HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Health

HESA • NUMBER 066 • 1st SESSION • 41st PARLIAMENT

EVIDENCE

Tuesday, November 27, 2012

Chair

Mrs. Joy Smith

Standing Committee on Health

Tuesday, November 27, 2012

● (1100)

[*English*]

The Chair (Mrs. Joy Smith (Kildonan—St. Paul, CPC)): I call the meeting to order.

Good morning, ladies and gentlemen. We have a very special day today. We are studying juvenile diabetes and we have some very special guests with us. They're all set to go.

I'm going to give you some instructions, ladies and gentlemen.

I'm going to ask Mr. McKee and Ms. Sissmore to make a five-minute presentation only because we need to listen to our other guests as well. We have seven guests today and that's quite a bit.

We're going to open with opening remarks. Mr. McKee, you have five minutes. Would you start, please?

Mr. Andrew McKee (President and Chief Executive Officer, Juvenile Diabetes Research Foundation Canada): Thank you, Madam Chairperson.

Good morning.

I'd like to thank the committee for inviting JDRF to appear before you today during National Diabetes Awareness Month.

JDRF is the largest, not-for-profit charitable supporter of type 1 diabetes research globally. Founded in 1974, JDRF Canada has chapters located across Canada, and we are driven by passionate, grassroots volunteers, several of whom you are going to meet today.

The goal of JDRF research is to improve the lives of every person affected by type 1 diabetes by accelerating progress on the most promising opportunities for curing, better treating, and preventing the disease.

Today, JDRF has brought 40 young delegates from across Canada for our fourth Kids for a Cure Day. These remarkable kids are meeting with parliamentarians to share their type 1 diabetes story. They are among the more than three million Canadians who live with diabetes every day.

Type 1 diabetes is an autoimmune disease that occurs when the body's own immune system attacks and destroys the insulin-producing cells of the pancreas. This disease usually strikes in childhood and lasts a lifetime. Living with type 1 diabetes is a constant challenge from which there is no vacation.

The theme for this year's Kids for a Cure Day is “Living proof...a cure is within reach”. The stories of these children, some of whom you'll hear from in a moment, are nothing short of inspirational.

The history of diabetes research in Canada is, in every sense, a history of innovation. Over 90 years ago, Canada's Dr. Banting and Dr. Best gave the life-saving gift of insulin to the world. In 1999, a Canadian team of researchers accomplished a major breakthrough in islet cell transplantation, now known worldwide as the Edmonton protocol.

This committee has made the study of technological innovation in health care a priority. I want to share with you some of the significant and innovative technological advances in diabetes care being made right here in Canada and jointly supported by the Government of Canada and JDRF.

In 2009, the Government of Canada, through the Federal Economic Development Agency for Southern Ontario, committed $20 million as part of a $33.9 million partnership with JDRF to support the development of the JDRF Canadian clinical trial network in southern Ontario.

JDRF CCTN, as it is known, has assembled a team of highly experienced doctors, scientists, academia, and other clinical support professionals who currently are operating in 24 sites across Ontario. JDRF CCTN provides, for the first time in Canada, an independently funded and supervised platform for the clinical testing of new technology as it becomes available. JDRF CCTN has launched nine clinical trials and two technology projects focused around the artificial pancreas project, diabetes complications, immunology, and clinical care programs, and through this initiative has created in excess of 200 high-paying jobs in southern Ontario.

JDRF CCTN trials and studies provide reliable, evidence-based evaluations that establish not only the value of technology, but also contribute to safe implementation of these technologies within our community. This high quality, breadth, and depth of the JDRF CCTN studies will significantly stimulate adoption of drugs and devices by patients and clinicians, and will contribute to the development of evidence-based clinical practice guidelines.

The JDRFI artificial pancreas program represents a coordinated and collaborative effort to concentrate and focus resources on developing a closed-loop system that connects information from continuous glucose monitors with insulin pump delivery systems. Computer programs, or algorithms, digest all of the information and automatically give the correct signal to deliver proper amounts of insulin, depending on the circumstances of meal, activity, sleep, and so on. “Closed loop” refers to the fact that such systems can be automated, thereby markedly improving the quality of controlling blood sugar, the same way the pancreas does in people living without diabetes.

JDRF CCTN has approved studies that provide an ideal clinical platform to help advance the global APP effort. For example, Dr. Margaret Lawson, here at the Children's Hospital of Eastern Ontario, is leading a study of more than 100 individuals to determine if initiating continuous glucose monitoring at the same time as pump therapy in children and adolescents with established type 1 diabetes results in more sustained continuous glucose monitoring use compared to delaying CGM introduction until six months after pump initiation.

JDRF CCTN's trial focusing on CGM in women with type 1 diabetes in pregnancy is being led by Dr. Denice Feig from Mount Sinai Hospital in Toronto. This is the first global trial of continuous glucose monitoring in pregnancy. The primary objective of the study is to determine if real-time continuous glucose monitoring can improve glycemic control in women with type 1 diabetes who are pregnant or planning pregnancy. This trial is expected to set the standard for the use of this technology and to improve both fetal and maternal outcomes.

Dr. Bruce Perkins at the University Health Network is also using this technology to assess an algorithm that can detect impending hypoglycemia and stop the delivery of insulin, or the basal—

● (1105)

The Chair: Could I ask you to sum it up? We're over time now.

Mr. Andrew McKee: When the JDRF CCTN partnership was originally proposed, JDRF set a goal to initiate three human clinical trials in southern Ontario. I'm pleased to report that JDRF CCTN has exceeded that goal, initiating nine clinical trials and two technology projects. JDRF CCTN provides a platform for researchers and industry to test their treatments and technology sooner, ensuring that Canadian patients have access to the newest—

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

We'll now go to Ms. Sissmore.

● (1110)

Ms. Deborah Sissmore (Ambassador, Juvenile Diabetes Research Foundation Canada): Thank you, Madam Chair. I was told I have five minutes to make an impact, so here goes.

I've been living with type 1 diabetes for almost 46 years. Due to complications, I lost my eyesight when I was 30 years old. I'm completely blind. That's what this disease can cause: devastating complications—blindness, kidney failure, heart disease, and amputations.

Since I was diagnosed at the age of four, many advances have been made in the care and treatment of type 1 diabetes, or T1D. Those include the home glucose monitor; they weren't invented until I was a late teenager. There were two kinds of insulins when I was a kid: beef and pork, extracted from cows and pigs, plopped into vials, and injected pretty much in raw form. Today, we have synthetic insulins, very sophisticated insulins.

Even injection methods have come a long way. I used a glass syringe as a kid. It had to be sterilized in boiling water every morning, whereas today we have the insulin pen and the insulin pump. The tools that have been developed have helped those living with T1D today, but it's far from perfect. You see, there are a lot of factors influencing blood glucose control—factors outside our own control. Those include not only diet and exercise, but also illness, stress, and even hormones. So there is a lot of guesswork when it comes to insulin dose, and it can be very frustrating.

About 15 years ago I suffered from a condition called hypoglycemia unawareness. It's a condition in which you are no longer aware of your low blood glucose levels. The danger is that you could go into a coma at any time, with no awareness of this. Those days, we didn't have the continuous glucose monitors of today. I was testing obsessively then, not knowing whether my blood glucose levels were so high that they were damaging the organs of my body or, conversely, whether they were so low that I could be in a coma the next minute—I had no idea.

Desperate times called for desperate measures, and I applied for, and was accepted into, an experimental, world-renowned transplant program developed for those living with T1D, called the Edmonton Protocol. The team takes a donor pancreas from someone who has died and isolates the insulin-producing cells—the islet cells—from that pancreas. Those islet cells are then transplanted into the liver of someone living with T1D. Those islet cells then graft onto the liver and they get to work. They start to produce insulin.

I've had two islet-cell transplants, and I can tell you that they have saved my life. Since those transplants, I require little to no insulin, with perfect blood glucose control. Right here, right now, I have islet cells in my liver that are producing insulin. However, there are restrictions to the Edmonton Protocol. You see, to prevent rejection, you must take a daily dose of powerful immunosuppressive drugs for the rest of your life. Also, there is a lack of donors.

I am living proof that research in the field of type 1 diabetes is working. It's making a difference. But further research needs to be done, which brings us to the JDRF Canadian Clinical Trial Network and its focus in research on the care, management, and cure for type 1 diabetes.

The Chair: You have one minute left, Ms. Sissmore.

Ms. Deborah Sissmore: Because of the great strides made in the field of T1D research, I firmly believe that there will be a cure for type 1 diabetes in my lifetime, which will mean that these children here today, and so many others, will not have to face devastating, if not life-threatening, complications.

Thank you.

The Chair: Thank you so much for your very compelling testimony here today. We really appreciate it, Ms. Sissmore, and of course Mr. McKee as well.

Now we are going to begin with the co-chair, Mr. Michael Thornton. I guess I will begin with you, sir. You have two to three minutes.

Please begin.

Mr. Michael Thornton (Ambassador, Juvenile Diabetes Research Foundation Canada): Good morning. My name is Michael Thornton, and I am 12 years old. I am from Mr. Kellway's riding of the Beaches—East York, and I am thankful that you have invited me here to speak today.

I am so proud to be a diabetes champion and co-chair for this year's Kids for a Cure Day. I have made it my life's mission to help find a cure for type 1 diabetes.

From the age of six, when I was diagnosed, I accepted that I had to live with this disease. I will not let my diagnosis interfere with my dreams and goals. My day used to start with a needle and end with a needle. Now I am on an insulin pump, and I only have to change my site once every three days.

I still have to keep testing my blood sugar levels on a constant basis, but I have more flexibility and I don't have to take that many needles now. This helps, but now I have to always have it attached to my body for the rest of my life.

Although I live with the challenges that diabetes brings, I continue to live my life to the fullest. I travel internationally as a top competitor in soccer and track and field, which are my two favourite sports. Everywhere I go I find myself speaking about diabetes and educating those around me on what it is like to live with this disease. I want to show the world that diabetes will not stop me from being the best that I can be.

