HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Health

HESA • NUMBER 082 • 1st SESSION • 41st PARLIAMENT

EVIDENCE

Tuesday, April 23, 2013

Chair

Mrs. Joy Smith

Standing Committee on Health

Tuesday, April 23, 2013

● (1540)

[*English*]

The Chair (Mrs. Joy Smith (Kildonan—St. Paul, CPC)): Welcome, ladies and gentlemen.

I'm Joy Smith, the chair of the health committee.

My apologies go to the witnesses. We had votes following question period today, and it takes a while to get through those votes and to get here on time.

I want to thank you so much for coming today. We have been doing a wonderful study here in the health committee that has permeated the technological innovation subject matter. We've come up with many exciting guests who've had many exciting, innovative ideas, and we're very happy to have you here today.

We have with us, from the Public Health Agency of Canada, Ms. Kim Elmslie. Welcome back.

From the University of Ottawa Heart Institute, we have Ms. Heather Sherrard, vice-president of clinical services. I must say it is a world-renowned institute. It is extremely progressive. We're very happy to see you here today.

We also have Dr. Robyn Tamblyn, scientific director, Institute of Health Services and Policy Research. Welcome. We're glad you're here.

And we have Dr. Peter Selby, associate professor of family and community medicine and psychiatry with the Dalla Lana School of Public Health at the University of Toronto. We're very happy to have you here.

We are going to begin with Ms. Elmslie from the Public Health Agency for a 10-minute presentation, please.

[*Translation*]

Ms. Kim Elmslie (Director General, Centre for Chronic Disease Prevention and Control, Public Health Agency of Canada): Madam Chair, honourable members of the committee, I am very pleased to be here today to speak to the use of innovative technology to support the prevention and management of chronic diseases.

As the committee members have heard before, chronic diseases are a significant burden to individuals, families and caregivers, as well as to the Canadian health care system and economy. Most hospitalizations, disabilities and premature deaths are associated with chronic diseases and injuries.

Today, three out of five Canadians live with one or more chronic diseases, and eight out of ten have at least one risk factor—such as physical inactivity, unhealthy diet, smoking and being overweight or obese.

The impact of chronic diseases on the Canadian economy is at least $190 billion annually.

● (1545)

[*English*]

With such a profound impact on the quality of life of Canadians, it is important that we make use of innovative technology to support the prevention of chronic diseases.

Today I will focus my comments on type 2 diabetes and describe how we are using a web-based technology to support Canadians in preventing this chronic disease.

About 2.5 million Canadians live with diabetes and many more are unaware they have this disease. Type 2 is the most common form of diabetes. It accounts for 90% to 95% of all diabetes cases. At the Public Health Agency of Canada, we estimate there are five million Canadians over the age of 20 who are currently pre-diabetic—that's one in five adults. By 2016, we estimate an additional one million new cases of pre-diabetes, and may I say that is driven by increasing overweight and obesity in our population. These are sobering statistics. Pre-diabetes is a key risk factor for developing type 2 diabetes.

Early detection and intervention is an effective diabetes prevention strategy. If we can stop progression from pre-diabetes to diabetes, we will achieve savings both in health and economic terms, and stopping progression means changing the risk factors we can change. Some risks are not modifiable, such as advancing age, our ethnicity, our family history, but other risk factors, such as overweight and obesity, physical inactivity, and an unhealthy diet can be changed.

I don't want to imply to you that changing these behaviours is easy. We know this is not the case. We also know that the environments in which we live can make it more difficult to make these changes, but within this complexity there are tools we can provide Canadians to help them assess and understand their risk and work with health professionals to stay healthy.

Let me describe now how we at the Public Health Agency of Canada are helping Canadians take control of their own health. We've developed a risk assessment tool called CANRISK. It's a scientifically validated Canadian diabetes risk questionnaire, and it's targeted at adults aged 40 to 74. This is a made-in-Canada risk assessment tool. It was adapted from the Finnish version, but CANRISK takes additional risk factors for our Canadian context into consideration: ethnicity, education, and gestational diabetes, to name a few.

Using web-based technology, CANRISK is a simple tool that calculates a risk score for pre-diabetes and diabetes. As each question is answered, information on healthy living and diabetes prevention pops up on the screen, so users receive educational material at the same time they're thinking about their diabetes risk.

CANRISK was first announced by the federal health minister in November 2011, when it was rolled out in partnership with Shoppers Drug Mart and at Pharmaprix in the province of Quebec. This was an important first step to making this tool available to Canadians. By putting CANRISK in pharmacies, Canadians can receive counselling and further information from these trusted health professionals in their communities. New collaborations are taking place to expand the reach of CANRISK.

In order to facilitate the use of this risk assessment tool and meet the demands of health practitioners, CANRISK is available in 11 alternate languages that can be used by Canada's ethnic populations, some of whom are at higher risk for type 2 diabetes. In addition to English and French, the CANRISK assessment tool and its accompanying guide to diabetes prevention are available in Chinese, Vietnamese, Korean, Spanish, and Punjabi, to name just a few. So far, over 51,000 Canadians have accessed CANRISK online.

Of course we want to keep pace with the advances in telecommunication technologies, so we've developed a mobile phone application for this risk assessment tool. As health professionals are increasingly exploring the use of mobile technologies to access the latest guidelines and tools, they're better able to support their patients in real time, both in the doctor's office or, in this case, at the pharmacy. For example, with our Apple iPhone you can simply search the app store, download CANRISK, and use it for free. Users can seek further information about diabetes and its risk factors, and they can share the web link to CANRISK with friends and family through social media sites or by e-mail. We're also planning to develop an app for Android devices.

Since the launch of the mobile app—and that was only about two months ago—CANRISK has been downloaded over 500 times from countries all over the world: from France, China, Hong Kong, Thailand, Switzerland, and Russia, as well as from the United Kingdom and the United States. Indications are that CANRISK is catching on. People want to access and use it.

I want to emphasize how CANRISK use is spreading in Canadian pharmacies. We started our collaboration with Shoppers Drug Mart/Pharmaprix, but CANRISK is also now available in Pharmasave and Rexall stores. We are working with others as well and are aiming to have CANRISK in over 2,000 pharmacies across the country.

Why are we focusing on pharmacies? More and more pharmacists provide a point of regular, frequent contact for many Canadians. They answer a broad range of health questions, and they can provide reliable information and encouragement on ways to live healthier and prevent chronic diseases. They are integral parts of communities and they know the contexts in which their clients live. This ongoing relationship is important to the sustained message on healthy living.

● (1550)

[*Translation*]

I am proud to tell you that the Canadian Pharmacists Association is promoting and evaluating the use of CANRISK by its members because it wants to help build its capacity to deliver public health messages on diabetes prevention and to support Canadians in taking action to prevent type 2 diabetes and other chronic diseases.

So simple technologies, delivered in the right place and at the right time, with credible support and encouragement, are a component of our prevention work.

There is currently significant momentum in Canada to develop partnerships that support healthy living and ultimately prevent chronic diseases. These partnerships include the public, private and voluntary sectors.

The Public Health Agency of Canada is encouraging innovation through these partnerships, and CANRISK is one good example.

Thank you.

[*English*]

The Chair: Thank you very much for your very insightful comments.

We'll now hear from the University of Ottawa Heart Institute, Ms. Heather Sherrard.

Ms. Heather Sherrard (Vice-President Clinical Services, University of Ottawa Heart Institute): Thank you for the opportunity to present today and tell you a bit about some of the work we're doing in improving the care for patients with chronic disease, primarily in the area of cardiac disease.

I'll be specifically speaking about programs that operate in the Ottawa region, but many of its parts have been implemented in other regions and provinces in Canada.

In today's environment, we're seeing a growth in the number of patients who have chronic diseases. We've already talked about how people often have more than one chronic disease. In cardiac we find that it's a disease of the elderly, that individuals living in rural communities tend to have a greater preponderance of the disease, and they often have less access to services and specialists than their urban Canadian counterparts. The health care challenges for these people are: making sure they receive care that is based on best practices; helping them learn to live and cope with their chronic disease; providing support to the family, and this most often is an elderly spouse who may also have a chronic disease; preventing adverse events, particularly around medications; keeping them out of hospital, unless they need to be there; and improving their quality of life.

In our region we've developed an innovative e-health strategy that actually allows us to deliver different care by connecting patients to us virtually, without actually requiring them to come to the facility. This is an integrated model with three layers, and each layer provides an e-health strategy that works for the specific needs of the patient as they move through the course of their disease. This is chronic, and many of them will come to an end stage in this disease.

The first layer is telemedicine. This is a high bandwidth video conferencing capability. It allows us to add diagnostic capability. For example, we connect an electronic stethoscope to the system. We can hear the heart sounds of people who live in Nunavut and we can actually make a diagnosis. We can also send electrocardiograms and X-rays. It allows a cardiologist at the institute to conduct a full cardiac exam without ever having the patient leave their home community. This is a huge benefit to the family and patients. They don't have to travel. In addition, we can have the local health care provider—who's usually a family physician—with them so that the plan of care is well understood and discussed all at one time.

In a large study done in 2001, the institute found there were significant cost savings to patients and families, as well as improved access to services, using this technology. This led to the creation of the provincial system in Ontario called OTN, which now connects all of our hospitals. Today we can connect with hospitals across Canada and internationally to discuss patients.

