

Osler Research Institute for Health Innovation

Inaugural Report
2023–2024



Osler Research Institute
FOR HEALTH INNOVATION

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Osler Research Institute for Health Innovation

This inaugural annual report captures the journey of Osler's research program, celebrating its history and planning for the future.

The story of research at William Osler Health System (Osler) owes much to the visionary leadership of the late Dr. Ron Heslegrave, Osler's first Chief of Research. Dr. Heslegrave's dedication to ethical research practices and community health laid the foundation for Osler's research program.

This past year marks the realization of Dr. Heslegrave's dream—the establishment of the Osler Research Institute for Health Innovation (ORIHI) aligning with Osler's strategic plan and our community needs. Moving forward in honour of his legacy, ORIHI is committed to turning his vision into a reality, inspiring future generations to carry on his mission.

ORIHI will foster collaboration, maximize value, support innovation, and enhance the efficiency and effectiveness of our research initiatives. As a dedicated platform, demonstrating research excellence, ORIHI will focus on innovative solutions to healthcare challenges ensuring that our community has access to the best care possible.

It is our strong connection to the community that sets us apart. Research at ORIHI is firmly rooted in the reality of our patients' and their families' lives in one of the most diverse regions in Canada. Positioned uniquely as a community hospital engaged in cutting-edge research, ORIHI's approach remains people-centered, bringing research directly to the bedside. This ensures timely benefits for patients while also shaping future treatments and approaches in care.

Through strategic partnerships, Osler has delivered advanced medical interventions, bridging the gap between research and real-world health care. Over 200 studies, spanning various areas, from cancer to cardiac care, including groundbreaking studies on understanding and combating COVID-19, have been conducted.

In the coming years, ORIHI will continue to further develop and grow as a hub of pioneering research.


Explore the inaugural report to learn more about the remarkable progress of the ORIHI over the past decade.




Tiziana Rivera

Executive Vice-President, Quality, Research and Chief Nursing Executive


ORIHI work includes



Trialing and improving new treatments



Advancing diagnostic techniques



Innovating healthcare models tailored to a diverse population

ORIHI by the Numbers: Impacts and Achievements

In the last decade, Osler’s research team has

591
articles published

252
conference abstracts

11
publications by Osler’s Summer Student Research Program participants

537
studies over the past 10 years

259
individuals have lead research projects under our program over the past 10 years*



* This group includes Osler staff and multiple collaborators from external institutions.

Areas conducting research

MEDICAL SPECIALTIES

- Cardiology
Critical Care
Diabetes
Geriatrics
Hepatology
Infectious Disease
Nephrology
Neurology
- Oncology
Respirology
Rheumatology
Urology
Ophthalmology
Audiology
Musculoskeletal
Rehabilitation

IMAGING AND DIAGNOSTICS

- Personalized Diagnostics and Medicine
Diagnostic Imaging
Laboratory Medicine

EMERGENCY AND ACUTE CARE

- Emergency
Medicine
- Intensive Care
Surgery

WOMEN’S HEALTH

- Obstetrics
- Gynecology

PRIMARY CARE AND INTERNAL MEDICINE

- Internal Medicine
Pediatrics

SUPPORTIVE CARE

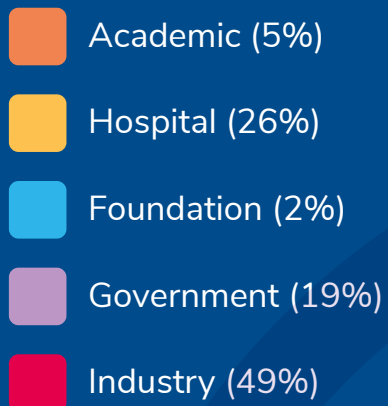
- Palliative Care
Speech-Language Pathology
Pharmacy

QUALITY AND MANAGEMENT

- Medical Affairs
Quality



Funding



Research Highlights

ONCOLOGY PROGRAM

Osler's cancer research program continues to gain international recognition and gives our patients access to cutting-edge treatments. Through this research, coupled with advanced diagnostic tools, Osler delivers quick and personalized treatment options to patients.



Dr. Parneet Cheema, Medical Director of Cancer Care and Head of Cancer Research at Osler, has created pioneering initiatives through the Osler Cancer Immunotherapy Program, bringing a paradigm shift in the way cancer is treated at Osler. Dr. Cheema

has also positioned the research program at the head of clinical trials recruitment in Canada, ensuring that patients are given opportunities to have access to the most advanced treatments through global clinical trials.



By collaborating with **Dr. Brandon Sheffield** in the division of Advanced Diagnostics, Osler's comprehensive Next-Generation Sequencing (NGS) was established to ensure that patients can undergo testing, receive diagnosis, and treatment as quickly as possible in our community. This state of

the art technology can sequence and test tumours and offer quick reporting when time is of the essence. It also means a more efficient process and an improved capacity to provide personalized and targeted care for each patient.

