LONG COVID WEB

2024 Year In Review

Year Two: Building Momentum

May 2025

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A Message from the Executive

Dear Colleagues,

Welcome to our 2024 Year In Review! On behalf of the Long COVID Web (LCW) core team and leadership, we are delighted to share our second report highlighting our activities, achievements and next steps for 2025. Together with patient partners, researchers and clinical colleagues across the country, the network has continued to grow and build momentum toward our vision of a Canada without Long COVID. We have worked hard to respond to the challenges and lessons learned since the launch of the network in 2023, all with excellent and timely guidance from our patient advisory council and a responsiveness to community input.

We thank our funders and partners for contributing essential infrastructure and funding (both cash and in-kind) that enables the network and associated activities. Thanks also to our network members and collaborating organizations across Canada for your support, encouragement and insights that keep this network strong and relevant to the needs of people living with Long COVID and those that care for them.

Sincerely,
Drs. Angela Cheung, Simon Décary, Adeera Levin and Doug Gross (LCW Executive Committee)

Dr. Angela Cheung

Professor of Medicine, University Health Network University of Toronto

Dr. Simon Décary

Assistant Professor of Rehabilitation, Université de Sherbrooke

Dr. Adeera Levin

Professor, Nephrology and Internal Medicine, University of British Columbia

Dr. Doug Gross

Professor and Chair, Faculty of Rehabilitation Medicine – Physical Therapy, University of Alberta

Building Momentum

In the material that follows, we present the important investments in foundational projects and research grants in 2023 and 2024 that amount to about $3.5 million to date, supporting 48 projects across Canadian researchers and institutions. These projects include work across all four LCW research pillars to advance the science of Long COVID – related to understanding, diagnosing, treating and monitoring the health and social implications for people living with Long COVID.

Efforts to mobilize knowledge within and beyond the network in 2024 have included a successful second annual Symposium in Edmonton, AB, ongoing monthly webinars, regular newsletters and support for other Long COVID research initiatives in Canada and internationally. The network has contributed to strengthen relationships across and within research teams that are fundamental to addressing knowledge gaps and sharing findings across the country. LCW also had its first meeting of our International Scientific Advisory Board with excellent advice for next steps. Our network is now nearing the mid-point of its original mandate – to realize a Canada without Long COVID – and we acknowledge that it is also time to consider strategies for sustaining this excellent work.

Internationally, LCW is one of the few remaining coordinated efforts targeting the needs of people living with Long COVID, although we continue to benefit from global efforts through research and patient-led connections and the broader network. We look forward to our third year of building momentum and continuing to advance the science and practice for Long COVID in 2025.

Vision & Mission

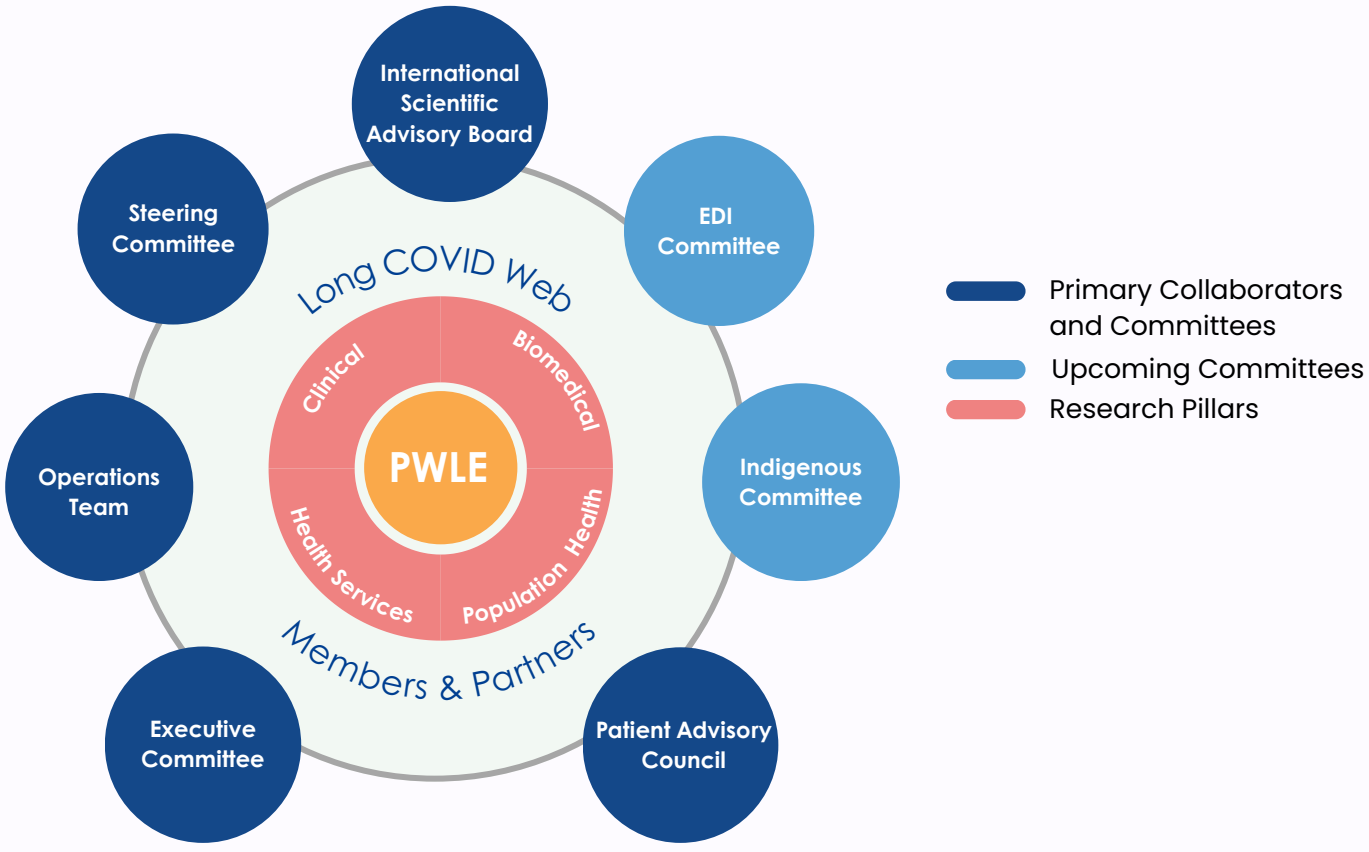
VISION: Canada without Long COVID.

