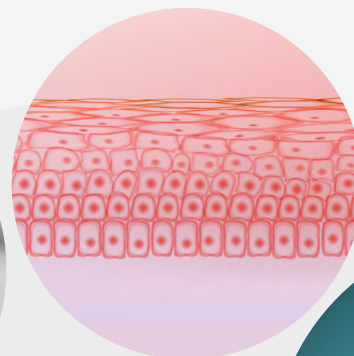


CIHR-IMHA

STRATEGIC PLAN 2021-2026



Canadian Institutes of Health Research
160 Elgin Street, 9th Floor
Address Locator 4809A
Ottawa, Ontario K1A 0W9
Canada

www.cihr-irsc.gc.ca

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This Institute-specific strategic plan reflects the Canadian Institutes of Health Research (CIHR) Strategic Plan 2021-2031—A vision for a healthier future.

OUR MANDATE

The CIHR Institute of Musculoskeletal Health and Arthritis (IMHA) is CIHR's hub for musculoskeletal, skin, and oral health research in Canada. CIHR-IMHA is mandated to provide research leadership related to: active living, mobility and the wide range of conditions related to bones, joints, muscles, connective tissue, skin as well as the mouth, teeth and craniofacial region. Musculoskeletal health is critical for mobility, productivity, and general well-being.

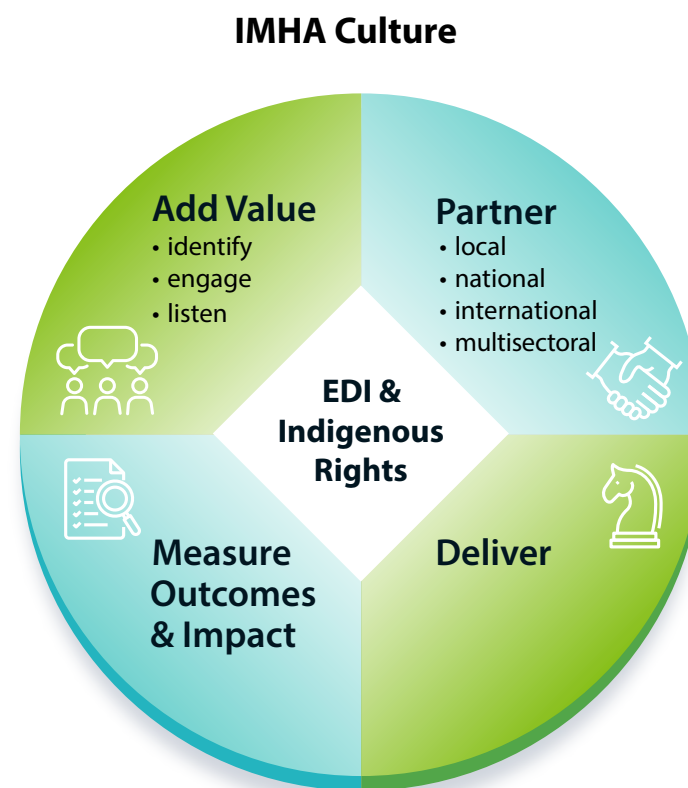
OUR INCLUSIVE, ENGAGED, COMMUNITY

Our community consists of researchers, policy-makers, clinicians, health charities, patient organizations and people living with conditions listed in the CIHR-IMHA mandate. We aim to authentically engage a broad community including those who have historically been excluded from participating in research.

BUILD CULTURE

Over the next five years, CIHR-IMHA will:

- Add value to the community by being inclusive and engaging equitably. We will better reflect the diversity of Canadian communities.
- Partner with CIHR Institutes, Federal, Provincial, Territorial and Indigenous governments, health charities, not-for-profit and private partners to foster creativity, fund research and reconceptualise research excellence.
- Deliver on four priority areas: Alleviate Pain, Mobilize Digital Health, Nurture Leaders, and Scale-Up for Health Impact.
- Engage with patients, mobilize knowledge, and champion open science.
- Measure the health and social outcomes and impact of key Institute activities against our operating plan.
- Keep equity, diversity and inclusion as a central focus. We value working with Indigenous partners and commit to ensuring that the unique rights, interests and circumstances of Indigenous Peoples are acknowledged, affirmed and actioned.

