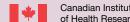
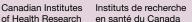


# Impact Report 2017-2025

# Institute of Musculoskeletal Health and **Arthritis**







#### Land Acknowledgement

The Canadian Institutes of Health Research (CIHR) Institute of Musculoskeletal Health and Arthritis (IMHA) is situated on the traditional, unceded and ancestral lands of the Coast Salish people, including the  $S\underline{k}w\underline{x}w\acute{u}7mesh$   $\acute{U}xwumixw$ ,  $selil\dot{w}$  and  $x^wme\theta k^we\dot{y}$  and  $x^wme\theta k^we\dot{y}$  Nations. This Impact Report highlights work from across so-called Canada, extending across the ancestral lands of many Indigenous peoples. As you read this report, we would encourage you to reflect on the impact of systemic disadvantages in health research for Indigenous peoples.



This year and moving forward, CIHR will refocus on delivering impact for Canadians through collaboration and big initiatives.

### Dr. Paul Hébert, CIHR President



Impact Report 2017-2025

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https://cihr-irsc.gc.ca/e/13217.html imha-iala@cihr-irsc.gc.ca

# Introduction

# The impact of our Institute over the past 8 years is grounded in community.

We only achieve impact through people, the conversations we have, and the trusted relationships we develop¹. The success of our initiatives has depended on the collective energy of those of you working within the IMHA mandate, and so this impact report celebrates your efforts from these research communities: active living, mobility and the wide range of conditions related to bones, joints, muscles, connective tissue, skin, mouth, teeth and craniofacial region.

Between 2018 and 2020, over 1,100 people contributed to the Institute listening tour which was based on the 8-step Gibson Mitton Framework and Multi-Criteria Decision Analysis<sup>2</sup>. This approach aimed to be transparent, systematic and ethical, and generated a "living" strategy document that has continued to be shaped by community and partnerships.

The Canadian Institutes of Health Research endorses the Declaration on Research Assessment (DORA)<sup>3</sup> and IMHA strives to take an inclusive approach to excellence both through funding and other activities. Thus, when viewing the impact of our own work we need to use a lens that extends beyond traditional metrics—a lens that includes health, economic and social benefits.<sup>4,5</sup> We recognize that impact depends on the internalized biases of the authors and must be considered transient—the importance of past work can shift depending on subsequent circumstances.<sup>6</sup>

In this report, we consider impact through various mechanisms, drawing on a broad menu of metrics, visuals and impact stories. The aim of the narratives is to allow nuanced and integrated perspectives. IMHA has advanced scientific excellence by tailoring funding opportunities and other initiatives to the diverse needs of the research communities under our mandate; building capacity in inclusive, high-quality and practical research methodologies; building collaborative partnerships; and furthering our existing strengths in patient engagement.

4 Introduction







#### We report under three pillars that combine to foster high-quality research:

#### **Nurture Leaders**

A key element of the IMHA strategic plan<sup>8</sup> related to the "Capacity Building" metrics proposed by the Canadian Academy of Health Science (CAHS) 2009 report on research impacts.

#### Collaborations

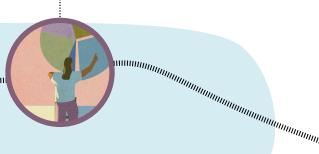
Aspirational indicator under "Capacity Building" of CAHS report.

#### Metaresearch

Recognizing our role in bolstering the rigour and impact of health research and funding mechanisms.











Cross-cutting these three pillars is the core ethos of **patient engagement**. In 2003, IMHA became the first CIHR Institute to formalize a connection with patients in research ("Research Ambassadors"). From 2017-2025 our efforts have been to see patients as research partners and to build a model of patient leadership. This is part of a paradigm shift towards a "new power" approach defined by connection, peer-to-peer learning, methods informed by lived and learned experiences, and the broader environmental context of our work. Aiming to better share our power with the communities that we serve amplifies the layers of impact we can have.



# Nurture Leaders



Leaders exist all around us. However, we recognize that power and privilege have informed leadership in many organizations and communities.

Therefore, to support CIHR Strategic Plan priority B, Strengthen Canadian Health Research Capacity, CIHR-IMHA worked with partners to foster research leadership that is equitable, diverse and inclusive and that supports Indigenous self-determination. CIHR-IMHA aimed to 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.



#### Stars Career Development Award

This initiative is led by Arthritis Society Canada, a key IMHA partner, to promote creativity in all domains of arthritis-related research. Between 2020-2025 IMHA has co-funded 9 awardees for three years: 7 mid-career researchers and 2 early-career researchers.



Since receiving the award, I've had the privilege of working with an outstanding group of students and early-career researchers. Being able to dedicate more time to supervising and mentoring them through their projects has been incredibly rewarding. I've also had the chance to build collaborations with researchers from various institutions across Canada, bringing together different skill sets to tackle complex research questions—something I find vital in a multidisciplinary field like ours.

Dr. Jean-Philippe St-Pierre, full interview available<sup>10</sup>



We engaged with patients, healthcare providers, and system leaders to understand the most important areas for quality improvement, aligning these with existing quality measures and identifying further gaps. What's been particularly exciting in recent years is the introduction of a new electronic medical record system in Alberta. With the support of CIHR funding, we've been able to build a learning health system, which has enhanced our ability to track and improve care quality in real time.

Dr. Claire Barber, full interview available<sup>11</sup>

### **Inclusive Research Excellence Prizes**

The CIHR-IMHA Inclusive Research Excellence Prizes were designed to recognize completed research projects under the broad IMHA mandate areas that have demonstrated a strong commitment to one of six crosscutting methodologies or concepts: Indigenous Health Research, Open Science, Research Impact, Team Science, Patient Engagement, and Implementation Science.

These prizes were a celebration of **completed** projects, rather than proposals for future work. They form an impressive collection of peer-reviewed case studies that other researchers can look to for thought-leadership and practical ways to carry out research that better meets the needs of the whole research community, and strives to improve the health of people living in Canada.



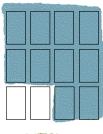
When developing the IMHA Inclusive Research Excellence prizes, we stepped out of traditional research silos to embrace a more inclusive concept of research across six domains. IMHA worked with artist Adriana Contreras, with the support of Indigenous researcher and artist Michelle Buchholz, to develop an illustration that highlights different elements of this initiative and enables us to embody inclusivity in future communications. Learn about the meaning of this piece in the accompanying blog.<sup>12</sup>



8 Nurture Leaders

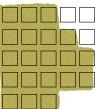
#### Who we talked to

We surveyed awardees to better understand the impact of this funding model and to learn how it might support higher quality research. Survey responses were collected from:



83%

10 out of 12 awardees from the 2022 competition



78%

18 out of 23 awardees from the 2023 competition What do you find interesting or innovative about the CIHR-IMHA Inclusive Research Excellence Prizes?

Recognizes non-traditional research outputs: Highlights research focused on inclusivity, aligning with broader goals of promoting Equity, Diversity, and Inclusion (EDI) in academia.

Celebrates diverse methods and achievements: Raises awareness of important research, providing valuable examples for trainees and other research teams.

Acknowledges the importance of cocreating with patients and knowledge users:

Encourages researchers working with historically excluded groups.

Promotes novel ways of thinking about research programs: The only Tri-Agency funding mechanism recognizing open science.

