HEALTH AND COMMUNITY SERVICES COMMITTEE

Members present:

Mr TJ Ruthenberg MP (Chair)
Mrs JR Miller MP (Deputy Chair)
Ms RM Bates MP
Dr AR Douglas MP
Mr JD Hathaway MP
Mr JM Krause MP
Mr DE Shuttleworth MP

Staff present:

Ms S Cawcutt (Research Director)
Ms L Archinal (Principal Research Officer)

PUBLIC HEARING—INQUIRY INTO TELEHEALTH SERVICES IN QUEENSLAND

TRANSCRIPT OF PROCEEDINGS

FRIDAY, 9 MAY 2014

Brisbane

FRIDAY, 9 MAY 2014

Committee met at 9.02 am

BROWN, Dr Ed, Chief Executive Officer, Ontario Telehealth Network (videoconference)

DUGGAN, Mr Scott, Manager, Engineering and Innovation, Ontario Telehealth Network

WAITE, Ms Karen, Senior Telemedicine Consultant, Ontario Telehealth Network

WILLIAM, Dr Rob, Chief Medical Officer, Ontario Telehealth Network

CHAIR: Good morning and welcome. I declare open the Health and Community Services Committee public hearing for its inquiry into telehealth services in Queensland. My name is Trevor Ruthenberg. I am the chair of the committee and the member for Kallangur. With me is Mrs Jo-Ann Miller MP, the member for Bundamba, who is the deputy chair; Ms Ros Bates MP, the member for Mudgeeraba; Dr Alex Douglas, who is not with us at this time; Mr Jon Krause, who will be turning up shortly; Mr Dale Shuttleworth MP, the member for Ferny Grove; and Mr John Hathaway MP, the member for Townsville.

We will hear today from witnesses from OTN, the Ontario Telehealth Network. I welcome our witnesses. Dr Ed Brown, CEO of OTN, is with us by videoconference. Welcome, Dr Brown. Also with us is Ms Karen Waite, Senior Telemedicine Consultant; Dr Rob Williams, Chief Medical Officer; and Mr Scott Duggan, Manager, Engineering and Innovation. Witnesses are not required to give evidence under oath, but I remind you that misleading the committee is a serious offence. I remind those present that these proceedings are similar to parliament and are subject to the Legislative Assembly's standing rules and orders. Under the standing orders members of the public may be admitted to or excluded from the hearing at the discretion of the committee. Mobile phones or other electronic devices should now be turned off or switched to silent.

Hansard is making a transcript of the proceedings. The committee intends to publish the transcript of today's proceedings unless there is good reason not to. The proceedings today are also being broadcast live on the parliament's website.

We have allowed up to two hours for the hearing. Dr Brown will make a presentation for about an hour, after which we will take a five-minute break. Then we will have some time for questions from the committee to Dr Brown and his colleagues who are here with us. Dr Brown, I invite you to start your presentation.

Dr Brown: Great. Thank you so much. I trust everybody can hear me well. First of all, I would like to thank the committee for inviting us. It is a great honour to be here today. Unfortunately, I could not be there, but through this miracle of technology we are still able to hold this event and, of course, there are three of my colleagues who are sitting around the table with you who certainly will support me, particularly through the question period.

I am just going to start the presentation. I just want to make sure that you can see this. Can you see the presentation?

CHAIR: Yes, thank you. Sorry, Dr Brown, just for the purposes of Hansard Dr Douglas has just joined us.

Dr DOUGLAS: Apologies. I am sorry I was late. I was upstairs.

Dr Brown: Great. Thank you. Just so that you are aware, these are my personal views. We receive significant funding from the government of Ontario, but these are the views of myself and OTN rather than of the government itself.

What I would like to cover today is starting out by just comparing what we do in Canada with Australia, having a look at our health system and then digging right into OTN—what we do in terms of telemedicine, what our service offerings are, our role as a service provider, some of the key

partners that we work with, some of the applications that we use and our short-term road map, our reason for doing telemedicine in the province. Hopefully, this will give you a pretty good feel for the environment we are in, a way to compare that to the environment of Queensland and a look at what we have done to be successful and some of the challenges as well.

This is Canada and it is a large country. It stretches right up to the North Pole. In fact, the magnetic North Pole is on the land mass of Canada. That greyish area is the province that I am in right now, the province of Ontario. I am just going to beam in there a little closer. Ontario is big. It is certainly not as big as Queensland. It is about a one million square kilometres versus Queensland which, I think, is 1.7 million. But it has a really vast rural area with a sparse population. Most of the people in Ontario live towards the southern end. There are about 13½ million people in the province and more than 12 million of them live within about 100 kilometres of the US border to the south. The rest is quite sparsely populated and often underserved with health professionals. If you look at this map closely—I do not know if you can see the detail—there is one road in the north and that is the last road in the north. So everything beyond there actually are what we call fly-in communities, mostly Aboriginal communities, that connect with either ice roads in the winter or they fly in. So there are some very remote populations in the province.

I think one of the interesting parts of this is that Canada is very similar to Australia in a lot of ways. Ontario is very similar to Queensland—the size of the whole country, our colonial history is pretty similar, we are separated by a common language as well. I think that, certainly in my visits to Australia, I felt very much that we had a shared system of values, a shared culture. I think both countries have an entrepreneurial spirit. Both are quite resource based—Canada increasingly so as our manufacturing sector is currently declining—and I think both are competitive societies but also with a great deal of social compassion and safety nets for the underserved among us. Fairness and justice I think is also a key characteristic.

It is the same for health care. I think there is a whole lot of similarities between the two countries. We have challenges with sparse rural populations that are underserved. The people in those communities usually have, on average, a poorer health status than folks in urban centres and that is a big challenge for health systems. Besides the challenge of distance, we also have challenges of weather—ours perhaps on the cold side; yours on the hot side, but certainly an enormous burden of travel for those who need to move to receive health care.

If you look at some of the numbers, there is a comparison of the size. It is interesting that Australia has a larger GDP per capita than Canada—that is $67,000 per person, which is our $52,000—but Canada spends a bit more on health care, about $1,900 per capita, about 13 per cent more than Australia. If you cone that down to look at the Queensland-Ontario comparison, Queensland is about 70 per cent larger in land mass. Ontario has a larger population—13½ million versus about 4.6 million. But, again, Queensland has a higher GDP per capita of $60,000 compared to Ontario's $49,000, although healthcare spending on the operating side is very similar—at least, using the 2010 figures—to Ontario. Actually, this current year it is probably closer to Can$48 billion that is the cost of publicly funded health care in Ontario. We know that Queensland is making a significant investment in telemedicine. I do not know the exact amount, but we know that there is at least $30.4 million committed over four years. The Ontario Telemedicine Network, our base funding is $22.5 million per annum. That is just to give you an idea of the scope of our network.

Just a little background on our healthcare system to give you some of the contrasts and similarities: there is federal legislation, most recently in updated 1984, called the Canada Health Act. That really sets out a very simple set of five principles in terms of health care's philosophy and requirements in Canada. However, the delivery of health care is very much a provincial responsibility. The federal government does have responsibility for delivering care on Aboriginal reserves, but otherwise it is up to the provinces to deliver. The federal government provides transfer payments to the provinces. At the moment they have attached very few strings to that payment. So the provinces generally use that to support their general expenses in health care.

Most of the provinces are divided up into some kind of regional health authority. Here in Ontario we have something called LHINs—local health integration networks. We have divided the province into 14 of those and they have some level of accountability for care in each of their LHINs, usually for hospitals and community care, but most often not for the physician services that are provided in their regions.

If you drill down a bit, about 70 per cent of all health care expenditures in Ontario are funded through the public system—through the Ontario government. About 30 per cent is private. One of the things that I think is probably unique is the fact that 100 per cent of physician fees, 100 per cent of hospital services for essential services, are actually covered by the province through a single

payer system. So unlike Australia, where there is a federal jurisdiction and there is private pay for some physicians in hospitals, we simply do not have that in Ontario. I think that might be unique. I have not seen that in any other country—at least in my travels. There is no coverage for dentistry except for specific services. So people pay that out of their own pocket or through their self-insurance. There is drug coverage for low-income populations and seniors. There is mixed coverage of allied health professionals and, again, for Aboriginal community and home services. So I think that gives you a flavour for the role of our provincial government in delivering health care.

This is just a breakdown. Probably like most developed countries, the three big ones are hospitals, physicians and prescription drugs. Those are the lion's share of the costs across the healthcare system. I will just leave this graph for your perusal.

