



British Columbia's Women's Health Research Agenda



**WOMEN'S HEALTH
RESEARCH INSTITUTE
AT BC WOMEN'S**



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The Women's Health Research Institute's primary mandate is to create "new knowledge and evidence-based solutions that inform and transform the health and healthcare of women and their families."

The Women's Health Research Institute: Experts in Women's Health Research

Established in 2005, the Women's Health Research Institute (WHRI) is one of only two research institutes in the country with an explicit focus on women's health research; that is, research on or pertaining to women, girls, and newborns. WHRI's primary mandate is to create *"new knowledge and evidence-based solutions that inform and transform the health and health care of women and their families."*¹ This mandate is executed with a provincial focus, with the WHRI empowered to act as the research arm for BC Women's Hospital and Health Centre, the province's only dedicated women's hospital, and part of the Provincial Health Services Authority. Guided by the 2013–2018 Strategic Plan, the WHRI's goal is *"to communicate research discoveries and successes to researchers, stakeholders and the public,"*¹ thereby supporting the knowledge-to-action process, and increasing the active uptake of evidence. To do this, we at the WHRI are committed to facilitating and supporting women's health research, sex and gender based analyses, and explicating sex- and gender-relevant findings in research. We champion knowledge translation in our research community to ensure that research findings translate into key improvements in health care practice and policy that are relevant to women. Presently, the WHRI has a membership of over 200. More than a research institute embedded in a hospital, the WHRI seeks to enable all women's health researchers across British Columbia to reach their highest potential in their critical work towards improving girls' and women's health.

Why Women's Health Research is Vital

“Every cell is sexed and every person is gendered,”² which means both sex and gender affect everyone. Defining and differentiating between these concepts is essential to good research in all health domains, and to understanding user experiences in the health care system, and health and disease more broadly [see a full list of definitions in the glossary, p.30]. While distinct, sex and gender are not mutually exclusive; they have separate *and* interactive effects on health for women, men, girls, boys, and gender-diverse people.^{3,4} For example, a person's bone density is determined by both sex-related characteristics (e.g., hormones) and by social factors that can be highly gendered (e.g., activity level, dietary habits, occupation).⁴ Another example of sex and gender interplay is that women disproportionately shoulder both the risk and the burden of Alzheimer's disease: they are 2.5 times more likely to develop Alzheimer's due to sex-related genetic differences and hormonal changes at menopause, and they are also more likely to be primary caregivers of others with the illness.⁵ Similarly, women's disproportionately high use of prescription pain medication⁶ appears to be due to a combination of both sex- and gender-related factors: for example, physiological differences in pain response and drug metabolism as well as gendered differences in health seeking behaviour and increased likelihood to self-medicate to cope with trauma or violence.

Currently, much of what we know about health and disease is based on male human and animal studies.^{5,7-13} Unfortunately, women have been historically underrepresented in pre-clinical, clinical,

and population health research.^{5,7,11,14,15} Failing to consider sex and gender in health research because of a mistaken belief that some research is sex or gender neutral, using men's health as a proxy for women's, or by not using sex or gender as a factor in the analysis, effectively leaves women's health to chance. This puts women at risk, and prevents society from deriving the most benefit from health research efforts and spending.^{5,15}

Women's health research projects are necessary in order to understand differences between women, across sexes, and across the lifespan.

Although the past two decades have seen considerable advances for women's health, sex and gender-related health disparities persist. For example, women are more likely to die prematurely from largely preventable illnesses (e.g., lung

cancer, HPV-related cancer), bear a higher burden of chronic illness, and experience higher levels of disability than men, particularly in old age.^{15,16} Women's health research projects are necessary in order to understand differences between women, across sexes, and across the lifespan, whilst interrogating how sex and gender track across experiences of health.

We know with certainty that dedicated women's health research, along with rigorous sex and gender analysis across *all* research, results in better science by improving research quality, reliability, validity, and innovation.¹⁶ We know that women's health research specifically matters to the health and well-being of girls and women. We also know that when women thrive, so do their families and communities.^{17,18} In turn, everyone benefits from advances in women's health research and conscious attention to sex and gender in research and practice.



A person's bone density is determined by both sex-related characteristics and by social factors that can be highly gendered.

BC's Women's Health Research Agenda seeks to guide research and implementation innovations in women's health, and see those innovations translated into health care practice and policy.



About British Columbia's Women's Health Research Agenda

The need for a Women's Health Research Agenda emerged alongside the development of a revitalized provincial Women's Health Strategy to improve the health and well-being of girls and women across British Columbia. Hand-in-hand with a women's health strategy is the need for a research agenda: a chance to review the landscape of women's health research in BC and chart the priorities, challenges, and opportunities for women's health research, knowledge translation (KT), and implementation across the province. This also presents an opportunity to consider women's health research at the population and public health level.

BC's Women's Health Research Agenda serves as a guiding document for those engaged in the women's health research enterprise. It is intended to be useful, practical, and applied. This research agenda seeks to guide research and implementation innovations in women's health, and see those innovations translated into health care practice and policy. It is intended to direct our work forward with strength and cohesion, focus and vision, to advance the field of women's health research in British Columbia. The rejuvenated BC Women's Health Strategy intends to engage and align with this agenda by supporting and endorsing provincial stakeholder development, capacity building, and the sharing of best practices to inform overall system enhancements and the provision of services.

This research agenda is *not* a thematic report pointing to a subset of health issues or practice areas where research is currently needed. It is much more foundational than that. In this agenda, we identify key challenges, drivers, and enablers to women's health research and implementation efforts in BC; and, we present strategies for enabling, facilitating, and accelerating growth and excellence in women's health research and implementation.

Key priorities in the development of this Agenda:

- ▶ Understanding facilitators to women’s health research and implementation successes in BC;
- ▶ Understanding key research needs for advancing women’s and girls’ health in BC;
- ▶ Examining the knowledge-to-action gap within the context of women’s health research; and
- ▶ Integrating both the challenges and strengths in BC’s women’s health field to map a course forward, promote excellence in research and innovation, and foster responsive knowledge mobilization and implementation initiatives.



Intended Audience

The intended audience for this research agenda is primarily, though not exclusively, an academic one, with anticipated readers located throughout the health system in capacities that conduct or enable women’s health research and implementation: researchers, health authority leadership and directors, health system decision makers, policy analysts, foundations, research institutes and centres of excellence, and others.



Underlying Values: Women-Centred, Culturally Safe

This agenda has grown from core values of practising and enabling culturally safe, women-centered care. **Women-centered care** places women’s experiences, needs, and perspectives as central to the effort being undertaken. In this agenda, that means keeping the health and well-being of girls and women central to our analysis of drivers of change, and ensuring mechanisms for meaningfully engaging women in the production and evaluation of research through to implementation—as researchers, clinicians, systems level supporters, community and patient participants.

Cultural safety and cultural humility¹⁹ are integral to the development of research paths and implementation initiatives going forward. The act and process of cultural humility are the building blocks of cultural safety, which is central to the values and vision of British Columbia’s health authorities, and to the Women’s Health Research Institute. Reflexivity, ongoing learning, community engagement, and the active acknowledgement of inherent systemic/historic power imbalances are imperative for researchers and care providers, as well as for the systems that drive them. In so doing, we can better understand and address the ways in which our health system has become culturally unsafe for many, undermining the health needs of girls and women across the province, and over the lifespan.

“Cultural safety is an outcome based on respectful engagement that recognizes and strives to address power imbalances inherent in the healthcare system. It results in an environment free of racism and discrimination, where people feel safe when receiving health care.”

First Nations Health Authority



“Cultural humility is a process of self-reflection to understand personal and systemic biases and to develop and maintain respectful processes and relationships based on mutual trust. Cultural humility involves humbly acknowledging oneself as a learner when it comes to understanding another’s experience.”

First Nations Health Authority



Developing BC’s Women’s Health Research Agenda

Stakeholders were identified from research, clinical, health systems, and community sectors, and were invited to participate in a semi-structured interview about women’s health research, and generating a women’s health research agenda. Participants did not need to self-identify as women’s health researchers, or representatives in the field of women’s health research, though they were invited to engage as stakeholders because their work (be that research, clinical, policy, etc.) identified them as doing women’s health or gender-informed research, work, or practice. The interviews were complemented with a literature review, including grey literature, which focused on both the historical and current women’s health research context in BC, along with emergent interview themes.

Key themes that emerged aligned with challenges that have been identified in reports and calls to action across the country,²⁰ as well as those found in the literature: good work is being done, and much more is lying in wait, but there are core challenges that need to be addressed in order to improve women’s health research and implementation.

Specifically, we identified the following core challenges:

1

Limited understanding of the field of women’s health research



2

Limited understanding of the scope of knowledge-to-action work



3

The need to enhance mechanisms for cross-sectoral partnerships to bridge research, policy, practice, and community



4

Limited funds for all aspects of research— from project funding, to trainee and student funds, to evaluation resources, and participant engagement and knowledge-to-action budgets.