Supports early career researchers: Able to fund conference travel and open access publishing.

Reinforces the value of transdisciplinary research:
Supports underfunded areas (e.g., Indigenous Health, oral health, etc.).

Why is it important for awards and funding opportunities to highlight these domains?

Recognition supports reconciliation: Indigenous Health is under-researched and under-funded.

Promotes scientific
progress: Open science
encourages transparency,
public trust, collaboration,
and accessibility, accelerating
scientific advancements.

Promotes better
outcomes: Patient and
public engagement in
health research is crucial for
improving outcomes, making
it essential for awards and
funding to highlight this
domain.

Encourages real-world impact: It motivates researchers to design studies that address real-world problems and highlights policy-research collaboration to drive meaningful change.

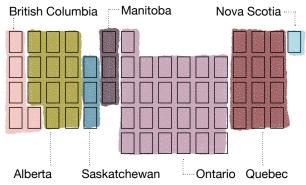
Addresses pressing scientific questions: Team science fosters collaboration and reflects real-world needs to drive innovative solutions, since the most pressing issues around the world today require expertise from multiple disciplines.

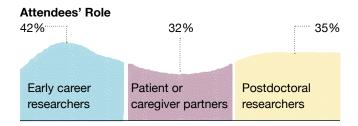
## **Emerging Leaders Training Series and Workshop**

These training sessions are part of IMHA's commitment to build capacity under the six domains highlighted by the Inclusive Research Excellence Prizes.

Workshop - June 2022 60 attendees

#### **Geographic Distribution of Attendees**





The emerging leaders workshop included opening and closing remarks from Dr. Kyle Vader and Dr. Dawn Richards, and the keynote by Dr. Jane Philpott on daring leadership in difficult times. Sessions included open science with Dr. Chonnettia Jones; research purpose and social responsibility by Dr. Jonathan Grant; research impact by Dr. Eddy Nason; patient engagement in research by Dr. Andrea Tricco and Linda Wilhelm; and scientific writing by Professor Lorelei Lingard.

#### Emerging Leaders then and now

Over 50% of the postdoctoral research attendees from the 2022 workshop have transitioned to early career researchers according to the CIHR definition.<sup>13</sup>

Workshop and Webinar Series June 2024 – June 2025

Approx. 200 attendees

Implementation Science in Research Webinar

Virtual

Hosted by Dr. Joanie Sims Gould, Dr. Carolyn Steele Gray, Dr. Noah Ivers, Professor Linda Li

Patient Engagement in Research Workshops

Hybrid and Virtual Halifax & Toronto

Blog available<sup>14</sup> about the co-creation of the first of these workshops.

Research Impact and Open Science Virtual

Dr. Kelly Cobey, Dr. Jonathan Grant, Alex Haagaard, Dr. Eddy Nason,

Dr. Sarah Neil-Sztramko

Indigenous Health Research Workshop Virtual

Knowledge Keeper Adrian Goulet

10 Nurture Leaders

#### **Grant Writing Masterclass**

The CIHR-IMHA Intensive Grant Writing Masterclass was designed to support post doctoral candidates and early-career researchers (ECRs) with theoretical knowledge, practical experience and individualized feedback and coaching to enhance their grant writing skills.

#### Shaping and being shaped by the research landscape

The masterclass was refreshed each year to incorporate attendee feedback and meet changing needs. For example:

- 1. We heard that the masterclass would be invaluable to those trying to secure independent research positions, so we expanded the eligibility to include post-doctoral researchers.
- 2. We added material about the use of generative artificial intelligence to help future-proof the working style of attendees and keep the course current.
- 3. We reduced the group sessions from 6 to 4 and boosted 1:1 coaching time to better support individual learning approaches while retaining the benefits of peer-to-peer mentorship.

Led by Professor Lorelei Lingard, communication cier.
sch. scientist and writing

23 ECRs. 11 Postdocs

100% of participants who completed the evaluation survey indicated they would recommend the masterclass to their peers and networks

Participants reported that after the courses they had:

Increased confidence to frame the significance of their research with compelling narratives

Greater ability to write clearly and concisely

Improved skills in leading writing teams and giving better quality feedback to trainees

#### CIHR-IMHA Research Catalyst Networks

The following <u>6 networks</u> of researchers were funded by IMHA and partners after peer-review. <sup>15</sup> These Catalyst Networks consist of researchers, clinicians, and patient partners who aim to improve the health of Canadians (first year of funding in brackets).

#### **Major Successes**

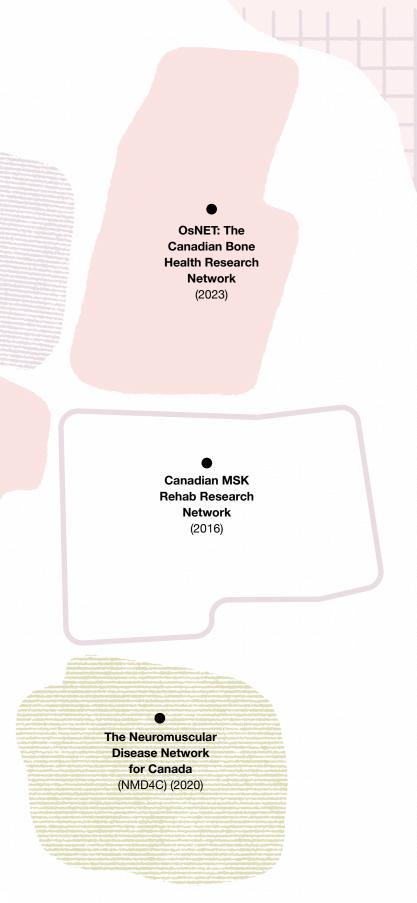
- 1. Governance structures are robust.
- 2. Collaborations and membership have expanded.
- 3. Funding initiatives support novel research.
- 4. Patient engagement is a key element.
- 5. Knowledge translation and capacity building initiatives include tools/guidelines and educational programs.
- 6. Emerging leaders receive training including virtual programs, workshops, or summer schools.

#### **Major Barriers**

- 1. Government and private sector support are limited, impacting the ability to maintain and expand operations.
- COVID-19 hindered many research activities but networks adapted to virtual activities/ meetings.
- 3. Geographic diversity creates challenges for the networks as access to resources and participation varies substantially across provinces.
- 4. Decision-making processes can be complicated by engaging multiple interested parties, particularly in multi-center collaborations.

**Network for Canadian Oral Health Research** (NCOHR) (2022) **Skin Investigation Network of Canada** (SkIN Canada) (2020) Interdisciplinary Canadian **Collaborative Myalgic Encephalomyelitis Research Network** (ICanCME) (2019)

12 Nurture Leaders



#### **Key Lessons Learned**

- 1. Collaborative initiatives, such as biobanking and fellowship program collaborations showcase the value of diverse expertise in fostering innovative solutions.
- 2. Networks that prioritize patient engagement believe that involving patients leads to research that is more relevant and impactful.
- 3. Establishing partnerships, including with international organizations, is vital to securing ongoing funding and enhancing research visibility.