I have learned to manage this disease very well, calculating my carbs, always testing my blood glucose prior to and after meals and exercise, and I eat extremely healthy.

Still, when I compete in track and field, I wish I could only focus on the race itself. Instead I have to check my blood sugars, adjust my insulin, and take my pump off and store it in a safe place. I have to be really careful that I compete with good blood glucose levels to ensure my best performance. This is really tough to do.

When I play soccer, I wish I didn't have to wear an insulin pump while playing. I wish I could play an entire game without having to test my blood glucose levels before, during, and after a game or practice.

In March I received a special invitation to train and play in the professional soccer club of A.S. Roma's Youth Academy in Italy. Also this past summer, I was a member of the Canadian soccer team that competed in the world junior diabetes cup in Switzerland.

In July of this year I was competing in an international soccer tournament in England when a Manchester City scout took notice of my soccer talent. Now I will be returning back to the United Kingdom to showcase my soccer skills at other professional clubs there. These were experiences of a lifetime. Being able to display my talents internationally is a dream come true.

I have learned to manage my diabetes very well, calculate my carbs, and I am always testing my blood sugar prior to and after meals and exercise. I eat healthy, and I carry a diabetic kit with me everywhere I go. One day I aspire to be one of the best soccer players in the world. To me, a cure for diabetes would mean being able to live a life with more freedom.

The success that I have is not only for me but for everyone who has to live with diabetes. I am a little person, but I know I can make a big difference. It would be a miracle if a cure could be found during my life time, and I will do whatever it takes to make it happen.

● (1115)

The Chair: Wow, Michael. You play soccer, and you speak so well. Your presentation was dynamic. Thank you so much for that. You do make a difference. I think all of us were very touched by what you had to say. Thank you.

Now we will go to our next guest, which will be Mr. Noah Stock.

Noah, you have two to three minutes. We would love to hear what you have to say. Can you begin now?

Mr. Noah Stock (Ambassador, Juvenile Diabetes Research Foundation Canada): Hi. My name is Noah Stock. I am eight years old and I am in grade 3 at West Bayfield in Barrie, Ontario.

I was diagnosed with type 1 diabetes when I was only 21 months old. I don't really remember it because I was too small, but my mom and dad tell me that I was really sick and had to be in the hospital for a week.

I remember getting lots of needles. Things are better now with my insulin pump. My mom changes the site every three days. Still I have had countless finger pokes and needles and doctors' appointments.

I had to keep track of everything I do. It all affects my numbers. I also have to follow a healthy, well-balanced, low-sugar diet. I still wish I could be a regular kid. My family worries about me a lot, even though I tell them that I am okay.

For me, a cure would mean I would get to be a normal kid like my friends. It would mean never having to wear a pump, no more finger pokes, no more needles. I could eat whatever I wanted, like my sisters do. I could play at my friends' houses and have sleepovers. Overcoming the challenges I face with my diabetes makes me feel like I can do anything. I am my own superhero. I am living proof that I can be anything I want when I grow up. I am determined to try new things even if it takes a lot of planning.

I know I can do it, just like I know that we can one day find a cure for type 1 diabetes.

Thank you.

The Chair: Thank you, Noah. Your speech was extremely inspiring. I know you can do everything you want to do as well. You're an awesome kid. Thank you for coming.

Our next guest is Marley Greenberg. We look forward to hearing from you, Marley.

Take it away.

Miss Marley Greenberg (Ambassador, Juvenile Diabetes Research Foundation Canada): Good morning. My name is Marley. I live in Thornhill, Ontario. Thank you for having me here today. I am 13 years old and I was diagnosed with type 1 diabetes four years ago. My mom was also diagnosed with type 1 diabetes when she was a child. She's lived with type 1 diabetes for over 40 years now.

Like any other person, when I was diagnosed I was scared. Even though I had my mom and all her experience living with diabetes, it was still difficult to learn to cope with this disease. I had to learn how to count carbohydrates, take blood tests, give myself injections, and explain everything I was doing to other people.

Now I am using an insulin pump. I love it. It gives me so much more freedom to do the things I love, like dancing and playing sports. I'm able to eat when and what I want to, sleep in, and take a lot fewer needles.

Things can still go wrong. Sometimes my catheter gets bent when it's inserted or it's ripped out accidentally. If we don't realize that this has happened, my blood sugars go extremely high. When my blood sugars are high, I feel really sick, and it takes a really long time to feel better. A great addition to the insulin pump is the continuous glucose monitor. It helps me to prevent low and high blood sugars. I have only used it a few times, but it has made a huge difference with managing my diabetes.

Even with the insulin pump, I still take 5 to 10 blood tests a day, and I have to watch everything I put into my mouth. There is never a time that I am able to forget that I have diabetes. Sometimes that makes it harder for me to participate in the things I want to do, or do them to the best of my ability. In gym class, if my blood sugars go too low, I have to eat, sit out, and wait for my blood sugars to go back up before I can participate again. Sometimes when I go out with my friends, if my blood sugars are too high and everyone else is buying something to eat, I can't. I have to take more blood tests, take an insulin injection, and then wait to make sure I get my blood sugars back in control. I find I'm missing out on all the fun stuff my friends are doing because I am worrying so much about my diabetes.

A cure for type 1 diabetes would mean everything to me. It would make my life so much easier and more enjoyable. I wouldn't have to worry about diabetic complications. I wouldn't have to worry about my children also being diagnosed with type 1 diabetes. I think that together we can make a difference in the lives of all people living with diabetes and ultimately find a cure.

Thank you.

● (1120)

The Chair: Thank you, Marley. That was very well spoken and very well delivered. It was quite profound. Thank you very much.

Now we'll go to Miguel Rémillard. We look forward to hearing from you, sir.

Mr. Miguel Rémillard (Ambassador, Juvenile Diabetes Research Foundation Canada): Good morning. My name is Miguel Rémillard. I am 11 years old and I am from Winnipeg. I'm excited to be here to tell you my diabetes story. I'm more excited about the hope for a cure.

I was diagnosed with type 1 diabetes when I was only two and a half years old. It was a hot summer day in August 2003 that my parents will never forget. It changed my life. That's the day I had my first shot of insulin and finger poke. That's the day we had to learn about carbohydrates. It's when we learned about the delicate balancing act of living with diabetes. It's the day my parents started worrying about complications. It's the day my life sentence began.

I have at least 10 finger pokes and at least 4 shots of insulin per day. Some days it's 12 finger pokes and 5 to 6 insulin injections. So far, in my 9 years of living with type 1 diabetes, I have had over 46,000 insulin shots and finger pokes. That's too many pokes. I now do most of my diabetes care myself, like my own insulin shots and fingers pokes. I figure out my insulin dosage based on my blood sugar and how many carbohydrates I eat.

To me, a cure for type 1 diabetes would mean no more pokes and no more insulin shots, no more stopping to check my blood sugar, no more worries of highs or lows, and no more worries about complications. No more annoying bracelets and no more balancing food, insulin, and activities. It would mean no more type 1 diabetes for me and for anyone. I could just be a happy, healthy kid. I have dreams of being a hockey star or an Olympian or a rock star. I dream of being someone's hero. I dream of making new discoveries, of changing the world, and of living to be 90 years old, like my great-grandmother. Most of all I dream of a life without type 1 diabetes.

Thank you.

The Chair: Thank you, Miguel. You're our hero.

All of you are our heroes as you come today and tell your story, because it helps us a lot, so thank you.

Now we have another one, Maksim Stadler.

Mr. Maksim Stadler (Ambassador, Juvenile Diabetes Research Foundation Canada): Hello. My name is Maksim Stadler. I'm 11 years old and I'm from Beamsville, Ontario. I like school at lot, especially math and science. I like to play soccer, swim, ride my rip stick, jump on the trampoline, do gymnastics, and build with Lego.

I was diagnosed with type 1 diabetes when I was five and a half years old. I started taking three needles a day and poking my finger eight times per day. That's about 4,005 pokes and needles a year, approximately 20,000 since I was diagnosed. Most people will never have that many needles in their lifetime.

Now I wear an insulin pump. It's a lot better. I was nervous at the beginning, but now I'm in control. I need my mom and dad's help to make changes and to do the insertions, but I bolus for the carbs I eat. Today, I'm involved in JDRF CCTN's clinical trial that looks at timing the initiation of continuous glucose monitoring and pump therapy.

When I first got the continuous glucose monitor I thought of myself as a cyborg. Now I don't even notice I have a sensor and a site. I calibrate the sensor myself, and no one even notices anymore.

A continuous glucose monitor, or CGM, is a device for people with diabetes that provides continuous real-time readings and data about trends in glucose levels. This can allow people with diabetes to understand the level of their glucose and whether it is rising or falling, and to intervene by eating or taking insulin to prevent it from going too high or too low.

I still finger poke before I eat and I still count carbs. I always have to be careful of highs and lows with my blood sugar because I can become sick very quickly. The CGM measures my glucose levels every five minutes and is another step closer to better monitoring and better glucose control.

There is hope that one day the CGM will speak to the insulin pump to distribute the correct amount of insulin automatically. JDRF is working really hard at developing the artificial pancreas, an automated system to disperse insulin based on real-time changes in blood sugar levels the same way the pancreas does in people without diabetes.

I've been involved in three clinical trial studies with JDRF. They are trying really hard to find a cure for me and others who have type 1 diabetes. I am thankful my friends at JDRF are always searching and never giving up on finding a cure. My family and I will continue to do our part.

Thank you.

● (1125)

The Chair: Thank you very much, Maksim.

I must say you're the best group of witnesses we've ever had. Would you not agree?

Some hon. members: Hear, hear!

The Chair: Ladies and gentlemen, now I'll be calling out the committee members' names one by one, and the committee members have seven minutes to ask you questions. During that seven minutes, you have time to answer them. When that time is up, we go on to somebody else, so everybody gets a chance.

