



Turning research
into transformational
impact for women:

The Centres of Excellence

A Case for Support



Beat health inequity.



Women face unique, systemic challenges when it comes to safeguarding their heart and brain health.

And despite the significant impact of heart disease and stroke on Canadian women, meaningful sex- and gender-specific research has been desperately lacking.

To close this gap, **Heart & Stroke will raise \$15 million to establish three Centres of Excellence (COEs)**. A first of their kind in Canada, the COEs will serve as the foundation of a new system that will help **beat health inequity** through innovative research that prioritizes care for *all* women in Canada – from prevention to diagnosis, treatment to recovery – and help them **beat heart disease and stroke** to live longer, healthier lives.



Creating a brighter future for women's heart and brain health

Heart disease and stroke are the number-one causes of premature death in women, claiming tens of thousands of lives every year. And while the problem – and the effort that has gone into solving it – is massive, there is still much more to be done.

Historically, two-thirds of all clinical heart disease and stroke research has focussed on men, meaning that much of the awareness and care available to people in Canada today neglects the experience of more than half of our population. And because our healthcare system is not properly equipped to address their specific needs, women are being put directly in harm's way as their symptoms go ignored, overlooked and untreated.

But we are changing this. Heart & Stroke is committed to transforming Canada's healthcare system to serve all women. We have made many strides forward to address these inequities by cultivating awareness and research and building a network of expertise. Now, we are creating a new opportunity that will jumpstart cutting-edge heart and brain research for women, putting the spotlight back on where it is critically needed.

Our Centres of Excellence (COEs) will be **the first of their kind in Canada**. These transformational research partnerships and competitions will grant the best researchers and institutions from across the country the resources needed to lead innovative, impact-based research and create real solutions to some of the most pressing challenges facing women's heart and brain health today.

An opportunity to build upon, progress and accelerate learnings from existing research excellence led by Heart & Stroke and the world's foremost leaders and innovators, the COEs will each serve as a holistic research hub, mobilizing key findings into clinical practice and ensuring equitable, lifesaving care reaches the women who need it. They will also serve as a training ground for the next generations of researchers who will carry on the legacy of this important work for the future.

With **\$15 million in donor support**, we will create and sustain three COEs for five years each, launching two of these research partnerships by August 2024. Heart & Stroke – along with our generous donors and partner institutions – will drive the innovative, impact-based research needed to create a bright future where women receive the high level of targeted care they need and deserve, where both women and their care providers understand the risks and advocate for prevention, and where women can expect the best possible outcomes.

Together, we will **beat health inequity** and make this future a reality.

A growing concern

The burden and impact of heart disease and stroke on women in Canada is both high and inequitable.

They are now the number-one causes of premature death for women in Canada, claiming more than 32,000 lives in 2020 alone (that's approximately one woman every 16 minutes).

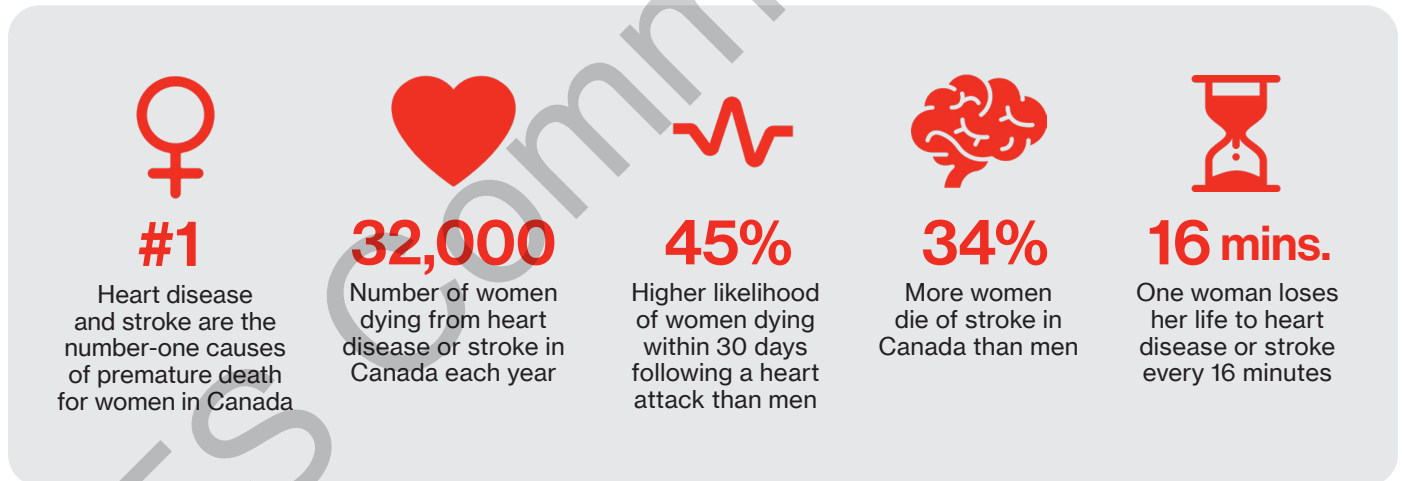
Due to key physiological differences that are not sufficiently understood or addressed, women face a vastly different situation from men when it comes to heart and brain health – such as experiencing higher rates of microvascular disease or hypertension once over 60. These differences are particularly heightened during pregnancy, menopause, contraception use or hormonal therapy use, when using certain types of birth control, or after cancer treatment.

