Ontario
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Unit

Ontario SPOR SUPPORT Unit
Response to the Coronavirus (COVID-19) Pandemic

September 2020

The impact of the COVID-19 pandemic on society is unprecedented in modern times and will likely pervade our lives for years to come. Never before has it been more essential to mobilize Canada's research excellence and innovation toward improving the efficiency of the health system and the health of Canadians. In response, OSSU's research centres have pivoted their focus to tackling critical issues and unmet needs regarding COVID-19 utilizing patient-oriented approaches to health and health services research. Their work will have impacts that span local, provincial and national boarders.

The research centres listed below receiving funding from OSSU as well as from other funding agencies that contribute toward the collective impact of their work. OSSU's funding model allows centres to nimbly respond to time-sensitive critical issues facing the health care system. Below, you will find some of the critical work underway at OSSU research centres to combat the COVID-19 pandemic:

Applied Health Research Centre
The Applied Health Research Centre (AHRC) is an academic research organization at the Li Ka Shing Knowledge Institute of St. Michael's Hospital at Unity Health Toronto. The AHRC has expertise in clinical study design, pragmatic methodology, study operations and coordination, and biostatistics. The AHRC offers a comprehensive services package – a true one-stop-shop for patient-oriented clinical research.

Website: www.hubresearch.ca

AHRC is supporting 31 research projects ongoing or under development in critical questions regarding COVID-19 such as:
- the effectiveness of social distancing provisions and incentives;
- epidemiological studies of populations including children and residents of long-term care facilities;
- therapeutics for the prophylaxis and management of COVID-19;,
- mental health impacts of COVID on patients and hospital staff;
- a study to definitively determine if high dose heparin versus low dose heparin can improve outcomes in hospitalized COVID-19 patients with established abnormal blood clotting; and
- a study entitled "*Direct Income SupporT and Advice Negating Spread of Epidemic COVID-19: a randomized controlled trial*" - measuring the effects on COVID exposure and adherence to physical distancing guidance.

Click here to learn more.

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Centre for Rural and Northern Health Research

The Centre for Rural and Northern Health Research (CRaNHR) is an academic and applied health research centre at Laurentian University (Sudbury) with a mandate to conduct interdisciplinary research on rural health, with a growing focus on Indigenous and Francophone populations, particularly in rural and northern communities.

Website: www.cranhr.ca

CRaNHR's work on the pandemic includes:
- providing data analysis and epidemiological support to the Public Health Sudbury and Districts on COVID-19 and related issues (complete, possibility of renewal);
- developing working models on health human capital planning for the Ministry of Labour, Training and Skills Development;
- Reviewing programs to enhance emotional wellness for indigenous children in rural and remote communities as part of a CIHR COVID-19 Rapid Research Fund grant in mental health and substance abuse.
- Working with MLD Solutions Inc on understanding effective interactive digital content in support of mental health.
- working with the Ontario Pharmacies Evidence Network (OPEN) to better understand vaccination capacity in Ontario;
- developed geographic definitions for COVID response on Manitoulin Island, Ontario;
- Rapid ad hoc health planning support for Ontario Health (north) and local Ontario Health Teams.
- supporting 14 research teams develop applications to CIHR and other funding organizations such as the Ministry of Health, Physician Services Inc. (PSI) Foundation and the Northern Ontario Academic Medicine Association (NOAMA)
- Funded projects:
  - Valuing Indigenous emotional wellness: Reviewing programs to enhance support for children in rural and remote communities [CIHR]
  - Understanding effective interactive digital content in support of mental health [MITACS]

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Clinical Trials Ontario

Clinical Trials Ontario (CTO) is improving the clinical trials environment in Ontario by streamlining research ethics review and other processes to conduct trials, developing resources for investigators and sponsors with respect to patient engagement with trials, and engaging patients and the public in recognizing the health and economic benefits of clinical trials.

Website: https://www.ctontario.ca

During the pandemic, CTO has:

- processed 74 COVID-19 clinical trials with an average Research Ethics Boards (REBs) approval time of 16 days;
- provided enhanced training resources, on boarding and extended Helpdesk hours to support research teams, sponsors and REBs in submitting and reviewing urgent applications for COVID-19 research;
- disseminating pertinent information to the research community regarding REB requirements for COVID-19 submissions;
- launched a public web portal dedicated to COVID-19 resources and updates;
- begun planning for future updates to the system that will further enhance its tracking of research related to pandemics and other emergency situations

Click here to learn more.

Health System Performance Network
The Health System Performance Network (HSPN) is a multi-university and multi-institutional network of Ontario researchers working closely with policy and provider decision makers, to find ways to improve management of the health system. The network includes investigators, trainees and project staff developing high quality evidence that is relevant to health system policy development and decision making for performance excellence.

Website: www.hspn.ca

During the pandemic, HSPN has been:
- Creating customized team-specific quantitative and qualitative reports on readiness to implement integrated care for Ontario Health Teams.
- Developing a provider experience survey for evaluating system-wide quadruple aim evaluations.
- Developing a series of guidance documents on implementing population health management.
- Developing indicators and a Learning Health System developmental evaluation plan for implementation in Ontario Health Teams in the Fall.
- Participated in a paper in BMJ on the equity of COVID and the pandemic response: https://www.bmj.com/content/369/bmj.m2149
- And co-facilitated in a webinar with the International Foundation for Integrated Care that was focused on the centrality of integrated care in response to COVID that included two patient panelists https://vimeo.com/423320621
- Received a new CIHR grant on evaluating implementation of a health information system using the learning health system model

Through its association with the Institute for Better Health, HSPN is also:
- conducting local forecasting/trending of pandemic infections, Personal Protective Equipment (PPE) usage, hospital capacity (e.g, ICUs, ventilators), and human resource capacity.

- worked on internal guidance documents for THP on a framework for opening to elective procedures as the pandemic continues (not as extensive as the Ontario Health report).
- undertaking analyses examining the outcomes of patients screened for COVID through in-person, virtual and drive through modalities (for individuals with both positive and negative test results).
- investigating novel PPE production streams – shields, masks, mask holders etc.
- rapidly launching new clinical trials on investigational products to treat or prevent COVID-19 disease progression.
- launching many new research projects related to disease surveillance/epidemiology (e.g, in children), health service innovations (e.g, virtual care), patient/caregiver experience, AI/data modelling and others.