This is a very important time because people can hardly wait to ask you questions. We'll do that until 12 o'clock. Then at 12 o'clock I'll suspend the committee. Then you will leave your seat, but you can stay and listen while another panel comes and speaks to us.

We begin with Mr. Kellway.

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

I concur with the chair that this is indeed the most interesting and inspiring panel I've had the privilege of hearing from one end of the table to the other. Thank you very much, all of you, for coming and speaking to us today. I know it has been a whirlwind tour for you, and I'm so glad we were able to make time to hear your stories and that you are able to make time to share your stories with us.

Michael, you and I are getting to be close friends now. We've seen you as recently as last Friday in the office, and I've watched your soccer video. Our chair, Ms. Smith, wants to see you play soccer, so perhaps you can send Ms. Smith a copy of the video you shared with me.

I understand you have a new feature-film-length soccer video coming out on your new dribbling tricks. Can you tell everybody how long you can keep that ball in the air, alternating feet?

Mr. Michael Thornton: I did 10,458 keep-ups.

Mr. Matthew Kellway: And how long did that take you, Michael?

Mr. Michael Thornton: Two hours.

Mr. Matthew Kellway: Okay. Could you send that video to Ms. Smith, please?

Some hon. members: Oh, oh!

Mr. Matthew Kellway: Michael, on Friday, when we had a chat back home, you seemed a bit nervous about what was coming up this week. How does this compare now to a day at the Roma Youth Academy, trying out for that team?

Mr. Michael Thornton: Could you explain that again?

● (1130)

Mr. Matthew Kellway: You said you were nervous coming here. I know you've been in a lot of stressful situations in your young life, trying out for professional clubs in Europe with your soccer. I was wondering how you'd compare the two.

Mr. Michael Thornton: With soccer, when I went into the change room at first I was really nervous. I could hear everyone talking and laughing, and then I walk in and it goes quiet. So I got nervous there. But once I stepped on the field, I think all my nerves went away, because I was confident and I knew I was there for a reason. It's the same today; I think I'm here for a reason, too.

Mr. Matthew Kellway: So when you step on the field—let's say last summer at the Youth Academy in Italy—are you thinking about your type 1 diabetes while you're there?

Mr. Michael Thornton: I'm mainly thinking about soccer. I don't want type 1 diabetes to control me; I want to control it. I have found that if I focus on soccer, my diabetes just takes care of itself kind of.

Mr. Matthew Kellway: You've been living with this long enough now, since you were six. Is that right?

Mr. Michael Thornton: Yes.

Mr. Matthew Kellway: You've kind of grown accustomed to managing the disease through the day.

Mr. Michael Thornton: Yes. Well, the longer you live with it, the more experience you get and the more you start to understand the disease.

Mr. Matthew Kellway: Right.

Mr. McKee, we kind of cut you off—well, the chair did actually—on your speech.

The Chair: And I'm about to cut you off, Mr. Kellway.

Mr. Matthew Kellway: You were getting around to the conclusion. I want to have that on the record for us today.

Guys like Michael...he tells us that his life's mission is to find a cure for type 1, but it seems to me he's got another life's mission as well, given his record on the track in his young life and on the soccer pitch. Our concern is to make sure that he gets to realize that life's mission. Can you tell us about how close we're getting to finding a cure and putting out technologies that will assist Michael and all these other guys at the table today in fulfilling their own life missions?

Mr. Andrew McKee: Absolutely.

Diabetes generally—and type 1 diabetes—has benefited incredibly over the last few years from advances in technologies, some of which you've heard about today from the kids providing their testimony, with both insulin pumps and continuous glucose monitoring. The JDRF Canadian Clinical Trial Network is helping take those technologies a step further.

Our goal here today is to try to garner your support in expanding that trial network across Canada to give access to those technologies to all Canadians, because that is a mechanism that's providing Canadians with the opportunity to see those technologies earlier than others in the world today. In fact, we're a couple of years ahead with the technology that's available here in Canada relative to the United States at the moment. We want to help develop the knowledge economy around...and expand on our history of excellence in diabetes research.

That is a position that Canada holds, and holds very well. We're well regarded in the world. That's our goal here today, to try to expand that human clinical trial network, because that is what's taking those breakthroughs in laboratories and in industry and delivering them to the market.

Mr. Matthew Kellway: On this issue of delivering these things to the market, how far off are we on delivering new technology? How far off are we on the artificial pancreas technology? And how do we move it forward?

Mr. Andrew McKee: At present, five of the nine trials in the CCTN are focused on elements of the artificial pancreas. In fact, in a pure laboratory environment at the moment, a closed-loop artificial pancreas is being tested today.

To move that to market will take additional investment in clinical trials to prove the technology in a broader-based community. That timeline would be four to five years, once you can move into phase one and phase two human clinical trials with that technology.

Mr. Matthew Kellway: Excellent. What are you seeking today? What's the ask for us here around the table?

Mr. Andrew McKee: Today is to seek your continued support of CCTN here in Ontario, where appropriate, but also to expand it across Canada, to broaden the patient cohort and the patient base who'd have access to the technologies, and give our researchers out there in the Canadian community the opportunity to take their technologies from the lab to the bedside.

The Chair: Thank you, Mr. Kellway.

We'll now go to Mr. Strahl and Mr. Brown.

Do you want to start, Mr. Brown?

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

First of all, I just want to say to all the JDRF youth advocates what an excellent job you've done today as representatives for young people living with juvenile diabetes across Canada.

Particularly, I want to recognize Noah Stock, who comes from Barrie, Ontario. Noah has been an inspiration in our community. Whether it's speaking and talking to people in Barrie at the walk or the skate, to have an eight-year-old who is so eloquent...you really are moving mountains. I feel very proud to have someone like you hailing from the city of Barrie and coming all the way here today to speak before our committee. You did an excellent job.

To Andrew McKee, I think one issue that would be important to raise and highlight is the cost that diabetes has on the health care system, and particularly the portion that is type 1 diabetes. Could you touch upon that to start with?

● (1135)

Mr. Andrew McKee: Certainly. Some of this is derived from estimates, but it is estimated that diabetes costs the Canadian health care system at present in excess of $12 billion a year. As you know, as the health committee, that's a significant portion of the budget.

Type 1 diabetes presents an extra challenge in terms of cost to the system in the sense that type 1 diabetes is typically diagnosed much earlier in life, as we've seen here with youth, and you're immediately insulin-dependent. So there's the maintenance challenge associated with insulin, with continuous testing and continuous insulin dosing, but because of that earlier diagnosis, it also raises the risk of developing complications much earlier in life, and complications associated with diabetes are very expensive for the health care system to manage.

Diabetes is currently the leading cause of working-age blindness in Canada. It ranks very highly in the cause of heart attacks and stroke. It represents a progenitor disease to many other conditions we face. When you consider the quantum of dollars that diabetes is costing the Canadian health care system now, and the advances that are being made that allow us to mitigate some of those expenses by good management and good controls, there's a real opportunity here for us to realize some health care savings in the long run.

Mr. Patrick Brown: I certainly noticed that with Noah's family, or beforehand, with Sydney Grace and Rebecca Morrison, the previous youth advocates. If you look at the cost to the families, whether it's lost time at work for his father, Jay, whether it's the nurses involved, or the huge family obligation that's involved with managing this.... I'm glad we've raised that figure because I think it highlights that investments into juvenile diabetes research in the long run could actually save the taxpayer.

I know I'm sharing my time with Mark Strahl, but there's another thing I wanted to ask. Could you just update us briefly on the clinical trials that we're undertaking in Waterloo and Hamilton and that historic $20 million federal contribution? What is the progress from that, the success from that?

Mr. Andrew McKee: Of the nine clinical trials that were launched against the target of three—so we're very pleased that we could over-deliver on that front—the first trial, which I spoke to briefly, Bruce Perkins' trial at the University Health Network in Toronto, has finished enrollment and is just finalizing its collection of data. The first reports on that will be out. Clinical trials by their very nature take time, so the data will be coming out from each of these trial networks over the next three to four years. The shortest trial is Bruce Perkins', which, as I say, is wrapping up now, and three years out from now we should see data from the pregnancy, or CONCEPTT, trial.

Thus far, I'll say we've had unparalleled success in recruitment. One of the great measures of how you're doing within clinical trials is how well you're recruiting. Canada, which certainly hasn't had as many clinical trials available to the diabetic population as we've seen, say, in the United States, is over-recruiting. In fact, one of the trials, the AdDIT trial, which is being done in conjunction with the United Kingdom, has completed the Canadian portion of recruitment and is now over-recruiting and picking up some of the U.K.'s portion. So thus far, we're seeing really great success, great strides forward.

Then there's somebody like Maksim, who testified here before you today, who is participating in the CGM TIME trial. That trial, which is being run here out of the Children's Hospital of Eastern Ontario, but at four sites across Ontario, has actually over-delivered on its recruitment targets as well. As you can see, it's having a direct impact on the lives of Canadians as we sit here today.

Mr. Patrick Brown: Thank you.

The Chair: Mr. Strahl.

Mr. Mark Strahl (Chilliwack—Fraser Canyon, CPC): Thank you, Madam Chair.

I want to thank Patrick for bringing this idea to our attention. He knew when you were coming months ago, and suggested that we meet with you here today. I certainly can speak for myself, and I think everyone here, when I say that this has been one of the best meetings we've ever had.

Michael, I used to think I was quite good. I could do a hundred keep-ups. I was on a rep soccer team, and we travelled all the way to Vancouver. But you've shown that this was minor league stuff.

I want to talk to Maksim and Miguel.

Maksim, you said that you felt like a bit of a cyborg when you first got your insulin pump. Now, I have an eight-year-old son, and he might think that's pretty cool—to be a cyborg, that is, maybe not to have a pump.

What is it like at school? Do your teachers and your friends understand what you're going through? Are they supportive of you as you deal with your type 1 diabetes?

● (1140)

Mr. Maksim Stadler: Well, at school I don't really like to talk about it. I don't really think a lot of people need to know, but I'll let my teachers know. I don't tell a lot of my friends, but a few of them do know. Some found out. Some I told.