#### **Target Engagement Groups**

To ensure comprehensive engagement, the networks recognize the importance of involving the following groups:

- Patients and Patient
   Organizations to shape
   research priorities and ensuring
   relevance.
- Researchers to drive novel solutions and interdisciplinary collaboration.
- Healthcare Professionals to translate research into practice and improve patient care.
- **Policymakers** to influence healthcare policies and funding priorities.
- **Trainees** to ensure the growth of the next generation of leaders in health research.

#### **Mobilize Digital Health**

Digital health tools and services can:

- Enhance access to, and efficiency of, healthcare services;
- Strengthen patient-centered care including through greater health literacy relating to personal health data;
- Better mobilize knowledge among researchers, healthcare providers,

Essential Digital Health for the Underserved<sup>20</sup>

Project spun-out of the 2023 Technologies in Emergency Care Conference, hosted by UBC Digital Emergency Medicine, Vancouver Coastal Health and the VGH & UBC Hospital Foundation, of which IMHA was one of multiple sponsors.

The knowledge that was co-produced in the EDH4U Project lives on in:

- Bill C-72, the Connected Care for Canadians Act,<sup>21</sup> "respecting the interoperability of health information technology...",21 which can change how digital health systems connect, interact and serve Canadians.
- Nine published research articles<sup>22</sup> accessed >90K times from the journal HealthCarePapers. Five of the articles were rated Top Articles of 2024 (most read) by the Journal. Because the readership is primarily health policy-makers, these articles are delivering research-based recommendations to digital health policymakers.
- Eight open-access infographics that were coproduced with patient partners, summarizing patients' messages for policy-makers, research funders and researchers.

May 2024

In the dynamic landscape of digital health, leveraging technology ethically and sustainably is fundamental to improve health outcomes for all people living in Canada. This strengthening workshop was hosted by IMHA and the program was guided by international experts, Professor Emmanuel Stamatakis and Professor Adrian Bauman from the University of Sydney, and Professor Fiona Bull from the World Health Organization. Discussions identified challenges, gaps and opportunities across five themes: Hardware & Software, Sub-Populations, Population & Public Health, Ethics & Equity and Implementation.





<sub>immumum</sub>

Dr. Véronique Lowry and I connected at the workshop over our shared research interests in primary care access to physiotherapy (including ways to use technology to facilitate access). Since the workshop, we have submitted 3 grant applications together, and co-presented a symposium on models of advanced practice physiotherapy for improving access to high-quality musculoskeletal care in Canada (2025 Canadian Physiotherapy Association Orthopaedic Symposium).

Dr. Clare Ardern

# CIHR-IMHA Digital Health Catalyst Grants 2024

August 2024 \$700,000 commitment

This funding opportunity aimed to catalyze discovery in digital health, support mobile applications or interventions relevant to CIHR-IMHA's broad mandate areas and fund research that integrated technology into healthcare in Canada. These grants were reserved for early and mid-career researchers, and Indigenous Health researchers at any career stage. Patient and/or community engagement were an essential part of these grants, as was inclusion of a Knowledge User or Patient Partner as a Principal Applicant or Co-applicant.

#### International Consensus Meeting on Wearables for Measuring Mobility in Aging Populations

November 2024 Hosted by the McMaster Institute for Research on Aging (MIRA)

This international meeting included experts from Australia, Germany, Ireland, Israel, Spain, UK, US, in addition to Canada. Several of the attendees were included as a direct result of connections made during the IMHA-hosted workshop in May 2024.

This meeting aimed to develop a consensus statement about critical metrics to evaluate mobility with wearable devices in older adults.

#### Informing Development of Global Guidance on the Use of Wearable Device for Assessment of Physical Activity

June 2025

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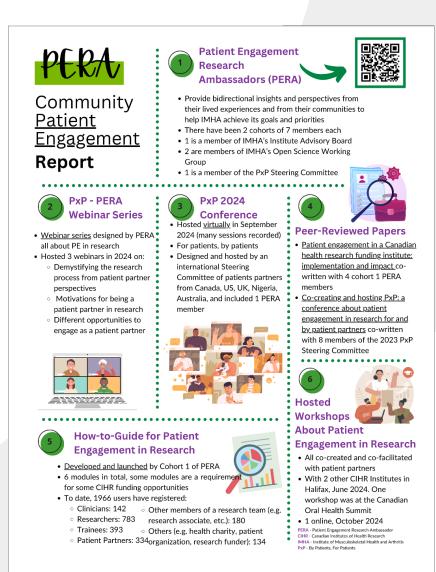
Collaboration between IMHA and World Health Organisation

The WHO identified 12 international leaders who worked with Canadian experts in digital health to further advance the field of device-based surveillance of physical activity at the national level. The content of a Canadian Summit (Montreal, June 2025) informed WHO leadership (Geneva) as they developed their recommendations to nations. The Canadian content also feeds into the development of the WHO Physical Activity Guidelines (scheduled to be launched in 2030).

## Patient Engagement and Patient Leadership

#### Patient Engagement Research Ambassadors

The Patient Engagement Research Ambassador (PERA) team comprises members who either live with a condition that falls under IMHA's research mandate, or are advocates for individuals living with those conditions, such as family or community members. Current<sup>23</sup> and alum<sup>24</sup> PERA members provide bidirectional insights and perspectives from their own lived experiences and those from their communities to help IMHA achieve its goals and priorities, and have also generated the ideas for several patient engagement and patient-led projects, many of which are captured on the infographic below reporting the outputs and impacts of this group.





#### How to Guide for Patient Engagement in Research

This online course<sup>81</sup> is free, self-directed and applicable to any research where patient partners are engaged, not just musculoskeletal health and arthritis. In the absence of accessible "training" for all members of a research team that engage patient partners, the need for these modules was identified by PERA. They were prioritized and developed by PERA to help patient partners, researchers, trainees and others on research teams to do patient engagement in research. These modules are widely used within CIHR and by other organizations and are a pre-requisite to apply for certain funding calls.

16 Nurture Leaders



Being a member of CIHR/IMHA as a PERA has been one of the greatest honours of my life and in the words of Lorraine Graves, it gave me a Sense of Social Purpose. With the strong leadership and guidance from Dawn Richards, Karim Khan, Hetty Mulhall, and the support of the IMHA team, our cohort accomplished so much. We also learned from each other; capitalizing on our areas of expertise, our strengths and passions for better results and outcomes in relation to health care and clinical research. We formed strong friendships and have collaborated on other projects outside IMHA.

We supported and cheered on each other successes. The PxP-PERA webinar series was a huge success, followed by the PxP Conference which is by patients, for patients. These initiatives demonstrated the depth of expertise, passion and commitment for patient engagement in POR for all of the current and past PERA members.

**Deb Baranec** 



My role as a PERA member has enhanced both my personal and professional life. It is a joy to engage with my peers and the greater community. Promoting patient partnership in research is so important and I'm honoured that IMHA has allowed me to do so.

Beth Ciavaglia



Serving on PERA is an honour.
For me, working together with patient partners, researchers, and medical experts across Canada is invaluable. It is evident how our collaboration fuels a better tomorrow. We innovate together and work towards ensuring better understanding of lived experiences, that in turn improves quality of life care.

Linda Niksic



My association with the PERA group has given me the assurance that we can have an effective voice in encouraging and guiding others in effective ways to improve healthcare services. It is wonderful to be given input as Patient Partners, which is already being recognized as a very direct, personal, resource in the better delivery of healthcare services. I know that there is still a lot more to learn!