Click here to learn more.

ICES
ICES provides researchers, students and knowledge users with access to the largest and most comprehensive collection of health-related data in Ontario through ICES Data & Analytic Services (ICES DAS). ICES DAS offers several types of services to researchers who receive funding from the public sector including access to research-ready, linked health administrative data and analytic tools through a secure online desktop infrastructure.

Website: www.ices.on.ca

During the pandemic, ICES has been supporting the COVID response via 4 key tracks of work:
1) Conducting Applied Health Research Questions (AHRQs) to directly provide health system stakeholders with rapid analytics and evidence and researcher-led projects. To date, ICES has provided access to data or initiated studies related to COVID-19 for 103 projects. Titles of these projects are listed in table 1.
    a. ICES has been providing **bi-weekly** reports to the provincial emergency Command Table on testing in Long Term Care and Retirement Homes.
    b. ICES has been providing **weekly** reports to the Ministry of Health (MOH) on testing by key demographics in the province.
    c. ICES has provided the Indigenous leadership organizations, including the Chiefs of Ontario and the Métis Nation of Ontario, with weekly reports of cases and testing in First Nations and Métis people. In addition, ICES has been developing reports for individual Indigenous Communities and urban Indigenous health services organizations upon request.
2) Obtaining key additional data:
    a. Daily eHO/OH feeds of COVID test data linkable to ICES data repository (currently being received, cleaned and linked on a daily basis). The algorithm to clean

these data has been made publicly available and adopted by key health system stakeholders such as the Ministry of Health (MOH).

    b.   Negotiated receipt of key outcome data (weekly feeds of hospital discharge and emergency department visit records from the Canadian Institute for Health Information (CIHI).

    c.   Weekly feeds of Electronic Canadian Triage and Acuity Scale (eCTAS) data, emergency department triage data, from Ontario Health-Cancer Care Ontario (OH-CCO) until the end of October 2020, with negotiations underway for a six-month extension.

    d.   Negotiating monthly feeds of Critical Care Information System (critical and intensive care unit data) expected to be received shortly.

    e.   Additional data from MOH, including information regarding residential addresses and long-term care and retirement homes, with the negotiation of the integrated Public Health Information System (iPHIS) dataset underway.

3) Use ICES's section 45 authority under PHIPA to enable an external researcher who is responding to a question from the command table/Public Health Ontario (PHO) /MOH or other COVID related knowledge user to undertake a rapid analysis at ICES. No REB approval is needed under section 45. For example, this could support modelling analyses of several groups currently supporting the command table – early results have been published from one McMaster-based team (Age-dependence of healthcare interventions for SARS-CoV-2 infection in Ontario, Canada - https://www.medrxiv.org/content/10.1101/2020.09.01.20186395v1).

4) For machine learning researchers, we have similarly used ICES's section 45 authority to enable machine learning (ML) researchers to access to COVID-related datasets in the high-performance computing platform (HAIDAP) that ICES has built in partnership with Vector and HPC4Health. This model would allow for rapid data access and would be more flexible (enabling access to code repositories external to ICES) to accommodate ML researcher needs.

5) Support for additional COVID-19 related initiatives

    a.   ICES continues to support the MOH initiative Ontario Health Data Platform (OHDP) formerly known as PANTHR.

        i.   ICES is contributing through sitting on advisory boards and will be providing raw data and cleaned and curated data and documentation into the platform where authorized.

       ii.   ICES analytic environments DAS, HAIDAP, ICES sites – formally integrated as part of the OHDP (referred to as OHDP-I) and available to all approved OHDP projects.

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1. The OHDP formally launched on July 15, 2020 with the OHDP-I operational. The second high-performance platform at Queen's (OHDP-Q) is in development.
2. Currently there are 37 Ministry-approved OHDP projects, 36 of which will use an ICES platform (OHDP-I).
   iii. ICES negotiated for funding to support OHDP-I operations and enhancements to support the provincial COVID-19 response.
   b. ICES is providing daily feeds of cleaned OLIS COVID-19 data to Ontario Health-Cancer Care Ontario (OH-CCO).

Table 1. List of studies/initiatives related to COVID-19 initiated at ICES since March 01, 2020

	Applied Health Research Questions (Knowledge User Driven)
1.	Access to testing and hospital outcome data for COVID modeling; supporting MoH Command Table I
2.	Command Table reports: COVID testing results by key demographics (daily reports for LTC, weekly reports provincially)*
3.	COVID risk factors and surge-capacity planning in northern communities
4.	COVID-19 impact on economic activity in health-care sector[†]
5.	COVID-19 impact on vulnerable populations (weekly reporting)
6.	COVID-19 Testing in Ontario retirement homes
7.	How has the COVID-19 pandemic affected access to health care for sexual assault and domestic violence survivors?
8.	Impact of COVID-19 on outcomes of patients with kidney disease
9.	Mechanical ventilation and ECMO in elective procedures
10.	Modelling ICU utilization and ventilator demand for COVID-19 in the second wave
11.	Network effects, PPE shortages, and other key factors in the spread of COVID-19 in Ontario healthcare workers
12.	Proportion of adults/children living in Thunder Bay with COVID-tests, cases, ER visits[†]
13.	Surge-capacity planning for [a specific GTA] hospital
14.	Surge-capacity planning for Ontario for Public Health Ontario (PHO)
15.	Hotspot identification and analysis of COVID-19 (COVID-19 Hotspots)
16.	Forecasting the progression of COVID-19
17.	Access to testing and hospital outcome data for COVID modeling; supporting MoH Command Table II