I don't like to tell a lot of my friends, because, you know, they'll ask questions, and I really just don't like to answer questions. They'll get the wrong idea. It just kind of irritates me.

Mr. Mark Strahl: I can understand that. I won't ask you any more questions, then.

Voices: Oh, oh!

Mr. Mark Strahl: Miguel, you said that you want to be a pro hockey player. Hopefully there's a league to play in and they're back from their lockout by the time that comes up.

Could you talk about how it works for you when you play sports? Do you find support from your coaches and your peers there as well?

Mr. Miguel Rémillard: Usually my parents are in the stands. If I need to test, they come down to the bench and I check my blood. I just spit out my mouthguard if I need to have something to eat, and then I get back on the ice and keep going.

Mr. Mark Strahl: Well, good luck to all of you. Thanks again so much for being here today.

The Chair: Thank you so much.

Now we'll go to Mr. Scarpaleggia.

Mr. Francis Scarpaleggia (Lac-Saint-Louis, Lib.): Thank you, Chair.

Today is my lucky day. I'm not in fact a regular member of this committee—I'm replacing a colleague who couldn't be here—and I just happened to come here on the most interesting day.

I'm really moving up a steep learning curve here, but I've learned more from your presentations on this issue than ever before. I have also had good contact with one of JDRF's advocates in Montreal, Bob Hindle.

Do you know Bob?

Mr. Andrew McKee: Yes, very well.

Mr. Francis Scarpaleggia: Bob has been keeping me in the loop on progress on this file. He has done an excellent job, but there's nothing like really hearing the life stories of those of you who are here today. As I say, I've learned a great deal in a very short time.

I'm not that familiar with the technology involved, so I'm having a hard time understanding the progression—from how people with type 1 diabetes would manage the diabetes at the very beginning, to the point we are now, and the point to which we're going. Perhaps you could just explain to me what it used to be like.

Ms. Sissmore, I think you talked a little bit about that. In the early days, if you were diagnosed with type 1 diabetes, what did you have to do on a daily basis?

Ms. Deborah Sissmore: It was very little, actually, because we didn't have blood glucose monitors. Glucose then was not measured in the blood, at home; it was measured in the urine. It was not very reliable. I took one injection a day, and it was primitive insulin, at best. There was no carb counting. You watched what you ate. It was like a sugar-free diet, a diabetic diet they would put you on—nothing to the extent it is today.

I marvel at the gains that have been made since I was diagnosed. Over the last 46 years there have been so many gains. The quality of insulins, the kinds of insulins, the pumps, the continuous blood glucose meters—oh, my goodness, it's extraordinary. But it's still not perfect.

● (1145)

Mr. Francis Scarpaleggia: Can you tell me this, though? We're going from a stage where you just watched what you ate and you took one insulin injection a day to the next level, which was.... Was it continuous glucose meters? What would that mean, a continuous glucose meter?

Ms. Deborah Sissmore: The first meters, the first glucometers—and they were not continuous blood glucose monitors—weren't available until I was a late teenager. You pricked your finger. Still, we didn't have the sophisticated insulins of today. So then I think I was bumped to two injections a day. Now with the better insulins, the rapid-acting—you use them in combination with the longer-acting—it's far better. So you would have an insulin injection or a pump, where you have it all the time. But you have an extra amount of insulin before you eat your food. We didn't have that then.

Mr. Francis Scarpaleggia: What do you mean by the insulin pump? I'm sorry, I don't understand that.

Ms. Deborah Sissmore: I'll let....

Mr. Francis Scarpaleggia: Would somebody mind showing us a pump?

I see. So you wear this? Is that how it works?

Miss Marley Greenberg: It works 24 hours a day.

Mr. Francis Scarpaleggia: Twenty-four hours a day, it pumps insulin, but it's triggered by...? How does it know when to pump the insulin?

Miss Marley Greenberg: To tell it what to do, you have to program it; you have to tell it when to give insulin and what to do.

Mr. Francis Scarpaleggia: So based on your readings and your carb counts and so on and so forth, you would then program the pump?

Miss Marley Greenberg: Yes.

Mr. Francis Scarpaleggia: So the next step is the artificial pancreas. Is that the next stage?

Mr. Andrew McKee: That's the goal right now.

Mr. Francis Scarpaleggia: How would that work? Would it be a pump like this, a more sophisticated pump?

Mr. Andrew McKee: In essence, it would be a more sophisticated version of that pump and a continuous glucose monitor.

Maksim, you're not wearing your CGM right now, are you?

You're wearing your CGM, Marley.

That pump has a continuous glucose monitor connected to it. So the tubing you see is the mechanism for putting insulin into the body. On another spot on her body, Marley will have a patch that is reading her glucose levels. So she can look at the screen on her pump and see what her glucose levels are, whether they're trending up or trending down. She still has to intervene. So there is no automation between those two elements of the pump.

The artificial pancreas project is about automating that process.

Mr. Francis Scarpaleggia: It is coming out of the University of Alberta, I guess. Is that right?

Mr. Andrew McKee: The University of Alberta is the Edmonton Protocol. The artificial pancreas project has actually been worked on by many corporations and many institutions worldwide. In our trial network, we are working on parts of that too. That's taking an algorithm that can take those glucose readings and predict whether your blood glucose is rising or declining and intervene by dosing....

Mr. Francis Scarpaleggia: The Edmonton Protocol is the algorithm. Is that right?

Mr. Andrew McKee: The Edmonton Protocol is the islet cell transplant. That's taking cells from a cadaveric pancreas and transplanting those into an individual who has type 1 diabetes.

Mr. Francis Scarpaleggia: So it's a different parallel process.

Mr. Andrew McKee: It's a separate process.

Mr. Francis Scarpaleggia: Canada is still today at the forefront of this research, would you say?

Mr. Andrew McKee: Canada remains very much a leader. It is a competitive space for sure, especially in the device market, because those are the treatments that are closest to market, if you like, right now and where it's developing, and there are big international device players that are working that.

In cell therapy or biological therapy, Canada remains a real leader at the forefront of technologies associated with diabetes and the hopes for a biological cure right now.

Mr. Francis Scarpaleggia: There are other partners then. The federal government invested $20 million. I imagine the—

The Chair: I'm sorry, sir. I've been very generous with you.

Mr. Francis Scarpaleggia: Oh, that's fine. There's no need to apologize.

The Chair: We're going to have to go on now. We have Ms. Block and Mr. Lizon. Who's going to begin?

Ms. Block?

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

I want to echo all of the comments that have been made this morning about this panel, about your willingness to be here and the excellent presentations you have made to us.

As I look through some of the notes, I notice that many of you were diagnosed at very different stages in your childhood.

Marley, you were 8, and you're 13 now. I'm just wondering if you would be willing to describe for our committee what sorts of things were happening for you health-wise that caused you and your parents to understand that quite possibly you needed to see a doctor, and then this diagnosis was made.

● (1150)

Miss Marley Greenberg: I was going to the washroom a lot. I had to pee a lot and I was drinking a lot of water, which are two signs of diabetes, because when your blood sugars are high you're very thirsty and you have to pee a lot. So I told my mom when I got home. Being a diabetic herself, she saw the signs and she decided to take my blood sugar. It told her that I was extremely high. She didn't believe it, so she did it again. Then after that we went to the hospital and I was diagnosed there.

Mrs. Kelly Block: I've also noticed that all of you seem to be very active, very involved in sports. It doesn't appear that it affects your ability or desire to be involved in sports.

Marley, I want to come back to you and ask you some similar questions to what my colleague asked some of the other presenters about your experience at school. In the activities, do you find there is awareness of the issues that you face when you have type 1 diabetes, or do you have to do a fair bit of explaining?

Miss Marley Greenberg: I have to do a lot of explaining, but I'm very open with my diabetes. I actually like being asked questions, unlike Maksim.

Mrs. Kelly Block: We have opposite ends.

Miss Marley Greenberg: I'd rather people understand it than just assume information that's incorrect. So I'm very open with it and I like to tell people and explain it to them. I don't go around announcing it, but if someone asks a question, I always answer it.

No one really understands what's happening. They have some idea, so they know what to do if I need help, that I probably need sugar or that I'll need something else, and all the teachers know that if I ask for something I should be able to leave to go get it. So they're very supportive, but they don't really understand.

Mrs. Kelly Block: Thank you. I'll turn it over to my colleague.

Mr. Wladyslaw Lizon (Mississauga East—Cooksville, CPC): Thank you very much.

I would like to congratulate and thank all the participants for coming here today. It's really a very interesting day for all of us. You young people are very courageous, and I wish you all the best. You're aiming high, and I know with your determination you will get there.

Michael, I personally hope that you will play for Manchester United, not the City. With young players like you who are so determined, maybe one day Canada will win the World Cup in soccer. I wish you all the best.

The question I have is on the artificial pancreas. If I understand correctly, it's working towards combining the glucose monitoring with the dosage of the insulin from the pump. Is it going to be an external device, or is there work to develop an internal device that would be implanted in the patient's body?

Mr. Andrew McKee: There has been work done on both the internal and external devices. The prevailing enterprise right now is on external devices. There are some additional challenges around implantable devices. First and foremost is that you have to be able to refill the pump component of the artificial pancreas with insulin, so you need access through the skin of an individual.

There was an implantable pump that was brought to market in the late nineties, and it's still in use in a few patients in France, but the whole industry has actually moved away from internal devices and is working with external pumps and external glucose monitors. You'll have some kind of control with an external device and a patch, typically, as Marley showed you with her two devices—one attached to her site, which is where she doses insulin, and then the other patch that has the reading.

One of the goals, ultimately, is to try to get those two patches down to one patch, but at the moment it's all external devices that are being looked at for that market.

Mr. Wladyslaw Lizon: If you had to guess, how far would you say we are from getting one on the market?

Mr. Andrew McKee: It would be speculation on my part—and I'm happy to try to speculate a little bit for you—but there are several companies working on it right now. Within JDRF trials and testing we have this working in a hospital environment, so in a very controlled environment.