We've expanded these initial services now to provide patients access to services that are not available unless you live in an urban city. For example, our rehab program broadcasts its classes on exercise, diet, and healthy lifestyles to the telemedicine stations in our partner hospitals that may not have these kinds of services. We also use it for follow-up visits for patients who prefer not to travel to a larger city. As a final service, we can see complex, admitted patients in hospitals where the local providers may be struggling with the diagnosis. They take a mobile telemedicine station to the bedside of the patient and we assist them with the diagnosis.

As a final use, we actually help to link families and patients when patients have to stay in Ottawa, for example, for long periods of time. This is particularly helpful for our patients from Nunavut. They become quite socially isolated while they're here, so we connect them to their families for a visit by using these stations.

The benefits of this system are reduced travel costs to patients and families, improved access, people can stay in their home communities, we have an ability to support local family physicians in complex care, and they reduce readmissions to hospital.

Of the strategies I'm going to talk to you about, this is our most expensive, and it has to be done centrally. You have to come to a site that has a telemedicine station, but it has the highest bandwidth and we can do the most detailed work with it.

The second layer is our home monitoring program. This program uses portable home monitors about the size of two pounds of butter. We give them to the patients to take home. These devices are plugged into their telephone jack and they're able to transmit their actual vital signs in the same way we would take them in a hospital. So we can assess blood pressure, pulse, weight, electrocardiogram, oxygen levels, and blood sugar levels. The data comes into a central station. We have a nurse there who can assess the results, based on a pre-set parameter. If the patient is outside of range, the nurse may call them back and adjust their medications or they may offer them some advice around diet or other compliance issues.

The system also allows us to pre-program questions—in eight different languages—that we would normally ask a patient. It speaks to the patient and the patient simply presses a button responding yes or no. This adds additional symptomatic screening capability that we don't have because we can't see the patients.

In addition, once a week we do a regular medication update to make sure they're still on the right medications and that no one has inadvertently changed them off their best practices. I can say that on every call we usually find a problem.

● (1555)

There's a considerable amount of medication management that has to be monitored. The typical monitoring period lasts three months, and during this time, in addition to seeing how they're doing, we actually have a predefined teaching program to help them learn to deal with their disease. In the Ottawa region, we have 150 of these monitors; 90 are located at the Heart Institute. The remaining 60 have been sent out to the local hospitals so that they can actually provide them locally to patients. Again, they don't have to come in to the city to receive the service.

Because these transmissions use a regular telephone system, we've sent monitors with patients all across Canada. We do see patients from across the country, and we've been able to use this because it plugs into the telephone system. The patients just simply ship it back on the bus when they're done.

We've started these systems for many years, and we've found the following. Patients are statistically more likely to be on best practices. They have a lower rate of readmission. The old, elderly, or people over the age of 85 do not require any more interventions and they're very capable of using the system. There's a high degree of satisfaction with patients and family physicians. By way of comparison, an average nurse in a centre like ours can look after three or four patients and sometimes up to six. These nurses who manage these systems look at 30 patients at a time. The cost of a monitor is $5,000. The cost of an average readmission is $7,000. In the first year, we saved $340,000 in one year looking after patients with this technology.

The third layer is automated calling, and the strategy was developed for the longer to medium term. We run five services under this program, but I'm going to restrict my comments to one related to heart attacks. We work with a local company, and we just use a simple automated calling platform. We have clinicians who develop a series of questions in the same way they would ask questions of a patient during a follow-up visit. The patient is called at regular intervals and responds to the questions, and the voice is captured in the system as a text response. A nurse can see what the patient has actually said, yes or no, to the question, and in the event that they see a wrong response—a patient may have stopped taking a medication—they'll call them and see what the issue is.

Each of these five systems are separate and they deal with different diseases and conditions that patients may face. This is the least expensive of all of the strategies, and it has the largest and easiest reach. If you have a phone, you can get a call. For example, patients with heart attacks often stop taking their medications once they're feeling better. This is a huge problem, since those medications will prevent them from having future heart attacks. The calling system for heart attacks calls people at day four, after they get home, and at months one, three, six, nine, and twelve. Their individual medications have been loaded into the system, and it simply asks them if they're continuing to take each of those medications. If they answer that they've stopped taking them, a nurse will call them and work with their family physician and/or the patient to get them back on the desired medications.

Again, these systems have been tested for effectiveness. We've just finished a large randomized control trial, with 600 patients receiving the call and 600 not. The patients who received automated calling are statistically more likely to be on best practice medications at the end of a year, and they are also statistically less likely to have a readmission during the course of that year.

The benefits to patients are that they have a smoother transition from hospital to home. We can give them additional support and reassurance as they learn to live with their disease. We're able to identify problems that are happening and intervene in a more timely way, and it removes geography as a barrier to care. This system has also been used by patients across Canada, and it is being implemented in other facilities in Ontario and across other provinces.

In conclusion, the e-health technology, when implemented properly, can be used to better clinically manage patients and to better support their families. It removes the barriers of geography, resource inequities, age, and regional disparities. It's inexpensive compared to hospital care, and it keeps the patients closer to home. There's a high degree of satisfaction with these systems from patients, and there does not appear to be any specific difficulties in using them with the elderly.

As a final comment, the clinical needs of the patients have to drive the type of technology you choose. That's why we have three layers. Some of the least expensive technology, when implemented in an innovative way, brings the best outcomes.

Thank you.

● (1600)

The Chair: Thank you very much.

We'll now go to Dr. Robyn Tamblyn.

Dr. Robyn Tamblyn (Scientific Director, Institute of Health Services and Policy Research, Canadian Institutes of Health Research): Thank you very much for inviting me. It's a true pleasure to be able to speak to you about the use of technologies for chronic disease prevention and management.

As my other colleagues have mentioned, I think we're all aware that we are aging well in Canadian society, as people are in many other countries. We are now essentially facing a situation where many people have chronic conditions that they live with for a fair length of time, including the cancers. This has meant that we've had to retool and rethink how we deliver health care. You don't do that through the emergency department or through acute hospital beds.

Most countries that have made a lot of progress here have invested in building a very different kind of community-based primary health care system. CIHR, along with its partners in the provinces and territories, has put funding into this area to try to create some innovations at the front line. I think that's very exciting.

One thing that will be a key enabler and an accelerator of change will be the appropriate use of e-technologies within these new models of care. My colleagues have actually provided examples of the wonderful things that can be done. I think this is really where we could actually see transformative change and a way of delivering care that you could never have had before, in a way that's cheaper, faster, and better. That's hard to believe. We aren't Walmart yet, we're not Amazon.com, but we could really make dramatic changes in the way we deliver care that would improve the experience for patients.

In thinking about Canada, telehealth and tele home care are two areas where we can make huge strides, not only in the rural and remote areas, but even in downtown Toronto. We may be able to actually monitor what's going on at home, so you wouldn't need to be trotting down to the downtown hospitals in Toronto.

To see how we could build some traction in this area, CIHR began funding what we call catalyst grants, simply getting a handle on what was there. Some very exciting things happened, and I think this is because we have research talent and a very highly educated workforce who are incredibly creative and very frustrated about how things are going, and they want to do it better. I think it's an exciting time.

In this particular small area—and it was not a huge investment—we had a number of phenomenal examples of improving the patient experience. For example, the Hospital for Sick Children created this new peer-to-peer support mentoring system for adolescents who had juvenile arthritis. Juvenile arthritis is a really rare condition. To get a bunch of kids in a room—10-year-olds and 8-year-olds, and so on—so that they can collectively learn from each other and share their experience would be impossible. It is now possible through social networking and technology.

Similarly, for adolescents who are confronted with the challenge of having cancer, they set up a new communication tool. Teens like to text—we don't, but they do—so they set up this new collaborative way of actually connecting to their team in a way that was cool. It was not cool to have cancer, but this was a cool way of actually getting more timely and accessible health care.

A McGill team actually developed an e-health promotion program to deal with cardiovascular risk factors. They provided not only encouragement and incentives for doing that, but a way of monitoring and showing progress for people who are using that program, to reduce blood pressure, overweight, and so on.

We've seen some very exciting things happen with only a small bit of investment, so we know there is huge talent and huge potential out there. I'm speaking now from the funding agency perspective. The question is, what's the recipe for ramping up the progress? What's the recipe for putting Canada in a leadership position here, as we have assumed in the area of telehealth, for example?

In looking at the pieces, what we definitely need is a high-functioning science and technology innovation system. We need some alignment between what we're doing in industry, what we're doing in research, and what we're doing in clinical care. We need these three things to be aligned.

We spent some time looking at Israel this past year because they are at the top of the leader board in this area. A number of lessons were learned in our visit with them. It has to do with really getting the right people—and I think we have the right people—getting an interest sectoral science agenda between engineering, social sciences, and health, and connecting with the industries that could develop a high-content capacity in this area.

I'm simply delighted to hear Heather's story, because that's exactly the kind of thing we think could really happen.

● (1605)

To look at where we go with this and in what three target areas we think we can make big changes in a short period of time, one is in the area of ramping up people's capacity to manage their own conditions, through patient portals and so on. This is using technology to empower people to manage their chronic conditions. It includes linking to primary and secondary service delivery through their personal health records or through web-based communication; developing intelligent monitoring algorithms, so that, for example, when you're monitoring someone's glucose, weight, and blood pressure, you in fact have computerized algorithms that say this person is in trouble and you should get going in a certain direction, similar to the way they've used their interactive voice recording system to monitor those kinds of things; having a capacity for personal social support and innovative social networks for people who have specific conditions, and not just in Canada but around the world. We have really great examples, such as PatientsLikeMe for people with ALS, which is a very rare condition, being able to share that condition with each other.