18.	7 AHRQs supporting Indigenous community requests
ICES Investigator-led initiatives**	
25.	Association between ABO blood type and coronavirus illness or SARS: case-control study
26.	Impact of the COVID-19 pandemic on drug utilization: Special attention on potential treatments, NSAIDS, ACEs and ARBs
27.	Trends in wait-times for aortic stenosis treatment in Ontario, Canada
28.	COVID-19 in Immigrants[†]
29.	Association of Cardiovascular Risk Factors and Angiotensin Inhibitor Drug Use with COVID-19 Infection and Subsequent Adverse Cardiovascular Events
30.	Changing patterns of opioid agonist therapy use and associated outcomes during the COVID-19 pandemic in Ontario
31.	Leveraging population-based data to validate mathematical modelling of COVID-19 transmission and inform population-specific interventions
32.	Health impacts of COVID-19 on individuals at risk of homeless
33.	The impact of the 2019 coronavirus (COVID-19) outbreak on physicians in Ontario
34.	Epidemiological features and clinical outcomes of children with confirmed severe acute respiratory syndrome coronavirus 2 in Ontario, Canada
35.	Statin Use and the Risk of Coronavirus Disease 2019 (COVID-19) Related Harms
36.	Predictors of severe outcomes associated with respiratory viruses (Sub-study of: Leveraging population-based data to validate mathematical modelling of COVID-19 transmission and inform population-specific interventions)
37.	Informing Ontario Cardiac Resource Needs and Wait-time Consequences during the COVID-19 Pandemic
38.	Validating diagnostic codes for acute respiratory illnesses
39.	Evaluating associations between drug exposure and coronavirus detection in suspected lung infection: a pharmacopeia-wide association study
40.	Prediction of Severe Outcomes Among Covid Patients: A Machine learning approach
41.	Impact of COVID-19 on the health care use, quality of care, and outcomes among long-term care residents with varying frailty levels
42.	Real-world cardiovascular safety of hydroxychloroquine for the treatment or prevention of COVID-19 infection

43.	Evaluation of admissions for stroke, myocardial infarction, and death as well as adherence to cardiovascular medications during COVID19
44.	Characterizing the burden of surgical care in CoVID-19 positive patients
45.	Health impacts of COVID-19 on snowbirds
46.	Creation of a Learning Health System for Patients with Cardiovascular Diseases during the COVID-19
47.	Primary Care Responses to the COVID-19 Pandemic in Ontario
48.	Cardiac surgery triaging tools to reduce mortality and unplanned harm during the COVID-19 crisis
49.	COVID-19 Cancer Surgery and Infection
50.	Cancer Surgery and COVID19: Infection Rate, Processes and Outcomes
51.	Duration of COVID 19 Viral Shedding
52.	ONDRI –Understanding the impact of COVID-19 in persons with neurodegenerative diseases
53.	Analytic approaches to understanding Covid-19 infections and outcomes in the population
54.	Cancer-related Health Care Utilization and Outcomes During the Current (COVID-19) and Prior Pandemics
55.	Prevalence, predictors and downstream outcomes of myocardial injury in patients with COVID-19 infection
56.	COVID-19 and diabetes: Clinical Outcomes and Navigated NEtwork Care Today - the CONNECT study
57.	Impact of COVID19 on surgery in Ontario
58.	Patterns of Mental Health Service Use and Outcomes for Postpartum Women in Ontario During and After the COVID-19 Pandemic
59.	Baseline Characteristics, Multimorbidity and Outcomes Among Patients with Laboratory-Confirmed COVID-19 in Ontario
60.	Family Physician Virtual Visits during COVID-19
61.	The risk of COVID-19 infection and its related outcomes in patients with immune-mediated inflammatory diseases (IMID) – A population-based study
62.	Outpatient Care for COVID-19
63.	A serial cross-sectional study of acute care transfer from long-term care: Evaluating the impact of COVID-19
64.	Comparing Risk Factors and Prediction for Acute Respiratory Infections and Covid-19
65.	Exploring excess deaths in older women and men during the COVID-19 pandemic: Making the most vulnerable visible
66.	Predicting survival of long-term care residents with COVID-19 infection
67.	COVID-19, Anti-Coagulation, and Adverse Outcomes (CACAO)

68.	COVID-19 in Patients with Solid Tumor and Hematologic Malignant Diseases in Ontario
69.	The Effects of the Health System Response to the COVID-19 Pandemic on Chronic Disease Management
70.	Estimating Excess deaths due to covid-19
71.	Impact of COVID-19 on frail population in Ontario: has the language an effect on the health outcomes?
72.	Outcomes of Non-COVID-19 Hospitalized Patients in Ontario During the First Six Month of the Pandemic
73.	Telemedicine use among rural residents across three countries
74.	Cancer Outcomes resulting from the Covid-19 pandemic resource reallocation in Ontario
75.	Impact of COVID-19 on Antibiotic Use and Resistance
76.	Incidence of COVID-19 among childhood cancer survivors in Ontario
77.	The response of provincial health systems to COVID-19: Service provision and costs across health sectors, First Nations, and other populations
78.	The impact of the COVID-19 pandemic on virtual care use, total healthcare utilization and spending, and patient outcomes
79.	Examining the Effects of COVID-19 on Alternate Level of Care and Care Trajectories: A Time Series and Longitudinal Study
80.	Improving the care of older adults living with dementia across Canada during the COVID-19 pandemic
81.	The impact of the COVID-19 pandemic on the rates of preterm birth, stillbirth, and severe maternal morbidity in Ontario
82.	Risk of COVID-19 infection and complications with diabetes drugs
83.	Improving Canadian Outcomes Research On the Novel SARS-CoV-2 using Analytics: the CORONA Consortium - Project 1
84.	Improving Canadian Outcomes Research On the Novel SARS-CoV-2 using Analytics: the CORONA Consortium - Project 2
85.	Improving Canadian Outcomes Research On the Novel SARS-CoV-2 using Analytics: the CORONA Consortium - Project 3
86.	Deferred Care Outcomes in Canadian Children and Youth: Measuring and Mitigating Risk during COVID-19
87.	Pediatric Primary Care Access during the COVID-19 Pandemic
88.	Improving prescribing of medications at the end-of-life in long-term care facilities during and after the COVID-19 pandemic
89.	Ontario Real-Time COVID Data and Analytics Collaborative ("howsmyflattening.ca")
DAS Requests**	
90.	Sex-specific profile of patients admitted to intensive care units with COVID-19: Primary prevention to reduce healthcare burden