An important part of the reason that something like OTN is important is this slide. There are many organisations—at least 8,000 hospitals and non-governmental organisations—funded at various levels from our provincial payer, but most of those have their own governance structures, their own management structures and act more or less independently, usually with agreements with their local health integration network or with government. It is the same for physicians. Many physicians—in fact the majority—are fee for service. Many of them own their own practices, essentially operating as small-business people, although there is an increasing number of alternative payment programs for specialists and primary care physicians. But essentially, mostly of these providers really are running their own businesses. That is important for OTN, because these are our target customers, if you will, and we need to add value to them. They make independent decisions. They can decide whether to be a member of a network like OTN—whether that is appropriate for their business environment, their healthcare delivery environment. So we need to make sure that we provide a service that meets their needs.

In terms of licensure, we have a college of physicians and surgeons that maintains jurisdiction over physicians. There are, I believe, 24 regulated health professional groups in Ontario. The standard for telemedicine really is the same as in person. There was a policy that the CPSO put out some years back around telemedicine. I know that they are revising it right now. Dr Williams in the room with you sits on the committee and can probably update us best on where that is currently sitting. Essentially the concepts are that patients should receive care using the most appropriate vehicles for providing care, you need to meet the standards of care just as you would in person, the appropriate resources have to be there to manage events that happen at the patient end and, of course, we do have privacy legislation, we have something called the Personal Health Information Protection Act (PIHIPA), which is around personal health information management that physicians certainly have to obey.

In terms of hospital credentialing, this is a problem in many jurisdictions. The issue here of course is whether physicians who are seeing a patient in a remote hospital need to be credentialed at that remote hospital and, of course, that has the potential to hamper telemedicine. In Ontario we have quite an aged act called the Public Hospitals Act which has not been updated in many years that really spells out the requirements for credentialing. It really pre-dates the advent of virtual health care so it is really silent on whether credentialing is required or not. So really there has been more of a custom perhaps developed through most of Ontario where hospitals will accept physicians who are credentialed at other hospitals and do not necessarily have to be credentialed at their hospital.

Finally, physician payment. In Canada, as I mentioned, most physicians bill fee-for-service. There are 10 provinces and three territories. Of those, 11 have some level of billing for telemedicine available through the provincial plan. Eight of those actually have premiums for doing certain and specific telemedicine services but I would have to say this is spotty. There are different services, different regulations and no real consistency across the country in terms of what is billable and what is not.

That is the overview of our healthcare system. Hopefully that will give you a bit of context as to how OTN actually fits into the puzzle. We are actually an independent not-for-profit corporation. We were established, in partnership with the government of Ontario, in 2006. We actually had three regional networks that all came together in a merger to create this single and provincial network. We have a number of very important delivery partners who we work with to actually deliver the service. I am going to drill down a bit later on exactly what they do, but suffice it to say that these are really a fabric of organisations that work together to ensure that the care is seamless and to ensure that resources are not duplicated across the healthcare system. We operate under a membership model and really that is about a collaboration agreement. There are now over 1,350 healthcare and education organisations that have signed that collaboration agreement with OTN.

In terms of our operations, we have about 230 employees and we have five offices. We have about 25 home offices. Our employees who work directly with health providers and health organisations are really scattered around the province in the different geographic areas and they can maintain those relationships effectively. Our governance is an independent board of directors. Of course they manage me so I would definitely tell you that they are 13 sage individuals. They include some of the leading characters or folks here in Ontario, we have a LHIN CEO, one of the people who runs those regional areas, we have a number of hospital CEOs and users who are health providers, educators and business leaders who provide advice and ongoing oversight of our organisation. The way we actually operate financially is through a transfer payment agreement with the Ministry of Health. That is approximately 80 per cent of our funding and our deliverables are updated annually. So we have a base contract with recurring funding but with deliverables that change every year. That ensures alignment with the ministry, that ensures that the ministry can check and see that we are providing the value that they expect from us as a publicly funded organisation. The other revenue that we receive is from other ministries within government, it is from premium services, it is from for-profit organisations that become members, federal grants and other sources.

Our vision is I think remarkably simple. We really see a time when telemedicine is really nothing special or essentially telemedicine is just part of healthcare providers' everyday activities where they do not have to think about it, it is very simple, it is wherever they are on their desktop, on their mobile device, and they are able to deliver optimal and efficient care either in person or using technology. So very, very simple. We also see education as being part of this, because education is really about connecting providers, it is about diffusing best practices across the healthcare system, it is about training the new generation of healthcare providers and it is about mentoring so that people can build capacity in primary care in rural areas and with allied health professionals. That is the vision.

I am going to spend a minute talking about our services and what we actually provide and give you a quick overview of what they are and really the benefits so hopefully we will be able to connect why we do these things to the actual service itself. No.1 for us is clinical videoconferencing, and we will come back to each of these, provider e-consult, which is also known as store forward telemedicine, we have an acute care service which leverages several of these technologies, we have a learning channel and for us the bold new frontier of telehomecare in the consumer environment, so bringing health care right into the homes of patients. I am going to drill down on each of these.

I am sure you are all familiar with this. We are doing it right now. We are using technology to video conference over a distance, typically a provider at one end, a patient at another end. We use devices like digital stethoscopes, hand-held exam cameras and otoscopes to provide care over a distance just as if the patient was in the office. We are doing this in virtually every specialty that is out there in terms of medical specialties and allied health is also using it to provide services. No.1 for us is mental health. Almost two-thirds of all of our activity is in the form of mental health, whether it is psychiatry, addiction counselling, child or adult. It is a very large network but certainly there are primary care uses, surgery, oncology, internal medicine and others.

In addition to the hardware based technology, we have rolled out what we call personal videoconferencing and that is software based videoconferencing. This is completely integrated into the rest of the network. The big advantage, of course, is that it is essentially free. People use their own devices: their computers, their macs, their PCs. They can download the software and they are completely integrated and linked into the rest of the provincial network. This is what the actual portal looks like when you sign in. If you are a specialist you will probably get this view and you can see that that is your day's schedule. If you click the little button there that says 'connect' you will immediately be hooked up to your patient wherever your patient happens to be in the province. We made an effort to make this as inexpensive as possible, to make it ubiquitous, to make it as simple as possible for the specialist to do their work.

Just looking at our numbers, for the last fiscal year or year just ended on 31 March we served just over 390,000 patients using this technology. That added up to 314,000 clinical events. There were 2,745 consultants who provided consulting services, and of those over 1,800 were physicians of various specialties. There were about 1,700 active sites, so physical plants out there, that were providing telemedicine, that included almost 3,300 hardware based videoconferencing systems sprinkled around the province and 1,100 personal videoconferencing users last year. We are looking to grow the personal videoconferencing quite aggressively this year. Our current business plan is looking to add about 8,000 more users to personal videoconferencing this year.

Our clinical events grew by 33 per cent last year over the previous year. That is pretty typical for us. Over the past five years that has been a standard rate for us, roughly, so we have consistent growth. This is a bit of an eye chart, I am sorry if you cannot see it, but the idea here is to give you an idea of the type and breadth of member organisations that are lined up as members using the OTN system. We have all the hospitals in the province, including the academic community and small rural hospitals. All of them are members. Most of them have been members since 2007. We had a huge effort to grow across the community. We have most of the family health teams that are members. We have a lot of professional organisations. There are over 400 mental health agencies participating. There are nursing stations in remote Aboriginal communities. All of our medical schools participate, many of the nursing schools, and the list goes on. I think this gives you a flavour for the reach of this. It touches every part of the healthcare system.

If you are a patient and you need to receive care you have to go somewhere right now to get that. When we started out in 2006 the only location for the patient to go was usually the hospital in their rural community and, of course, we have worked hard to build our spread across the rest of the community. In the last year about 80 per cent of our activity was outside the hospital in community settings. I think as time goes on, and if I am ever invited back to talk to you, I think in the future we are going to see the home as one of the major elements here as we start to migrate telemedicine directly into patients' homes as well.

When you look at videoconferencing, when you look at the geography of Ontario, avoided travel has always been our No.1 statistic that we count. If you look at last year we avoided about 260 million kilometres of patient travel because the patients used telemedicine instead of travel. To give you an idea of the scope of that, that is approximately 338 trips to the moon and back, so an enormous amount of distance. The nice thing about this is that this is also a green solution. If people had travelled instead of using telemedicine last year they would have burned about 25 million litres of fuel, about 61 million kilograms of pollutant that we avoided by using telemedicine.

One of the very important numbers for our government is the savings in patient travel in the northern part of Ontario and that is because, I believe similar to Queensland, for patients in rural areas the government subsidises their travel. Had all the patients travelled instead of using telemedicine last year it would have cost the government about Can$61 million.