The second area in which we think we'll see real capacity to do something much needed and very creative is in going down the route of individualized advanced decision support—supporting health professionals in doing the right thing at the right time for the right person—and being able not to target it to the average, but to say people like you, who have these preferences and want to see these outcomes in this period of time and who have this kind of genotype profile, should do this for it.

If you take, for example, antidepressants, half of the first antidepressants you use don't work. You can't predict right now who it is going to work in and who it is not going to work in. We will soon have the capacity to do this. Then it's a question of how you deliver it right to the point of care—to patients themselves, to pharmacists, to physicians who are actually prescribing those medications.

That's a second exciting area.

The third exciting area has to do with population and health system monitoring. We have pioneered the capacity in Canada. We have a social health care system, we have a lot of population-level data, and we have shown how we can use it to assess variations in practice, the risks and benefits of medications, and epidemics and infectious disease outbreaks. We could do much more of that.

Big data and big data analysis, such as you see in the private sector, could come to health care, and it could dramatically change how we do things. You would have more just-in-time information to manage. You would know, for example, whether the vaccination rate was falling in certain regions, and the corollary—that we now have a measles outbreak or, worse yet, a polio outbreak—could be something you would learn now and not two, three, or four months later, as we did in the case of Walkerton. So there are opportunities there.

We feel this needs to be taken from a global perspective so that we're sharing the experience, sharing in the innovation, and sharing in the marketplace, where Canadian innovations can go. We think that's an important piece.

Along with that is that Canada has really excelled in being able to run a health care system with a single payer. Lower- and middle-income countries are wanting to move down that pathway. We have the talent. We could build the tools to allow them to do that well.

We have some challenges. One challenge that I'd say has been very difficult for us is in the capacity to use the data assembled through these multiple sectors to create new knowledge, to create new intelligence, and be able to monitor how things are going in health care. We have some privacy issues that we have not successfully dealt with. We worry about data travelling across city lines, regional lines, provincial lines, and even national lines, so that's getting in our way.

Canada, which once led in this area, is now falling behind, because we do not have a policy framework that will successfully manage this way of providing access to managers of the health care system, providing access to researchers, and being able to deliver this point-of-care information back to citizens who need to know it now, not later. I think there are solutions, which we hope to push in that direction as a collaborative, and I look forward to your feedback and suggestions in that regard.

Finally, let me mention that I think we see the e-health initiative being nicely married with the strategy for patient-oriented research, which truly is trying to transform the way we connect research to the backbone of the care delivery system and change outcomes, not when the study is done, but as knowledge is accumulated through time. I think that's one of the most exciting things we're doing. It will be in the area of community-based primary health care and mental health, which we see as some of the early strategic priorities, and we're looking at other areas in which we think we can excel as Canadians.

● (1610)

We see this as a way forward. We have assembled an international advisory group of small and medium-sized industry representatives, scientists, leading clinicians, and funders from around the world to help us understand how we could do this collectively.

Thank you very much for your attention. I look forward to any questions you might have.

The Chair: Thank you very much. We look forward to the questions around some of your comments.

We want to hear now from Dr. Peter Selby, please.

Dr. Peter Selby (Associate Professor, Family and Community Medicine, Psychiatry and Dalla Lana School of Public Health, University of Toronto, As an Individual): Thank you.

Honourable chairperson, members of Parliament, colleagues, and other attendees, thank you for the privilege of addressing you on this very important topic, which is very close to my heart.

I've been asked to address how innovative technologies can be used to support the prevention and management of chronic diseases. It is very difficult to follow my colleagues, who have spoken very eloquently about various aspects. I hope to add a little bit more to these. I have made a submission as a brief and trust it will be useful to you as you deliberate.

There are two key messages that I have for you today. One is that our health behaviour—what we do—is determined by a variety of interacting and competing factors between our environments, whether social, geographical, economic, or family environments, and our biology, whether that be our genetics or what the environment has done to our genetics—what is known as “epigenetics”.

So how we act today is best understood from a developmental context of our brains, from before we were born until what we do now. It determines how we think about things, how we feel about things, and how we act. This means that the actions—especially the habits—of what we do today are shaped by our early experiences and by the current opportunities and constraints of our environment, which help us to act in a healthful way or not.

That's one message. The second is that the technological advances in the products, practices, policies, and communications through such means as social media are double-edged swords. They can promote ill health by exposing us to harmful messaging or making us more sedentary, or they can play a major role in empowering us to take action, whether at an individual level, a family level, or a community level. However, the use of these technologies needs to be promoted, and they need to be situated within the broader context of health behaviour change interventions, rather than in isolation.

Never before has society faced such a radical shift in how we live. Think about it: in the last 50 years, we have seen a huge shift, from most of us being paid to expend our energy to now, in this knowledge economy, having to pay to expend energy. I find it ironic that I drive to a gym, pay a membership, and then pedal a stationary bicycle for no purpose at all other than to get my heart going. Then I sit back in my car and drive home. That's the change. Our ancestors never did that, and I'm sure, when they look down on us, they must be wondering what on earth we are up to. That's it.

We've also tamed the production and distribution of food so that it is low-cost and packed with calories that we can consume ad lib, no problems, in ways that go far beyond what we need. What does that lead to?

Moreover, the use of tobacco and alcohol is endemic and accounts for significant ill health and premature death. Moreover, the pressures of modern living, despite everything we have, are leaving us more stressed, with less time to sleep. Taken together, our successive advancements are also making us more prone to develop such chronic diseases as cancer, heart disease, depression, etc.

Now we are closing in on a health care cliff whereby most chronic diseases will take up most of our health care resources—approximately $83 billion in 2005, and I think much more now, as you mentioned, Kim.

The good news is that as our health care system matures into its forties, it's starting to develop a little less myopia and starting to look into the future, so that we begin paying attention a bit more to prevention. We need to do that.

Moreover, we have a population ever increasingly informed about health and health behaviours, but clearly not in numbers sufficient to prevent the tsunami of chronic disease that's going to come exponentially, as Kim was just saying in talking about diabetes.

I and many others before me have identified the core modifiable behaviours that account for about 200 chronic diseases that are estimated to account for seven years of lost life, at least in Ontario. Often these behaviours cluster in the same individual and often in the same community. We can also understand them as being socially infectious. Many good researchers have found that these behaviours don't just occur in isolation; they tend to occur in communities and they tend to be infectious.

● (1615)

If we as a society collectively address the problems of tobacco use, excessive and risky use of alcohol, poor nutrition, including excess salt intake, physical inactivity, stress, and poor sleep, we can reduce illness and approximately prolong healthy years of life—not life on a respirator—by about three and a half years. Taken together, I call this a health promotion six-pack. If we all strengthened and implemented this broadly across the country, it could help address things like obesity, heart disease, cancer, lung disease, Alzheimer's, and diabetes, just to name a few that we are now trying to address separately.

So how do we reach everybody across Canada? Clearly, we are aware of the geographical variations in health status in the urban versus rural divide, the spread across various sectors of society, maldistribution of health care resources across the country, and that we'll never have the health human resources necessary for that one-to-one promotion of health. Clearly, policy-level interventions are necessary to promote health, such as taxation on certain products, reducing the access and attractiveness of unhealthy behaviours, and, as I said, the promotion of the health promotion six-pack. These make it easier for all of us to do the right thing for our health.

In addition, there are other ways to increase health literacy in our society and empower us. Here's where I see technology has that role in potentially scaling up what we know needs to be done.

Roughly, if you take a look at these risk behaviours, you can step back and ask what are the core, the dominance, of these behaviours and this is what we can modify. Clearly, we can modify it at the individual level, but we can sometimes modify it at the product level. For example, there are product innovations that may be able to help us reduce the harm from certain of these products—medications and medication reminders to help people stop unhealthy behaviours, or create safer products that might have less salt or less sugar. Good examples that are emerging now that need to be paid close attention to are things like electronic cigarettes. Suddenly, most of the carcinogens or cancer-causing chemicals are being eliminated from that. We need to be able to study that. We need to be able to develop that. That's technology really taking out the harm from cigarettes that we need to focus on, and it needs to be proven. It needs to be studied scientifically. We need to invest in those kinds of scientific studies to make sure they come in and don't cause more harm than good. Moreover, we may need to look at design innovations that get us to move more or get us to pick healthier choices when we eat food. However, the biggest developments that have been published and that I'll speak about are communication technologies to promote and assist with behaviour change, and these are typically reminders.

What's very interesting is that our brain is the only organ that outsources its functions. Your heart doesn't say “I've had a bit too much beating and I'm going to get a machine to help me do that”; that's called sickness. But our brain constantly writes it down and puts it on a BlackBerry, or what have you, to help us remember. So we outsource a lot to remind us of one thing that can help us. It helps us check on weight, blood sugar, track calories, reduce the amount one drinks, or even help quit smoking. These can be done through websites, social media pages, web-based tools, video games, and apps that can be downloaded on to your phone and therefore don't need an active Internet connection that you can take with you to make it mobile.