MISSION: Our mission is to advance Canadian-led Long COVID research, foster a patient-centred learning health system, ensure equitable access to optimal care and rigorously monitor the impact of Long COVID, also known as Post-COVID-Condition (PCC).

Structure

LCW's organizational structure prioritizes inclusive collaboration, research and innovation through its diverse committees and research pillars.

People with lived experience (PWLE) are central to what we do and how we work — their contributions ensure that LCW's approach to understanding and addressing the complexities of Long COVID remains deeply rooted in the needs and priorities of those most affected. In 2024, LCW enhanced its governance by appointing a PWLE and Indigenous Lead to foster meaningful relationships through our engagement with patients, including our Patient Advisory Council and other communities.



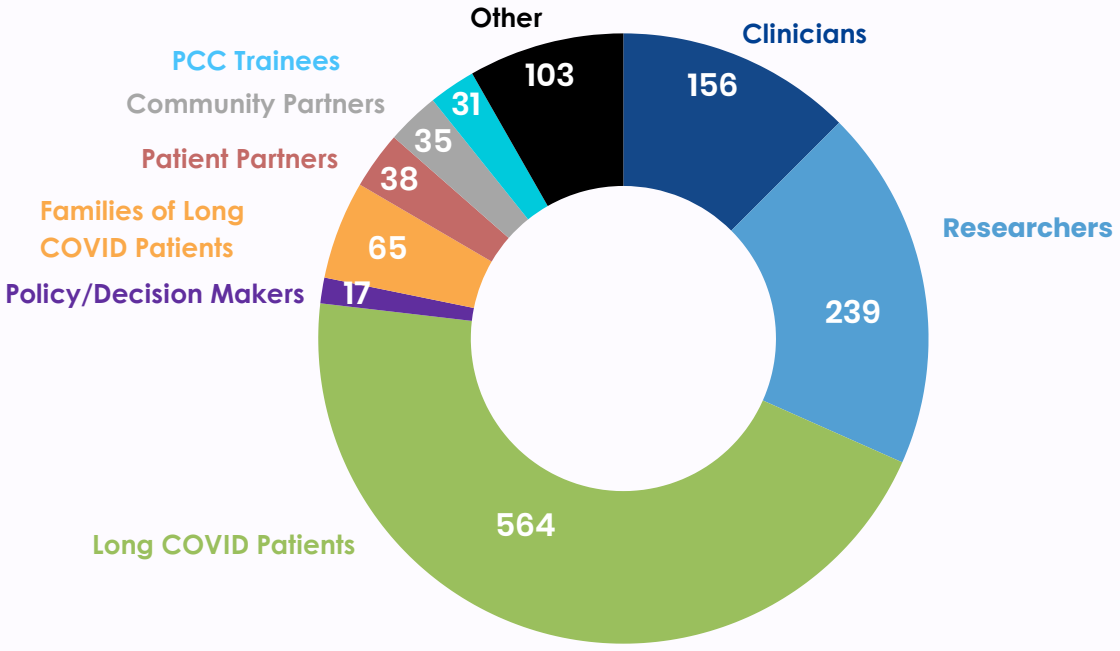
2024 Membership Reach

LCW's expanding membership reflects our commitment to engage with diverse communities across Canada.

As of 2024, LCW's total membership has grown to 1,013, of which 402 new members joined this year. The below graphs reflect where our members reside, which key groups they belong to, and if they belong to groups that have experienced inequities.

Network Groups

The LCW membership is categorized into key groups, reflecting the diversity and types of members within our community. Notably, membership increased across all groups, with a major increase (60%) in Patients with Long COVID (from 351 to 564) and 97% for Families of Long COVID Patients. Increases in other categories included: 36% for Clinicians, 21% for Researchers, 31% for Policy/Decision Makers, 36% for Patient Partners, 59% for Community Partners, 55% for Trainees and 58% for Others (*e.g. healthcare professionals, industry representatives, members of organizations, advocacy and knowledge mobilization specialists, professionals in technology and innovation, educators, government representatives, and media and public communication professionals*).



399 members identified with one or more groups (members can identify with multiple groups).

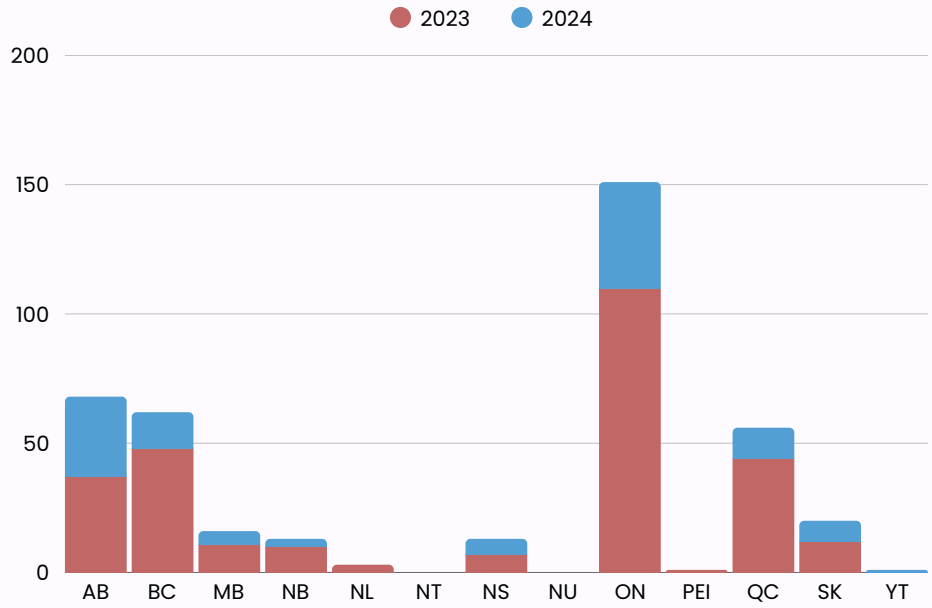
2024 Membership Reach (continued)

The descriptions below are based on member responses to equity, diversity and inclusivity (EDI) survey questions conducted in 2024.

