



The background of the page is a stylized illustration of various people's profiles in profile, facing right. The profiles are rendered in a variety of colors including shades of brown, tan, grey, blue, and orange. The style is flat and graphic, with simple outlines and no facial features like eyes or mouths. The profiles are of different heights and orientations, creating a sense of a diverse crowd.

Land Acknowledgment

We respectfully acknowledge that the land on which we developed The Plan is Treaty 6 Territory in Western Canada, the traditional meeting ground and home for many First Nations Peoples (Cree, Saulteaux, Niisitapi [Blackfoot] and Nakota Sioux) and Métis. We acknowledge their diverse histories and cultures, and we pay respect to all Indigenous Peoples (First Nations, Inuit and Métis) from coast to coast to coast, for their past and ongoing contributions to society. We strive for respectful partnerships with all Indigenous Peoples as we search for healing and true reconciliation.

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Message from the Scientific Director

It gives me great pleasure to introduce you to the 2022–2025 CIHR Institute of Circulatory and Respiratory Health (ICRH) Strategic Plan (The Plan).



The Plan follows our 2017–2020 Refreshed Strategic Plan, which focused on capacity development, networking and equity, diversity and inclusion (EDI) in health research. Much has changed since those early days of my first term as Scientific Director. First, the development and release

of The Plan was interrupted by the Severe Acute Respiratory Distress Syndrome coronavirus-2 (SARS-CoV-2 or COVID-19) pandemic. Second, CIHR released an organizational Strategic Plan designed to encompass the period from 2021–2031. Finally, the commitment to EDI and Indigenous health research (IHR) has increased, at ICRH, within CIHR and across the entire Canadian health research ecosystem. The only thing that is consistent appears to be change itself.

The COVID-19 pandemic is an unprecedented global health crisis that has affected everyone around the world. To the relief of many, knowledge creation and translation as well as iterative policy changes based on emerging research evidence have been at the forefront of the crisis. From the use of masks and physical distancing to the evaluation of acute COVID-19 treatments in platform trials and the development, trialing and uptake of vaccines, science has driven much of the decision-making throughout the pandemic. Unfortunately, misinformation, social media and political divisions have resulted in vaccine hesitancy and anti-vaccination posturing. Consequently, CIHR has funded research to understand misinformation and implement policies and interventions to maximize vaccine uptake.

The pandemic has also been an innovation accelerator. Some of the innovations have been long overdue, some have had unintended consequences and some represent permanent solutions. For example, prior to the pandemic virtual meetings, working from home and virtual care practices were uncommon; however, not a day goes by now

without virtual interactions. Collaboration, data-sharing and rapid research responses have been the keys to addressing the pandemic and advancing science.

In collaboration with our leadership and staff at the CIHR Capital Region, the ICRH staff have worked diligently during the pandemic to contribute to the CIHR medical countermeasures funding opportunities, the Centre for Research on Pandemic Preparedness and Health Emergencies, the Clinical Trial Fund and strategic funding within the Institute mandate areas (e.g., Transitions in Care, Sepsis Research Network, Heart Failure Research Network and the Sleep Research Consortium). We have remained in regular contact with partnership groups such as the Health Charities Coalition of Canada, the National Heart, Lung and Blood Institute at the National Institutes of Health and many more external Institute partners (e.g., charities, societies, industry and other partner groups). These interactions have reemphasized the importance of every partner within the health research ecosystem resulting in the **central tenet** of The Plan: Partnerships. Clearly, the critical contributions of science during the pandemic have illustrated the power of collaboration with partners.

During the extensive consultation process for this new strategic plan, we have heard from people with lived experience (PWLE), scientists, funders and other partners. Rather than simply developing a short- and medium-term recovery plan, our partners challenged us to produce a plan focused on creating an environment that will permit the ecosystem to recover **and** improve. In that vein (pun intended), we are proposing a bold model focused on partnerships: with other Institutes, within CIHR and with external partners. We recognize the challenges partners have experienced during the pandemic; however, the pandemic has reconfirmed the critical role the various partners play in the stability of the health research ecosystem. Their resilience and collaboration have been an inspiration to both the Institute team and me.

The Plan represents the culmination of many months of dialogue and listening with our community. We have focused on **three strategic priorities**: Preparing Future Capacity, Accelerating Knowledge Through Collaboration and Catalyzing Impact Through Knowledge Mobilization. In addition, Strengthening IHR and Enhancing EDI in Health Research reflect **two foundational themes** that the Institute has focused on over the past six years and will continue to champion in the future.

We believe the strategy is comprehensive and nimble. Most importantly, given the difficulty of gazing into the crystal ball and predicting the future, the strategy is disease and health research topic agnostic. For example, regardless of the health research issue we apply the strategy to (e.g., artificial intelligence, mandate-specific health conditions, climate change, clinical trials, pandemic preparedness and health emergencies, prevention, etc.), the three strategic priorities and the two foundational themes will resonate with partners in the research community. Together, we are excited to apply our Plan to the health challenges you believe are important to your community!

In closing, I am indebted to all of the members of the Institute Advisory Board (IAB), led by Dr. PJ Devereaux (Chair) and Dr. Marilyn MacKay-Lyons (Vice-Chair), who have provided so much of their time and expertise to advance the strategic planning for the Institute. I also want to acknowledge all of the participants from the community who helped shape The Plan, and the MP Strategies Group (MPSG) for their assistance in coordinating the engagements and writing. Finally, it is essential for me to acknowledge the efforts of the team at ICRH, including Dr. Ryan Perry, Dr. Helen Coe, Ebele Unaegbunam and Kaylin Barnes, for their hard work, commitment and flexibility through this very challenging period. Working with the IAB, our dedicated ICRH team and the MPSG consultants on The Plan has been a highlight for me.

We are building **Partnerships for Better Health** and our team looks forward to engaging with our incredible research community to advance the generation and implementation of science in our mandate areas.

Sincerely,



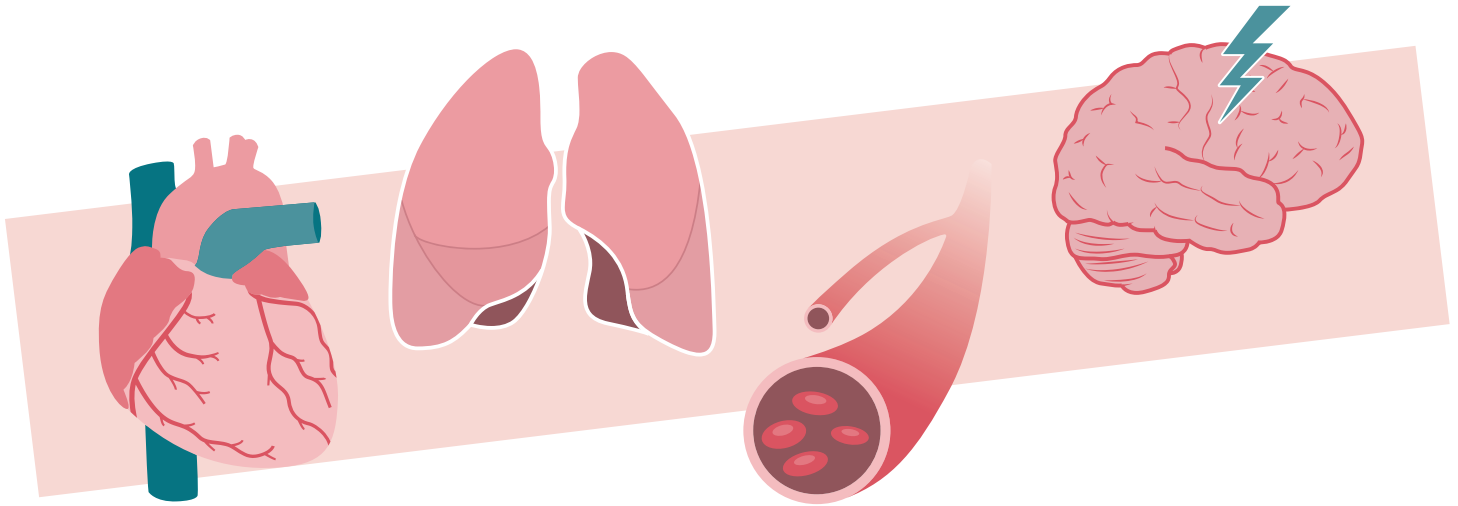
Brian H. Rowe, MD, MSc, CCFP(EM), FCFP, FCCP, FCAHS

Scientific Director, Institute of Circulatory and Respiratory Health, Canadian Institutes of Health Research

Professor, Department of Emergency Medicine, Faculty of Medicine & Dentistry, University of Alberta

Professor, School of Public Health College of Health Sciences, University of Alberta

Executive Summary



The Institute of Circulatory and Respiratory Health (ICRH) mandate areas represent some of the most important health conditions affecting Canadians and people across the globe.

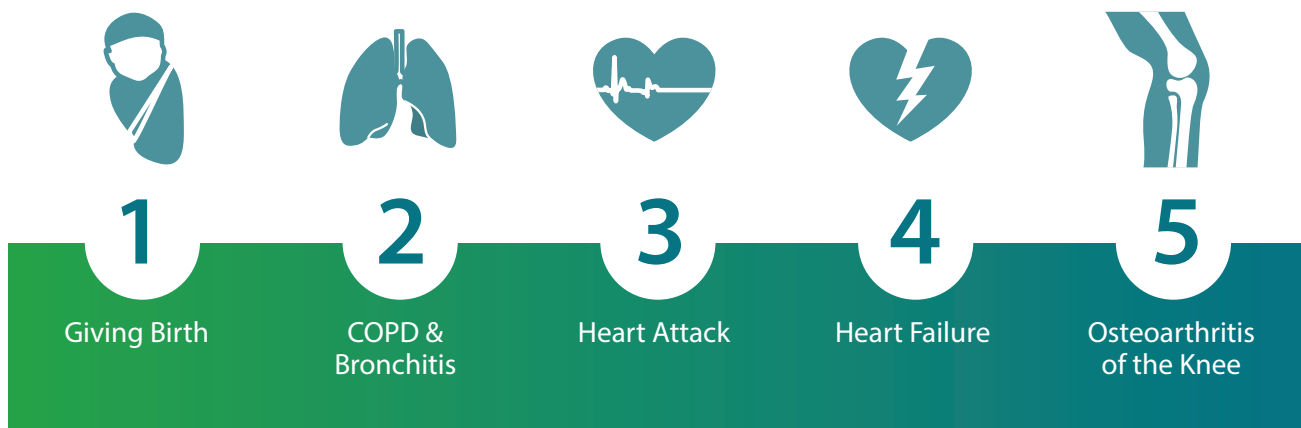
These circulatory (e.g., cardiovascular, brain [stroke], critical care, blood and blood vessels) and respiratory (e.g., lung and sleep) conditions within ICRH account for the highest number of deaths, hospitalizations, need for critical care, emergency department visits and comorbid conditions in Canada. Investment in these areas is critically important to the health and wellness of Canadians.

