

ANNUAL REPORT 2023



THANK YOU TO OUR 2023 SREMI DONORS

Gerald Schwartz & Heather Reisman
 The Peter and Shelagh Godsoe Family Foundation
 RBC Foundation
 The Slight Family Foundation
 The Harding Family Foundation
 Andrew & Marianne Guizzetti and Daniel & Maria Guizzetti
 The Bitove Foundation
 National Bank of Canada
 Anton & Ilana Rabie
 Hannam Fertility Centre
 Don Melady & Rowley Mossop
 The Donald Family
 Diane Loeb
 Kirsten Jenkins
 Bharat Bahl

SREMI focuses on conditions where emergency practitioners play a key role in patient care



CONNECT
 www.sremi.ca
 @SREMI_MSH
 SREMI@SinaiHealth.ca
 416.586.4800 ext 8330

SREMI
 SCHWARTZ/REISMAN
 EMERGENCY MEDICINE
 INSTITUTE

Sinai Health

NORTH YORK GENERAL
 Making a World of Difference

CONTENTS

Welcome from the Director 1

Collaboration

Chair's Report to the Board 3
 International Advisory Board 5
 Executive Liaison Report 7

Research

Research Report 9
 Academic Achievements & Awards 11
 SREMI by the Numbers 12
 SREMI Team 13
 Research Chair 15
 Clinician Scientist Profiles 17
 NYGH Research Lead 21

Education

Geriatric Emergency Medicine 25
 EM Cases 27
 MSH EM Fellowship 29
 EDAC 30
 Dr. Paul Hannam Award 31

Innovation

RBC Pathway to Peers 33
 Research Publications 35

Director
 Bjug Borgundvaag, MD, PhD

Research Director
 Shelley McLeod, PhD, MSc, BSc (hons)

Hospital Liaison Committee, SREMI
 Rick Penciner, MD, MSc
 Howard Ovens, MD

ED Leads
 Kevin Wasko, MD, MA (NYGH)
 David Dushenski, MD (MSH)

Deputy Director
 Catherine Varner, MD, MSc

Geriatric EM Research Chair
 Jacques Lee, MD, MSc

SREMI Faculty
 Nana Asomaning, RN
 Keerat Grewal, MD, MSc
 Anton Helman, MD
 Don Melady, MD, MSc
 Rohit Mohindra, MD, MASc

MSH EM Fellowship Directors
 Shawn Lacombe, MD, MSc
 Nadia Primiani, MDCM

MSH EM Fellows
 Nana Maklada, MD
 Tamar Shemesh-Lobl, MD
 Sabrina Weil, MD

Geri EM Fellows
 Priyank Bhatnagar, MD
 Kira Gossack-Keenan, MD
 Ranjeev Kumar, MD

Research Coordinators
 Clotilde Ngwa
 Cameron Thompson, MSc
 Joanna Yeung

Research Nurse Specialist
 Victoria Aziz, RN

RBC P2P Program Manager
 Bice Amoroso, MSc

RBC P2P Support Workers
 Chloe Chalmers, BA
 Jordyn Ethier, BA
 Stef Figueiredo, BA
 Mahfam Nikoo, BSc
 Bella Shulman, BA

Administrative Assistant
 Mahima Sethi

Welcome from the Director

2023 was a year of administrative renewal at SREMI with many changes on our International Advisory Board. As we say a heartfelt thank you and goodbye to Dr. Simon Mooijaart, Dr. Suzanne Mason, Dr. Matthew Cooke and Dr. Kevin Katz, we welcome Dr. Judy Morris, Dr. Kendall Ho, Dr. Luis Lobón, Dr. Maaret Castrén, Dr. Ula Hwang and Dr. Rick Penciner. We look forward to meeting our new board members at our November meeting.

The hard work and dedication of the SREMI team over the last year have filled me with admiration and respect. A main goal for SREMI is to use the institute as a vehicle to create international leaders in emergency medicine. An equally important goal is for our work to be impactful for ED patients and broadly within our discipline. Here are just a few examples of our most impactful accomplishments in 2023.

Dr. Keerat Grewal received her first CIHR grant to study ways to improve outcomes for patients diagnosed with cancer in the ED. She is leading a team of emergency physicians, medical and surgical oncologists to catalog cancer resources across Ontario and identify ways to ensure newly diagnosed ED patients receive treatment without delay.

Dr. Shelley McLeod's findings from the evaluation of Ontario's Virtual Urgent Care program have informed Ontario's plans for funding the virtual urgent care program moving forward. Her current project, POWER III, will be used to determine future funding models for EDs in Ontario.

Reflecting the high quality of her research and lay reporting on health care issues, Dr. Catherine Varner has been appointed deputy editor at the Canadian Medical Association Journal. She has also started a new project evaluating a new model of care for pregnant patients in the ED using nurse practitioners as patient navigators.

Dr. Anton Helman's EM Cases Podcast continues to be a world leader in EM education. His most recent data show that more than 20 million episodes have been downloaded, 4 million in just the last year. EM Cases reaches an audience of more than 80,000 individuals around the world.

Dr. Jacques Lee is nearing completion of his current project looking at ways to alleviate social isolation and loneliness in older people, one of the largest social determinants of health in Canada. Results should be available in early 2024.

Dr. Don Melady received the Canadian Association of Emergency Physicians "Honorary Life Member Award". This is given in recognition of outstanding contributions and dedicated service to emergency medicine in Canada and the association. Mount Sinai Hospital also announced the "Dr. Don Melady Chair in Geriatric Emergency Medicine", created in celebration of Mount Sinai's most impactful leaders on the 100th anniversary of the hospital.

Dr. Rohit Mohindra has started a project studying ways to improve care for Canada's refugee patient population. The large refugee population in Canada represents an important marginalized group.

SREMI's research coordinator Cam Thompson has returned to school to complete a PhD in epidemiology. He will be using health services data from ICES to study the impact of social determinants of health on ED usage and has successfully defended his research proposal.

Reflecting our leadership position in peer support in the ED, we have secured funding to expand our RBC Pathway to Peers Peer Support Program to a second ED in the greater Toronto area. Finally, I am leading development of the first ED guidelines for the management of non-opioid addiction (alcohol and cannabis) in the ED. These guidelines, sponsored by the Society for Academic Emergency Medicine, will be published in 2024.

Our principal benefactors, Heather Reisman and Gerry Schwartz, have remained committed to improving ED care for decades. Their commitment has inspired a growing community of donors who share their vision of achieving this goal through ED-focused research and education. We are extremely grateful to Heather and Gerry for their passionate support, and to all our donors and supporters without whom the incredible work you read about in this report would not be possible.



Dr. Bjug Borgundvaag PhD, MD, CCFP(EM)
Director, Schwartz/Reisman Emergency Medicine Institute

Collaboration





Chair's Report to the Board

Welcome to the 9th Annual Schwartz/Reisman Emergency Medicine Institute (SREMI) International Advisory Board (IAB) meeting and to this 2023 SREMI Report. It highlights the many significant accomplishments and contributions made by SREMI faculty towards improving emergency care over the past year.

As we commented last year, the SREMI team remained very productive through the difficulties of the COVID-19 pandemic and have continued to be successful. Although there will be an uptick in COVID-19 and other respiratory illnesses over the coming winter, we don't anticipate it to be as intense as the two previous years, at least we hope that will be the case. Nevertheless, our emergency departments are still reeling from the aftermath of the pandemic with higher than previous volumes and, in many hospitals, the inability to staff to the level needed to look after such high volume of patients in a timely manner.

In this environment of clinical and operational stress, it is very difficult to conduct high quality research. However, it becomes even more important to support emergency clinical care. The more knowledge we can provide practitioners through research into better diagnostic processes or treatment options, the more efficient clinicians can be, and the better care patients receive. SREMI's excellent education programs also provide the needed support to provide the best possible care.

The 2023 SREMI annual report highlights the many projects completed and underway, and the amazing number of publications and awards received by SREMI faculty. Each year I am amazed at the academic output and by the talent of the SREMI team.

Director Dr. Bjug Borgundvaag, Research Director Dr. Shelley McLeod, and Deputy Director Dr. Catherine Varner continue to provide inspiring leadership. They each not only support the whole team but also have substantial research programs of their own.