Women's Health Research: Then and Now



History of Exclusion or Oversight

For much of the past century, women have been largely excluded from medical research.^{5,7,8,11,14,15} For example, many high-impact clinical trials conducted between the 1950s and 1990s had zero female participants, despite studying conditions that affect the sexes equally.⁸ The results of these and other studies led to the development of medications, medical technology, and other treatment approaches based primarily on men's biological responses, which can differ markedly from women's. This "male as baseline" approach can have dangerous implications.^{14,21,22} Insufficient analysis of sex and gender in the early discovery and testing stages of research perpetuates health equity gaps down the line as drugs and medical equipment are developed, outcomes are measured, and findings are translated into clinical practice.⁵ Some anticoagulants, for example, while safe and effective for men, have been shown to cause dangerous bleeding problems in women.⁸

Women have been underrepresented in or absent from health research for a range of reasons. For many years, women's health was strictly defined according to biology or reproduction.¹⁵ This line of thinking, referred to as "*biological or reproductive determinism*" or "*the bikini approach*," promotes a narrow understanding of women in terms of their reproductive capacity, and limits our ability to understand differences both between men and women, and among women themselves.^{7,15,23} It can also lead to the pathologizing and overtreatment of normal events across a woman's reproductive life cycle (e.g., pregnancy, menopause) while neglecting other, more general but less distinctly "feminine" aspects of women's well-being (e.g., mental health, cardiovascular health), or the social determinants of those health statuses (e.g., poverty, food insecurity).^{15,23}

Taking our mistakes to heart.



Women and men are equally likely to develop cardiovascular disease.^{24,25} However, there is strong epidemiological evidence that women's experiences of cardiovascular disease look very different than men's. Women have different risks, initial symptoms, and outcomes for cardiovascular diseases due to a combination of factors, both sex-related (e.g., gene expression, hormone levels) and gender-related (e.g., health-seeking behaviour, social stress).²⁶ Even though Canadian women are more likely to die from heart disease than from any other disease, a 2010 review of randomized controlled trials (RCTs) for cardiovascular disease prevention found that only one third of participants were female, and only 31% of studies that included women actually reported outcomes by sex.²⁷ Given this context, it is perhaps unsurprising that women are less likely than men to receive recommended care for cardiovascular disease^{28,29} and care providers are less likely to refer women for cardiovascular diagnostic tests, despite women's similar risks.²⁴ What's more, for the women who are actually diagnosed and receiving care for their cardiovascular health, available treatments may not be a good fit for women — in one case, quite literally! A failure to account for sex-related anatomical differences between men and women resulted in the first pacemakers being too large to fit inside most women's chest cavities.³⁰





The tendency to conflate “women’s health” with “women’s reproductive health” and “child health” has also created barriers for women’s participation in research studies due to strict inclusion policies designed to safeguard women from hazardous exposures during the childbearing years.^{8,11,22,31} Though perhaps well-intended, these protectionist efforts have represented women as vulnerable and unwilling participants in medical research¹¹ and, as Schiebinger⁸ suggests, “‘walking wombs’ unable or unwilling to control their fertility.” Finally, treating reproduction as something under the sole purview of women removes men from the equation, resulting in missed opportunities to investigate the complexity of conception, fertility, and caregiving for both sexes.

Incomplete or narrow understandings of women’s health can go hand in hand with the assumption that, except for the breasts and reproductive organs, men and women are otherwise physiologically comparable. *This gender-neutral or gender-blind* approach sees sex and gender as irrelevant to health, and results in a tendency to dismiss, rather than explore, social and biological differences between and among groups.¹⁵ Of the relatively few studies that *do* include women or female subjects, many fail to report outcomes by sex and gender or make attempts to control for these differences rather than investigate them or modify the research design accordingly.⁵ Conversely, women have also been excluded from health research because of a belief that males and females are so physiologically *dissimilar* that controlling for biological differences like hormonal variations would be too complex or resource-intensive to merit investigation.^{8,11} These represent missed opportunities to investigate the myriad ways sex and gender inform disease prevalence and prognosis, differences in how people behave with respect to their health, and how they engage with health systems.

With the exception of those intentional efforts to minimize harmful exposures during the childbearing years, the reasons for women’s exclusion from health research are largely unconscious and stem from implicit biases and social norms that have historically privileged men over women. Taken together, these perspectives contribute to health disparities between men and women, information gaps in the field of women’s health, and difficulties effectively translating the research that does exist into health professional curricula and clinical practice.

The number of neuroscience animal studies comprised entirely of male subjects outnumber studies of female subjects 5.5 to 1, despite clear sex differences in risk for many brain disorders.³² Women are also twice as likely to suffer from anxiety and depression than men, but fewer than 45% of animal studies investigating these disorders include female subjects.³²

Progress so Far

We have come a long way since women's outright exclusion from clinical trials and erasure from health research, and there has been a targeted effort during the last 20 years to account for sex and gender across health research and practice. Policies for the inclusion of women in clinical research are rooted in the efforts of the Women's Health Movement that first emerged in the 1960s and 70s and continue to this day.³³ Governments and funding agencies have created inclusion guidelines and research institutes in response to ongoing concerns about the paucity of women and female subjects in health research, and a growing understanding of how sex and gender influence physical, mental, and community health.^{4,34–36}

A major advancement for the study of gender and health in Canada was the creation of the Canadian Institutes of Health Research (CIHR) for Gender and Health (IGH) in 2001.³⁷ IGH has been a leader, championing sex- and gender-informed work and providing dedicated funding for sex- and gender-based research. In accordance with the Government of Canada's Health Portfolio Sex and Gender-Based Analysis Policy, applicants for CIHR funding are required to consider sex and gender in their research.³⁸ In 2010, the CIHR modified its grant application forms to require that all applicants respond to the questions, "are sex (biological) considerations taken into account in this study?" and "are gender (socio-cultural) considerations taken into account in this study?"³⁴ Despite these efforts, the IGH has also been criticized for falling short, by failing to focus on, and fund, women's health research specifically.³⁷

Though inclusion guidelines have mandated sex and gender analysis as a part of the grant and funding process, the uptake of sex and gender analysis in health research is not uniform, and is not yet standard practice.⁴² A recent analysis of funding applications to the CIHR revealed—perhaps unsurprisingly—that clinical research studies were more likely to incorporate sex while population health studies were more likely to incorporate gender as an object of study and/or analysis; few studies report on both.⁴² A 2017 cross-sectional analysis of 100 Canadian human RCTs published in 2013 and 2014 found that none of the studies explicitly defined sex, gender, or sex and gender analysis for the purposes of the research. Only 9% of the studies that included both men and women reported on some aspect of sex or gender, and only 12.5% of mixed-sex studies reported on the sex and/or gender implications of the research findings.⁴³

Tools for understanding intersections of sex, gender, and health.

It is widely understood that many aspects of individual and population health are shaped by what are known as the **social determinants of health**.⁴⁴ These factors, social determinants that affect people's daily conditions of life, include—but are not limited to—income, race, ethnicity, age, ability, sex, gender, sexual orientation, educational background, and geographic location as well as other factors.^{44–46} Sex and gender based analysis (SGBA), gender-based analysis plus (GBA+), gender and diversity analysis (GDA), the social determinants of health (SDH) framework, and intersectionality-based analysis (IBA) are all examples of tools and approaches we can use to better understand how context affects health.⁴⁷ For more information on these examples and tools, please refer to: Hankivsky (2012).⁴⁷

The IGH is a multidisciplinary national research institute for the study of inter-relationships among sex, gender, and health^{37,39} with a mission to “foster research excellence regarding the influence of gender and sex on the health of women and men throughout life, and to apply these research findings to identify and address pressing health challenges.”^{40,41}



Intersectionality in Health

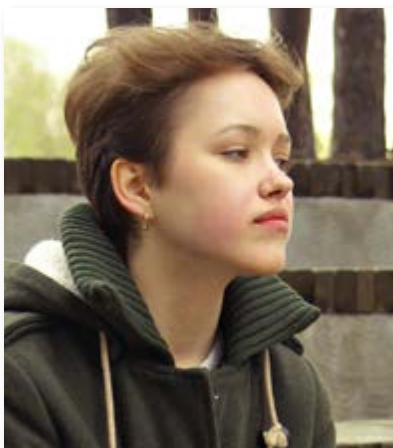
In consideration of the application of SGBA or the social determinants of health, many^{47–49} have called for an intersectional approach that addresses multiple forms of social difference and the ways they interact synergistically—rather than additively—to affect health and quality of life. “Intersectionality” was first coined by African-American feminist scholar Kimberlé Crenshaw in 1989, and the theory and framework has its roots in Black feminist, Indigenous feminist, third world feminist, queer, and postcolonial theory.⁴⁸ Applying an intersectional lens to the study of gender and health recognizes gender as inseparable from other forms of social difference, such as race, religious affiliation, geography, class, and ability.^{42,45,50} An intersectional approach considers the ways that multiple points of social location interact to affect health and well-being. Intersectionality also examines how and why health disparities are maintained, by examining the interlocking systems of oppression, hierarchy, and power distribution (classism, sexism, racism, colonialism, heteronormativity, etc.) that create these differences.^{45,51,52} This provides a valuable lens through which to consider not only the differences between men and women, but also differences *among* women.⁵³

