

Introduction

JDRF Canada, the country's largest charitable supporter of and advocate for type 1 diabetes (T1D) research, would like to make the following submission to the House of Commons Standing Committee on Finance, as part of Budget 2015's consultation process. This submission contributes to three of the Committee's priority themes:

- Supporting families and helping vulnerable Canadians by focusing on health, education and training;
- Increasing the competitiveness of Canadian businesses through research, development, innovation and commercialization;
- Maximizing the number and types of jobs for Canadians.

The history of type 1 diabetes research in Canada is, in every sense, a history of innovation. From the world-changing discovery of insulin by Sir Frederick Banting and Dr. Charles Best, to the more recent breakthrough in islet transplantation (known as the Edmonton Protocol), Canadian researchers have made immeasurable improvements to the lives and health of Canadians living with T1D.

Despite these scientific advancements, Canadians face mounting personal and public costs brought on by diabetes, which are expected to increase to \$16.9B by 2020 – the equivalent of the entire 2014/2015 health care budget of the province of British Columbia. To help the more than 300,000 Canadians suffering from T1D and to bring down these growing costs, JDRF approached the Federal Economic Development Agency for Southern Ontario in 2009 to create a unique partnership which enabled the launch of the Canadian Clinical Trial Network (CCTN).

As a direct result of the Government of Canada's initial \$20 million investment in 2009, JDRF provided \$13.9 million of its own funding to launch the CCTN, a clinical research network of over 24 institutions. CCTN's researchers develop and conduct leading-edge clinical trials, contributing to ground-breaking efforts to accelerate "Made-in-Canada" solutions for the management, care and cure of T1D. The Network was designed to:

- Create an infrastructure and capacity for diabetes research in Canada and greater international competitiveness when attracting global research dollars;
- Conduct advanced clinical trials research and development of leading-edge treatments and technologies for T1D;
- Provide Canadians with T1D access to the latest diabetes breakthroughs via participating in clinical trials; and
- Develop new job-creating partnerships between academic researchers, industry, government, and non-profit organizations.

Delivering Strong Results for Canadians

With this \$33.9 million in funding, CCTN has demonstrated remarkable benefits and capabilities in innovative research and has contributed to improving the health of Canadians living with T1D. This includes:

- Operating nine peer-reviewed clinical trials in Ontario plus one technology project, significantly more than the three trials originally envisaged.
- Creating and sustaining over 200 highly-skilled, knowledge-based jobs across leading hospitals, academic, medical and health science centres and industry, more than the predicted 150 jobs.
- Providing nearly 1,000 Canadians with T1D with early access to life enhancing technologies or solutions through these clinical trials.

About T1D

Type 1 diabetes (T1D) is an autoimmune disease in which a person's pancreas stops producing insulin, a hormone that enables people to transform food into energy. Unlike type 2 diabetes, diet and lifestyle factors are not a trigger for the sudden onset of T1D in children or adults. More than 300,000 Canadians have T1D, although many more are affected as parents, family and friends. T1D strikes children and adults suddenly, causing dependence on injected or pumped insulin for a lifetime, and carries a constant threat of devastating complications, which may include: kidney failure, blindness, nerve damage, amputation, heart attack, stroke, pregnancy complications and the risk of dangerous high or low blood sugar levels, both of which can be life-threatening. With the aging of Canada's population, health care costs resulting from diabetes in Canada are expected to increase to over \$16.9 billion annually by 2020 – the equivalent of the entire 2014/15 health care budget of the province of British Columbia.

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Since its launch, CCTN has grown into an international hub for T1D translational research, innovation, and global leadership of new therapeutics and enabling technologies. As a result of the Government of Canada's investment, Canada is now home to a significantly larger portion of JDRF's funding for global trials. Canadian researchers now participate in up to 19% of the global clinical trials JDRF is funding worldwide even though Canada has approximately 2% of the global population. CCTN's success has led to new scientific collaboration, including international collaboration with researchers in Israel, UK, US, and Australia. JDRF Australia recently received \$35 million from the Abbot Government to launch a clinical trial network based on Canada's CCTN.

