have this, we're not going to need as many drugs, as long a hospital stay, or the increased need for care post-treatment.

That's the background on MEDEC and the industry from our perspective.

● (1550)

We understand that this committee is focusing primarily on health technology assessment in Canada, which we refer to as HTA, and also on the general theme of barriers to commercialization and research in Canada.

I'd like to take the remainder of my time to highlight some observations from the perspective of our industry.

The Chair: You have just under five minutes, Mr. Lewis. I just want to make sure that you cover all your stuff.

Mr. Brian Lewis: We will be good, Madam Chair.

We know that patients are going to need better access to the most effective health care in the system. We understand that in Canada we're facing major issues. We need to find ways to control government spending, but at the same time to produce high-quality health outcomes. Medical technology is definitely an enabler in achieving these goals. Many of our member companies have experience in developing innovative technologies around the world. We actually do it in other countries. There are hugely untapped resources in Canada.

One of the things is that technology has been seen as a cost driver, but this misconception is changing around the world as health care systems recognize that health technology innovation is an enabler to delivering high-quality care, as John mentioned, improving access, and making health care systems sustainable. Technologies can definitely improve efficiencies in our system for us and contribute to the health of Canadians. We believe it's important that you utilize this industry as the engine of research and development.

To go specifically to health technology assessment, health technology assessment processes designed to evaluate the unique research, development, and value outcomes of medical devices are essential in the evaluation of these products. We must all play a role in ensuring that it is done correctly. Industry wants and needs to be brought to the table in the development and evaluation of these solutions.

I'll give some examples. John touched on one of them, and I'll talk about a couple more.

For the last few years, MEDEC has had ongoing interaction, by actually sitting at the table in the evaluation, with the Ontario Health Technology Advisory Committee in its role in making recommendations about the uptake, diffusion, or removal of health innovations in Ontario. OHTAC's recommendations are based on a review of results through the lens of decision-determinant framework. It truly is a model process in the world. We have it right here in Canada.

Alberta, through the Alberta Advisory Committee on Health Technologies and the Institute of Health Economics, is also bringing the med-tech industry directly to the table, and we are partnering. We are there at the table and we are helping develop solutions. The EXCITE process, which Ilse will mention more about and John talked about, is also in the same vein.

These are all really important steps, but these are only two provinces: Ontario and Alberta. We still have a long way to go in terms of consistency in HTA, health technology assessment, in Canada. There is definitely an opportunity for better coordination nationally on HTA.

There are some other examples that we must consider when doing HTA. It is crucial that we understand the differences between devices and drugs in terms of how the system of health technology assessment is done. HTA, in settings where it's not being conducted optimally, too often results in an excuse to say no to new technologies in an effort to curb short-term hospital and health care spending. Even when there is a positive HTA, and this is very important in a place such as Ontario where a model assessment process is in place, there are still system problems with the problem of strict hospital budget silos and cost minimization mindsets that hamper the adoption of a product, which may result in increased costs in one department's budget but overall cost savings to the hospital or the total health care system. The current process tends to silo budgets rather than look at the broader outcomes, cost savings, and better health outcomes.

As John mentioned earlier, regarding programs such as SR and ED, IRAP, and DTAPP, we'd like to thank the federal government for this support and commend you for what you've done to support the industry.

The regulatory requirements related to medical devices in many countries, including Canada, are extensive, cumbersome, expensive, and especially difficult for a small business to manage. While we understand the need for rigorous regulatory requirements, we would like to see some form of reciprocal arrangements between countries, or more streamlined processes for devices that have regulatory approval in other jurisdictions. A transition to mutual recognition between Canada and its peer jurisdictions would go a long way to reducing the regulatory burden.

The last topic I want to touch on is procurement. The increased presence of group-purchasing organizations and shared-service organizations, which are large health care product-buying groups in Canada, has created significant barriers to entry for products in the Canadian health care system.

● (1555)

One observation is that the current procurement environment is not conducive to the uptake of disruptive innovative technologies that have the potential to change the way patients interact with the health care system. It tends to favour the large, multinational firms that can supply hospitals across Canada. This procurement process is problematic for Canadian small and medium-sized enterprises that are unable to compete on such a large scale. It is unnecessarily bureaucratic and cumbersome. It restricts access to the end users, and there is a lack of strategic purpose in purchasing. In particular, there is no advantage to being a Canadian firm.

To build on what John was saying, in my role in this job, for the last 14 months I've travelled across the country and I've met with many firms that have sales between $5 million and $15 million. A lot of these particular organizations do not sell a single product in Canada, 90% to 100% of their sales being outside Canada. We have to realize that. As John was saying, to get them to be able to develop their products in Canada and market them in Canada would be a huge advantage.

The Chair: We're quite a bit over your time, sir.

Mr. Brian Lewis: Okay, I just want to say one thing.

The Chair: There is time for questions and answers and you have some very important information, so maybe what you could do is make sure when the questions are asked—

Mr. Brian Lewis: I've actually covered everything.

The Chair: I thought so. So we'll stop there and go on to our next witness, if that's okay with you, Mr. Lewis. We'll come back with questions and answers. That will give you lots of opportunity.

We'll go on to our next witness.

Would you begin, Doctor. You are via video conference. Can you hear everything?

Dr. Ilse Treurnicht: I can hear you very well. I hope you can hear me.

The Chair: Wonderful. You'll have to watch me. I usually make a signal when your time is up. I'm stretching out the time a little bit today because we have the time to do that, but we've gone significantly over, and I want to make sure that the committee members have time to ask their questions and you have time to answer.

You can begin now, for 10 minutes.

Dr. Ilse Treurnicht: Thank you for this opportunity. I'm sorry that I can't be there in person, but I've just wrapped up a board meeting here.

I really appreciate the opportunity, particularly in the context of this committee, to give you a bit of a view of our efforts to build a coherent innovation system in the health sector. Although much of our work focuses on the early side of the innovation food chain, harvesting assets from academe, and building young companies, we are increasingly also working in the scaling and diffusion of these opportunities both in Canada and beyond.

Briefly, I would highlight five areas for you. I think they reflect some of the challenges and opportunities across the country.

The first is an experiment in the better commercialization of academic research. As we know, we significantly fund health sciences research.

In Toronto we have a sister organization called MaRS Innovation, which is funded through the federal centres of excellence for commercialization and research and is creating a single storefront for 15 academic institutions, including four universities, nine teaching hospitals, and two research institutes, to really create a pipeline that is globally relevant. In terms of the volume of discoveries coming through that pipeline now, it is on par with MIT and Stanford around the world.

I think we've created an engine to bring about the important discoveries, and it allows us to bundle them and develop them to the point where they can partner with industry in a more significant way. That is under way. I think it's an important example of a unique collaboration to do business differently in terms of harvesting academic research.

The second part is the engine room of our work at MaRS. Really, it's work with young start-up companies. In the health space particularly, we work with about 250 such companies today. We support them with entrepreneurship and education, including skills, tools, market intelligence, a very hands-on mentoring model, which we deliver with sector experts as well as a large number of volunteers, talent attraction and development, and access to corporate partners.

Also, on behalf of the province, we administer a seed fund that can invest up to half a million dollars in these young companies. That's another piece of the engine room. It brings about important technologies, hopefully to our own health benefit, but it also obviously can create high-value jobs for the future of the company.