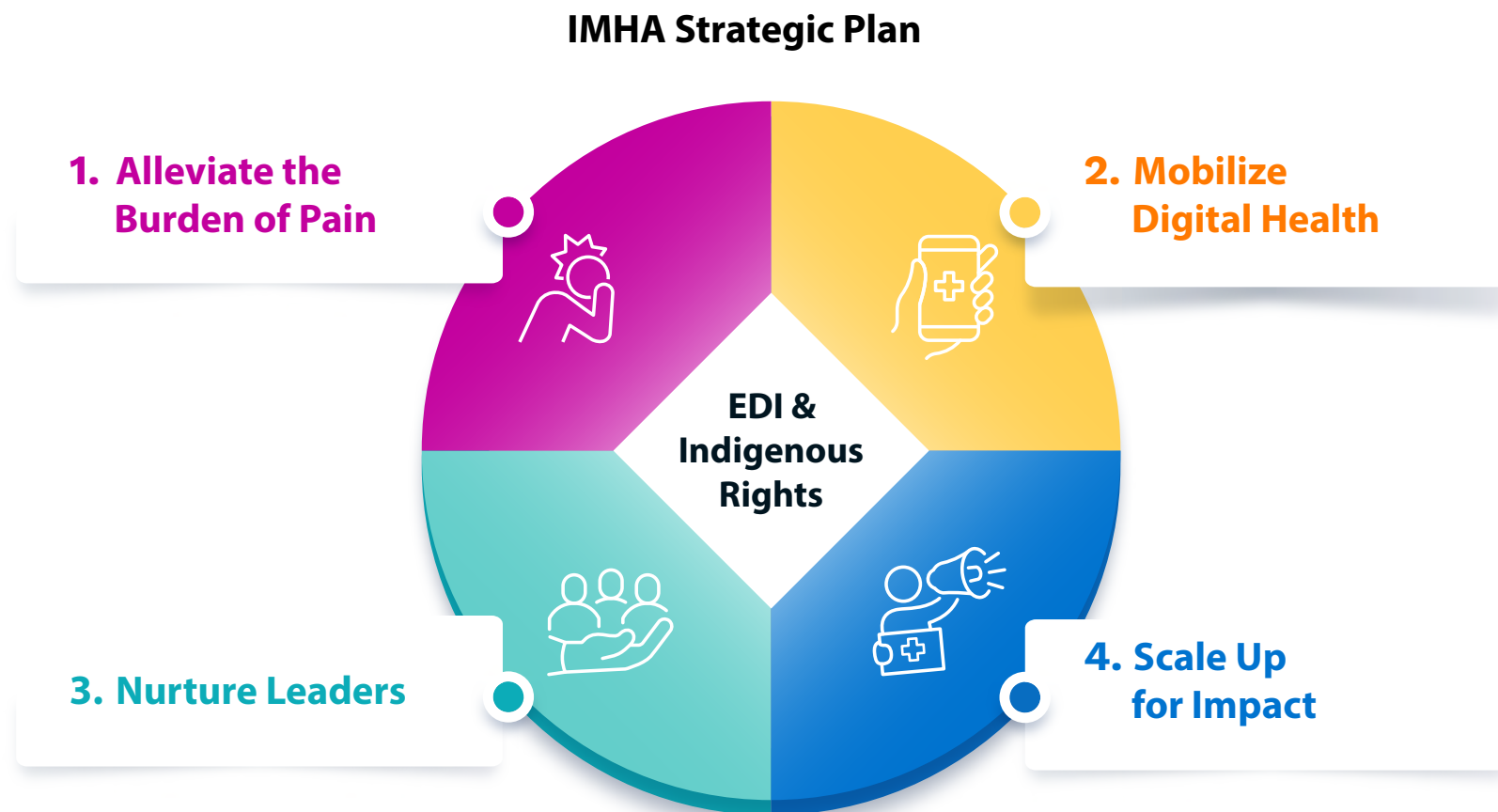


OUR PRIORITY-SETTING PROCESS

With the full support of the CIHR-IMHA Institute Advisory Board (IAB), Scientific Director Dr. Karim Khan launched CIHR-IMHA's research priority-setting process early in 2018. The priority setting exercise was systematic, transparent, and flexible. Professor Craig Mitton (UBC, School of Population & Public Health) served as a consultant to guide the 8-step priority-setting process using a variant of the Gibson-Mitton Framework.⁽¹⁾

For more details, please see **Appendix A – CIHR- IMHA Priority Setting Process: 2018-2020.**

CIHR-IMHA'S FOUR PRIORITY AREAS



1. Smith N, Mitton C, Hall W, Bryan S, Donaldson C, Peacock S, et al. High performance in healthcare priority setting and resource allocation: A literature- and case study-based framework in the Canadian context. *Soc Sci Med.* 2016;162:185-92.