91.	Impact of COVID-19 on Surgical Care in Ontario- Identification of Gaps in Essential Procedures and Strategies to Enhance Surgical
92.	The Ontario Health Study - Covid-19 Ancillary Study
93.	Canadian COVID-19 Emergency Department Registry (DASH 2020-008) [†]
94.	Multimorbidity and Other Factors Associated with Susceptibility to and Outcomes of Covid-19: Focus on Long-Term Care Homes
95.	Risk factors for acquisition of or serious illness due to Covid-19 infection: an analysis within the Canadian Study of Diet, Lifestyle, and Health
96.	Vulnerable and Left Behind: Autism Community Experiences in Canada During COVID-19
97.	COVID-19 and cancer care disruptions: effects on healthcare utilization and health outcomes in Ontario
98.	COVID-19 in Rheumatoid Arthritis: A comparative cross-sectional study on risk and predictors of infection, admission and mortality and effect of immunomodulating treatments
99.	Interrupted Time Series Study of the effects of COVID 19 global pandemic on emergency room visits and mortality to non-COVID related illnesses
100.	Examining risk of infection in patients with psoriasis
101.	Association between SARS-CoV-2 infection and disease severity among men on androgen deprivation therapy for prostate cancer[†]
102.	Palliative care and health care utilization outcomes at the end of life for patients with cancer before and after the COVID-19
103.	COVID-19 Windsor/Essex County[†]

* Original request resulted in sub-studies
** Project documentation/request completed
[†] This project is in early stages (no Privacy Impact Assessment or Confirmation of Feasibility)

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INSPIRE – Primary Health Care OSSU
INSPIRE – Primary Health Care OSSU focuses on Primary Health Care (PHC) research, assisting Ontario researchers with primary health care-specific research consultation, knowledge translation and exchange (KTE), capacity building activities and patient engagement resources.

During the pandemic, INSPIRE-PHC OSSU:
- has responded to three Applied Health Research Questions (AHRQ) from health system partners;
- is supporting six primary care research studies related to COVID-19;
- leadership are participating in nine Ontario Health primary care committees/tables;
- provide external review on Public Health Agency of Canada (PHAC) guidance on Personal Protective Equipment (PPE) use in Primary Care;

- Establishing a 9-12 patient group to support the patterns of primary care during COVID study;
- Participating in a CIHR funded tri-provincial study entitled the "PUPPY Study - Problems Coordinating and Accessing Primary Care for Attached and Unattached Patients Exacerbated During the COVID-19 Pandemic Year: A Longitudinal Mixed Methods Study with Rapid Reporting and Planning for the Road Ahead"

Click here to learn more.

McMaster Health Forum | Public and Patient Engagement Collaborative
The McMaster Health Forum | Public and Patient Engagement Collaborative co-produces and supports the use of patient-oriented research about system issues; elicits patient values to inform system decisions; designs and evaluates approaches to combining evidence and values with other influences on the decision-making process; and, involves the full range of policy-makers and stakeholders in all aspects of its work and supports their use of what's learned through rigorous knowledge-translation approaches that are appropriate to the system level.

During the pandemic, the **McMaster Health Forum** (www.mcmasterforum.org):
- jointly co-leads the secretariat, with its partner at the Ottawa Hospital Research Unit, for the COVID-19 Evidence Network to support Decision-making (COVIDEND), which:
  - **has seven major achievements to date**: **1)** regularly updated guide to COVID-19 evidence sources, which can be used to quickly review high-yield, high-quality sources of evidence to respond to decision-makers' urgent questions; **2)** living hub of COVID-19 knowledge hubs, which can be used to identify organizations that are already supporting decision-making with a specific topic or sectoral focus, with a specific type of resource (e.g., recommendations, evidence syntheses or data), and/or with a specific geographic or linguistic scope [**searchable version coming soon**]; **3)** taxonomy of decisions where evidence will be needed, which spans public-health measures, clinical management of COVID-19 and pandemic-related health issues, health-system arrangements, and economic & social responses; **4)** principles and resources to support evidence packaging for decision-makers; **5)** description of an evidence-support model that can provide responses to decision-makers questions – both what's known and who's doing what – in timelines as short as 3-4 hours; **6)** tips and tools for those supporting decision-makers; and 7) resources to support researchers considering or conducting an evidence synthesis (with an interactive flow diagram)
  - **has four current major priorities**: **1)** an inventory of best evidence syntheses linked to specific policy decisions (where high quality up-to-date (preferably living) syntheses will be identified making it even easier for decision makers to find the best evidence); **2)** a horizon scanning panel of key global stakeholders that meets monthly to identify recurrent and emerging issues where syntheses would be needed in the coming months; **3)** a prioritisation process to identify where living systematic reviews are most needed (using gaps in the inventory and insights from the horizon scanning panel) that can be used to encourage groups to collectively take responsibility for a full set of living

reviews addressing all priority issues related to the pandemic and pandemic response; and **4)** developing a virtual COVID-END community of any interested groups globally conducting evidence syntheses, guidance and decision support related to COVID-19.

- has developed, in its role as co-lead of RISE, a rapid-response model to support Ontario policymakers and stakeholders with the best available evidence about COVID-19 in timelines as short as 3-4 hours - browse the rapid evidence profiles

During the pandemic, the **PPE Collaborative (https://healthsci.mcmaster.ca/ppe)**

- Supported research teams (pre-award and post-award) investigating aspects of COVID/pandemic:
    - o New research grants awarded through internal McMaster and Labarge COVID-19 research competitions:
        - ▪ The impact of priority setting on pandemic preparedness and response: A Global comparative analysis of the role of priority setting and equity during the COVID-19 pandemic (PIs: Kapiriri L, Essu B; Co-applicants: Abelson J, Biemba G, Danis M, Gibson J, Goold S, Nouvet E, Sundman L, Williams I).
        - ▪ The #Caremongering social media campaign: Understanding its impact and adaptability to combat social isolation among older adults affected by COVID-19 (PI: Seow H; Co-applicants: Abelson J, Chan T, Gardner P, Moll S, Urowitz S, Williams A)
- Participated in aspects of patient engagement related to COVID/pandemic activities
    - o Consultations and interviews with patient partners (previous and planned for Fall 2020) to discuss the challenges associated with their roles during the COVID-19 pandemic (Ontario-specific)
        - • this is work that falls under responsibilities with the OHT Program of Central Supports

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MIRA | Collaborative for Health & Aging