The third part, which you've already heard about, is really about how we become better adopters of our own innovation. This is a critical cultural, economic, and health outcomes goal for us. We've developed, in partnership with the other two presenters, a project called EXCITE, which tries to bring these technologies through the system much faster and earlier in their development cycle. That's a very interesting proof point today: get important technologies to patients better and faster, but also allow Canadian companies that are developing those technologies to use the evidence they garner locally and take that further internationally.

What is interesting about that process is that we are productizing the soft knowledge that Canadians have around running single payer health care systems. We are now beginning to move that also into the area of health data, which I think is also an increasingly important asset for us, in order to make better evidence-based decisions in our own health care system, but also to engage with international partners to see the value of our assets and our innovation.

The fourth area I want to highlight flips the innovation process upside down. If you think about young companies and researchers with ideas and discoveries and moving them to the market or into the system, there is an important way to apply innovation to the bigger challenges in the health care system, such as how we are going to take care of an aging population that will increasingly be cared for in the community.

If we put those big, hairy problems on the table, the new challenge I think for us—and I think there's a big opportunity for Canada—is to create multi-stakeholder partnerships of technology providers, policy-makers, funders, system clinicians, and so on, in order to figure out what the innovative solutions are for that problem, which of course are applicable not only in Canada but around the world. We can then take those solutions further internationally.

● (1600)

We're currently working on a very interesting public sector innovation in the area of chronic disease management in that context.

The final example I'd like to highlight is twofold. I think you've heard the challenges of risk capital, which are very significant in the commercialization of research, and developing of our companies. We are looking at new funding partnerships between the public and private sector in the area of social finance and in subsectors like venture philanthropy, and also social impact bonds, where we are partnering with a couple of very significant disease-based foundations to look at new pay-for-performance models in health care delivery. That's a very interesting early experiment. I think it's a new way of bringing innovation into the system and forging new public-private partnerships around results.

The second example is that we've recently launched, in partnership with the Ontario Institute for Cancer Research and our sister organization, MaRS Innovation, a new cancer drug development accelerator called Triphase, which has attracted very significant international investment. What's interesting is that we are developing Canadian assets in that accelerator, but we're also creating a magnet for the best assets around the world to come into our very innovative development platform. That is a way to use our local skills to also do investment attraction.

If there are two big barriers, from our window, risk capital remains an absolutely stifling challenge. We simply do not have highly expert seed capital in the life sciences space in Canada, and that makes it very difficult to attract international investment. They are looking for local partners, and then talent, that can take these technologies global.

Commercialization of health is difficult. You need highly specialized science. You can't actually do this stuff in your garage; I would disagree with John. You need sophisticated business expertise to execute the partnerships with large companies, intellectual property issues, and you need significant capital.

The flip side of that, though, is that although it's hard, when I look across the innovation spectrum, I still very firmly believe this is the one area, and it's one of very few areas, where our strengths in research and science coupled with our highly talented diverse population and our health care system as a potential adopter of technology, and the global market opportunity, gives us a unique opportunity for Canada to punch well above its weight. That's the work we have to do.

There are no shortcuts in this, but I'm very encouraged with the progress that's been made over the last few years.

● (1605)

The Chair: Thank you so very much.

We'll go to our Qs and As for seven minutes, beginning with Ms. Davies.

Ms. Libby Davies (Vancouver East, NDP): Thank you very much, Chairperson, and thank you to the witnesses for being here today.

I have to confess I feel as though I've fallen into a bit of a maze. It's a maze that you're very familiar with. In trying to get the big picture of what's going on here, I feel as though I'm in very unfamiliar territory. What you try to tell us in 10 minutes that you live and work every day we're trying to assimilate very quickly. I'm going to try to take a stab at some questions here.

I'm having trouble zeroing in on what the problems are. Is the problem more the lack of infrastructure? Our research notes tell us some of the federal foundations, departments and so on, that are there, so it gives you the idea that the infrastructure is there. Is it that there are gaps in that infrastructure, or does it really just come down to a question of money, in terms of the commercialization that you spoke about, and how difficult it is to get public-private investment, especially where it's considered high risk?

You all sound like you're doing well within your sphere. Two of you are operating in the Ontario scene. Is it really more that we're just not doing it nationally and that we're doing okay in bits and pieces? Somehow I'm not getting that.

The second question I have is on the issue of local procurement.

Mr. Lewis, you said that most of the discoveries and so on are actually going abroad, that they're being developed abroad. Are you suggesting that we should look at a policy of Canadian procurement for these companies and the use of these technologies in our health care system?

One's a very broad, general question; the other is a little more specific, if you'd like to give me your answers.

Mr. Brian Lewis: Do you want me to start with the specific question—

Ms. Libby Davies: Sure.

Mr. Brian Lewis: —or do you want the broader answer first?

What's happening is there's a plethora of companies that are developing products, but the ability to get them utilized within the hospital, the hospitals just.... Actually, I was at a conference a while ago where there was a hospital physician who was a department manager. We were talking about the adoption of innovation and there was a lot of conversation. He put his hand up and he said, “That's great. There's a lot of great innovation. What do I cut in my budget? My hospital department has this much budget and I have to cut something in order to do it.”

There isn't a provision that's made for the adoption of innovation. It's all about our hospitals are in crisis, so cost minimization is their mindset. Value is there, too, of course, but cost minimization is primary. It doesn't enable people. They want to, but it doesn't enable them to really go. The system isn't built correctly for them to be able to do it, so there has to be some sort of fund or ability created so that if something comes along, they're able to fund it.

Ms. Libby Davies: The local procurement?

Mr. Brian Lewis: The local procurement that goes on is that for many companies it's easier for them to go internationally than to come through Canada.

Ms. Libby Davies: What do we need to do in Canada to foster local procurement?

● (1610)

Mr. Brian Lewis: What we have to do is make the process a little more simplistic. We have to build a provision within it for the adoption of new technology.

Ms. Libby Davies: Are you saying that it's easier to get something adopted outside Canada than it is inside Canada?

Mr. Brian Lewis: Absolutely.

Ms. Libby Davies: Could you give us a specific of that, please?

Mr. Brian Lewis: Sure.

I visited with a company, and I won't give you the name, but they developed an incredibly innovative product that allows for hearing testing in infants. They can actually tell the child's level of hearing. The FDA.... It sells everywhere else in the world. Because of the system in Canada of paying for it, paying the physician to use the test, paying the health care professional, the whole system will not allow this product to be adopted. It's a $10-million company. They've sold two units in Canada, and everything else is in the United States and Europe.

Ms. Libby Davies: To be clear, the problem wasn't getting the project up and running. The problem was who was going to pay for the use of it.

Mr. Brian Lewis: Correct.

Ms. Libby Davies: So under our supposed public health care system, that wasn't an allowable thing that could be billed for. Is that what you're saying?

Mr. Brian Lewis: Correct.

Ms. Libby Davies: Okay. That's a different kind of problem, then. Are there other issues around local procurement that there are barriers to?

Mr. Brian Lewis: When you say local procurement, do you mean within the hospitals?

Ms. Libby Davies: You raised it. You said it's easier to get stuff out globally than it is to have it adopted in Canada. I'm trying to figure out if we need something that emphasizes local procurement in Canada, and, if so, what that would be.