Heart disease and stroke also disproportionately impact racialized and visible minority communities in Canada, with women from Indigenous, Black, South Asian and other marginalized communities facing uniquely heightened levels of risk and systemic barriers that create immense difficulties in accessing quality care. These challenges are also present for those women of lower socio-economic status.

Women are more likely than men to die in the months and years following a heart attack, and are more likely to develop and die from heart failure. They are also more likely to die from stroke, and they often face worse outcomes, more activity limitations and lower overall levels of mental and physical well-being.

But what is being done to address this problem?

Despite the significant and disparate toll these illnesses are taking, many Canadians are not aware of the consequences this reality is having on women's health, while researchers and care providers have not yet overcome these challenges.



One size doesn't fit all

It is estimated that **roughly two-thirds of all heart and stroke research has historically been based specifically on men and their experience**. This means that the innovations and care practices resulting from this work ignore women's unique risk factors and symptoms. This puts them at a greater risk for serious complications throughout their lifetime and even premature death.

Women have been under-represented in – and sometimes even excluded from entirely – heart and brain health clinical trials, while there are only a limited number of research investigators dedicated to women's heart and brain health across Canada. Even then, these researchers can frequently be disconnected from each other, and though their research is often inter-related with the potential for significant impact, they are limited by geographic and intellectual silos, funding challenges and a lack of access to networks through which they can mobilize their findings.

Without the research infrastructure dedicated to identifying, investigating and mobilizing solutions specific to women's health, we are perpetuating inequities in our healthcare system that are leaving women and the people who love them in the dark.

And this research gap has intensified a dangerous gap in heart and brain care for women across Canada – one that requires significant investment to reverse its trajectory.

Many women are misinformed about their own heart and brain health, and they often don't know what they should be aware of or what it may mean. At the same time, more than half of all women who experience a heart attack have their symptoms go unrecognized or downplayed by being attributed to something less severe.

Due to a lack of sex- and gender-specific understanding of a women's unique risk factors and symptoms, expertise and experience on how to properly address them is lacking among healthcare professionals. Women won't receive appropriate heart and brain health diagnoses and care because the system has not been designed with them nor their unique needs in mind.

At the same time, a lack of race or ethnicity-based data (and other socio-demographic data) has resulted in limited knowledge related to disparities among or between different groups of women with regards to heart and brain health.

These glaring care gaps in the detection, management, prevention and care of heart and brain conditions has led to a healthcare journey that is ineffective for women. Tens of thousands of women are dying each year because of it and, if left unaddressed and unchallenged, thousands more will continue to suffer and needlessly lose their lives.



2/3

Of all heart and stroke clinical research has historically focussed specifically on men



14

Average number of years lagged in clinical uptake for women's heart and brain research



11%

Of women can name one or more of the women's specific risk factors for heart disease and stroke



53%

Of women who experience a heart attack have their symptoms go unrecognized or downplayed



From lifesaving cancer treatment to surviving heart failure

At 46, busy fashion buyer Jackie Ratz was told she was experiencing heart failure. While alarmed, the diagnosis came as something of a relief.

Believing her recent symptoms heralded the return of the cancer she had battled in her 20s, **she had repeatedly been shunted from one specialist to the next looking for answers and delaying potentially lifesaving care.** Ultimately, it turned out she had developed heart failure as a long-term side-effect of the chemotherapy she'd had all those years ago.