2024 EDI Database: **121 Responses**
Complete EDI Database: **405 Responses**

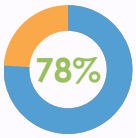
Provinces

In 2024, our membership reach continued to expand across the country, with membership growing by at least 20% in most provinces. We also welcome our first members from the Yukon and continue to seek out ways to increase engagement in northern regions.

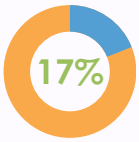


Diversity

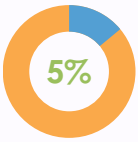
The graphs illustrate the total number of responses received for our EDI survey in 2023 and 2024 (n = 405).



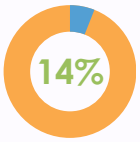
woman



man



agender / multi or bigender / gender fluid / gender queer / non-binary / transgender



visible minority/ racialized

Indigenous

Key Linkages in the Canadian System

Cross-sectoral Support for Mobilizing Long COVID Knowledge

A strong research network reaches across sectors to share resources and expertise. For the 2nd Canadian Symposium on Long COVID, LCW worked with universities, healthcare organizations and industry partners, which was central to its success. This annual Symposium is a cornerstone of our efforts to share and amplify research, foster dialogue and promote collaborative problem-solving. Our co-hosts — the **University of Alberta**, the **University of Calgary** and **Alberta Health Services** — contributed strategic and logistical support and recruited leading experts in research and clinical care as speakers. Healthcare and industry partners, including the **Glenrose Rehabilitation Hospital**, **Workers' Compensation Board – Alberta**, **Pfizer**, **Roche** and **Canada Strong Mask**, provided financial resources and expertise.

Engagement with National & International Initiatives

LCW's initiatives are enriched by collaborations and intersections with other national efforts addressing Long COVID.

One key research ally in our national network is the Rehabilitation Science Research Network for COVID, funded by the Temerty Faculty of Medicine at the University of Toronto. This network is a leader in advancing rehabilitation-focused research and hosts the annual International Forum on COVID Rehabilitation Research, an invaluable platform for PWLE, researchers, clinicians and policymakers to exchange insights and share best practices. LCW maintains a strong partnership with this network with significant overlap in membership and by supporting each other's events. Members of our Steering Committee actively contribute to their initiatives and vice versa, fostering cross-pollination of expertise. Additionally, LCW was proud to sponsor their 2023 International Forum. Through this close relationship, we continue to enhance research, knowledge-sharing and advocacy efforts for those affected by Long COVID.

Key Linkages in the Canadian System (continued)

At the federal level, the **Chief Science Advisor of Canada (CSA) and her Office** have played a critical role in elevating the importance of attention to Long COVID and identifying priorities for action through an initial report in 2023, followed by a **2024 update** focused on the ongoing impact of Long COVID. This latest report underscores the profound effects of Long COVID on society and on individuals, emphasizing the need for sustained research, policy innovation and healthcare adaptations. LCW's work not only aligns with these priorities, our members (Cheung, Décary, Gross, Muhajarine, Quinn) have also made several direct contributions to CSA initiatives, including as members of the CSA Task Force on PCC.

The **Canadian Guidelines for Post COVID-19 Condition (CAN-PCC)** initiative, based at McMaster University, was funded by the Public Health Agency of Canada to develop, disseminate and evaluate evidence-based guidelines for Long COVID with an operating window of 2023-2025. There has been considerable synergy and cooperation between our organizations, which has contributed to the fulfillment of the objectives related to both initiatives. Many LCW scientists have been members of the CAN-PCC guideline development groups and related international efforts; our patient partners have been highly active contributors to the consultations on individual guidelines; and members of both organizations serve on each other's scientific and knowledge mobilization committees. The CAN-PCC initiative has engaged many in our network as part of the 4500+ responses during public comment periods, in the development of the recommendations and good practice statements to date.

CAN-PCC | CANADIAN GUIDELINES FOR POST COVID-19 CONDITION

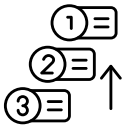
Building a Collaborative Ecosystem

The success of LCW's initiatives and those of our collaborators and partner organizations is a testament to the power of collaboration. By working alongside esteemed cross-sectoral partners across Canada and engaging with national organizations and initiatives, LCW contributes to a dynamic, holistic ecosystem contributing to the science and care for those affected by Long COVID. Together, we are building a foundation for innovative, evidence-based solutions that prioritize patient care, mobilize research and inform policy while ensuring that the experiences of those living with Long COVID remain at the heart of these efforts.

PWLE Making a Difference in LCW - Research & Knowledge Mobilization

LCW engages with patient partners to facilitate genuine collaboration on all network initiatives. LCW is thus well equipped to support **patient-oriented research** where PWLE are valued as true partners in research and knowledge mobilization.

The Patient Advisory Council (PAC) has made direct contributions to improve LCW's seed funding program and patient-oriented research by engaging in:



Priority Setting

Grant Review Processes and Panels

Individual Studies

Recommendations from the PAC about the patient engagement review criteria were integrated into the 2024 LCW Seed Funding competition.

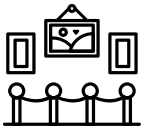
For the **2nd Canadian Symposium on Long COVID**, the PAC and other PWLE influenced the program content and engagement in the following ways:

Reviewed and provided feedback on abstracts

Co-created the program to feature patient experiences

Hosted a session on key patient engagement issues in research

Joined sessions as a panelist, presenter, keynote, or chair



Contributed to LCW's first art gallery showcasing 31 artworks that amplified the voices of PWLE and their families.