This explosion of interest has been due to the development, reach, and adoption of the Internet and mobile technologies, and it has enhanced connectiveness among society, even among people who don't know each other. These online communities are powerful networks that are constantly forming, reforming, dissolving, and often mirror real-world networks, except that the geographic and socio-economic divide is being bridged. In other words, we have networked intelligence potentially among these members in these communities. This flow of information can be fairly rapid, but we need to figure out ways in which this information can flow. For example, we've had this broadband initiative in Canada that has increased access in remote areas of this country. This increases the possibility of mitigating the inequity of access of evidence-based information to empower health.

At least 80% of Canadian households had access to the Internet in 2010, according to StatsCan. Two-thirds use it to search for health information, and the numbers are growing exponentially, especially in rural areas and by women.

● (1620)

There are over 20 million mobile phone users in Canada, with over six and a half million of these with smart phones, with half of them accessing the Internet using that smart phone. Using downloaded apps is the top monthly Internet activity; 85% of smart phone subscribers download an app. According to Quinn Street, the number of mobile health apps has nearly doubled worldwide, from 124 million in 2011 to 247 million in 2012.

We know that although younger people are most likely to use their mobile phones, older individuals have begun to use them as well, and we shouldn't make any assumptions about age. The trend is only going to go up. As I age, I don't see myself giving up my own smart phone.

The Chair: I'm sorry, we've gone way over. Could you wrap up now please, Doctor?

Dr. Peter Selby: To wrap up in terms of the evidence, the evidence is actually quite compelling and it's been summarized in many publications that look at it. They do make a change, people do use them, but we need to make sure that we situate them in such a way that they can virtualize some of the aspects of care that are now falling on our health care system, so that we can empower people to live healthily.

The Chair: Thank you, Dr. Selby.

Thank you all for your very insightful comments.

Now we'll go into our seven-minute Q and A, beginning with Dr. Sellah.

[*Translation*]

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

I want to begin by thanking our witnesses for providing us with information about innovation, about repercussions on health promotion and, ultimately, about the Canadian health care system.

We know that the aging population and chronic diseases are a considerable burden for the Canadian health care system. I listened carefully to what Ms. Elmslie said about the experiment that was conducted as part of CANRISK. I think this is a brilliant approach, and I know it is promising. However, as things currently stand, I am worried about certain generations. As Dr. Selby rightly pointed out, not all generations are keeping up with the computer evolution. I can confirm that, as my son is more computer literate than I am.

Some of the new technologies used to support the management of chronic diseases can represent obstacles for patients because basic computers knowledge is required. People also need to have access to computers or other digital technologies. That obstacle has been referred to as “the digital divide”, which has to do with patients' economic status. Some technologies can involve costs for patients, such as Internet access charges or the purchase of smart phones.

Based on your experience in innovation, would you say that patients have to be computer literate to be able to use those technologies?

Do patients have to incur the costs of using those applications? If so, what, if any, financial assistance is provided to low-income patients?

● (1625)

[*English*]

The Chair: Who would like to take that?

Ms. Sherrard.

Ms. Heather Sherrard: We do a lot with the elderly. We poll them about every three years. They use the Internet, but a lot of them aren't there yet in terms of using applications. They quite like devices that sit on their little lampshade. They go to it; they use it; they're done. And they do very well with the phone piece. They just plug it into the phone. If they have a jack, they can use it.

In our particular program, because there are such huge cost savings, we buy the device and we pay the charges for the long-distance calls that would be incurred over the phone line. It's minuscule; they're only online for a couple of seconds when they download their data. So there's a huge cost saving, and we provide that service at no charge to the patients.

Automated calling is the same for them. Interestingly, 45-year-old men with heart attacks are the group that don't like to use automated calling—no surprise—and they're going to be back. But, broadly, people use these systems because they're very easy. We watch, and we think in the next five years we will begin to develop some apps for the 55-year-olds now who will get their heart disease because they will probably want them. Right now the group that we see doesn't, and we just continue to monitor that. They use smart phones. They're just not quite there with it yet as a device to monitor their health.

[*Translation*]

The Chair: Ms. Tamblyn, go ahead.

[*English*]

Dr. Robyn Tamblyn: I think this is a very interesting area. It has been fascinating to see the digital divide essentially closing and an even more rapid upgrowth in the seniors community.

But I think this is an area for innovation: we don't deal with the human factor things very well. When you think about it, the first computer was horrible to work with, right? Then it became so easy that you didn't really have to understand it. Ditto with the car. To start with, the car was hard, and now it's all computerized. You don't know why it's doing what it's doing, or even what it's doing, but it works.

I think we could create senior-friendly user devices. I think this should be something that we should push towards. You put on a sweater, your informatics sweater, and it actually reads everything about you and sends it wirelessly. You don't have to worry about it. You just put on the sweater, right? You can imagine some very creative ways in which science actually could contribute to making this more user-friendly. I think we could push in that direction.

The second is this area of affordability. The cost in Canada is very different from the cost in other countries, so it is a matter of policy, to a certain extent, as to what the cost is and whether there's competition and so on. As Heather points out, in some instances, even at the prices we pay now compared to other countries, it's cost-effective to invest in the technology; it will cost more if you don't.

● (1630)

The Chair: I think Dr. Selby also wanted to make a comment.

Dr. Peter Selby: My comment is simply that I think these innovations need to come, but one way in which we can reduce that divide.... Clearly there are places where we need to have access, such as libraries, such as health care centres, and those can certainly help that. In increasing the literacy, yes, there's a little bit of training, but as Dr. Tamblyn points out, I think we need to take a look at that interface and make sure it can be used.

I've had an experiment with my own family. My 88-year-old mother is using an iPad. It's fascinating to see how she has adopted it, and it has really connected her in ways that I could never have imagined. So yes, I think there does need to be that.

The Chair: We'll have one more comment from Ms. Elmslie. We have only 30 seconds.

Kim, go ahead, please.

[*Translation*]

Ms. Kim Elmslie: Thank you very much.

In the case of CANRISK, pharmacists act as intermediaries between patients and technology. Patients decide on their own whether they want to use the technology. If they choose to do so, that is great, but they are provided with assistance. That is very important.

Mrs. Djaouida Sellah: That is what I wanted to say. Thank you.

[*English*]

The Chair: Thank you.

We'll now go to Dr. Carrie.

Mr. Colin Carrie (Oshawa, CPC): Thank you very much, Madam Chair.

I want to thank the witnesses here today. I think we're having an excellent study.

I liked what Dr. Selby said. I think I belong to that demographic that would drive to the gym, get out, get on the bike, and then drive back, but I think that too many of my friends actually made pit stops at a restaurant that had a bar, went to the bar, had the chicken wings, and then had a cigar afterwards.

Voices: Oh, oh!

Mr. Colin Carrie: What you stated about these different apps really spurred my interest. You've done a lot of work with addiction. Are there any apps out there that you recommend? I'm curious, because you said there were so many apps out there, and I was wondering about that.

Also, Ms. Elmslie, are there apps out there that Health Canada actually recommends, even with regard to this committee, in order to get the word out? This sounds like a really great way of managing some of these chronic diseases, and a lot of people don't know about it.

I was wondering, Dr. Selby, if you could comment on that, and maybe you could, Ms. Elmslie.

Dr. Peter Selby: Yes. In the briefing, we submitted a range of apps for various health behaviours, and we've also put in some of the ones that we've developed, studied, and written about. But again, when we look at it, when we take a step back, there needs to be a better evaluation. Right now, it's a buyer beware kind of problem, because you don't know what is snake oil versus the real McCoy. I think we do need to come to a way of helping consumers make an informed choice in what they use.

About 10 years ago we did a review internationally of all the websites—at that time, there were no apps—and there was a methodology developing to start rating websites around content and usability and whether they were science-based or not. I think that work still needs to be done. The issue is that it gets out of date as soon as it's put out there, so there's a bit of a challenge in getting our heads around how to do that and keep it up to date.

Mr. Colin Carrie: Is anyone around the world doing that?

Dr. Peter Selby: One way in which people are beginning to do that—and I think the big one—is crowdsourcing. The more people are using something, the more it tends to rise. Search engine optimization is one way in which this is being done.

The Internet is much flatter, and the authority of health individuals is not respected as much as are the individuals. We've got to pay attention to that. Sometimes just having a stamp of approval from an agency doesn't necessarily lead to the adoption of it. It really is dependent on what the crowd is saying right now.

Mr. Colin Carrie: Thank you.

Ms. Elmslie, go ahead.

Ms. Kim Elmslie: I'd like to reinforce what Peter said about ensuring that there's a scientific base underneath whatever application the public is choosing. For example, the Public Health Agency, of course, recommends CANRISK because we developed it and we know what science is behind it. We're not recommending other apps for just the reason Peter talked about. I think there is a lot more research to be done on what is underlying these applications that folks are using. We have to be sure that we're doing more good than harm.

● (1635)

Mr. Colin Carrie: Dr. Selby, you mentioned these electronic cigarettes. I've heard about those and I've seen kids with them. They think they're cool and safe. You mentioned the importance of research.

Dr. Peter Selby: Right now, it's just out there, but we have no framework to study them and say, yea or nay, whether they're harmful or not. But that's an example of technology coming in without a framework and taking over.

It requires research. We don't know what's in them. We don't know the product-to-product variability. We don't know whether there are heavy metals going into people's lungs or not. But we see them sold in convenience stores, so we need to get our head around them. That's technology grabbing people.

It might have some benefit, but we need to study it. Right now, it's a bit of a concern to me that we aren't in a position to be able to study it.