The MIRA | Collaborative for Health & Aging brings together world-class researchers from the McMaster Institute for Research on Aging (MIRA) and the McMaster School of Nursing's Aging, Community and Health Research Unit (ACHRU) with a mandate to support optimal aging in Ontario through capacity building and advance Ontario's health care system by using an integrated, coordinated, and people-centred approach. The collaborative seeks to address the unique needs of older adults and their caregivers through resources, consultation supports, data access, and technical services in patient-oriented research in aging. Website: https://mira.mcmaster.ca/research/research-centres/mira-collaborative-for-health-aging

During the pandemic, the MIRA | Collaborative on Health & Aging:

- opened an additional offering of a free online course entitled "*Caregiving Essentials Course*" to support caregivers; providing content to the McMaster Optimal Aging Portal that helps older adults stay active and engaged while practicing physical distancing. The course also won a 2020 Program Award from the Canadian Association for University Continuing Education;
- published guidelines for providers caring for COPD patients in the Canadian Journal of Respiratory, Critical Care, and Sleep Medicine;
- published guidance for Occupational Therapists, Physical Therapists, Speech-Language Pathologists and Assistants on *Rehabilitation for Patients with COVID-19* from the School of Rehabilitation Science, McMaster University;
- provided content for a publication entitled "Being Prepared in the Time of COVID-19" for The Conversation Starter (Institute for Healthcare Improvement);
- presented as part of 10 webinars for audiences including the McMaster Health Forum, Diabetes Action Canada, OSSU, and Pallium Canada on topics including the use of big data to understand the COVID-19 pandemic, long-term care in Ontario, hospital-to-home transitions, and engaging with patients and caregivers while social distancing measures and visiting restrictions are in place;
- partnered with the Hamilton Public Library to offer talks for community members on aging research, beginning with "Navigating Life During Personal Disruption," which will be offered both live and through the library's YouTube channel;
- contributed to a COVID-19 Rapid Evidence Profile #3 (27 April 2020) on asymptomatic screening to identify COVID-19 case and to prevent transmission;
- contributed to development of a toolkit, fact sheets and resources for identifying vulnerable home care patients – available from Big Data and Geriatric Models of Care: title: DIVERT-CARE, Supporting Home Care Cardiorespiratory Patients during the COVID-19 Pandemic;
- Created the COVID Caregiver Back-Up Plan tool, to support primary caregivers to communicate important information about caring for their loved ones, especially in situations where their regular caregiving schedule has been interrupted or altered;
- participated in various news articles and media interviews for radio and television with local and national reach;
- launched CLSA-COVID Study: National Study Collecting Data on Aging Adults' Experience during COVID-19;
- Launched CLSA Seroprevalence Study, investigating age- and sex-specific prevalence of COVID-19 across Canada (by province). This study will collect samples from CLSA's existing participant pool;
- the CLSA research platform will be used to launch a CLSA COVID brain study, investigating the impact of COVID-19 on brain health. This study will draw from the pool of suspected or confirmed positive participants from the seroprevalence study and study the impacts of COVID-19 on older adults' brains through MRI and cognitive testing;
- provided 3 research projects with catalyst funding through the Labarge Centre for Mobility in Aging COVID-19 Grant;
- supported 8 research project applications to various funding agencies and organizations;

- developed the "MIRA Ideas Exchange", a researcher discussion session that provides an opportunity for MIRA members to discuss and work through the challenges and opportunities created by conducting their research during COVID-19;
- developing Collaborative webinar series to highlight the research by Collaborative members at McMaster University that has been impacted by the COVID-19 pandemic. This includes research that has been developed to address the COVID-19 pandemic directly (e.g. treatment, prevention, screening for those who have or are at risk of contracting COVID-19; LTC; health care workers), or indirectly (e.g. displaced health care services, older adult priority populations, marginalized populations, pivots in current research programs in aging) and the patient engagement tools, strategies and approaches that are being used or adapted in the context of COVID-19.
- Webinar: Gannan R, Maybee A, Smith M. OSSU Patient Partners Webinar | Patient partnership and COVID-19 Research in Ontario. OSSU. July 9, 2020.
- Webinar: Ganann R, Beleno R. Engaging Patient and Public Research Partners in the Aging, Community & Health Research Unit (ACHRU) Community Partnership Program for Diabetes Self-Management for Older Adults – Canada. Diabetes Action Canada. July 8, 2020.
- Webinar: Whitmore C [Trainee]. 2020 CLSA Webinar Series: Engaging in Research on Aging: How trainees and researchers connect with the Canadian Longitudinal Study on Aging. CLSA. June 30, 2020.
- Invited Presentation: Markle-Reid M. Optimizing hospital to home transitions for older adults with stroke and multimorbidity: A pragmatic effectiveness-implementation trial of an integrated transitional care intervention. Hamilton/Burlington Stroke Community Re-Engagement Network. Saint Elizabeth Health Care, Hamilton, ON. June 12, 2020.
- Webinar: Gauvin FP, Markle-Reid M, McAiney C, Ganann R. Part 2 – Insights from the COVID-19 Response. McMaster Health Forum Top Ten Webinars. June 11, 2020.
- Webinar: Gauvin FP, Markle-Reid M, McAiney C, Ganann R. Part 1 - Older Adults with Complex Health and Social Needs. McMaster Health Forum Top Ten Webinars. June 9, 2020.

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Ontario Brain Institute
The Ontario Brain Institute (OBI) is pioneering an open-source, "team science" approach to brain health. OBI integrates the will, knowledge and resources that creates new connections across research, commercialization and care.

Website: www.braininstitute.ca

During the pandemic, OBI has:
- hosted an online conversation with CAMH experts about coping with the stress of the COVID-19 pandemic and tap into the power of being present.

- participated in a TVO.org interview with Yona Lunsky, director of the Azrieli Adult Neurodevelopmental Centre at CAMH, about how mindfulness can help those with autism — and the ways in which the COVID-19 pandemic may be affecting the mental health of people with autism and their families.
- hosted a webinar entitled "Taking Care of Body, Mind & Soul in the COVID-19 Pandemic" for people living with or caring for those with cognitive or motor problems from Alzheimer's disease, MCI, Parkinson's disease, ALS, Frontotemporal dementia, Stroke or Aging.