The ICRH Strategic Plan (The Plan) is designed to guide the Institute through the next four years (2022–2025), the

transition to the next Scientific Director (starting in January 2024) and a period of recovery and growth following the pandemic.

The Plan represents the culmination of many months of dialogue and listening to our community with the aim to advance Canada’s position as a leader in addressing circulatory and respiratory health and wellness challenges for all people living in Canada. The Plan is informed by a decision-making framework and includes the following:

Top 5 Reasons for Hospital Stays in Canada



A Central Tenet

- **Partnerships:** To enhance existing and build new partnerships with other Institutes, within CIHR and with external partners, including people with lived and/or living experience (PWLE).

Three Strategic Priorities

- **Preparing Future Capacity:** To attract, retain and develop future research and knowledge leaders within the Institute mandate areas.
- **Accelerating Knowledge Through Collaboration:** To create and support innovative purpose-driven research collaborations to generate knowledge within the Institute mandate areas.
- **Catalyzing Impact Through Knowledge Mobilization:** To maximize the application and impact of new and existing knowledge created by and for the ICRH research community.

Two Foundational Themes

- **Strengthening Indigenous Health Research:** To champion the conduct of research led by Indigenous Peoples and people with demonstrated culturally safe engagement with Indigenous communities.
- **Enhancing Equity, Diversity and Inclusion in Health Research:** To support ICRH mandate area activities that are conducted on and/or by those who represent the diversity and intersectionality of ICRH community members and stakeholders.

The Plan in action is exemplified in the following Institute led strategic activities:

- **Heart Failure (HF) Research Network** (\$5M investment over 5 years): To strengthen IHR in areas of need, the Institute includes Indigenous-led requirements within many of its strategic funding opportunities such as the HF Research Network.
- **Sleep Research Consortium** (\$5M investment over 5 years): Funding sleep research using a consortium model enabled the support of individual research teams that focused on specific research areas relevant to sleep hygiene and insomnia while at the same time providing a framework for coordination of key cross-cutting activities among the research teams.
- **Transitions in Care (TiC) Initiative** (\$35M investment starting in 2017): The TiC Initiative was developed through strategic partnerships that supported several funding components that addressed knowledge gaps, identified evidenced-based practices and supported the embedding of health system decision-makers within implementation science teams to address care transition challenges.
- **Health Research Training Platforms (HRTPs)** (total CIHR investment of \$31.1M over 6 years): The HRTPs are designed to ensure that health research trainees and early career researchers are best positioned to navigate a dynamic health research landscape with evolving research directions, practices and technologies.

The Plan guides the Institute through a period of recovery and growth following the pandemic and by listening and working with our stakeholders, we aim to achieve *Partnerships for Better Health*.

Top 5 Reasons for Primary Care Visits in Developed Countries



About the CIHR Institute of Circulatory and Respiratory Health

The Institute of Circulatory and Respiratory Health (ICRH) is one of thirteen virtual Institutes that make up the CIHR, Canada's premier health research funding agency.

The ICRH activities and investments provide strategic support for the research community within its mandate, strengthens the community's competitiveness in obtaining other research support from CIHR (as well as other provincial, national and international funding organizations) and fosters capacity development of the ICRH research community across the CIHR research pillars (I - biomedical; II - clinical; III - health systems and policy; and IV - population and public health) (1), while addressing equity, diversity and inclusion (EDI) and support across all career stages.

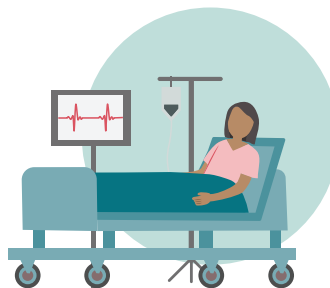
The ICRH Institute Advisory Board (IAB) further supports these actions by providing advice on the Institute's strategic directions and priorities. The IAB includes individuals with lived and/or living experience, as well as scientific and policy experts from across Canada who represent the diversity of sex, gender, race, career stage, regions and research areas encompassed within the ICRH mandate.

The Mission of ICRH

The mission of ICRH is to be an active and meaningful contributor to the collective goals of CIHR by supporting the research community within its mandate and to continue to advance Canada's position as a leader in addressing circulatory and respiratory health and wellness challenges for all people living in Canada.

The Mandate of ICRH

The mandate of ICRH is broad and supports research into the causes, mechanisms, prevention, screening, diagnosis, treatment, support systems and palliation for a wide range of conditions associated with the heart, lung, brain (stroke), blood vessels, blood, critical and intensive care, sleep and circadian rhythm.



ICRH Values

Excellence and Leadership: A high level of professionalism and exemplary leadership is expected by the research community. The Institute is committed to excellence and leadership in supporting circulatory and respiratory health research and innovation in Canada and throughout the world.

Commitment to Collaboration: The health research ecosystem is dynamic, with many organizations and individuals playing important roles to support health research. The Institute is committed to meaningfully consulting and engaging with our colleagues, partners and stakeholders.

Respect for People: Health research is most impactful, more robust and generalizable when everyone is included. The Institute is committed to supporting the principles of equity (fairness), diversity (representation) and inclusion (valued participation) in all interactions and across all aspects of ICRH's daily operations.

Integrity and Accountability: Health research needs to meet the highest international standards of excellence and integrity. The Institute is committed to decision-making based on evidence, accountability and transparency.

The Scope of the ICRH Mandate

The burden of disease covered by the ICRH mandate is significant, encompassing numerous areas related to cardiovascular and respiratory health, stroke, sleep and circadian rhythm, blood and blood vessels and critical care sciences.

Research advances to address the burden of circulatory and respiratory diseases have been significant; however, much work remains as the global prevalence of cardiovascular and respiratory diseases continue to rise.

While malignant neoplasms remain the single most common cause of death in Canada, cardiovascular disease is a close second. The full spectrum of health conditions covered by the ICRH mandate (e.g., cardiovascular and respiratory) represent a staggering 42% of all deaths in Canada (2).

In addition, three of the five leading causes of hospital admission in Canada result from circulatory and respiratory diseases (e.g., heart failure, heart attacks, chronic obstructive pulmonary disease [COPD] and bronchitis) (3).

Many of these conditions present frequently for ambulatory care assessment within emergency departments and primary care (4). In summary, presentations of patients with the various conditions contained within the ICRH mandate account for a large burden on society and on the acute care system.

In Canada, one in three adults lives with at least one chronic disease. An estimated 2.4 million people live with ischemic heart disease, 2.1 million are living with COPD (one of the most common types of chronic respiratory disease) and 800,000 are living with the effects of a stroke (5).

The lifetime risk for developing hypertension among adults aged 55 to 65 years with normal blood pressure is 90% and more than one in five adults aged 20 years or older are living with diagnosed hypertension, while an estimated 17% are not aware they have the condition (6,7).

Notably, circulatory and respiratory diseases account for two of the ten leading causes of death in Canada (2). Clearly, there is a significant economic cost associated with circulatory and respiratory conditions.

Demographics (age, race, ethnicity, sex and gender), environment (air pollution) and lifestyle (smoking, diet, exercise and sleep) all contribute to an increased risk for

circulatory and respiratory diseases. The number of people living with a chronic disease, such as heart and chronic lung disease, increases with age and with the growth of the Canadian population. Not surprisingly, these numbers are increasing.

Circulatory and respiratory conditions disproportionately affect Indigenous Peoples (First Nations, Inuit and Métis) and racialized communities living in Canada (8,9,10).

Circulatory and respiratory conditions also affect males and females differently. For example, ischemic heart disease symptoms present differently in women when compared to men and there are sex and gender specific risk factor differences for cardiovascular diseases (11).

More than 20% of all cardiovascular deaths globally are caused by air pollution; and environmental air pollution is one of the most important risk factors for circulatory and respiratory diseases (12).

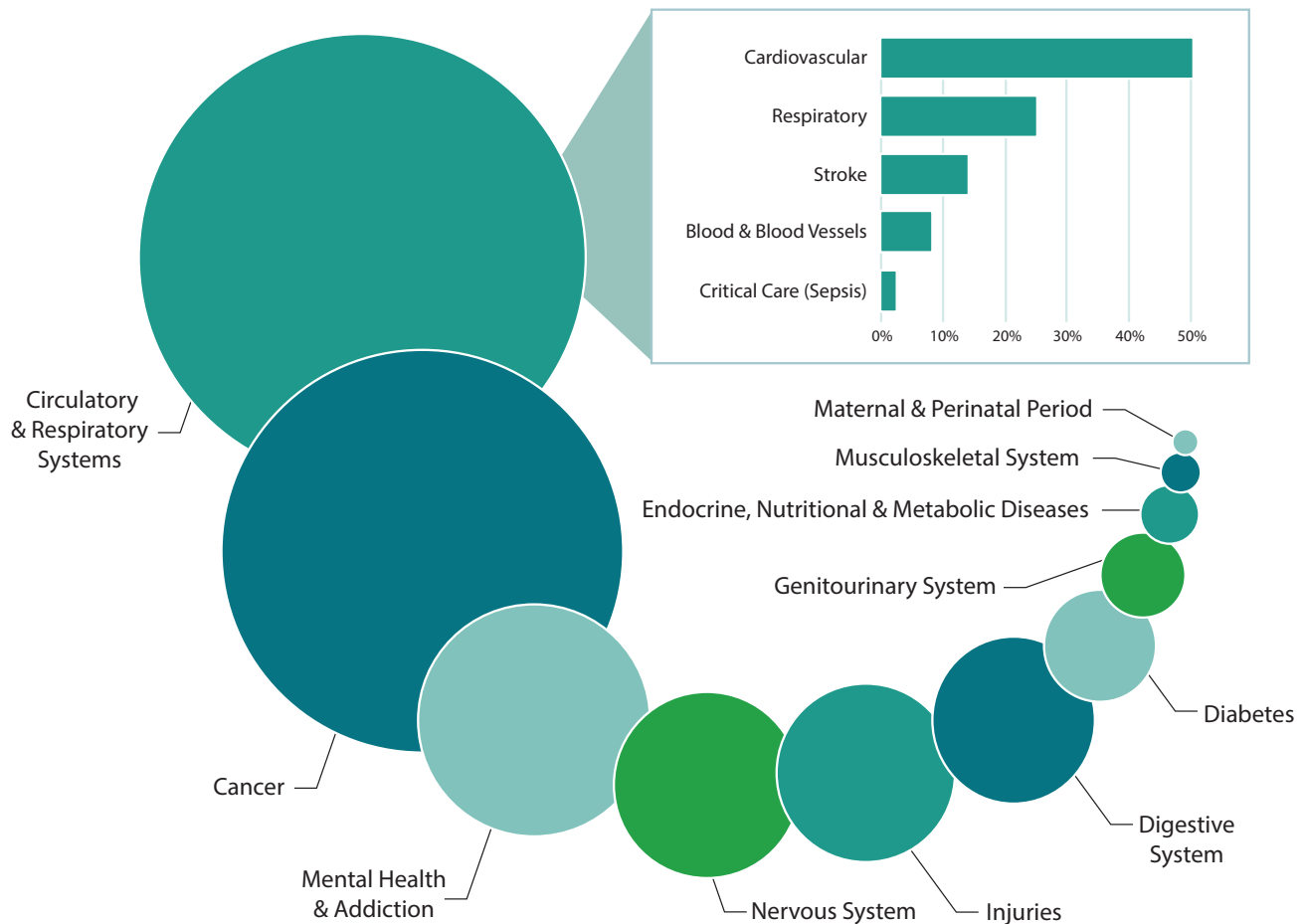
Canada continues to have a high prevalence of modifiable lifestyle factors such as inactivity, poor sleep, unhealthy eating and harmful use of alcohol, with 85% of adults in Canada reporting to having at least one of these risk factors. More recently, disrupted sleep is on the rise as a result of the ongoing COVID-19 pandemic further contributing to the risk of circulatory and respiratory conditions (13).