Looking at the Canadian health context, there is no shortage of examples that highlight how multiple axes of social location—such as sex, gender, ethnicity, income, and sexual identity—intersect to affect health and well-being:



Diabetes:

Diabetes can affect all members of the population, and generally affects women and men in almost equal numbers.⁵⁴ In Canada, the overall prevalence is slightly higher in males than females.^{55,56} However, diabetes affects women differently than it affects men: women with diabetes experience greater risk of heart disease, depression, and blindness, for example.⁵⁴ Risk factors for Type 2 diabetes specifically include being a member of a high risk ethnic group—such as being of South Asian, Aboriginal, Hispanic, Asian, or African descent.^{54,57} It is still unknown whether this risk stems predominantly from genetic or social factors, though it is unlikely to be explained by any single element; income level, physical activity, obesity, and geographic location (rural/urban) are all factors associated with the prevalence of diabetes.^{55,58}



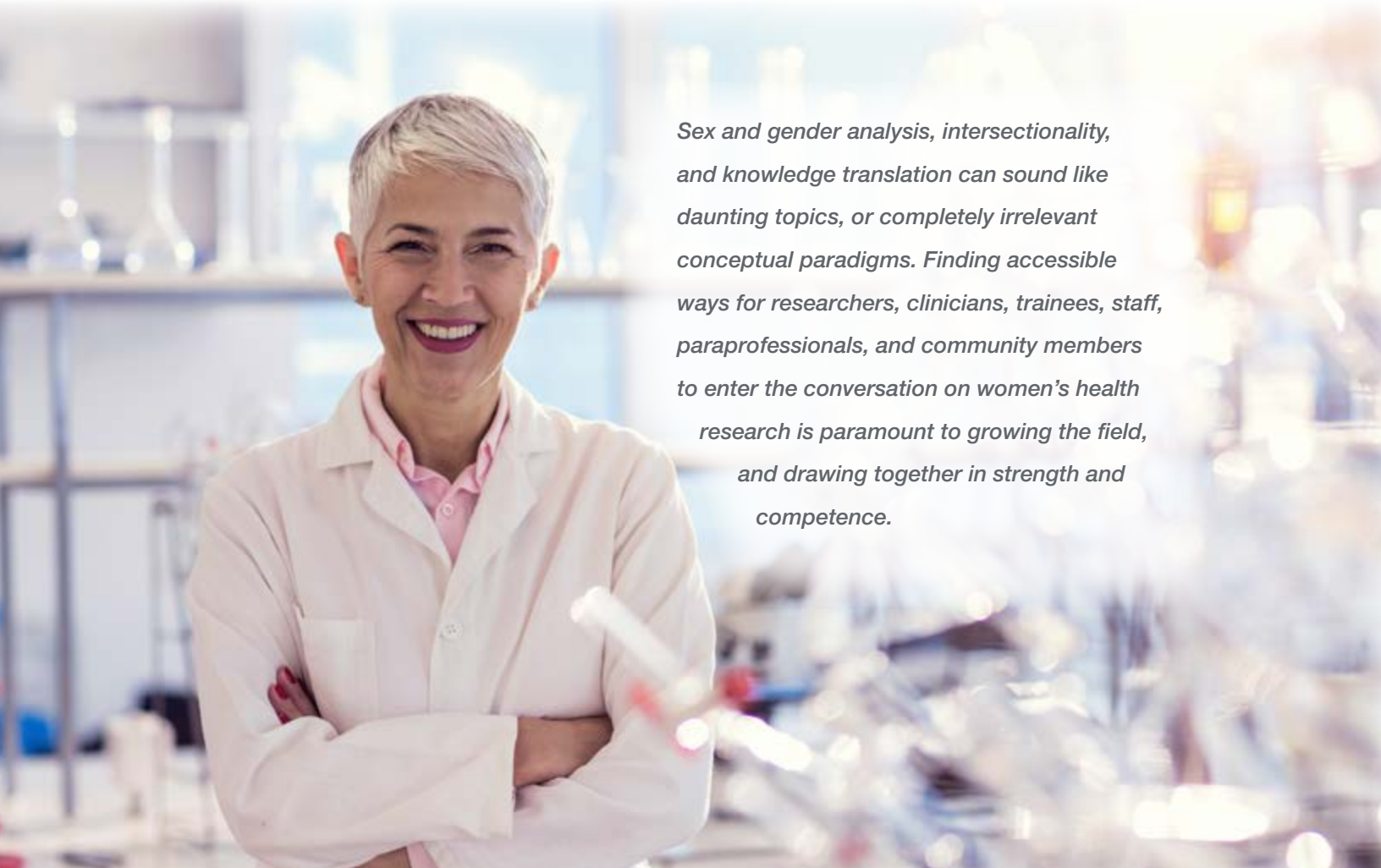
Cervical cancer:

The incidence and burden of cervical cancer has sharply declined with the implementation of Pap screening for women in Canada; however, these efforts have not been equally effective across population subgroups. Indigenous women continue to have significantly higher cervical cancer incidence and mortality rates.^{59,60} A closer look reveals how the enduring legacy of trauma from violent colonial systems and practices has led to an ongoing distrust of, and lack of engagement with, the medical system.^{59,60} In response, new approaches to cervical cancer screening and prevention (including the HPV vaccine) for Indigenous people and communities are using participatory design methods to ensure concerns over trauma-informed care, privacy, stigma, bodily autonomy, and informed consent are built into practice.^{59,60}



Mental Health:

LGBTQI2S people report poorer mental health overall than heterosexual, cis-gender, non-intersex-identifying populations, and face higher rates of depression, anxiety, self-harm, substance use, and suicidality.^{61–63} Within women, there are higher rates of unmet mental health care needs, particularly among bisexual women and trans women. Trans people are 2.4 times more likely to report an unmet need for mental health supports, and bisexual women are 1.8 times more likely, relative to cisgender, heterosexual women.⁶⁴ Intersecting points of social location and the social determinants of health—like social exclusion, socio-economic status, discrimination, and limited availability and access to culturally competent care—interweave to differentially affect the mental health and well-being of LGBTQI2S people.^{63–65}



Sex and gender analysis, intersectionality, and knowledge translation can sound like daunting topics, or completely irrelevant conceptual paradigms. Finding accessible ways for researchers, clinicians, trainees, staff, paraprofessionals, and community members to enter the conversation on women's health research is paramount to growing the field, and drawing together in strength and competence.



Women's Health in the Current Knowledge Mobilization Movement

Knowledge-to-action efforts gained momentum in the Canadian research sector in the late 1990s under a range of terms such as knowledge translation, knowledge exchange, knowledge mobilization, and implementation. Most were trying to touch on the same key issues: the gap between knowledge generation and its application, be that dissemination to other researchers, or uptake in clinical practice. Different uptake of terminology in various sectors has contributed to the generally vague and variable understanding within the research community of what is meant by knowledge translation, or knowledge-to-action work, with confusion about what tasks, skills, deliverables, and expertise reasonably fit within this.^{66,67}

Seventeen years is often cited as the average time it takes to get evidence to practice,^{69–72} though there is little agreement on the mechanisms to appropriately assess this time.⁶⁹ Regardless, there is broad agreement that these gaps between evidence and application are far too long, and associated financial and health costs are significant.⁷³ As efforts increase to address this gap, all aspects of knowledge-to-action work are being developed, with examination into how best to support, appraise, implement, and fund this work.

While we are seeing incremental progress in this work to minimize the delays from evidence to action, there has been a notable absence of sex and gender considerations in knowledge translation education and research work.⁷⁴ Including sex and gender is not only important in research, it is critical to effective knowledge-to-action efforts, and to realizing the full possible benefits of implementation initiatives.⁷⁴ Understanding the context in which women's health research is being implemented—who is executing it, who it is serving, what the local social and built environment looks like and allows—is vital to any successful implementation plan.⁷⁴ Fortunately, there has been a recent shift toward understanding the importance of integrating sex and gender analysis in knowledge translation (KT). CIHR's own KT resources now include a sex, gender and KT section; Doull et al. have developed sex/gender briefing notes as a knowledge translation tool to guide the implementation of sex/gender analysis in systematic reviews;⁷⁵ and Tannenbaum et al. have produced a useful set of questions for “appraising an implementation research and practice initiative for inclusion of sex and gender.”⁷⁴

“Canada faces a dual challenge in the research-to-practice continuum, often referred to as the two “Death Valleys” in the health care landscape. Valley 1 refers to the decreased capacity to translate the results of discoveries generated by basic biomedical research in the laboratory to the bedside or careside as well as to successfully commercialize health discoveries. This negatively impacts Canada’s clinical research and knowledge base and its international competitiveness. Valley 2 refers to the limited capacity to synthesize, disseminate and integrate research results more broadly into clinical practice and health care decision-making. These two valleys must be bridged if Canada is to bring evidence to bear to enhance health outcomes and ensure a sustainable health care system.”⁶⁸



Women's health research in BC is vibrant, innovative, and strong. From clinical research like the Maternal Microbiome Legacy Project⁷⁶ (M2LP) examining how the vaginal microbiome affects the development of the infant gut microbiome in vaginal and caesarian section births; to implementation initiatives like the Heartwood Centre for Women,⁷⁷ a residential treatment centre for women with substance dependence; to integrated KT (iKT) initiatives and bridging projects like the Dialogue to Action on Women and Substance use project⁷⁸ that brings health and social service perspectives together to yield responsive health policies, BC is a leader in excellence. From that foundation of excellence, there is strength, capacity, and desire to further excel; to expand in scope, to tackle implementation puzzles, and to address critical challenges holding women's health research and implementation back.