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Ontario Child Health SUPPORT Unit

The Ontario Child Health SUPPORT Unit (OCHSU) – led by The Hospital for Sick Children (SickKids) and the Children's Hospital of Eastern Ontario (CHEO) –provides patient-oriented clinical research and data management support to researchers to enhance capacity in child health clinical research in Ontario.

Website: www.ochsu.ca

During the pandemic, OCHSU:
- through its CHEORI Patient Engagement in Research team, supported Family Leaders to complete 28 project reviews on proposed CHEO COVID-19 research projects that were submitted for internal funding;
- through its CHEORI Patient Engagement in Research team, provided letters of support and facilitated access to the PFAC (Research Patient and Family Research Family Advisory Council) to facilitate a consultation service for the project "Natural Evolution of Serum Antibodies in Children and Adults with SARS-CoV-2 and Household Contacts." which was then awarded close to one million dollars in funding https://www.cheoresearch.ca/about-us/media/news/research-team-receives-almost-1-million-for-covid-19-study/.
- The TARGet Kids! COVID-19 Study of Children and Families now has 959 subjects enrolled from 739 families. This project continue to enroll participants and has just received funding for serology testing which is now being added to their protocol and consent form. They are also working on a school questionnaire which will provide information on how COVID is affecting school-aged participants.
- has supported Family Leaders to completed 28 project reviews on proposed CHEO COVID-19 research projects being submitted for funding;
- has, through the SickKids Patient Engagement in Research Team, facilitated either access to the RFAC (Research Family Advisory Council) or provided a patient advisor to research teams. In total 6 projects have reached out for formal input from family advisors.
- completed three systematic reviews on N95 mask decontamination using UV, heat and chemical disinfectants. The reports were delivered to the Office of the Chief Science Advisor of Canada, by request.

- Evaluation of N95 mask fit performance, post sterilization with UV and the Clean Flow Mini devices. Manuscript in development.
- Developed a reuseable surgical mask for healthcare professionals with an industry partner. Prototype masks are undergoing initial focus group testing before beginning Health Canada testing. Funding from IDEaS grant application under review.
- OCHSU has provided support to 12 grant applications to CIHR and other funding agencies. Eight of the submitted grants were funded - $1,166,497.
- Three papers published, one accepted:
    - O'Hearn,K. et al. (2020) Efficacy and safety of disinfectants for Decontamination of N95 and SN95 Filtering Facepiece Respirators: A Systematic Review. (2020) J. Hosp. Infect Preprint Registered OSF protocol
    - O'Hearn, K. et al. (2020) Decontaminating N95 masks with Ultraviolet Germicidal Irradiation (UVGI) does not impair mask efficacy and safety: A Systematic Review. J. Hosp. Infect. 106, 163-175 https://doi.org/10.1016/j.jhin.2020.07.014 Registered OSF protocol
    - Gertsman, S. et al. (2020) Microwave-and Heat-Based Decontamination of N95 Filtering FacepieceRespirators (FFR): A Systematic Review. J. Hosp. Infect. Preprint Registered OSF protocol

Click here to learn more.

Ontario Drug Policy Research Network
The Ontario Drug Policy Research Network (ODPRN) is a collaboration between researchers and drug policy-makers across Ontario that aims to respond rapidly to the need for high-quality, timely, relevant and scientifically rigorous research to support drug policy decisions. The network's core mandates are to: generate scientifically sound evidence related to real-world drug utilization, safety, effectiveness, and costs of drugs in Ontario; and, develop partnerships for cross-provincial comparisons of drug safety and utilization.

Website: www.odprn.ca

During the pandemic, ODPRN has:
- Engaged with members of the ODPRN Citizens' Panel (CP) and Lived Experience Advisory Group (LEAG) to discuss the impact of COVID-19 to Ontarians and identify potential research questions;
- Initiated a project on the Impact of the COVID-19 Pandemic on Drug Utilization and potential Drug Shortages in Ontario. This project has engaged 4 members from the ODPRN's CP who have joined as project team members;
- Initiated a project on the Changing Patterns of Opioid Agonist Therapy Use and Associated Outcomes during the COVID-19 Pandemic in Ontario and engaged with a patient representative from the LEAG who will be incorporated as project team member;
- Initiated a project on the Real-World Cardiovascular Safety of Hydroxychloroquine for the Treatment and Prevention of COVID-19 Infection;

- Initiated a project on Statins and Alpha-1 Receptor Blocker use and the Risk of Coronavirus Disease 2019 (COVID-19) Related Harms;
- In response to a request from the Ontario College of Physicians (OCP), initiated a project on the Impact of the COVID-19 Pandemic on Prevalence of Pharmacist-Prescribed Opioids in Ontario.
- Participated in a CBC News article entitled "*Coronavirus a 'wake-up call' for Canada's prescription drug supply*" discussing how Canadian pharmacies are limiting how much medication can be dispensed to try to prevent shortages

Click here to learn more.

Ottawa Methods Centre

The Ottawa Methods Centre (OMC), a sub-unit of the Ottawa Hospital Research Institute, provides expert methods consultation to provincial researchers and/or decision makers planning or currently involved in POR-related projects. OMC's robust infrastructure of services includes a specific focus on patient engagement wherein we offer training, mentorship, and conduct specialized methods research. We offer a range of other services including research design and methodology support, data management and big data analytics, statistical consultation and health economics, and knowledge syntheses, knowledge translation, and evidence implementation support

Website: http://ohri.ca/ottawamethodscentre/

The Ottawa methods Centre provided support for several COVID-19 projects thanks to $1.2 million in funding from The Ottawa Hospital Academic Medical Organization (TOHAMO). This year, TOHAMO launched a separate Innovation Fund Competition on COVID-19 and partnered with The Ottawa Hospital's COVID-19 Research and Innovation team to align the central intake of ideas through the COVID-19 Ideas Hub. In total, more than 160 ideas have now been submitted to the COVID-19 Ideas Hub.