North York General Hospital and Sinai Health Collaboration

The collaboration of Sinai Health and North York General Hospital (NYGH) is further strengthened. NYGH is a shining example of a community hospital dedicated to quality care and academic pursuits. Dr. Rohit Mohindra continues to expand the NYGH academic program. It is now an important component of the overall SREMI academic output with an ever-growing academic infrastructure. Dr. Anton Helman's FOAMed program of EM Cases continues to be the most downloaded emergency medicine podcast in Canada, with over 21 million listens. It continues to evolve and remains one of the most respected educational medical podcasts in the world.

SREMI Research Activities

The SREMI research output is once again remarkably successful. The group published 34 peer reviewed articles in a broad range of journals including in some of the most prestigious. SREMI faculty played visible leadership roles in the Canadian Association of Emergency Physicians annual meeting as speakers and track chairs. Dr. Varner won the Best Pediatric Abstract award for her study "Maternal emergency department use before pregnancy and infant emergency department use after birth." International expertise and recognition are displayed by Dr. Borgundvaag in leading the SAEM guidelines on alcohol use disorder. Dr. McLeod is leading the Predictors of Workload in the Emergency Room study, commissioned by the Ministry of Health, Ontario Hospital Association, the Ontario Medical Association and the Ontario Emergency Services Advisory Committee. Dr. Jacques Lee continues his important research on social isolation of older people. Dr. Keerat Grewal won a CIHR grant to explore facilitators and barriers to care for cancer patients diagnosed in the ED. Dr. Varner received a grant from the Innovation Fund to discover patient views on better support for early pregnancy loss. Dr. Mohindra received a grant from the CAEP Advancement Fund to better understand emergency care needs for refugees. There are many more worthy and impactful activities, too numerous to mention or describe in detail, that you can read about in this annual report.

SREMI Education and Support Programs

As important as the research programs are, the astounding and world leading education programs including EM Cases (above) and the Geriatric Fellowship and International Education program leading the world by Dr. Don Melady. Dr. Varner continues to highlight critical issues in emergency care in public journals and media outlets. The RBC Pathway to Peers program provides exceptional innovative peer support to young people needing emergency care in Mount Sinai emergency department.

Rejuvenation of the Board

In the past year, three IAB members have resigned. Dr. Suzanne Mason (University of Sheffield), Dr. Matthew Cooke (University of Warwick) and Dr. Simon Moojaart (Leiden University Medical Center) served the board with extensive experience and insightful advice. We will miss their wise council.

We were very fortunate to entice five very accomplished individuals to join us this year. Dr. Kendall Ho is a Professor from the University of British Columbia with a deep research interest and key national and international leadership roles in Digital and Virtual Emergency Medicine. He is Medical Director of the BC Ministry of Health HealthLink virtual physician program. Dr. Judy Morris is an Associate Professor at the University de Montreal, current president of Association des Médecins d'Urgence du Québec (AMUQ) and current Chairperson of the CAEP Leadership Committee. Dr. Luis Lobón is Vice Chair of Strategic Collaborations, Department of Emergency at Medicine Mass General Brigham, Executive Director of Strategic Partnerships Global Advisory at Mass General Brigham and Assistant Professor of Emergency Medicine at Harvard Medical School. Dr. Maaret Castrén is the Head of the Department of Emergency Medicine and Services in Helsinki, Finland. She leads a large international research group and is Past Chair of the European Resuscitation Council. Dr. Ula Hwang is a professor at New York University. She co-lead the development of the 2014 Geriatric ED Guidelines and serves on the Board of Governors for the American College of Emergency Physician's Geriatric Emergency Department Accreditation program.

Our enhanced board aims to provide support and advice to the SREMI leadership and enable local, national and international connections to expand collaborations.

Reflections from the Chair

It is an honor to serve on the IAB of SREMI. I congratulate the team of Bjug, Shelley and Catherine who continue to provide strong program and personal support for the faculty and staff.

Despite increasing stress on our health system, we have seen our emergency colleagues...physicians, nurses and allied workers...meet current challenges. Emergency care plays an ever more central role in our health care systems as well as carrying a disproportionate burden when our health systems are failing.

The research and education programs in SREMI are essential to supporting emergency care, the care providers and most importantly our patients. SREMI can be proud of its local, national and international reputation in emergency medicine research and education and the impact it has had and will continue to have.

Respectfully submitted,

Dr. Jim Christenson
Professor, UBC Department of Emergency Medicine
Senior Medical Advisor, Emergency care BC
Co-Director, BC Resuscitation Research Collaborative

I acknowledge and am grateful to be able to live, work and play on the traditional, ancestral and unceded territory of the Coast Salish peoples, including the x̱məθḵʷəy̱əm (Musqueam), Səlilwətaʔ (Tsleil-Watuth), and Skwxwú7mesh (Squamish) Nations.



International Advisory Board

The IAB serves as an advisory body to the Director of SREMI, offering guidance to promote interdisciplinary collaboration, shape research priorities, and enhance emergency medicine research and education, aiming to establish SREMI as a global leader. IAB membership is voluntary, representing a diverse range of expertise in emergency medicine and related fields within the international health research community and society.



Dr. Maaret Castrén

is a nurse, anesthesiologist, emergency physician and is working as the Head of the Department of Emergency Medicine and Services in Helsinki, Finland. Dr. Castrén is leading the prehospital and emergency care for the region of Uusimaa in Finland having over 800,000 patient contacts a year. She became the first professor of Emergency Medicine in Sweden at Karolinska Institutet 2007, and the first professor of Emergency Medicine in Finland at Turku University 2012 and at Helsinki University 2016. She has an international research group and is the past Chair of the European Resuscitation Council and the Honorary Secretary of ILCOR.



Dr. Jim Christenson

is a recently retired emergency physician and Professor and past Head of the Academic Department of Emergency Medicine in the Faculty of Medicine at the University of British Columbia. He has a wide range of experience in emergency clinical research and is currently a Co-Lead for the Canadian Resuscitation Outcomes Consortium. He also leads the Kwiis Hen Niip project, funded by CIHR, to improve emergency care in remote Nuu-chah-nulth communities on the west coast of Vancouver Island. Dr. Christenson is a Senior Medical Advisor to Emergency Care BC, a health improvement network within the BC Provincial Health Services.



Dr. Matthew Cooke

is a recently retired emergency physician and Professor of Clinical Systems Design at Warwick Medical School. He is now an advisor to a range of NHS bodies and digital healthcare companies. Dr. Cooke was previously the NHS National Clinical Director for Emergency Care in England and a WHO advisor in emergency care. He was also Deputy Medical Director, and then Director of Strategy for a large NHS Hospital. He has extensive experience in supporting improvement and change in emergency care in the UK and internationally and has undertaken extensive research in emergency care.



Dr. Danielle Martin

is Professor and Chair of the Department of Family and Community Medicine (DFCM), University of Toronto. Dr. Martin is an active family physician and a respected leader in Canadian medicine. She holds a Masters of Public Policy from the School of Public Policy and Governance at the University of Toronto and teaches health policy and health system leadership. Dr. Martin spent eight years as a senior hospital executive, most recently as Executive Vice President and Lead Medical Executive at Women's College Hospital (WCH), where she was also medical lead of the hospital's COVID-19 pandemic response.



Dr. John McLaughlin

is a Professor Emeritus of epidemiology in the Dalla Lana School of Public Health at the University of Toronto. He recently retired as Executive Director for the Canadian Partnership for Tomorrow's Health (CanPath), which is Canada's largest health study with over 300,000 participants being followed in a prospective cohort study. He previously served as the inaugural Chief Science Officer at Public Health Ontario, and he held several leadership roles across Ontario's research and health systems. His research focuses on advancing disease prevention, addressing disparities and improving health system performance, which has led to more than 340 publications.



Dr. Judy Morris

is an emergency physician and trauma team leader at Hôpital du Sacré-Cœur de Montréal, and a member of the emergency department's research team. In this role, she has collaborated on numerous local and multicenter research projects in emergency medicine. She is the current president of Association des médecins d'urgence du Québec (AMUQ) and the chair of the leadership committee of the Canadian Association of Emergency Physicians (CAEP). Dr. Morris is an Associate Professor at University de Montréal's faculty of medicine. Since 2018, she has served as the Assistant Director of the Department of Family and Emergency Medicine.