Trusted Resources on the Website: A list of trusted resources was co-developed with the PAC to provide PWLE, families, caregivers and clinicians current and accurate information about Long COVID. For PWLE, this included information and resources about support groups, self-care, and how to monitor their condition, and engage with healthcare providers.

"We feel like we're together driving the bus instead of just being a passenger."

- PAC Member

Progress on Foundational Projects

In 2023, each of the four research pillars were awarded a foundational grant to provide important foundational knowledge and methods to enable high quality research in line with priorities determined across the network. The following provides an update on progress for each area at the mid-point of their work.

Pillar 1: Preclinical Models as a Platform for Discovery and Validation of Biomarkers and Therapeutic Targets for Long COVID - G. Oudit, University of Alberta

Aiming to Achieve

Pillar One's foundational project focused on developing animal models of Long COVID to determine the effects on brain, lung, gut and heart structure and function, to better understand Long COVID mechanisms. The research team also aimed to evaluate blood-based tests (biomarkers) that correlate with various pathologies in the animal model. This work will facilitate discovery of Long COVID mechanisms, biomarkers and effective therapeutics.

Achieved to Date

Two major contributions have been achieved to date including the identification and use of taurine as a biomarker for Long COVID, and established animal (mice, rats and hamsters) models of COVID. Progress to date (mid-project) by Pillar One research teams includes the formation of collaborations with other LCW scientists, including a CIHR-funded clinical trial of taurine and Long COVID as part of the RECLAIM platform with Dr. Angela Cheung (Toronto), and another clinical study on gut microbiota and Long COVID, with Dr. Emilia Liana Falcone (Montreal). Knowledge mobilization has included presentations (LCW webinar and 2023 and 2024 Symposia), as well as several publications on a range of topics including the association of organ injury and biomarkers for Long COVID, the links between taurine and Long COVID symptoms and outcomes, the use of multi-omics analysis to identify clinical phenotypes and predictive biomarkers for Long COVID. LCW Webinar Series: Updates on Research Activities for Pillar One.

Working On

Completing foundational project work by December 2026.

Pillar 2: Establishing a Core Outcomes Set for Use in Long COVID Research and Practice - K. O'Brien, University of Toronto

Aiming to Achieve

The foundational project for Pillar Two was to develop a framework of core outcome measures of Long COVID to be considered in clinical practice and in research involving cohort and intervention studies of people living with Long COVID. The project is called *Measurement and Assessment Paradigm for Long COVID (MAP LC).*

Achieved to Date

The Pillar Two research team has submitted the study protocol for publication, established guidelines for patient engagement in MAP LC and have completed the consultation and literature search for a scoping review to inform the framework. New collaborations and partnerships have been built in the field of outcome measurement, and across LCW Pillars Three and Four, as well as with the Rehabilitation Science Research Network for COVID. Their team continues to grow and evolve with graduate students and trainees, as well as other clinicians, scientists and PWLE. The team presented their work at the 2nd Canadian Symposium on Long COVID and have a second manuscript in preparation. LCW Webinar Series: Updates on Research Activities for Pillar Two.

Working On

By December 2025: completion of the framework of core outcome measures to guide research and practice related to Long COVID; completion of the evidence review of definitions and terminology of Long COVID; publications, a commentary (led by a clinician-scientist-patient colleague) on the complexities of outcomes measurement in Long COVID.

Progress on Foundational Projects (continued)

Pillar 3: Improving Identification of Canadians Living with Long COVID in Administrative Data - K. Quinn, Mount Sinai Hospital

Aiming to Achieve

The foundational project for Pillar Three was to determine how to identify the number and attributes of Canadians living with Long COVID within routinely collected administrative data about people's health that is held by institutions, research teams and governments at local, provincial and national level. The specific aims were to create a data atlas for adults and children living with Long COVID, establish a consensus-based definition of Long COVID for the purposes of this project, and develop the tools to identify people living with Long COVID from existing datasets.

Achieved to Date

To date, the Pillar Three research team has worked across all Pillars and LCW members to co-develop, validate and adapt case finding algorithms across multiple jurisdictions, populations and type of data. The work on the national data atlas has been completed and a manuscript has been submitted for publication. The algorithm to identify people living with Long COVID has been developed in British Columbia and adapted for use in Ontario. Five presentations have been completed at Canadian and international conferences. Results of the work from Pillar Three foundational project also contributed to the Chief Science Advisor's report – Dealing with the fallout: 2024 Post-COVID Condition and its continued impact on individuals and society. LCW Webinar Series: Updates on Research Activities for Pillar Three.

Working On

The team is working on an external validation of the algorithm using data from the CANCOV study. They will complete their foundational projects by Spring 2025.

Pillar 4: Delphi Process: To Create a Consensus-Based Minimal Data to Access Long COVID Data - G. Groot, University of Saskatchewan

Aiming to Achieve

The foundational project for Pillar Four was to create a consensus-based minimum dataset that will guide data collection in all research and clinical settings for Long COVID patients enabling better tracking, policy and service response. This work will contribute to the establishment of a national registry of Long COVID patients.

Achieved to Date

Pillar Four research teams have completed Delphi consultations, including patients, to inform the development of a minimum dataset; the proposed minimum dataset for Long COVID research and clinical application has been created and ready for dissemination and uptake; two publications to date. LCW Webinar Series: Updates on Research Activities for Pillar Four.

Working On

Pillar Four research team members are working with LCW Operations to develop a knowledge mobilization and dissemination plan to promote the use of the minimum dataset across Canada. They are working on further publications from this work.

Appendix A for Foundational Projects Publication details.

Building Long COVID Research Capacity

Providing Seed Funding

LCW continued to build a foundation for sustained progress in Long COVID research by funding research, supporting members funding applications and championing trainees. LCW awarded **$1.35M CAD** in **2024** to support **22 cross-pillar seed funding projects**. These projects, funded in amounts of **$25,000, $50,000 and $100,000**, address all **12 LCW research sub-priorities**, ensuring continued progress in key areas of Long COVID research. Details of the awarded projects can be found here.