If you recall, our base funding is about $22.5 million. Even with project funding and other funding this is more than twice the government's investment in OTN. We think that on this one statistic alone there is an enormous business case to invest in telemedicine, not to mention the improvement in care, improvement in access, improvement in quality that results from telemedicine.

The patients who use telemedicine are also very satisfied with it. I do not think we have ever done a survey where patients did not declare their satisfaction levels at above 90 per cent. It is a wonderful service for patients. They get to stay home. This is particularly important for patients when they are ill. They do not want to drag their families with them and have to travel. They get to bring their family in to see the doctor or to see the health professional. They save out-of-pocket money as well. It is really a very powerful patient service.

Our challenge over the years has not been the patients; they have always been ready for telemedicine. Our challenge has been organising the health providers, building adoption and organising the health system to be able to deliver this in an organised way. But certainly the patients out there really appreciate this service. That was service No. 1—our videoconferencing service.

Service No. 2 is e-consult. This is very different. This is a service that is not live; it is asynchronous. People collect data and send it asynchronously to a specialist for review. The biggest service for us is dermatology. You can imagine a primary care provider, a nurse or a physician, encountering a patient with a rash or mole that they cannot diagnose. They take pictures of that, they add additional history around the patient and they send that to a dermatologist.

We have been doing that for a number of years. Right now we have 2,300 family physicians using this service. It has really created a remarkable improvement in access. Right now it is under five days for them to get a response back from the dermatologist. They send the data to the dermatologist and they get a response back in under five days. Then the family physician or nurse follows up directly with the patient to implement the treatment plan. The patient never actually has to meet the dermatologist.

We are using this in other specialities as well. It is important for teleophthalmology, especially with the number of diabetic patients that we have. There are almost a million type 2 diabetics in Ontario. An important part of their treatment is retinal screening. We are looking to be able to take those retinal pictures in rural areas. Here about 300,000 of those diabetics are not getting appropriate screening so we are looking to target them.

We are expanding this in a whole other set of areas as well. We are doing store and forward telepsychiatry. We are doing store and forward home care. We are looking to really extend this to virtually all specialties over the next year or two, in collaboration with other organisations in Ontario.

In terms of channel No. 3, acute care, we have had a telestroke service for more than a decade now. What that is really about is providing emergency neurologist advice to rural hospitals that do not have a stroke specialist. You are probably aware that if you are a patient and you have a stroke if you can get to the emergency department within three or four hours they have an opportunity of giving you a clot-busting drug which can actually reverse your stroke. The problem is that it is quite dangerous to give that drug to the wrong patient. So you really need that expert stroke neurologist to look at the CT scan and look at the patient.

We have a 24/7 on-call system that does that. Last year there were about 750 activations. About 30 per cent of that population got the drug. The literature says that for every nine patients that get that drug one of them has avoided death or very severe morbidity. This is truly a program that is saving lives across the province.

We also have an urgent sign language reading service for folks who are unable to hear so that they can have interpretation in emergency departments. There is a provincial teleburn program. There are a number of regional programs that are growing in the specialties on the slide.

Crisis telepsychiatry is a big program. There is a child and adolescent psychiatry program in one of our LHINS which has really dramatically improved access to psychiatrists for children, and particularly suicidal children. In the past, if a child came to an emergency department in a small rural area and they were suicidal there would often be no psychiatrist available at that time. The child would be sent home awaiting an appointment. It may take weeks or longer to get that appointment. You can imagine how terrifying that is for the family waiting for that appointment to happen. Now, with telemedicine those children typically get their appointment within a day or two of their presentation to an emergency department.

There is a new virtual critical care program being launched in north eastern Ontario. There is a teletrauma program where sophisticated trauma centres provide their expertise to smaller rural hospitals. Vascular surgery emergencies recently started. These are growing programs. Other than telestroke, they are not quite as mature. But there is certainly a lot of enthusiasm and growth in a lot of different areas.

Channel 4 is really around education and meetings. It is the same technology that we are using today. Usually they are multipoint videoconferences. Add to that webcasting which enables you to broadcast events like this over the internet for people who are not videoconferencing. Add that to webconferencing which enables document sharing. That really is the environment for education.

This is a remarkably active service for us. Last year there were over 21,000 education events and over 27,000 meetings using this technology around the province. If you do the math on that, that means that there are about 25 events on average every hour of every business day of the year that are being organised. It is a very busy and active service.

There are a lot of people who when they provide education events actually want to make them public. So they want to allow the entire health provider community to access their events. If they want to make them public they simply check a box when they are scheduling it and it shows up in this learning centre. This is an app available at learning.otn.ca. It tells you what events are available. You can search for events in your specialty. If you are an oncologist you can search the key word ‘oncology’. When you click on that it tells you whether you can sign up. There is a little description of the event. Often the presentation they are going to use is there. It really allows learning to spread in a viral fashion.

A lot of folks when delivering education record their presentation as well. If they record an event and make it publicly available then it shows up on this public website or webcasting centre. There are thousands of different recorded events here by august professors and other educators that are available to anybody who chooses to come to the website.

This year we launched a new concept. This particular web page is called the Ontario Geriatrics Learning Centre. We did this as a result of a government strategy. They created a plan called the seniors plan. The gentleman whose picture you see at the top left was the author of that plan. One of their recommendations—recommendation 134 actually—was to establish an interprofessional education website. That is what this is. This is our first iteration of that website. This is led by a steering committee of interprofessional leaders. The material is embedded. We are using this to build really a social network of education to attract health providers to learn more about care for seniors.

It has a lot of excellent content. Just by coincidence you may notice that the very first event includes a gentleman named Professor Len Gray who did a presentation for us. He is actually a professor in Brisbane at the University of Queensland's Centre for Online Health. There certainly are some very internationally august and famous individuals who are helping us with our work here.

Finally, this is the last channel. This is very exciting for me. Telehomecare is really a very important part of our strategy. There are a number of ways to do this. We are actually doing it in a very specific way. This is a combination of remote monitoring and coaching for people with significant chronic disease.

Right now our target audience are people with congestive heart failure and chronic lung disease. That makes up two out of the three top reasons for hospital admissions in Ontario. Usually they are at the top of the list in most developed countries. We are targeting those people with an intervention that includes the technology that you see on the slide. So there is a touch screen tablet and a number of medical devices. They use the touch screen tablet to answer questions every day. With the devices they can check their blood pressure, their weight, their pulse oxygen levels and other biometric areas.

Really the intent of this program is to use that data to coach these patients. They are paired up with a nurse. It is normally a six-month program. The nurse actually coaches patients to understand and self-manage their conditions. For example, patients may have fish and chips with a great deal of salt. They discover that they are collecting fluid, they are gaining weight and their pulse oxygen is dropping. The nurse will use that as a teaching moment to help that patient understand that their behaviours are impacting their health. If they collect enough fluid, if they have heart failure that is going to lead to acute pulmonary oedema, an ambulance ride, possibly intubation and ventilation in the ICU.

These patients really learn to manage their own conditions. It sounds pretty straightforward, but this is a remarkably powerful intervention in our experience. We started with a pilot project in 2008. At that time we looked at 813 patients. We actually reduced their hospitalisation rate by over 60 per cent. We reduced their emergency department visit rate by over 70 per cent.

Since then we have been retooling to roll this out more aggressively and expand this across the province. This is early data from our expansion with the first hospital that has been keeping track. This is really a before and after slide. This hospital found that of its first 130 patients they actually had a 71 per cent reduction in hospitalisations. This is a very dramatic change.

These numbers are somewhat consistent with what you find in the international experience. If you travel around the world you will see numbers that do demonstrate the effectiveness of this intervention. We think it has a very powerful future.

What we are doing right now is rolling this out to more patients. We are in five of the 14 LHINS. We have three more LHINS coming live by September, so that is more than half the province. We do this at no charge to patients who meet the eligibility criteria. That is because the cost of this program is outweighed by the cost avoidance in terms of hospital care.

We are also working with home video pilots right now—so adding videoconferencing to appropriate patients. Essentially what we are doing there is really what we call sandboxing—that is, looking at different applications with different providers, looking for the benefits and looking at our best recommendations as to how that should grow in the future. We are also looking at adding other chronic conditions to the mix over the coming years. This year we are looking at post hospital discharges as the priority—post surgery, follow-up in the home as well as palliative care.

That is really our service mix. Hopefully that gives you an idea of what we do here every day and really what some of the benefits are to the health system. OTN plays a role which is often very different from other telemedicine providers. At least in Canada, in every other province the telemedicine services are usually run from within government. Being an independent, not-for-profit is a fairly unique role even within Canada.