Dr. Kendall Ho

is an emergency physician, Professor at the University of British Columbia (UBC) Faculty of Medicine and Lead of the Digital Emergency Medicine Unit. He is the medical director of the BC Ministry of Health HealthLink BC virtual physician program, and collaborates with provincial partners on implementing and evaluating the BC Real Time Virtual Support provincial virtual care services. His research focuses on virtual care, wearables and sensors, and multicultural engagement in digital health literacy to support patient transitions. His research and education in digital health has received awards and recognition of the BC Medal of Good Citizenship.



Dr. Ula Hwang

is an emergency physician and Professor in the Ronald O. Perelman Department of Emergency Medicine and Department of Population Health at New York University. She is the Medical Director for Geriatric Emergency Medicine. She co-led the development of the Geriatric ED Guidelines and serves on the Board of Governors for the American College of Emergency Physician's Geriatric ED Accreditation program. She is the co-PI of the Geriatric ED Collaborative, a national implementation program supported by the John A. Hartford Foundation and the West Health Institute and is the PI of the National Institute on Aging funded Geriatric Emergency care Applied Research Network.



Dr. Luis Lobón

is Vice Chair of Strategic Collaborations, Department of Emergency at Medicine Mass General Brigham, Executive Director of Strategic Partnerships Global Advisory at Mass General Brigham and Assistant Professor of Emergency Medicine at Harvard Medical School. Dr. Lobón also holds a Master's in Health Policy and Management from New York University and is an alumnus of the Brigham Leadership Program, a joint program with Harvard Business School. With over 25 years of healthcare leadership and management expertise, Dr. Lobón is currently program director for the International Emergency Department Leadership Institute, leading the master-level continuing executive education course.



Dr. Peter Selby

is a Senior Scientist and Senior Medical Consultant at the Centre for Addiction and Mental Health. He is the Vice-Chair, Research and GIBLON Professor in Family Medicine Research at the University of Toronto. His research focuses on innovative methods to understand and treat addictive behaviours. He has received over 100 million dollars of grant funding from CIHR, NIH, and the Ontario Ministry of Health and has >200 peer reviewed publications. His most recent research program utilizes a Learning Health Systems approach to investigate how technology equitable collaborative care can enhance the delivery of evidence-based interventions to patients.



Dr. Lynn Wilson

is the Vice Dean, Clinical and Faculty Affairs and Associate Vice Provost, Relations with Health Care Institutions, and Professor and past Chair of the Department of Family and Community Medicine at the University of Toronto. Dr. Wilson was the co-director of BRIDGES, an Ontario Ministry of Health funded project to support the design, implementation and assessment of innovative models of care that promote integration in the healthcare system. Dr. Wilson has practiced comprehensive family medicine for over 30 years. Her clinical interests have included substance use disorders, mental health, palliative care, primary care obstetrics, and care of the elderly.



A Message from the Executive Liaison Committee

This has been a year of transition and renewal for SREMI and our International Advisory Board (IAB) as we all emerge from the pandemic and its impact on emergency services and health care more broadly. First, I (Howard) would like to thank Dr. Kevin Katz for his years of service with me as the Executive Liaison for North York General Hospital (NYGH), and welcome an old friend, colleague and trusted partner, Dr. Rick Penciner to the role. We are all delighted to have Rick in a leadership role at SREMI. We both join in welcoming Dr. Kevin Wasko to the role of Director of the ED at NYGH. He's already proven to be a willing and engaged partner in SREMI.

This year has also seen renewal of our IAB. We thank Dr. Suzanne Mason, Dr. Matthew Cooke and Dr. Simon Mooijaart for their wisdom and engagement and welcome new members Dr. Judy Morris, Dr. Ula Hwang, Dr. Kendall Ho, Dr. Luis Lobón and Dr. Maaret Castrén. We hope you will find the role interesting, rewarding and informative.

On May 30th 2023, SREMI joined with CAEP and the family of Dr. Paul Hannam in presenting the inaugural Dr. Paul Hannam Leadership Awards. Dr. Hannam was the former Chief of NYGH ED and SREMI leader, who died unexpectedly last July. The nominees were so outstanding we had to name two people, Dr. Allie McConnell and Dr. Rob Ohle. It was an emotional event, but everyone agreed it was a fitting tribute to Paul and an impactful way to continue his legacy.

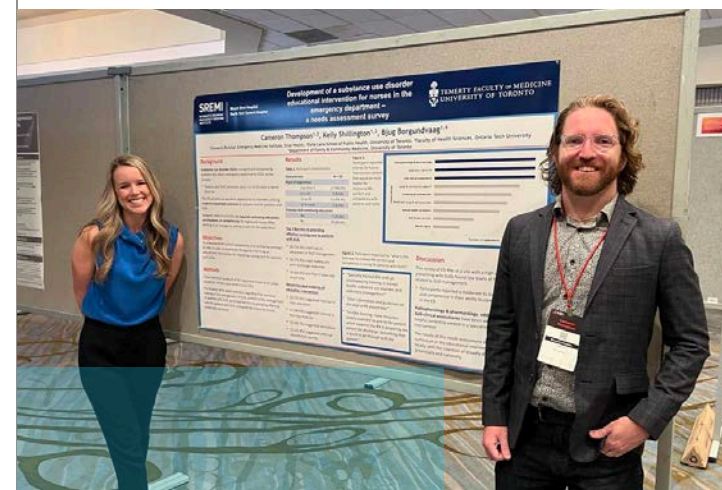
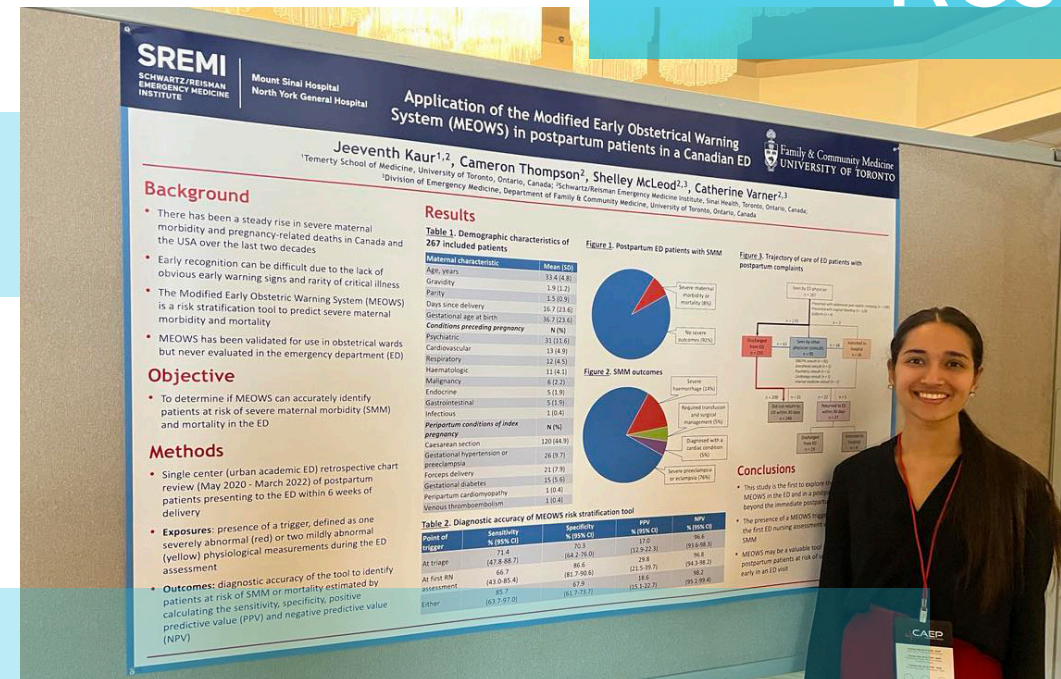
We are proud of SREMI's continued leadership in public policy development and evaluation in Ontario. Several papers were published this year on the evaluation of virtual urgent care models, and SREMI is gearing up to launch the data acquisition stage of the very important Predictors of Workload in the Emergency Room (POWER) III Study of how emergency physicians spend their time.

This year marks the 10th anniversary of the founding of SREMI. We had planned to celebrate a decade of remarkable growth, along with announcing the completion of funding for the "Dr. Don Melady Sinai 100 Chair" in emergency care of the elderly but have postponed the event in light of world events and will reschedule at a time when we can celebrate with our donors and key stakeholders more enthusiastically. The Dr. Don Melady Chair is an endowed chair established as part of a series of such chairs celebrating the 100th anniversary of Mount Sinai Hospital and will be established with a \$3M endowment in perpetuity to celebrate Don's great career and ensure SREMI always is a leader in this area. Don ended his clinical career in September, but will continue his academic work with SREMI. The chair will be filled on his full retirement (hopefully not for a while yet), but the revenue from the endowment will be available for advancing the Chair's purpose immediately.