Over the next five years, CIHR-IMHA will aim to improve the health of Canadians through four priority areas:



1 Alleviate the Burden of Pain

The annual direct cost to manage chronic pain across Canada exceeds \$40 billion annually.⁽²⁾ Research evidence holds the key to improving care, reducing these costs and ameliorating health outcomes for Canadians. To support CIHR Strategic Plan priority E, *Integrate Evidence in Health Decisions*, CIHR-IMHA plans to alleviate the burden of pain by playing a leadership role alongside key government partners (e.g., Health Canada) and non-government stakeholders to help convene pain research experts. We will complement CIHR's investment in pain via the Project Grant competition by investing strategically in relevant research networks, research leaders, and knowledge mobilization. We will encourage open science, and support researchers who aim to evaluate models of care for patients with painful conditions.

Goals	Actions
Catalyze pain research that addresses the priorities defined by the Canadian Pain Task Force	<ul style="list-style-type: none">Invest in critical areas of pain research for Canada to respond to gaps identified by the Canadian Pain Task Force
Characterise the burden of disease related to oral health of Canadians and provide an open science platform for investigators to better understand whether the standard of oral health is consistent across all Canadians	<ul style="list-style-type: none">Strengthen research that will map the distribution of oral health in Canada. We will fund analyses of this valuable new dataset respecting OCAP, FAIR and CARE principles

2. Canadian Pain Task Force. Working Together to Better Understand, Prevent, and Manage Chronic Pain: What We Heard 2020.

2 Mobilize Digital Health



The World Health Organization (WHO) states: *“the use and scale up of digital health solutions can revolutionize how people worldwide achieve higher standards of health, and access services to promote and protect their health and well-being.”*³⁾ To support CIHR Strategic Plan priority E, *Integrate Evidence in Health Decisions*, CIHR-IMHA plans to invest in digital health research that has the potential for immediate-to-medium term health impact (2-10 years). In particular, we will convene Canadian digital health researchers and facilitate their collaboration with leading actors in artificial intelligence/machine learning and data science. We will keep the critical equity issues in this research area in our focus.

Goals	Actions
Foster CIHR-IMHA-relevant research in digital health including: SMART devices, wearables, internet of things, remote patient monitoring, clinical application of machine learning, virtual appointments, and addressing the health needs of those who live in remote and rural areas	<ul style="list-style-type: none">• Provide incentives for researchers to focus on digital health solutions for the CIHR-IMHA mandate areas• Foster a community of CIHR-IMHA digital health researchers that partners with the Canadian leaders in equitable digital science

3. World Health Organization. WHO guideline: recommendations on digital interventions for health system strengthening. Executive summary. 2019.

3 Nurture Leaders



Leaders exist all around us. However, we recognize that power and privilege has informed leadership in many organisations and communities. Therefore, to support CIHR Strategic Plan priority B, *Strengthen Canadian Health Research Capacity*, CIHR-IMHA will work with partners to foster leadership that is equitable, diverse and inclusive and that supports Indigenous self-determination in research. CIHR-IMHA will nurture diverse leaders from the higher education sector, industry, Indigenous communities and organizations, patient communities and the non-profit/government sector by providing education, opportunity, and mentorship for emerging leaders.

Goals	Actions
Catalyse research networks/teams within the CIHR-IMHA research mandate areas	<ul style="list-style-type: none"> Carefully mandate the eligibility criteria for NPIs and CoPIs, patient partners, and trainees/fellows within CIHR-IMHA's network funding opportunities
Invest in early-career, mid-career, and under-represented researchers including those who identify as Black or Indigenous	<ul style="list-style-type: none"> Support researchers in partnership with partner organizations (e.g., Arthritis Society, Canadian Rheumatology Association, Cancer Research Society, etc.) Host convening, networking and training events online and in person (e.g., Canadian Arthritis Research Conference) to showcase Canadian leadership and talent across IMHA mandate areas and cross-cutting areas of research excellence Invest in broad CIHR training efforts (e.g., Health System Impact Fellowships, Institute Community Support Training Awards, etc.)
Authentically engage people with lived experience, carers and members of the public in CIHR-IMHA-related research	<ul style="list-style-type: none"> Re-envision CIHR-IMHA's Patient Engagement partners and its leadership model; partner with our community to co-create national online resources to be used by CIHR- IMHA and others

4 Scale Up for Impact



The World Health Organization (WHO) defines 'scale up' as: *"the effort to magnify the impact of health innovations successfully tested in pilot or experimental projects so as to benefit more people and to foster policy and program development on a lasting basis."*⁽⁴⁾ To support CIHR Strategic Plan priority E, *Integrate Evidence in Health Decisions*, CIHR-IMHA will invest strategically in implementation science research that will evaluate selected health services in the CIHR-IMHA mandate to better position them for scale up.