Similarly, the Ottawa Hospital Foundation created a COVID-19 Emergency Response Fund through which to fund additional projects. Over $1.7 million of seed funding has been provided for 21 different care, innovation, and research projects with many supported through the process by the OMC. Examples of supported projects include:

- Analysing the Effects of the Health System Response to the COVID-19 Pandemic on Chronic Disease Management
- The CONvalescent Plasma for Hospitalized Adults With Acute COVID-19 Respiratory Illness (CONCOR-1) trial http://www.ohri.ca/newsroom/story/view/1250?l=en
- Predictive COVID-19 Case Identification Using an Interactive Propensity Score Modelling & AI Approach
- Research that will test if hyperbaric oxygen therapy may be able to help some people with COVID-19 pneumonia. http://www.ohri.ca/newsroom/story/view/1257?l=en

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- Research that is using behavioral science and artificial intelligence to reduce the transmission of COVID-19: http://www.ohri.ca/newsroom/story/view/1246?l=en

Patient engagement has been integrated into the review process, with patient partners, who themselves have been affected by COVID-19, providing feedback to project investigators. Several projects have developed ongoing patient involvement.

Click here to learn more.

The Knowledge Translation Program

The Knowledge Translation Program (KTP) works with researchers to develop a strategy to put knowledge into practice at both the clinical and policy level. By focusing on the processes through which knowledge is effectively translated into changed decision making, KTP plays a critical role in enabling the creation and delivery of outcome-based learning experiences, and ultimately improved health outcomes

Website: knowledgetranslation.net

During the pandemic, the KT Program:

- Has assembled a transdisciplinary team of >30 individuals and organizations to collaborate on supporting long-term care homes (LTCH) and retirement homes (RH) with infection prevention and control (IPAC) and other needs through these challenging times. To date, the team has addressed the need for practical resources to support the implementation of IPAC recommendations in LTC through:
    (1) the creation of a publicly available infection prevention and control tool repository (https://www.rgptoronto.ca/resources/ipac+/),
    (2) the development of an interactive tool for LTC self-assessment of IPAC preparedness (https://ipac.knowledgetranslation.ca/), and
    (3) the hiring of a facilitator to support the implementation of IPAC resources in LTCHs.
    Moving forward, the KTP will build on this initiative to ensure the program is supporting LTCHs and RHs address long-standing gaps in processes and care highlighted as a result of this COVID-19 pandemic. This may include the implementation of theory- and trauma- informed educational, procedural and wellness resources to optimize LTC resident care while ensuring LTC staff physical, emotional, and mental wellness and safety.
    Additionally, the multidisciplinary team has received funding to pilot the implementation facilitator model with 5 LTCHs and conducting a process and outcome evaluation of the LTC/RH support program which will allow ongoing improvements and tailoring of supports to best meet needs.
- Has initiated a project with donor funding to compare the accuracy of virtual and in-person comprehensive geriatric assessments and to determine barriers and facilitators to the conduct of virtual assessments.

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- Has partnered with the Chinese Canadian National Council for Social Justice (CCNC-SJ) and the Chinese Canadian National Council Toronto Chapter (CCNCTO) to develop strategies and tools to combat misinformation as it relates to stigma and fear during an outbreak. In addition, the KT program has engaged the Yee Hong Center for Geriatric Care to ensure the perspectives of healthcare providers caring for primarily Chinese-Canadian populations are considered.
- Is working on a rapid scoping review on effective models of provider care in long-term care facilities. This builds on the Restoring Trust document, which was published by the Royal Society of Canada.
- Has produced (or is producing) the following Publications:

    - Restoring Trust: COVID-19 and The Future of Long-Term Care - June 2020 https://rsc-src.ca/sites/default/files/LTC%20PB%20%2B%20ES_EN.pdf
    - Effectiveness and safety of antiviral or antibody treatments for coronavirus: A rapid review. https://www.medrxiv.org/content/10.1101/2020.03.19.20039008v2
    - Preventing respiratory illness in older adults aged 60 years and above living in long-term care: A rapid overview of reviews. https://www.medrxiv.org/content/10.1101/2020.03.19.20039081v3
    - Guidelines for preventing respiratory illness in older adults aged 60 years and above living in long-term care: A rapid review of clinical practice guidelines. https://www.medrxiv.org/content/10.1101/2020.03.19.20039180v3
    - Rapid review methods more challenging during COVID-19: Commentary with a focus on 8 knowledge synthesis steps. https://pubmed.ncbi.nlm.nih.gov/32615209/
    - Conducted a rapid review entitled "*Preventing the Transmission of Coronavirus (COVID-19) in Older Adults Aged 60 Years and Above Living in Long-Term Care: A Rapid Review*".
    - Conducted a review entitled "*Testing for Asymptomatic COVID-19: A rapid systematic review and jurisdictional/ healthcare organizational scan*"
    - Intradermal versus Intramuscular Administration of Influenza Vaccination
    - Rapid scoping review of fractional dosing of the intramuscular influenza vaccine
    - Preventing the transmission of coronavirus (COVID-19) in older adults aged 60 years and above living in long-term care: a rapid review. Manuscript submitted: currently under revisions with the Systematic Review Journal. Authors : Patricia Rios, Amruta Radhakrishnan, Chantal Williams, Naveeta Ramkissoon, Ba' Pham, Gordon V. Cormack, Maura R. Grossman
    - We Must Act Now to Prevent a Second Wave of Long-Term Care Deaths – June 10, 2020 – Royal Society. https://rsc-src.ca/en/voices/we-must-act-now-to-prevent-second-wave-long-term-care-deaths
    - Conducted a rapid review entitled "*COVID-19 in Older Adults in Long Term Care*" to identify infection protection and control measures for adults aged 60 years and older in long-term care settings. This project was commissioned by the Infection Prevention & Control of the World Health Organization (WHO) Health Emergency Programme.
    - Conducted a rapid review entitled "*Risks Associated with COVID-19 in Children with Brain-Based Disabilities*" to understand if children with brain-based developmental

disabilities more likely to develop COVID-19, and have complications or poorer outcomes following infection?