Respectfully submitted,

Howard Ovens MD, FCFP (EM)
Mount Sinai Hospital

Rick Penciner MD, MSc, CCFP (EM), FCFP
North York General Hospital





Research Report

Dr. Shelley McLeod

This has been another successful and productive year for SREMI researchers and scholars, and I am immensely proud to highlight some of our recent accomplishments.

Research Impact

SREMI continues to grow our academic profile at the international, national and provincial level. With 34 peer-reviewed publications in high-impact journals like New England Journal of Medicine, Nature, and Academic Emergency Medicine, SREMI scientists continue to be leaders in producing emergency medicine research of high quality. Many of our faculty were invited speakers and track chairs at the Canadian Association of Emergency Physicians (CAEP) 2023 conference and continue to be vital members of committees, working groups and panels, acknowledging the important contributions we are making towards emergency medicine.

Dr. Catherine Varner, SREMI Deputy Director and clinician scientist, won the Top Pediatric Abstract Award at this year's CAEP Annual Scientific Meeting for her research study entitled, "Maternal emergency department use before pregnancy and infant emergency department use after birth." This population-based cohort study of more than two million livebirths found that an ED visit within 90 days before the start of pregnancy was associated with a higher risk of infant ED visits, and potentially offers a useful trigger for health system interventions to decrease acute care utilization for low acuity indications in infancy.

Commissioned by the Society for Academic Emergency Medicine (SAEM), Dr. Bjug Borgundvaag has been leading the GRACE-4 guidelines on alcohol use disorder and cannabis hyperemesis syndrome management in the ED, which will be published later this year. He has also been leading the development of an educational program designed to improve the care of patients with alcohol use disorder by increasing the prescription of anti-craving medications in the ED.

Over the past year, SREMI clinician scientist Dr. Rohit Mohindra continued to build the emergency medicine research program at North York General Hospital, successfully leading and participating in multiple on-going projects. One new initiative started by Dr. Mohindra is EM Cases Journal Club, a monthly blog where he and I critically appraise current research articles in an approachable way so physicians can stay updated on the latest research, evidence-based practices, and advancements in emergency medicine.

Dr. Jacques Lee, our SREMI Research Chair in Geriatric Emergency Medicine, continues to enrol patients in his social isolation and loneliness trial, an initiative to determine whether virtual video check-ins are equally or potentially more effective than telephone calls to help combat social isolation and loneliness in older people. Dr. Lee also graduated his first geriatric emergency medicine research fellow, Dr. Judah Goldstein and oversaw the successful defense of his Masters student, Sara Corvinnelli.

Earlier this year I completed the provincial evaluation of Ontario's virtual urgent care pilot program, which helped inform provincial policy decisions on how to structure virtual care services across the province. At the joint request of the Ontario

Ministry of Health, Ontario Hospital Association, Ontario Medical Association and Ontario Emergency Services Advisory Committee, we are about to launch the third iteration of the Predictors of Workload in the Emergency Room (POWER) study. Conducted in 21 Ontario hospitals between 2003 and 2006, the first two iterations of the POWER study amassed data on nearly 30,000 separate ED patient encounters over 1359 shifts, and examined the workload faced by nearly 400 different emergency physicians in both academic health science centres and community hospitals. Data derived from the POWER study were subsequently used as the basis of a formula used to determine physician hours of coverage for the ED Alternate Funding Arrangement workload model used in Ontario and other provinces. The results from POWER III will be used to predict future ED staffing needs and determine appropriate levels of funding for EDs with very different case mixes.

External Research Funding

Dr. Keerat Grewal received a grant from the Canadian Institutes of Health Research, Canada's federal funding agency for health research, to explore current pathways to cancer care for patients diagnosed with cancer in the ED and examine facilitators and barriers to optimal cancer care for these patients. Dr. Grewal hopes to use the results of this study to lay the foundation towards standardizing referral pathways to specialized cancer care from the ED.

Building on her exceptional research program in early pregnancy, Dr. Varner received an innovation fund grant to evaluate a new program called Virtual Wraparound Care, which supports patients as they experience symptoms of pregnancy loss. The evaluation will seek patient and provider input to create more supportive and more informed care of Canadian's experiencing early pregnancy complications and loss.

Dr. Mohindra received a grant from the CAEP Emergency Medicine Advancement Fund to explore what medical issues bring refugees to the ED and understand the patient perspective and lived experience of their encounters with our acute care system. Dr. Mohindra found there is a high mental health burden in the refugee population seeking emergency care and access to primary care is a significant barrier for refugee patients. These results will inform patient education programs and future initiatives designed to improve access to healthcare for refugee patients in our communities.

I would like to thank our Director, Dr. Bjug Borgundvaag for his continued leadership, SREMI faculty and staff for their hard work and unwavering commitment to our shared goals, and our generous benefactors, whose support is the ultimate driving force behind all our achievements. Cheers to a year of triumphs, growth, and the limitless potential that lies ahead. I am truly honored to work with and learn from such an exceptional group of individuals.

Respectfully submitted,

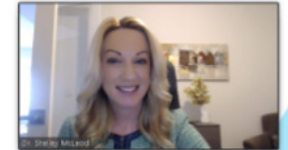
Shelley McLeod, PhD, MSc, MSc, BSc(hons)
Research Director, SREMI



Predictors of Workload in the Emergency Room: The POWER Study

An Evidence Based Approach to ED Staffing

Shelley McLeod, PhD, MSc
Research Director, SREMI, Sinai Health
Associate Professor, DFCM, IHPME
University of Toronto
✉ shelley.mcleod@sinaihealth.ca





Academic Achievements & Awards

Associate Deputy Editor, Canadian Medical Association Journal. [Dr. Catherine Varner](#)

Sinai Health Foundation. Dr. Don Melady Chair in Geriatric Emergency Medicine. [Dr. Don Melady](#)

Sinai Health Foundation. Dr. Howard Ovens Chair in Emergency Medicine. [Dr. Howard Ovens](#)

Canadian Association of Emergency Physicians 2023 Honorary Life Member Award. [Dr. Don Melady](#)

Canadian Association of Emergency Physicians 2023 Top Pediatric Abstract. Maternal emergency department use before pregnancy and infant emergency department use after birth. [Dr. Catherine Varner](#)

Top Cited Article in Academic Emergency Medicine. Low-dose Ketamine for Acute Pain Control in the Emergency Department: A Systematic Review and Meta-analysis. [Dr. Keerat Grewal](#)

BC Resident Doctors Innovation Award. BC Ministry of Health. Implementation of a novel non-pharmacologic intervention to improve comfort and experience among older adults in the emergency department. [Dr. Kira Gossack-Keenan](#)

Selected Scholar. Canadian Institutes of Health Research - Institute of Cancer Research (CIHR-ICR) Early Career Researcher (ECR) Workshop. [Dr. Keerat Grewal](#)

Award for Best Project, Maternal, Child, and Mental Health Category. Co-designing a web-based education platform for patients with early pregnancy loss. The Ontario Innovation Fund Provincial Oversight Committee (IFPOC) Innovation Fund Showcase. [Dr. Catherine Varner](#)

Ontario Innovation Fund Provincial Oversight Committee (IFPOC) Innovation Fund Showcase. [Dr. Catherine Varner](#)

Award for Excellence in Postgraduate Teaching. Department of Medicine, University of Toronto. [Dr. Shawn Lacombe](#)

Award for Excellence in Postgraduate Teaching. Department of Medicine, University of Toronto. [Dr. Catherine Varner](#)

Appointment to Assistant Professor. Department of Medicine, University of Toronto. [Dr. Rohit Mohindra](#)