Leveraging Private Sector Partners

CCTN has also solidified its industry partnerships with Medtronic of Canada, Eli Lilly Canada and Roche. TELUS is the lead sponsor in JDRF's Walk to Cure Diabetes, which has over 70 walks taking place annually throughout Canada.

The 2014 walk raised nearly \$8 million dollars and some 45,000 Canadians participated.

CCTN's success in Ontario led to JDRF securing a \$3 million donation from the WB Family Foundation. This donation enabled JDRF to expand CCTN into western Canada in 2013, launching Phase II of CCTN with two clinical trials in British Columbia and one in Alberta.

The Next Step for CCTN: Phase III

CCTN is now ready to scale up nationally, bringing its benefits to all Canadians. Phase III would require a \$25 million commitment over five years from the Government of Canada. This investment would allow JDRF Canada to commit additional funds from its own fundraising and to leverage additional industry partnerships. This renewed and strengthened partnership between the Government of Canada and JDRF Canada would allow up to 10 new clinical trials across Canada, while building a national network.

Prime Minister Stephen Harper and All Party Diabetes Caucus Chair, MP Patrick Brown, with JDRF Youth Ambassadors.



Clinical Trial Case Study: CONCEPTT



CONCEPTT

Women with type 1 diabetes continue to have adverse pregnancy outcomes, including high rates of major congenital malformations, stillbirth, and neonatal death. Pregnancy is one of the biggest accelerators of diabetic complications.

This CCTN study is a randomized, open-label controlled trial funded by JDRF to evaluate the benefit of using a real-time continuous glucose monitor (RT-CGM) sensor for pregnant women and to improve baby outcomes. The sample size is 324 women (110 pre-pregnant and 214 pregnant), to be recruited from eight centres in Canada and 10 internationally.

This Canadian based trial is supporting an international group of more than 20 leading investigators in the U.S., Europe, and Israel.

“Through all the years of discussion around pregnancy, I knew it was a big deal,” said Vanessa Oliver, who was diagnosed at age six with T1D and participated in the CONCEPTT trial. “On average, you need to start working with your diabetes team up to a year before you’re planning to conceive... It’s a lot of pressure when you know that not only your own quality of life depends on that control, but also the health of your child.”

Institutional Partner	Principal/Site Investigator
Mount Sinai Hospital, Toronto, ON	Dr. Denice Feig
Sunnybrook Health Sciences Centre, Toronto, ON	Dr. Julia Lowe
St Joseph's Health Care, London, ON	Dr. Ruth McManus
Kingston General Hospital, Kingston, ON	Dr. Robyn Houlden
Diabetes Care & Research, McMaster University, Hamilton, ON	Dr. Natalia Yakubovich and Dr. John Booth
The Ottawa Hospital, Riverside Campus, Ottawa, ON	Dr. Erin Keely
Alberta Health Services – Calgary Zone Diabetes in Pregnancy Clinic Foothills Medical Centre, Calgary, AB	Dr. Lois Donovan