Jim Kempster



Being a member of PERA has been an incredible experience and I am so grateful for the opportunity to have learned from the diverse experiences of the other PERA members and CIHR IMHA team supporting our group. A highlight was absolutely working to codesign the PxP-PERA

Anna Samson

webinars and be able to build it from the ground up and then have the opportunity to be a panelist during the first webinar and see the incredible impact on the people that attended the session. This group works together in the best way to provide truly meaningful outcomes both within the IMHA research community and externally.

**Trinity Lowthian** 



Being a guest speaker on the second webinar of the PxP-PERA webinar series was a highlight for me! As a newer patient partner, I got to speak about my motivations for being a patient partner and learned a lot about how motivations evolve throughout years of partnership. As a result of being a PERA member, I have learned from all the other members and grown in my personal advocacy and as a patient partner.

### Canadian Arthritis Summer School June 2025

Building on learnings from the PxP conference, IMHA supported a new pilot project in 2025: the Canadian Arthritis Summer School (CASS). Whereas PxP is a patient-led conference about patient engagement more broadly, one of the aims of CASS is to demonstrate that patients can (and should) lead content-specific events too—in this case about arthritis.

CASS is a pilot program intended to foster collaboration and learning between trainees and patient partners who are interested in arthritis research. The steering committee<sup>32</sup> is comprised entirely of people who identify as the target demographic for the summer school (i.e., patient partner, trainee, or both). This choice recognizes that both patient partners and trainees are regularly minority voices on steering committees, if they are included at all, and aims to create new opportunities and build capacity within research communities. The CASS model supports co-learning of trainees and patient partners by working together. Being part of the SC shows trainees how to engage by "doing".



CASS succeeded for me because it was extremely well organized, from top to bottom! Speakers were topnotched for all sessions: they knew so much of the content of their topics and they knew how to present it. They made their stories interesting as well as informative. They responded to questions with super answers. What more could we ask of them? Support for all aspects of CASS was admirable, right from the moment of early plans to the final session. Thanks, everybody for involving me on the steering committee. You gave me a wonderful treat by listening to me/us as we listened to you!



Being part of the CASS steering committee was one of the most rewarding experiences of my training so far. Collaborating with patient partners and fellow trainees from across the country created a safe, engaging, and truly special space for shared learning, creativity, and growth. Every single person brought such thoughtful, valued perspectives that not only shaped the event—but elevated it into something truly impactful.

#### PxP: For Patients, By Patients

Standing for "For Patients, By Patients", PxP was launched in 2023 and is entirely led by an international steering committee of patient and public partners, which fully rotates each year, with financial and operational supports from CIHR-IMHA. The purpose is to share resources, mentorship and community with patient partners and others involved in health research. Ultimately, the goal of PxP is partnering to make research stronger.

### How is PxP doing things differently?

- 1. PxP is led entirely By Patients. Every topic on the PxP conference programs have been chosen by the steering committee of patient partners.
- 2. PxP is specifically For Patients. While there has been excellent progress in the available patient engagement resources, many of these are designed for people who hold other research roles. PxP welcomes researchers and others to join the virtual events, but its key priority is patient partners.
- 3. PxP is about patient engagement in research. Many conferences focus on a specific research area (e.g. a disease), and have some patient engagement in them. PxP focusses on how patients can engage in research and it surfaces patients' experiences related to engaging in research.



#### **Building Community**

2023 Conference

617

registrants from 34 countries

310 attendees from 18 countries

2024 Conference

1126

registrants from 38 countries

423
attendees from 25 countries

- 2023 Attendee
- 2024 Attendee
- Attended both 2023 and 2024







#### **Steering Committee**

We are hugely grateful to the three PxP Steering Committees for their significant guidance and expertise. Read the 2023, 2024 and 2025 SC biographies on the PxP website. 25,26,27

In the spirit of PxP, many of the 2023 patient partner Steering Committee members collaborated on a paper.<sup>28</sup> It aimed to detail the processes, provide templates and resources, and share learnings by highlighting the expertise, time and other resources that were necessary to make PxP a success. The intention is that people who are interested in elements of PxP may benefit when planning their own patient-led conferences or events.

Some members of the 2024 patient partner Steering Committee have subsequently developed an accessibility checklist for virtual events which can be accessed here.<sup>29</sup>

Learn more about PxP from this overview video<sup>30</sup> or the summary visual below which details the inputs and outputs for the 2024 conference.



The artworks for PxP 2024 were created by visual alchemist, Candace Ramjohn.

Learn about their creation here.31

# Collaborations

IMHA collaborates with CIHR Institutes, Federal, Provincial, Territorial and Indigenous governments, health charities, not-for-profit and the private sector.

We partner to foster creativity, fund research and reconceptualize research excellence. By aiming to engage equitably, we hope to better reflect the diverse communities living in Canada so that research meets real-world needs.



# Canadian Arthritis Patient Alliance

IMHA sponsorship of CAPA mentorship initiative. \$5000



We're deeply grateful to IMHA for supporting our patient-led capacity building project. Their seed funding allowed us to pilot an approach grounded in IMHA's rigorous training on patient engagement in research. Through this initiative, we expanded our network of patient partners—many of whom continue to contribute to our work today in research, policy, and education. This initial investment also laid the foundation for a successful application for a much larger grant—five times the size of the original. With this expanded support, we were able to co-design a training portal with people living with arthritis and grow our community of patient partners by threefold.

#### National Oral Health Research Strategy

In May 2024, the WHO published its "Global Oral Health Action Plan 2023–2030" (GOHAP),<sup>40</sup> which calls for countries to have a national oral health research strategy.

In June 2024, the Canadian National Oral Health Research Strategy (NOHRS)<sup>41, 42</sup> was launched at the Canadian Oral Health Summit in Halifax by Minister Holland. This was a collaboration between IMHA, Canadian Association for Dental Research, Association of Canadian Faculties of Dentistry, Network for Canadian Oral Health Research, Canadian Dental Association, Denturist Association of Canada, Canadian Dental Therapists Association and Canadian Dental Hygienists Association. The NOHRS Co-Chairs were Dr. Leigha Rock, Dalhousie University and Professor Paul Allison, University of McGill.

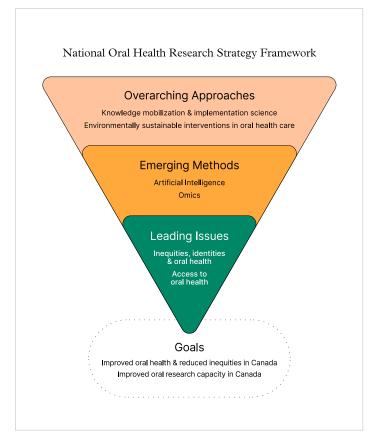
A national implementation group for NOHRS has since been established. The Oral Health Data Platform (2021, pre-dating NOHRS) and subsequent Catalyst Grants (2025) align closely with the goals outlined in NOHRS. Canada is also leading discussions to form an international consortium to support global efforts towards creation and implementation of national research strategies, in line with GOHAP.





National Oral Health Research Strategy: Advancing the Health of Canadians through Research

**Download here** 





**22** Collaborations

# Canadian Oral Biomaterials Initiative: A Team Science Case Study

#### October 10, 2013

Canada signs the Minamata Convention on Mercury.