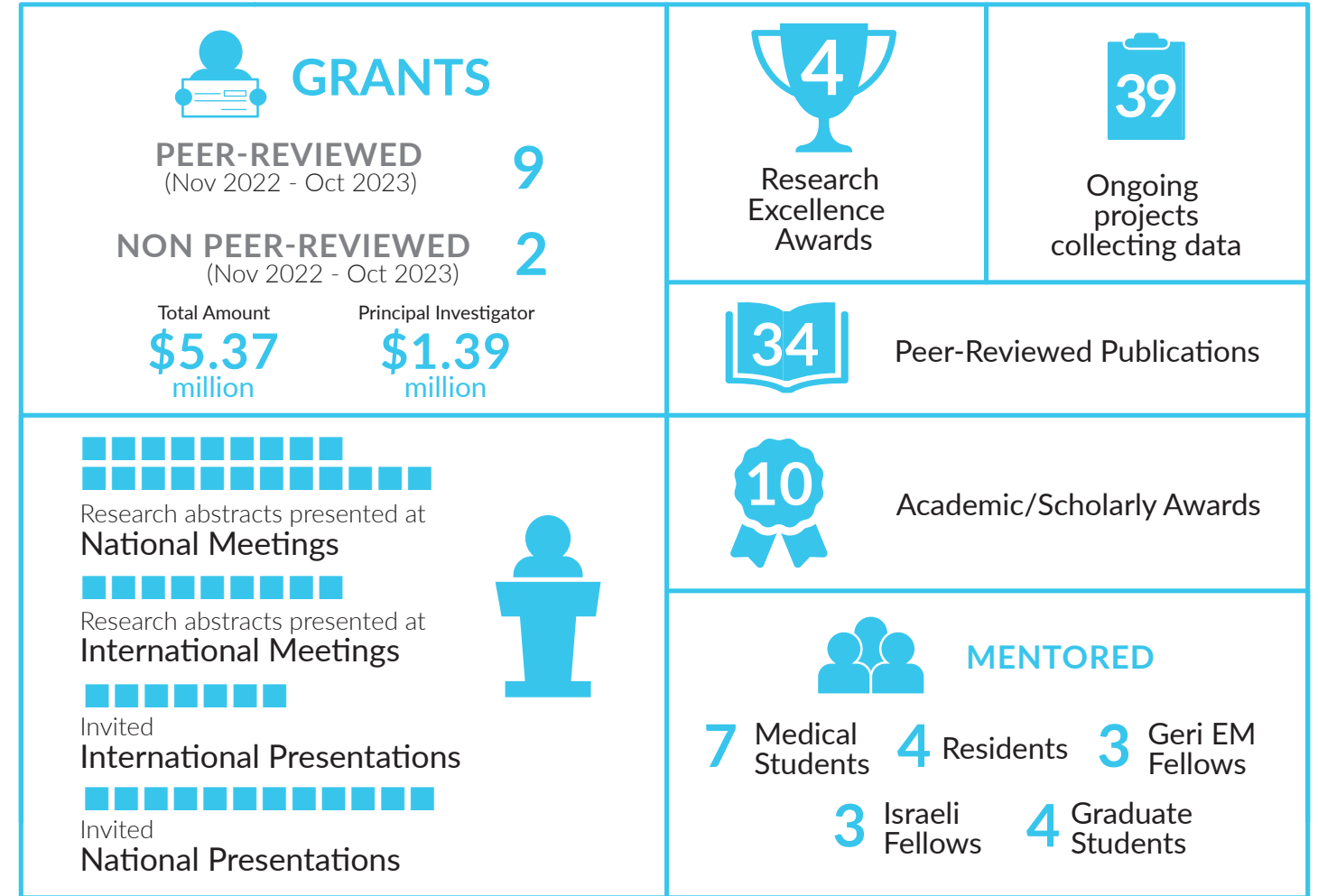
Appointment to the School of Graduate Studies, Institute for Health Policy Management and Evaluation, University of Toronto. [Dr. Keerat Grewal](#)

Nominated for the Peters-Boyd Academy Teaching Award. University of Toronto. [Dr. Jacques Lee](#)

The MD Financial Management Canadian Medical Hall of Fame Award. Temerty Faculty of Medicine, University of Toronto. [Jeeventh Kaur](#)



SREMI by the Numbers



SREMI Team



Bice Amaroso
Project Manager



Nana Asomaning
Faculty



Victoria Aziz
Research Nurse
Specialist



Dr. Priyank
Bhatnagar
Geri EM Fellow



Dr. Bjug
Borgundvaag
Director



Dr. Don Melady
Faculty



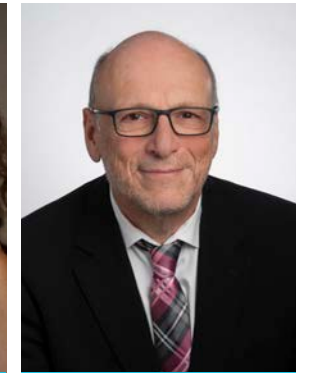
Dr. Rohit Mohindra
Faculty



Clotilde Ngwa
Research
Coordinator



Mahfam Nikoo
Peer Support
Worker



Dr. Howard Ovens
Executive Liaison



Chloe Chalmers
Peer Support
Worker



Dr. Dave Dushenski
Faculty



Jordyn Ethier
Peer Support
Worker



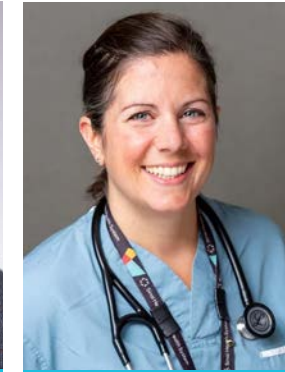
Stef Figueiredo
Peer Support
Worker



Dr. Keerat Grewal
Faculty



Dr. Rick Penciner
Executive Liaison



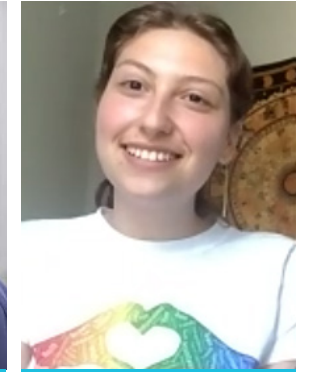
Dr. Nadia Primiani
MSH EM Fellowship
Director



Mahima Sethi
Administrative
Assistant



Dr. Tamar
Shemesh-Lobl
MSH EM Fellow



Bella Shulman
Peer Support
Worker



Dr. Anton Helman
Faculty



Dr. Shawn Lacombe
MSH EM Fellowship
Director



Dr. Jacques Lee
Research Chair



Dr. Nana Maklada
MSH EM Fellow



Dr. Shelley McLeod
Research Director



Cameron Thompson
Research
Coordinator



Dr. Catherine Varner
Deputy Director



Dr. Kevin Wasko
Faculty



Dr. Sabrina Weil
MSH EM Fellow



Joanna Yeung
Research
Coordinator



SREMI Research Chair

Dr. Jacques Lee

The impact of the inaugural SREMI Research Chair in Geriatric Emergency Medicine continues to grow. As highlighted below, SREMI's support for the Research Chair has enabled the expansion of crucial research into social isolation and loneliness, using powerful basic science techniques like metabolomics to better understand delirium, the incorporation of technology and artificial intelligence to improve outcomes for older people who need emergency care and new national and international mentorship and collaborations.

Social Isolation and Loneliness

Social isolation and loneliness contributes to 45,000 deaths per year in Canada and continues to be one of the largest social determinants of health for which there is no commonly accepted treatment. Dr. Lee is leading a team of dedicated, bright research assistants and volunteers to implement and test an intervention to combat social isolation known as *HOW-RU? (HOspitals WoRking in Unison)*. *HOW-RU?* connects lonely older people discharged from the ED with hospital volunteers.

As of October 2023, the study has screened over 4,000 older people and enrolled 89% of the required participants, with completion of enrollment anticipated by the end of 2023. Recently, University of Ottawa medical student Jacky Lee completed over 120 qualitative interviews to understand participants' experience with the *HOW-RU?* interventions, and to learn ways to improve the intervention.



Results should be available by March 2024. If the results are successful as anticipated, the *HOW-RU* intervention offers great promise as a low-cost, scalable intervention that can be expanded to 90% of Canadian hospitals that have volunteer services.