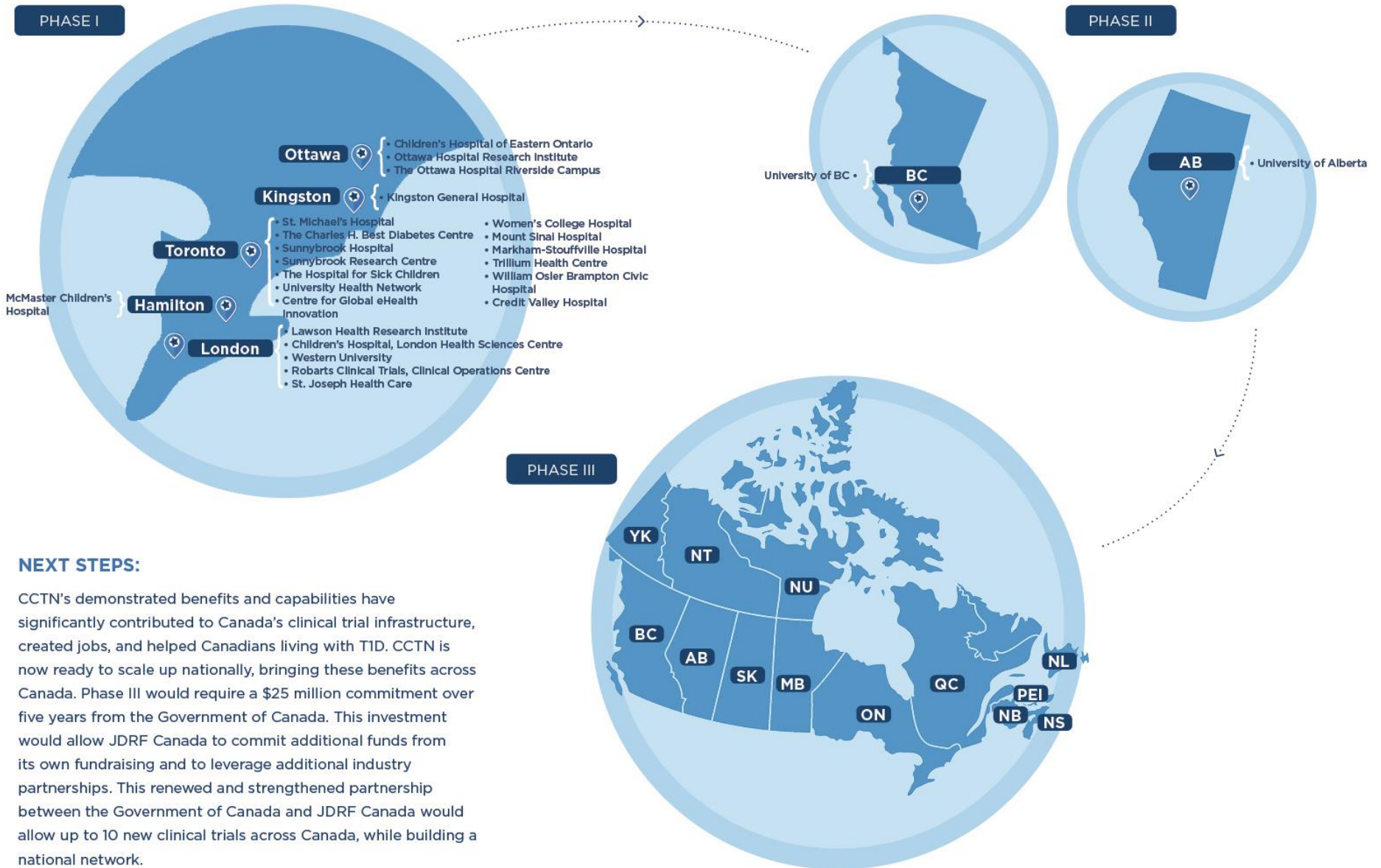
“Through trials such as CONCEPTT, we are positioning Canada as an international hub for diabetes science and innovation, researching new technologies and therapeutics that will enable the diabetes community to lead better, longer and healthier lives,” says Dave Prowten, JDRF Canada’s President and CEO.

About JDRF Canada

JDRF Canada, the country’s largest charitable supporter of and advocate for type 1 diabetes (T1D) research, invests in the most scientifically promising research opportunities for curing, treating, and preventing T1D, an autoimmune disease that affects more than 300,000 Canadians. In 2014, JDRF International was ranked globally as the top non-governmental diabetes research funder and is the leading global organization funding T1D research, according to Thomson Reuters’ ScienceWatch, which conducted an independent analysis of scientific diabetes publications over the past five years. Visit: www.jdrf.ca

The JDRF Canadian Clinical Trial Network (JDRF CCTN)

Accelerating “Made-in-Canada” Solutions for the Management, Care and Cure of Type 1 Diabetes



NEXT STEPS:

CCTN’s demonstrated benefits and capabilities have significantly contributed to Canada’s clinical trial infrastructure, created jobs, and helped Canadians living with T1D. CCTN is now ready to scale up nationally, bringing these benefits across Canada. Phase III would require a \$25 million commitment over five years from the Government of Canada. This investment would allow JDRF Canada to commit additional funds from its own fundraising and to leverage additional industry partnerships. This renewed and strengthened partnership between the Government of Canada and JDRF Canada would allow up to 10 new clinical trials across Canada, while building a national network.