What we do is really three major things. I think that No. 1 is probably the most important part of this. What we really created is a governance model, if you will. We have created a model that enables many different organisations to choose who their partners are. They can choose who they want to work with. They can choose who they do not want to work with. But they can all live harmoniously on the same network because of the standard that they have agreed to follow.

Those standards include not just technology standards but also business process standards—so how do you schedule; how do you make a call. They include privacy and security standards as well. Once you have signed up to this, people know how to work together effectively across the health system. The membership model that we have is an annual fee, and it is all you can eat. So for one fee folks get all the services that are required and that are part of our standard service package

The second major item is the services we provide. Over the years we have identified what we think are core services that are needed to make this practical and easy enough for healthcare providers and healthcare organisations to engage in telemedicine. Clearly they need to have the applications, and we provide those. We do provide turnkey technology support. We provide training, privacy and security oversight, and a directory so they can find each other and work together. Very important for us has been the idea of scheduling. When you are working with multiple organisations and multiple providers, some of them who do not have pre-existing business relationships, scheduling becomes a really important barrier. So over the years we have developed a service that assists them in finding sites for their patients, connects people, develops the time for those appointments and really helps grease the wheels so that folks can do this in a relatively easy fashion. That has required us to build a concierge scheduling service over the years that is a call centre. We have also developed software so that individuals and organisations can self-schedule with each other using that software through a portal.

Finally, particularly if you are a government this would be quite important to you, the concept of reporting—what is happening out there, how are people using the service, what specialities are being provided, what are the benefits we are reaping from our investments in telemedicine. We certainly try to develop indicators.

The last item is about adoption. This was not an overnight miracle. This required a long and persistent work to help providers to understand this, to see the value in it for themselves, for their organisation, for their program and for their region. In the early days we looked for individual champions. More and more we are looking to organisations and to regions working both from the bottom up with providers and from the top down with regions and programs.

This slide is about our position in the healthcare system. The most important part of this slide is understanding that it is really all about our reputation. For us it is very important to be credible and to be independent. We do not actually deliver any health services as OTN. We are a facilitator for others to deliver health services. We do not compete with anybody. We are there as a service provider to help them, to support them, to help them build their business cases and business models, and deliver their services. I think an important part of this is credibility, it is integrity and, ultimately, trust—building trust with those members and partners, and we take that very seriously.

I have talked a bit about adoption, and I think this is really a process. People have to be aware. They have to understand the value to themselves. I consider telemedicine to be an adoption value chain. You need to have an organisation that sees value. You need to have a provider who sees value in doing it. You need yet another organisation usually to be part of that chain and of course the patient. If any of those links are broken, then the telemedicine event simply will not happen. It is also a constant journey to make this simpler and easier, to make the technology more available. That is something we all do in the background.

A new service for us in the past year has been what we call strategic business planning. We have started working almost as consultants with large hub hospitals and other large organisations to look at their entire strategic plan, to understand what their challenges and problems are, and to help them integrate virtual health care into their entire strategic plan. Rather than being a one-off telemedicine platform in the basement with a nurse and a manager running that program, we want them to see this as a strategic, integrated part of their business plan and not as a stand-alone service.

I mentioned training. I think this is hard to underestimate. It is a very important part of telemedicine and it really includes a broad aspect of items. It is not just about the technology; it is really about the clinical components, the business process components with different views for different providers, multiday courses for telemedicine coordinators at a site and very short courses

for folks like physicians. Last year we trained almost 5,000 learners. We have a learning content management system for more formal courses as well as the availability of ad hoc materials. Just in time learning: in case you are about to watch an event and you have forgotten how to use the remote, you can look online and get a quick primer on how to do that. We have a fairly large resource in terms of content that we are constantly updating for our members and users.

Finally, we have our customer care centre. This is really a combination of our scheduling service and our technical support. It is a formal call centre. Our tech support takes 4,000 calls a month. Scheduling, as you can see, is a very busy service with 10,000 emails and about 8,000 outbound calls per month. We activate about 250 new customers every month. We manage about 1,500 emails in terms of our account management and CRM every month. It is a very active service. We are constantly looking at how we can make that more efficient. We are very focused on customer satisfaction. We do continuous surveys and develop new themes. We are continuously looking at how to drive more self-service and reduce the pressure on our service delivery as the network continues to grow.

I will take one more breath and give you a minute or two on our partners. I mentioned these earlier. One of our most important partners is a First Nations Tribal Council—an Aboriginal group in northern Ontario. This is a very advanced group that provides network to these fly-in remote communities. Their eHealth service runs the telemedicine network. We have been working with them for over a decade. We have a mutual collaboration agreement. This network is completely integrated into the provincial network so that somebody in the far north can seamlessly see a specialist at any academic health centre as required. It has been a very effective partnership. It has been a mutual learning and certainly mutual respect and collaboration over many years.

eHealth Ontario has a mandate to drive an electronic health record across the health system. We leverage their data centres for our equipment. We use their network and we use their secure authentication. We also work with Ontario MD. It is an organisation that has a mandate to fund and help physicians adopt electronic medical records. About 80 per cent of family physicians in Ontario now use EMRs. We are busy working with them to integrate our solutions right now with those EMRs so that physicians can do telemedicine and collaboration from their EMR as opposed to going to a separate location.

Finally, Canada Health Infoway is a federal agency. It has been a very important strategic investor for us. It is currently funding half of our telehome care program in collaboration with our provincial government.

I was asked to show you some of our applications. This is what our online scheduling tool looks like. So you can see if you are a provider out there this would be your day's schedule. You can click over there to make a call from an internet portal. You can book education events or clinical events. You can find other users on here and communicate with them. It is reasonably straightforward as far as these things go. It is called Ncompass. This is the single page you would use to schedule. It is particularly effective for education and meetings because you can simply list all of the people you want to invite. They will get an automated e-mail and they can say, 'Yes, I'm coming,' or 'No, I'm not.' If they happen to say yes, then on the day of the event the bridge will call them and they will automatically beam into the multipoint event. We have tried to make it as simple as possible. It is certainly not as simple as we want it to be, so we continue to work on it. What you are seeing here is version 6.1. Later this year we will be starting on version 7. It is a mature product but we continue to try to make it as simple and as easy as possible.

We have had a telemedicine directory for many years. We are relaunching a new directory right now. This is about match making: allowing you to find health providers that you need, find out what services they provide, really understand and refer to them, perhaps find a site for your patient to go in a small community, maybe a local hospital or a family health team. It is also the place to launch the interaction so not only can you find what you want but you are able to launch the service from within the directory. This is what the directory search looks like. It is very much like some of the search engines out there like Google or Yahoo. If you type in 'Smith' it would search for sites with that word in it, it would search for programs and it would search for consultants. If you found Dr Peter Smith as a cardiologist, that cardiologist can maintain his own profile and tell you what kinds of patients he takes, what regions, what his wait time might be, how you should organise an appointment et cetera. You can see over on the left there are some action buttons. You could add this consultant to your favourites list so you have easier access to this next time around, or you could click on video conference and call him immediately from this web page, or you could click on e-consult and send him an e-consult from this web page. This is an integrated service. You can see across the top, although it is not quite done yet, that we will be building all of our services in one

place. You will be able to do everything from here. It is single sign-on using the provincial authentication service which I mentioned earlier. I spoke to this already, but there is an online training centre that has all of the resources—the video and the courses—and that is available to our users as well.

The last couple of slides give you a feeling for where we are going this year. I am not going to give you a longer term picture. The world is very exciting. There is a lot of innovation happening in this area right now in terms of personal devices and analytics in other areas, but what are we doing right now in this current year? I think the focus is this: this is a motto that our health minister uses. Everything we do in health care in Ontario has to be better care for patients and better value for money. I think we are in a very fortunate place in telemedicine. Most of what we do does exactly this. It is a combination of better care and at the same time creating efficiencies and creating better value for the investment. This is really a pyramid that shows progress over time. We started out with rural telemedicine—a reduction in travel and improved access as being critical. That is still our most important business, but certainly this has also become very relevant to the urban areas. It also certainly has an impact on quality and cost of health care, and it does that through creating new models of care, making providers more efficient and particularly improving outcomes for chronic disease patients.

These are our priorities this year. No. 1 is really about improving access to care, reducing travel, reducing wait times where there are wait times and expanding our videoconferencing and e-consult services. No. 2 is newer for us, and that is looking at how can we extend our impact on chronic disease management. Most healthcare systems right now in the Western world, somewhere around five per cent of the population uses about 60 to 80 per cent of healthcare system resources. Most of those patients are chronic disease patients so that is really a huge target for us. If we want to sustain our healthcare systems, we really need to figure out how to manage those patients better and how to do that at a lower cost.