Advancing Support for Long COVID Research

LCW continues to foster a collaborative and supportive research environment, strengthening Long COVID research capacity across Canada. Over the past two years, we have provided:

- 24 Letters of Support for funding applications,
- 10 of which successfully secured funding (Appendix B for Letters of Support details)

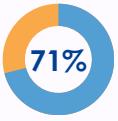
The above demonstrates the growing recognition of Long COVID research and the strength of our network.

Building Confidence & Competence

The **2nd Canadian Symposium on Long COVID** was designed to help contribute to building capacity for Long COVID research and knowledge mobilization across different groups. The post-Symposium survey revealed that:

Most respondents felt that both trainees and PWLE had meaningful opportunities to contribute to the Symposium.

Trainees PWLE

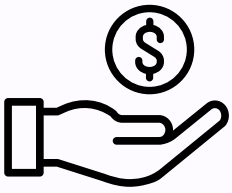


Gained a clearer understanding of Long COVID science

Felt they were better able to talk about Long COVID research

Supporting the Next Generation of Researchers

At our 2024 Symposium, we awarded top abstract prizes and featured **31 trainee posters** (Appendix C for Poster Awards)

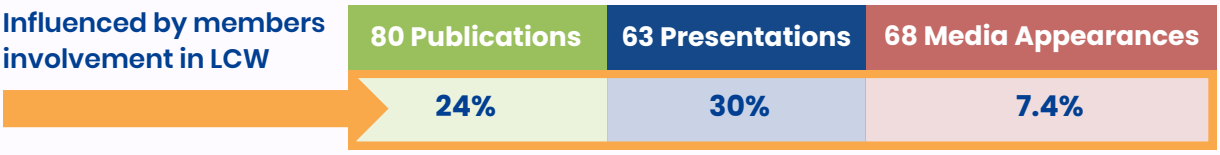


We provided **$537,000 in seed funding** to 23 trainees

Principal investigators in our network identified **64 trainees actively engaged in Long COVID research**

Advancing Long COVID Knowledge

Our members have made valuable contributions to Long COVID knowledge. New research activity in 2024 included:



Of all publications involving LCW members in 2023 and 2024, **eight articles** received enough citations to place them in the top 1% of their academic field.* These articles included research involving one or more of the four pillars (biomedical, clinical, health services and population health research) indicating the breadth and reach of expertise in our network.

- Circulating anti-nuclear autoantibodies in COVID-19 survivors predict long COVID symptoms. (2023) European Respiratory Journal. Doi: 10.1183/13993003.00970-2022 Open Access
- Post-acute sequelae of COVID-19: understanding and addressing the burden of multisystem manifestations. (2023) Lancet Respiratory Medicine. Doi: 10.1016/S2213-2600(23)00239-4 Open Access
- Rehabilitation interventions for physical capacity and quality of life in adults with post-COVID-19 condition. (2023) JAMA Network Open. Doi: 10.1001/jamanetworkopen.2023.33838 Open Access
- Cellular and molecular biomarkers of Long COVID: a scoping review. (2023) EbioMedicine. Doi: 10.1016/j.ebiom.2023.104552 Open Access
- Conceptualising the episodic nature of disability among adults living with Long COVID: a qualitative study. (2023) BMJ Global Health. Doi: 10.1136/bmjgh-2022-011276 Open Access
- Cardiovascular autonomic dysfunction in post-COVID-19 syndrome: a major health-care burden. (2024) Nature Reviews Cardiology. Doi: 10.1038/s41569-023-00962-3
- Features of acute COVID-19 associated with post-acute sequelae of SARS-CoV-2 phenotypes: results from the IMPACC study. (2024) Nature Communications. Doi: 10.1038/s41467-023-44090-5 Open Access
- Masks and respirators for prevention of respiratory infections: a state of the science review. (2024) Clinical Microbiology Reviews. Doi: 10.1128/cmr.00124-23 Open Access

*The definition of a 'highly cited article' used by Web of Science.

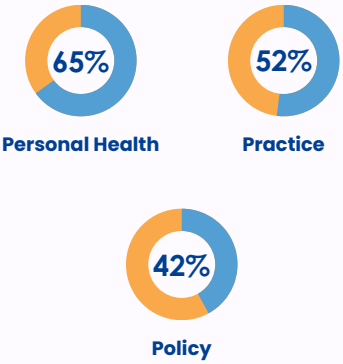
Mobilizing Knowledge for Impact

Long COVID Research Informed Decisions in Research, Policy & Practice

The 2nd Canadian Symposium on Long COVID is the network's flagship knowledge mobilization event, attended by 504 people across Canada to share new research and knowledge. From the Symposium evaluation results, knowledge was taken up, used and shared by individuals and organizations in the following ways:

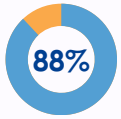
Individuals more aware of Long COVID:

Individuals used/planned to use knowledge to inform:

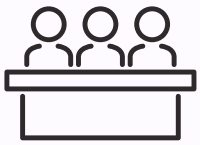


Organizations used/planned to use knowledge to:

Individuals shared knowledge from the Symposium with others:

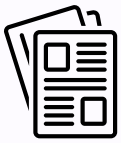


LCW Members Informed Decisions in Long COVID Research, Policy & Practice



Published **20** (2023, 2024) articles that were cited **88x** in **18** policy documents, in **10** countries by **governments, think tanks, international governing organizations** and **legislative bodies**

Served on committees/advisory roles (**20 members** served on **39 committees**)



Contributed to **2 policy briefs**

Trusted Resources for PWLE, Families and Healthcare Providers

A list of trusted resources for patients, families and healthcare providers was gathered and reviewed by PAC members, researchers and clinical partners:

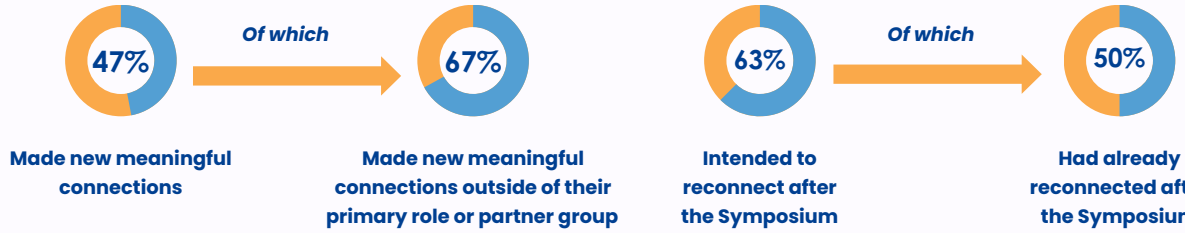
- The webpage attracted **2000+ page views**, **1680+ site sessions** and **1000+ unique visitors**
- Updated regularly and includes **five sections:** Factsheets and checklists, Information for healthcare providers, Where to get support and help, Other resources – news, media, patient stories, Resources to help PWLE get involved in research

Establishing & Strengthening Research Relationships

LCW provided opportunities to establish and strengthen the relationships needed for a diverse and strong 'web' of national and international connections to accelerate Long COVID research and knowledge mobilization.

The 2nd Canadian Symposium on Long COVID, like the first edition, provided opportunity for people across different roles and research areas across Canada to catalyze and strengthen connections.

Results of the Symposium evaluation indicated that participants:



The top 3 reasons for reconnecting were: knowledge exchange and sharing, collaboration opportunities and research projects.

Wide-Reaching Collaborations Influenced by LCW and its Members

Demystifying Long COVID North American Conference 2024

LCW members are actively engaged with international researchers to shape Long COVID discussions:

- Two LCW members served on the organizing committee
- Five sessions at the conference highlighted Canadian research

LCW Contributed to the Success of Cross-Pillar Collaborations.

A foundational component of LCW's approach to building a strong research network is encouraging cross-pillar collaborations. LCW embeds cross-pillar collaboration into its research funding initiatives to provide opportunities for scientists across the research continuum to establish lasting and successful relationships. Early indications are that this approach may be effective. The following are three examples of research teams consisting of diverse LCW scientists who have been awarded funding from CIHR in 2024:

- Nirmatrelvir/ritonavir (Paxlovid) in the prevention of long-term cardiovascular outcomes: The paxloviD Effectiveness For the prEvention of loNg coviD (DEFEND) clinical trial. Funder: CIHR Amount: $100,000
- Learning Best Practices from Integrated Care Models for Long COVID. Funder: CIHR Amount: $680,851
- Taurine Supplementation as a Novel Therapeutic Approach for Neurocognitive Symptoms in the REcovering From COVID-19 Lingering Symptoms Adaptive Integrative Medicine (RECLAIM) Platform Trial. Funder: CIHR Amount: $2,850,669

Establishing & Strengthening Research Relationships (continued)

The Impact of LCW on Research Relationships: A Conversation with Dr. Kelly O'Brien

Kelly O'Brien, PT, PhD
Professor, Department of Physical Therapy, University of Toronto
Co-Director, Rehabilitation Science Network for COVID, Temerty Faculty of Medicine, University of Toronto

Creating a Network of Relationships in Canada and Abroad

Dr. O'Brien, a mid-career scientist and Canada Research Chair in Episodic Disability and Rehabilitation, shared some of her insights with us about how LCW has played a pivotal role in helping to strengthen her network of relationships as well as in establishing a functional pan-Canadian 'network of networks'. Dr. O'Brien has found that the opportunities offered by LCW — individual and LCW pillar projects and cross-national meetings or exchanges — have sparked many new invaluable research collaborations and partnerships with scientists with whom she otherwise did not know, as well as with PWLE and clinicians, in Canada and internationally. She believes these opportunities have been instrumental to advancing inter-professional collaboration and patient and caregiver engagement in Long COVID research, expanding possibilities for research projects to consider the full continuum of care. In that light, Dr. O'Brien feels that LCW's collaborations with rehabilitation scientists and partnership with the Rehabilitation Science Research Network for COVID have helped to put rehabilitation 'on the map' from a Canadian perspective.

> *"LCW has strived to support an expanded research agenda, knowledge translation opportunities and calls to action through building deeper and more diverse relationships and engagement with individuals and organizations dedicated to understanding Long COVID and improving care and outcomes."*

In addition to her leadership on LCW initiatives such as **Measurement and Assessment Paradigm for Long COVID (MAP LC)**, Dr. O'Brien has **co-led international projects** to help identify COVID **rehabilitation research priorities** and better understand and measure **episodic disability in persons living with Long COVID**. Her team recently released a **policy brief** that was an international call to action on rehabilitation and Long COVID for employers, government and insurers to improve conditions for people living with Long COVID and their employers. More information on Dr. O'Brien's research program can be **found here**.

Moving into Year 3

Our priorities for Year 3 will focus on strengthening and expanding research, relationships and knowledge mobilization.

Enhance Indigenous Engagement & Strategy

In Year 3, we are excited to focus on increasing Indigenous voices within LCW with plans to hold workshops and engagements with a number of Indigenous communities and contribute knowledge sharing to key events throughout the year. Our LCW team will seek informal and formal relationships with Indigenous partners and health leaders right from the proposal stage and throughout our ongoing work. Hiring an Indigenous Lead in 2024 has had a significant impact on LCW activities and plans, supporting the inclusion of Indigenous perspectives and experiences throughout research processes. This includes actively working to engage Indigenous partners in our Patient Advisory Council. These individuals will play a crucial role in ensuring that the unique experiences and needs of Indigenous patients with Long COVID are represented authentically and addressed in our work. Our aim is to promote culturally sensitive approaches to understanding and addressing Long COVID in partnership with Indigenous communities, ultimately leading to more equitable and effective outcomes for all patients and caregivers impacted.