Mr. Colin Carrie: Thank you very much.

You mentioned CANRISK is in different languages. Do we have CANRISK in any first nations languages?

Ms. Kim Elmslie: At this point we don't, but we're in the process of modifying CANRISK to ensure that's it's scientifically valid for first nations populations. Once we've done that, we will have it in those languages.

Mr. Colin Carrie: Okay.

You mentioned the importance of partnerships as well. Can you comment on the partnership of the federal and provincial governments on the obesity initiative?

Ms. Kim Elmslie: Yes, I'd be delighted to do so. That's a really exciting partnership.

Mr. Colin Carrie: Are there opportunities to use technology in that?

Ms. Kim Elmslie: Absolutely. As governments have come together around the childhood obesity challenge, we're looking at ways we can support families in providing healthy choices to their children and reinforcing that message in schools and of course in workplaces. Even if you're fighting childhood obesity, you want the whole family to be involved. The moms and dads are doing the shopping; they have to be part of this as well.

Applications that we're looking at and talking about with others include the Dietitians of Canada, for instance, and working with them to provide information based on good science, using technology to get that information out there, and to make it fun for kids to learn about healthy eating so that they can do that in the schools and take those messages home.

We're facing, as all of you around this table know, a very serious problem with childhood overweight and obesity. The creative solutions that will come to us from partnerships with sectors beyond the health field—the technology sector, the telecommunications sector, and many others—will need to be part of our innovation agenda going forward. We've got a great partnership with provinces and territories to do that.

Mr. Colin Carrie: Dr. Sherrard, you mentioned that sometimes you get the best savings out of the least expensive...that when you implemented what you were moving forward with, you saved $340,000 in the first year.

Have you ever done any extrapolations on that? If we applied that across the table or if we did it with other diseases, how much potential money could be saved? Has anybody done that work?

Ms. Heather Sherrard: That work is done in different jurisdictions. The methodology is always slightly different, so the ability to say that this is the exact way of doing it is not really out there. When you go into the literature, you'll see a variety of numbers.

For us, that was done with heart failure patients, and that number represents a catchment of $1.5 million. That number represents real savings annually when you do these programs. That would be how I would start.

The Chair: Thank you very much.

We'll now go to Mr. Pacetti.

Mr. Massimo Pacetti (Saint-Léonard—Saint-Michel, Lib.): Thank you, Madam Chair.

Thank you, witnesses. This is very interesting.

My question is going to be directed more to Ms. Sherrard.

You were speaking about patients and using monitors and devices. It might not be the group, but I'm just wondering.... I'm going to make this very basic. I'm not trying to insult you in any way, but are we replacing a nurse with a technician or a telephone operator? I guess that's what I'm asking. If I'm going to be self-diagnosing through a monitor by having myself clicked into a telephone or by a mobile app, as somebody else mentioned, what happens to my practitioner? What happens to the specialist? What happens to the surgeon? How does this make me healthier?

● (1640)

Ms. Heather Sherrard: If you look at the data, you see that about 80% of the patients who you send home with chronic disease don't actually have a problem. They manage quite well. It's the 20% who do, so you need to have an economical way of getting to the 20%. This absolutely does not replace a practitioner at any level. It helps the patient self-screen themselves to know if they're okay or not. Immediately that you see.... You're not diagnosing yourself; you're just answering a question like you would do on a phone call. Then a practitioner is in contact with the 20% who really need them, because the other 80% are fine.

The problem is that in health care you don't know who the 20% are if you don't have, for example, a mechanism to call them. It's very cost-effective to deal effectively with the 80% who are fine and to identify those who need help. Then we leverage the nurse and/or their family physician, because they work in partnership—or a specialist if they need one.

Mr. Massimo Pacetti: Before you determine that 80% don't need medical intervention or access, don't they have to come in?

Ms. Heather Sherrard: Well, these are patients who we would actually see, but in our data that we see as we follow up on patients, if you take a cohort of 100 patients, about 80% of them are fine. We don't actually have to—

Mr. Massimo Pacetti: After you've seen them one time?

Ms. Heather Sherrard: Yes, after we've seen them. This program is designed for patients who have actually had a medical incident or had a need to be hospitalized for some reason.

Mr. Massimo Pacetti: The next question would be, once you determine who are the 80% who don't need a follow-up or who need a small amount of follow-up, do they turn around and say, “I think I'm having a heart attack today”? You tell them they're not having a heart attack, but do they turn around the next day and say that maybe they have cancer, and then the next day maybe something else? Does this lead them to keep going back? Is this something else you're seeing?

Ms. Heather Sherrard: No, because we teach them how to live with their chronic disease. Everybody has to learn how to do that. It's a step process that you take people through: understanding what is your condition, what you can do to help make yourself better, and when to know when to engage back into the health care system.

For example, there are people on home monitoring. That's a very step-wise program that we take them through for three months. At the end of three months, we are confident they know the symptoms to watch for, they know who to call, and they've had enough experience in trying to manage themselves so they can actually get through it better. Otherwise, without these systems, you just toss them out and say “good luck”, right?

Mr. Massimo Pacetti: I have one other question for you. You were saying that you call to verify that people are taking medication. How can you determine through a phone call that the person is taking his or her medication?

Ms. Heather Sherrard: Interestingly, there's literature out there, and a lot—

Mr. Massimo Pacetti: Particularly for some of us men, you were saying?

Ms. Heather Sherrard: Well, no, they don't like to use the calls at all.

There is literature out there on these automated calling systems from years ago, and they actually studied where people are most honest. They are most honest on an automated calling system, as opposed to talking to a practitioner, so we have a high degree of confidence in the system. Now, it wasn't in the addictions field, but we have confidence that people answer honestly, and you can only do what you can do. If they lie to you, they lie to you, and we'll see it on their vital signs.

Voices: Oh, oh!

Ms. Heather Sherrard: We'll catch them in about three weeks if they've lied about their medications.

Mr. Massimo Pacetti: How about you, Dr. Selby? You were mentioning these apps. It's the same thing. Do people go to these apps? Is it resulting in more people going to hospitals and getting themselves checked out for no apparent reason?

Dr. Peter Selby: I think it's an empirical question, but what we do notice is that people are coming in way more informed. Now when I'm talking to patients, before I start giving any advice, I'll ask them what it is they know about a medication or what they have read about it. Then I fill in the blanks, as opposed to starting with a lecture.

What it has really done is we actually have a true dialogue and the patient is more engaged, so I think it creates a way for people to talk. Has it actually led to increased utilization? My hope is that it leads to more appropriate utilization, as opposed to—

Mr. Massimo Pacetti: Have you seen it where it's not appropriate?

Dr. Peter Selby: I think you would—

Mr. Massimo Pacetti: There must be a learning curve.

Dr. Peter Selby: Yes, there is a bit of a learning curve.

I think what happens...and this is when I used to take care of pregnant women, or young mothers, really. There wasn't a lot of social infrastructure around, so when they discovered that the baby had a little bump—it was actually just the breastbone—sometimes they would come. That kind of vigilance, that caring, does come into it.

My hope is that the communities around them can help support that, but you do see that learning curve.

● (1645)

Mr. Massimo Pacetti: So it works both ways.

Dr. Peter Selby: It does work both ways, absolutely.

Mr. Massimo Pacetti: Okay.

Ms. Elmslie, you mentioned CANRISK. What is it, a little machine? It's a questionnaire.

Ms. Kim Elmslie: Yes.

Mr. Massimo Pacetti: Then what happens after you lie and fill out that questionnaire?

Voices: Oh, oh!

Ms. Kim Elmslie: It's a web-based tool, so it's Internet-based. It's 12 questions. You go on the questionnaire. You answer each question. As you answer, information pops up and tells you about healthy living, about things you can do to change the way you're currently living if you have risk factors. You end up, at the end of the questionnaire, with a risk score that says whether you're at low risk for diabetes or pre-diabetes, or moderate or high.

The true value, although we actually need to study this more, comes in that discussion with your health care provider. If you're with your pharmacist when you're filling out the questionnaire, then the pharmacist can say to you that you really need to be paying more attention to this aspect of your health, or you really should see your family doctor because you're at very high risk for diabetes or pre-diabetes.

So it's that kind of counselling session and education session, and it's at a time when people are motivated to learn.

Mr. Massimo Pacetti: But if, for example—

The Chair: I'm sorry, I have to interrupt.

Mr. Massimo Pacetti: That's it?

The Chair: Yes, that's it.

Mr. Massimo Pacetti: Thank you.

The Chair: But your very...almost interesting questions—

Voices: Oh, oh!

The Chair: No: your very interesting questions; very good. Thank you.

Mr. Massimo Pacetti: Thank you.

Geez, I passed the test.

Voices: Oh, oh!

The Chair: Now we go to Mr. Wilks.

Mr. David Wilks (Kootenay—Columbia, CPC): Thank you very much, Madam Chair.

Thanks to the witnesses for being here today.

It's quite an interesting topic when you think that over the years, and as we progress further into...as years come by, we're going to live longer whether we want to or not, because technology is going to allow us to live longer.

Having said that, what do you foresee, let's say in 30 or 40 years, when the average human lives to 90, on average, and the average physician, who may still be working at 75, says, boy, what's the one thing we can do now to make people live longer?

Dr. Tamblyn.

Dr. Robyn Tamblyn: I think the emphasis is increasingly on living high quality longer. Living longer on a respirator is not the way to go, right?