Mr. Brian Lewis: As John was saying, it has to be a disruptive therapy. It has to be something that adds value, where actually you can see something there.

There has to be a process set up within the hospitals in terms of their financial systems to allow them to make the decision to actually spend money on that, or there has to be money infused into the system for that adoption, with a specific fund created.

Ms. Libby Davies: Do I have more time?

The Chair: You have a minute and a half.

Ms. Libby Davies: Okay.

Would either of the other two witnesses like to respond to my questions?

Mr. John Soloninka: Yes, I would.

I can give you an example. Ilse mentioned and I mentioned the lack of funding. There's the lack of funding in terms of creating early-stage companies and getting them to the point where they can get the interest of international customers, international companies that may be strategic partners or may buy them out. Early-stage capital is the number one problem. When you have capital, you can attract talented people. Those two things go together.

To try to demystify what we're talking about with local procurement, there's logic towards the provincial health care systems telling the hospitals that they must minimize the costs that they have control over.

However, chronic disease management crosses all silos. Right now there are no good business models in Canada in any of the provincial health care systems that will pay a physician to have a remote monitoring system inside a patient's home taking data, or when the patient with congestive heart failure is released from hospital, to have them go home and be monitored by a nurse in the hospital. When you do that, you avoid about 80% to 90% of the readmissions because of congestive heart failure problems.

There's no business model to fund that. There is the technology; we have companies in Canada who have built such technology and are selling it in Europe and are selling it in the United States. There's no business model here to do it.

Michael Julius, the vice-president of Sunnybrook Research Institute, quipped that....

Oh, sorry.

The Chair: We've gone quite a bit over.

Mr. John Soloninka: I beg your pardon. No problem.

The Chair: Thank you very much.

We'll go to Dr. Carrie.

Mr. Colin Carrie: Thank you very much, Madam Chair.

I want to thank the witnesses for being here today. Technological innovation is such an interesting topic. One of the things I've been interested in for a long time is commercialization and the challenges.

I do want to congratulate you on MaRS. I think it's a great example of the partnerships when government, academia, and industry work together. I do want to congratulate you on the progress that you have made.

I was wondering if you could comment on how essential it is to promote collaboration between universities and the business sector in order to boost commercialization of knowledge. We see that in different incubators. We see that happening in MaRS. What steps could the federal government take to help make this grow even stronger and more quickly?

Dr. Ilse Treurnicht: I see the role of government in these processes as very much catalytic. You have academe as the feeder system of these important discoveries and ideas, and obviously the government has a role in funding those. There is industry and more established sources of funding to move these products further down the pipe.

The challenge is to build the right collaboration models in the middle that can translate between these very different worlds. I think the role of the governments is in training the people who have those straddling skills between business, academe, and finance, because it is a translation function, and then providing the very critical proof of concept funding models that get you through the de-risking of the technology.

One of the things about our funding system is that technologies emerge from our academic sector earlier than they would in the United States. John alluded to the SBIR program in the U.S., which takes that fledgling technology and funds it through the point where you can be pretty sure it's going to work. Then it becomes more attractive either to grown-up industry or to funders to take it further through a start-up.

It's an area where the market doesn't really work. If you look around the world, this is where government steps in typically. I think the trick for government is to create commercially viable businesses that can stand on their own so that it doesn't fund a bunch of co-dependent hothouse flowers. I think that's where you have to be very thoughtful in how you structure the partnership.

There are models that I think are very well proven. The seed fund, for example, that we administer, is prepared to go early. It goes in as a convertible debenture so it doesn't distort the cost of capital. It does the grunt work to de-risk the technology and actually create the package that's ready for investors. On its own investment committee, it has all the key investors present. The investors see the technology as it comes through that early pipeline and can therefore take it up. They've had a very good success rate even though this is an early portfolio, five times leverage of private capital.

I think there are good examples where government played that catalytic role either in training people or de-risking important opportunities, but making sure the market is the driver of the decision-maker ultimately so that those things can emerge as stand-alone viable entities.

● (1615)

Mr. Colin Carrie: Very good.

You did mention in your comments....

Sorry, was there another comment?

The Chair: There's another comment.

Mr. John Soloninka: Very briefly, I totally agree with what Ilse just said.

There are two other things that government can do. I mentioned the quote from CIHR and we know that CIHR is moving quickly to address the translation aspect of what they're doing, but encouraging them to do so is very important.

Another program is IRAP. IRAP in its criteria says that it doesn't fund certification of technologies. There's a misconception of what a clinical trial is and what clinical development of technologies is. In medical technologies, 75% of the early stage capital that they get is to do clinical trials to generate evidence in order to show that their technology works, etc.

That's misconstrued as a licensure, a certification that you meet a standard in telecoms or something like that. The problem is that we need to change those criteria, or broaden the definition of them so that it can get fully funded by IRAP. IRAP is a great program. It just stops short of 75% of the capital that early stage med-tech companies have to spend. That's something government can do, and it would be a dramatic difference if IRAP were to understand that nuance.

Mr. Colin Carrie: Thanks for that input.

You mentioned five things in your presentation. You talked a little about social impact bonds and the private-public partnerships, things along those lines. I've read that Britain is doing something on that. Could you expand on that?

Dr. Ilse Treurnicht: Absolutely. Yes, Britain has been the pioneer in this so-called area of social finance, led by Sir Ronald Cohen, one of the world's grandfathers of venture capital. He has been exploring for the last 12 to 15 years models of partnership between the public and private sectors. It was pioneered in the U.K. with a task force.

We had an equivalent task force in Canada in 2010 that published a set of recommendations. Some of those include the foundation sector, for example, which includes, in this context, the very large disease-based foundations, whether it's heart and stroke, or arthritis, and so on, coming into partnership with the public and more direct private investors to build performance-based models of investing in health technologies. So you can see, if I'm heart and stroke, rather than just giving grants to researchers for heart and stroke research, can I partner to better manage chronic heart disease, or invest in a diagnostic technology in partnership with other actors? There are a number of vehicles, and the social impact bond is one of them, where essentially you are sharing the upside benefit. It's really a partnership that says it pays when outcomes are achieved.

It's tricky to do in health care because you need the longitudinal evidence to know what line you're shifting over typically a fairly long period of time, but we're deep in that experiment, so I'm very curious to see how it plays out. There has been a lot of interest from both the public and the private sectors.

● (1620)

The Chair: Thank you, Dr. Treurnicht, and Dr. Carrie.

Now we'll go to Dr. Fry.

Hon. Hedy Fry: Thank you very much, Madam Chair.

Those were excellent presentations.

My questions are pretty focused, and I don't know if you can answer them.

I remember that in about 1998 there were certain things the federal government did. They created the Canada Foundation for Innovation, which allowed the infrastructure for hospitals and laboratories and others to link with innovation, etc., and to afford innovation. That was one thing. Then, of course, there was Technology Partnerships Canada, which was created to do that kind of venture capital linking from the laboratory to making it a commercial product. There was another foundation that had been created where the government acted as a venture capitalist for biomedical technologies only. It was all about linking the laboratory to a private company. The government would put in matching funds so that it could become commercialized.

I don't know what happened to that last foundation. I think it was a 10-year thing and it sunsetted in 2008. I don't know where it is or whether it still exists. I've tried to find it everywhere, within Industry Canada or elsewhere, and it's as if it has disappeared.