Ongoing Research and New Directions

Dr. Lee's main research focus is delirium, a poorly understood and deadly condition that most affects older people. After 400 years, the underlying processes in the brain that lead to delirium are still not understood. Over a decade, Dr. Lee developed a network of hospitals across Canada that have the capacity to conduct research on older ED patients. With this network and an \$850,000 grant from the Canadian Institutes of Health Research, over the next 5 years Dr. Lee and his team will conduct fundamental research on what happens in the brains of older people when they develop delirium. Having enrolled 40 pilot patients at one center in 2023, enrollment will expand to 3 centers by March 2024, with a final goal of 610 participants by the end of the 5 years. This study has the potential to develop a simple urine test to detect impending delirium in older people with hip fractures, as well as providing fundamental insights into the pathophysiology of delirium that may provide novel treatments and prevention strategies.

Training the Next Generation of Leaders

Dr. Lee supervised Sara Corvinelli, who completed her MSc. thesis in July 2023. Delirium can be classified as "hyperactive delirium", characterized by agitation and restlessness, and "hypoactive delirium" marked by excessive sedation and difficulty arousing patients. Ms. Corvinelli's thesis examined tools to measure these two subtypes of delirium and she discovered important inconsistency with these tools that brings previous research into question. Ms. Corvinelli is continuing her research with the goal of developing better measurement tools.

International Collaboration & Mentorship

The SREMI Research Chair has allowed Dr. Lee to serve as a global resource to foster research in older people needing ED care. With new mentees and collaborators in Australia, the US, Ireland, Singapore and Ethiopia, Dr. Lee is guiding new investigators to help develop important and feasible research projects that will have local and global impact.





SREMI Deputy Director

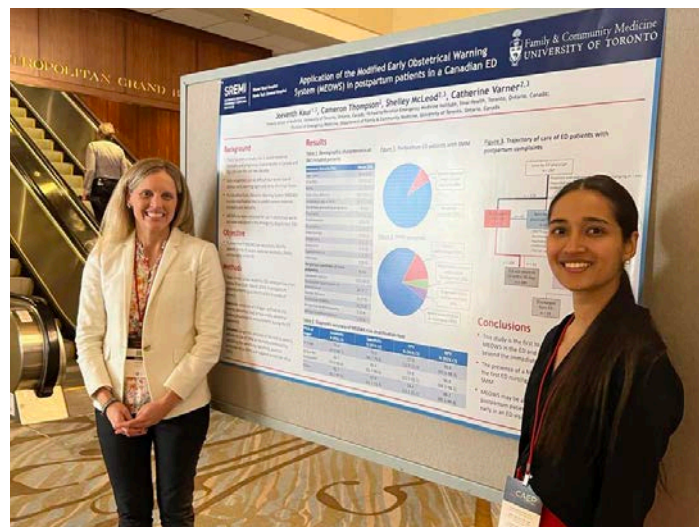
Dr. Catherine Varner

In Canada, emergency departments play a critical role in pregnancy care. In fact, nearly half of women will visit an emergency department (ED) during or shortly after pregnancy. SREMI Scientist and Deputy Director Dr. Catherine Varner is regarded as an international expert on the care of pregnant patients in the ED. In January 2023, Dr. Varner and the SREMI team were thrilled to launch a new care program at Mount Sinai Hospital to improve care for patients experiencing pregnancy loss, an unfortunately common concern in the ED.

Virtual Wraparound Care is a first-of-its-kind program that begins at the point of care in the ED and continues after discharge. A specialized, advanced practice nurse, supervised by Dr. Varner, supports patients through their loss, is available to address their concerns as the loss progresses, and ensures timely follow-up care.

In March 2023, SREMI warmly welcomed Victoria Aziz to the role of Virtual Wraparound Care nurse navigator. A familiar face, Victoria is an RN who has worked in the Schwartz/Reisman Emergency Centre for many years before she transitioned into this role. The program has been an incredible addition to the ED, and more importantly, to the care of this vulnerable and frequent patient population.

The research evaluation of the program has started in the form of patient surveys and interviews, and so far, the feedback is very positive. This program has been a win-win for all involved: the patients receive more attentive and comprehensive care, and the ED has established more efficient follow-up care pathways with our gynaecology colleagues.



With the infrastructure of the program established, Dr. Varner and the SREMI research team applied for and received an innovation fund grant from the Mount Sinai Hospital-University Health Network Academic Medical Organization to co-design web-based supports for patients experiencing early pregnancy loss symptoms in the ED. This co-design project launched in July 2023 is in collaboration with Vitala Global, a not-for-profit organization that creates and supports reproductive technology solutions for pregnant people worldwide.

Dr. Varner also continues to utilize health administrative data housed at the ICES to examine how pregnant patients utilize the ED, how these visits influence pregnancy and infant outcomes, and how to improve system-wide pregnancy care. In the last two years, her work has gained national media attention following the publication of these novel reproductive health studies. Her research abstract entitled, "Maternal emergency department use before pregnancy and infant emergency department use after birth" received the Top Pediatric Abstract Award at this year's Canadian Association of Emergency Physicians Annual Scientific Meeting.



Dr. Varner established a new collaboration in the area of pregnancy care for people with disabilities with Dr. Hilary Brown, an Associate Professor in the Department of Health and Society at the University of Toronto – Scarborough. Using ICES data, the project team evaluated whether people with disabilities are at greater risk of ED use in pregnancy

compared with those without disabilities. The findings of this study were also published in JAMA Network Open in August 2023. This successful collaboration has continued, and the project team was awarded a five-year Canadian Institutes of Health Research Project Scheme Grant to evaluate pregnancy outcomes and care of women with physical-mental multimorbidity.

In January 2023 Dr. Varner assumed the role of Deputy Editor of the Canadian Medical Association Journal. This summer she published two editorials on ED crowding, both resulting in national media attention. Her editorial entitled, "Emergency departments are in crisis now and for the foreseeable future" was one of the most read articles in the journal in 2023. The follow-up editorial entitled, "Without more acute care beds, hospitals are on their own to grapple with emergency department crises" was included in briefings of Deputy Health Ministers and Health Ministers at national meetings held in September and October, respectively.



SREMI Clinician Scientist

Dr. Keerat Grewal

Two in five Canadians will be diagnosed with cancer. Patients with cancer are known to use the ED frequently throughout their cancer journey, from diagnosis to treatment and survivorship. However, to date, very little is known about how these ED visits impact outcomes for patients with cancer. SREMI Clinician Scientist, Dr. Keerat Grewal, is studying this relationship between ED visits and patient outcomes throughout the cancer continuum. Her research aims to improve the care of patients with cancer in the ED.

This year, Dr. Grewal was awarded a three-year Canadian Institutes of Health Research (CIHR) project grant to lead a multidisciplinary, mixed-methods study examining the care of patients in Ontario who are diagnosed with cancer through the ED. As a part of this study, Dr. Grewal and her team surveyed emergency physicians across Ontario regarding follow-up practices for patients with suspected cancer in the ED and found that follow-up for patients varies substantially for different types of cancer. The team is now working on an ICES project using administrative data from across Ontario to quantify the number of patients with cancer in Ontario who use the ED prior to their diagnosis.

Locally, at Mount Sinai Hospital, Dr. Grewal is collaborating with a team of physicians to identify innovative ways to improve outpatient access to cancer diagnostics in order to avoid admission to hospital. The results of Dr. Grewal's research program are laying the foundation to improve access to cancer care from the ED and will help improve patient care for the many Canadians who will use the ED during their cancer diagnosis.



Dr. Grewal continues to study venous thromboembolism and anticoagulation in the ED. Keerat has partnered with investigators and clinicians from Thrombosis Canada, CanVECTOR, and ICES on a recent grant submission to examine real-world data on anticoagulation for cancer-associated thrombosis by comparing newer anticoagulants to older anticoagulants. Dr. Grewal is also a co-investigator on a Canada-wide grant studying testing for pulmonary embolism in the ED.

Dr. Grewal is active with various local and national emergency medicine initiatives. For instance, she is a member of the University of Toronto Emergency Medicine Resident Academic Project committee. She also sits on the CAEP Scientific Planning Committee for continuing medical education webinars. This year, she was invited to review Thrombosis Canada's clinical guidelines on pulmonary embolism treatment. Dr. Grewal continues to mentor medical students and residents, supervising multiple residents and medical students who have gone on to present their research locally and nationally, and receive research awards. Dr. Grewal received her graduate school appointment this year with the Institute for Health Policy Management and Evaluation at the University of Toronto and will contribute to graduate school teaching and supervision.