Strengthen Research & Funding

To ensure the research support and guidance provided by and to the network aligns with pressing knowledge needs, we will:

- Revisit and refine LCW **research priorities**
- Continue to provide **seed funding** for new research projects, integrating voices of PWLE

Expand Knowledge Mobilization Efforts to Help Improve Clinical Practice

Improving the care that people with Long COVID and their families receive is important to our patient partners and clinicians. We are launching the **Long COVID ECHO program (March 2025)** to support healthcare providers in Long COVID care. This program will:

- Establish a **hub-and-spoke mentorship model**, where experienced practitioners guide primary care providers
- Strengthen **clinical knowledge and skills** in Long COVID management, bridging the gap in structured care and treatment guidelines
- Build a **community of practice** to enhance patient-centered, evidence-informed care

Assessing Network Impact

Understanding the impact of LCW's work is important for continued learning and sustainability. Work in Year 3 will focus on developing and implementing strategies for assessing LCW's influence on research, policy and practice.

Appendix A - Publications - Foundational Projects

Pillar 1

Rationale and design of the multi organ inflammation with serial testing study: a comprehensive assessment of functional and structural abnormalities in patients with recovered COVID-19.
Paterson DI, White JA, Beaulieu C, Sherrington R, Prado CM, Tandon P, Halloran K, Smith S, McCombe JA, Ritchie B, Pituskin E, Haykowsky MJ, Coulden R, Emery D, Tsui AK, Wu KY, Oudit GY, Ezekowitz JA, Thompson RB. Front Med (Lausanne). 2024 Jul 24;11:1392169. doi: 10.3389/fmed.2024.1392169. eCollection 2024.PMID: 39114821

Plasma taurine level is linked to symptom burden and clinical outcomes in post-COVID condition.
Khoramjoo M, Wang K, Srinivasan K, Gheblawi M, Mandal R, Rousseau S, Wishart D, Prasad V, Richer L, Cheung AM, Oudit GY. PLoS One. 2024 Jun 5;19(6):e0304522. doi: 10.1371/journal.pone.0304522. eCollection 2024.PMID: 38837993

Protocol to identify biomarkers in patients with post-COVID condition using multi-omics and machine learning analysis of human plasma.
Khoramjoo M, Srinivasan K, Wang K, Wishart D, Prasad V, Oudit GY. STAR Protoc. 2024 Jun 21;5(2):103041. doi: 10.1016/j.xpro.2024.103041. Epub 2024 Apr 27.PMID: 38678567

Sequential multi-omics analysis identifies clinical phenotypes and predictive biomarkers for Long COVID.
Wang K, Khoramjoo M, Srinivasan K, Gordon PMK, Mandal R, Jackson D, Sligl W, Grant MB, Penninger JM, Borchers CH, Wishart DS, Prasad V, Oudit GY. Cell Rep Med. 2023 Nov 21;4(11):101254. doi: 10.1016/j.xcrm.2023.101254. Epub 2023 Oct 26.PMID: 37890487

Appendix A - Publications - Foundational Projects (continued)

Pillar 2

Establishing a Framework of Measurement for use in Long COVID research and practice: protocol for a scoping review involving evidence review and consultation.
McDuff K, Bhéreur A, Kadakia Z, Corrales-Medina VF, Gross DP, Janaudis-Ferreira T, Lam G, Naik H, Paterson TE, Sanchez-Ramirez D, Sasseville M, Sekar A, Vohra S, Bayley M, Birch S, Busse J, Cameron J, Kaup C, Cheung AM, Churchill K, Edgell H, Goulding S, Hamilton C, Jaglal S, Kumar P, Levin A, Munblit D, Naye F, O'Hara M, Plaismond J, Rutledge M, Supper JMW, Quinn KL, Wasilewski M, Wilkins A, O'Brien KK. BMJ Open. [Submitted] October 1, 2024.

Pillar 3

A National Atlas to Improve the Study of Canadians Living with Long COVID (Post- COVID-19 Condition).
Ahmad A, Janjua NZ, Lix L, et al. Can J Public Health [Submitted] 2024.

Pillar 4

Development of a minimum data set for long COVID: a Delphi study protocol.
Amah A, Kumar P, Ejalonibu H, Chavda B, Aburub A, Greene R, Kemp D, Frederick D. E, Mazurik K, Long COVID Web, Slagerman S, Dumitrescu D. I, & Groot G. BMJ Open 2024;14**:**e090304. doi: 10.1136/bmjopen-2024-090304

A review of Patient Reported Outcome Measures (PROMs) for characterizing Long COVID (LC) —merits, gaps, and recommendations.
Ejalonibu H, Aburub A, Amah A, Kumar P, Frederick D. E, & Groot G. J Patient Rep Outcomes 8, 101 (2024). doi: 10.1186/s41687-024-00773-1

Appendix B - Letters of Support Collaboration on Project Grants

NPAs	Title	Funding Agency	Amount and Duration
Lawrence Richer, Gavin Oudit	Taurine Supplementation as a Novel Therapeutic Approach for Neurocognitive Symptoms in the REcovering From COVID-19 Lingering Symptoms Adaptive Integrative Medicine (RECLAIM) Platform Trial	CIHR	$2,770,000, 3 years
Angela Cheung	A Randomized Phase 2 Dose Ranging, Active Control Trial of Using a Sequential Rebreathing Oxygen Mask (Hi-OxSR) to Increase PCO2 for the Treatment of Post COVID Cognitive Dysfunction (RECLAIM-Hi-OxSR)	CIHR	$1,131,999, 2 years
Kieran Quinn	Nirmatrelvir/ritonavir (Paxlovid) in the prevention of long-term cardiovascular outcomes: The paxloviD Effectiveness For the prEvention of loNg coviD (DEFEND) clinical trial	CIHR	$100,000, 1 year
Yun K. Tam	Commercialization of Cordyva: A Potent and Safe Treatment of Long COVID	Alberta Innovates	$300,000, 2 years
Nadia Gosselin	Hypersomnolence disorder in post-acute COVID-19 syndrome	CIHR	$795,600, 5 years
Elham Dolatabadi	The Socio-economic Impact of the Post-COVID-19 Condition in the Canadian Context	Centre for Research on Pandemic Preparedness and Health Emergencies	$100,000, 1 year
Naveed Janjua, Jat Sandhu	Multi-Provincial Surveillance Systems for Post-COVID-19 Condition and Outcomes (MSPCo)	PHAC and MSHRBC	$1,431,736, 3 years
Amélie Forget	Support for the Prevention, Research, Response and Resilience to CRIses Affecting Health Network - PR3CRISA	FRQS	$4,000,000, 8 years
Simon Décary	Learning Best Practices from Integrated Care Models for Long COVID	CIHR	$680,851, 4 years
Alain Moreau	Interdisciplinary Canadian Collaborative Myalgic Encephalomyelitis Research (ICanCME) Network	CIHR	$2,000,000, 4 years