- Updated a review entitled "*Transmission of Acute Respiratory Infections During Aerosol Generating Medical Procedures: Update of 2011 CADTH Systematic Review*". The report provides an overview of the 2011 CADTH report and presents a synthesis of updated findings.
- Conducted a rapid scoping review entitled "*Safety and effectiveness of dose-sparing strategies for seasonal influenza vaccine: Rapid scoping review of fractional dosing of the intramuscular influenza vaccine*"
- Conducted a rapid review entitled "*Safety and effectiveness of dose-sparing strategies for seasonal influenza vaccine: Rapid review of intradermal administration of the inactivated influenza vaccine*"
- Conducted a rapid scoping review entitled *"Rapid scoping review of the effectiveness and safety of treatments for COVID-19 and other coronaviruses that cause serious respiratory tract infections*"
- Conducted a review entitled "*Efficacy and safety of treatments (antivirals and antibodies) for coronavirus (CoV)*"
- Conducted a review entitled "*Digital Health Interventions for the Prevention, Detection and Management of Mental Health Problems in People with Chronic Diseases*"
- Conducted a review entitled "*Rapid and Point-of-Care Diagnostic Test for SARS-COV-2 (COVID-19): A Rapid Summary*"
- Conducted a review entitled "*Risk of Acquiring COVID-19 Associated with Singing in a Choir: A Quick Response Report*"
- Created a policy briefing for the Royal Society of Canada entitled "*Restoring Trust: COVID-19 and The Future of Long-Term Care*"
- Prepared an article for the Royal Society of Canada entitled "*What's Missing from Discussions on Nursing Homes*"
- Prepared an article for the Royal Society of Canada entitled "*Unintended Consequences*"

Click here to learn more.

Population Health Research Institute
The Population Health Research Institute (PHRI) is an internationally-recognized global health research institute of McMaster University and Hamilton Health Sciences specializing in large clinical trials and population studies. Originally formed with a focus on cardiovascular disease and diabetes, PHRI's research areas have broadened to include population genomics, perioperative medicine, stroke, thrombosis, cardiac surgery, renal disease, obesity, and other areas. PHRI has developed expertise in epidemiology, population health, clinical trial methodology, and patient and citizen engagement in research, as well as in the examination of biological, social, and environmental determinants of health.

Website: http://www.phri.ca/

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During the pandemic, PHRI has launched and received funding for several COVID-19 projects, including these initiatives (please see website for details):

- Post Discharge After Surgery Virtual Care with Remote Automated Monitoring Technology (PVC-RAM) Trial (now completed enrollment and follow-up)
- Anti-Coronavirus Therapy (ACT) to prevent COVID-19 disease progression: a clinical trial platform to rapidly evaluate whether several commonly available interventions can be repurposed for treating COVID-19 (recruiting internationally)
- Assessing Coagulation Biomarkers to Accelerate the Discovery of Effective Therapies for COVID-19 (ACT-COAG)
- PURE SARS-CoV-2, examining factors that affect the risk of infection and long-term health effects of getting infected by COVID-19

Click here to learn more.

Women's College Hospital: Women's Xchange

Women's Xchange (WX) is a research knowledge translation and exchange centre within Women's College Hospital that aims to support women's health research in academic and community settings and helps to disseminate those findings across the province of Ontario. The team offers support to researchers to enhance the integration of sex and gender in their research by reviewing proposals during the pre-funding and post-funding phases and providing feedback or recommendations on every element of the proposed study or project.

Website: http://womensxchange.womensresearch.ca/

During the pandemic, WX:

- developed an infographic with Ontario Network of Sexual Assault and Domestic Violence Treatment Centres (SADVTCs), highlighting the other global pandemics and rates of violence against women with additional information on how to access their services during this time
- published an article entitled "Modified Routine Cardiac Imaging Surveillance of Adult Cancer Patients and Survivors During the COVID-19 Pandemic" found in the *JACC CardioOncology*;
- published a paper entitled "The Missing Pieces of the COVID-19 Puzzle" found in *JAGS*, looking at the intersection of sex and age and its importance in informing our understanding of COVID-19 through exploring publicly available international data;
- published a paper entitled "Increasing the Visibility of Older Women in Clinical Research" currently in press in *The Lancet*, illustrating that there is a gap in the consideration of the unique health needs of older women in clinical research;
- published an Op-Ed in the Toronto Star entitled "To help combat COVID-19, we need better data to benefit all" (https://www.thestar.com/opinion/contributors/2020/04/15/to-help-combat-covid-19-we-need-better-data-to-benefit-all.html);
- developed two new modules to add to The Health Researcher's Toolkit;

- developed a list of suggestions and resources on Social Connectedness Suggestions – the document was distributed to over 100,000 members of the Retired Teachers of Ontario (RTOERO);
- distributed an REB approved survey of >5,000 members of the RTOERO identifying how and to what extent the COVID-19 pandemic has impacted older adults, particularly in terms of social isolation and loneliness;
- examined Ontario-wide COVID-19 data on vulnerable residents in LTC homes to identify strategies to improve outcomes going forward;
- launched a study using provincial COVID-19 databases to examine excess COVID deaths (related to measures such as physical distancing, or due to lack of access to usual healthcare) among different groups of vulnerable older adults, in order to target resources to where they are most urgently needed to prevent future deaths;
- Participating in the launch of a study on the impact of COVID-19 on vulnerable populations led by Dr. Bayoumi at St. Mike's
- Participating on a study to adapt digital safety planning tools for women in abusive relationships led by Dr. O'Campo at St. Mike's
- published an Op-Ed in the Toronto Star entitled "Family caregivers will be key during the COVID-19 pandemic" on the impact of COVID-19 pandemic on family caregivers (https://www.thestar.com/opinion/contributors/2020/03/31/family-caregivers-will-be-key-during-the-covid-19-pandemic.html);
- Invited member on the Long-Term Care Staffing Study Advisory Group (Ontario Ministry of Health) to provide strategic advice on staffing in the long-term care sector across the province of Ontario;
- invited member of an expert panel for a federal Task Group on COVID-19 in long-term care homes; this group has been convened to provide practical advice to the Government of Canada on the topic of long-term care homes;
- published a blog post on the Canadian Family Physician entitled "Uptake of virtual primary care visits during COVID-19";
- supported 15 grant applications;
- developed EDI content for the NFRF Transformation proposal submitted by Dr. Lewis
- established the Equity, Diversity, and Inclusion across Women's Working Group (EDIWWG) to establish harmonized and consistent approaches to considerations of equity, diversity and inclusion across the organization during the current COVID-19 pandemic and beyond;
- participated in all OSSU meetings and related activities.

Click here to learn more.