The work that needs to be done is the clinical trials to test that in a broader market, a broader population, so the evidence-based medicine will be there to get approval from health regulators in Canada, western Europe, and the U.S.

The timeframe for bringing something like that from a clinical trial to test it out to the market can range anywhere from two years out to eight to 10 years, depending on whether any complications arise in that development. But there are versions of the artificial pancreas working today in a laboratory environment right now. So this now becomes a big question of commercialization and how you get it to market, and clinical trials are what we need to move those devices forward.

● (1155)

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

The Chair: You have less than a minute.

Mr. Wladyslaw Lizon: Are there any new developments on the Edmonton Protocol? I understand there is a challenge with donors, but is there any new development with artificially growing the implants?

Mr. Andrew McKee: Debbie is our resident expert; she's a living example of the Edmonton Protocol.

A number of advances have been made in the cell therapy arena in terms of the ability to regenerate insulin-producing cells outside of an individual. The traditional sources of cells are being looked at, which are the pancreases of cadaver donors. Stem cell work is being done around regenerating an individual's stem cells so their own stem cells could be reimplanted into them. The other area that's seeing a lot of investigation, and JDF is running some trials on this outside Canada—we aren't doing it in Canada—is core—

The Chair: Thank you, Mr. McKee. Thank you so much.

We don't have time to go into another round. The parents have requested a picture with the parliamentarians, and I think that's the least we could do. We'll have our guests sit, and I'll instruct you on how to do that picture in a minute.

Dr. Sellah, you had a comment.

[*Translation*]

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

I am very proud of the young people of today. To me, you are superheroes, as Mr. Noah Stock was saying. I know that type 1 diabetes is an autoimmune disease. So you have no responsibility to bear in that regard. However, you are aware of your disease and you try to lead as normal a life as your friends do. You lead your young persons' lives, but I would say to you that as long as there is life, there is hope. I want to congratulate you because you are an example, you are the future of our country.

As a general practitioner, I think that you are in a better position than certain adults who have another type of diabetes that is due, for instance, to their lifestyle. I want to encourage you to continue what you are doing. You saw, with the example Ms. Sissmore gave, that with the evolution of technology, we have come up with the insulin pump rather than insulin injected with sterile glass syringes.

And so, I can only congratulate you. Continue your struggle. Congratulations.

[*English*]

The Chair: Thank you, Dr. Sellah.

Dr. Sellah is a medical doctor, so that's quite a compliment to all of you.

We're going to do something a little different. I'm going to suspend the committee for 10 minutes, because we have to bring on another panel at precisely five after twelve.

Your parents have requested that we have a picture with the parliamentarians. I would suggest that you stay seated and the parliamentarians will be very good at clustering around. The parents can come inside—there's a little opening in there—to take your pictures.

We'll suspend for 10 minutes.

● (1155)

(Pause)

● (1205)

The Chair: Could we reconvene again?

We had a very exciting panel with some young witnesses who gave us a clear insight into what it's like to live with type 1 diabetes.

We have a second panel now, and we have from the Canadian Diabetes Association, Dr. Jan Hux, who is going to be the first....

Pardon me?

Is Dr. Legault here? Oh, it's by video conference. Dr. Legault, I understand that you're on call right now and you need to leave shortly, so we'll begin with you.

Dr. Laurent Legault (Medical Doctor, Montreal Children's Hospital, McGill University, As an Individual): That would be appreciated.

The Chair: Thanks to the clerk, I'm informed of your busy schedule, Dr. Legault. Welcome, and thank you so much.

Please begin.

Dr. Laurent Legault: Thank you. I sent over my text, I believe.

Dear members, I was approached a couple of weeks ago to present to the committee. Initially, I was told that the committee would like to hear about my perspective on what should be the priorities in the field of juvenile diabetes, specifically outlining the potential role of public health. You may then excuse me if my comments sound quite different from those of other presenters. Given that JDRF, CIHR, and the CDA will also be represented at this committee, I don't intend to put much emphasis on research that I or my colleagues are undertaking, even though I strongly feel that supporting research that aims to prevent diabetes and to alleviate the burden of injecting multiple times daily for these children should be priorities. I reserve my comments on these issues for the question period.

I also acknowledge that my perspective is heavily biased by my working environment and may not reflect the reality of others.

Finally, I am well aware that this is a federal committee and that health coverage is a provincial matter, so there are limits to what can be accomplished.

For starters, the first point I'd like to make is that juvenile diabetes is now a much more confusing term. Type 2 diabetes, which gets a lot of media coverage, has been steadily increasing in our clientele. This entity—as well as cystic fibrosis-related diabetes and genetic forms—has made diabetes care much more complex and diversified in the pediatric age range.

It is also important to note that while there is no doubt type 2 diabetes prevalence is increasing, it has not reached the epidemic proportions it has in the United States, and it still represents a small proportion of most of the country's diabetes clinic populations. It is nevertheless concerning to see it growing. While both type 1 and type 2 diabetes have been increasing in most industrialized countries, it is still quite difficult to have good data to support this claim in Canada. Estimates of prevalence and incidence are usually given, but are mostly based on partial or unreliable data.

Canada has always been known to have a high incidence of type 1 diabetes, but proper ways to carefully follow trends and examine regional distribution of cases have been lacking. The creation of provincial or national registries has been plagued by many snags and is not usually a high priority for granting agencies struggling to maintain their budgets from year to year.

The setting of well-designed provincial and national registries would allow us to follow these trends, properly delineate diabetes type—and I admit that this is a challenging task—and help properly distribute care amongst areas according to the disease burden. An active diabetes registry for type 2 diabetes could allow, for instance, reflecting on the impact of interventions designed to curtail the increase of cases over time, not to mention its immense potential in the field of research to explore links to a yet elusive trigger for diabetes emergence.

We are now quite adept at predicting type 1 diabetes emergence in high-risk individuals based on our long-standing experience in prevention studies like DPT and others, but have yet to find a strategy to stop type 1 diabetes in its tracks. While we all wait and hope that some of these studies, one of which I am part of, pan out, there is a need to make sure that we diagnose those children who develop type 1 diabetes early.

The proportion of cases being diagnosed in diabetes ketoacidosis, also known as DKA, is still unacceptably high for a country where medical access should be universally accessible. The Province of Ontario explored this, and a campaign of information designed to remind key stakeholders of the early clinical signs of diabetes—frequent urination, thirst, weight loss—has been designed to address this issue.

Pushing this further, I'd advocate that information, as well as providing access to quick and useful diagnostic tools, such as urine dipsticks, glucometers in clinics and other care settings, to avoid the undue delay of sending out to labs and waiting three to five days for results to come back, would be a small investment with potentially huge dividends.

● (1210)

It is paramount that caregivers and others involved in the care of children understand the nature of type 1 diabetes. Those three to five days can make all the difference between a child's being started on insulin and going home the same day and an intensive care admission, cerebral edema, and unfortunately, but rarely, death.

While it is common to explore the diagnosis of type 2 diabetes over several weeks, timing is crucial for type 1 diabetes. This semantic point is not trivial, as diabetes is plagued by the fact that most people are familiar with type 2, and in a lumping culture—in other words, "all diabetics are the same"—the image of diabetes that most people, including health workers, have and sometimes transmit is tainted by this reality: "It has to be type 2; there are no other kinds."

This impacts upon the care of those, mostly children, affected by type 1 diabetes. A concerted effort to extend to the rest of the country initiatives aimed at diagnosing cases early would seem to represent an excellent cost benefit.

Diabetes management has become much more complex with the advent of new insulin options and the insulin pump. You heard something about it earlier. Several provinces now have a reimbursement program that allows interested families to benefit from this technology. While these provincial efforts are acknowledged and welcomed, the human factor has unfortunately fallen short. There is a wide discrepancy in services provided in schools for these children.

More specifically, there is a need for more support in elementary schools and day care centres. The growing perception is that these technologies do everything, but they fail to understand that a six-year-old child should not be expected to be fully in charge of what is basically a mini-computer. I am aware of several families in which one of the parents had to stop working or cut back on work hours to personally supervise their child at lunchtime because school personnel refused to do it. I personally think this is unacceptable. The same situation could arise in the case of intensive insulin regimens that incorporate lunchtime injections.

It is extremely challenging to find a working collaboration in many schools across the country. Every child, including those with a chronic medical condition, has a right to be educated, but implementing this principle in the school setting is not always easy. Diabetes teams frequently team up with school resources to ensure the best possible environment for the type 1-affected child, but nursing training and availability are lacking or inappropriate, and quality of care is then affected. Strong leadership by diabetes organizations is important to make schools more diabetes-friendly.

There is also a wide disparity in coverage of basic material for daily diabetes care. Just as an example, strips for glucometers are not covered in every province. I am well aware that health coverage is a provincial mandate, but I cannot stand idle when I hear that some families struggle to pay for their glucometer strips—or any essential material, for that matter, for the safety and care of their children. A federal program aimed at ensuring a minimum basic coverage of material for this and other chronic diseases would seem an important safety net to ensure that families do not run short of material because they can't afford it. These potential inequities are unacceptable.

Along the same lines, providing safe and adequately staffed summer camps for children with special needs—and that includes any with chronic disease—should not have to entirely depend on private foundations' support. I know that CDA is supporting many, and we are grateful for that, but many camps just get by and struggle. All families should have access to these stimulating and potentially life-changing environments. To ensure access to these camps for all children regardless of their socio-economic background, extra support should be provided.

Focusing now on type 2 diabetes, we know that its prevention is possible. Given its strong link with pediatric obesity and its known concentration in lower socio-economic strata of our society, I strongly believe that the fight against a potential type 2 diabetes epidemic in children is akin to the fight against poverty and hence mandates a concerted effort on multiple fronts.

More specifically, there is a lack of affordable and accessible opportunities for exercise outside of school for families from low socio-economic areas. School game and exercise facilities are underused and could be made available for after-school programs with the help of a kinesiologist trained to adapt the programs to the level of fitness of the children he or she faces.