Today, Ratz is living a very different life from the one she imagined.

“Heart failure is a lifelong, chronic condition”, says Jackie, who now has an implanted ICD (an advanced type of pacemaker), takes 10 different medications and has a heavily scripted lifestyle that includes constant health checks, a wholesome diet, daily walks and lots of yoga to keep stress levels down. She also speaks publicly to help raise awareness of the significant impact this diagnosis can have on one’s physical and mental health.

“I believe that, with support, every person living with heart failure can impact their care through self-advocacy. And this is an especially important message for women. **If we don’t take the time to care for ourselves, how will we be able to take care of everyone around us?**”

Delays in receiving accurate diagnoses are common today for women like Jackie facing heart disease and stroke. However, through a cutting-edge new research opportunity, Heart & Stroke is putting capacity towards shortening this timeline for future generations of women in Canada and, ultimately, saving lives.

Closing the gap

Heart & Stroke has a proven track record of contributing to meaningful progress for women's heart and brain health. But to ensure future generations of women can access the targeted, equitable care they need and deserve, **we still have more work to do.**

Through phase one of our Women's Initiative, Heart & Stroke mobilized over \$10.5 million in funding from government, corporations and donors, and led a coalition of partners, researchers, clinicians and women with lived experience to raise awareness of the health inequities that women face. We funded new women-focused research projects and publications, brought women's health champions and stakeholders together from across Canada, and propelled our message in front of millions through nationwide media campaigns.

We're ready to take things to the next level. Heart & Stroke needs to build upon our successes and leverage our established leadership to foster real impact and long-lasting system change.

As part of our bold vision for the second phase of the Women's Initiative, **we have created a one-of-a-kind opportunity for world-class researchers from across Canada.** We will help them accelerate their research into tangible action, going beyond building the body of knowledge to transform health policy and practice and create an immense impact for the millions of women facing heart and brain disease.

Enough is enough. No longer should women's unique symptoms and experiences at any stage of life be misunderstood and ignored, and no longer should they lose their lives because of it. Women across Canada deserve research that focuses on their unique experiences, and dedicated researchers who collaborate to innovate targeted, equitable care for their hearts and brains.

The time has come for a fundamental change in how we prioritize women's health, and how we mobilize real and sustainable solutions to the challenges they face – and Heart & Stroke is looking for partners who will **join us in transforming the health system by closing this research gap once and for all.**





The first of its kind in Canada:

The Centres of Excellence

An innovative, impact-based approach to women's heart and brain research and a catalyst for saving lives

The **first-ever research partnership and competition of its kind in Canada**, the trailblazing COEs will transform women's heart and brain health, across the country and around the world. Heart & Stroke will invite leading Canadian institutions, including hospitals, universities and research institutes, to apply and be selected to establish three Centres of Excellence and fund their transformative research.

The COEs will enable the best of the best from across the country – leaders in women's health research with demonstrated excellence, influence at the local, provincial, national and international levels and an existing network of multidisciplinary teams – to propose research with ground-breaking potential for women's health.

The principal investigator will be accompanied by a network of pre-existing collaborators (e.g., researchers, clinicians and knowledge users). As a cohesive unit, these pan-Canadian teams will build on existing expertise and research efforts, delving deeper than ever before into specific themes representing the greatest and most complex challenges facing women's heart and brain health today.

Through partner institutions and the support of Heart & Stroke, the transformative research borne of these collaborative networks will then be immediately mobilized to change systems, policies, attitudes and behaviours. It will bring targeted, equitable and lifesaving care to *all* women in Canada – across each province, throughout every marginalized community, and at both urban and rural levels – and empowering them with the knowledge and awareness to take control of their own health.

Our goals

The COEs will focus on achieving three primary goals:



To **continue developing knowledge** in the field of women's heart and brain health through research excellence at a Canada-wide level – a task Heart & Stroke is uniquely positioned to accomplish;



To **bring knowledge into practice**, mobilizing key findings to inspire and influence tangible change in policy while guiding best practices and training principles to transform care for patients; and,



To **build capacity for the future** by supporting training and mentorship for early-to-mid career researchers as they develop their expertise.

The Centres of Excellence: A cutting-edge approach

The model upon which our COEs will be established is a tried-and-true framework that will tackle challenges currently facing women's heart and brain health from a more holistic and effective perspective. As opposed to relying on individual researchers, who are often limited in the resources they can access and the networks they can tap into for support, the COEs will be equipped with the funding, connections and infrastructure needed to nurture innovation, advance clinical uptake and prepare to create impact from day one.