How does the Canada Foundation for Innovation work? It should help hospitals to take the technology that you're talking about and use it for benefiting Canadians, to take that technology and make it affordable within the hospital and the laboratory systems. That's what CFI was created for.

Is CFI not doing that? That's my first question.

My second question is, what happened to that foundation, which, I know when it sunsetted, had a $10 billion purse? What happened to that? That was going to do some of the things that you talk about. Can you tell me what happened? Does anybody know?

Mr. John Soloninka: Ilse may know about that fund, but I'll just make a comment on the CFI that I've been involved with.

There's been this belief not just in Canada, but in the rest of the world as well that you invest in research, either philanthropically or in the public sector, because you want to help patients at the other end. The belief is that if you invest in research, you get those outputs.

The Canada Foundation for Innovation is very much along those lines. It got great researchers and it got significant infrastructure created and so on, but none of that money funded the path between that invention and the actual market. It's not used to allow hospitals, for example, to go out and buy PET scanners for new uses. It's purely on that side. But around the world and in Canada we've recognized that just doing that is not enough and we need to spread our investments not only here, but also in those other areas. Ilse mentioned a bunch of them, as did I. I think that's changing, and going forward we're going to be investing, public sector and private sector, in a more balanced way between basic and applied research, and then the commercialization pieces.

With respect to that fund that you mentioned, I really have no knowledge of it. If I knew the name of it, that might ring a bell, but just by itself, it doesn't ring a bell. I'm sorry.

The Chair: Dr. Treurnicht, do you have an answer to that?

● (1625)

Dr. Ilse Treurnicht: I wonder if you are referring to Genome Canada, maybe. I'm just thinking about the large pots that have been created since then. I would say that is still very much a translational research and fundamental research funder. It funds more people than CFI, which funds equipment.

Hon. Hedy Fry: I wasn't referring—

Dr. Ilse Treurnicht: The Canadian medical discoveries fund was a private fund that sunsetted in about 2008. I don't know if that might be the vehicle. It was—

Hon. Hedy Fry: I thought one of you might be long enough in the tooth to remember that the fund was a $10 billion fund when it sunsetted in 2008, and then it was refunded for one year. Now it has totally disappeared. I think the sad thing is that you can't find it anywhere on the site. It's disappeared. A $10-billion fund doesn't just disappear. It did some of the things that you were talking about. Since none of you know about it, I'll move on.

My big question is whether CFI can be altered in the way it functions, or have added to its function, to be able to fill that little gap so that hospitals and laboratories not only would get the thing from academia down the line, but there would be a reverse path as well in which anything that is innovative that was built in Canada or elsewhere could be part of the infrastructure that a hospital can now get.

Do you think CFI could or would benefit from having that expanded function?

Mr. John Soloninka: It certainly could, whether you build a new one or transmute the CFI into that function.

All of my colleagues and I were saying that what you really need is not to change the hospitals from their very severe cost management, but in fact to give them another path that says if this technology has a great potential to bend the cost curve of health care, then you should not be penalized if it costs you more but saves more across the health system.

If you got CFI to say, “Let's propose this technology, get a grant and do this in this way”, that could be a way of allowing hospitals to buy innovative technology.

Hon. Hedy Fry: I am really concerned that I don't know, and nobody seems to know, and there is nothing on any website to know what happened to this particular fund.

I was in cabinet when we created CFI and we created Technology Partnerships Canada out of Industry Canada. It was back in 1997-98 when we created this fund. It was heralded. It was really working. It generated $10 billion out of the private-public partnership. It is kind of bizarre that it has disappeared from the history of the Government of Canada. I was there. I know it existed. I was a big part of it. I now find that it has disappeared.

CFI was meant to do more of what I talked about. It was meant to do more. It wasn't meant to function so rigidly as it currently is. It was meant to do more, to allow—

The Chair: The time is up. Perhaps you could give a brief answer.

Mr. John Soloninka: I'm going to look for that money.

Hon. Hedy Fry: It's gone. I don't where it's gone.

The Chair: Ms. Block.

Mrs. Kelly Block (Saskatoon—Rosetown—Biggar, CPC): Madam Chair, I'm not sure I'm going to take up all seven minutes that I have, so if I can pass the torch on to someone else, I will gladly do that.

I want to thank you all for being here, and our witness who has joined us through video conference. Much of your testimony is not dissimilar to what we heard at our last meeting. We had members from the Association of Faculties of Medicine of Canada with us. I want to briefly touch on something that they mentioned, which I think you've mentioned as well, and I'll ask you to comment on it.

At our last meeting we heard that there is a need to build a framework within hospitals to engage in procurement. We also heard that there are legislative barriers that keep that from happening. I know you talked about a burdensome or cumbersome regulatory environment that you function in.

I'm wondering if you can identify any legislative barriers that you would want to see addressed that might start us down that road of making it a little easier to do some of the things you want to do. I will throw that open to anyone.

● (1630)

Mr. John Soloninka: As you know, devices go through federal approval from Health Canada, but then they go through provincial approval because health delivery is a provincial jurisdiction. We're not going to change that.

I had the great privilege of running an analogous process, which ended up being called pCODR the pan-Canadian oncology drug review process. It's the same idea. Every province determines which cancer drugs they're going to fund, but Health Canada is the one that approves the drug to go on the market. In the past, each of the drug companies had to argue with each of the provinces to try to get their drug approved. Now with pCODR the same evidence package is used and referenced by all the different provinces. Without dramatically changing the world, we could do the same kind of thing. With respect to health care technology assessment, if an EXCITE review says that this is the greatest thing since sliced bread, then let's not have the other provinces redo it. Let's do it once, in B. C., or in Quebec, or wherever, and then let's have it used by the other provinces. That's just a recommendation.

Mr. Brian Lewis: To build on that, there are two parts to the regulations I was talking about. One of them is Health Canada approval. Health Canada is a world-renowned organization in terms of the quality of the work they do, but they are strapped at Health Canada and things end up taking longer and the approval time is relatively unknown. There is also cost recovery, which particularly damages the small organizations in terms of going to them. They put in, they pay their fee, and they don't know when their product is going to come out of the process. If we were able to help Health Canada with that, it would be a true benefit for the small organizations.

The second part was the health technology assessment. It seems that most provinces do that. Even nationally there is CADTH, and various hospitals are all doing their own health technology assessment. Everybody who understands health technology assessments to any degree gets it for pharmaceuticals. It's a lot easier. The system of utilization is so important for medical devices. There are differences. The sad part is we do have MaRS EXCITE and we do have OTACH, which are model processes in the world. We're not getting that to go across Canada and have other people adopting it. It's a bit of "it's not invented here". It's a bit of a paradigm shift. We have 14 separate health care systems, so it's getting everybody to look together and ask how they can share these best practices and what works.

Mrs. Kelly Block: Dr. Treurnicht.

Dr. Ilse Treurnicht: Going back to the earlier question about the role the federal government can play, the federal government can be very helpful in funding some catalytic activity to foster those collaborations. Sometimes it's just a question of incenting people to not reinvent, but to learn about a process that is being proven in a certain jurisdiction and build on that work that can then be executed on behalf of the country.

Mrs. Kelly Block: Okay, thank you.

I want to follow up on the fact that you mentioned the $400-million venture capital fund that was announced on January 14 of this year and ask you to describe how this venture capital access plan might help address the issues that you have identified for us today in this industry.