Key Challenges to Advancing Women’s Health Research in BC

Key challenges and proposed resolutions to support the advancement of women’s health research and implementation in BC emerged from the semi-structured interviews with stakeholders from the BC health research and practice community. Interview participants were invited to participate in semi-structured interviews about women’s health research and developing a women’s health research agenda. The interviews and literature review (including grey literature) on contemporary issues pertaining to the women’s health research context informed one another. Key challenges that emerged were not focused on core topical areas in women’s health research requiring priority attention, or on a paucity of skilled researchers or excellent work being conducted in the province. The central themes that emerged pivot around limited understanding of the scope of women’s health research, about KT, implementation, and adaptability, about linking research, policy, programs, and community, and about the need for comprehensive and sustained funding.

The key challenges identified, and presented here, are critical to address in order to enable women’s health research and implementation.

Key Challenges

Limited Understanding of the Field of Women’s Health Research

Limited Understanding of the Scope of Knowledge-to-Action Work

Barriers to Linking Research, Policy, Practice, and Programs

Limited Funding, Lack of Sustainability, and Sexism

1 Limited Understanding of the Field of Women's Health Research

A clear theme that emerged from the interviews was that a limited understanding of the meaning, scope, and practice of women's health research is a core challenge to address in order to advance women's health research and implementation in the province. Participants noted that many people do not see themselves as women's health researchers, be that because their work is not exclusively focused on women, because they are not aware of the sex and/or gender implications in their work, because they focus on sex and gender analysis at the KT/implementation stage, or because they are not primarily researchers themselves. A feeling of overstepping or intruding on a group also discouraged ownership of the label "women's health researcher." Interviews clearly indicated significant confusion around what the field of women's health research encompasses, and confusion around how a sex and gender based analysis is linked to, or distinct from, women's health research. There was a strong narrative of confusion around when a sex and gender based analysis is useful, with perceptions that it was not necessary in research on only one sex (e.g., a research study on cervical cancer would have no cause for SGBA).

Further, our work revealed that for some researchers, there is a strong concern that identifying as a women's health researcher could have negative repercussions for funding competitiveness and success rates, partnerships with non-women's health researchers, and networking within the health and policy spheres. It was not clear where these perceptions or beliefs came from. Though, from the literature, it is clear that historical beliefs that have underpinned the health domains leave a legacy of unconscious bias about the validity, integrity, and merit of women's health research.^{9,11,79} Further to that, there is a strong political context from which sex and gender based analysis and intersectionality emerged.^{3,42,49} Interviewees speculated that they, and others, find themselves hesitant to engage in learning on sex and gender analysis, women's health, Indigenous history and culture, or the LGBTQI2S community, because of knowledge gaps leading to fears of misstepping, inadvertently offending someone, or walking into an argument. Limited time in fleeting conversations throughout the work day adds pressure to people's perception of being able to handle these large topics in contained ways.

It may be that these strong political and sociocultural beliefs contribute to why many shy away from exploring the field, embracing the title of "women's health researcher," or explicitly naming their use of sex and gender analysis or intersectional methods. Though the cause of this discomfort is unclear, our work revealed a strong concern that identifying as a women's health researcher may lead to inadvertently ostracizing oneself from a more "mainstream" research community or funder, or that claiming membership in one research field must exclude them from another (i.e., identifying as a women's health researcher precludes identifying as a community health researcher or a cardiovascular researcher). It is likely that these concerns have been exacerbated by a funding model that has, of late, starved the research community,²⁰ increased competition among researchers, and nurtured a siloed and divisive approach to health research.^{80,81}

Limited understanding of the meaning, scope, and practice of women's health research is a core challenge to address in order to advance women's health research and implementation in the province.



2

Limited Understanding of the Scope of Knowledge-to-Action Work

Interviews revealed a highly varied conceptualization of what knowledge translation and implementation includes, whose role it is to do it, how to fund it, when to incorporate it, and why it matters. Despite varied understandings, most participants had familiarity and comfort with the terminology, and expressed a desire to see more knowledge translation and implementation efforts integrated into health research. Interviews also highlighted the lack of familiarity with this language within the general population, emphasizing the context-specific knowledge required to understand, in even the broadest strokes, what knowledge-to-action work encompasses.

The variable use of the term knowledge translation, and associated knowledge-to-action terms, along with the relatively new state of the field, presents several challenges to advancing women's health research in the province. The most fundamental of these is the lack of understanding from stakeholders across sectors (clinical, research, health authority, policy, community) of what the full knowledge-to-action spectrum of work entails—a broad range of activities requiring different amounts of time, levels of skill, sources of funding, and types of experience, and practice—and how various knowledge-to-action activities may fall within that.^{66,82} Our work found this limited and varied understanding is resulting in ambiguity around appropriate funding amounts, sources of funds, location of position (within an institution or on a research team), and support for knowledge-to-action work.⁸²

For many in the health research community, knowledge translation continues to be perceived as an end-of-project activity—one that is often brushed under the primacy of “real” research, and is understood as yet another skill all researchers are meant to hold—rather than one carried out by knowledge-to-action personnel with expertise in different aspects of the full scope of this work.⁷³ This perception undermines the spirit of what knowledge-to-action work is, and what is required in order to do it well. It further pushes fields and professionals within the research-to-practice community against each other, stacks the deck of expectations higher with regards to what researchers need to model and demonstrate in order to secure funds, and effectively limits the very requirements of what is needed to do this work well: knowledge, skill, dedicated funding, personnel, continuity in personnel, networking, trusting relationships, and so forth. If KT is understood as a task, not a field of work, and positioned as a subset of research, then the existence of the work and role is tied entirely to the funding success and general interests of any given investigator or research project. When, in fact, the application of knowledge to advance research, practice, and programming, should be driven by all stakeholders—including researchers, the broader community, and individuals and organizations within the health system—seeking responsive, effective, evidence-informed programs to improve health and well-being.

The interviews also revealed a strong belief that the general public is not familiar with, or in any way engaged by, knowledge-to-action terminology. Therefore, if an individual or community is seeking out more health information, or is looking for support on a research query, there is no natural way of finding the people or projects to connect with. Though there are advances in developing mechanisms for patient engagement, these mechanisms remain focused on patient recruitment and top-down approaches to research; they are not focused on networking and relationship building, which is more likely to connect the needs and interests of a community with the resources of the women's health sector. Our work also revealed a belief that there was minimal awareness among the general public about the amount of health evidence sitting unused and unapplied; participants felt that if there was an awareness of this, there would be public outcry, and a strong call to see it applied with more immediacy. Aspects of knowledge mobilization, and knowledge brokering, are about raising awareness of evidence lying in wait, of research outcomes, and possible applications.⁸³ These roles support the social understanding, valuing, and engagement of community in championing research. A greater understanding of the value of this role, and how it fits within the broader socio-political context, would benefit research generation and application.



3

Barriers to Linking Research, Policy, Practice, and Programs

The desire to draw research, policy, practice, and programs more closely together in research and knowledge-to-action efforts was evident in a variety of ways in the interviews. Researchers and clinicians expressed a strong interest in looking upstream at solutions, while policy makers and health authority representatives were focused on making programs evidence-based. Representatives from community service organizations expressed a discord between urgent community needs and the processes that surround research, evidence generation, and policy action. There is a dissonance between time, pace, needs, and tone that is challenging to overcome across these sectors; community organizations are often working with limited to no funding, rushing to meet a broad on-the-ground need or crisis (such as HIV, or overdoses), while researchers are focused on highly specific questions that often take years to work their way through funding proposals and ethics applications before commencing. Although researchers are lacking in funds for research, community service organizations are often struggling with no funds to keep running. Though there is strong interest in finding ways to work across these sectors, community organizations noted little gain for their involvement in research projects, and cited feelings of being used and undervalued.