The COEs will be established with these **building blocks** as their foundation for success:



Priority-Driven

Focussed on the most important gaps in women's heart and brain health, as identified by the research and medical communities



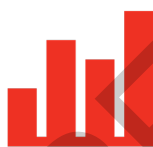
World-Class Leadership

Led by world-class scientists with a track record of demonstrated excellence and leadership around women's heart and brain health



Partnerships

Bringing together multi-disciplinary expertise and pre-existing networks of collaborators and knowledge users from across Canada to generate richer data with broader impact



Impact-Oriented

Accelerating research and innovation, delivering breakthroughs, and pushing evidence into clinical practice, policy and healthcare systems across every province



Equity & Innovation

Embedding themes of data, health equity and Indigenous health while designing solutions for all women in Canadian – including from marginalized communities and both urban and rural settings



Embedding the health equity lens

Heart & Stroke is committed to supporting Indigenous people and groups that have been historically and persistently marginalized and excluded – and who experience a higher risk of heart disease and stroke – by integrating their needs and experiences into the work we do. This is why a cross-cutting theme and requirement for each COE will be research and knowledge translation **conducted through an intersectional lens.**

This refers to actionable strategies to address systemic inequities reflected in their research and policies that ensure diverse representation is reflected in the teams themselves.



Building the future through science succession planning

The COEs will be required to incorporate early-to-mid-career researchers as part of their teams and provide opportunities for them to develop a life-long commitment to this area of research so they may lead innovation on behalf of future generations of women. This ensures they not only affect change in women's heart and brain health today, but will set the stage for long-term impact and sustainable progress.

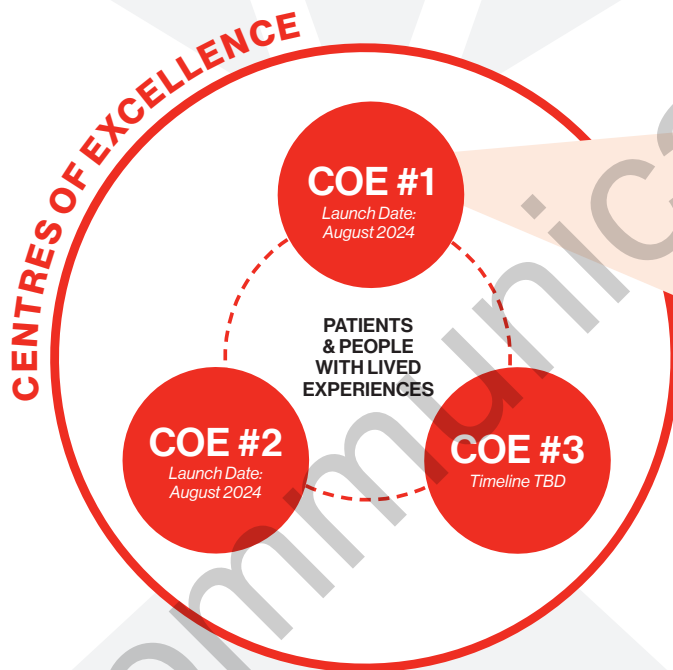
The Centres of Excellence: A roadmap to real system change

Donors and other funders will come together to provide funding needed to create the COEs, with Heart & Stroke uniquely positioned to serve as an integral partner throughout their lifecycle.

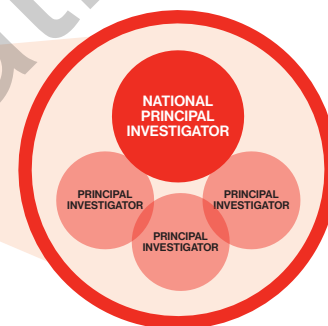


Leading researchers will submit applications outlining their research, its intended impact and how it relates to our areas of focus, as well as identifying a pre-existing network of collaborators (including other researchers, clinicians and knowledge users).

National principal investigators will be chosen to lead each COE through a highly competitive selection process. The COEs will operate for a five-year term and conduct cutting-edge research on one of three key themes vital to women's heart and brain health (see page 11).