#### October 2023, Geneva

Formal proposals for global amalgam phase-out by 2030 were initiated during the 5th Conference of the Parties of the Minamata Convention<sup>43</sup> and supported by multiple Member States.

#### June 2024, Halifax

In-person scoping meeting with Canadian biomaterials researchers.

#### September 2024, Istanbul

Initial meeting of Dr. Taylor with the CEO of the International Association for Dental Research (IADR) and two global biomaterials experts identified by IADR.

#### **IMHA Led Events**

#### October 2024 - January 2025

Survey to Canadian researchers and international experts (n=18) for initial prioritization of discussion themes for subsequent meetings and co-creation of the agenda.

#### February 2025

Virtual meeting for initial "teaming" and to further characterize research gaps.

#### April 16, 2017

Legally-binding treaty in force in Canada and internationally.

#### November 2, 2023

Office of Chief Dental Officer for Canada, led by Dr. James Taylor, proposed to Canadian biomaterials researchers four necessary characteristics for a novel restorative biomaterial to replace dental amalgam:

- Clinical performance properties similar to or beyond those of dental amalgam.
- Readily manipulated by the Canadian clinician in a general practice setting.
- 3. Reasonable cost, not exceeding that of dental composite.
- Risks to human health and the environment are limited or nonexistent and fall within national guidelines.

#### January - February 2025

Small group collaborations to develop gap statements under five identified priorities: Novel restorative materials; Dental composite resins; Bioactive materials, including glass ionomers; Tooth-restoration interface; Adhesive/bonding agents.

#### March 2025, Montreal

In-person meeting with Canadian researchers and international experts, to develop research questions against the identified gaps and catalyze collaborations that lead to actionable next steps including grant submissions.

#### **Oral Health Data Platform**

#### March 2021

\$3.3 million investment from CIHR-IMHA, CIHR Institute of Aging (IA), Institute of Circulatory and Respiratory Health (ICRH), Institute of Gender and Health (IGH), Institute of Nutrition, Metabolism and Diabetes (INMD) and Institute of Population and Public Health (IPPH) with an additional \$2.8 million contribution from Health Canada and Statistics Canada.

#### What is the Oral Health Data Platform?

The Oral Health Data Platform was created in collaboration with Statistics Canada through the Canadian Health Measures Survey to collect biological, clinical, and self-report oral health data in Cycle 7 of the CHMS. The project is lead by Professor Paul Allison, McGill University. The overall goals of this platform are to have dentists examine the mouths of 6,600 Canadians to provide oral health data (CHMS Cycle 7), create a database that can be widely accessed, and establish a research and training infrastructure. This is the first CHMS with an Oral Health Component (OHC) since Cycle 1 in 2007/08.

10 original research questions were developed by the Canadian oral health research community under the leadership of the Office of the Chief Dental Officer of Canada (OCDOC). These were embedded across the methodology for CHMS Cycle 7.

- 1. What is the current clinical/measured oral health status of Canadians, and how has it changed since 2007?
- 2. What are Canada's at-risk populations in the domain of oral health status, and what are the levels and areas of disparity?
- 3. What is the status of access to oral health care for Canadians?
- 4. What is the link between lifestyle and oral health for Canadians?

Building on the OHC investment, the

CIHR Catalyst Grants for Oral Health

Data Analysis are a \$1.4 million

investment from IMHA and IA to fund

targeted analysis of the OHC of CHMS Cycle 7. The OHC was particularly

timely given the subsequent

announcement of the Canadian Dental

Care Plan (CDCP) in December 2023.

The data analysis from CHMS7 will

contribute to a baseline from which to

assess the impact of CDCP.

5. How does poor oral health impact Canadians?

- 6. How is oral health associated with systemic health in Canadians?
- 7. What is the link between genome and oral health for Canadians?
- 8. What is the link between oral microbiome and health for Canadians?
- 9. What are the effects of dentistry biomaterials on the health of Canadians?
- 10. What are the effects of community water fluoridation on the health of Canadians?

**24** Collaborations

# Research Excellence, Diversity, and Independence (REDI) Early Career Transition Award

The <u>CIHR REDI program</u><sup>38</sup> is led by CIHR Institute of Infection and Immunity (III) in collaboration with IA, Institute of Cancer Research (ICR), Institute of Genetics (IG), IGH, Institute of Health Services and Policy Research (IHSPR), Institute of Human Development, Child and Youth Health (IHDCYH), IMHA, INMD, Centre for Research on Pandemic Preparedness and Health Emergencies (CRPPHE), CIHR HIV/AIDS and STBBI Research Initiative and external partners including Arthritis Society Canada.

Available to post-doctoral researchers, clinicians, and research associates from specific underrepresented groups to help them launch their research faculty careers in Canada. This transition award aims to develop independent research scientists who receive tailored, mentored career support in Phase 1 before transitioning to Phase 2 to establish and sustain their independent research program in academia. The CIHR REDI program addresses gaps in training and support by advancing scientific excellence through greater diversity. It strengthens Canada's research ecosystem and contributes to the creation and use of health-related knowledge in Canada.





I look forward to continuing to build a network of peer support, where we can all collaborate and lift each other up within this small but powerful community. The award has already had a significant impact on my career trajectory, particularly in emphasizing the importance of integrating equity, diversity, and inclusion into my research and practice . . . I now take a broader, systems-level approach, moving beyond a clinical focus to address barriers to accessing care to improve functioning in a more comprehensive way, including a patient's ability to perform daily activities and participate in life roles meaningfully.

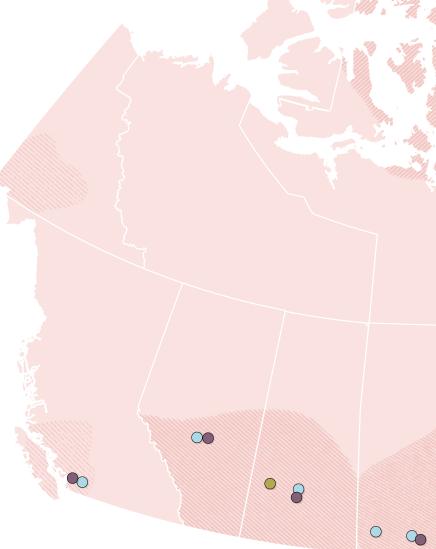
Dr. Jessica Wong, REDI Awardee, read full interview here.<sup>39</sup>

### **Healthy Cities Initiative 2019-2029**

\$43 million in initial funding from CIHR Institutes and external partners, co-led by IPPH — (lead strategic Institute), IA, IGH, IHSPR, Institute of Indigenous Peoples' Health (IIPH), IMHA, INMD.

#### Overarching goal

Improving health by maximizing the healthpromoting potential of cities and urbanized areas in Canada and internationally.