Mr. John Soloninka: Madam Chair, my other colleagues and I had the privilege of providing input prior to the announcement of that fund. Sam Duboc from the fund had public presentations on how the fund is going to be rolled out. We won't go into detail on that, but everyone I've talked to thinks that the way it's being rolled out right now looks pretty good. As long as it plays out the way it's planned, it's going to provide for the building of partnerships between private and public sector venture money that will make the overall availability of capital freer. It will seed companies. It will invigorate other venture capitalists. It will be a flag on the map too; other countries in the world will see that Canada has this venture fund and will be more interested in coming here to potentially get their companies started. It's all good.

● (1635)

The Chair: Thank you, Mrs. Block.

We'll now go into our five-minute round for Qs and As, so we have to be a little more mindful of the time. We are going to adjourn just prior to a quarter after five to address some business that we have in terms of motions. We'll go in camera at that time.

Let's begin with Dr. Sellah.

[*Translation*]

Mrs. Djaouida Sellah (Saint-Bruno—Saint-Hubert, NDP): Thank you, Madam Chair.

I would like to thank our guests who are here with us, as well as Dr. Treurnicht, who is joining us by videoconference.

There are six medical technology clusters across Canada located in Vancouver, Winnipeg, Alberta, Halifax, Ontario and Montreal. I know that there are strong universities and hospitals in each region that are able to work with industry partners on research and development projects, as well as on clinical proof of concept studies.

What is the real role of organizations such as Health Technology Exchange or MaRS Discovery District in these medical technology clusters? Could you give me an example of how you contribute to one of these clusters, for example, in Ontario?

I would also like to know whether we could have other clusters across Canada. If so, what role would the federal government play in fostering the development of such medical technology clusters?

Thank you.

[*English*]

The Chair: Who would like to start with that?

Mr. John Soloninka: There's no question there are pockets of expertise across the country. If you look at the very successful medical technology clusters in the world, in Boston, Minneapolis, Zurich, Palo Alto, and so on, what you find is that the number of companies they have, the universities and other things, are in a much tighter geography than we have in Canada.

As you know, in Canada we're very diffuse along the border, very thinly spread. It turns out, just by happenstance of history, that Ontario, Quebec, Alberta, and so on, tend to have a high concentration of the medical technology companies. If you look at the number of companies necessary to get, as you say, the cluster dynamics, lots of interplay, lots of synergy, we have Ontario, Quebec, and some other pockets, but some of the smaller regions don't have enough volume to make them a true cluster.

However, we have very good capabilities now, where you don't physically have to be together. We have very good linkages electronically, collaboratively. Ilse Treurnicht is here by video conference right now, as an example. We have very good technologies. There is a world-class neurosurgery technology out of Dalhousie University called NeuroTouch. I'm working with a neurosurgeon in Toronto named James Rutka, who has worked on the development of that technology.

We have funded 26 companies. We work across the cluster in Ontario. We're actually working with Quebec as well. We have worked very hard with both capital and networking, connecting people who didn't know they were even doing complementary things and holding events to get them together. We are a private sector organization, but we're government funded, so there's lots that we can do.

With respect to the smaller regions, we connect them on like-minded projects, which I'm doing right now in neuroscience. We connect them together to make sure the pockets of expertise are taken into account.

Last, with respect to clinical trials, you can run clinical trials almost anywhere. Maybe it's in Montreal or Toronto that you might head a clinical trial, but you should be able to take pockets of expertise wherever and engage them in the development and testing of that technology.

Then there's use of the technology. There are great hospitals all across the country that could be adopters of technology. The federal government could say that it's great that it was developed in Montreal but they're going to test it across Alberta and B.C., or in Halifax, or wherever.

● (1640)

The Chair: I know five minutes is not long, but we're into the shorter round. I'm sorry.

Mr. Wilks.

Mr. David Wilks (Kootenay—Columbia, CPC): I thank the witnesses for being here.

My questions are probably to John and Ilse, and, Brian, please jump in.

There are a number of health technology assessment organizations in Canada, including those that are academic, government, and hospital-based, as well as the Canadian Agency for Drugs and Technologies in Health.

In your view, what steps could CADTH take to coordinate efforts in health technology assessment in order to avoid duplication of efforts and possible inefficiencies in the area?

Mr. John Soloninka: That's a very, very good question.

A huge number of health care technology assessments are done. Depending on how they're done, they may be theoretical exercises that have to be contextualized to every individual hospital, and because of that theoretical nature, they may not be immediately usable by people across the country.

Having said that, though, there are health care technology assessments that are contextualized. Is something that's done for the University of Toronto applicable to McGill? Probably. If you do it for a Toronto hospital, is it applicable to a tiny community hospital? No, it's not. If you do it for a tiny community hospital in Ontario, is it applicable to Alberta? Yes, it is.

I think there's an element of having to be much more careful to contextualize the HTA and to do it in such a way that it's easily transferable. That has not been the history, and that's why a lot of CADTH stuff has not been widely documented.

As well, the not invented here syndrome is very big. CADTH is seen as national, and in fact all the provinces see themselves as owning health care and not being ones to be dictated to outside of their own spheres. It's a challenge, but I think having a collaborative cross-provincial kind of thing, such as pCODR, the pan-Canadian drug review, would be a really good step towards trying to get it all used.

Mr. Brian Lewis: That's something that IHE is trying to do. We've actually sat with CADTH and talked to them. We have regular sessions. CADTH's expertise is in pharmaceuticals, in terms of a lot of work they've been doing, versus the work that's being done by OHTAC and by AACHT.

At IHE, which is Alberta-based, they're actually trying to pull the whole country together, because it's about the methodology that you see with OHTAC and with AACHT. It is the best methodology. But as John was saying, it's the not invented here aspect, it's the change management aspects of it. It's a bit of a paradigm shift for people.

We need to get there, and the more quickly we can get there, the better it's going to be.

Mr. David Wilks: Ilse, do you have anything to add?

Dr. Ilse Treurnicht: I feel quite strongly about this, and it goes to the previous question. I think we're sleepwalking through the global innovation challenges, unless we rethink our approach.

We have to make collaboration our competitive advantage. In the EXCITE process, it's been very encouraging that we could use eight different centres across Ontario that all have complementary sets of expertise and present them on a single tray to industry, which then actually makes it an absolutely world-scale set of evaluation assets. I think if we can forge these almost virtual density models....

Again, I think the federal government has a key role in being the catalyst to enable those collaborations. We need to set the tone that this is not about Nova Scotia versus so-and-so; this is about us, collectively, against the world. That's the game we're in. We need to be much more proactive about forging these collaborations on a scale that's globally relevant.

Mr. David Wilks: Thank you.

Do I have more time?

The Chair: You have 30 seconds.

Mr. David Wilks: Just quickly, John, you had mentioned the IRA program. In your view—or perhaps someone else could chime in on this—how could IRAP be adapted to better meet the needs of small and medium-sized enterprises looking to develop medical devices in Canada?

Mr. John Soloninka: I think I mentioned that one of the challenges for medical device companies is that 75% of the capital is spent on things like the clinical trials associated with their product, the evidentiary development for reimbursement for health care technology assessment, and so on.

These are not certification exercises. They are not. But currently, the way in which IRAP has been interpreted, it tends to be seen that way.