NYGH Research Lead

Dr. Rohit Mohindra

The Refugee Patient Experience in the ED

Canada's emergency care and refugee systems are at a crisis point. With the government of Canada's plan to welcome more immigrants and refugees in the upcoming years, plus the ongoing shortage of primary care resources, there is an expected increased utilization of emergency departments (ED) by refugee patients. We know refugee patients are less likely to seek emergency medical care, but when they do, they tend to have more severe stages of illness. Refugees also face unique challenges when accessing healthcare in Canada, and their experiences in the ED can vary based on language barriers, cultural differences, past traumatic experiences, and healthcare system understanding. Creating a structured model of care for refugee patients visiting EDs may help to improve overall health, satisfaction with the healthcare system, and reduce unnecessary ED utilization.

This summer, Dr. Mohindra's ED research team launched a three-phase project to understand the refugee patient experience in the NYGH ED. First, the research team partnered with local refugee shelters and interviewed 15 patients about their experience visiting the NYGH ED. Next, Dr. Mohindra's team reviewed medical records to describe the demographics and common medical issues that bring patients to the ED. Finally, the team is currently surveying healthcare providers to understand their perspectives on caring for refugee patients.

The results from these projects will help to better define and understand local challenges and barriers to accessing acute ED care for refugee patients. These results will highlight potential areas for improvement in the care of refugee patients. From this, Dr. Mohindra will plan future knowledge translation initiatives for health care providers, patient education programs for refugee centers, and improve hospital policies for refugees seeking emergency care.



Artificial Intelligence & Enhancing Technology Use in Emergency Care

Dr. Mohindra and the NYGH ED research team have also been investigating ways to incorporate machine learning, artificial intelligence, and other technologies to improve ED care. One example is helping to match patients presenting to the ED with mental health concerns with appropriate outpatient resources.

Currently, clinical staff use a variety of manual practices to determine referrals to the most appropriate community mental health programs as part of their discharge planning (paper lists of current providers, addresses and contacts, etc). This method of matching patients with appropriate community healthcare resources is time-consuming, cumbersome and often uses static and outdated information. Building on the power of artificial intelligence (AI) and machine learning in healthcare delivery, we will develop a new, innovative AI tool for clinical use, optimizing and standardizing the process of matching youth presenting with mental health challenges in the ED to appropriate community mental health resources. This AI tool will be part of a more extensive system of wrap-around care for supportive discharge in partnership with community-based agencies and a multi-disciplinary team of mental health-trained professionals.



SREMI Research Summer Students



Jacky Lee is a second-year medical student from the University of Ottawa. He worked with Dr. Jacques Lee on the social isolation and loneliness trial. He conducted one-on-one telephone interviews with research participants to understand their experience and perspectives of isolation and loneliness, facilitators and barriers to accessing the intervention, and ideas for improvements in the trial. His SREMI summer studentship provided him with the opportunity to meet with leaders in emergency medicine and learn more about physician roles in advocacy and how to effect change.



Grace Kuang is a second-year medical student at the University of Toronto. This past summer, Grace worked with Dr. Rohit Mohindra to conduct qualitative interviews of refugee patients that presented to the North York General Hospital emergency department (ED). In parallel to this project, Grace also created a survey that was distributed to ED health care providers, asking about their experiences caring for refugee patients. Taken together, these projects aim to illuminate the challenges and facilitators to providing optimal care for refugee patients, a fast-growing patient population in the North York ED.



Pranav Tandon is a third-year medical student at the University of Toronto. This summer, he collaborated with Dr. Keerat Grewal on a retrospective chart review involving 848 patients diagnosed with venous thromboembolism in the ED and identified factors that predicted the selection of anticoagulant. Additionally, there is an intention to examine predictors of hospitalization among patients diagnosed with pulmonary embolism. Pranav also explored his clinical interest in emergency medicine through weekly shadowing sessions with physicians in Mount Sinai Hospital's ED.



Jeeventh Kaur is a third-year medical student at the University of Toronto. This past summer, she worked with Dr. Catherine Varner on a qualitative study of patients experiencing early pregnancy loss who visited the Mount Sinai Hospital emergency department. The objective to evaluate a new Virtual Wraparound Care Program that has been instituted in the ED to better serve this vulnerable patient population. She also organized two co-creation workshops with patient and healthcare partners intended to guide the development of an app (in development by Vitala Global) which will virtually support patients experiencing pregnancy loss.



Mina Al Akko is a third-year medical student at the University of Toronto. This summer, he worked with Dr. Rohit Mohindra at North York General Hospital on two refugee-health research projects. For the first project, Mina interviewed refugee patients about their ED experience, and the second project was a retrospective chart review of 960 patient encounters to describe the presenting complaints, demographic characteristics, and outcomes of refugee patients seeking emergency care. These results will inform patient education programs and future initiatives designed to improve access to healthcare for refugee patients.



Lara Murphy is a third-year medical student at the University of Toronto. This summer, she worked with Dr. Catherine Varner on the qualitative evaluation of the Virtual Wraparound Care Program. She interviewed patients who had an emergency department visit for symptoms of early pregnancy complications who also received follow-up care navigation with the Virtual Wraparound Care nurse navigator Victoria Aziz. Lara also worked with Dr. Nadia Primiani on a qualitative project evaluating the use of simulation as an educational modality to teach emergency medicine residents about implicit gender bias.

Education





Geriatric Emergency Medicine

Dr. Don Melady

Dr. Don Melady continues his work with SREMI focussed on promoting excellent care of older ED patients in Mount Sinai's own ED and on disseminating and implementing the concept of the older person-friendly ED, nationally and internationally.

Under Dr. Melady's direction, SREMI continues to host Canada's only clinical fellowship in Geriatric Emergency Medicine. This past year SREMI welcomed two fellows. Dr. Ranjeev Kumar, from Singapore, was our first international fellow. As an experienced mid-career physician, his principal interest was in innovative models of care that have been developed at Sinai Health and in the Canadian system in general. Dr. Kira Gossack-Keenan from UBC was our Canadian fellow. During her fellowship year, she completed a Clinical Teaching Certificate diploma and did additional training in both Addiction Medicine (in the older population) and palliative medicine. She has returned to a staff position at Vancouver General Hospital and a faculty position at UBC. In the year, 2023-24, we are hosting a final-year University of Toronto resident, Dr. Priyank Bhatnagar as the Geri EM fellow. SREMI now has eleven alumni of this fellowship program working in leadership positions in seven Canadian provinces and in Singapore.

Dr. Melady is active on the international stage. He continues as the chair of the Clinical Practice Committee at the International Federation of Emergency Medicine. This group brings together the leads of all the clinically relevant bodies in 45 national EM organizations. In that role, he supported the planning for the ICEM 2023 conference in Amsterdam; and is actively involved in planning the ICEM 2024 conference in Taiwan. At the American grant-funded organization, The Geriatric ED Collaborative, he creates and hosts a widely attended bi-monthly webinar series on various topics in geriatric ED care. He creates content and support for the group's website <https://gedcollaborative.com>. He works with a team to disseminate



and implement best practices in geriatric care in hospitals and health systems across the United States. He is on the Editorial Board of the nascent Journal of Geriatric Emergency Medicine which has developed a strategic plan that includes PubMed indexing by the end of 2024.



Dr. Melady maintains a leadership role in the Geriatric EM committee of the Canadian Association of Emergency Physicians (CAEP). The Education group within that committee has developed and presented a Clinical Geriatric EM course five times for Canadian emergency physicians. This year, the course was hosted by physician groups in northern Ontario and in Newfoundland. The group presented CAEP National Grand Rounds in January 2023 focussing on trauma management in older patients. Dr. Melady introduced a new format to the 2023 CAEP conference this year with the EM Learning Exposition, where over 450 conference participants interacted with clinical experts in "learning stalls" across the spectrum of emergency medicine. At the 2023 CAEP conference, Dr. Melady received its highest award, the Lifetime Membership Award, which is given in recognition of "outstanding contributions and dedicated service to emergency medicine in Canada and CAEP. Individuals who receive this award are fixtures within the EM specialty."



EM Cases

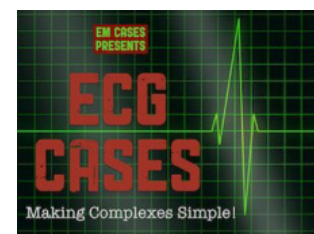
Dr. Anton Helman

Dr. Anton Helman's EM Cases, currently in its 13th year, is a leading force in the Free, Open Access Medical Education movement, widely known as FOAMed. As an exemplar of this movement, EM Cases produces freely accessible, emergency medicine-related podcasts, written material, quizzes, push emails, and videos.