● (1215)

There's also a need for adequate counselling, based on the financial constraints many of these families face, from a nutritionist trained in pediatrics, and I insist on this. Availability of good counselling is a big challenge in the hospital setting because of budgetary constraints. Community-based nutrition counselling is for the most part targeted to the adult clientele. There is a gap that is disfavouring the more vulnerable.

I personally don't favour taxing fast food, but rather subsidizing healthy foods—

● (1220)

The Chair: Dr. Legault, I'm sorry to interrupt you, but we've gone quite a bit over time. It's so interesting. Could you just please summarize so that we get all your points in?

Thank you so much.

Dr. Laurent Legault: Okay. I'm sorry; I didn't look at the time.

Summarizing, we need to try to prevent type 2 diabetes using school as the pivotal place to do so. I think we need to make sure that everybody has access to the material that's necessary to take care of diabetes in the 21st century. We need school support for patients who are trying to make their diabetes treatment intensive, whether through injections or through a pump.

I think I'll stop with that.

The Chair: Thank you so much.

Some of the points you made were very good ones. As a former school teacher, I too was baffled that all these facilities were empty. That is a very good point.

We'll now go on to Dr. Hux, chief scientific advisor to the Canadian Diabetes Association.

Dr. Jan Hux (Chief Scientific Advisor, National Office, Canadian Diabetes Association): Good afternoon. On behalf of the Canadian Diabetes Association, thank you for this opportunity to speak with you about juvenile diabetes.

The Canadian Diabetes Association is a leading authority on diabetes in Canada and internationally. We lead the fight against diabetes by helping people with the disease live healthy lives while we search for a cure. By providing education and services, advocating on behalf of people with diabetes, supporting research and translating research into practical applications, we deliver on our mission.

Type 1 diabetes is a disease in which the pancreas produces little or no insulin. As you've heard from other witnesses, this results in high blood sugar that requires lifelong insulin therapy administration by injection, and attention to diet and physical activity to maintain appropriate blood glucose levels. These measures are essential to prevent acute life-threatening emergencies due to excessively high or low blood glucose.

However, even moderately high blood glucose levels over a long period of time are dangerous because they lead to the chronic complications of diabetes, including kidney failure, heart attack, blindness, stroke, limb amputation, and depression. The average life expectancy for people with type 1 diabetes may be shortened by as much as 15 years.

Type 1 represents up to 90% of cases in people under the age of 20 and up to 10% of the overall population with diabetes, or about 300,000 Canadians.

While research is making great strides, at present there is no cure.

I would now like to address two important gaps in the care available for children with type 1 diabetes: a safe and supportive school environment, and appropriate access to insulin pumps. Children with type 1 diabetes must pay close attention to their diet and physical activity, regularly test their blood glucose levels, calculate insulin dosages, and administer insulin. This can be challenging, especially for young children. Excessively high blood sugar can interfere with students' ability to participate in school and excessively low blood sugar can quickly turn into a life-threatening emergency.

Students with diabetes must be full participants in school life. To ensure a safe school environment, every school board should have a diabetes policy that requires development of an individualized care plan for each student with diabetes. The plan would identify the type of care and monitoring required by the students to successfully manage their diabetes while attending school or related activities.

A diabetes policy should include strategies to reduce the incidence of high and low blood glucose, a communication plan, and regular diabetes training for school personnel. School boards should be responsible for ensuring that students with diabetes receive the care they require, including medication administration and blood glucose testing.

I would now like to turn to the benefits of insulin pumps to manage type 1 diabetes. These are portable devices attached to the body that deliver a constant baseline amount of insulin as well as bolus doses at meal times via a small tube placed under the skin.

Research supports the medical benefit of pumps versus multiple daily injections of insulin where clinically appropriate. The use of a pump has been shown to improve average blood glucose levels and consequently will, over the long term, reduce complications for those with type 1 diabetes.

In response to efforts by our association, insulin pump programs have been announced, implemented, or enhanced in several provinces. As a result, those with type 1 diabetes who require pumps will have better quality of life, and these provinces will also reduce their health care costs associated with diabetes. Insulin pumps are also available in aboriginal populations through special authorizations administered through federal non-insured health benefits. However, some provinces still have no comprehensive program for coverage. The existing programs in Canada serve only 30% to 35% of eligible persons. Savings from reduced complications are estimated to exceed the costs of implementing these programs in each jurisdiction.

While we seek to ensure that people with diabetes have access to the best available treatments, we also see the critical need for better treatments, and ultimately for a cure. Accordingly, we invest in the creation of new knowledge through research.

As Canada's leading diabetes charity, last year we devoted $7.1 million to fund 111 research projects. Since 1975 we've invested over $110 million to fund research to reduce the burden of diabetes, improve the health of people with the disease, and find a cure.

Some leading-edge examples include the following.

Dr. Pere Santamaria’s therapeutic nanovaccine halts the auto-immune attack that causes type 1 diabetes without impairing the ability of the immune system to respond to infections and cancer.

● (1225)

Dr. Julie Lavoie's anti-obesity drug may reduce weight gain in the obese and bring blood glucose levels close to those of people of normal weight.

Researcher, Dr. Przemyslaw Sapieha, has identified a molecule responsible for the leaking of blood vessels in the diabetic eye; such leakage often causes vision loss.

One research project often builds upon the next and requires collaboration between multiple funders. For example, Canada’s first successful islet cell transplant was conducted in 1991 by Dr. Garth Warnock. Building on his work, a University of Alberta team of researchers, several funded by our association, announced a breakthrough technique for islet cell transplantation for severe type 1 diabetes. By increasing the success of transplants, our funding has supported a milestone in the search for a cure.

I would now like to conclude my remarks with a brief mention of the link between childhood obesity and the significant increase in type 2 diabetes in North American children over the past two decades.

The link between unhealthy weights and type 2 diabetes is clear. Since almost two-thirds of Canadian adults and almost one-third of Canadian children and youth are overweight or obese...if these rates remain constant, the prevalence of diabetes will keep climbing.

In your 2007 report on childhood obesity, this committee shared the “...fears of many experts who predict that today’s children will be the first generation for some time to have poorer health outcomes and a shorter life expectancy than their parents.” Our association shares this concern.

Individual and community solutions are available to achieve healthy weights. It is estimated that over 50% of type 2 diabetes could be prevented or delayed with healthier eating and increased physical activity. Weight loss of 5% to 10% has been shown to reduce the risk of diabetes.

Ladies and gentlemen, thank you again for this opportunity to share this important information. I would be pleased to answer your questions.

The Chair: That's some very interesting information. It sounds like it's possible to get to this type 2 diabetes through diet. We'll talk more about that.

We'll now go to the Institute of Nutrition, Metabolism and Diabetes. Dr. Sherman, please.

Dr. Philip Sherman (Scientific Director, Institute of Nutrition, Metabolism and Diabetes, Canadian Institutes of Health Research): Thank you for this opportunity to speak about the Canadian Institutes of Health Research and our support of diabetes research in Canada to mark Diabetes Awareness Month.

I am the scientific director of the CIHR Institute of Nutrition, Metabolism and Diabetes, and I'm a staff pediatrician gastroenterologist at the Hospital for Sick Children in Toronto. I am also a professor of pediatrics, microbiology, and dentistry at the University of Toronto.

I am pleased to be joined here today by my colleague, Dr. Jane Aubin, the vice-president and chief scientific officer of the CIHR.

Diabetes research is central to the mandate our institute. Echoing the pioneering spirit of Dr. Banting and Dr. Macleod, many contemporary Canadian researchers are recognized internationally for their important studies related to advancing knowledge about the basic mechanisms and optimum interventions to manage diabetes.

The Chief Public Health Officer of Canada reported that in 2008 roughly 2.4 million Canadians, or nearly 7% of all Canadians, were living with diabetes. It is estimated that about 10% of those have type 1 diabetes. The per capita health care costs are four times greater for populations affected by diabetes, compared with those without the illness. There are limitations on the data, as you heard from Dr. Hux, but among aboriginal peoples it is estimated that the prevalence of diabetes, whether they live on or off reserve, is higher compared with rates in non-aboriginal populations. In general, aboriginal individuals are diagnosed with diabetes at a younger age and suffer from more severe complications of the illness.

CIHR is the Government of Canada funder of health research for all types of diabetes and its long-term complications, which you heard Dr. Hux mention. CIHR funds the gamut of research, including discovery-based research, clinical research, health services research, and population-based research.

Since 2006, CIHR has committed nearly $250 million to support diabetes-related research, which benefits all affected individuals, because the knowledge gained is often highly transferable between the different types of diabetes. CIHR has also made substantial investments in obesity-related research, as obesity is a key risk factor for type 2 diabetes.

Examples of diabetes research that CIHR has supported include the following.

There is research on developing a new way of using gene therapy to deliver cells produced inside the body, instead of using an insulin pump on the outside, and to detect glucose levels in the blood. That pioneering work is done at the University of British Columbia, funded by CIHR.

Dan Drucker, at the University of Toronto, won the CIHR/Canadian Medical Association top achievements in health research award last year for his work on new peptides, which has led to the development of whole new classes of drugs in the treatment of diabetes.

CIHR also funds studies looking at Smartphone technologies to care for diabetics in remote, rural communities, like the far north, to better manage their disease and the complications arising from it.

An important study funded by CIHR and JDRF is the first prevention trial in the world for type 1 diabetes. It's looking at genetically susceptible individuals. You heard the young lady whose mother had diabetes. Well, that individual is being entered into trials at birth to see if adjustments in the diet can prevent or delay the onset of type 1 diabetes. That study is now being undertaken, and we won't know the results for another five years, but that's the kind of work that CIHR is funding.

CIHR also supports larger signature initiatives in priority-need areas, where Canada can capitalize on our strengths and excellence, including in the area of diabetes. For example, $25 million has been committed by CIHR for Pathways to Health Equity for Aboriginal Peoples, and this includes a focus on obesity and diabetes. A second signature initiative in inflammation and chronic disease focuses on this critical component in the development of multiple chronic diseases, including both type 1 and type 2 diabetes. A third signature initiative focuses on the epigenetic impact on chronic diseases like diabetes, and a fourth looks at managing diabetes in primary health care settings, including rural and remote communities.