● (1645)

The Chair: I'll now go to Dr. Morin.

Mr. Dany Morin: Mr. Lewis, I have a question for you. You mentioned earlier the funds that should be allocated to new technology.

That reminded me of the fact that as MPs, we do have a good-sized budget. For several years we did not invest in new furniture, such as new couches or new computers, because we preferred to spend the money we had on the workforce or to contact, through several ways, our constituents. For many years we didn't invest in replacing our furniture and computers until the government said, "You can have $5,000 per year to devote only to replacing the technology and furniture."

I think you're right that the special fund could be a good thing, but what would be the sources of money for this fund? Would it be federal, provincial, private, hospital, local community? I don't think only the federal government should invest in that fund.

Mr. Brian Lewis: It's mostly provincial where that needs to come from, because that's where the delivery of the health care system happens.

What you have to do is develop a process, like MaRS EXCITE, that identifies devices that are disruptive, that are really adding value. When you go though the process of doing that, to pick those particular products.... There are over a thousand class III and class IV agents approved by Health Canada every year, so you're going to have to choose the products. As well, you're going to have to be realistic about it in terms of where it is.

It's to have money for those innovative therapies that are really going to add to patient health outcomes and reduce cost to the system or make things more effective. I think that is a provincial mandate.

Mr. John Soloninka: The federal government, however, could assist in lessening the not invented here issue. If it were to partner with a province to deal with the technology, that would encourage more collaboration across the other provinces, because it would not be just one province footing the bill and then other people benefiting.

Mr. Dany Morin: I'm amazed. We can look at the private sector. For example, a company in my riding will invest in new technology because it will be more efficient, more productive, and more cost-efficient, but when we look at the health care systems in the provinces, they don't apply these same principles.

I'm not advocating for our health care in Canada to go to a private model, of course not. But is there a way, from your point of view, to take the best elements of the private sector and apply them to our public, universal, and free health care system in Canada?

Mr. John Soloninka: Absolutely. Value-based health care financing is a model that's been showing great benefits in pockets all around the world. This has nothing to do with public versus private health care. This has everything to do with a way of funding that provides incentives so that people, patients and providers across the silos, do the right thing.

Yes, it's totally doable, but it takes a lot of political will and understanding on the part of the public and on the part of the interested parties within the whole scope of the health care system.

Mr. Dany Morin: Thank you.

Mr. Soloninka, you mentioned earlier that when money is invested in the health care system, it is for acute care rather than chronic care, or something similar to that.

I feel the same way. When you treat acute problems, you can show good statistics, that you cured whatever number of diseases, or you can check boxes. Prevention and chronic disease management are investments that we need to make, but they produce results only down the road.

Mr. John Soloninka: With proper investment, you'd be surprised at how many benefits you get in the very short term. But you're right, the biggest benefits are long term.

There are great books by Jeffrey Simpson and others that talk about how this other model with other emphasis will play out. We don't have time for it here, but there are lots of good references on that describing how the health care system could work.

● (1650)

Mr. Dany Morin: Thank you.

The Chair: Thank you very much. Those were very good questions.

Mr. Lizon.

Mr. Wladyslaw Lizon (Mississauga East—Cooksville, CPC): I would like to join my colleagues in thanking all of you for appearing before the committee.

I will start with a comment made by Dr. Ilse Treurnicht.

Doctor, you would be amazed what people can make in a garage. Maybe they don't apply to complicated medical devices, but great things were invented in a garage.

On a more general topic, Mr. Soloninka, what you described in your presentation is a problem that inventors have been faced with over the centuries. They invent something, and then how do they sell it? How do they implement it? There are stories, anecdotes, about how Fulton convinced someone to use the steam engine on a ship, and there are thousands of others.

In answering the questions, you always mention that the financial part is very important, but it's not only the financial part. It's also how knowledgeable they are in buying new things, and whether they can afford it. Some things have to last for *x* number of years. You may show up with a great invention, but you may be told, "I just bought devices, and I won't have money for the next 10 years." With the way technology is going now, things are changing very fast and becoming obsolete. How do you envision this? What is your advice to the companies, to the inventors, and to the innovators?

Mr. John Soloninka: There's been a sea change over the last three or four years in the medical technology world. In the old days, five to 15 years ago, particularly the U.S. health care system had almost a licence to print money, because you could take a product, improve it just a little bit, sell it into the U.S. health care system, and they would pass the added cost on to the insurance companies and on to the other payers, and patients, and others. In our system, we aren't really able to do that.

That beautiful model for generating cash has gone away, fortunately. Now everywhere in the world technologies that are coming out have to be better clinically. They also have to reduce the overall life-cycle costs for the customer. That is a change now. Now we're getting better technologies at lower prices.

However, you are also right that new technologies replace old technologies. They've already made their investment in the old technology, so there has to be a basis for them to swap out the old technology for the new. Then there's the huge aspect of practice. Physicians are trained and they use their tools; they can't just change in mid-course.

I don't think there's an easy answer to this. The challenge specifically Canadian hospitals face is that they don't have the budget to do what this other gentleman said. They are not given a budget to look forward several years and to invest today for benefit down the road. They are told to manage their budgets on this year's budget alone, and that makes it very difficult.

I'm not asking you to change that. I'm saying that someone else with a broader view of health system value should assist in identifying technologies that are very beneficial, testing them out, proving them, and then enabling the health care system to adopt them and do the necessary change management. That's really what I'm talking about.

Mr. Wladyslaw Lizon: Do I have any time left?

The Chair: You have about 35 seconds.

Mr. Wladyslaw Lizon: I have a quick question. Are companies involved in medical research and innovation cooperating with companies in other fields? Some devices come from other sectors. How do you cooperate?

● (1655)

Mr. John Soloninka: We do much more so now, and especially as mobile technology is becoming more than.... We do much more now than we did, say, five or 10 years ago. Ten to 15 years ago there was almost none. Now people are looking more broadly to aerospace, to consumer electronics, to other places as to how they can use them.

Mr. Brian Lewis: If you look at the large imaging companies, they tend to be in clusters with other areas of expertise. Even the companies GE and Philips are broadly into electronics in a big way.

The Chair: Thank you very much.

Mr. Kellway.

Mr. Matthew Kellway (Beaches—East York, NDP): Thanks to you folks for coming today.

It's been a very interesting discussion. We've had people at this committee as witnesses for this study who have talked about, in your terms, Mr. Soloninka, the invention part of this process, with the frustrated researchers and inventors. It's been very interesting to focus on the next step, the innovation part of it, which I take is synonymous with a commercialization process.

Mr. John Soloninka: It is mostly, except there could be surgical techniques or things that are not products which also need to be innovated and moved into practice, but they may not be generating revenue or anything. That still is an innovation.

Mr. Matthew Kellway: Is that something your organization—

Mr. John Soloninka: We don't. Hospitals would do that themselves. Physicians would do that.

Mr. Matthew Kellway: All right.

I wanted to unpack what happens in this innovation process before it gets to the customer. I get the issue that you've identified, the second big problem of the customer and cost minimization versus value.

There's a funding issue that goes along with this, because these are risky ventures. When we've talked about government involvement in this process, we've talked about it as a kind of catalyst.

Dr. Treurnicht, I think you mentioned that the government's role is primarily catalytic. It's also funding, I take it, to a large extent.

