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Institution: *University of Calgary*

Project title: *Program to IMPROVE the Heart and Brain Health of Post-Partum Canadian Women*

The Health Problem/Issue

Right now, in Canada, women with a high blood pressure disorder in pregnancy (HDP) are 2-5 times more likely to have a heart attack or stroke before the age of 40 and die prematurely before they reach 60 years old. Half of the doctors in Canada aren't aware of this higher risk - which is probably why only nine in ten women with a HDP aren't told by their doctors that they have a higher than average risk of heart disease or stroke.

If women don't know they are at risk, how can they take charge of their health to lower their risk of a heart attack or stroke until it's too late? Clearly, we need to find better ways to prevent thousands of young women from having heart attacks and strokes. We need to keep them healthy - for their sake and for the sake of their family - and we need to do it now.

While we don't know the best ways to make a difference, we need to start somewhere. We can use information on the best ways to prevent heart attacks and strokes in people over 50 (like checking for high cholesterol, high blood pressure and diabetes) to see if it works as well in young women. We also need to figure out the best places and times to see new moms - as we know about half can't make it to their doctor's appointments.

The IMPROVE study team is ready to start answering some of these hard questions – to start making a difference now.

The Objectives

The main goal of the IMPROVE (Identifying Methods for Postpartum Reduction Of Vascular Events) Research Program is to determine how best to prevent heart attacks and strokes in young women who had high blood pressure in pregnancy. To achieve this goal, we brought together a team of patients, doctors, researchers, and health care groups from across Canada. Together we have worked very hard to develop heart disease prevention programs for these young Canadian women. As first steps, we need to quickly answer these important questions:

1. How many Canadian women with high blood pressure disorders in pregnancy actually go on to develop the risk factors for hardening of the arteries? (high blood pressure, high cholesterol diabetes and obesity)
2. Do the usual blood tests and treatments for these conditions work as well in young women?
3. What's the best way to reach women to educate them about their health? Will they come to clinic? Or can we find better ways to reach new moms through baby check-ups or baby immunizations?
4. What's the best way to help doctors take care of these new moms to prevent heart disease and strokes? What kinds of tools would work in different types of clinics?

The Approach

We are lucky that we can do two studies at the same time so that we can quickly answer these important questions. We also have a strong team that can do the work.

For the first study (APPLES), we will use several health databases that already collect health information on Alberta women. The information will tell us how often, when, why and where women see their doctors after they have a baby. We will also be able to tell how many women have their cholesterol and diabetes blood tests and what the results are. This will give us a starting point to work from for understanding how big the problem is and how to reach women. We can see if patterns in health problems over ten years to see if they are improving with public health programs we plan to start.

For the second study, several specialized follow-up clinics for women after pregnancy across Canada have started working together to share clinic information so we can find out if specialty clinics work better than usual care clinics at finding and treating the heart and stroke risk factors. These specialists will also help us develop and test "tools" to help doctors take better care of their patients. If these tools work, we can test these tools in different clinics across Alberta as another starting point.

Unique Factors

The APPLES study will be the first study to look at where, when and why women see their doctors after pregnancy so we can understand how to reach these women. This answers the "how" and "where" to reach women in a real world setting. Since no one else has looked at this, it may help us understand how we can improve clinic attendance from a low rate of 50%. It might mean that we have to go directly to the women in their communities instead of asking them to come to a clinic, pay a babysitter and pay for parking.

The specialty clinic study is also really unique. There is a lot more health information in clinic charts than in the APPLES databases. This will be the first study joining all of the information on the specific care of young women after high blood pressure diseases. By joining the information from all of these clinics together, we can get a lot more information on a lot more women to quickly answer the questions of "what" to do to lower their risks of heart disease and stroke. We can also look at the treatments the specialists use (and if those treatments actually work to prevent high blood pressure and high cholesterol as a way to identify the "best treatments").

The most important thing that is unique is that we have involved the women who we want to help. We've asked them what's important to them and their health. Most researchers don't do this. This way, we are starting with what's most important to women.

How the Project is relevant to the Objectives of the initiative

These studies are directly related to women's heart and brain health - because we are working directly with women, for women, to prevent heart attacks and strokes.

In short, we know that 1 in 10 Canadian women will have a high blood pressure disorder of pregnancy - and some of these women have a very high risk of early heart disease in stroke. Unless these women live near one of these specialty clinics in Canada, chances are that only 1 in 10 women who are at risk will learn about their risks of heart attack.

We need to change this. The time is now and we are the right team, with the right tools and experience to quickly answer these questions.