Health care research lends itself to a focus on the presentation of a problem, or the point of ill health. Many note that traditional research methods “are not well suited to addressing multi-faceted problems, such as understanding the complex interaction of multi-morbid chronic illness with social, environmental and healthcare systems.”⁸⁴ But there is awareness and appreciation that early prevention at the community level is paramount to addressing a wide range of health issues.⁸⁵ Interview participants expressed a very strong interest in working on health protection and promotion, across the lifespan and at a community-wide level. They noted that few funding mechanisms allow for this, and so point-of-illness work is taken up in the meantime. The lack of direct mechanisms for health researchers to engage in health promotion and prevention initiatives means missed opportunities for both researchers and community members to benefit from advances in preventative health research. Willingness from funders, health authorities, supervisors, and colleagues to support shifts in focus in research efforts is paramount to responsive health research, as well as growth in scope, exploration, and innovation. Research must be adaptive and responsive to discoveries, communities’ needs, and available resources. While no single project should be zigzagging off course midstream, mechanisms to allow a broadening scope of interests from health researchers would enable more timely and meaningful work.



Stemming from the structures that dictate bureaucratic processes and influence which research topics are valued, participants spoke to the need for adaptability and agility in the health sector. At a pragmatic level, slow, rigid, and arduous institutional HR processes limit research teams. The ability to hire skilled team members, consultants, and experts is inherently tied to the processes in place for hiring staff, and all of the financial safeguards in place to mitigate organizational risk. This makes good sense. However, when the HR processes of one arm of the health care system are applied indiscriminately to another arm, foreseeable challenges arise. Research funding cycles are short, team members come from a variety of social and educational locations that often misalign with required hiring criteria, and funds are limited for hiring the best person for the job. The lack of agility in many HR processes limits research teams' ability to hire, appoint, and compensate team members in timely ways.

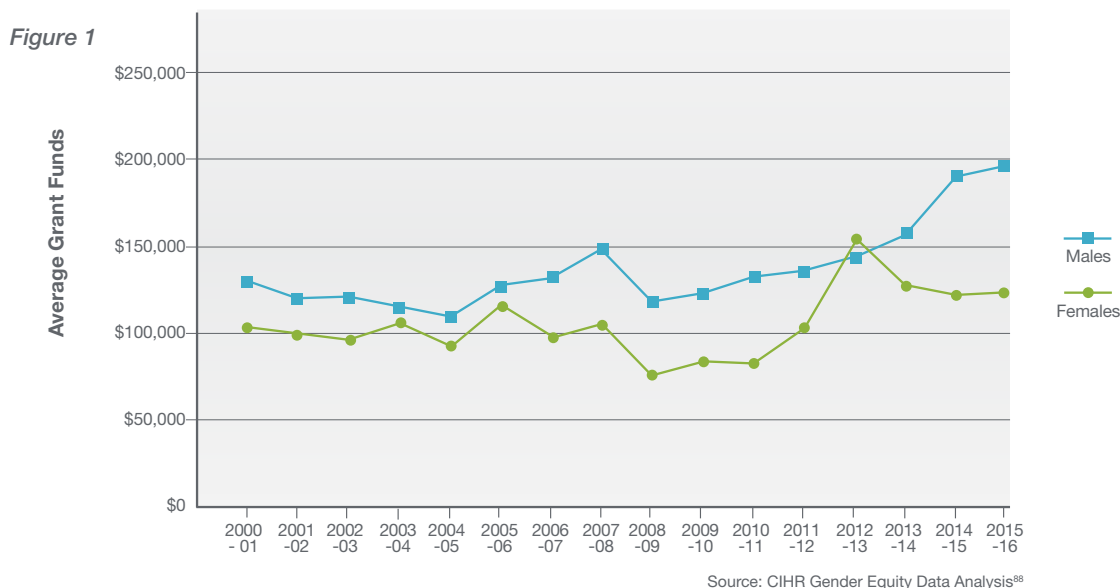
Participants also noted that the complexity, time, and resources required for many larger scale implementation efforts, like quality improvement initiatives in a hospital setting, are often underestimated. They are time-consuming initiatives, where individual people are often tasked with rolling out, or taking up, an initiative with no resources—time, personnel, funds—allocated to do so. This creates a large challenge to effectively bringing evidence or policy into practice. Furthermore, institutional readiness and suitable mechanisms for implementation may not have been reviewed and established. Limited institutional recognition of the time and resources required for knowledge-to-action work hinders effective evidence-to-practice roll out. Finding ways to meaningfully connect research, policy, practice, and programs is a key challenge to address in advancing women's health research, and women's health and well-being, in BC.

4 Limited Funding, Lack of Sustainability, and Sexism

Interview participants stressed decreasing funds for research in Canada as a concern, and many cited the focus of their work on women's health topics as a disadvantage, or limiting factor, in funding competitions, as well as in the perceived value of their work. Participants also stressed a desire for funds for a variety of research and knowledge-to-action activities that were currently hard to execute because of limited sources of funding – examples included program evaluations, prevention and health promotion work, community engagement, and health systems research. Government ministries and funding agencies within Canada are not set up with funds, distribution methods, and allocation strategies to support women's health research and knowledge-to-action efforts, along with other competing research priorities.

Gender disparities within the health domain are not limited to the level of the patient, user, or research subject. The same systemic challenges and implicit biases that affect women's health status and access to health care extend to women working in health research, education, leadership, and funding spheres. Although roughly equal numbers of women and men enter the health sciences, women are underrepresented as researchers, receive less research funding, and are published less frequently.^{86,87} Analyses of the Canadian Institutes of Health Research (CIHR) funding successes in Canada show that overall, the predicted probability of funding success for male principal applicants is 4.0 percentage points higher than that of female principal applicants.⁸¹ Success rates vary by both career stage, and pillar of research; for example, in the 2016 CIHR Project Scheme mid-career female investigators were half as likely to be funded (8% vs 16%). Women also receive less money per CIHR grant, particularly in the areas of clinical research and social, cultural, environmental and population health research where gender-specific funding disparities for 2015/16 measured \$82,730.16 and \$142,443.89, respectively.⁸⁸

Figure 1⁸⁸ shows the average grant funds received by female and male principal investigators submitting to CIHR for funding from 2000–2015. While not all women’s health researchers identify as women, the field is one of the few women-dominated fields of science, to the extent that the National Institutes of Health Office for Research on Women’s Health recognized in its formative mission the interconnected goals of strengthening and promoting women’s health research, as well as the professional advancement of women researchers in biomedical careers.^{89,90} Taken together, we can see how factors converge to disadvantage women’s health research, and women’s health researchers, in the funding and publication cycle—an impact that compounds over time, and is linked to academic advancement and successes.



Despite efforts to improve gender equity in the biomedical and health sciences fields in North America and abroad, there continues to be a significant wage gap for female medical faculty members.^{91,92} Women continue to be under-represented in medical leadership roles,⁹³ and as Canada Research Chairs (CRCs) and Canada Excellence Research Chairs (CERCs), and a disproportionate number of women teaching the life sciences can be found in lower academic ranks (e.g., as lecturers and instructors) compared to men.⁹⁴ For example, a recent analysis of a top Canadian university-affiliated, hospital-based research institute revealed that 85.7% of professors were men and only 14.3% were women.⁹⁵ This clear disadvantage of being a woman in health research is notable, and could well underscore the reluctance we heard from participants about the possible implications of positioning oneself as a women’s health researcher.

Our work also highlighted that mechanisms for funding knowledge-to-action work are generally limited to research grants or, at a systems level, are wedded to health authority funds, and, in turn, their priorities and mandates. Community organizations have little to no resources, funds, or human capacity for research or knowledge-to-action initiatives. This means that while there is support and enthusiasm for the importance and value of knowledge-to-action work, there are very few mechanisms to actually make it happen. Research funders such as CIHR and MSFHR are increasingly offering competitions for knowledge-to-action efforts, and while these will help meet the needs of research-based projects, rarely do funding cycles have the longevity to properly support the requisite knowledge-to-action activities, and the relationships paramount to their success. Sources of funds for implementation projects are needed, so as to improve health practices with the best available evidence. These funds need to extend beyond clinical practice improvement, or projects that may fall within the scope of quality improvement, to include community-level prevention initiatives.



What is Needed to Address these Challenges

There is significant energy and drive in British Columbia to address these challenges and advance women’s health research and knowledge-to-action efforts across the province—in both rural and urban settings—and throughout the life span. Addressing them requires a range of actions across individual, organizational, and system levels, ideally, supported by government, with recognition that girls’ and women’s health is a non-partisan issue. This systemic acknowledgement would help appease fears around the tenuous nature of funding, as well as build societal confidence in the value and merit of this work beyond a “special interest” need.

The following means for addressing the identified challenges emerged from our analysis of the stakeholder interviews as well as the supporting literature.