CRITICAL CARE PROGRAM

Osler's critical care unit offers potential life-saving treatments to patients and is aiming to ensure that ICU patients have access to the latest evidence-based care.



Dr. Alexandra Binnie, is the ICU research lead and manages the critical care research program. Conducting research in the ICU requires extensive coordination among the medical team, nursing staff, respiratory therapists, pharmacists, and other healthcare providers. This teamwork ensures the integration of study treatments with each patient's overall care plan. The ICU is staffed by a dedicated group of professionals who recognize that integrating research into clinical care is essential for achieving the best possible outcomes for patients.

During the pandemic, the critical care research team was able to offer cutting edge therapies to Osler's many COVID-19 patients. Patients welcomed the opportunity to access novel therapies such as remdesivir,

tocilizumab and decidual stromal cells, which were only available through research studies. In addition, many patients generously participated in observational studies, which helped improve care for COVID-19 patients globally.

Dr. Binnie's leadership embodies Osler's community mindset, fostering innovations that benefit patients and their communities. As co-chair of the Canadian Community ICU Research Network (CCIRNet), she collaborated in developing the Community Hospital Research Toolkit to support the establishment of research programs at other community hospitals across Canada.

To view
the toolkit:



Osler's Research Profiles

Dr. Sergio Borgia **Infectious Diseases Consultant**

Worked with an interinstitutional team to describe the first outbreak of Carbapenemase-producing Enterobacteriaceae in the Americas. He was also part of the group that was the first to discover a new Hepatitis C genotype. This work helps to inform public health strategies, improve clinical management, and contribute to the prevention of infectious diseases in the community.

Dr. Paula Chidwick **Ethics Quality Improvement Lab**

Was recently awarded the Canadian Bioethics Society's Lifetime Achievement Award for her outstanding contributions to bioethics research, scholarship, education, mentorship, and policy. As the first ethicist to be hired at a community hospital in Canada, and the founding Director of the EQI Lab, Dr. Chidwick's commitments to patient centred, community-informed, and equitable care are helping to shape the field of healthcare ethics.

Osler's Ethics Quality Improvement (EQI) Lab

Approaches common ethical challenges in healthcare by collaborating with healthcare teams and other stakeholders to develop ethics quality improvement projects (EQIPs) that support upstream changes aimed at improving healthcare decision-making. Through this work, the EQI Lab has demonstrated improvements to patient care, and that their ethics interventions make positive impacts on the healthcare system.

Dr. Daryn Cushnie **Speech pathologist**

Is helping to improve Canada's historically low rates of oropharyngeal dysphagia (OD) research. When this condition occurs, there is difficulty in moving food or liquid from the mouth to the upper esophagus due to problems with the muscles and nerves involved in the swallowing process. This exploration will help to uncover factors and outcomes linked to OD and the way it is managed. The study is also unique in using a co-creation approach, where researchers and practitioners collaborate closely, to enrich our understanding of OD management.

Dr. Priya Chopra **General Surgeon**

Reviewed Breast Cancer wait times and outcomes before, during and after the pandemic. By analyzing the impact of the pandemic on breast cancer care, Dr. Chopra helped to provide insights into responses to managing cancer amidst unprecedented challenges. This research not only informs current practices but also serves as a critical resource for future pandemic preparedness, guiding the allocation and utilization of resources in oncology departments. This work will be presented at the Canadian Surgical Forum in September 2024.

Dr. Marco Iafolla **Medical Oncologist**

Is pioneering new research on biobanking of non-invasive samples from patients with advanced urothelial carcinoma and exploring the potential of BRAF-mutant circulating tumor DNA as a predictive and prognostic biomarker across different cancer types. This research could revolutionize how clinicians identify and manage cancer, potentially leading to earlier detection, more tailored treatment strategies, and better prognostic assessments for patients.

Dr. Sudip Saha **Medical Director of Seniors Health, and Division Head of Geriatric Medicine**

Along with Trish Geerlinks, Director, Clinical Services, introduced the Butterfly Model™ of Dementia Care, making Osler the first accredited hospital in the world to implement the model. He, along with Dr. Neil Dattani, Emergency Physician, and Dr. Shailesh Nadkarni, Director of Seniors Health, also conducted additional research that suggests that the Butterfly approach has potential to improve patient care, enhance unit safety culture, and optimize treatment plans. This model has been adopted within the Region of Peel long term care homes and will be further implemented in the future.

Dr. Masud Khandaker, **Division Head of Cardiology**

Introduced structural heart disease interventions (valvular heart disease and PFO/ASD closure) and the 3D TEE imaging program for structural heart disease at Osler. This enhances diagnostic capabilities, providing clinicians with detailed insights into cardiac anatomy and pathology.

Research Supports

Conducting research at ORIHI means being provided with support, such as funding opportunities, research and lab coordination, research ethics board office, study team, data extraction and analysis, and mentorship programs.

Osler's research administration office oversees contract negotiations and ensures compliance with training requirements and knowledge translation.