We are really looking at how we put these telemedicine services together, how we bundle them, how we provide them in the field, in the community, to primary care, to the patients, to their caregivers, to really leverage the technology the way it is capable of being leveraged in that area. We are also ramping up our consulting service, which I mentioned to you earlier. We are looking at what the consumer level strategy should be and our role as a steward to help the private sector actually deploy more effectively, to help bring that innovation out there to market in a structured way.

There is a shift going on under our feet. We are really moving from a fragmented system to a more coordinated system—

CHAIR: We have lost the connection to Dr Brown. We will wait until it is restored.

Dr Brown: Thanks, I am back.

CHAIR: Please continue.

Dr Brown: I am almost done. I am not sure exactly where we got cut off. What I was saying is that there really is a shift right now, and an important part of this is a change in our focus, really looking at quality and outcomes as opposed to just the quantity of care, just the number of services. In the e-health space, we have been collecting our repositories, looking at developing longitudinal health records. The new realisation is that it is about sharing information among teams of providers and the patient and the caregiver, really enabling that flow. It is about monitoring patients and really creating a community and new models of care around the patient.

I think it is an exciting time for us. There is an immense amount of innovation out there in mobile health and other areas that I know we are going to be able to leverage to really improve care for patients and reduce pressures on the health care system. The bottom line for us is that, as we go through healthcare transformation in rural areas and urban areas, we know that telemedicine is really a key enabler. We really cannot do a lot of what we need to do as health systems without using these virtual technologies as an engine to support those transformations.

I will stop right there. I think I am right on my hour and I am sure that I and my three colleagues would love to take questions.

CHAIR: Thank you, Dr Brown. We will take a short five-minute break—you folk would probably call it a bio break—and we will be back in five minutes. The internet broadcast will be switched off for about five minutes while we are out, so if you are watching on the internet you will see a test pattern for about five minutes but we will be back very soon.

Proceedings suspended from 10.03 am to 10.07 am

CHAIR: I welcome everybody back. I just want to let our guests and Dr Brown know that we are very early in our inquiry stage. We met Professor Len and his team at Princess Alexandra yesterday and we spoke with some of the senior physicians there. We have had a briefing already from the department as to where they are at. We are very, very early in our inquiries but already we are starting to see some things that have piqued our interests. So please bear with us as some of our questions may seem very rudimentary but it is trying to help us expand and understand what the potential is, where we are right now and what some of the barriers are to what we are currently doing. Just because you have world-renowned people in that area of expertise does not necessarily mean that we have world-renowned services, and that is what we are trying to endeavour to do—that is, understand what it may take for us to get to that point.

We are going to have a lot of questions here and I will kick off initially. One of the foci for me is to try to understand barriers. My experience in the business world says to me that often a 95 per cent solution is rendered useless because of a five per cent impediment so those are the things that will pique my interest—what are those things that we can tweak which will give us great leaps forward? So my question I guess is around initially technology. That seems to be sometimes an impediment. One of the things we have got is a very, very large proprietary network and one of the impediments to that is physicians, clinicians and users who have their own devices but cannot access these broad networks because they are trying to access it via their own devices. If I heard it right, you guys seem to have overcome that by having people sign up to common standards. Is that accurate? One of the great threats is that you have an individual device that you have got no control over, that is riddled with rubbish, and it hooks on to one of your networks and all of a sudden it takes your networks down. How do you control that? How do you go about dealing with that?

Dr Brown: That is a great question. I am not a technologist so I will start and maybe our technologist in the room can continue. The videoconferencing standards are important—people have to use the same standard—but it is not the only part of the puzzle. The security of course is another key component, so there has to be some kind of a plan for security.

If you go back in history, we have been somewhat lucky in that we have been doing this for a very long time so there was really a greenfield, if you will, and when people started to enter this field they mostly just followed the standards that we had declared. We had a very large VPN—what you call a virtual private network. We were one of the first places to really create a very large IP network using a combination of private network and public network across the province. So I think the bottom line is that we are able to establish those standards and the people who wanted to participate and be part of the club, if you will, who wanted to be a member, really had to follow those to be there.

As time has gone on and we have started to add software based devices, then a big part of our work was actually technically figuring out how to integrate software devices into the network. When it comes to the risk of the end points, all of the people who use the technology do sign a collaboration agreement with very clear privacy regulations. There are laws around privacy that they have to respect. Privacy requires a chain, if you will, of agreements from end to end to be legal, so all of those people have signed up and they generally know what their accountabilities are in that space. I think that is how those issues have been overcome.

CHAIR: Do you have anything to add, Scott?

Mr Duggan: I guess from a technology perspective, you have your core network of devices that have maybe what you would call wide access to services across the network. As you move into realms of lesser control, you technically restrict access to those resources. So you are kind of doing two things—you are restricting wide access to the network but you are providing tools to give targeted access to the users.

CHAIR: Is that using applications or things like that which are unique?

Mr Duggan: Somebody inside our current network would have access to all of the tools from their hospital or whatever, and those are somewhat trusted environments. As they move out, they would only get access to those services through regulated means—so through a portal, through only communications channels. Their software client can only access things through a controlled gateway and that sort of thing. You maintain the same level of usability by providing them additional tools that compensate for the reduction in access.

CHAIR: So if someone were to bring, for example, an iPad to the table, you would be using a web portal from the iPad as opposed to an application loaded on the iPad.

Mr Duggan: Both. You would be using a certified application from OTN that is only permitted to access our services, and you would be using a web portal that would, as Ed said earlier, grease the wheels a little bit so to make those limitations that we are imposing on you seem a little less onerous.

CHAIR: How do you go about stopping increasingly sophisticated software bugs from climbing through the networks into your system?

Mr Duggan: It is really about control. An iPad externally only has access to web properties of OTN and a communications channel; that is it. It is not like they are bringing in a virus-riddled device and plugging it into one of our core networks. It is really about that separation.

CHAIR: So they are actually looking, not inputting.

Mr Duggan: That is right. They are consuming our resources, and they may have some ability to update information and that sort of thing.

CHAIR: One of the things we heard yesterday was the physicians saying, 'I've got these devices and I carry them with me everywhere, but I've got absolutely no visibility into the core system.' So their frustration, for example, was, 'I use FaceTime here but I can't use that same technology with my clients. I actually have to go to a Queensland Health machine or I don't have access.'

Ms BATES: Or a UQ machine.

CHAIR: Or a UQ machine, yes. We will now have some questions from other members. Mr Hathaway has a page full. I will restrict him to two and then we will move to other members.

Mr HATHAWAY: Some of these will be quite short. I noticed in your telehome package that you did talk about these devices like glucose meters and whatever else that talk into the iPad and that then talks to the practitioner. How do you go for that end leg of the transmission, say, in a 3G or 4G environment? Have you had issues with the suitability of the bearers?

Dr Brown: The initial requirements were having either an analog phone line—it is not a lot of data so analog phone lines will work—or an internet connection. We also started a wireless pilot for those who have no connections at all, so we have managed to overcome that last mile.

Mr HATHAWAY: Generally, has your model for Ontario been adapted or used in any other provinces or, in particular, the territories because they have physically quite a different outcome?

Dr Brown: I would say that we work with all the other provinces. Our model has not been implemented anywhere else. Each province has its own kind of approach to healthcare delivery. We have provided services to one province not on a large scale, but a small scale—one of the prairie provinces. We are working with another province right now to expand our stroke network out there. Certainly Karen Waite has been working with yet another province, supporting them in their work.

Mr SHUTTLEWORTH: Over here we are just starting to move towards e-health records and so forth. A lot of the conditions you spoke of are exactly the same here in terms of management of chronic conditions in remote areas and so forth. How do you guys manage, for instance, a local GP having access to patient medical records? How is that managed in your system?

Dr Brown: We actually do not manage the electronic medical records. That is really our partner organisations. The picture I was painting was kind of a fabric of organisations that work together at various levels. Hospitals have their own systems. In a number of the regions, the hospitals have come together to share those systems. There are physician EMRs in their offices. Other organisations have their particular systems. As a province, eHealth Ontario, which is our provincial e-health agency, has a number of projects in play right now to aggregate large volumes of data for many institutions, put them in one place and make them accessible to healthcare providers. That is very much a work in progress. Over many years we have always wanted to integrate closely in that area but there has not been a place to integrate. Now that these systems are truly emerging at the system level, we are working hard to make sure that our services form a seamless fabric with those other services.

Dr DOUGLAS: I am a GP and a politician as well. As a regional doctor, I have used the systems that we currently have. I have also used them in distance services. The things that I see as barriers you seem to have overcome. Currently, our biggest barrier here would be that we have got a problem that our federal system—and it is probably not dissimilar to yours in some way, although you seem to have devolved states; they are autonomously funded—controls the payment system.