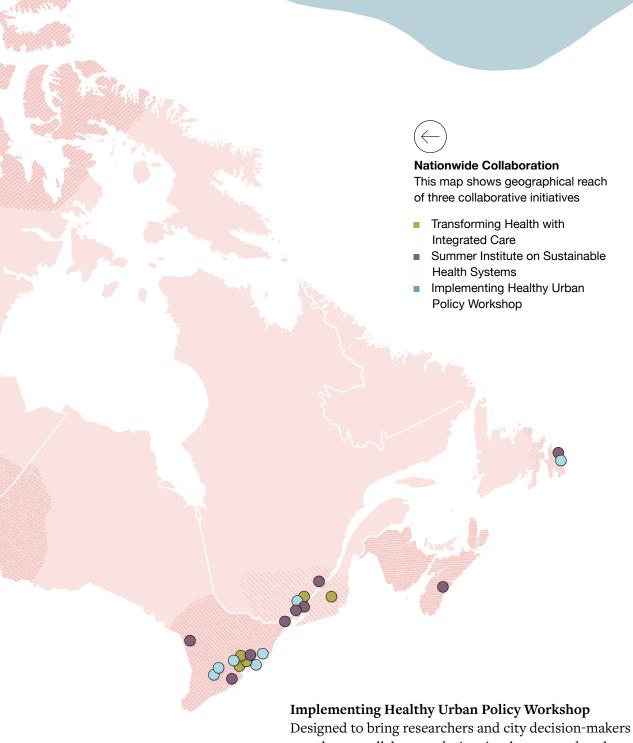
#### **Healthy Cities Implementation Science Team Grants**

2021 IMHA supported two projects through the HCIS Team Grants dedicated to improving health outcomes of older Canadians, with a focus on physical activity and falls-prevention programs.

- 1. IDEAS for Healthy Cities<sup>33</sup>, was awarded \$25,000. Researchers from University of Waterloo developed a digital eReferral tool along with an implementation guide that sought to integrate evidence-based physical activity programs to prevent falls and mitigate the burden of arthritis into healthcare and community settings nationwide.
- 2. The Zoomers on the Go
  project<sup>34</sup> scaled up a peerled falls prevention program
  from New Brunswick to
  municipalities across Canada.

2022 IMHA awarded the AAIMs project<sup>35</sup> \$3 million. The team, led by Dr. Danielle Bouchard, aims to improve fall prevention in community settings for older adults by exploring how to attract individuals who are not currently participating in fall prevention exercises, adapt existing programs to meet evidence-based recommendations, and promote sustainability of these programs in community settings.

**26** Collaborations



Designed to bring researchers and city decision-makers together to collaborate, design, implement and evaluate healthy cities programs related to active transportation and design of public spaces. Twelve teams participated in workshops between 2020 and 2025, held online in Copenhagen, or in Helsinki. Following the workshop, the various teams have led numerous knowledge mobilization activities including a "walkshop" <sup>36</sup>, public "un-conferences" and development of key strategies to increase equitable active transportation.

# Summer Institute on Sustainable Health Systems

IMHA was one of four CIHR Institutes that sponsored the CASCADES-led Summer Institute on Sustainable Health Systems (alongside IHSPR, IPPH and III).

- Understand core topics and concepts related to sustainable health systems.
- Increase awareness of sustainable health practices, policies, and initiatives in Canada.
- Develop leadership and professional capabilities to advance sustainability in health systems.
- Foster professional interdisciplinary networks of like-minded professionals and trainees.



# Transforming Health with Integrated Care (THINC)

The initiative is led by CIHR-IHSPR in partnership with IMHA, IA, ICRH, IHDCYH, HIV/AIDS and STBBI Research Initiative, SPOR, as well as the Fonds de recherche du Québec – Santé (FRQS), ResearchNB, the Ontario Ministry of Health, the Saskatchewan Health Research Foundation (SHRF), and the Social Sciences and Humanities Research Council (SSHRC). Collectively, THINC represents a \$26.6 million investment over six years.

In 2022, CIHR-IHSPR used an evidence-informed, community-engaged, partnered approach to design and fund a large-scale, multi-year research funding initiative aimed at transforming health through integrated care. THINC comprises 13 implementation science teams (ISTs) and one knowledge mobilization and impact hub called the Network for Integrated Care Excellence (NICE).

IMHA is a core partner in the THINC initiative with funding and co-funding support for six of the 13 ISTs. Key design elements of the ISTs were intended to enhance impact, including the shared leadership models which are quadripartite—leaders come from research, policy, practice and lived experience. These ISTs aim to generate evidence for implementing, scaling, and spreading integrated care models nationwide and are focused on a range of high-priority integrated care challenges, including: Using Digital Health to Better Serve Rural Albertans living with Shoulder Pathology; The Ontario Rheumatology Learning Health System for Transforming Integrated Care for Patients with Rheumatic & MSK Disorders; Testing Healthcare innovations in integrated Networks for Chronic pain: Evaluation of the Implementation of ECHO Chronic Pain in Canada (THINC-ECHO); and more (team descriptions available on the THINC webpage<sup>37</sup>).

**28** Collaborations

#### **Health Systems Impact Program**

CIHR-IHSPR provides leadership of the program on behalf of all CIHR Institutes and initiatives, including IMHA, and provincial partners like Michael Smith Health Research BC, Fonds de recherche du Québec-Santé, Saskatchewan Health Research Foundation, ResearchNB and Mitacs.

Launched in 2017, the Health System Impact Program<sup>16</sup> (HSIP) has supported 328 doctoral and postdoctoral fellows and 12 early career researchers (ECRs), collectively leading 140 embedded research projects designed to advance the impact goals and evidence needs of health system partner organizations. IMHA supported a one-year PhD fellowship and 8 two-year post-doctoral fellowships between 2018 and 2024, a total contribution of \$772,818.

Several fellows have addressed health system priorities relevant to the IMHA mandate during their embedded research projects, including:



A proactive approach to health: integrating personalized physical activity behaviour change support into inflammatory arthritis care

Dr. Elena Lopatina Innovative models of care for patients with inflammatory arthritis in Canada

Innovative models of care for patients with inflammatory arthritis in Canada



#### Dr. Kimberly Manalili

Bridging the gap: working with health system partners to design data-sharing and coordination of care

Collecting, synthesizing, and sharing research on Canadians' physical activity, sleep, and

A recent addition to the program is the \$2.4 million six-year Health System Impact Training Platform, led by Dr. Elena Lopatina (a fellowship alum funded by IMHA and current Embedded ECR focused on integrated models of care for pain management) and a pan-Canadian team of program alum and mentors. The platform is the first of its kind focused on building capacity and capability for embedded research and learning health systems.

#### **Other Partnerships**

#### North American Pain School (NAPS)

NAPS is a high-quality program bringing together 30 trainees from across North America each year, along with internationally recognized pain investigators as "faculty", to foster networking, scientific education, and professional development. Led by the Quebec Pain Research Network, IMHA has sponsored this initiative for 4 years as part of <u>our Institute priority commitment</u><sup>45</sup> towards alleviating the burden of pain.

#### Fibromyalgia Canada

Trudy Flynn, Chair of Fibromyalgia Association Canada (FAC), was an IMHA Research Ambassador from 2014, and Patient Engagement Research Ambassador (PERA) 2019-2023. FAC was launched in 2021 and Trudy is a Primary Investigator on a successful grant submission to update the Canadian guidelines for Fibromyalgia with patient-centered approaches.