CIHR now is strongly supporting a strategy for patient-oriented research to ensure the translation of new knowledge to point-of-care therapy in provinces and territories. This is meant to help them meet the challenges of delivering high-quality, cost-effective health care for specific identified needs.

● (1230)

We anticipate that these new research initiatives and their findings will lead to improved prevention and treatment for Canadians with diabetes.

In addition, we are launching research funding initiatives that will further support diabetes research. For instance, we recently launched a $10 million funding research opportunity to support comprehensive programs of research in the area of food and health. This funding will support research to better understand how diet and dietary factors impact on chronic disease.

Another initiative we'll soon launch supports the research on the environment, genes, and their impact on chronic disease, like diabetes. Advances in gene therapy, cell transplantation, patient-based research, new technologies, and improvements to health care service delivery will effectively be used to manage, prevent, or delay the onset of diabetes in the future.

With that, I conclude my comments. Dr. Aubin and I would be pleased to take your questions, comments, and feedback.

[*Translation*]

Thank you very much.

[*English*]

The Chair: Thank you very much for all your insightful comments, Dr. Sherman, Dr. Legault, and everybody who has been here today.

We'll now go to our seven-minute Q and A round. I understand Dr. Sellah and Ms. Davis are sharing their time, so we'll begin with Dr. Sellah.

● (1235)

[*Translation*]

Mrs. Djaouida Sellah: Thank you, Madam Chair.

I am going to get directly to the point.

First of all, I want to thank all of the witnesses here for having provided us with this more up-to-date information.

My question is for Dr. Legault.

At the beginning of your presentation, you said that there were provincial and national registries, but that unfortunately the system had some snags. Could you explain what you meant by that?

Dr. Laurent Legault: In fact, my point was not that we had some, but rather that we would like to see some well-designed registries.

Mrs. Djaouida Sellah: Oh! I apologize.

Dr. Laurent Legault: It is a difficult task, because the delineation of type 2 and type 1 diabetes is very difficult. There are registries. I know the Ontario one. However, the definition of cases is such that it is really quite difficult to tell whether one is dealing with type 1 or type 2 diabetes.

Before, it used to be easy. We used to say that an adult had type 2, and a child had type 1. However, now that we know that type 2 diabetes is emerging among children, and that type 1 diabetes can be diagnosed in patients of 20 or 30, the picture is much more confusing. Consequently it is more difficult to determine the real needs and trends.

There is a global increase in the incidence of type 2 diabetes, but also of type 1. The latter is increasing especially among very young children, those of less than 5 or 6. We hear that the situation is the same everywhere, but this is often based on data from clinics in large centres such as Toronto or Montreal, where the Sainte-Justine hospital is located. So that gives us a much vaguer picture of the situation.

I think there would be a lot of advantages to having well-kept registries that would allow us, as is the case for instance in Scandinavia, to see exactly what is being done, while reporting the distribution of cases. Diabetes is also found in rural areas, as well as in urban areas, although there are many more cases in urban areas. Consequently, the health needs of people who live in those areas are greater. We could then distribute health care according to the real prevalence of the disease.

Mrs. Djaouida Sellah: Thank you.

How much time do I have left, Madam Chair?

[*English*]

The Chair: You have about three more minutes.

Mrs. Djaouida Sellah: With the time I share with my colleague? I have just one minute to question Dr. Hux.

[*Translation*]

I was very happy to hear you talk about the development of the project you are supporting. You were talking about Dr. Pere Santamaria's therapy, about Dr. Julie Lavoie's treatment, and about the research being done by Dr. Sapieha. Can you update us on these projects? Are they in the preliminary phase? If they have reached the clinical phase, can you tell us how many people have access to this type of therapy?

Thank you.

[*English*]

Dr. Jan Hux: I don't have the exact details on each of these projects. These projects are at the discovery stage, and clinical trials are required to ensure that before they are translated into practice, they are both safe and effective in a real-world setting. The information will be available in the public realm. We support researchers who publish their findings in peer-reviewed medical journals to ensure the integrity of the science and the availability of the research findings to the broader clinical and scientific community.

[*Translation*]

Mrs. Djaouida Sellah: Thank you.

[*English*]

Ms. Davies.

Ms. Libby Davies (Vancouver East, NDP): Thank you very much.

I've got a very specific question, because if what I'm going to ask is still a situation, I want to make sure it's on the record.

I remember a few years ago there was a lot of concern, and even controversy, over people with diabetes 1 who, in effect, were allergic to synthetic insulin, and we had a number of deaths. I remember because I raised it in the House. There was concern about the fact that Health Canada didn't keep accurate records of people who were lodging complaints, and we didn't have good information about people who were basically intolerant to synthetic insulin and relied upon animal insulin, which was getting harder and harder to get. To source it at a particular pharmacy was getting to be very difficult.

I want to know, either from the Diabetes Association or from Dr. Sherman, from the institute, if this is still an issue. If it is an issue, how are we responding to it? Are we doing a better job, hopefully, of helping people who are intolerant to find a better source?

I remember that people had to go overseas to get pig insulin, and that we were doing a very poor job of recording the number of people who were intolerant. It was a hidden story. I recall that it's higher than what people think it is.

I wonder if you could respond to that.

● (1240)

Dr. Philip Sherman: Yes, I can. Thank you for the question. Indeed, this has been brought up as an issue. CIHR has been involved in the context of evaluating a research effort to look at other than synthetic insulin, like pork-derived insulin, so we have been in discussions with Health Canada, affected individuals, and big pharma producers of synthetic insulin. There has been an interest in supporting research in the area.

Health Canada has been monitoring how many affected Canadians are involved and whether there does need to be a source. The numbers are very small, as you heard from the testimonials, where—

Ms. Libby Davies: But for those people it can be catastrophic.

Dr. Philip Sherman: You're absolutely correct, so there is an ongoing issue of monitoring and seeing what's available.

There isn't a local source, as you say, so that still is—because the volume for the pharmaceutical producers is not high enough in Canada, but there is an international source.

As you heard from the testimonials earlier, for most Canadians who are affected with diabetes, the synthetic insulins of the various durations are a big advance.

Ms. Libby Davies: Right. I understand that.

The Chair: Your time is up, Ms. Davies. I'm sorry.

Dr. Carrie.

Mr. Colin Carrie (Oshawa, CPC): Thank you very much, Madam Chair. I want to thank the witnesses for being here today.

I saw my father suffer from the complications of diabetes, and to see the changes that have occurred just in my lifetime are quite amazing.

Our overall theme of these studies is technology and innovation. We heard from Ms. Sissmore. She talked about the glucose monitor, and I was excited to hear from JDRF here today.

Occasionally, we hear from Dr. Beaudet. He said some recent changes are happening at the institute in terms of reforming the granting systems. I was wondering, what capacity and infrastructure does CIHR have to be responsive to issues like juvenile diabetes, and can this be done efficiently?

Dr. Jane Aubin (Chief Scientific Officer and Vice-President, Research and Knowledge Translation, Canadian Institutes of Health Research): I'll take that one. Thank you for the question.

I think there are really two prongs to an answer. We're certainly making proposals to reform our investigator-driven or open grants programs to make them more hospitable to rapid innovations, including new technologies, but we also have, as one of our major strategies, as was commented on by Dr. Sherman, our strategy for patient-oriented research. Many of its key components, including networks and the infrastructure support units that we're going to partner with the provinces to establish, will speak toward sharing best practices and sharing evidence across jurisdictions so that rapid new knowledge could be put in practice much more quickly than today.

I think CIHR is making important advances on both prongs.

Mr. Colin Carrie: Thank you.

To follow up, I always hear from my constituents about making sure government investments are done well. I was wondering if you could describe CIHR's approach to creating partnerships that build and leverage public funds, and what factors you think contribute to how well we can do this.

Dr. Jane Aubin: I think either Phil or I could take that one.

Much of CIHR's work, through the institutes and CIHR overall, is done in partnership with provinces, with charities, and with other stakeholders. Again, the strategy for patient-oriented research is indeed a collaborative strategy, where all voices are brought together to best shape the research being done, and then it's translation into practice.

The partnerships go beyond funding partnerships. They go to conceptual partnerships to help prioritize where needs are and how they can best be addressed.

● (1245)

Mr. Colin Carrie: How much time do I have?

The Chair: You have about another minute.

Mr. Colin Carrie: Mr. Lobb had—

The Chair: Mr. Lobb.

Mr. Ben Lobb (Huron—Bruce, CPC): Thanks very much.

The first question is for Ms. Hux.

Is there a country or a jurisdiction where type 1 diabetes is much lower than, say, the average country or area or region?

Dr. Jan Hux: Type 1 diabetes is more common in northern latitudes. The highest prevalence in the world is in Finland, and it would be more than 20 times higher than in some of the peri-equatorial regions. People at one point thought that either light or coldness were contributors. Those theories haven't necessarily panned out.

Mr. Ben Lobb: Is there any scientific data that explains this phenomenon?

Dr. Philip Sherman: There is a lot of interest in the geographic representation of type 1 diabetes. It is considered that it falls in a category of so-called autoimmune diseases, where the body has fought against something and then it ends up fighting against itself. In the case of type 1 diabetes, the immune cells of the body are fighting against the cells in the pancreas that produce insulin. It occurs very early in life. The antibody testing that you heard of can detect it way before the signs and symptoms of diabetes occur.

The study I mentioned to you, the trigger study, is a Finnish-Canadian collaborative effort to look at high-risk individuals, where the thought is that the trigger is a dietary trigger. It might be a cow's milk protein antigen. Now we don't know that for sure, but that's what the study is going to find out. These aren't patients with an illness. Somebody in their family has type 1 diabetes. When they're born, half of the children go on regular feedings, breast feeding or formula feeding, and with the other half, the mother takes digested cow's milk or the baby goes on a formula with digested cow's milk protein.