So they control the gateway, and they are extremely defensive of their gateway to the point that they will not let anybody else to actively input on it other than using their scavenging systems for which you have to sign up and they have the right to scavenge in a one-way direction. The state cannot even access that. Len Gray was trying to say that yesterday when we went to see him. How did you get around dealing with the Commonwealth, the federal government, to actually allow two-way passage of information? How did you do that?

Dr Brown: We do not actually interface with federal government systems per se. So when we enter federal jurisdictions, we are working with providers in those areas. So, for example, our biggest area of collaboration is with our first nations partner Keewaytinook Okimakanak e-Health. That means northern chiefs tribal council. They run a very large network. They run the telemedicine network and we interface with them through a collaboration agreement. They are funded federally—they have annual funding that is renewed to support their system—but the federal government obviously allows them to collaborate with us. That is how it works.

Dr DOUGLAS: Are they defensive of their data set to the point of extremism, because that is what we have? I know you have more devolution to the provinces, but did you have some sort of a working committee that agreed on what you would exchange?

Dr Brown: I think when it comes to data, electronic medical records, I do not think there is the same level of interoperability between federal and provincial systems. It is not my area of expertise, but I know that that data is normally not shareable across those jurisdictions at the moment. Karen, do you care to comment?

Ms Waite: For first nations data, right now across Canada it is all manual. There is very little electronic data to pass back and forth. There certainly are some issues between the provincial jurisdictions and the federal jurisdictions as it relates to data sharing and it is predominantly in the area of privacy in terms of that information going back and forth. There is a fairly large-scale trial underway in the province of British Columbia right now where the federal government has devolved all of its dollars for Aboriginal health care to a first nation health authority that is provincially based. They would then be subject to provincial privacy legislation. They are beginning to become more highly automated and probably are the leaders in Canada in that area. I think there has been acknowledgement that there is a divide between federal funded organisations and their rules and provincially funded organisations and their rules and they are trying to overcome that simply by passing things along to the provincial government.

Dr DOUGLAS: I asked this question for the obvious reason. As you would know, whilst your systems are tremendously elegant, the reality is that when you are managing patients you need a complete pile of information. If you have significant gaps, you cannot do what you want to do. You can do little bits of it. However, if you are actually responsible for the whole incidence of care, what tends to happen, particularly in that model which is probably not dissimilar to yours in Canada—we have a problem and that is my second question, whereby you are responsible for the legal aspect of it. I will give you a small example of how this can be a problem. I was in Alpha, which is a very regional centre, a couple of years ago. It was a massive mining operation; they had a big camp up there. They would not exchange information with us until they could actually devolve all responsibility for what was a massive accident. Until I assumed all control of it, they virtually would not give me any information. You could break this up into smaller bits whereby we have this problem where someone has to take responsibility. You cannot take responsibility when you do not know what the entire problem is. I just wonder whether that is a barrier for you, because it is a barrier for us.

Ms Waite: Privacy legislation in Ontario is such that within the circle of care, regardless of who is funding that care, information can be shared amongst that circle of care for the purposes of healthcare delivery. If it is for another purpose, so for the purposes of insurance or other third-party interests in that data, then there needs to be consent given by the patient themselves in order for that data to be shared. The only other incidence that I can think of where it could be a barrier in Ontario is in relation to the Department of Defence and individuals who are being cared for and funded by the Department of Defence seeking healthcare services within the province. There are some issues there in terms of information sharing. They are permitted to receive information from the province and populate the Department of Defence records, but the other way around does not happen until the individual has left the service. Then it is up to them to share their records with any provincial service providers.

Dr DOUGLAS: I might come at it a different way. I think what I am seeing is terrific. There is an element of cherry picking going on and there are fees paid for it. At the end of the day, with the cherry picking, has anyone gathered up whether it is all additional—or if you broke up, say, an incident of treatment, is it really part of the pie or is it additional to the pie to improve that? Do you know what I mean? Len Gray said that he had written something on this. It is actually adding a stratum of information which you may not otherwise have. It is not necessarily part of that key bit of looking after a person.

Dr Williams: I am not sure I completely understand your question. Patients under the federal system in Canada are very, very small in number. It is Aboriginal and it is armed forces that are cared for. The ratio between that and everyone else who is managed under the provincial system would probably be one in a hundred thousand. In that system it is very easy to move information from provider to provider and from one organisation to another organisation on behalf of the patient. Speaking as a physician myself in a rural area of Ontario, the practice is that when it is of benefit to the patient, the norm is to just share the data and to transfer the data by paper, by fax or electronically. So the scenarios that you are describing really are not scenarios that personally I have dealt with in Ontario.

Dr DOUGLAS: So they are all managed. Any capital grants or grants from the Commonwealth government are untied. So, in effect, that money that comes across—I am so sorry. That means that everything is managed within the state or province itself?

Ms Waite: Yes.

Dr DOUGLAS: Okay. That is good.

Mrs MILLER: I was just wondering what the annual budget for telehealth is?

Dr Brown: Our base funding is Can$22.5 million annually and then in addition to that there tend to be projects. For example, I mentioned Telehomecare has additional funding from Canada Health Infoway. We also currently have a budget that funds some network connectivity for partners around the province, although we are really on a path to reduce that funding over time as broadband connectivity is more available and people have their own connectivity.

Mrs MILLER: Do you licence your applications?

Dr Brown: We have not done that yet. We have not commercialised our products at this point.

Mrs MILLER: Why did the ministry outsource telehealth to OTN?

Dr Brown: That is a very good question. Back in 2006 that was certainly the source of a lot of discussion. I was personally involved in the merger of the three original networks. We, at the time, felt that putting this outside of government would enable a bit more flexibility, a bit more of an entrepreneurial approach than if we went inside government or became an agency of government. So in a way, we tried to experiment. 'Is this going to be a better way to deliver this service or to grow this service?'

Mrs MILLER: What are the barriers between public hospitals and private fee-for-service GPs?

Dr Brown: We actually do not really have much in the way of private fee-for-service GPs in Ontario. Pretty much all essential healthcare service providers are paid through the provincial health plan. So they are publicly funded. They are private in the sense that they own their own small business, but their billing is billed back to the government.

Mrs MILLER: Okay.

Dr Brown: So just to take that a step further, the barrier really is that they are all independent. They are, in essence, running their own small business. They get to choose what they want to do. They spend their money the way they choose to spend it through their patients and their business.

Mrs MILLER: Thank you.

Mr KRAUSE: Just following up on that last question, so there are no barriers between the sharing of information or care between GPs funded by the province and private or public hospitals; is that correct?

Ms Waite: That is correct.

Mr KRAUSE: I just have a simple question from a patient perspective. I notice that there was a home telepsychiatry service mentioned in the presentation and one of the examples given was a service for suicidal teens. From a practical perspective, how would someone in that position access

that telepsychiatry service? I know that there is a mechanism to sign on to the network through a device, but does that patient need a referral or any type? Is it just a matter of accessing the network and trying to source an appointment through that telepsychiatry service?

Dr Brown: Just to clarify, those kinds of patients would not be receiving that service at home. They would have an appointment to go to a local health facility.

Mr KRAUSE: Sure.

Dr Brown: Something like their local hospital or their local family doctor's office. It would not be appropriate for a patient in that kind of distress to be served alone in their own home.

Mr KRAUSE: Sure. Okay. Thank you.

Mr HATHAWAY: When we visited Professor Gray the other day a number of the specialists indicated that they saw telemedicine as a supplementation to current practice. They definitely saw the need for an initial physical consult and then there would be so many sessions of telehealth, which would obviously achieve those efficiencies. Have you found that you still need that physical consult between patients, particularly a remote patient and perhaps a city bound specialist?

Dr Brown: That is a great question. We have a lot of experience in that. I think typically what we find is that that is what most physicians usually want to start with when they are starting up telemedicine, but we find that over the years more and more of those physicians are quite comfortable with initial assessments. So I think it is a matter of your comfort level. It also depends to some extent on the specialty. Some specialities just happen to be harder to do than others, but I think you will find that a lot of experienced physicians are very comfortable doing the initial assessments as well.

Mr HATHAWAY: I think your answer would go towards that principle that you see telemedicine or telehealth becoming the mundane, the ordinary. We do not tell our practitioners how to use a phone or fax these days. So is that how you see the growth of telehealth? It is just everyday business?

Dr Williams: Yes.

Mr HATHAWAY: You mentioned you had about 2,300 GPs who were signed on to the system. How deep is that market penetration of physicians who are sitting in Ontario? What percentage? Do you have a feel for that?