Appendix C - Highlighted Poster Excellence Award

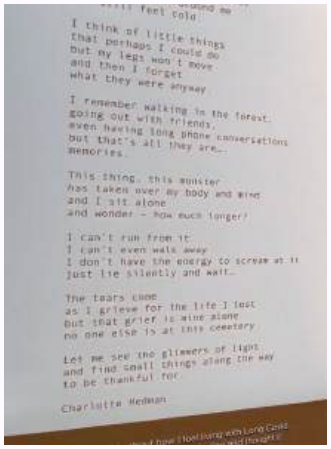
1. **Kelly O'Brien,** University of Toronto, Rehabilitation Science Research Network for COVID. Research Priorities in COVID Rehabilitation: A Framework from the Rehabilitation Science Research Network for COVID
2. **Hiten Naik,** University of British Columbia, MyGuide Long COVID: an online self-management tool
3. **Mobin Khoramjoo,** University of Alberta, Linking Plasma Taurine Levels with Post-COVID Outcomes. Reveals Therapeutic Implications
4. **Mansoure Jahanian,** McGill University, How Post COVID-19 Condition (PCC) biomarkers change over time?
5. **Jérôme Bédard-Matteau,** McGill University, The Th17 inflammation axis as a potential mediator of persistent fatigue symptom in postCOVID-19 condition
6. **Tania Janaudis-Ferreira,** McGill UniversityVirtual Rehabilitation for Individuals with Long COVID: a Randomized Controlled Trial

Top 3 Poster Award

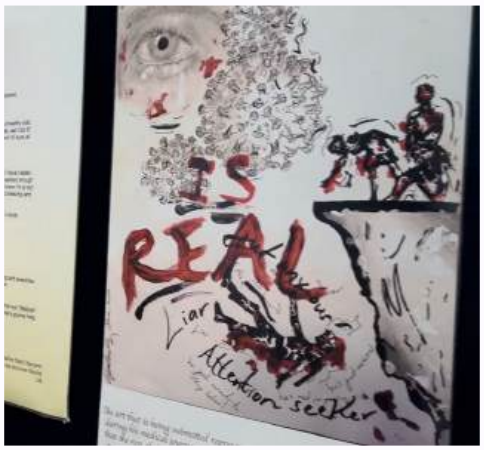
- **1st place: Hamideh Ghazizadeh,** University Health Network, Genetic Susceptibility for Long COVID: A Systematic Review
- **2nd place: Zhongyu Huang,** University of Toronto, Sinai Health System and University Health Network, Post-COVID Condition and Neurocognitive Outcomes: A Cross-Sectional Study
- **3rd place: Dahn Jeong,** University of British Columbia, British Columbia Centre for Disease Control, Characterizing Subgroups of Long COVID: Insights from A Population-level Latent Class Analysis in British Columbia, Canada

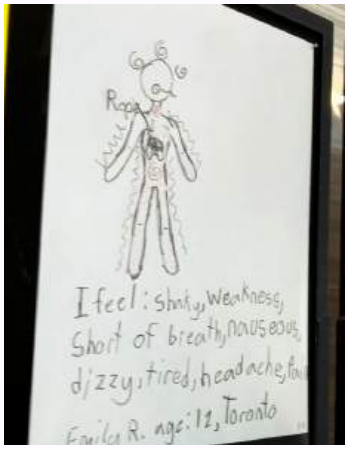
Trainee Poster Excellence Award

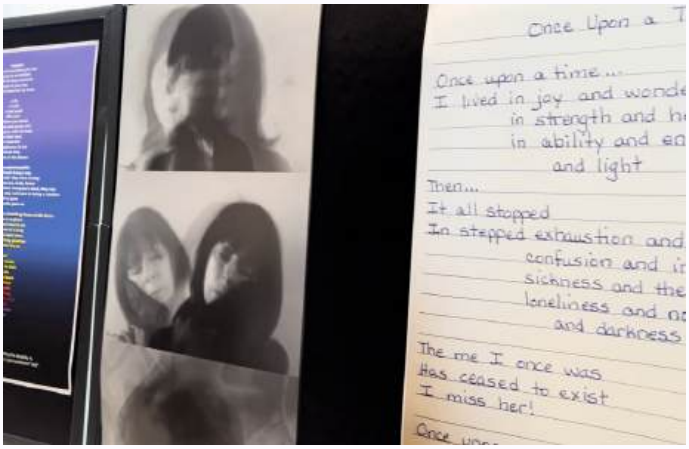
1. **Xueyi Chen,** University of Alberta, Post COVID- 19 Outcomes among Adults in Alberta, Canada: Creation of Database Linking Survey and Administrative Data
2. **Estefania Espin,** University of British Columbia, Gene-expression analysis of a long-COVID paramedics cohort
3. **Kelly Hall,** Saskatchewan Centre for Patient Oriented Research, Exploring Self-Care Strategies for Chronic Fatigue Syndrome/Myalgic Encephalomyelitis (CFS/ME) and Their Implications for Long COVID: A Scoping Review
4. **Faith Olarinde,** University of Manitoba, Do physiological responses to orthostatic stress challenges differ between long-covid and non-long-covid individuals? A cross-sectional study
5. **Mei Nee Chiu,** McMaster University, Persistent respiratory burden in Post-acute COVID-19 Sequelae is associated with systemic inflammation
6. **Monserrat Casado Sanchez,** University Health Network, The Brain After COVID-19: Uncovering Evidence of Altered Brain Functions Through Electroencephalography











Images from the Long COVID Art Gallery at the 2nd Canadian Symposium on Long COVID in Edmonton, AB. All artwork from the gallery can be viewed here.