Can you tell me to what extent this kind of commercialization process depends on government funding?

Mr. John Soloninka: Do you mean to get a sense of how much?

Mr. Matthew Kellway: Yes. As you go through this process, how much of it is being funded from that? I guess it's really a part of this tunnel that it has to go through as a proof of concept issue—

Mr. John Soloninka: Right.

Mr. Matthew Kellway: —so how much of the proof of concept process for most technology that comes through this is actually funded by government money?

Mr. John Soloninka: Right.

I won't name the company, but I'll give you an example of a company. It's unlike drugs, where you're talking about $1 billion or more to get to market. Med-tech products typically are in the range of $10 million, $20 million, or $30 million to get to market. They're not at the same level.

A company I'm working with right now would have had probably about $500,000 to $1 million in research grants. They would have had about $1 million in government grants. They've levered that up with, currently, $3 million to $4 million in private sector funding, and they're doing another round of another $5 million after that. When they get to market, when a surgeon has actually bought the first product, they will have had about $15 million to $20 million of funding, of which probably $3 million would have been from government-related sources.

Those are very round numbers. Don't quote me on that, but it's—

Mr. Matthew Kellway: Sure. I'm just trying to get the magnitude.

Dr. Treurnicht, is that your sense, too, that there are those kinds of proportions?

Dr. Ilse Treurnicht: Yes. These are all very research-intensive companies.

One of the other primary sources that funds R and D in Canada is the SR and ED tax credit. While these companies are in the research phase, they typically claim tax credits. In some other countries, you would find government being more proactive in funding specific companies directly, but in our case, our indirect funding through SR and ED is quite large

Mr. Matthew Kellway: On the government funding that comes through this part from tax credits, does the government act in any way as a bit of a venture capitalist? Is there return on these things for government?

● (1700)

Mr. John Soloninka: It depends. We provide loans. We do get returns, but we're not seeking returns. IAF at MaRS is like a venture capital fund, but again, social capital.... In Ontario, for example, there are also the Ontario emerging technologies fund and OVCF, the Ontario venture capital fund. They are more like a regular source of funds. They provide funds to other venture capital companies. They also co-invest. FedDev does co-investing with angel funders.

The key is not so much for the government to try to get into the venture capital business in the sense of displacing private sector venture capital. The key is for government to get in and de-risk the opportunities. As Ilse was saying, there are certain elements that are just not viable by themselves, but government can get in and de-risk. It can make the equation look better and attract more private sector funding to that particular area for investment.

The Chair: Thank you so much.

Thank you, Mr. Kellway.

We'll go to Mr. Lobb.

Mr. Ben Lobb (Huron—Bruce, CPC): Not to simplify this too much, but is there a problem in the sector?

I worked for a while in the automotive sector. With GM, Ford, and Chrysler, 3% price reductions are just a fact of life, so every year you're trying to drive costs down through innovation.

Is part of the issue in this sector that there are not enough ideas coming up or is there not enough innovation coming up to actually drive efficiency?

Certainly there would be a great portion of them that are trying to improve outcomes for patients, but I'm sure there is also technology, or new ideas, that can drive efficiencies and economies of scale to help drive down the cost to the hospitals. What is that mix out there right now?

Mr. Brian Lewis: I'll make a really simplistic answer for it in the hospital environment. As I was saying during my presentation, when you take a look at a department budget versus a cross-hospital or cross-system budget, you see that it doesn't tend to get looked at in that hospital as the total benefit of outcomes. They look at a department budget.

There needs to be a shift in mindset. I've seen physicians and others who see a product and say that yes, it would really be good, but they can't get it. It's because of a budget mindset. It's that simplistic. Looking at it a little differently may have a positive impact.

Mr. Ben Lobb: I'm from Ontario. Are you saying that hospitals in Ontario are so backward that their budgets won't allow them to do that? If there's an opportunity to invest money and to save money for the department over five or 10 years, are they not allowed that flexibility?

Mr. Brian Lewis: Often that's true.

Mr. John Soloninka: The other way to look at it is there are technologies. You've got to be careful because for medical technologies in the cost environment we have here, doing more is not always good, right? You could come out with a new technology that allows cardiac bypass to be done that much better, and then we do 50% more cardiac bypasses but half of them are inappropriate. You've got to be very careful with health care technology. You want it to be used to achieve good outcomes, not just to be used, because with every use it's going to cost you more money.

Mr. Brian Lewis: The other thing is if you have something that reduces the hospital stay, the mindset is that stay is just going to be replaced by another patient coming in, so you're not going to save money. It really is a system look at it. If you have enough products you utilize that reduce the stay, the stays would actually reduce. But there's such a backlog in our system, in terms of waiting, that if there's a product that saves three or four days in the hospital, and then you go to the hospital, they'll just say, no, because that is just going to be replaced by another patient.

It's that simplistic. It's very pragmatic at the interaction level.

Mr. Ben Lobb: That's certainly not motivating anybody around the table, I don't think.

Mr. John Soloninka: But there are solutions to that.

Mr. Ben Lobb: Yes, I realize.

Mr. John Soloninka: We just haven't got time to talk about them, but there are solutions to that.

Mr. Ben Lobb: The other thing I wanted to talk to you about was the idea behind basic and applied research. Correct me if I'm wrong, but the majority of our research in health care is basic research.

Is there an issue right now, today? Is this part of the problem, that we have plenty of identified issues and problems within our health care system and not enough of it being in the applied research to get those problems fixed, to get those products to market and to get better outcomes? Is there a problem right now in that area?

Mr. John Soloninka: I don't think I'm informed enough to comment on basic versus applied research, and the levels, and whether they're appropriate or not. Ilse, you may have a thought on that. I just know there's not enough spent on the commercialization and innovation phase.

Whether there's an appropriate amount on the innovation, Ilse, can you comment on that?

Dr. Ilse Treurnicht: I think that's an open question.

My own view is that real expertise and basic research is table stakes in the global innovation economy, and that's what the world is investing in. It's not just because basic research is fun to do; it's because it actually keeps you at the leading edge of the knowledge frontier, and that knowledge applies down the road.

The important point is that you have to look at the innovation process as a continuum that goes all the way from basic research to market adoption and look at how you apply resources or develop resources along that continuum. If you have a break in the continuum, a lot of the upfront investment that you may make will fall down the cliff, because the continuum is not robust enough along that pipeline. It is a system view.

● (1705)

Mr. Ben Lobb: That's fair. There has to be a mix, and nobody's arguing going 100% either way. It does seem to my mind that in Germany, with the Fraunhofer institutes, the most technologically advanced vehicles generally come from Germany, and I wouldn't want to say all the time, but generally speaking that's what the last 50 years have produced. Their focus is very much on applied research.

I'm just throwing that out there, that we're advocating for basic research, and there is a space for it here, but in some of the other industrialized businesses, sectors, applied research is where....

Do I have time for one quick question?

The Chair: Actually, you don't. I'm sorry, Mr. Lobb, but I would love to hear it another time.

Mr. Ben Lobb: Okay.

The Chair: We have with us the Honourable Lawrie Hawn. Welcome to our committee. You're up next.

Hon. Laurie Hawn (Edmonton Centre, CPC): Thank you, Madam Chair.

I was going to go onto some other things, but what you said in response to Mr. Lobb has piqued my interest.