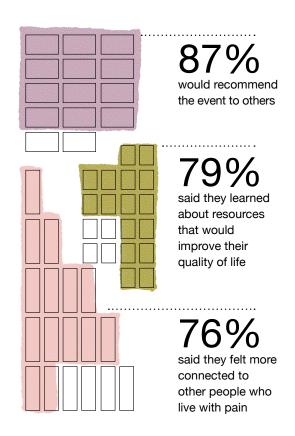
FAC's original goal was simple: to be a hub where people with fibromyalgia felt seen and supported. Too often, fibromyalgia is treated as an add-on to other conditions like arthritis or ME, rather than recognized on its own. That invisibility motivated us to build something ourselves . . . FAC aims to change this narrative. Last summer, we applied for a planning grant to create diagnostic tools and build partnerships between doctors and patients. We're also focused on empowering people through self-management by encouraging consistent practices like movement, nutrition, and sleep regulation. You can't let fibromyalgia get away from you, you have to stay ahead of it.

#### **Putting the Pieces Together**

Supported by Pain Canada, Putting the Pieces together is a free, virtual conference hosted for and by people with pain. IMHA has sponsored PTPT since its inaugural conference in 2022 and the patientled concept of this event helped inspire the PxP conference.

Registration has grown from 540 people in 2022 to 1096 people for the 2024 conference, with over 700 active participants in 2024.

Over the three years:



### National Gathering of Indigenous Clinicians

In September 2023, a multidisciplinary group of Elders, clinicians, health leaders, and children came together for a national gathering to set health research priorities of Indigenous children and youth's pain and healing on Six Nations of the Grand River. The event was led by the Aboriginal Children's Hurt & Healing Initiative and the Chronic Pain Network, with IMHA contributing sponsorship funds. Reflections from the gathering are shared in a video.<sup>46</sup>

### 6th Canadian Fall Prevention Conference

Co-hosted by Parachute and KITE/ UHN with support from CIHR-IA and IMHA. The conference,44 which focused on research and implementation to prevent and mitigate the impact of falls and falls-related injuries, was attended by 187 delegates including community, researchers and healthcare professionals. 93% of survey respondents said the conference was very relevant to their profession and 93% also said they would attend another Canadian Fall Prevention Conference. The keynote from Professor Stephen Lord has catalyzed initial discussions to bring together a Canadian consortium to plan a national fall prevention strategy for Canada. There was discussion that Canada might bid to host an upcoming World Falls Conference (2029).

#### **Canadian Arthritis Research Conference**

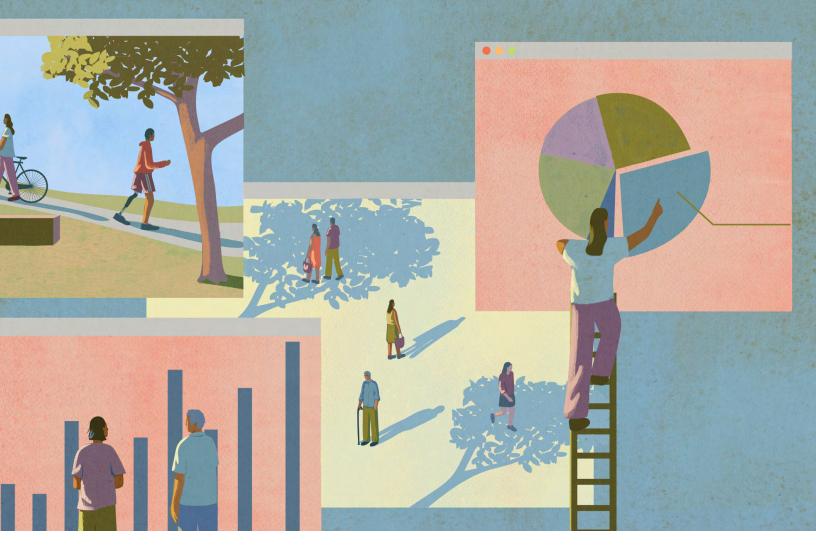
Between 2020 and 2024, IMHA partnered with Arthritis Society Canada and the Canadian Rheumatology Association to bring together patient partners, researchers, clinicians and trainees for the Canadian Arthritis Research Conference. This successful partnership focused on sessions that highlighted key developments in the science and management for different kinds of arthritis (osteoarthritis, rheumatoid arthritis, psoriasis etc.), comorbidities, and relevant strategies such as the Canadian Pain Task Force. We heard from our research communities that two elements which were most valued were the speaking opportunities for trainees and the integration of patient partners on the steering committee and throughout the program. These learnings were integrated into the CASS pilot program.



# Metaresearch

Can peer-review be improved, what size grants provide the best value for money, are Canadian researchers embracing Open Science?

As a science-based agency, <u>CIHR is committed to continually evaluating how it funds</u> and promotes research<sup>47</sup>. As an Institute, IMHA endorses the importance of these type of questions which can be considered examples of metaresearch (research on research). Metaresearch questions are not limited to one Institute and the results of metaresearch may apply across various parts of the research ecosystem (e.g. research into peer-review has wide implications).



#### **IMHA and Metaresearch**

CIHR-IMHA researchers (and others): (i) evaluated CIHR project grant peer-review using three different methods, <sup>48-50</sup> (ii) outlined factors associated with high-quality research grant submissions <sup>51,52</sup> and, (iii) captured the extent of trial registration and reporting among Canadian researchers. <sup>53</sup>

Specifically, this meta-research demonstrated that:

- CIHR peer-reviewers, as judged by panel chair and scientific offices, perform well on positive reviewer traits and show few negative reviewer traits. These descriptions did not differ when the competition was held in person (one competition) or on Zoom<sup>48</sup> (5 competitions).
- A qualitative study of CIHR peer-reviewers highlighted three threats to quality peer-review: (1) lack of peer-review training and limited opportunities to learn, (2) challenges in differentiating and rating applications of similar

- strength, and (3) reviewers weighting applicant reputations and relationships (who applicants worked with) in the adjudication process.<sup>49</sup>
- In a study of peer review, ranking grants (putting them in a sequence of relative merit) was more reliable than rating (providing a score out of 4.99) and less susceptible to the characteristics of the review panel, such as level of expertise and experience, for both reliability and potential sources of bias.<sup>50</sup>
- Resubmitted grants are more likely to be funded than new grants. The factor which made a resubmitted grants more likely to be funded than other resubmissions was a grant rating or a ranking that placed the grant near the top 20% of the competition. This may help guide those whose grants fall in the bottom half of a funding competition not to resubmit immediately or with the same grant plan.<sup>51,52</sup>
- Canadian researchers are generally not meeting best practice for clinical trial registration and reporting (i.e., not meeting one of the elements of open science) based on 2009-2019 data.<sup>53</sup>

# For Patients, By Patients (PxP) Conference: Investigating Patient Partner Perceptions of Patient-led Events

Tianna Magel, Kimberly Strain, Anna Samson, Dr. Hetty Mulhall, Dr. Dawn Richards, Professor Karim Khan, Professor Lorelei Lingard



IMHA is a leader when it comes to patient engagement. Through groundbreaking initiatives such as the PxP conference, IMHA is pushing the boundaries and opening the doors for patient partners in areas previously unexplored. Not only that, IMHA is taking a critical lens to their own work with an eye for improvement. As a member of a research team with IMHA, we are currently investigating the experiences of previous PxP Steering Committee members. From this research, we hope the knowledge gained will contribute to IMHA's future development in this area as well as encourage others to learn from our strengths and opportunities for growth.