Goals	Actions
Strengthen Canada's leadership in scaling successful health services within the CIHR-IMHA mandate	<ul style="list-style-type: none">• Curate and promote Canada's effective health service innovations within the CIHR-IMHA mandate
Bolster Canadian researchers' ability to partner in evaluating scaled-up health services	<ul style="list-style-type: none">• Fund implementation science researchers who will evaluate scaled-up health service programs in real-world settings

4. World Health Organization. Scaling up projects for better health: from concepts to practice. 2016.

OUR DESIRED OUTCOMES

Our aim is for CIHR-IMHA to improve the health and social well-being of Canadians through research. Specifically, we aim to:

- Increase the competitiveness of the CIHR-IMHA community in the CIHR Project Grant program and in receiving grants from other funding sources (all sectors, nationally and internationally). We will achieve this by investing in priority research areas and by nurturing leaders (capacity building).
- Increase collaboration with our broad range of partners. CIHR-IMHA will be recognised in the community as a valued partner and collaboration will reflect our community's values.
- Make the CIHR-IMHA research community more representative of Canada. The leaders will vivify a culture of equity, diversity, inclusion, and Indigenous rights; we will call for this in grant funding evaluation criteria.
- Promote investments that encourage the CIHR-IMHA community (including patient partners, all levels of researchers, and policy-makers) to deliver specific knowledge mobilization products in keeping with CIHR's refreshed 2021-2031 knowledge mobilization plan.

Our focus on areas of critical need (Pain, Digital Health and Scale Up) aims to benefit Canadians' health (beginning with, but not limited to the CIHR-IMHA mandate area) in the short to medium term (2-10 years). To measure our progress, we will develop a framework outlining our expected outcomes and associated key performance metrics informed by the Canadian Academy of Health Sciences Framework (CAHS). This will include a combination of quantitative and qualitative measures (such as impact case studies). Indicators will also align with those developed for CIHR's Strategic Plan priority areas. We will measure the impact of:

1. Key IMHA strategic funding investments (e.g., Networks, Pain, Oral Health, Digital Health and Scale Up)
2. Convening activities and their impact on the success of IMHA investigators in the CIHR Project program
3. Our commitment to increasing the participation of Indigenous health researchers within the IMHA research portfolio
4. Our commitment to call for Equity, Diversity, and Inclusion reflected in research conducted in the IMHA mandate
5. Evidence integration into practice as a result of our commitment to knowledge mobilisation

IMHA will work with a health research impact consultant to conduct targeted impact studies on IMHA's largest investments to both report on our progress and to advance the evaluation science of health research funding.

APPENDIX A - CIHR-IMHA PRIORITY SETTING PROCESS: 2018-2020

With the support of the CIHR-IMHA IAB, Dr. Khan launched CIHR-IMHA's research priority-setting process early in 2018. The priority-setting exercise was systematic, transparent, and flexible to encourage national partnerships to strengthen research in musculoskeletal health and arthritis in Canada. Professor Craig Mitton (UBC, School of Population & Public Health) served as a consultant to guide the priority-setting process using a variant of the Gibson Mitton Framework.⁽⁵⁾

The process consisted of 8 steps:

1. Define aim, scope and budget:

The aim was to assist the CIHR-IMHA Scientific Director (SD) to strategically allocate CIHR-IMHA's budget in 2019/20 to 2025/26 to serve CIHR-IMHA's research communities.

2. Form a Priority-Setting Committee:

- The Committee - The CIHR-IMHA IAB served as the Priority-Setting Committee to (a) lead, b) assist to develop the criteria for the CIHR-IMHA Priority-Setting Criteria Tool, and (c) recommend the top 3 priorities to the CIHR-IMHA SD on behalf of their research community.
- The Coordinator - Anne Tarazi, CIHR-IMHA Project Officer (2018-2020), served as the Priority-Setting coordinator to assist with the day-to-day roll-out of the priority process.
- The Consultants - Prioritize Consulting: Dr. Francois Dionne, and Professor Craig Mitton (both Managing Partners).

3. Develop decision criteria with stakeholder input:

- The IAB members developed the CIHR-IMHA Priority-Setting Criteria Tool over four months. The final instrument consisted of 3 Screening Criteria and 10 Decision Criteria. A rating scale from 0-3 was used to evaluate each priority proposal against each criterion.
- The IAB members agreed that the criteria were relevant to CIHR-IMHA's funding decisions and represented the competing 'goals, values and multiple stakeholder relationships' that decision-makers must consider when setting health research priorities.