Mr. David Wilks: I agree.

Dr. Robyn Tamblyn: It's really about putting health into the aging years. I think we know an awful lot at this point about the risk factors that make you unhealthy and live a shorter and poorer-quality life. What we haven't really been able to master as well is how you deliver, in an effective way, interventions that turn that around.

That's where I think technology, as we've already discussed, actually has a power that has never been there before to use the right people, health professionals, in a way they've never been used before—at the right time, at the right place, for the right person—and empower people who don't need that intensive help through other means.

I think it's a really exciting time. Now it's a matter of how you harness it in such a way that you don't get a lot of junk out there in the app world and you get things that really matter. How do we marshal the science to make sure we get that kind of evaluation done so that we know how it's going to work?

There was a recent example with dermatology, where they took pictures of skin lesions with two different products, one being actually highly successful. It was reviewed by a pool of consultants. Others were generating an awful lot of false negatives, meaning that they truly had treatable—should have been in there, could have prevented that—skin lesions.

I think this is the kind of thing that we really are quite aware of in the scientific world. We really need to make sure that we cover the full spectrum, from co-innovation of new things to evaluating what's out there, so that we can provide the best guidance.

Mr. David Wilks: Thank you.

Dr. Sherrard, you were talking about telemedicine, and it sounded really intriguing to me, coming from a rural area of Canada, Kootenay—Columbia.

Would you explain a little more about it? How does it work from the patient's end? I got it from the doctor's end, but how does that work from the patient's end?

Ms. Heather Sherrard: A patient would go into a facility, wherever there's one of these telemedicine stations. It looks like a television screen, and they sit in front of it. There's usually a nurse or somebody with them; it could be their family doctor, but not usually. You turn the screen on; it has a broadband link. They see the cardiologist at our end who walks them through a health assessment. The nurse at the patient's side has the electronic stethoscope, and she puts it on the patient's chest. The cardiologist says to move it here, move it there—

● (1650)

Mr. David Wilks: So it's not the patient doing it; it is actually—

Ms. Heather Sherrard: The patient can. Some of them who are chronic and come for repeat visits do it themselves. The doctor says to move it to the left or move it to the right, and they can certainly do it themselves. On the early visits, they usually have somebody with them.

Everything they need, by way of a diagnostic tool, is linked to that system. The patients just sit in front of a television and use the devices. It's very easy. It has a camera that can zoom in. They have a very good dial-up—it's broadcast quality, so it's a real conversation and it's not very jerky. Nunavut is a bit jerky because it goes up over the satellite, but other than that, it's pretty good quality. It's a very good interaction, and patients love it. Once you start them on it, they're not coming for the drive.

Mr. David Wilks: Thank you very much.

To anyone here on the panel, is there more the federal government should be doing within its scope of jurisdiction to support innovative approaches to managing and preventing chronic illness? If so, can you provide some illustrations of that?

Any of you who want to take that on...it looks like Dr. Selby's jumping.

Dr. Peter Selby: I think it's what Dr. Tamblyn said: how do we align engineering science with social sciences and telesciences? It goes back to your previous question. If you project that we're going to be living until 90 years of age, it's what we do in our thirties—before we hit 40 years of age—that's going to make the difference.

One is, how do we make it easy for people to do the right thing in how they live, in what they eat, and in what they have access to and those kinds of things? That's where that alignment, if we do that....

Clearly, it's enabling policies that can help this. Is there some reason alcohol can cost the same amount no matter what latitude you're at, but fruit becomes exponentially more expensive the further north you go? That makes a difference in what people choose to consume, right?

Can we do something like that, which can reduce that inequity, that isn't going to happen through a health system—it's outside of the health system—and can help people be healthy? Those are the things.... I would focus on the 30-year-olds who are going to be getting to 90 years.

Mr. David Wilks: Thank you very much.

Dr. Robyn Tamblyn: I have a quick one on that.

One key thing we really need is...the alignment of the tri-councils can be achieved fairly readily through collaborative work. We've already gone down that pathway.

But the alignment with industry policy hasn't been as successful. We don't have...we could have more industry-friendly policies, we could have a strategic investment in the e-health industries aligned with what's going to happen in the health and engineering research councils—we could make that alignment. That's what's been successful in these other countries; they made that alignment.

We don't have a military like Israel's that generates new ideas, but we do have the Canadian Space Agency that does do that. New technologies and innovations come from that alone, and could be highly relevant to our geographically remote populations.

That's number one.

Number two is that we build it in Canada, but then we don't buy it. I think that's a big issue. In Finland, they built it in Finland and they bought it. They had a more friendly procurement policy. When we have companies that do this unbelievable work—like TelASK, for example—why is that not being widely adopted? Look at what they've done—

The Chair: Thank you very much.

We now have to go into our second round. It's a five-minute round.

Dr. Morin, you're first.

Mr. Dany Morin (Chicoutimi—Le Fjord, NDP): Thank you very much, Ms. Chair.

Thank you for wearing the daffodil today.

Ms. Sherrard, I was fascinated by your example of a nurse being able to treat 30 patients during her shift, or during her day—contrary to five, or something like that—and for only an additional investment of $5,000.

My first question is, why is it not done this way in every hospital across the country? Our ERs in hospitals are overburdened with patients waiting hours and hours and hours because we lack the manpower, for example.

What are your thoughts on this?

● (1655)

Ms. Heather Sherrard: It's an interesting question. I think it's about knowledge translation and spread, and I think someone has talked about that.

In Canada you get these pockets of innovation, and it is very difficult to spread them. In the cardiovascular community we talk to people; they know about it. But this is an adoption for which you need an innovator. Dr. Keon at the time was the innovator behind this. He invested in it. We had partnerships with Nortel, etc. We put this up without any money, and not everybody will do that.

I think the other point, to address Robyn's comment, is that once you have good things that work, how do you enable them to spread, and how do you say, “Okay, this works, so stop playing around the edges now and start implementing it”? It's the way the system is actually set up. There are individual boards, there are individual regions, and it's very hard to spread it.

Mr. Dany Morin: Do you think the federal government or its agencies have a role to play to spread this knowledge across the country?

Ms. Heather Sherrard: I'm not an expert on what the federal government can do, but yes, I think the spread nationally is very important. I think bringing people together like this, people who can contribute information as you make your deliberations, is good. There's a spread that happens just by doing that.

There are also probably some broad policy pieces as well, not at the funding level but just from a strategy point of view. We've seen a number of big health strategies come out of the federal government, and support for these kinds of initiatives would be very important. That leads provinces to start thinking that way.

Mr. Dany Morin: That's interesting.

Later in your speech you talked about—

The Chair: If I could interrupt you, Dr. Morin, Dr. Selby wanted to make a comment.

Dr. Selby, go ahead.

Dr. Peter Selby: Thank you.

I think there are some things we can learn about implementation from south of the border as well as from Canada. There is a research methodology of implementation called implementation science. Whereas right now we're just letting it happen, where we need to be is to make it happen. I think that's where we need that alignment across society, because when that happens, things can be implemented, and there's a science behind it. There's a lot of investment in the research behind it happening in the U.S. We're looking forward to having that kind of implementation science research happening here in Canada as well. I think that might help us better understand why something that works well in one community just doesn't take off in another, and what adaptations need to be made so that people can actually adopt it.

Dr. Robyn Tamblyn: I just want to add that in the area of technology, you do need to have an industry-friendly environment for small and medium-sized businesses, since they are the ones who partner with these innovators like the Ottawa Heart Institute. These are the people who actually make it happen, but they get knocked out of the game when it comes to the spread, and I think that's where you can make a truly big difference.

Mr. Dany Morin: It's fitting that you reply to my question, because my next one is for you, and it is based on similar ground. You talked about the need for a policy framework to ensure the sharing of medical information between the different lines. At present there's a lack of coordination, and there are a lot of hurdles between provinces and the federal government and so on.

What do you think the federal government can do to improve the situation? I know the federal government has poured in a lot of money. Is the solution more money, or is it basically to play an active role as a leader?

Dr. Robyn Tamblyn: I think it's to play an active role as a leader. I think the two arms would be to foster this kind of interesting partnership that PHAC has been maintaining with the private sector. We're all in it for all sorts of reasons, and we actually have to transform how we're delivering health care. We need to create healthier communities, and in fact the private sector has a big role to play in that.

The second thing is, again just to reinforce it, that you can't beat up these small, innovative companies and tell them they're not going to get a place in health care, and that's what happening right now.

The Chair: Thank you very much.

I must say this is a great conversation. And based on this innovative technology report we're doing right now, this is part of that solution. So it's exciting to hear what you're saying today.

Mr. Brown, you're next.

Mr. Patrick Brown (Barrie, CPC): Thank you, Madam Chair.

Thanks for all the commentary today.

We talked a lot about cutting-edge technology, but I know one basic thing in the health care system that's always frustrating is the slow pace of transition to digital records, electronic records. I know we've invested a lot federally into that. I find it perplexing that if I go to the MTO with my licence, they know if I've gotten a traffic ticket; they know everything very accurately. Yet, in the health care system, something so fundamental, there is no data; there is no registry of our health. I think most people deal with several doctors in different manners based on their own health needs, so if there's ever a need to have a central registry or a central repository of information, it would require electronic health records.

How come we've put so much money in and there's not really any evidence of success? Do you have any comments on that?