Future Direction

To support the cultivation of future leaders and strengthen community connections, **ORIHI aims to pursue innovative research while creating an exemplary educational experience for aspiring researchers.**

The transformation of Osler into an academic health centre, and the partnership with Toronto Metropolitan University to establish a new School of Medicine in Brampton, mark important milestones for ORIHI to support this goal; positioning ORIHI to play a central role in shaping the future of health care education and research in our community.

ORIHI remains dedicated to translating research to improve health. To do this, ORIHI will focus on key areas where research can have a big impact. Aging, cancer, cardiology, and diabetes are priorities identified in consultation with patients and key stakeholders.

The future of research at ORIHI is characterized by a commitment to academic excellence, exploration, education, and innovations for community health.

Research Leadership

Our leadership team at ORIHI supports innovation, creativity, and collaboration:

- Tiziana Rivera** Executive Vice-President, Quality, Research and Chief Nursing Executive
- Dr. Steven N. Liss** Interim Scientific Director, Osler Research Institute for Health Innovation
- Patti Rempel** Director, Clinical Research
- Dr. Parneet Cheema** Medical Director of Cancer Care and Head of Cancer Research

ORIHI Research Council

Our Research Council is made up of expert researchers from within the walls of the organization. This is a group of passionate individuals from diverse disciplines that are responsible for informing and shaping the trajectory of research and innovation at ORIHI.

CHAIR: Dr. Alexandra Binnie Leading ICU research	Dr. Martin Chasen Medical Director, Palliative Care	Emily Cichonski Manager, Integrated Health Systems	Dr. Rosa Marticorena Manager, Clinical Research
CO-CHAIR: Patti Rempel Director of Clinical Research	Dr. Parneet Cheema Medical oncologist and head of cancer research	Hina Marsonia Clinical Pharmacist, Residency Coordinator	Lynn Vicente Manager, Clinical Research, Oncology
Dr. John Byrne Surgeon, Vascular Surgery	Dr. Paula Chidwick Director, Clinical and Corporate Ethics	Irene Chen Clinical Nurse Educator	Dr. Steven Liss Scientific Director, ORIHI
Dr. Lorand Kristof Physician, Family Medicine	Sai-Amrit Maharaj PFAC member	Marissa James Professional Practice Leader	Tiziana Rivera EVP, Research, Quality and Chief Nursing Executive
	Dr. Shy Amlani Physician Lead, CV Research and Cardiologist	Amrutha Kumar Quality Improvement Consultant	

Community Engagement

To ensure that ORIHI research aligns with the community's needs, we have the newly established Community-Based Research Advisory Committee (CBRAC).

CBRAC is made up of community advisors and will be a vital part of ORIHI's goals. This committee will share experiences and insights to inform research excellence, initiatives, policies, and programs affecting health in our region.

Community Advisors of CBRAC

Husna Osman
Karanjot Bhatia
Mark Mohan
Naomi Wokocha
Shurabi Anphalagan
Simrat Soni
Tulsidai Ramdass
Syna Surena Thakur
Claudia Stewart
Rakhi Mistry
Esha Dhillon
Amanda Quinn

Osler Advisors of CBRAC

Yasir Khalid
Angel Petropanagos
Sofia Ramirez
Patti Rempel
Augustina Ampofo



Summer Student Research Program (SSRP)

Since 2015, ORIHI has accepted students into our SSRP with the goal of matching student qualifications to investigator projects. The SSRP provides students with the opportunity to work alongside passionate researchers across many different disciplines. In the last three years, TMU has also provided sponsorship to give their students unique experiences in the program.

1332

Total applications received

132

Total employed

135

Total projects

Publications from the SSRP

Abstracts from the 11th Canadian Conference on Dementia: Better and Earlier Detection of Dementia in a Changing Landscape, 2023

Real World Experience of Ibrutinib in an Ethnically Diverse Canadian Community Hospital, 2023

Hyperphosphatemia and vascular calcification in chronic kidney disease, 2023

The great imitator: a case of mistaken cirrhosis, 2022

Utilization of point of care ultrasound in a specialist palliative care team across multiple care settings: a retrospective chart review, 2022

Utilization of point of care ultrasound in a specialist palliative care team across multiple care

settings: a retrospective chart review, 2022

Effects of a Cancer Survivorship Clinic-preliminary results. Support Care Cancer, 2020

Evaluating newer generation intraocular lens calculation formulas in manual versus femtosecond laser-assisted cataract surgery, 2021

Topical cannabis-based medicines - A novel adjuvant treatment for venous leg ulcers: An open-label trial, 2021

Palliative care as a public health issue: understanding disparities in access to palliative care for the homeless population living in Toronto, based on a policy analysis, 2017

ORIHI is open to ideas for new collaborations with our academic community, donors, and supporters. We welcome inquiries from aspiring students, researchers, donors, industry, and our community.

For more information:

<https://www.williamoslerhs.ca/research>

Email: research@williamoslerhs.ca

ACKNOWLEDGEMENTS

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