Mr. Soloninka, you've got four minutes and 30 seconds. What are the solutions to the situation that Mr. Lobb brought up?

Mr. John Soloninka: The problems that we're describing here are the siloed nature of the health care system and its funding. Even our health care funding is a hospital and doctors funding model, as opposed to an integrated health care system model. There are many books on this that you could read that articulate it very well.

For example, if a patient comes into a hospital with congestive heart failure and goes out of the hospital too early from congestive heart failure and has to come back to the hospital for care, that hospital and those doctors will get reimbursed for doing that more times. You don't want to do that. What you want to do is, say there's a certain way you should get incented to do the job correctly, and to have the resources necessary to do the job correctly. The scope of the patient is hospital, community centre, a private doctor's office, home, etc. There should be a way of incenting care delivery across that envelope, not just in each of the individual components.

Whether it's so-called value-based health care financing or a different integrated care delivery network, there are such things that exist in the world. They work very well and they get much better outcomes than we have in our environment here.

Hon. Laurie Hawn: What's stopping us from pursuing those solutions?

Mr. John Soloninka: Interestingly enough, I think it's ignorance on the part of the public. In deference to the politicians, health care reform is often seen as kryptonite, as death to a politician. It's not because the politicians wouldn't do the right thing if they thought it was the right thing, but Canadians, and Jeffrey Simpson's book is really good on this, have a wrong idea of what the health care system is, how it performs, how good it is, how bad it is, what it covers, and so on. They have a very strange view of it. They have to change their view so that politicians can say, “Right. Now that the public is informed, I can now do something that makes sense”, rather than....

Hon. Laurie Hawn: I'm agreeing with you 100% so far. What's going to change the public's view?

Mr. John Soloninka: Education, I think, is about the only thing that's going to change the public's view. I'm involved with the Public Policy Forum, the Conference Board of Canada, and a number of other groups that are trying to hold forums to get people to understand that our health care systems are just insurance plans, that they're just coverage plans. They're not part of Canadian DNA in our blood. They're just insurance plans, and they can be improved. There are better health care system components in the world that we need to adopt.

Hon. Laurie Hawn: Is it about trigger words, like public health care is good, private health care is bad?

Mr. John Soloninka: Absolutely, it's that kind of ignorance, yes.

Hon. Laurie Hawn: Well, if there's one message that I think should get out, that's it.

I still have a couple of minutes. We have a really good little garage in Edmonton called TEC Edmonton. I don't know if you're familiar with it, but it's a great collaboration of the University of Alberta, and there are about 100 different companies being incubated there. It's not just medical technology; it's broad-based technology. I'm there quite often doing funding announcements, because we do invest in those things.

One of the things they've found is that the biggest challenge is not necessarily the technology; it's getting it to market, as we've talked about.

There's a lot of cross-talk between and among those 100 or so companies not just about their individual technology—they all work in a big area, and they have their individual offices, but they also have a lot of common areas—but collaborating on best business practices.

I'm going to pose an obvious question. How important is it to not just stay within the medical technology field, but in technology generally, with business practices that would benefit everybody?

● (1710)

Mr. John Soloninka: I'd say it a little differently. What they need or what they lack is experienced people who have carried these companies through that process before. In Massachusetts you might have 20 of them sitting on the bench with really big experience, so if you're starting a new company, you can pick one of those 20. You might have only one or two in Canada who have the kind of expertise that, say, a diagnostics company needs in oncology.

We need to attract those people back to Canada by creating stuff like MaRS and what HTX is building and what you're building in Alberta, so that they have somewhere to come home to, so they know that if one company fails, there are many other companies, etc. We're trying to build that infrastructure to attract them back and get more management talent.

Also, if they have more money, they can get more management talent.

Hon. Laurie Hawn: Thank you very much.

The Chair: Thank you so much.

Thank you so much, Mr. Hawn.

We'll now go to Dr. Fry.

Hon. Hedy Fry: Thank you very much, Madam Chair.

We should expand this to a six-hour session, because it's as if everything just jumps onto something else, and you have to move on.

I want to go back to this issue of.... We in Canada are quite innovative in terms of biomedical research. We're very innovative, and the fact that we cannot take advantage of our own innovations because of the gap that exists from the test tube or the laboratory to the hospitals and offices, and to looking at how we change the way we deliver health care.... And it's not merely about widgets, a new drug or a new piece of technology; I'm thinking of innovative ways of how to deliver health care.

There are so many ways. You touched on something. While it's purely a provincial jurisdiction, the ability for them to decide how their hospitals are run and the budgeting of hospitals, it actually squeezes hospitals into this very linear thing. As you say, if you move a patient out faster, then you have to put another patient in, so it doesn't leave room for any kind of incentive for a hospital to be budgeted on how it innovates. I think if we could move those forward....

Even though it's a provincial jurisdiction, there is a real role for the federal government to play in taking a leadership place at the table. When it talks to ministers of health provincially, the federal government might want to talk about how transfer payments reward provinces that are moving in innovative ways to improve efficiency, to improve cost-effectiveness, to improve outcomes.

I think there is a role, so I don't want to write the federal government out of this. Again, while how a hospital is run is clearly provincial, we all know there is the ability to shift our system into a way that makes it able to sustain itself. I would like to hear from you.

Madam Chair, I know there's a witness who's going to come and talk about how you actually shift that global funding of hospitals and how you make hospitals budget differently, etc.

Do you have any comment on how you see this unfolding and where the government can play a role in incentives? Do you have any idea how those incentives would work?

Mr. John Soloninka: Not in the broader sense, but even in a more narrow sense without trying to change the way the world works, FedDev, the federal government funding agency in Ontario, and other federal funding agencies that provide incentives and those kinds of funding programs can be used as alternate funding programs to allow companies and others to introduce technologies into hospitals.

You don't have to interfere with the provincial health care systems, but you can have a dramatic impact on their ability to test and try new technologies. If you do it in one place, and you do it in such a way that other places in the country become aware of it and hear about that technology, or perhaps participate in the pilot, in other words if you encourage people from multiple provinces to participate in a pilot, then I think that could have a significant effect.

● (1715)

Hon. Hedy Fry: Do you have any comments, Dr. Treurnicht?

Dr. Ilse Treurnicht: I would I agree with that. I think the trick is to create a pod that is dedicated specifically to this kind of activity.

Part of our challenge right now is that our commercialization funding lives in our granting councils, and so it typically goes to academics who are doing a little bit more of the same, maybe a little bit more towards the market. Then at the other end Technology Partnerships Canada was awarding large companies, often not for being that innovative.

Creating an agency that could take the long-term view, and therefore perhaps also fund some of these more social innovations in the health care delivery systems as well as prevention innovations but which would be very specifically targeted at rewarding innovation, I think, would be a very interesting national catalytic role that would drive behaviour.

Hon. Hedy Fry: I just wanted to segue into something.

The Chair: I'm sorry, but I promised you we would have time at the end of the meeting, and we will.

We have to thank the witnesses very much. This has been so interesting. I have to agree with Dr. Fry that we need about six hours for something like this.

Your testimony has been amazing, and I want to thank you. The whole committee wants to thank you for coming today.

Having said that, we're going to suspend for two minutes and we're going to have to ask people to clear the room, because we do have to go into a business meeting shortly.

[*Proceedings continue in camera*]