● (1700)

The Chair: Dr. Selby, and then Ms. Tamblyn.

Dr. Peter Selby: I've been perplexed as well. When I practised in India, the poorest of poor people kept all of their own health records and brought them to the visit. Then I came to this country, where most people are educated, have the highest level of education in the world, but have no access to their health information. My observation has been that the end-user, the stakeholder, the individual, the families who have the most interest in making sure this is happening, have no control over it. It's left to us as physicians and health care providers, and the lack of agreement has left us with this situation. So it's not about the money; it's about the voices and the stakeholders. I think the stakeholder, the patient, and the families around them, is what hasn't been able to drive this process. That, I think, is one issue that really gets in the way of us having this good system. That's just my observation.

The Chair: Ms. Tamblyn.

Dr. Robyn Tamblyn: I think there are a couple of things we've learned from other countries. Number one is, I'm not sure we've had what you might call the magic carrots. The U.K. system was built on the fact that there was terrible inefficiency in having to refill prescriptions every 30 days. They started off by getting every U.K. physician on board—making it so it was easy to renew prescriptions online through a computerized system. It saves them a heck of a lot of time. We didn't really have those kinds of magic carrots in our plan, so that the end-user said “we need this, we need this”, and they pushed the envelope on adoption.

Another approach was used in New Zealand, and they were being pushed by the end-users to make it happen. We didn't quite take that approach. We didn't invest in the end-user. I think Canada is now doing that. Canada Health Infoway is now doing that, investing in the end-user to hook up to what will be very interesting pooled data on drugs and labs and imaging. These are the kinds of things that you don't want to repeat over and over again. They're critical for health care, and they will drive efficiency if we get people hooked up.

We have neglected the fact that in other systems, particularly the U.S., the consumers drove the system. They drove it by saying, “I want to have access to my labs”, and there are certain other things they want to have. They want to be able to book appointments online. They want to be able to do these kinds of things. If we were to go that route—we can steer the ship in a slightly different direction and get it going on that route—it would drive demand in a big way and empower consumers. We really should go down that pathway.

Mr. Patrick Brown: If a phone company can tell you what phone call you made a year ago at four in the afternoon, to what city and what number, there really has to be a means to do this.

I have another question within the federal jurisdiction; it's on the regulation of medical devices. We've heard testimony on both sides that we're slower than we should be in Canada. We had one witness who said it was actually very good. What are your comments on what can be done to make the system more efficient?

Dr. Robyn Tamblyn: There is an interesting model that's been developed in the Ontario health technology assessment, and I think that would be very well worth looking at as a model for Canada. It provides much more upstream.... If this is your innovation, these are the kinds of things you need to collect, this is the data you need to collect in order to get into the health care system. People hate developing the technology, and all of a sudden you're at a brick wall that says you're not getting into the health care system because you haven't shown it's more cost-effective than the devices we already have. You need to go upstream, educate the industry, as it's moving in, and provide these pre-assessments so you have things like an environmental scan. You're actually working in partnership with the industry. That's the Ontario model, and they love it. I think we need to set up a framework. What is it going to take in order for new technology to be adopted?

The Chair: Thank you so much, Ms. Tamblyn.

I've allowed you to go over time, but I want to make sure everyone gets their very important questions in. Your answers are extremely good and very helpful to us. I'm not trying to cut you off or be rude. I just need to be balanced with everybody on the committee.

We'll now go to Mr. Kellway.

● (1705)

Mr. Matthew Kellway (Beaches—East York, NDP): Thank you, Madam Chair.

Thanks, folks, for coming today.

I'm a bit skeptical, frankly, about technology such as CANRISK, for example, and the notion of these health-related apps that people are supposed to use and that are supposed to be effective. The basis for my skepticism, I think, is that I thought the path you were taking, Dr. Selby, when you were talking about all of us, when we get to whatever age we're at.... Maybe it's because I'm one of those 45-year-olds who's about to have a heart attack, I don't know, but at some point in time—

Voices: Oh, oh!

Mr. Matthew Kellway: We've been conditioned throughout our lives. We have all sorts of experience. We've developed perhaps modifiable but deeply ingrained habits. They may even cluster, and we're a part of communities where we have these habits, as you describe.

I guess the question is, what's the science behind these apps and CANRISK that suggests a guy like me is going to walk into a pharmacy and submit myself to some kind of test, or that someday I'm going to go online and say I wonder how close I am to that heart attack, or whatever? I just don't see that, frankly.

The Chair: Who would like to answer that?

A voice: All of us—

Voices: Oh, oh!

Ms. Heather Sherrard: Let me start.

There are tools. We call them “readiness to learn”. People will engage in changing their behaviour when they're ready to do it. There are four different ranges that you get, and you have to help people move through those things. You will not move until you're ready, and there is a whole science behind how you do that.

In our prevention and rehab program, we test people. We know where they're at. Sometimes we just say this: “You know what? You're going to have a problem in five years.” That's the best you can do. Sometimes they're much more ready. There are many behavioural change models that are used in different settings, and they work when they're done properly and you understand where people are. It's possible to help people change.

Ms. Kim Elmslie: Just very quickly on CANRISK, we spent about two years working with our provincial and territorial counterparts in communities, testing the validity of the tool so that we weren't putting anything out there before we were sure it would be a benefit to those clients using it.

But remember, these are only tools and, in the case of CANRISK, one tool. Really, we are talking about complex changes in behaviour that are always going to require many different types of approaches for different people. One won't work for everyone.

Mr. Matthew Kellway: One of the things that got me thinking about this was something on the news recently about all the science that goes into the food we eat. It was suggesting we're really being victimized here, that somebody's tugging at some biological things here.

It's leaving us without a lot of choice, in a sense, about what it is that we're going to eat, what we're going to reach for when we're hungry, and there's a science behind creating these habits and addictions in us. Yet the response is to offer an app for someone to go to. It's a bit like the knife at the gunfight: this isn't going to work. That's my sense of it.

Dr. Robyn Tamblyn: That question is so big that we couldn't—

The Chair: This actually means I have to pass on Mr. Kellway's cookies—

Voices: Oh, oh!

Mr. Matthew Kellway: I had my cookie, but no fruit today.

The Chair: That's more information than I needed, Mr. Kellway.

I'll give you extra time: one minute and 30 seconds. Go ahead.

Dr. Robyn Tamblyn: On that one part of your question, the knife and the gun, I'm going to let Peter talk about that, but I do want to talk about the science.

What was recognized in this area, which is not uncommon with many areas as new technologies are developing, is that the science was scant relative to the promise. Most of the science, 80% of the science, comes out of five centres in the United States.

What's going on in those five centres in the United States? They have the magic triad. They have researchers linked with clinical people who are linked with a large test bed where they can actually try this out in big populations. We don't have that. We think we should go down that pathway. Other countries in the world think they need to go down that pathway.

● (1710)

Dr. Peter Selby: Do you want me to answer?

The Chair: Yes, please.

Dr. Peter Selby: I think you're right: it is a knife at a gunfight, but I think it's within the context. At the bottom line, for behaviour change to occur, we have to change hearts and minds. With that comes the change in skill to counteract. We all like to believe that we are the masters of our own domain and we make decisions, but that's the issue: the decision-making does get clouded by all of these other things that happen. Life happens.

You're right, the app in and of itself is not going to do it. There's nothing magical about sitting in front of a computer or playing with an app that's going to make you do it. But if it can touch your heart, it can give you some knowledge, and it can help you keep track of it; that's the science that is shown to make a difference.

The Chair: Thank you.

Now we'll go to Ms. Block.

Mrs. Kelly Block (Saskatoon—Rosetown—Biggar, CPC): Thank you very much, Madam Chair.

I join my colleagues in welcoming you here today.

I have a lot of questions. Usually when we're at the end of the questioning we've run out of questions because everyone has asked them, but your answers have served to create more questions.

Ms. Elmslie, you said at the beginning of your presentation that three out of five Canadians today live with one or more chronic diseases and that eight out of ten Canadians have at least one risk factor. You talked about the impact on the economy as a result of that. Then you said that with such a profound impact on the quality of life for Canadians, it is important that we make use of innovative technology to support the prevention of chronic diseases.

I would like you to tell us how PHAC's Centre for Chronic Disease Prevention and Control program is continuing to benefit Canadians who are suffering from chronic disease, but also whether there is anything you're doing in terms of prevention. I'm sure there is.

I'm sure there's a whole lot you're doing, but could you share that with us?

Ms. Kim Elmslie: I'd be glad to, and I'll keep this brief.

As the federal public health agency, a big part of our role is surveillance of chronic disease. That means we're working across the country with the provinces and territories, with StatsCan, and CIHI, the Canadian Institute for Health Information, to provide good information on how chronic disease rates are changing in our country and where there are pockets of problems.

The reason we do surveillance is not so that we can talk about a lot of statistics; it's about targeting interventions where they can do the most good. It's also about helping our stakeholders—because we work with partners all the time—to know where their interventions can be best placed to make a difference. That's a foundation of public health, as you know, and that's one of the things we do at the agency and the centre.

The other really important thing is around identifying best practices and working with our partners to scale those up. That's an important federal role. You can imagine that if every jurisdiction across the country were trying to identify best practices there would be so much duplication; everybody would be doing the same thing. We have one place where we can devote our expertise and resources to pulling together what is known about what works in chronic disease prevention.