There is also a significant economic cost associated with circulatory and respiratory conditions as these represent a considerable proportion of emergency department visits, hospital admissions and critical care utilization. For example, presentations of chest pain, COPD, heart failure and sepsis consume important health resources and contribute to over-capacity within the health care system.

Finally, hypertension is the most common reason to visit a doctor, the number one reason for taking medication and significantly increases risk for stroke, ischemic heart disease, peripheral vascular disease and heart failure.



Leading Causes of Death in Canada, 2019



The ICRH Research Community

Canadian contributions to research advances that address circulatory and respiratory disease are significant, and many Canadian researchers are recognized as international research and thought leaders. The circulatory and respiratory health research community has consistently been highly ranked for its size, making major advancements and discoveries to address the health and wellness of individuals locally, nationally and internationally (14).

The Institute has a responsibility to provide strategic supports to attract and retain this vibrant research community as well as a duty to advance all research

communities within its mandate. ICRH also has a commitment to incorporate the principles of EDI in supporting its research community across the CIHR research pillars for ongoing advancement of health equity, generation of new evidence and knowledge mobilization (KM).

Creating the right balance of support across such varied research communities within the ICRH mandate continues to be at the core of our strategic efforts. The collective effort of the community within and beyond the Institute mandate are paramount to reducing the burden of circulatory and respiratory diseases and is critical to building a more resilient, equitable and healthier Canadian society.

Effects of the Global Pandemic

The ongoing direct and indirect effects of the global COVID-19 pandemic have further contributed to the high prevalence of circulatory and respiratory conditions in Canada, and around the world (16). Clearly, the COVID-19 infection is a respiratory condition, which can lead to hospitalization and need for critical care services. In addition, people with pre-existing circulatory and respiratory conditions are at greater risk of severe illness and death resulting from COVID-19 infection. During the pandemic, venous thromboembolism, neurological and sleep-related disorders have also been prevalent (13,17,18).

The COVID-19 pandemic has also brought unprecedented challenges, and in some cases opportunities, for the ICRH community, its partners (including patients) and colleagues. The pandemic has, however, mainly been challenging for many of our partners and colleagues and we understand there is uncertainty regarding the immediate future. As part of the strategic planning process, ICRH consulted with its broader membership (both organizations and individuals), with a specific focus on their experiences related to the COVID-19 pandemic.

Consequently, our near- and medium-term actions will focus on the Institute and community's shifting context since the pandemic began and its implications into the future. The Plan aims to both maximize the opportunities presented by the COVID-19 pandemic and respond to its related challenges, while also remaining flexible as its true impacts become better quantified and understood.

Alignment to the CIHR Strategic Plan

The Institute shares responsibility for achieving CIHR's Strategic Plan (2021–2031) that has a bold *Vision for a Healthier Future* to encourage Canadian researchers to think in the broadest possible terms about how they can demonstrably improve the health of people in Canada and throughout the world (15).

While the ICRH Plan directly aligns with CIHR's overall strategic plan, the identified Institute strategic priorities and foundational themes are specific to the needs and interests of the ICRH research community, people with lived or living experience (PWLE) and partners. ICRH adopted CIHR's corporate values as its own and will apply these values in how The Plan will be actioned.

Performance Metrics and Evaluation

The Institute is committed to the continuous monitoring and assessment of the strategies to measure progress of the three strategic priorities and two foundation themes throughout the period of The Plan. To guide this, the Institute will convene a subcommittee that is specifically tasked with developing a performance measurement framework with indicators to complement this strategic plan and leverages CIHR's Performance and Outcome Measurement Framework. The performance measurement framework will be evergreen and internal, which the Institute will maintain and modify on an annual basis as needed. Ongoing support to the performance measurement framework will be provided by the IAB, input from relevant CIHR staff, and in collaboration with the CIHR Planning, Evaluation and Results branch, as required.

A Framework for Decision-Making

Given the large and important ICRH mandate, the totality of demands on the Institute exceeds available financial and human resources.

Due to the current and future pandemic realities, the next several years are likely to be unpredictable and are likely to require flexibility from the Institute. We will need to collectively continue to engage, partner and be responsive in the near future. As such, The Plan includes a decision-making framework to guide necessary choices to determine the best use of available Institute resources (both granting and non-granting) within the broader health research ecosystem.

The decision-making framework considers where and how to engage in the use of Institute financial and human resources. The framework draws on the Hedgehog Concept (19) which is composed of three inter-related questions:

- What is the alignment to the ICRH mandate?
- What is the ICRH capacity to deliver?
- What provides the best value for ICRH resources?

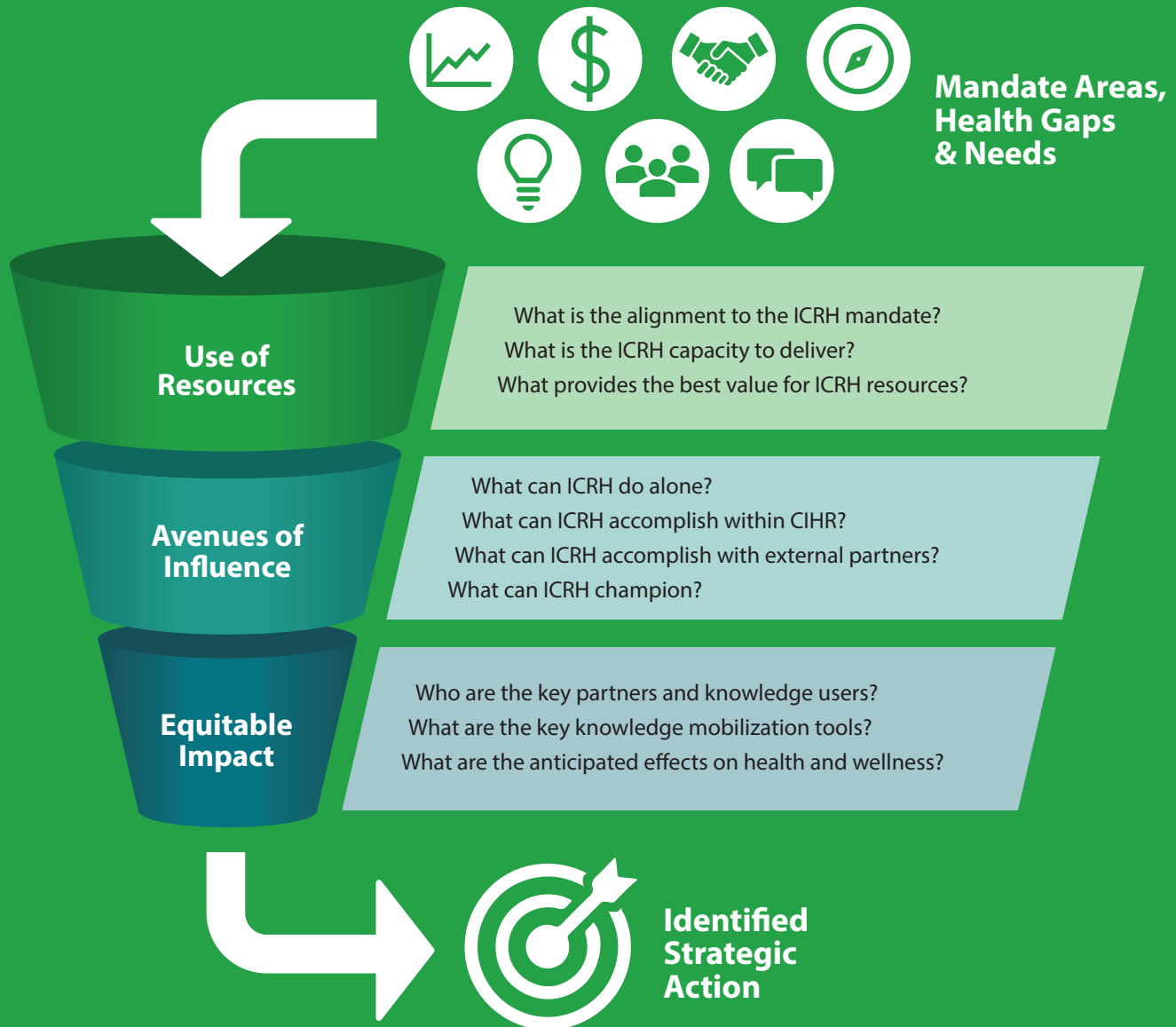
It is the intersection of these three questions that will inform how ICRH is best positioned to produce beneficial short-, medium- and long-term results through strategic investments and activities.

The decision-making framework also considers the multiple avenues of influence available to ICRH. There are times when ICRH can and will lead on a matter – other times, we will work with others, champion for a community priority, or simply call upon partners to lead on a particular issue. An understanding of these lines of influence where ICRH is best positioned to act, allows for a more nuanced, tailored and coordinated approach to strategic decision-making.

A final input to the decision-making framework is informed by the Knowledge-to-Action Process (20). This input frames the concept of equitable impact for ICRH strategic activities. The decision-making framework also considers how to maximize strategic investments within the broader health research ecosystem by identifying key partners most ready to advance both the creation and mobilization of knowledge for maximum equitable impact on the health and wellness of Canadians.