Dr Brown: Yes. There is probably somewhere between 10,000 or 12,000 family physicians in Ontario, although please did not quote me exactly. So 2,300 would be the number who have signed up for the teledermatology service specifically. Not all of those would be using it actively, but certainly a good number of them are.

Mr HATHAWAY: Okay. I think Dr Williams mentioned that you and he work together, with Dr Williams being the remote outstation and you being the more metro station, I guess. As the growth of telemedicine has increased, do you now find that patient-doctor transactions or family physician specialist transactions are now occurring more often rather than those long distances to a remote community, but even downtown or across town?

Dr Brown: Yes, absolutely. I will give you an example. There is a major teaching hospital in the city of Toronto that manages burn patients and for rehab they will send that patient to a rehab hospital that is probably about 12 kilometres away within the city. Prior to telemedicine those patients had to take an ambulance down to see the specialist once a week to see how their rehab was going and how they were recovering. They realised that they can do those visits by telemedicine. Basically, what that meant was that you avoided the ambulance ride and the patients got an extra day of rehab instead of a day of sitting in an ambulance and a waiting room. So it is a very efficient way to improve care and reduce costs at the same time.

Mr HATHAWAY: Thank you. With most of your physicians that have the fee for service or specialist fee for service, is it a different fee for service paid by Ontario health for a teleconsult versus a physical consult?

Dr Brown: Yes. That is a little complicated, but the way it works is that with telemedicine videoconferencing consultations are not technically an insured service. They are billed through the insurance plan with a code. The physicians receive the payment the same way, but the actual funding comes from a different area within government. It comes from the e-health area of our government. So they have it incorporated into the formal plan. There has also been something called the virtual health care table in the physician-government negotiations that they have been developing. They are working on developing virtual healthcare codes that will be insured. But that

work has not quite finished. There are a few new codes that came out last year specifically for teledermatology, for teleophthalomogy, that are true insured services, but certainly that is work that is underway. At this moment, for a videoconferencing consultation there is a premium. So a physician would bill whatever they would have billed in person plus a premium on top of that.

Dr Williams: If I could add, relating back to one of your earlier questions with this last question, one difference between Queensland's system and ours is that your family physicians can bill for being present with the patient while the telemedicine presentation is going on with the consultant. In Ontario, our ministry decided not to allow GPs to bill for their presence while with their patients. So it has evolved, our telemedicine, in a slightly different way, where our patients are usually not with their GP when they do a videoconference; they are with a nurse or another allied health professional who is paid by whoever owns the studio.

Mr HATHAWAY: So if the GP is there, it is a love job, so speak.

Dr Williams? I am sorry?

Mr HATHAWAY: If the GP is there, then he is not getting an additional fee for that time that he is on the conference.

Dr Williams: Correct.

CHAIR: That is interesting. I think I am going to pick up a little bit where Alex was heading with this. One of the things that we have seen early is that government policy is not necessarily keeping up with patient best practice models as they evolve with the technology of telehealth. I think that is what we have seen substantially. We were just talking about doctor payments. If we want to see these best levels of care, I think what we are able to see is that a specialist's time, for example, is valuable to the point where telehealth allows them to see a lot more people in the time they have by lining up a bunch of patients all at once. So if you have five or six patients in a rural area, they can consult with them all at once rather than flying out there and losing a day flying out and flying back. They can spend that day doing something else. But I think what we are seeing is that government policy—and I am talking all governments—is not necessarily keeping up the models of best practice. It seems that you have a broader pick-up. How have you gone about trying to fight that little fight?

Dr Brown: That is a challenging question. Virtual care is still quite a small part of the overall healthcare system, so we do not have quite that much influence on legislation. But certainly, identifying where the barriers are—I think in my presentation I highlighted the Public Hospitals Act and some of the old legislation there. We have been supporting the work that is being done with the physicians and the government in terms of their fee negotiations. The virtual health care fee code area is very important. Dr Williams has been sitting with the college of physicians and surgeons of Ontario supporting their work and policy. Essentially, we just try to reach out and really support people to develop best practice and to interpret existing regulation in an appropriate way. But I do not think that we are quite there yet.

I also think that some of the benefits of virtual care are challenging because of some of the ways that we deliver health care and some of the policies that we have. For example, team based care, intraprofessional care, clearly using the lowest-cost providers supported by physicians or other providers—those models do not exist because the payment models are not there. I think that we need to look at not just virtual care by itself but what really do we want our health system to become and then virtual health is a support for that future model of health care.

CHAIR: I spent 15 years in high-tech implementing application systems and my experience is that the best outcomes always existed when you developed a good business case beforehand, including understanding best practice—so clearly documenting process and procedure and then implementing applications against those processes and procedures. I am not comfortable that that is what we have seen here. What I think we are seeing is technology adapting to current practice and then that practice requiring change, but running up against some pretty significant barriers, which leads me to my next question which is around scheduling. I would see that as one of those major barriers. If you line up a particular consult at a particular time, it is a bit like using skype on a small level. If the person is not sitting at the other end ready to hit 'connect', it is pointless using. This is no different. The logistics involved in using this efficiently are still quite significant and understanding that technology—right through to including making sure that where you have a specialist on one end and maybe a GP or a clinical nurse on the other end who may have necessarily the training required to help the specialist at the other end. So I am looking at those scheduling details. I was very interested to see your scheduling tool. You mentioned that it was fairly mature. I am wondering whether you are seeing the scheduling problems that maybe we have seen over here at this time?

Dr Brown: Yes, you have hit the nail on the head in terms of scheduling being a really important barrier. If I go back in history a little bit I think we recognised a decade ago that, if we did not take on the burden of scheduling on behalf of those health providers, that telemedicine event simply would not happen. So we actually took that burden on for them. We contacted both ends. We made sure that there was a provider to sit with the patient—usually a trained nurse. We made sure that the right equipment was there—if you needed a digital stethoscope, or whatever else we used. We took the protocols from the specialist and made sure that the other end was aware of what those protocols were, for example. We even 10 years ago helped facilitate the faxes that went back and forth with the patient information so that the consultant would have the right data.

That was an immense amount of work. We had to keep hiring individuals to do that. That really was the stimulus for us to develop software to try to support self-scheduling. Really, to try to organise our work was the first application and then once we realised that we had something that we could push out as a portal, we began to push it out for self-scheduling. That is still a lot of work. We have, I think, about 27 individuals right now who do scheduling and that is in spite of ever-increasing self-scheduling activities. So as more and more activity happens, more and more people self-schedule, but in addition there is still more and more concierge scheduling going on to support that. So that is a very important problem.

CHAIR: I can see the significant benefits here, especially with an ageing population, where one in three of our population in the not-too-distant future will be retired and the typical diseases that come with age. I can see that being a significant benefit to our community. But I not sure that we are even close to being able to deliver that in the home. So this is going to be a challenge for us.

Mrs MILLER: I wonder if you could comment on telepharmacy. For example, if a doctor or a specialist wants to prescribe medications, is there any type of web dispensing service? In practice how does that happen?

Dr Brown: That is a bit of a sore point in the province because I know our e-health system has been looking to develop a provincial prescribing application and I think that is still in the planning stages so at some point there will be, and I think Karen will add to that. But at a practical level right now, with a telemedicine consult it is really the fax machine that is the predominant force. The specialist would normally fax it or if there is a local provider they may ask the local provider to write the prescription on their behalf. Karen, I think you wanted to add to that?

Ms Waite: There are two significant e-prescribing initiatives in the province that have been highly successful. The challenge with rolling that out provincially is again a policy challenge in that the regulatory authority for pharmacists has not yet endorsed e-signature for a script. There are two rural and remote communities that are doing it very well and very successfully and would not be able to let that go, but again it is a case of policy catching up.

Mr HATHAWAY: You get funded Can$22.5 million from the government which you said was about 80 per cent and the other capex was grants. I take it also the membership fees for physicians and consultants form part of the package. Do you charge a transactional fee for that service, those connections at all, or that all comes out of that baseline funding?

Dr Brown: We have chosen to make it, if you will, an all-you-can-eat annual membership fee. So for a single fee you can consume all the services that you desire. There are premium services though, so if you need an extra level of service for some reason we will charge you for that.

Mr HATHAWAY: My second question was about generic Ontario health costs. Do you have a feel for the average annual growth in the healthcare costs for the province; say, a running average for the last five years or something like that?

Dr Brown: I would be afraid to say that because I know it has changed pretty dramatically. I think it used to be right out of control in the past but I think in the last couple of years it has levelled off somewhat, but I would be loath to give you the number right now. I can follow that up.