1

Increase Knowledge & Build Capacity

Foundational to the knowledge base we need to develop is a widespread understanding of what comprises women's health research, what sex and gender based analysis is, and how the two interconnect. To do this, it is important to acknowledge that sex and gender analysis, intersectionality, and knowledge translation can sound like daunting topics, or completely irrelevant conceptual paradigms. Finding accessible ways for researchers, clinicians, trainees, staff, paraprofessionals, and community members to enter the conversation on women's health research is paramount to growing the field, and drawing together in strength and competence. Educational initiatives must be targeted at a variety of levels, and to a variety of audiences, recognizing that researchers, clinicians, and community members all hold space in women's health research, and all need to be engaged in the conversation and action. Educational opportunities and spaces also need, as much as possible, to be welcoming, positive spaces of respect and integrity. Knowledge and capacity building in the domain must include consideration for increasing people's comfort approaching the topic, and minimizing shame, discomfort, or fear due to a lack of knowledge or familiarity with this field and its associated concerns.

When examining challenges to women's health research, it is all too easy to overlook facilitators and barriers to connection, such as time, trust, and integrity, but they are paramount to successful initiatives. The relational element of women's health research cannot be forgotten. Creating an inclusive environment for all people to learn about, and contribute to, our understanding of sex and gender analysis, intersectionality, and the social determinants of health is critical to seeing how all work is affected by these things. We all benefit from a broader, more open conversation on how to do that meaningfully. Dedicated times and spaces for inquiry could help generate a widespread understanding of how these analytic frameworks are critical to advancing women's health research in BC.



Understanding knowledge-to-action work.

In order to bridge the evidence to practice gap, there needs to be greater understanding of the scope of knowledge-to-action roles, and to understand it as a field of work—one that supports research and researchers, but is not limited to them. It is a field that needs a place within health authorities and health systems in order to develop the relationships, contextual knowledge, and skills that make the work relevant and successful. Though questions of whose job it is to do this work, and how it is funded, remain, it is imperative that we find ways to integrate all aspects of knowledge-to-action work across the health sector: we need skilled relationship builders connecting with communities, we need skilled research communicators spreading research news, and we need systems thinkers connecting opportunities with solutions. These are all part of knowledge-to-action work; unfortunately, limited understanding among funders and researchers about the scope of the work means that we are primarily only funding these efforts via research projects, something that severely limits knowledge-to-action efforts.





Teaching, learning, & resources.

Core to building capacity is creating teaching and learning opportunities, and ensuring the availability of up to date resources. Training or education sessions could take a variety of forms, focusing on building broad knowledge bases, addressing topics like “what is women’s health research?” and “what is knowledge translation?”. These could be targeted at both researchers as well as the general community. More specific skill building could look at areas like sex and gender based analysis, intersectionality, considering sex and gender in the knowledge-to-action cycle, and authentic and gender-informed community partnerships. Many British Columbian organizations, including the WHRI, are well underway working on these very sorts of resources, but much more still needs to be done in the development of appropriate learning resources, creating learning environments, and promoting and disseminating existing resources to increase uptake and use.

Useful tools can facilitate integration and expedite uptake. There are a variety of tools and resources already available for individuals and organizations to use in order to integrate many of these approaches into their work. For example:

- ▶ **Gender-Based Analysis Plus (GBA+).**⁹⁶ A Status of Women Canada initiative to promote implementation of sex and gender based analysis that is inclusive of other identity factors. GBA+ is used as an analytical framework for assessing gender equality in Government of Canada programs, policies, and initiatives. The GBA+ course is publicly available.
- ▶ **SGBA e-learning Resource: Rising to the Challenge.**⁹⁷ An online resource of SGBA tutorials for learners to explore sex and gender based analysis as a concept, a process, and a practice. This resource includes a PDF version of the book *Rising to the Challenge: Sex- and gender-based analysis for health planning, policy, and research in Canada*.
- ▶ The article **Why Sex And Gender Matter In Implementation Research**⁷⁴ details the ways that sex and gender matters in implementation research and activities, offering key concepts, along with specific questions that pertain to methodology, design, and knowledge translation. For example, the article addresses questions like, “how do prevailing gender norms or gender roles serve as barriers or enablers to the uptake of evidence-informed practices, programs, policies?”, “does the intervention work differently for sub-groups of men, women and gender-diverse people, and how?”, and “does the monitoring and evaluation plan for the intervention collect data on sex, gender, and diverse factors, and include a strategy for assessing and mitigating inequitable outcomes?”.

Distribution of resources across many websites and in the academic literature can make it hard for people to readily access them, assess quality, or gauge current relevance. With so many excellent resources available already, and many more being developed, centralizing existing resources so they can be readily accessed from a trusted site could enhance uptake and increase their use.



Embracing technology.

Technology is a tremendous resource that could serve to enable and enhance relationships and streamline dissemination or uptake of new evidence or policies. Embracing technology in the development of research, dissemination, knowledge-to-action work, teaching, and capacity building activities is vital to ensuring resources are broadly accessible and available for all those engaged in women’s health research and implementation.

2

Shift Culture. Elevate the Conversation: Discuss, Amplify, Promote

Women's health research is topical, and timely; it's innovative, it's meaningful, it's community based, it's person centered, it's policy relevant. We need to amplify that message, promote the field, and highlight the myriad ways people are doing, and could do more, excellent women's health research.



Engagement.

Explicitly and implicitly it is evident that more opportunities are needed for people to find ways into the conversation about women's health research. People shy away from this topic and this label. Exploring ways to make women's health, and sex- and gender-based work and inquiry topical could break some of the legacy discomfort in discussing the topic. We need to shift the field from being secretive, limiting, or shameful, to being innovative, cutting-edge, and broadly applicable across research types and health topics. Engaging in women's health research does not mean you are not doing, for example, cancer research. It means you are conducting necessary and timely cancer research that focuses on a specific population: women. This is a success, a specialization, a story to celebrate, not something to apologize for.



Leadership.

Funding, flow of funds, education, training, engagement, and other key factors in asserting change all happen by, and with, people within systems, organizations, and institutions. In order to successfully address challenges to women's health research as a field, organizations and individuals across the province need to step in, step up, and take a lead in shifting the status quo. Collectively, across the province, we need those who can, to speak clearly and strongly about the importance of this work, and the intersection of this work on all health factors. Those organizations and institutions that can, also need to show their support for research and innovation by supporting new, or different, ways of doing the standard work, ways that support greater agility, integration, and opportunity.



Agility.

Agility speaks to one's ability to adapt, to respond quickly, with relative ease or functionality. Health care has historically demonstrated caution in the application of new approaches, be they technological, structural, or clinical. And though rushing into changes in clinical practice is not optimal, organizational agility is needed to accommodate, and encourage, both innovation and implementation. Collectively, we need to generate ways of being more agile within entrenched funding streams and organizational structures. A groundswell of agile practice at an individual and group level, openness to innovation, and creative thinking is needed to help shift the culture from status quo, and enable more innovation and responsiveness as the larger health care system shifts its course.



Amplify & promote the conversation.

Elevating the conversation, and amplifying women's health and sex and gender based analysis language, means that more people will have women's health, sex and gender implications and analysis, and intersectional thinking in mind as they go through their daily routine. Increased general awareness and interest will enable more thought into the interplay between sex, gender, and social location during the design, implementation, and evaluation of research, practice, policies, and programs. By promoting a conversation, and elevating comfort in engaging on a topic, more people will be asking more questions, and trying to solve more issues. We will have more brilliant minds and creative thinkers integrating sex and gender considerations across the myriad facets of health and illness, throughout the spectrum of the research-to-action life cycle, and across the human life cycle.

3

Increase Operational & Award Funding

Funding for women's health research and knowledge-to-action work must take a variety of forms in order to effectively address the current shortfalls in the field that affect different aspects of women's health research and practice. Funding into the following specific areas would help meaningfully address several of the most pressing funding needs:



Women's health research.

In order to improve women's health, and generate advances in the understanding and treatment of health conditions in women, it is critical to have dedicated funds specifically supporting women's health research. Funding for women-specific research will allow for greater understanding into the presentation of health conditions in women, across groups of diverse women, and across the lifecycle, as well as understanding the effects of physiology on health conditions and treatment. Another key priority for improving women's health includes increasing discovery research for women's health research specifically. Discovery research is needed across topical areas, including poorly understood yet common women's reproductive health conditions, such as endometriosis, infertility, and miscarriage. It is critical to ensure that innovations, such as genomics and precision medicine, are applied to reproductive health conditions as well as women's health in its entirety. Discovery research is imperative, as without it, few new treatments are developed, and women's health and well-being lags, and continues to amplify a century of inequities based on sex and gender.



Students and trainees.

An influx of funds directed at engaging and retaining students and trainees is critical to building an engaged profession. Students, trainees, and young investigators are the next generation of women's health researchers. Without funds for engagement, partnerships, and capacity building, younger generations of researchers in all areas of women's health research will, at best, be missing out on enhancing and skill-building opportunities to learn from the expertise of senior and seasoned practitioners; at worst, they will be lost from the field entirely. Available funding, trainee positions, and awards are also an indicator of a thriving and energized domain, whereas a lack of funds can be perceived as a cue that subsequent funding or support for the field may also be limited. Suitable funding will help attract and promote the next generations of women's health researchers, allow for mentorship and supervision, and expand capacity overall, now and in the coming years.