Collectively, the decision-making framework will support informed and intentional strategic choices for the Institute based on the best available information. In addition, the framework provides a common language that can be applied to evaluate competing demands on ICRH resources. Finally, the decision-making framework is not time-limited and therefore can be applied on an ongoing, dynamic basis during the lifespan of The Plan.

Institute Decision-Making Framework



A Unifying Approach

We chose the unifying approach Partnerships For Better Health deliberately, to reflect the value we place on working with partners.

Partners include other CIHR Institutes, PWLE, research funders within the national and international health research ecosystem and scientists across Canada. This unifying approach was co-created with the ICRH community and reflects the central tenet of partnerships around which all Institute actions and investments will be linked.

Partnerships for Better Health underscores the rich and respectful relationship ICRH has with community partners and recognizes that partnering with others is how we can collectively maximize health impacts.

Our unifying approach also reflects our shared values, which will guide us in the application of our strategic decision-making framework and is embedded in our three strategic priorities and two foundational themes.

As areas for use of Institute resources are identified, the three strategic priorities and two foundational themes along with the identified goals and strategies will then be applied to maximize the informed investments and activities ICRH undertakes for the duration of The Plan. These efforts will be further amplified and leveraged through the central tenet of partnerships.

Strategic Priorities

Preparing Future Capacity



Accelerating Knowledge Through Collaboration



Catalyzing Impact Through Knowledge Mobilization



Foundational Themes

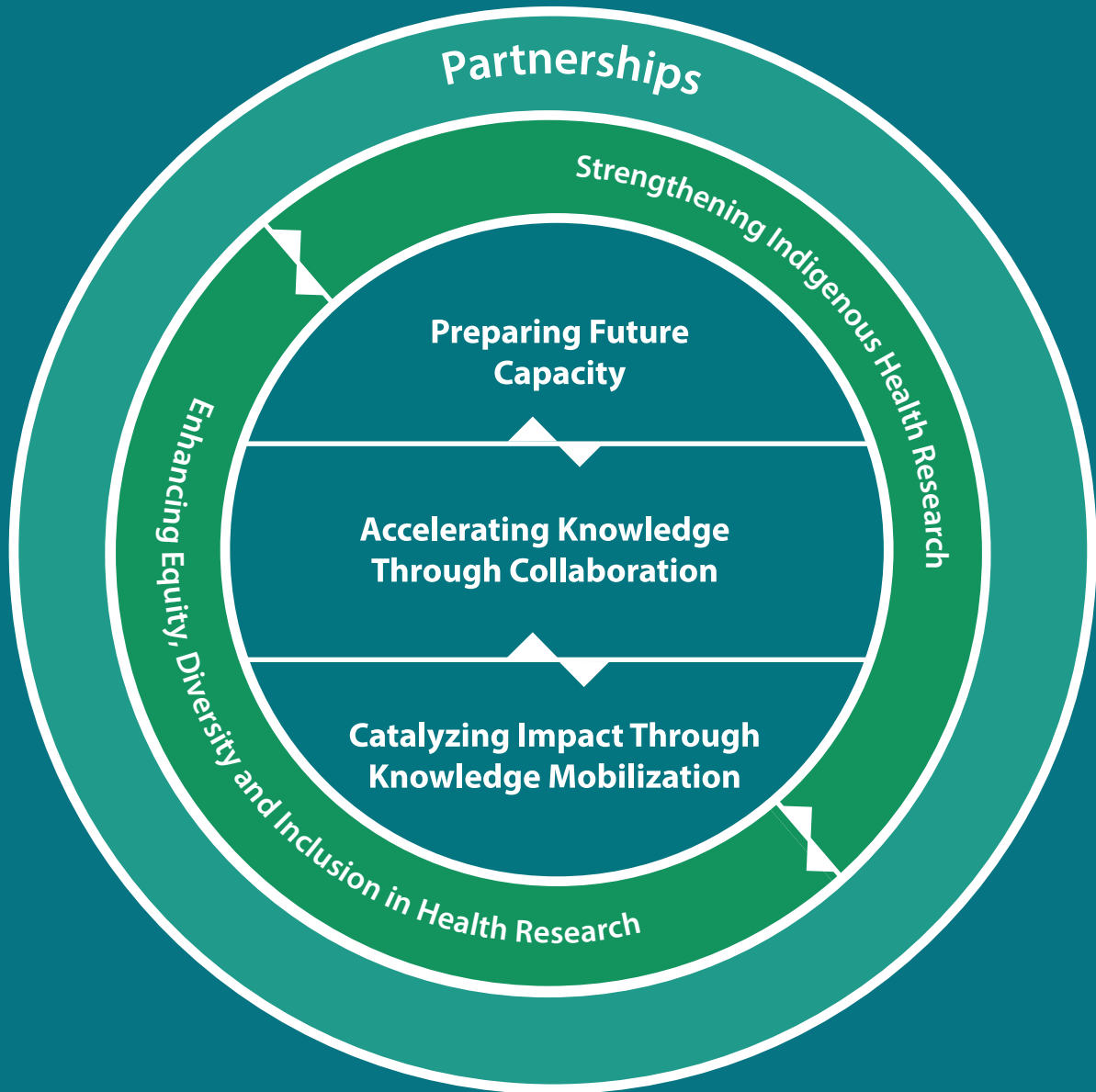


Strengthening Indigenous Health Research



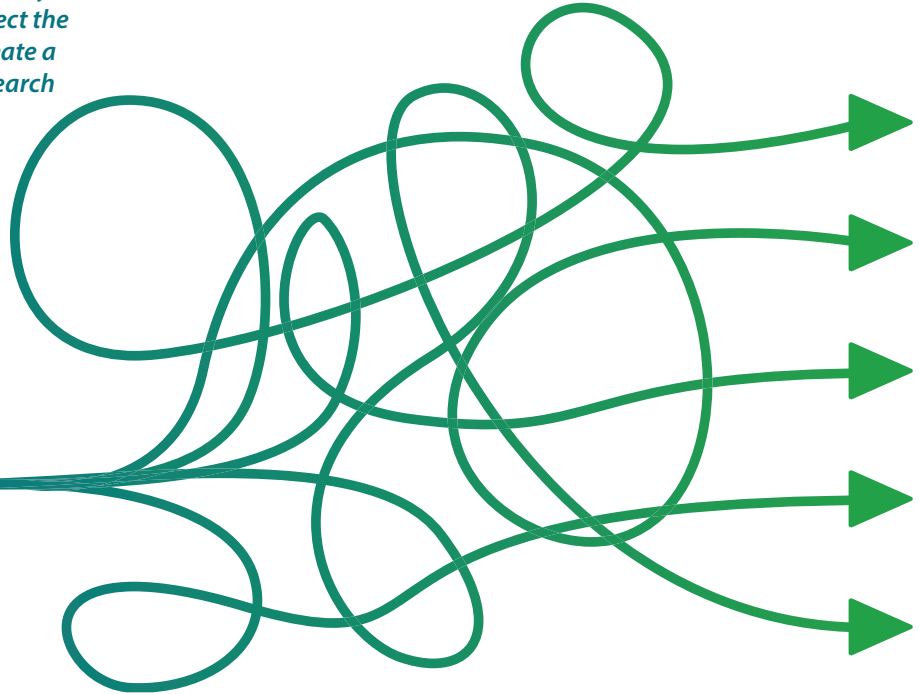
Enhancing Equity, Diversity and Inclusion in Health Research

Institute Strategic Plan Model



A Preparing Future Capacity

The Institute is reimagining the capacity development paradigm to better reflect the dynamic environment needed to create a more inclusive and diverse ICRH research community.



STRATEGIC GOAL

To attract, retain and develop future research and knowledge leaders within the Institute mandate.

Past

The circulatory and respiratory health community has benefitted from an Institute-driven focus on training and capacity development that is mandate-specific, flexible and delivered annually.

Training and capacity development has included a focus on providing individual supports through studentships, fellowships and early career investigator awards, program-based supports through investment in early career research forums and support for training platforms included in network funding opportunities.

In addition, travel awards, meeting grants and in-kind resources strive to promote an equitable, inclusive and diverse approach to training and career development. Finally, investments have promoted career sustainability through available funding across the early-stage career path.

Present

Strengthening Canada's health research capacity represents a present and ongoing need within the Institute mandate in order to accelerate the process of scientific discovery and application of knowledge into evidence-based solutions that address important circulatory and respiratory health challenges.



STRATEGIES

1

Committing to Inclusive Capacity Development

The Institute will clarify, define and integrate EDI and IHR considerations across all capacity and career development initiatives.

2

Developing KM Skills

The Institute will encourage and promote a focus on building KM skills into all capacity development initiatives and to continue to develop capacity for effective KM.

3

Aligning with Need

The Institute will collaborate with partners to co-develop and deliver effective, evidence-informed strategies to ensure that capacity development support reaches those with highest need, including mid-career scientists and clinician-scientists.

4

Nurturing Professional Development

The Institute will collaborate with partners to promote and enhance activities in experiential learning, training supports and professional development.

5

Prioritizing Early Career Support

The Institute will continue to support early career researchers within the ICRH mandate.

6

Advancing Mentorship and Networking

The Institute will explore and develop new approaches to broker mentorship and networking opportunities to enhance traditional approaches to health research training.

Continuing to co-create a responsive, robust, diverse and inclusive environment for the training and career development needs of the leaders of tomorrow remains a priority for the Institute health research community. The training and career development approaches need to be vibrant, stable, well-supported and free of racism and systemic biases to respond effectively to the health and health system challenges faced by everyone living in Canada.

Future

To meaningfully address the development of the next generation of leaders within ICRH mandate areas, there is a need to reimagine the talent development paradigm. This new paradigm needs to be dynamic, flexible and responsive in order to address the realities of a modern career in the health research ecosystem.

The approach needs to be equitable, inclusive and supportive, at the same time as being inclusive of the diversity and experiences of those who pursue these career paths. For ICRH, this means continuing to provide training and career development opportunities that are responsive to the evolving health research ecosystem, are inclusive and offer experiential opportunities for learning.

B Accelerating Knowledge Through Collaboration



The Institute will intentionally enhance existing, and seek new, innovative partnerships to address complex circulatory and respiratory health challenges through interdisciplinary and collaborative research efforts.



STRATEGIC GOAL

To create and support innovative purpose-driven research collaborations to generate and use knowledge within the Institute mandate areas.

Past

Solutions to address complex health challenges within the ICRH mandate are not isolated to the research enterprise and will require coordinated efforts inclusive of social, economic and political structures to make significant advances for improved patient outcomes.