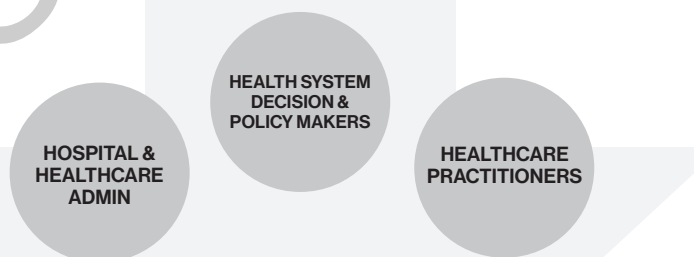


AN INSIDE LOOK



Within each COE will be a primary principal investigator working with a team at a national level, while also overseeing and collaborating with smaller teams across the country as they explore various aspects of each theme. As a collective, they will form a collaborative "network of knowledge" to holistically address these pressing challenges at every level.

KNOWLEDGE TRANSFER



Driven by a patient-centred approach, the COEs will work with Heart & Stroke and their pre-existing networks of knowledge users to inform cutting-edge research and immediately mobilize their findings through knowledge transfer activities. This will rapidly bring their research into care settings to inform health practices and policies that will better the lives of women across Canada.





The Centres of Excellence: Addressing our most pressing challenges

Heart & Stroke has identified three primary focus areas* that represent **the most critical research and care gaps in women's heart and brain health** and that will direct the research, knowledge translation and impact to come out of the COEs:



Risk factors specific to women across their life-stages

Goal: To investigate the range of sex- and gender-based differences and determinants that influence the risk and pathogenesis of cardiovascular disease.

Intended Impact: To increase awareness among women, the public and healthcare providers of women-specific risk factors for heart and brain conditions across their life stages, and establish integrated health systems that ensure the screening, early detection and management of women-specific risk factors.



Diagnosis and treatment of understudied conditions more prevalent among women

Goal: To identify sex- and gender-specific differences in heart disease and stroke (and their comorbidities), measure the safety and efficacy of treatments for women and develop sex- and gender-specific guidelines for prevention and management.

Intended Impact: To increase knowledge about the prevalence, diagnosis, treatment and outcomes of heart and brain conditions among women, including data on race, ethnicity and other intersecting demographic factors, and build a system with equitable access to diagnosis and optimal care for heart and brain health.



Access to cardiac and stroke rehabilitation and the whole-person approach

Goal: To address unequal outcomes for women caused by systemic inequities and barriers, including systemic racism, language barriers, low health literacy and lack of access to primary care professionals, rehabilitation or prevention programs.

Intended Impact: To increase the equitable availability of, and access to, rehabilitative care that adopts a whole-person approach integrating biological, psychological, emotional, social, and environmental needs.

*NOTE: Only two of these three focus areas will be captured during the initial COE competition (expected to be complete in August 2024), with a competition to address the third focus area following thereafter (timeline TBD).

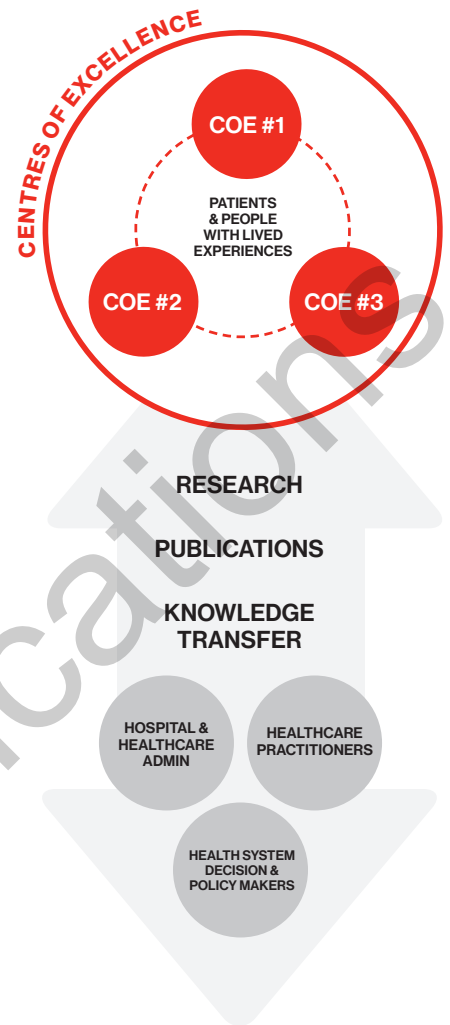
The Centres of Excellence: Accelerating knowledge into action

While groundbreaking research and building the overall body of knowledge for women’s heart and brain health are key components of the COE initiative, what Heart & Stroke is focussed on most is ensuring the COE’s work – and the findings that result from it – are **mobilized effectively, broadly and as quickly as possible** to ensure the most immediate, tangible impact on women’s health outcomes.