That study is under way. We don't know the results. A pilot study had been done, which was very promising—that you could prevent diabetes enough to reduce the risk by about a half. But we don't know the result of the formal study.

Mr. Ben Lobb: Okay.

I'm not an expert on any of this stuff, but with type 1 diabetes, is this something that the father has in his genes that he can give to the child, or is this purely from the mother?

Dr. Philip Sherman: It's what's called a complex polygenic disorder. It's a big term, but it means that multiple genes from both the mom and the dad are risk factors for both type 1 and type 2 diabetes. Lots of excellent researchers around the world, including the group from Montreal Children's Hospital, are doing this kind of work in large populations to identify genetic susceptibility. So it's not from one side or the other, per se. It's not X-linked through the father.

Mr. Ben Lobb: I think I have time for one last quick question.

We heard from the kids today, and there was quite a range in age that it was identified. The young lady explained how she knew it, but can we explain why one kid gets it at 21 months and another kid gets it at 9 years? What happens there?

Dr. Philip Sherman: That's a great question. Dr. Legault maybe can answer as well.

One of the things is that there may be epigenetic modification. It's certainly not just the genes. It's got to be something else more complicated, like environmental exposure or epigenetic modification. We don't know the answer, but there's lots of research looking to see why there is that variation in expression with common susceptibility genes. So we just don't—

The Chair: Dr. Legault, did you want to make a comment on that as well?

Dr. Laurent Legault: Actually, I am part of the trigger study and this is exactly one of the questions we are addressing.

To answer part of the question that was just asked, strangely enough, if your dad has type 1 diabetes, your child has a higher chance of developing type 1 than if your mom has type 1 diabetes. It sounds like it is counterintuitive, but that tells you that there is obviously not a direct link.

Part of the study is to explore many of these aspects, because all the kids who were selected for that prevention study had similar risk factors, but they do develop diabetes at different rates. So it's a combination of many different things.

You do sometimes have the same genetic set-up, but there are probably environmental triggers, as were briefly described by Dr. Sherman, and those may play a different role, depending on what your genetic makeup is. So it's not quite clear, but it's very complex in nature, and we are trying to unravel those complexities through that study. Perhaps we're not going to have all the answers, and it's at least five years down the road before we can conclude anything.

● (1250)

The Chair: Dr. Legault, I note that your clinic starts at one o'clock. We are going to have one more question, and then we'll be dismissing.... We love to have you here; it's just that you gave us this warning about your clinic and I want to be mindful of that.

Mr. Scarpaleggia.

Mr. Francis Scarpaleggia: You're looking at triggers, or the possibility of triggers, such that someone with the gene will never get type 1 and someone with it may get it at a different time in life. Are the triggers you are looking at mostly environmental? Is that what I understand from what you and Dr. Legault said?

Dr. Philip Sherman: The answer is that we don't precisely know, so we're taking a very wide-angle lens.

Environmental triggers are being looked at. There was a study, for example, published last year from China, where type 1 diabetes is occurring. Bisphenol A, the stuff in hard plastics, might be a risk factor for diabetes.

There is some evidence—actually excellent Canadian work—suggesting that it's not chemicals in the environment, but it's the composition of the microbes that colonize your intestinal tract that are a risk factor. Another one might be the kind of dietary exposures you have early in life.

So all of those things are being looked at, at the same time, and we don't yet have the answer. But it's a wide angle, because if you go too narrow you might miss something that is the real culprit.

Mr. Francis Scarpaleggia: I'm just trying to simplify the issue so that I can grasp it. Where are the gaps in research? Triggers are one area, but if you had to name three major gaps in research, what would they be? Where do you feel more resources are required? What are you concentrating on—your research priorities?

Dr. Jan Hux: I will start, and Phil can pick up.

Certainly there is a need for ongoing research toward a cure. That's the best way to stem this epidemic, but even if we had a cure today, there are millions of people with diabetes, or at sufficiently high risk for diabetes, and we will be treating the condition for a long time. So more effective treatments to manage diabetes and to reduce the risk of the chronic complications....

Eighty percent of the cost of managing diabetes is related to the complications, not just to controlling the blood sugar, so better treatments to prevent and manage those complications are important.

Public health approaches and the understanding of the importance of public health approaches.... We focus on diabetes as a condition where people can self-manage and really take control of their health, but if we go too far down that path, we forget the fact that the environment that people live in is critical. Recent research in Toronto has really looked at the built environment and how that impacts on the risk for diabetes.

Mr. Francis Scarpaleggia: The built environment?

Dr. Jan Hux: The built environment meaning the walkability of neighbourhoods. If you live in a suburban rabbit's warren where you are forced to use a car, you will be less active. The risk for new immigrants in developing diabetes, if they live in one of those least walkable neighbourhoods, compared to the most walkable neighbourhoods, is 50% higher.

Mr. Francis Scarpaleggia: Wow. That's very interesting.

I guess stem cell research is part of a search for a cure?

Dr. Philip Sherman: Absolutely, yes.

You heard the Edmonton Protocol mentioned a few times. Canada is well known in that regard for leading stem cell therapy to derive cells that could act like a pancreas. A pancreatic cell that produces insulin is on the horizon. It's not pie-in-the-sky thinking, but it's not yet ready to be used in humans.

Mr. Francis Scarpaleggia: Is that related to the Edmonton Protocol?

Dr. Philip Sherman: It's the next step. Instead of transferring islet cells from a human subject, it's taking cells from the skin, say, and telling those skins cells, no, we don't want you to be a skin cell anymore, we want you to become a pancreas cell that produces insulin. That is not far from the distant future in animal studies. We need steps along the way, and I totally agree with Dr. Hux that a multi-pronged approach—which is what CIHR funds—along the breadth of the health research spectrum is what's required, because we need to find a cure and we need to prevent, but we also need to manage people who are already affected.

Mr. Francis Scarpaleggia: In terms of managing, I was listening to Dr. Legault, who said we need more support in the schools; we need more guidance from medical practitioners who can counsel their patients on healthy living and refer them to a dietitian if they need one. It's all true, and they are very good points, and in some ways they're obvious. But when I look at the real-life situation where I live, the schools are chronically underfunded. They don't seem to have enough money to help kids with autism in the schools. They don't have enough special needs specialists and counsellors. Married to that is the fact that more and more, in my area, if your doctor retires, you're not going to find another one. It seems like such an intractable problem from a public health perspective, because the school commissions are underfunded and they're dealing with many different demands, and fewer and fewer people are going to have a steady family doctor.

I just don't know where the answer lies, Dr. Legault, other than greater funding generally for the health care system and for education, and to make sure that some of that new funding goes into these areas. I don't know if you feel discouraged by the state of affairs. You see the same thing I do: school commissions that just don't have enough resources. In fact, there's even a trend now to want to get rid of school commissions in Quebec.

I'd just like your general reaction to this state of affairs.

● (1255)

Dr. Laurent Legault: If I were pessimistic, I'd probably be out of business, but I need to have an optimistic point of view from this.

I think those are two different things. I think the efforts to try to curtail the epidemic of childhood obesity is a much more challenging task in itself. From a diabetes perspective, though, because that's what we're here for, I think it's doable.

We're focusing in Quebec here because we know the reality, but certain areas of the province do have pretty good school services for diabetic children. It's a matter of school boards sometimes making choices, and they're making choices, I'm sure, based on budgetary constraints. But there is a way for public health, I think, to be involved, to try, at least, to get more knowledge out there. The nurses who are working in the schools are actually obviously catering to 8 to 10 schools, on average. They're not physically present. There needs to be a general way for them to know about type 1 diabetes as opposed to type 2 diabetes, which is often the case. They need to try to find out, as was pointed out by the people from the CDA, what the priorities are for this particular child, age-wise, autonomy-wise. And if it takes only someone supervising the child for half an hour, I think this is perfectly doable, and I don't think that's stretching the budget to a really unreasonable amount.

I agree that the fight against obesity is a completely different type of approach, and it probably involves major support and long-standing work. But I think diabetes is perfectly manageable. It's just a matter of committing to it and making concerted efforts so that everybody's on the same page. The problem is there are many jurisdictions, and I don't know that abolishing school boards is necessarily going to help—

Mr. Francis Scarpaleggia: No, I don't think it would at that point.

Dr. Laurent Legault: I don't think so either, but I'm not the one making those decisions.

But we can work around this. It's just a matter of making sure the nurses are also properly trained. For the most part, the nurses are trained by an adult-type system, where you get calls because a child has a high blood sugar level, which is obviously a cause for concern for someone who has type 2 diabetes because that doesn't happen very often, but it does happen daily for a type 1 diabetic. So we need to make sure they know what they're talking about.

I'm finishing there.

The Chair: You finished well, Dr. Legault.

I want to thank you, Dr. Legault, and all the doctors in front of us today, who have given us some very insightful information. It has been extremely helpful. Your contribution here is very much appreciated. With that, I will dismiss the committee.

Thank you, committee members.

The meeting is adjourned.

Published under the authority of the Speaker of the House of Commons

SPEAKER'S PERMISSION

Additional copies may be obtained from: Publishing and Depository Services
Public Works and Government Services Canada
Ottawa, Ontario K1A 0S5
Telephone: 613-941-5995 or 1-800-635-7943
Fax: 613-954-5779 or 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Also available on the Parliament of Canada Web Site at the following address: http://www.parl.gc.ca

Publié en conformité de l'autorité du Président de la Chambre des communes

PERMISSION DU PRÉSIDENT

On peut obtenir des copies supplémentaires en écrivant à : Les Éditions et Services de dépôt
Travaux publics et Services gouvernementaux Canada
Ottawa (Ontario) K1A 0S5
Téléphone : 613-941-5995 ou 1-800-635-7943
Télécopieur : 613-954-5779 ou 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Aussi disponible sur le site Web du Parlement du Canada à l'adresse suivante : http://www.parl.gc.ca