Province-specific work.

Province-specific funding opportunities are paramount to fostering BC's dedication to research and evidence-informed practice. If we want to research our own communities and address our own BC-specific regional, urban, and rural needs, we need our own funding pools that allow us to focus on this context-specific work. Competing in the singular national funding competitions is limiting, both due to available funds and due to being further removed from establishing the identified research priorities. More sources of province-specific funds, particularly ones that are not tied to matched funds, could help create opportunities for new investigators to launch their careers here in British Columbia. Further, Ministry level funds in health systems research, like Ontario's Health System Research Fund,⁹⁸ would create opportunities for the much needed, context specific, knowledge-to-action projects focusing on health systems, prevention, and women's health research.



Evaluation.

Evaluating existing programs, program implementations, research processes, and quality of evidence (e.g., did it consider sex and gender?) is foundational to quality health systems. However, how to implement evaluation efforts is often overlooked. Time and personnel dedicated to evaluation work is imperative, and funding targeted at evaluating pilot programs in women's health, or the effective use and application of sex and gender based analysis, is critical to evidence-informed practice. Evaluation should not end with a research project; it needs to be integrated into a variety of aspects of our health system, to ensure we have a robust understanding of what research, programs, or policies are needed to address current presenting needs, which initiatives are working, which ones are not, and how we can improve.



Knowledge-to-action personnel & activities.

Funding for both personnel and activities are needed to overcome the implementation gap. A continued increase in the opportunities for knowledge translation or knowledge mobilization grants will support team building and research in the area, as well as enable greater dissemination or implementation work for research teams.^{99,100} These funds may also support the ability for research teams to hire suitably skilled knowledge-to-action staff to support their specific needs, as opposed to relying on the availability and wherewithal of research team members, research assistants, student support, or volunteers. This would be a critical positive step in recognizing the value of this work, and the importance of skilled professionals in the field enabling the work, thereby avoiding a devaluing of the role, which reinforces passive beliefs that regardless of suitable compensation, the work can somehow still be completed.

Increased operational funds, in addition to awards, are necessary for the gamut of knowledge-to-action activities. In order to move away from the idea that knowledge-to-action work is simply a subset or stage of research projects, and towards an understanding of the systems role that this work encompasses, operational funds at organizational, health authority, institutional, and policy levels are needed. These funds would ensure continuity of personnel across projects, and time, which allows for the development of critical aspects of the role to the success of the work—contextual knowledge, trusting relationships among key stakeholders, policy intersections, and familiarity with complementary projects or implementation initiatives underway, to name a few.^{83,101} Knowledge-to-action work is the hub, the intersection where research and action meet. If this field is not supported, and this work is not funded, health improvements, community health, and women's health, lag.



Compensating organizations and individuals for their participation.

Representative and authentic engagement cannot happen with a volunteerism model. Understanding dissemination strategies, community needs, and health care contexts is critical to excellent research and practice. Accordingly, it should be valued as such. If we are asking community organizations and individuals to contribute their expertise—their time, their knowledge, themselves—to the success of an initiative, it is unacceptable to suggest that this be done out of an altruistic desire to improve health. Researchers and clinicians do not spend their days volunteering their wherewithal; that should not be requested behaviour from any team member. Community partners need to be compensated in ways that are suitable and meaningful to them.¹⁰²⁻¹⁰⁴ That said, there is a real challenge surrounding how to fund community contributions. Grants are often underfunded to start with, and many have restrictions as to how much can go to community members. Organizational operating funds have never had community engagement or compensation in their operating budgets, so there is no precedent for funds coming from there. However, individuals and organizations that contribute to health research and knowledge-to-action work need to be suitably compensated in order to recognize the meaningful perspective they offer, and to enable engagement from diverse people and populations—not only those who have the time and resources to volunteer—something critical to good quality research and practice.



Take Action for Change

Towards our goal of enhancing research excellence in women's health, following are ideas for action applicable at a personal, community, provincial, and national level, all actionable today. These ideas are here to spark action and change in multiple spheres of impact. The list is far from complete, generate your own ideas to promote engagement and support for women's health research, sex and gender based analysis, and intersectionality!



Individually

- Reflect on the extent to which your own work is sex and gender informed.
- Examine and apply available tools and seek consultation to determine whether there are new or additional ways to analyze sex and gender influences on your work.
- Practice breaking binary thinking. Think beyond male/female, or comparing women and men, and consider spectrums of difference. It is important to consider the differences between different women, across the lifespan, across genders and sexes, and varying social locations. Often times, there are more within-gender differences than between-gender differences.
- Don't fall into the trap of thinking "I only need to ask about sex or gender" to address a criterion; collecting data is not enough, comprehensive analysis is critical to making data useful.
- Share your women's health findings. Make them interesting, novel, revolutionary. Don't bury them, showcase them! If sex and gender differences are best suited for a secondary publication, pursue that.
- Think publicly! Explore venues beyond academic publications to share women's health findings—write op-eds, blog posts, and magazine articles. Women's issues are at the forefront of the news today, engage with the current and grow those discussions.
- Ask researchers, clinicians, and policy drivers about how they've considered, and analyzed, sex and gender in their work—be open to teaching and learning about the importance of this work.
- Use sex and gender based analysis and intersectional tools and language frequently to build awareness and comfort on the topic (thereby de-stigmatizing them and opening doors to engagement).
- Talk to your students, learners, and colleagues about women's health research and a sex and gender lens; invite their perspective. Often a fresh set of eyes can shed nuance even to a well-studied topic.
- Ask your university, research institute, or health authority, to offer training sessions on the basics of sex and gender based analysis to clinicians and researchers. Understanding whether sex and gender were considered in evidence generation is critical to appropriate evidence informed practice.
- As a peer reviewer of publications, grants, and presentations, ask authors to present their results by sex and gender.
- If you conduct women's health research, or are known as a "sex and gender based champion," make this known to the scientific community, offer your expertise, answer questions, and speak about it.



Locally

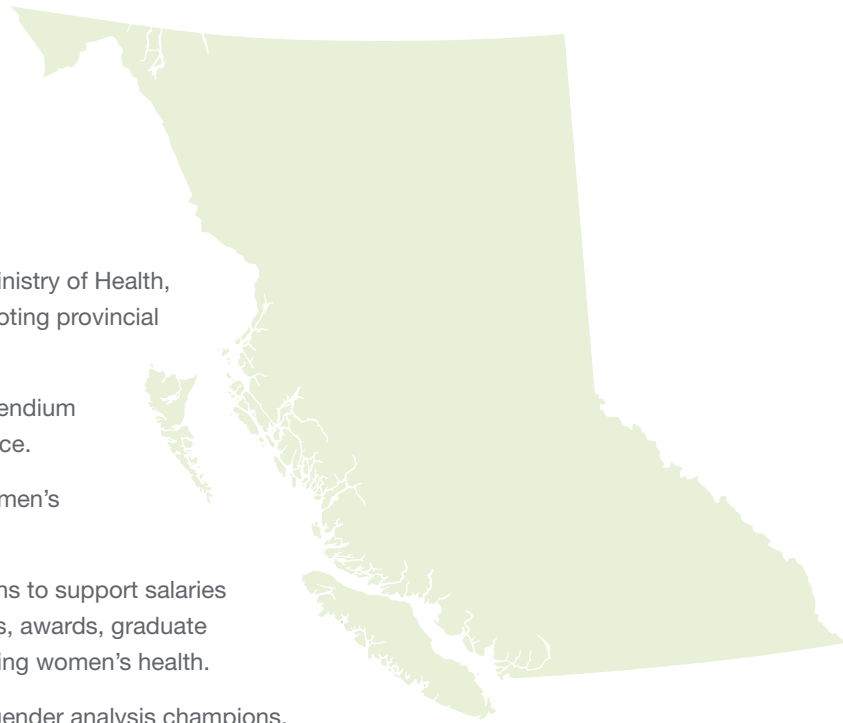
- Promote women's health research projects specifically. Together with the WHRI and other research institutes and university departments, create a directory of women's health research projects, and women's health researchers, and make such lists publicly available.
- Amplify the voices of successful women's health researchers and women's health research more broadly. Support and share their stories via word of mouth, social media, community or meeting announcements.
- Call on our universities to put women researchers, as well as researchers of women's health, forward for research chairs and senior positions, invite them to sit on executive committees where key decisions about funding salary awards and prizes are made, and support deserving women candidates.
- Track success rates on grants, awards, prizes, publications, and other academic outputs according to self-reported gender, and use the data to champion change when there are inequities.
- Hold key events, such as symposia or workshops, focused on women's health research and showcase a broad profile of innovations in women's health research from basic science to clinical research to population and public health research and implementation initiatives.
- Support women's health research entities; raise their profiles. Use their logos in your presentations.
- Encourage and mentor graduate students in the women's health field.
- Meet with local Member of the Legislative Assembly (MLAs) and tour them through your research units. Share stories of the impact of women's health research.
- Create awards and meetings focused specifically on women's health for individuals across the spectrum of their career.
- Build local networks of women's health researchers to support mentorship of women's health trainees, young investigators, and senior investigators who are new to women's health research.