Mr HATHAWAY: That would be appreciated. It is an issue in our state because it was about 5.5 to six per cent year in, year out.

Dr Williams: It was in Ontario as well, but recently it has levelled, but I think it is starting to creep up again.

Mr SHUTTLEWORTH: In relation to the learning content management system, you referred to the buffet-style, all-you-can-eat membership fees. Are GPs or centres that are not members able to access learning content through the web and maybe pay for downloads or use pay-per-view type applications? If that is the case, how do you manage the IP of that material?

Dr Brown: There are two services. Just to clarify what they are, the learning content management system that we run is really for telemedicine training, so it is for people who are using the network. It could be for nurses who are becoming telemedicine coordinators, it could be for physicians who want to learn a bit more about telemedicine. We run courses to train people in telemedicine and that is why people want to use that service. The education service is very separate. That is the large service. The webcasting material, so the recorded events, are available on our website absolutely at no cost. You could access them yourself. That is available globally. There are some that are private. If a member asks to make those private then we will put them behind a password protected wall for them, otherwise they are public. For every one of those events they sign a consent, so they have waived their rights to that material and allowed it to be made public.

Dr Williams: Karen and I were just conferring about a previous question. Just to be clear—I am not sure it came across clearly—we do have a membership model and we do have membership fees, but we waive those fees for healthcare providers and healthcare organisations that are funded at greater than 50 per cent by our Ministry of Health. What that really means is that most members do not pay a fee. They have signed the membership agreement, but it is in fact free and it is funded through our funding by the ministry.

Mr HATHAWAY: Baseline, yes.

Dr DOUGLAS: I am sorry I am getting back to a difficult point, but this is in relation to doctors interacting with the system. For many years in our state we have had a very centralised model. We are in the process of devolving back to boards in a transition of the organisation but we still have major central hospitals that have competing ambitions. I am sure you have the same problem. We have two major hospitals, and possibly a third, where the ambitions are very different, extremely different. As a doctor we become the default option when whatever they are doing does not work. We do not know, a lot of the time, what they have done in terms of teleconferencing or whatever. I will give you some examples. This happens in managing mainly oncology patients, of which increasingly there are huge numbers being managed by things like outreach radiotherapy clinics which might either be by person or increasingly by consultation. A person suddenly rocks into your rooms because whatever thing they tried to implement did not work. You have no idea what is going on and you do not have the capacity to access that gateway to get into whatever their system is. You do not even know who has done it, but you know they have talked to someone and done something but it did not work, or it did not work because they could not examine them or whatever and then they left them hanging. This is a very, very real situation. Sometimes what happens is they get dragged by relatives down from the regions—I live on the Gold Coast which is outside a major city—so you have this disconnection from wherever they are if they live in a regional centre. The competing ambitions situation is a problem. How do you manage that? I am sure you would have the same problem. Maybe you subsection out part of the province: this one does that, that one does that. How do you get them to say they want to work together? The end result is that we have to participate together. How do you do that? How do you make that happen?

Dr Brown: That is a very good question. I think there are a couple of mechanisms. Certainly every organisation has to look after its own interests. I think one of the things that our government did was create this regional LHIN structure. If there are a number of hospitals in a region they would all be accountable to that LHIN so they will have signed funding agreements with that LHIN. The LHINs certainly, I do not think, would tolerate competition that was damaging. I think there is what I would call 'co-opetition'. People certainly cooperate, they may compete at some levels, but there is certainly an understanding that they are all being funded by the same funder and they certainly are accountable for their communities and accountable for the patients they manage and that requires them to collaborate where appropriate. I am not sure exactly what the challenges are you have, but I see an ever-increasing appetite for collaboration in the major centres that we have here, more so than perhaps in the past.

Dr DOUGLAS: The next corollary is if you get this problem of the default option—I am sure Rob has seen exactly what I am talking about—if you are at the end of that with that person, how can a person link in, how do they make that connection in fairly rapid time? Do they get on the gateway, say they have x patient, x was seen by such-and-such, book an appointment of sorts, please tell me information, send me something urgently. Sometimes these patients are neutropenic—that is when their white cell count is down. We now have the problem in secondary hospital facilities, as opposed to the tertiary facilities, where they will not take certain patients because of the difficulty of managing a particular type of person, particularly if they are severely neutropenic or possibly even borderline septicemic. I mean, they will not take them.

Dr Williams: I think in Ontario the Ministry of Health has taken a stewardship role in ensuring that regional and then provincial wide services are delivered in a coordinated way. Whether it is a virtual service or an in-person service, there is now accountabilities that the patient cannot be dropped and left. If they were, even our college now has very active statements around physician accountability over a patient encounter and part of the referral consultation process is that there needs to be clear documentation and agreement between the referrer and the consultant as to who is managing what parts of care and who is responsible for what parts of care. As a rural family physician caught with a very ill patient there is a clear accountability now that the consultant would still have the responsibility for co-managing if not completely managing that complication and would need to be responsive to the referring physician promptly, whether it be by seeing the patient in person or by video and any less than that would be reason for the college to investigate and probably take some regulatory action against the physician for failure to fulfil their obligation as a consultant.

CHAIR: In relation to peripheral e-health or telehealth opportunities, we heard on Wednesday that there was a hospital in New Orleans that was installing cameras at every bed so that when the patient pressed the buzzer they would immediately be attended to via someone who asked what they needed. Instead of sending a nurse at $60 an hour to see that they need a drink of water they could send an attendant down at $40 an hour. Are you delving into those discrete or proprietary systems at this point?

Dr Brown: There is a lot of experimentation going on. I think what you have described is the concept of the digital hospital. I know a lot of the new hospitals that are being built, and there are some here in Ontario, are looking at how they can be most efficient and a big part of it is improving communications. Nurses doing a lot of walking is a huge source of inefficiency. Enabling them to do care either by audio or video over the phone is certainly part of that. I think that certainly is where people are thinking in the hospital environment. We are also finding that people are doing lots of innovative things just to improve care and to reach out to patients I think in the home environment in particular. There are innovators who are using technology to allow families to visit their relatives who are in the hospital, families who live a distance from that hospital, so that they do not have to travel. They can improve access. Prisons have been an interesting place for telemedicine. As you are aware, there is a captive audience there and it is quite expensive to take those patients to the hospital or the doctor's office, it usually requires an armed guard, so delivering telemedicine into those prisons is a very cost effective approach. I could go on, but there are many, many different innovations that individual providers and organisations experiment with.

CHAIR: Taking that a little bit further to the home care, which I think is where you said you are looking at next, and looking at our ageing population—I think you are in the same boat—one of the healthcare systems in the states now has a room full of information coming through where they have devices sitting in the home so someone can take a blood test, that information feeds back and then based on that information you would get a traffic light scenario where an attending nurse could then immediately contact that person to determine, 'Your blood tests weren't so good today, where are we at?', or, 'Your breathing analysis isn't as good as it should be.' How well developed are you with your home-care systems?

Dr Brown: We have taken a very specific approach. We looked at what we thought would have the most value to healthcare delivery. Often when you look at remote monitoring trials they do not have the same level of impact on the health of the patient or the cost to the system. We found that the coaching approach is really more important for that group of patients at this time. I am certain there are applications where that is appropriate, but it just happens that we felt that this was a more powerful approach for us to take at this time.

Mr SHUTTLEWORTH: Is there any evidence, either anecdotal or otherwise, that the maturity of your system has assisted in reducing the number of presentations out of hours to EDs and so forth across the network?

Dr Brown: Yes, absolutely. In the telehomecare program that was one of the major outcomes. In our pilot there was an over 70 per cent reduction in emergency department visits. In our expansion program we are seeing similar numbers, depending on the region you are in. It is anywhere from a 50 per cent to a 70 per cent reduction. As we get more and more patients I would probably expect those numbers to go down given the volume of patients. But certainly it is a dramatic reduction.

A huge part of telehomecare and coaching is that we have more confident patients. They know how to manage things when they go wrong. They do not just pick up the phone and call emergency services. They are more prepared and educated and they avoid that scenario. That is a rational outcome for an empowered patient or a patient who understands their condition better.

CHAIR: Thank you. The time allocated for the hearing has expired. Can I say thank you very much. Dr Brown, we truly appreciate you and your people being here. We have learnt a lot. We could probably sit here and ask a lot more questions. Thank you for everything. Thank you for your time. We sure appreciate you attending today.

Dr Brown: Thank you very much. It has been a pleasure. Thank you for your wonderful questions.

CHAIR: Thank you.

Dr Brown: I am very pleased to meet you all, virtually.

CHAIR: Thank you. I declare the hearing of the Health and Community Services Committee closed.

Committee adjourned at 11.02 am