The Institute has a track record of creating investments in interdisciplinary, multi-pillar research, community-engaged collaborative efforts that have shifted from the traditional single discipline research paradigm needed to address complex health challenges within its mandate. Networking opportunities such as the Community Development Programs (e.g., Canadian Critical Care Trials Group, Canadian Venous Thromboembolism Network) and Emerging

Networks (e.g., Canadian Vascular Network, Canadian Respiratory Research Network, Canadian Stroke Prevention and Intervention Network) formed a large component of funded activities and have contributed to significant health research advancements.

Interestingly, these network investments have also driven advancements in investigator-initiated research, as individual investigators who are members of these funded networks have experienced increased success within CIHR Operating Grant programs, such as the Project Grants.

Present

As a learning organization that seeks to be responsive to the evolving research needs and be adaptive to the health research ecosystem, the Institute has iterated the



STRATEGIES

1

Creating Innovative Funding Models

The Institute will use the decision-making framework to guide and inform decisions with partners to co-create and co-deliver funding models that are innovative and collaborative in nature.

2

Reducing Barriers

The Institute, as a learning organization, will assess and address barriers to successful implementation of supported collaborative models for meaningful and effective research collaborations.

3

Linking, Amplifying and Leveraging

The Institute will engage with existing and new partners to link, amplify and leverage current investments to further enhance research collaborations.

4

Collaborating for Excellence

The Institute will continue to focus on equitable, inclusive and diverse partnership efforts with existing and new partners, including partners not historically linked to health research (e.g., charities, private foundations, consumer organizations and other relevant organizations).

5

Incentivizing Collective Engagement

The Institute will continue to incentivize engagement of early- and mid-career researchers in networks and other collaborative research platforms to improve access and inclusion of a diverse group of leaders, mentors and research participants.

6

Responding to Change

The Institute will continue to approach partnership opportunities with flexibility, transparency and equity to reflect the dynamic nature of the health research ecosystem.

collaborative research model to meet the identified health challenge. As examples, the Sepsis Research Network and Heart Failure Research Network funding opportunities were designed to support single nationally coordinated, interdisciplinary research efforts that included patients, PWLE, family/caregivers, Indigenous Elders or Knowledge Keepers, government, policy makers, not-for-profit organizations, health care providers, researchers, clinicians and industry with a primary focus on the identified complex health challenge.

Adaptive funding models, such as the Sleep Research Consortium, were designed to fund individual research teams linked through a Coordinating and KM Centre. This broad, yet focused centre, has a mandate to co-create new knowledge and strategies to mobilize knowledge for improved health outcomes as they relate to insomnia and sleep deprivation.

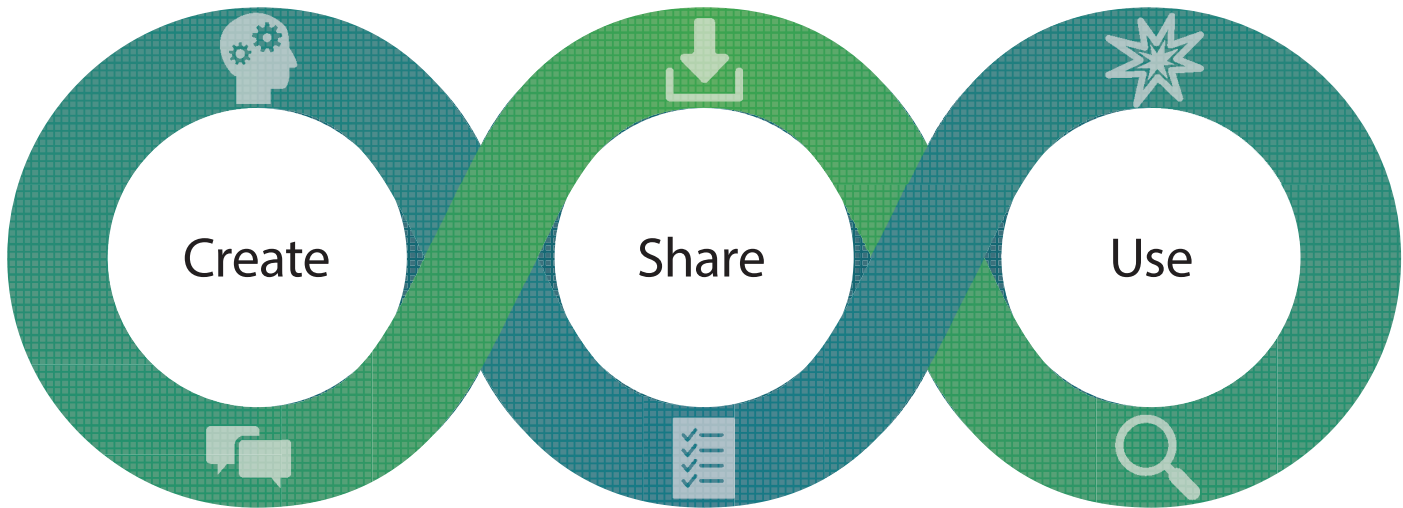
Future

In the future, ICRH will continue to learn and adapt collaborative funding models that are greater than the sum of their parts to create meaningful change in identified areas of need.

We will intentionally seek new innovative partnerships and partnership models to address the complex health challenges that will only be addressed through interdisciplinary, collaborative research efforts (e.g., teams, consortia and networks).



Catalyzing Impact Through Knowledge Mobilization



The Institute will work with valued partners to cultivate trust, transparency and confidence among researchers and community groups to inform the generation of knowledge, its dissemination and validation and ultimately the tailoring and refinement of knowledge.



STRATEGIC GOAL

To maximize the impact of new and existing knowledge created by and for the ICRH research community.

Past

CIHR played an important leadership role in developing a knowledge translation framework and impact opportunities for health research. The 2021–2031 CIHR Strategic Plan has a renewed emphasis on knowledge translation by recognizing the evolving field of KM as a key priority to reimagine the uptake, scale and spread of evidence so it is ingrained within Canadian health systems.

Over the past six years, ICRH has continued to participate in KM activities such as the Best Brains Exchanges or end-of-grant workshops (e.g., Effects of the Alberta Wildfires dissemination workshop), supported mandate-specific

research training programs and provided opportunities for networking and collaboration (e.g., travel awards, strengthening workshops and planning and dissemination meeting grants). Collectively, these activities have provided lessons about effective engagement strategies and will inform future and ongoing KM strategies.

Present

Over the course of the pandemic, there have been growing concerns over the abundance of science and health misinformation and the need to combat it. Social media platforms and communication tools have provided opportunities for widespread sharing of diverse perspectives



STRATEGIES

1 Addressing Gaps
 The Institute will encourage KM funding opportunities to address critical translational gaps in the health research ecosystem.

2 Embedding KM Requirements
 The Institute will embed KM requirements in funding opportunities, capacity development initiatives and ensure strategic funding peer review panels include appropriate KM expertise.

3 Contributing Leadership
 The Institute will contribute leadership to develop and implement the new CIHR KM Action Plan and tool kit (e.g., Café Scientifique and Planning and Dissemination Grants), including health innovations (e.g., virtual care and artificial intelligence [AI]) within the circulatory and respiratory health research community.

4 Requiring Community Engagement
 The Institute will require the inclusion of patients, PWLE, knowledge users and decision makers in research funding opportunities to mobilize evidence efficiently, effectively and appropriately.

5 Promoting Informed Decision-Making
 The Institute will promote the inclusion of science and evidence in health policy and system decision-making in emerging areas of importance (e.g., CIHR Centre for Research on Pandemic Preparedness and Health Emergencies, clinical trials, data sharing and AI).

6 Extending Outreach
 The Institute will implement creative communication approaches to ensure KM efforts focus on communities and populations that have been historically hard to reach (e.g., Indigenous communities, remote/rural communities and newcomers to Canada).

7 Encouraging Innovation
 The Institute will propose and champion creative KM funding opportunities, including trainee supports and clinical trial initiatives, to advance the dissemination, application and implementation of knowledge into practice.

on health topics, particularly those related to the response to, and prevention of, COVID-19.

Now more than ever, it is paramount that credible information sources that disseminate scientifically sound health information earn the trust and confidence of Canadians. Communicating key findings in an accessible format may encourage the public to be well-informed in their efforts to make evidence-based choices that are more closely aligned with current health recommendations.

Future

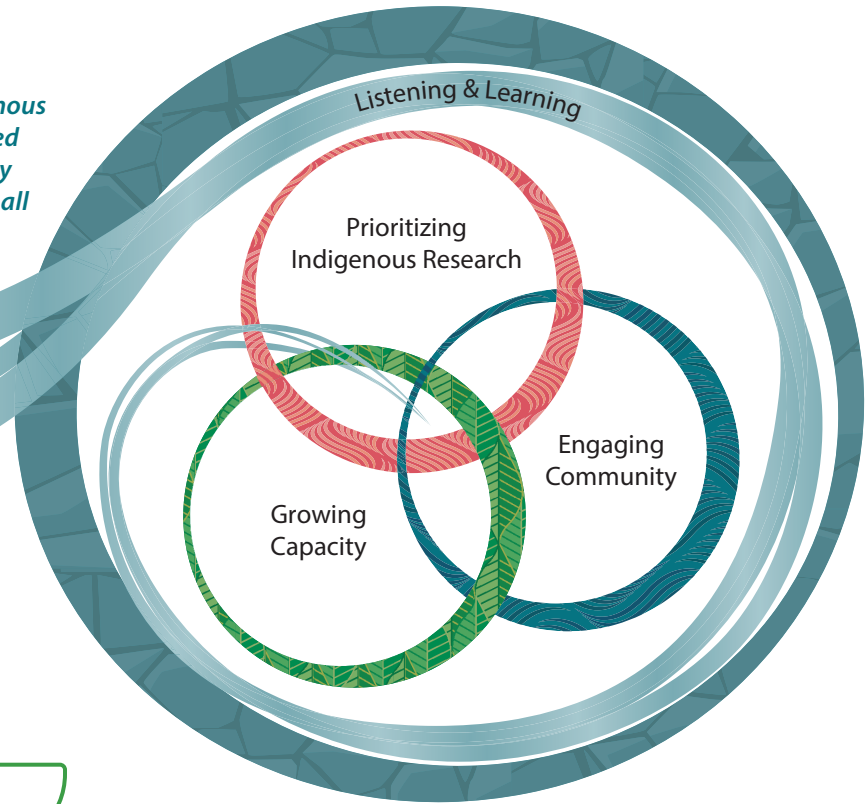
As the science of KM evolves, the Institute will remain nimble and responsive to the strategies where knowledge is successfully mobilized into action. ICRH will work with

valued partners to cultivate trust, transparency and confidence within the research community to address evidence gaps and areas of concern.