4. Identify funding options:

- *10 research communities identified:* Skin, Inflammation, Orthopaedic Trauma, Pain, Muscle, Musculoskeletal diseases, Metabolic bone disease including osteoporosis, Arthritis, Oral Health (including craniofacial conditions), as well as Rehabilitation, mobility and disability. This was based on the CIHR-IMHA mandate and consultation with IAB members and community leaders.
- Each IAB member led priority-setting efforts with their respective research communities, partners, patients and policy makers and presented the results of their initial outreach in one of a series of 10 live national webinars with each CIHR-IMHA research community. After each webinar, the CIHR-IMHA SD individually called each IAB member to discuss the priority options proposed by their respective research communities and asked each member to present the top 3 priorities for their community at the next IAB meeting.
- Dr. Khan also discussed potential priority options (at a high level) with representatives from national clinical societies (e.g. Canadian Orthopaedic Trauma, Canadian Association of Occupational Therapists, Physiotherapy Canada) and health charities relevant to CIHR-IMHA's mandate (e.g. Muscular Dystrophy Canada, Osteoporosis Canada) to identify potential research and knowledge mobilization partnerships.

5. Smith N, Mitton C, Hall W, Bryan S, Donaldson C, Peacock S, et al. High performance in healthcare priority setting and resource allocation: A literature- and case study-based framework in the Canadian context. *Soc Sci Med.* 2016;162:185-92.

5. Rank funding options:

- An initial screening of the top 3 priorities by each IAB member was done against the CIHR-IMHA Criteria Tool: Screening Criteria. Each IAB member was also given 1 slide and 10 minutes to present the proposed priorities and make a recommendation to the CIHR-IMHA SD.
- Dr. Khan decided on funding opportunities for the short-term (2018-2020) by taking into consideration: (a) the options that ranked highest on the CIHR-IMHA Criteria Tool, (b) the recommendations made by the CIHR-IMHA IAB, (c) the larger Canadian research funding ecosystem, (d) strategic opportunities he envisioned in MSK, Arthritis and Oral Health research, and (e) other internal factors such as CIHR-IMHA's previous funding history. After March 2020, the COVID-19 pandemic also influenced decisions about the Strategic Plan.

6. Communicate decisions and rationale:

- In the July 2019 CIHR-IMHA This Month! Newsletter, CIHR-IMHA's stakeholders were thanked for being involved in the priority-setting process and they received the planned timeline for the CIHR-IMHA (and CIHR) Strategic Plan release (which was later amended because of COVID (see above).
- Communicating Funding Opportunities: Funding opportunities were released on ResearchNet. Once the CIHR-IMHA funding opportunities went live on ResearchNet, they were also highlighted via an e-blast to CIHR-IMHA newsletter subscribers.
- Communicating Rationale: The rationale for each Funding Opportunity was discussed, post-hoc—after the FO was made public on ResearchNet — with IAB members during the October 2019 IAB meeting. These discussions were not shared beyond the IAB.

7. Provide a formal decision review process:

The CIHR-IMHA IAB was encouraged to make appeals with the CIHR-IMHA SD during a one-on-one session, if they felt the need to disclose or express discomfort with decisions.

8. Evaluate and improve the priority-setting cycle:

- To systematically evaluate and improve CIHR-IMHA's priority setting-process, a 'describe-evaluate-improve' strategy was used.
 - ➔ *Describe* > The process was described in section 4.1-4.7 of the report.
 - ➔ *Evaluate* > Evaluation used a checklist adapted from Gibson et al. ⁽⁶⁾
 - ➔ *Improve* > After sizing up CIHR-IMHA's efforts against the A4R framework, Dr. Khan identified ways to improve future CIHR-IMHA priority-setting cycles.
- The evaluation step also included feedback from a qualitative survey of the IAB assessing various factors of the priority-setting process that assisted the CIHR-IMHA SD to make decisions.

This process was completed in Q4 of 2019 and it was then paused so that CIHR-IMHA could benefit from the CIHR Strategic Plan. During 2020 it was reviewed twice. In January 2021, the version Science Council had endorsed was circulated to the IAB. It was endorsed by the full Board at its meeting on February 3rd, 2021.

6. Gibson J, Mitton C, Martin D, Donaldson C, Singer P. Ethics and economics: does programme budgeting and marginal analysis contribute to fair priority setting? *J Health Serv Res Policy*. 2006;11(1):32-7.