That's not an easy question to answer. That comes back to what colleagues have said about intervention science and research, and investing in that. That's the only way we're ever really going to know what works in communities. We're all different, and our communities are all different, in chronic disease prevention.

Those are the two areas where, as a federal agency, we're adding value to prevention. We're identifying best practices and working with partners to scale those up in a way that prevents us from being inefficient in the use of our resources to do the right things that are working to prevent chronic disease for Canadians.

Mrs. Kelly Block: Thank you.

One thing this study has done is to highlight not only the opportunities that are out there when it comes to technological innovation, but also the challenges we face, perhaps on a daily basis, when it comes to innovation in the health care system.

I want to ask Dr. Tamblyn a question.

You talked about the need to build capacity. You talked about having a high-functioning alignment between researchers, industry, and providers...or maybe I didn't hear that correctly. You also talked about what they are doing in Israel.

In the time you have, perhaps you want to highlight a couple of things you saw in Israel that you think should be transported to Canada, and also the barriers that are keeping us from being able to get to where Israel is.

● (1715)

Dr. Robyn Tamblyn: It would be hard to summarize this in as short a time as we need to make it, but I want to highlight two or three things.

One thing that's key is the collaboration at the intersectoral interfaces, where the innovation is. You need the provider and consumer, and they're going to come out with the best ideas and where the inefficiencies are.

The next thing you need are the researchers. You don't know whether the stupid thing works or not. You need the person who's going to co-innovate with you: the industry. You need to partner these three folks together so that you get the right answer. You do the co-innovation together, and you actually evaluate it, initially on a small scale, and then if it looks promising, on a bigger scale. You need those three things to come together.

When you have something really cool and successful and you've already shown it's cost-effective, then you say “You need to push it out in whatever policy-relevant approach you can”.

I've talked about procurement. It isn't Canada first; it's, let's say, a multinational first or another company that is lower risk, because this is a baby Canadian company kind of thing. I think that needs to be addressed. It needs to be the right thing to do, to actually adopt Canadian innovation that works. We'll make sure the science is good behind it, and that's going to be better than even what an international could do at this point.

The Chair: Thank you so much.

Dr. Robyn Tamblyn: Oh, and capitalize on our space agency, yes.

The Chair: Thank you, Doctor.

Thank you, Ms. Block. It's a very good question.

Dr. Sellah.

[*Translation*]

Mrs. Djaouida Sellah: Thank you, Madam Chair.

We know that certain patients, who have a physical disability in addition to a chronic disease and even some other diseases, can suffer from a loss of dexterity or of their cognitive faculties owing to pain or other factors. In what way does technological innovation change the approaches used to manage chronic diseases in the health care system for those kinds of patients? In addition, do the innovative technologies designed to manage chronic diseases often present physical or cognitive obstacles for patients? We would gladly hear any examples you may have regarding those technologies.

I have another question for you. Could you give us an example of a concept or change that was created to facilitate the use of an application for patients with a specific disability?

[*English*]

The Chair: Who'd like to take that?

Dr. Selby.

Dr. Peter Selby: Currently, we're exploring a very interesting innovation. The intervention is done using the video camera, but it's all virtual, and it guides the person through the whole assessment. The screen is very simple. It's not a lot of big check boxes, so it helps the person who might have a disability to go at their own pace and fill it up online, either in the presence of a health care practitioner or not.

This is very interesting for me particularly because it speaks to the issues of people with pain disorders, which are chronic. It also helps them do that and be able to do this. We can do this remotely as well as in the clinic.

That's one example with people who might have head injuries and some of these cognitive problems. You can slow it down without necessarily slowing down the clinician, who is often very pressed for time, very pressed to get things done. It becomes an enabler for helping that kind of assessment happen.

The good thing about those kinds of systems is at the back end you can start collecting those data and real-time decision-making is possible to see what kinds of trends.... For example, in my hospital we just did a quick survey, and we found that 30% of people coming in for addiction treatment have a history of a head injury. If you're trying to get that population into care, and you talk to them in high language and expect them to grab concepts, they're not going to do well.

So technology can help us. We need these systems, not only at the interface, but also at the back end, to rapidly tell us what's going on.

● (1720)

The Chair: Ms. Sherrard, do you have one?

Ms. Heather Sherrard: I was just going to mention that there are two pieces. One is technology that helps you look after those patients. The other one is to make sure whatever technology you use does not become a barrier. Part of it is looking at the technology you're using and making sure that people can actually work it. For example, when we did our initial look at the equipment, there was some equipment that people with arthritis couldn't actually use. They didn't have the dexterity to use it and it was too painful.

So that's the other part I would add: as we buy technology and we implement it, you have to go through the disability, who can use it, and how it works. For example, in our calling systems, we can change the pace of the question for the people who have a bit of dementia. We slow the question down; we give them more time to answer. That's the other half of trying to make the technology work.

The Chair: Very good. Thank you so much.

Mr. Weston, welcome to our health committee today. I'm sure you'll find it extremely interesting.

Mr. Rodney Weston (Saint John, CPC): Thank you very much.

Actually, Madam Chair, I have found it very interesting. I'm not a regular member of the health committee, but I will say that when you talked about the app, you probably noticed I went online. I downloaded your app and I went through the series of questions you ask, and I found that I'm at moderate risk. Now I'm very concerned.

Ms. Kim Elmslie: You know what to change.

Mr. Rodney Weston: That's where I was going with that, actually. It provided advice on what I should do to reduce my risk.

Mr. Kellway, you made a comment about showing up with a knife at a gunfight. I guess it's better to show up with a weapon of some sort, because then at least you stand a chance of drawing some blood.

Knowing that this is an audience you are trying to reach out to, and knowing that information is key to getting people to the position you talked about, Ms. Sherrard, of being ready to make the necessary changes, what other technologies are you looking at to move that thought process forward, to get people into that position?

Dr. Selby, you talked about people driving to the gym. Just get people thinking about how ironic it is that we actually drive to the gym, get on a treadmill, get back in the car, and drive back home. It's to get people thinking about these factors that can lower our risk levels, and I am wondering if you have something else.

I was thinking about the tools we had before. All too often what we had in the past was probably a pamphlet at the doctor's office to read while we were sitting in the waiting room or something of that nature. This is something more innovative. It gets people moving to where we are today with technology, people of my age who use an iPad or whatever, and my parents. I jokingly talked about my mom and dad. On the weekend, I helped my mom try to do something on her computer, and that's weird because I'm not technologically advanced. So many people have gone in that direction. Elderly people are intrigued now as well.

Do you have any thoughts or ideas on how to leverage that tool?

Ms. Kim Elmslie: We started out with pharmacies and the pharmacists because they were ready and they wanted to join up with us. They felt their role in the community would put them in a good place to help clients understand their risk. Now we're starting to talk to other parts of the private sector. We want to tell them that we have this tool, and find out how we can leverage people in workplaces, where it would be very easy. It doesn't take long to fill out that risk assessment and get your score, but that is only one part of what we need to be doing.

Working with partners, we're trying to create a change in the social norm regarding what it means to take control of your health and what it means to do things that support healthier choices in communities. There are many researchers and many organizations and communities working on things that use technology, but also very basic things, like how to change the built environment so that you allow people to walk more. You do the simple things. It doesn't have to be high tech and it doesn't have to be complex, but some of these technological innovations, as part of a bigger package, become very compelling tools for Canadians to use.

We've taken the first baby step with CANRISK. Now we think we have a platform on which we can start connecting up those other sectors that want to work with us on health. The Heart and Stroke Foundation's TV ad tells us that the last 10 years are spent in poor health. The Heart and Stroke Foundation is one of our key partners, and they are sending out a message to Canadians that is very compelling. That allows us with our tools to hook onto that message and take Canadians to the next step of understanding one's risk, understanding how to prevent, understanding what can be done for one's family, in our workplaces, in our schools, in our communities. It is putting the pieces of the puzzle together that moves us as a society.

● (1725)

Mr. Rodney Weston: Do you use Twitter?

Ms. Kim Elmslie: I've just started using Twitter.

The Chair: Thank you, Mr. Weston.

I thank the committee for generously giving me a slot so that I can ask questions.

Dr. Tamblyn, you have talked about research, the consumer, and industry. I'm going to direct this question to you, if I may. I'm very interested in what you had to say about how we need to go forward in terms of developing the research and about the practicalities of modifying the health care delivery in such a way that we can reach more people faster, so that people can be empowered, basically, to help themselves. That's what we're doing.

I was wondering if in your research you have coordinated or collaborated with other countries, such as Israel and Sweden. I've had quite a bit of dialogue from those two countries recently, and smatterings of some of the things you've said today have had that kind of delivery in those countries. Could you elaborate a bit on that?

Dr. Robyn Tamblyn: Yes. At the moment, we've assembled an international advisory panel made up of industry funders, consumers, scientists, and clinicians to help us decide how we should move this whole agenda forward in Canada in regard to learning from the lessons of others and actually being able to benefit from innovations.

For example, there are some very interesting innovations that have come out of Israel. We should try them out here in Canada and start doing this bigger exchange. I think it probably will amplify and accelerate the adoption of the coolest things on the planet, things that are really going to make a change. With that, we've involved the European Union—

The Chair: I'm so sorry, Doctor. I've just been told that the bells are ringing. I'm obligated now to come to a close. I had more questions.

I would like to thank all of you so very much for coming today and contributing to the innovation study we're doing.

Committee members, thank you as well.

The meeting is adjourned.