We will seek innovative ways to contribute to meaningful and accessible KM activities within our mandate. The Institute will promote for the need for high quality, impactful KM strategies, while creating inclusive opportunities for members of our research community to share their findings. We will champion research evidence that builds and encourages the health literacy of Canadians.

Strengthening Indigenous Health Research

The Institute embraces allyship and recognizes the need to work with Indigenous leaders to co-develop distinction-based approaches to improve the circulatory and respiratory health and wellness of all Indigenous Peoples in Canada.



STRATEGIC GOAL

To continue to champion research activities led by Indigenous Peoples (First Nations, Inuit and Métis) and people with demonstrated culturally safe engagement with Indigenous communities.

Past

Addressing Indigenous health has historically been a focus for ICRH as circulatory and respiratory health issues are disproportionately seen in, and affect, Indigenous populations.

Sleep is also identified as a serious concern for Indigenous communities, and insufficient sleep and insomnia are linked to circulatory and respiratory health inequities.

These disproportionate health effects are a result of multiple intersecting factors that include psychosocial stressors stemming from colonization and historical trauma related to harms as the result of the residential schools system, racism and systemic discrimination (including within the health system), economic and job inequity, poor and overcrowded housing, access to safe drinking water, multiple healthcare

jurisdictions and limited access to health care services due in part to rural and remote locations of some Indigenous communities.

Since 2016, ICRH has prioritized IHR in many of its activities to address these circulatory and respiratory health inequities more purposefully. Through our supporting role as an ally, we have worked with Indigenous leaders to inform our involvement and investments in CIHR programs such as the Network Environments for Indigenous Health Research (NEIHR), Indigenous component of the Healthy Life Trajectories Initiative (I-HeLTI), Transitions in Care (TiC), Diabetes Prevention and Treatment in Indigenous Communities: Resilience and Wellness.



STRATEGIES

1 *Prioritizing Indigenous Research*

The Institute will prioritize Indigenous research activities while supporting strong representation of researchers who are Indigenous and those engaging in culturally safe Indigenous research practices.

2 *Growing Capacity*

The Institute will co-create diverse opportunities that support Indigenous researchers and those engaging in culturally safe Indigenous research practices across the career trajectory.

3 *Championing Indigenous Knowledge*

The Institute will continue to champion and focus on the inclusion of Indigenous ways of knowing and strength-based models into the entire research and KM cycle.

4 *Creating Allies in IHR*

The Institute will lead efforts with partners regarding inclusion of Indigenous considerations in research and KM by convening a process to share current practice and policies.

5 *Centering Opportunities*

The Institute will embed appropriate language into all Indigenous funding opportunities, promote and support Indigenous approaches to KM.

6 *Listening and Learning*

The Institute will collaborate with and seek knowledge and advice from Indigenous leaders and communities (e.g., Advisory Group on Indigenous Health).

Present

We also created tailored approaches to include IHR requirements within ICRH strategic funding opportunities. These requirements include approaches such as specified IHR funding pools within strategic funding (e.g., TiC Best and Wise Practices Grants and Phase 2 Team Grants), as well as requirements for inclusion of Indigenous-led teams and cross-cutting activities embedded within networks (e.g., Heart Failure Research Network) and consortia (e.g., Sleep Research Consortium).

ICRH has also supported focused IHR capacity development through supports of early career research awards (e.g., Women's Heart and Brain Health Chairs and the ICRH Early Career Investigator Awards in Circulatory and Respiratory Health).

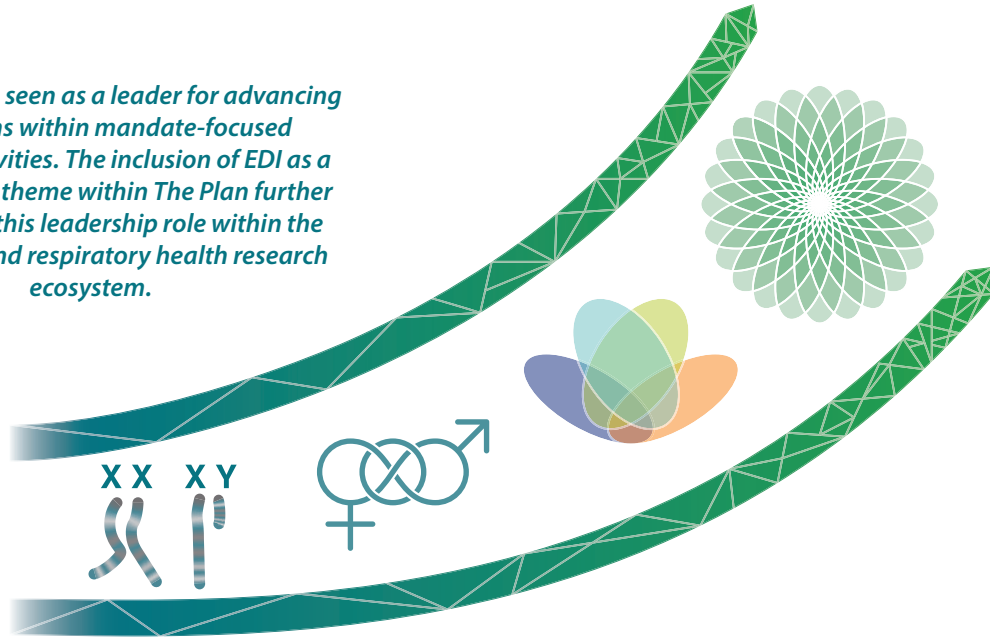
ICRH is continuing to strengthen research capacity and support the circulatory and respiratory health and wellness of Indigenous Peoples in Canada by engaging with organizational, Institute and external partners.

Future

In the future, and in the spirit of reconciliation, evidence-based solutions, grounded in Indigenous methodologies and ways of knowing, offer mechanisms to address many of the intersecting challenges and promote better health and wellness for Indigenous Peoples in Canada. ICRH will continue to prioritize IHR in strategically led activities to strengthen Indigenous research, seek advice from Indigenous leaders to develop meaningful inclusion of IHR within new funding opportunities and to support capacity development of Indigenous health leaders within the ICRH mandate. We will also work with partners to champion for inclusion of IHR activities when co-developing partner-led efforts.

2 Enhancing Equity, Diversity and Inclusion in Health Research

The Institute is seen as a leader for advancing EDI actions within mandate-focused strategic activities. The inclusion of EDI as a foundational theme within The Plan further emphasizes this leadership role within the circulatory and respiratory health research ecosystem.



Adapted with permission from CIHR-IGH



STRATEGIC GOAL

To support EDI of ICRH researchers, research participants, funding opportunities and stakeholders in circulatory and respiratory health research.

Past

Canada is a diverse nation with residents representing many social identities including, but not limited to, race, sex, gender and immigration status (21). It is well established that circulatory and respiratory diseases often present differently in men and women. Advancements have been made relating to sex and gender-based analysis plus (SGBA+), and ICRH has worked with partners to support sex and gender research (e.g., Women's Heart and Brain Health Chair Awards), capacity development (e.g., Early Career Investigator Awards in Circulatory and Respiratory Health) and training programs (e.g., embedded trainee workshops).

In addition to sex and gender focused strategies, ICRH has included sex and gender considerations in Institute staffing, IAB membership and development of strategic peer review panels. For example, the current IAB membership meets the *Government of Canada 50 – 30 Challenge* where there is gender parity (“50%”) and significant representation (“30%”) of other under-represented groups (22).

As we better understand the contribution of age, race, ethnicity, sex and gender on the morbidity, mortality, health and wellness of individuals in Canada, further attention is needed on EDI to address the disproportionate representation of racialized populations, newcomers to Canada and those at the intersection of race, class, sexual orientation, physical ability and gender in circulatory and respiratory diseases.

Present

While advancements have been made related to SGBA+ historically, the significance of intersectionality has been underappreciated. In response, ICRH-led collaborative funding opportunities have purposefully incorporated EDI as a cross-cutting theme. Applicants were required to outline how their proposed research addressed EDI and include a plan to promote EDI in the research and work environment, the research design, methods, analysis, interpretation and/or KM efforts (e.g., Sepsis Research Network [Sepsis Canada], Heart Failure Research Network and Sleep Research Consortium).



STRATEGIES

1 *Promoting EDI Considerations*

The Institute will promote research focused on EDI issues as well as include EDI strategies across all funding opportunities (e.g., Networks, Consortia and Teams).

2 *Increasing Capacity*

The Institute will expand opportunities that elevate researchers across the career trajectory (e.g., mid-career lecturer awards), encompassing sex and gender, intersectionality and racialized groups (e.g., featured researchers).

3 *Ensuring Accessible Communications*

The Institute will purposefully embed EDI strategies within Institute communications (e.g., slide decks, newsletters and social media), as well as Institute supported KM events (e.g., community dissemination events).

4 *Empowering Diverse Leadership*

The Institute will champion representation of historically excluded populations within ICRH staff, advisory boards, community events and strategic funding peer review panels.

5 *Inspiring Meaningful Engagement*

The Institute, in collaboration with partner organizations, will provide leadership to ensure barriers are removed for trainees to attend research events (e.g., travel awards) and that EDI considerations are implemented in the workshop agenda, speakers, panels and organizing committees.

6 *Seeking Advice*

The Institute will establish a bi-directional relationship with EDI communities and leaders and meaningfully engage with priority populations (e.g., remote and rural, newcomers to Canada, gender fluid, racialized peoples and intersectional populations).

ICRH is also promoting EDI in training through inclusion in annual training and early career development workshops and ICRH supported Health Research Training Platforms (HRTPs). The ICRH led TiC multi-Institute initiative team grant funding opportunity, supported by strategic partnerships, incorporated specific research areas focused on Mental Health Care for Black Youth, Transitions in Care for Adults (18 years and above) with Neurodiverse Conditions and Primary Care and Community Mental Health Care for Youth.