Provincially

- Encourage the province, including the Ministry of Health, to name key agencies in charge of promoting provincial women's health.
- Create and disseminate an annual compendium of women's health research in the province.
- Host an annual provincial meeting for women's health research.
- Work with donors to create Chair positions to support salaries of dedicated women's health researchers, awards, graduate student stipends, and other funds targeting women's health.
- Subscribe to the WHRI's list of sex and gender analysis champions.
- Solidify and grow the network of women's health researchers across the province and identify nodes of provincial expertise; forge connections between researchers and provincial community organizations focused on women's health.



Federally

- Call for specific funding for women's health research, knowledge-to-action, and implementation science projects or initiatives.
- Call on the federal government for targeted funds on women's health topics.
- Examine current federal funding on women's health research, to evaluate equity in funding amount, distribution, and sustainability. Ask why current funding programs are not funding members of particular population groups (e.g., gender, career stage, race, or ethnicity).
- Lobby to ensure all reviewers for funding and awards receive evidence-based training in sex and gender based analysis and the examination of implicit and explicit biases in research.
- Monitor allocation of Research Chair positions and senior research positions to ensure diversity and gender equity.
- Monitor membership, nomination, and election to national science academies to ensure diversity and gender equity, and call for increased reflexivity and transparency in nomination processes.
- Form strategic alliances across provinces with other women's health research institutes, or entities that champion women's health and/or sex- and gender-based approaches.
- Meet with your local Member of Parliament (MP) and tour them through your research units. Share stories of the impact of women's health research.
- Support the 2018 Federal Government's Budget recommendation to adopt the Athena SWAN (Scientific Women's Academic Network) program in Canada; lobby your local institutes and universities to follow these recommendations.

Glossary

Language is nuanced, and often context-specific. Though we have all heard many, if not all, of these words before, ensuring we are operating from a shared definition and use in this document is imperative.

Women's health research is understood as research on, about, or pertaining to, women. It takes a lifespan trajectories approach, is intentionally cross-pillar and multi-disciplinary, and it extends from health promotion and prevention to treatment and living well with illness.

Sex refers to a set of biological (e.g., anatomical, physiological, hormonal, genetic) attributes that differentiate males from females.^{3,16} Simply put, it refers to whether someone is biologically male or female. CIHR defines sex as: "A set of biological attributes in humans and animals. It is primarily associated with physical and physiological features including chromosomes, gene expression, hormone levels and function, and reproductive/sexual anatomy. Sex is usually categorized as female or male but there is variation in the biological attributes that comprise sex and how those attributes are expressed."¹⁰⁵ Though typically understood according to a male/female binary, sexual characteristics exist on a continuum; at least 2% of the population do not fall within that binary.¹⁰⁶

Sex alone cannot fully capture the social, political, and economic forces that contribute to different expectations, opportunities, and experiences for men and women. This is where gender plays an important role. While sex is often conflated with gender, the two terms are far from interchangeable. CIHR defines **gender** as: "The socially constructed roles, behaviours, expressions and identities of girls, women, boys, men, and gender diverse people. It influences how people perceive themselves and each other, how they act and interact, and the distribution of power and resources in society. Gender is usually conceptualized as a binary (girl/woman and boy/man) yet there is considerable diversity in how individuals and groups understand, experience, and express it."¹⁰⁵ Many people identify as transgender, or not included within the gender binary (e.g., agender, non-binary, gender non-conforming). Gender is a changeable social and cultural construct that has evolved throughout history, and different communities may have distinct ideas about gender.^{9,12} Gender manifests in the form of gender roles, gender identity, gender relations, and institutionalized gender.⁹ For more information on sex and gender concepts refer to Johnson, Greaves, & Repta (2007)⁹; and Tannenbaum, Greaves, & Graham (2016).⁷⁴

Sex and gender based analysis (SGBA) is a research framework based on the understanding that human biology (sex) and the social experience of being a man, woman, or gender non-conforming person (gender) inform a person's health status and life in general.^{3,12,42,74} CIHR defines sex and gender based analysis (SGBA) as: "An approach that systematically examines sex-based (biological) and gender-based (socio-cultural) differences between men, women, boys, girls and gender-diverse people. ... SGBA is meant to be applied within the context of a diversity framework that considers the ways in which determinants such as ethnicity, socioeconomic status, disability, sexual orientation, migration status, age and geography interact with sex and gender to contribute to exposures to various risk factors, disease courses and outcomes."³⁸ This means recognizing that men and women are different—not simply biologically, but also in terms of how they access opportunities, how they perceive themselves, and how they are perceived by others—and using that understanding to guide all stages of research.¹²

CIHR defines **Knowledge Translation (KT)** as: "a dynamic and iterative process that includes synthesis, dissemination, exchange, and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system."¹⁰⁷ Though not reflected in all uses of the term, the use of the word "translation" suggests a particular focus on communication to this work. Because of its adoption by CIHR, among Canadian health researchers, knowledge translation is the most common term used to describe a range of knowledge-to-action activities.



Knowledge Exchange (KE) is generally defined according to the Canadian Foundation for Healthcare Improvement (CFHI)'s definition, which is: "Collaborative problem-solving between researchers and decision-makers that happens through linkage and exchange. Effective knowledge exchange involves interaction between decision-makers and researchers and results in mutual learning through the process of planning, producing, disseminating, and applying existing or new research in decision-making."^{107,108} The use of the word "exchange" in this definition suggests a bilateral element to the work; interaction and mutual learning are key aspects of this definition.

Knowledge Mobilization (KMb) has been adopted by the Social Sciences and Humanities Research Council (SSHRC) as its core term. The emphasis on mobilization speaks to a broader goal of knowledge application within or across sectors: "The reciprocal and complementary flow and uptake of research knowledge between researchers, knowledge brokers and knowledge users—both within and beyond academia—in such a way that may benefit users and create positive impacts within Canada and/or internationally, and, ultimately, has the potential to enhance the profile, reach and impact of social sciences and humanities research."¹⁰⁹

Certain research methods that are particularly focused on engaging the knowledge user in the research process align with what CIHR defines as **integrated knowledge translation (iKT)**: "The central premise of iKT is that involving knowledge users as equal partners alongside researchers will lead to research that is more relevant to, and more likely to be useful to, the knowledge users."¹¹⁰⁻¹¹⁸ Each stage in the research process is an opportunity for significant collaboration with knowledge users, including the development or refinement of the research questions, selection of the methodology, data collection and tools development, selection of outcome measures, interpretation of the findings, crafting of the message and dissemination of the results. iKT has a longstanding tradition in many disciplines but has usually gone by other terms, such as collaborative research, participatory action research, community-based participatory research, co-production of knowledge or Mode 2 research."¹¹⁹ When searching for experts in iKT, or looking for project exemplars, familiarity with these other terms can be helpful.

Knowledge Brokering was a term used less often in relation to knowledge translation and dissemination activities, and because of CIHR's adoption of the knowledge translation language, has been less present in the health research domain. But it is well used when looking at mobilization and implementation work, and the role of knowledge broker is relevant across settings. Knowledge brokering is understood as "a strategy to support collaborations and partnerships within and across clinical, research, and policy worlds to improve the generation and use of research knowledge. Knowledge brokers function in multiple roles to facilitate the use of evidence by leveraging the power of these partnerships."⁸³

Implementation is defined as: "the use of strategies to adopt and integrate evidence-based health interventions and change practice patterns within specific settings."^{120,121}

For more resources on the range of knowledge-to-action approaches and language, refer to:
<https://www.msfr.org/our-work/activities/knowledge-translation/kt-resources>

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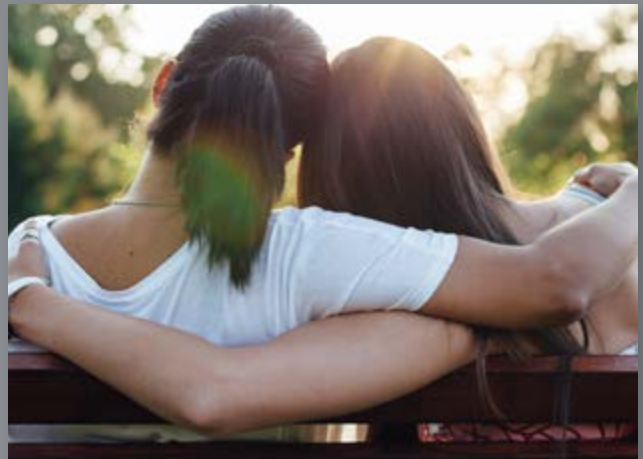
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