**Kimberly Strain** 

# Partial Lotteries with Bayesian Ranking

Partial lotteries are based on analysis of abstract scores; those who score within a specific range ("near-miss") are included in the lottery. There is literature that demonstrates partial lotteries can reduce bias.<sup>54</sup>

IMHA applied a partial lottery to four strategic initiatives using the Bayesian Ranking approach: Best Research Presentations for the 2024 Canadian Arthritis Conference, Patient Engagement 101 Workshop in Halifax 2024, Best Research Presentations for the 2025 Open Science and Research Impact virtual event, and CIHR-IMHA Intensive Grant Writing Masterclass 2025.

#### **Open Science Working Group**

The Institute Advisory Board (IAB) advised that IMHA convene an Open Science Working Group to co-create an accessible open science resource. The working group was a national, interdisciplinary team of sixteen individuals including researchers (Inclusive Research Excellence Prize Awardees, IAB members, leaders of IMHA-funded networks), patient partners, and IMHA staff. This diversity in member experience helped to ensure that open science outputs from the working group would be useful to a wide audience across the IMHA mandate areas.

In May of 2024, the working group convened its first virtual meeting, with subsequent meetings occurring bi-monthly. Working group members were responsible for identifying, discussing, and generating the resource content, format, accessibility, and platform. Eight priority areas for fostering Open Science practices in research were identified (figure below). Working group members developed guidelines and provided examples for each component of the Open Science research cycle. In line with IMHA mandated priorities, involving patient partners has been embedded throughout the entire cycle.





Eight priority areas for fostering Open Science practices in research



### Priority Announcement Data

One of our roles as an Institute is to support researchers under our mandate in unlocking larger sources of funding, including from the Project Grant competition. IMHA has conducted analyses into the Priority Announcement (PA) funding mechanism to better characterize its efficacy.

Between Spring 2018 and Fall 2024, IMHA funded 71 PAs. Of these, 16 were related to pain, 14 related to skin, 11 related to bone, 11 related to oral health, 9 related to arthritis, 2 related to the IMHA General Mandate, 2 related to muscle health, 2 related to physical activity, 2 related to mobility, 1 related to ME, and 1 related to rehabilitation.

We analysed data to look at whether PA-funded projects acquired Project Grant funding within three competition cycles. Between Spring 2018 and Spring 2023, IMHA funded 57 PAs and 26 of these (46%) went on to receive Project Grant Funding within at most 3 funding cycles (two per year).

# Patient Engagement and Metaresearch

All of the publications referenced here were chosen by patient partners for inclusion in the impact report, to signpost readers to the existing evidence base on patient engagement in health research. Many of these were co-created, co-authored with, or entirely written by people who identify as patient partners, including IMHA Patient Engagement Research Ambassadors.

#### Power

Power dynamics exist in any team, including research teams that engage patient or public partners. Free Recommended reads relating to power include themes of tokenism, free patient engagement that goes wrong, free how labels such as "patient" change dynamics, and opinions held by those who object to patient engagement.



Unfortunately for patient partners on research teams, many of us have been there and felt tokenism, even if we didn't know what to call it at the time . . . We've put together some of our own experiences, along with some potential solutions for both patient partners and other members of the research team to help mitigate these situations.

Dawn Richards, Eileen Davidson, Trudy Flynn, Linda Hunter, Gillian Newman, Christine Thomas<sup>56</sup>

### Patient Engagement in Research

Patient engagement is **not** the same thing as patient participation in a research study. Patient engagement is also known as patient and public involvement and consumer involvement in other parts of the world and describes when patient partners are part of the research team for a particular project or initiative. Patient partners may be asked to, and chose to, give input in many different ways including giving thoughts on the initial concept, deciding the best methods, interpreting results, and advising how to get the research findings to the people who need it. IMHA has supported initiatives to increase patient engagement capacity under our mandate including workshops<sup>14</sup> and learning resources. 62,79,80,81 Examples of patient engagement in research include all areas of IMHA's mandate such as oral health,63 physical activity, 64,65 osteoarthritis, 66,67 neuromuscular disease, skin and chronic pain.68



Co-designing with people with lived experience demands working with who we are: and doing so accessibly. That includes the potential of inviting people with lived experience to attend conferences with you to present. How can we ensure that this time is a successful and safe one that continues to build trust and ensures they feel welcome?

Rae Martens<sup>24</sup>

#### Patient-Led Events

There are still relatively few examples of patient-led events aside from those mentioned in this impact report: Putting the Pieces Together, PxP and Canadian Arthritis Summer School. Publications detail how and why patients take on leadership roles<sup>28,60</sup> and ways to support accessible conferences in-person<sup>61</sup> and virtually.<sup>29</sup>

### Patient Participation in Research

As mentioned, patient participation in research is not the same thing as patient engagement. Being a participant in a study can be another great way to help advance healthcare, but the role would not generally include giving input into the research study itself. A patient's experience as a trial participant may inform their work as a patient partner on another project, and IMHA PERA member Beth Ciavaglia speaks to her experiences on lessons learned from a clinical trial.<sup>69</sup>

### Patient Engagement in Research Funding

IMHA has published our patient engagement strategy. There is also an increase in patient partners being engaged as peer reviewers for grants. The properties of the properties



Patient partners bring lived experience and expertise that complements the expertise of other reviewers who may be researchers, clinicians, and others (e.g., people from community and not-for-profit organizations, etc.) . . . As patient partners who have been involved in peer review, we thought it would be helpful to use our own experiences to offer some advice to other patient partners as well as to people and organizations who are running peer review that involves patient partners.

Dawn Richards, Deb Baranec, Eileen Davidson, Trudy Flynn



#### **Barriers and Facilitators**

Throughout the research cycle and systems, there are many barriers to meaningful patient engagement. As illustrated by the quote from Joletta Belton, some of these require structural changes whereas others can be reduced through intentional actions and solutions. Existing literature explores barriers and facilitators such as compensation<sup>72</sup> and author affiliations<sup>73,74</sup>; specific considerations for different populations from a life-course perspective (e.g. young people<sup>75</sup>), across the globe,<sup>76</sup> and considering social determinants of health<sup>77</sup>; and non-traditional approaches to patient engagement such as social media co-creation.<sup>78</sup>

Dr. Dawn Richards: "I put out an initial call on Twitter from @TO\_dpr, and asked patient partners to let me know if a resource or tool helping people know more about what abstracts are would be helpful. The overwhelming response was 'yes.'

Next, I drafted some text that described what an abstract is, what it's used for and what the parts of an abstract are. My goal was to help demystify abstracts.

3

We need to build new tables. Not *just* invite people to the tables we already have.

Joletta Belton, PxP 2023

Back on Twitter again, I followed up my original tweet and asked people to comment on the text for me via Google Forms, so that we could ultimately create something that was useful to patient partners. Through Google Forms I collected responses from 17 individuals, and incorporated their feedback into the text about abstracts.

From there, my communications colleague helped to put the text into an infographic that made everything feel simple and uncluttered.

I circled back to everyone who provided me with input – to let them know how they contributed, and where they can find the infographic, and if they wanted to be thanked, they are acknowledged on the infographic itself."

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