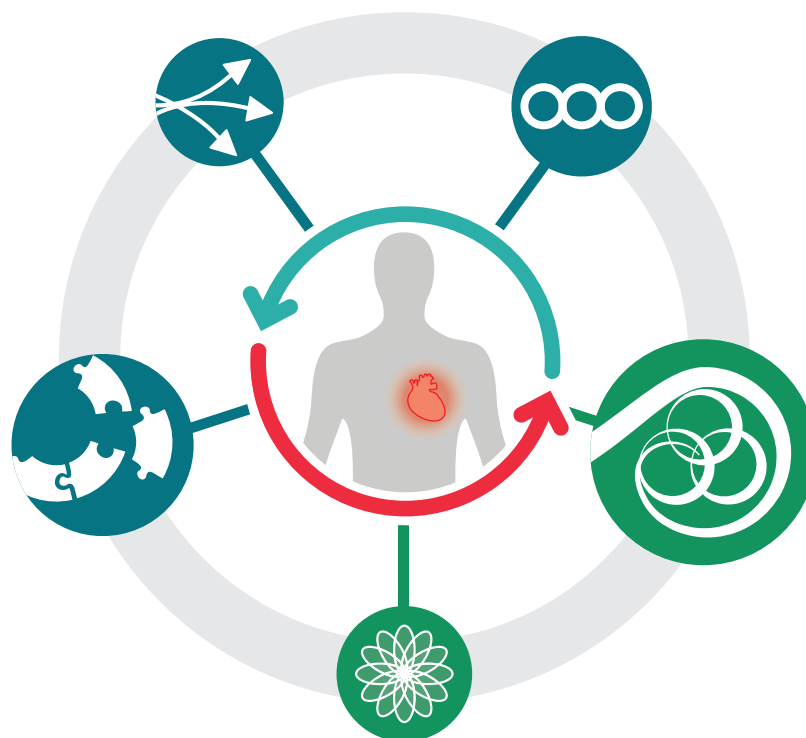
The COVID-19 pandemic has further highlighted how racialized populations in Canada are disproportionality represented in COVID-19 infections, vaccine accessibility and access to health care services. This highlights the ongoing need to expand efforts that ensure the researchers and participants are reflective of the diversity of the community being served.

Future

In the future, ICRH will actively build on previous commitments ensuring that EDI approaches are meaningfully embedded across activities or achieved through prioritizing racialized populations.

In addition, ICRH will continue to be responsive to the health research environment to address emerging EDI challenges, such as the need for representative samples in clinical research to accurately reflect the populations most severely affected. We are committed to co-creating and co-designing strategic opportunities that reflect and meaningfully engage the diversity of the ICRH community. As this priority evolves, ICRH will iteratively revise our EDI approaches into initiatives and activities to meet the dynamic needs of the circulatory and respiratory health research community.

Strategic Plan in Action



Heart Failure Research Network

In Canada, many health conditions are overrepresented among racialized groups and Indigenous Peoples in comparison to other communities.

To strengthen IHR in areas of need, the Institute incorporates Indigenous-led requirements within many of its strategic funding opportunities such as the Heart Failure (HF) Research Network (The Network). The Network includes an Indigenous-led research team along with the cross-cutting platform to address Indigenous health and wellness to strengthen Indigenous research and knowledge sharing activities.

In addition, the Network brings together an interdisciplinary group of people from across Canada including patients, PWLE, family/caregivers, Indigenous Elders or Knowledge Keepers, government, policy makers, not-for-profit organizations, health care providers, researchers, clinicians and industry. Together, this dynamic group will focus on HF across the lifecycle, within various health delivery settings (including hospitals, primary care, home and community

care as examples) and in the context of multimorbidity, health disparities and Indigenous health and wellness.

The Network activities also includes training and capacity development, KM and patient and citizen engagement.

The HF Research Network is a \$5M investment over five years collectively supported by five CIHR Institutes* and the Heart and Stroke Foundation of Canada in partnership with Mitacs and the National Institutes of Health – National Heart, Lung, and Blood Institute (NIH-NHLBI).

*CIHR Institutes of Aging (IA); Circulatory and Respiratory Health (ICRH); Gender and Health (IGH); Health Services and Policy Research (IHSPR); Infection and Immunity (III); Indigenous Peoples' Health (IIPH).



Sleep Research Consortium

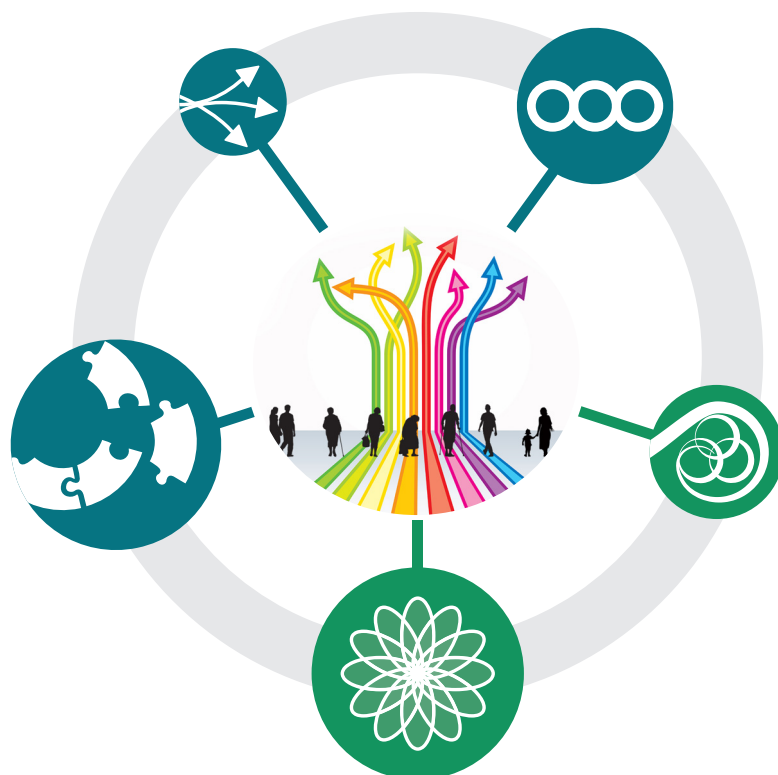
In combination with diet, exercise and other personal choices made by Canadians, sleep is a critical component of primary disease prevention and promotion of wellness.

In 2022, in partnership with four other CIHR Institutes* and Eisai Limited, ICRH led the development of a unique \$5 million, five-year initiative: the Sleep Research Consortium.

Funding sleep research using a consortium model enabled the support of individual research teams that focused on specific research areas relevant to sleep hygiene and insomnia while at the same time providing a framework for coordination of key cross-cutting activities among the research teams. The cross-cutting activities included

capacity development, health disparities and equity, Indigenous health and wellness (such as connections to culture and ceremony), data management and KM. The active coordination of the cross-cutting activities will be managed by a Coordination and Knowledge Mobilization Centre (CKMC). The CKMC is designed to ensure the collective benefits of research are realized and to maximize the mobilization of knowledge within and beyond the Sleep Research Consortium research teams.

*CIHR Institutes of Aging (IA); Circulatory and Respiratory Health (ICRH); Human Development Child and Youth Health (IHDCYH); Indigenous Peoples' Health (IIPH); Neurosciences Mental Health and Addiction (INMHA).



Transitions in Care Initiative

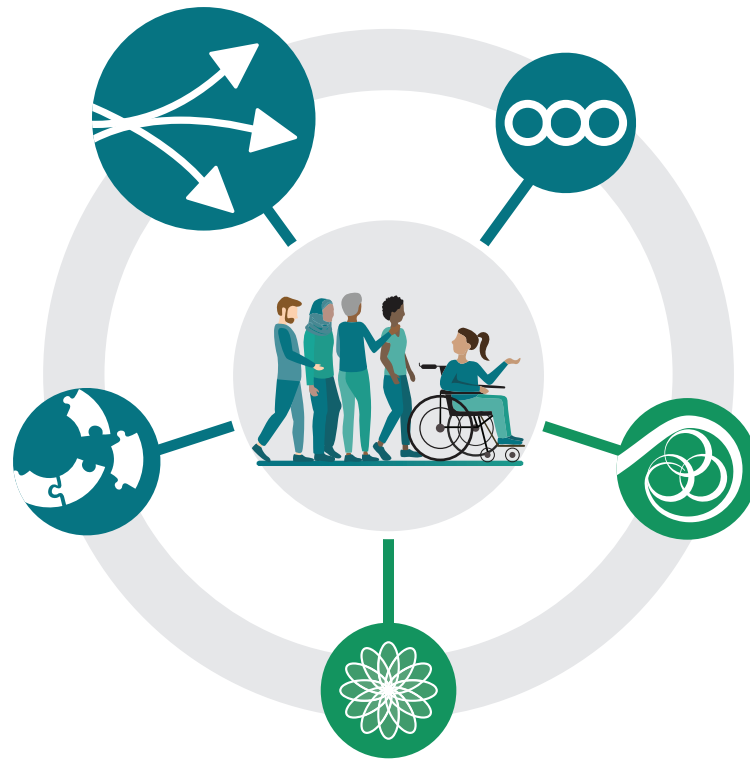
The Transitions in Care (TiC) Initiative is an over \$35M multi-component collaboration started in 2017, which is designed to improve the health and wellness of all people in Canada by supporting research that transforms the health system to optimize the outcomes of individuals experiencing transitions in care.

In their lifetime, every Canadian will experience many transitions in care, whether as a client, patient, caregiver, family member and/or as a member of a community that experiences challenges accessing care. To address these challenges, the TiC Initiative was developed through strategic partnerships within CIHR* and a diverse group of external partners**. The TiC Initiative included several funding components that addressed knowledge gaps, identified evidenced-based practices and supported the embedding of health system decision-makers within

implementation science teams to address TiC challenges. Supported activities were to include the intersection of two of the three TiC focus areas (across the lifecycle, changing health status or care and key populations to optimize transition in care outcomes), integrate CIHR's commitment to the health and wellness of Indigenous Peoples and racialized groups and develop relevant research capacity.

*CIHR Institutes of Aging (IA); Cancer Research (ICR); Circulatory and Respiratory Health (ICRH); Gender and Health (IGH); Human Development, Child and Youth Health (IHDCYH); Health Services and Policy Research (IHSPR); Indigenous Peoples' Health (IIPH); Musculoskeletal Health and Arthritis (IMHA); Neurosciences, Mental Health and Addiction (INMHA); and the CIHR Strategy for Patient Oriented Research (SPOR).

**Alberta Innovates, the Azrieli Foundation, the Canadian Frailty Network, the Canadian Space Agency, the European Commission, Greg's Wings, the New Brunswick Health Research Foundation, Mitacs and the Rossy Foundation.



Health Research Training Platforms

The Health Research Training Platforms (HRTPs) are designed to ensure that health research trainees and early career researchers are best positioned to navigate a dynamic health research landscape with evolving research directions, practices and technologies.

Of the 13 unique HRTPs launched in 2022 (a total investment of \$31.1M over six years), the Institute partnered on two.

The Improving Health Outcomes through Better Models of Care for Multimorbidity* platform focuses on the development of trainees on the design, implementation and evaluation of health system or service interventions that improve the prevention, treatment and management of multimorbidity. This HRTP embeds experiential learning

opportunities, networking, as well as training and mentoring of fellows and clinical researchers.