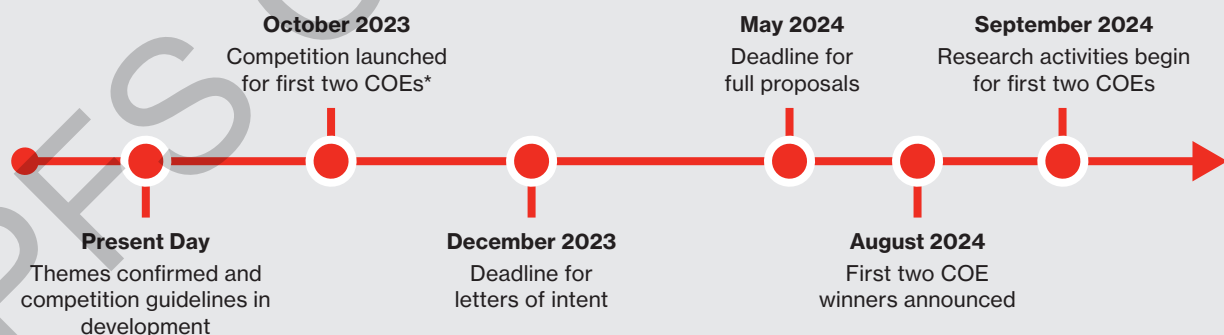
The COEs are required to adopt an integrated Knowledge Transfer (KT) strategy approach, meaning lead investigators must come to the table with a pre-existing network of knowledge users ready and willing to be involved right from the application stage – including healthcare providers, funders, hospital administrators and health system decision-makers.

By involving these partners in the design and implementation of the COE’s research from the get-go, they provide oversight ensuring the work is optimized for immediate uptake in their associated care settings. As they facilitate real-time impact for patients and clinical trial participants, they will also help to expedite overall system changes, accelerating the COE’s research into action by bringing these findings directly to healthcare leaders and care providers through best practice, training and public awareness

At the same time, Heart & Stroke will remain an integral and highly involved partner to the COEs. We will connect these teams to each other and to the guidance, support and capacity of other research institutions over the course of their grant, and will serve as a conduit to advocate on behalf of them and their research to government, healthcare leaders and other partners who can deploy it to the women who need it.



Our timeline



*NOTE: A competition for the third COE will follow this initial competition (timeline TBD).



An opportunity to beat health inequity **\$15 million for our inaugural Centres of Excellence**

The Centres of Excellence will be a first-of-its-kind catalyst for collaboration, innovation and positive change like never before seen in Canada. These innovative research networks will reprioritize women's heart and brain health, paving the way for targeted and equitable advancements in how their specific risks are recognized, how their symptoms are responded to and how their care is delivered.

But we cannot do it alone.

With **\$15 million in support from generous donors and community partners** who choose to invest in these one-of-a-kind partnerships and in a brighter future for women's heart and brain health, Heart & Stroke can achieve our bold vision and fund each of the three COEs for a five-year timeframe.

This funding will allow the COE teams to secure the tools and resources outlined in their proposed budgets. It will provide them with everything needed to not only initiate their research, but to sustain these projects for the duration of the grant and as they prepare to move from research to knowledge mobilization to implementation. The five-year timeline will also provide an opportunity for them to secure additional funding or grants based on the groundwork and legitimacy they will build through the initial \$5-million investment.

Without this critical support, the research gap – and thus, the gap in women's healthcare – will only continue to grow. This means more women will have their symptoms ignored and die from heart disease and stroke, leaving more families to pick up the pieces.

We now have the chance to do something about it – to beat health inequity and beat heart disease and stroke, once and for all. By creating our first-of-their-kind Centres of Excellence and setting them on course to make a transformational impact, we can change what this future looks like for women and their families.

Join us in mobilizing research that will have a transformational impact on women's heart and brain health.

Through our one-of-a-kind Centres of Excellence, we can **beat health inequity**, close the research gap and guarantee all women have access to the quality care and evidence-based support they need to understand their risks, take control of their health and live long, healthy lives.

Beat health inequity.
heartandstroke.ca



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