The Vascular Cognitive Impairment** platform prioritizes developing capacity across the CIHR research themes to unravel the complexity of, and changes to, blood flow to the brain as it relates to vascular cognitive impairment, including vascular dementia in ageing populations. This HRTP includes training on patient-oriented, team-based and translational research.

* CIHR Institutes of Circulatory and Respiratory Health (ICRH); Health Services and Policy Research (IHSPR).

** CIHR Institutes of Aging; Circulatory and Respiratory Health (ICRH); Neurosciences, Mental Health and Addiction (INMHA).

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Tier 1 Canada Research Chair in
Perioperative Care



Sucdi Barre, BA
Patient with Lived Experience,
Wellness Coach



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PharmD, FCSHP
Director, Health Program Integrity and
Control Migration Health
Immigration, Refugees and Citizenship
Canada



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Vice President (Indigenous) at the
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University of Manitoba



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Associate Professor,
Department of Pediatrics
McMaster University



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DSc (Hon)
Clinician-Scientist, University of Ottawa
Heart Institute
Professor, Faculty of Medicine
University of Ottawa



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(Vice-Chair)
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Dalhousie University
Affiliated Scientist, Nova Scotia Health



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FACP, FNLA
Associate Professor and Canada Research
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The University of British Columbia



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Medical and Scientific Affairs Bayer Inc.



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Professor of Medicine
University of British Columbia



François Lamontagne, MD, MSc, FRCPC
Full Professor, Université de Sherbrooke
Clinician scientist, Centre de recherche du
CHU de Sherbrooke



Grace Parraga, PhD, FCAHS
Tier 1 Canada Research Chair and Professor
Division of Respiriology, Department
of Medicine; Department of Medical
Biophysics
Western University



Rita Suri, MD, MSc, FRCPC
Director, Division of Nephrology,
McGill University
Scientist, Research Institute of the McGill
University Health Center

Partner Advisors

Charities

Canadian Allergy, Asthma, and Immunology Foundation	Andrea Waserman Managing Director
Canadian Lung Association	Terry Dean President & Chief Executive Officer (CEO)
Cystic Fibrosis Canada	Paul D.W. Eckford, PhD Program Director, Research
Heart and Stroke Foundation of Canada	Diego Marchese Executive Vice President, Mission, Research and Social Enterprise Mary Elizabeth Harriman, MBA Director, Research and Partnerships

Societies

Canadian Cardiovascular Society	Carolyn Pullen, PhD Chief Executive Officer (CEO) Marc Ruel, MD, MPH, FRCSC, FCCS President
Canadian Critical Care Society	Bojan Paunovic, MD, FRCPC Past President Claudia C. dos Santos, MSc, MD, FRCPC Scientific Chair
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Canadian Society for Atherosclerosis, Thrombosis and Vascular Biology	Scott P. Heximer, PhD Past President

Canadian Thoracic Society	Janet Sutherland Executive Director Paul Hernandez, MDCM, FRCPC President
Hypertension Canada	Ross T. Tsuyuki, BSc(Pharm), PharmD, MSc, FCSHP, FACC, FCAHS, ISHF President Asif Ahmed Executive Director
Thrombosis Canada	James D. Douketis, MD, FRCPC, FACP, FCCP, FCAHS Past-President

Government

Healthcare Excellence Canada	Jennifer Zelmer, PhD President and Chief Executive Officer (CEO)
National Health Lung and Blood Institute (NHLBI), National Institutes of Health	David Goff, MD, PhD Director, Division of Cardiovascular Sciences James Kiley, PhD Director, Division of Lung Diseases
Public Health Agency of Canada, Health Promotion and Chronic Disease Prevention Branch	

Industry

AstraZeneca Canada	Andrew Foster, PhD Medical Advisor Mena Soliman, MD, MSc Scientific Director – Respiratory & Immunology Medicines
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Community Roundtables

Participant discussions of the virtual focus group sessions centered on one of the following themes:

- 1) Enhancing Equity, Diversity and Inclusion
- 2) Strengthening Indigenous Health Research
- 3) Accelerating Knowledge Through Collaboration
- 4) Preparing for the Future
- 5) Patients and People with Lived/Living Experience

Participants

Ejaife Agbani

University of Calgary

Samira Chandani

Patient/Caregiver

Thanh Dang-Vu

Concordia University

Kerstin de Wit

Queen's University

Heather Dyck

University of Saskatchewan

Vivek Gill

CIHR Institute of Human Development, Child and Youth Health (CIHR-IHDCYH) Youth Advisory Council

Jordan Guenette

University of British Columbia

Padma Kaul

University of Alberta

Malcolm King

University of Saskatchewan

Manoj Lalu

Ottawa Hospital Research Institute

Kent Cadogan Loftsgard

CIHR/SPOR

Sunny Loo

Patient Partner, Michael Smith Health Research BC

Donna Martin

University of Manitoba

Farah Mawani

York University; and MAP Centre for Urban Health Solutions, Unity Health Toronto

Asher Mendelson

University of Manitoba

Eki Okungbowa

CIHR Institute of Human Development, Child and Youth Health (CIHR-IHDCYH) Youth Advisory Council

Gavin Oudit

Department of Medicine, University of Alberta

Mireille Ouimet

Ottawa Heart Institute, University of Ottawa

Sara Pintwala

University of Toronto

Michelle Ploughman

Memorial University of Newfoundland

Rithwik Ramachandran

University of Western Ontario

Kristine Russell

Sepsis Canada

Anni Rychtera

BC SUPPORT Unit

Min Hyung Ryu

Brigham and Women's Hospital, Harvard Medical School

Georg Schmölzer

University of Alberta

Nariman Sepehrvand

Department of Medicine, University of Alberta

Swapnil Shah

Mike Warren

NL SUPPORT Unit

Zoe White

University of British Columbia

Rita Wiebe

Bilqis Williams

OSSU SPOR

Amy Y. X. Yu

University of Toronto

Institute Staff

Kaylin Barnes, BEd

Lead - Communications and Events

Helen Coe, PhD

Lead - Institute Initiatives and Partnerships

Ryan Perry, PhD

Associate Scientific Director

Brian H. Rowe, MD, MSc, CCFP(EM), FCFP, FCCP, FCAHS

Scientific Director

Ebele Unaegbunam, MSc

Project Lead - Strategic Initiatives

Contributors

MP Strategy Group (MPSG; Michel Perron, Michelle Gagnon, Erika Beresford-Kroeger)

Indigenous Health Research Team, CIHR Initiative Management and Institute Support Branch

(Pascale Bouffard, Initiative Officer; Samantha Fauteux, Associate; Jenna Ives, Project Lead, Major Initiatives)

Graphic Designer: **Kyle Loranger Design Inc.** (Kyle Loranger)

Illustrator: **Kate Campbell Medical & Scientific Visualizations** (Kate Campbell)

As part of The Plan development, ICRH undertook a meaningful and thorough consultation process with key partners, researchers and the broader community.

The purpose of the consultation process was to ensure that The Plan considered the threats, opportunities and challenges faced within the ICRH community in a post-pandemic context.

The Institute retained MP Strategies Group (MPSG) to support the strategic planning process and helped co-develop six lines of inquiry. These lines of inquiry were used to guide key partner interviews, IAB discussions, community engagement sessions and an online community consultation (survey).

The lines of inquiry were also used to collect input from key partners and community members on proposed priorities and provided a validation on their relevance and resonance in guiding future actions. In addition, the lines of inquiry were designed to identify collaboration options with partners, as well as to uncover new or unrecognized alternate priorities for consideration. The inquiry involved seeking input from those who spoke on behalf of organizations, as well as those who spoke from the perspective of an individual with lived or living experience.

Results of the lines of inquiry were collated into a “What We Heard” report, which summarized input on the proposed strategic priorities, as well as identified gaps, threats and opportunities faced by the ICRH community. Information from the “What We Heard” report was used to develop the central tenet, the three strategic priorities, the two foundational themes and associated strategic actions for The Plan. This was then presented to the IAB to provide feedback and advice to support the final development of The Plan.

Partner Engagement Interviews

Between August and October 2021, MPSG and ICRH each led interviews with key partners. Key partners were defined as those having a partnering history with ICRH and/or alignment with ICRH mandate areas. Interviews included representatives from organizations such as charities and societies, who were asked to speak on behalf of their organization as a collective. MPSG undertook ten virtual interviews and ICRH undertook three virtual interviews. Where possible, ICRH IAB members attended meetings as observers to enable provision of ongoing strategic and expert advice to ICRH.

Online Consultation (Survey)

In order to engage the broader ICRH community, a REDCap (Vanderbilt University, Nashville, TN) survey was developed to collect demographic and key feedback (both quantitative and qualitative). The survey was launched in early September 2021, to collect responses over one month. The survey was disseminated through the ICRH communication channels, to key partner groups identified for engagement and to ICRH IAB members for amplification through their networks. There were 103 respondents to the survey. The survey captured perspectives from individuals, rather than those representing organizations.

Community Roundtables

In October 2021, feedback was also solicited from a broad range of community members through ten virtual focus group sessions centered on one of the following themes: 1) Enhancing Equity, Diversity and Inclusion; 2) Strengthening Indigenous Health Research; 3) Accelerating Knowledge through Collaboration; 4) Preparing for the Future; and 5) Patients and People with Lived/Living Experience. Two meetings per theme were organized with no more than six participants at each meeting to permit participant dialogue. The sessions encouraged community members to provide perspective and practical ideas on how ICRH might mobilize its strategic priorities within each area. Meetings were facilitated by ICRH with ICRH staff, an IAB member and a member of MPSG attending as observers.

ICRH Institute Advisory Board Engagement

In addition to input provided during IAB meeting points, MPSG facilitated two focused virtual group discussion sessions with IAB board members in August 2021. Conducted in alignment with the partner engagement interviews, these discussions followed the six lines of inquiry. Notes from all discussions were captured by facilitators for later use in the development of The Plan.

CIHR Approval Process

The Plan was reviewed internally by Dr. Sarah Viehbeck, Associate Vice-President Research – Evidence Integration, Dr. Michelle Peel, Acting Associate Vice-President Research – Evidence Integration and Ms. Erin Dunn, Senior Advisor to the Associate Vice-President / Research Programs - Strategy at CIHR. Furthermore, The Plan was reviewed at Science Council in February 2022, underwent iterative review by CIHR in March 2022 and received approval in April 2022 from Dr. Michael Strong, President - CIHR. The Plan was released in May 2022.



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Canadian Institutes of Health Research
Institute of Circulatory and Respiratory Health
8215 112 Street, Suite 602
Edmonton, Alberta T6G 2C8
Canada

www.cihr-irsc.gc.ca

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