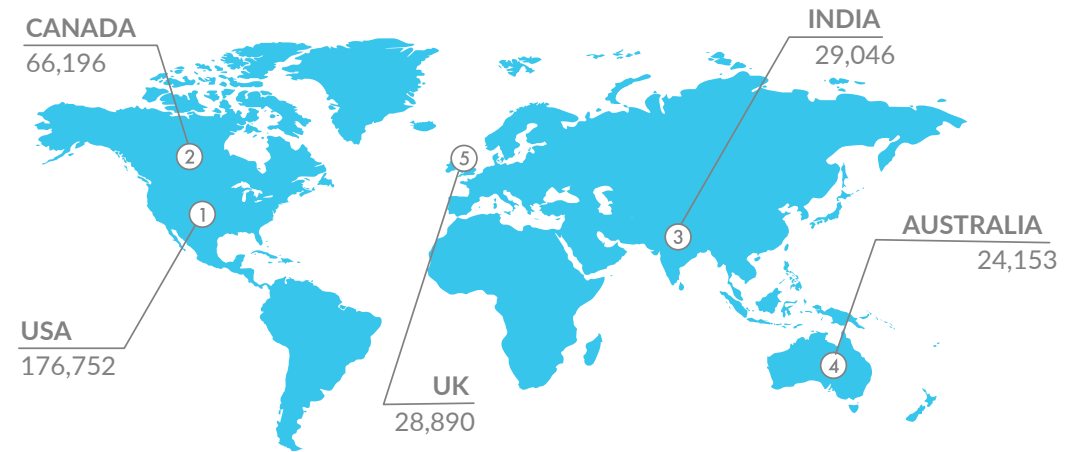
Having recently released its 400th podcast, EM Cases has more than 21 million podcast listens and is the most listened to emergency medicine podcast in Canada. The website has attracted nearly 3 million page views and 650,000 users in the past year.

Not surprisingly, the number of users of the website has increased over the past three years, as its multi-modal learning system attracts medical learners from all stages of training and beyond. EM Cases Quiz Vault, for example, is a growing bank of multiple-choice questions started three years ago and has been used by more than 10,000 people from around the world. More than 1000 multiple choice questions have also been made available for free on the most popular study aid tool used by medical residents and students, Anki flashcards.

This past year, the 2nd virtual EM Cases Summit brought more than 500 emergency medicine providers from around the world (including 100 from resource-challenged countries) for a large-scale interactive conference that featured prominent emergency medicine speakers, virtual simulations, symposiums on wellness, rural emergency medicine and global emergency medicine, procedural demos and panel discussions. The Summit's success



EM CASES NEW USERS - TOP 5 COUNTRIES




Total downloads since inception:	21,085,536
Total downloads Nov 2021 – Oct 2022:	4,075,534
Total downloads per day:	~ 12,000
Total downloads per month:	~ 325,000
Website users Nov 2022 – Oct 2023:	~ 55,000

has fueled a third conference planned for November 2024 that is again incorporating cutting edge virtual simulation sessions as well as a new ECG interpretation course.

Several new projects have been developed and are currently running including: a rural emergency medicine podcast series, a global emergency medicine podcast series, a wilderness emergency medicine podcast series, a podcast series featuring the best of University of Toronto emergency medicine research, the written summaries of the main episode podcasts translated into French, and an EM Cases Journal Club, featuring Dr. Rohit Mohindra and Dr. Shelley McLeod.

Emergency medicine and emergency medicine education have evolved significantly in Canada having hit a steady state where the quality of care and education is unparalleled from both a historic and geographic perspective. However, there is much work to be done to improve care and emergency medicine education in resource-limited countries. Dr. Helman would like to expand the EM Cases learning system further in this regard, providing more location-specific education while also developing an online simulation program.

EM Cases, as a unique multi-modal learning system, continues to be the leader in free open access emergency medicine education in Canada.



MSH Emergency Medicine Fellowship

The MSH Emergency Medicine Fellowship is a joint venture between the Ministry of Health of Israel, the Azrieli foundation, SREMI, and Mount Sinai Hospital. We are currently in our fourth operating year and have trained and developed lifelong relationships with five outstanding emergency medicine fellows from all parts of Israel who are already making impactful changes in their local hospitals and the field of Emergency Medicine. We are looking forward to hosting our sixth fellow Dr. Yusef Darawsha from the Bnai Zion hospital in the fall of 2023.



Dr. Tamar Shemesh-Lobl

(2021-2024)

Dr. Tamar Shemesh-Lobl has chosen to extend her fellowship by another year to focus on mastering emergency department orthopedics. Her second year of her fellowship saw her gain experience with regional anesthesia, pain management, and she spent many Friday's working closely with Dr. Arun Sayal at NYGH gaining hands on experience with common ED ortho presentations. She will continue this experience as well as completing another two months of high volume orthopedics at Collingwood General and Marine hospital during ski season, sports medicine at the Mount Sinai Dovigi Orthopedic Sports Medicine Clinic, trauma orthopedics at Sunnybrook Health Sciences Centre, and pediatric orthopedics at SickKids. After completing this third and final year, Tamar will return to Israel to her staff position at the Sheba Medial Center at Tel-Hashomer.



Dr. Sabrina Weill

(2022-2023)

Sabrina completed her fellowship in the summer of 2023. Upon return she will continue working as a staff EM physician at Assuta Ashdod Hospital, a regional academic center. With her additional training from her fellowship, she will be bringing back a host of new ideas to her department. Some of her goals include focusing on improving ED flow, resident education, department scheduling, and pediatric emergency medicine.



Dr. Nana Maklada

Two-Year Fellowship (2021-2023)

Nana also recently completed her fellowship and has returned to work as a lead in the ICU, trauma bay, and emergency department. In her second year, focused on regional anesthesia, orthopaedics, and improving critical care procedures. One of her main objectives is to promote emergency medicine orthopedics at her site. She also wishes to incorporate some of the learning strategies she experienced during her fellowship to help train the next generation of residents including weekly educational rounds.

EDAC 2022

Canada's leading Emergency Department Administration Conference (EDAC), presented by the Schwartz/Reisman Emergency Institute (SREMI), was held virtually on November 7th, 2022. It was a full day interactive virtual conference providing updates on issues of importance to leaders and administrators in emergency services, presented by internationally renowned speakers.

Dr. Alecs Chochinov and Dr. David Petrie spoke on the CAEP "EM:POWER" task force and the future of emergency medicine in Canada. Other sessions included the role of emergency services in the provision of virtual care, recruitment, and retention strategies to address the growing staffing crisis in emergency nursing, and burnout and staff resilience strategies. Lastly, the Dr. Paul Hannam Memorial Lecture, entitled "The Power of Teamwork in Emergency Care" was delivered by Dr. Brian Goldman.

Speakers:



Dr. Kylie Booth



Dr. Leigh Chapman



Dr. Alecs Chochinov



Dr. Brian Goldman



Jennifer Ko



Judy Linton



Dianne Martin



Dr. Heather Patterson



Dr. David Petrie



2022



84
Attendees

"I was glad to see an entire section of the program devoted to nursing issues."

"Good to hear from multiple different perspectives on the nursing/staffing issue and also different perspectives on virtual care. The speakers were very engaging and spoke to relevant topics."

"Excellent and timely topics. The session on virtual care was fantastic."

"The state of the union was most effective. Validation and common vision."

Dr. Paul Hannam Memorial Award

The Dr. Paul Hannam Memorial Award for Emerging Leadership in Emergency Medicine, established jointly through SREMI and the Canadian Association of Emergency Physicians (CAEP), honours Dr. Hannam's legacy and values, including leadership, mentorship and commitment to equity.



Dr. Allison McConnell

London Health Sciences Centre, London



Dr. Allison McConnell first demonstrated leadership through example by taking on the role chief resident while completing her residency in Emergency Medicine at Western University. When she became a permanent staff member at London Health Sciences Centre (LHSC), Dr. McConnell took on the role of Postgraduate Coordinator for Emergency Medicine, where she rose to the occasion despite the onset of the COVID-19 pandemic and increased demand on this role.

She was recently appointed Program Director of Western University's Emergency Medicine Residency program, securing academic accreditation for the program within a year of assuming the role. As program director, Dr. McConnell formally takes part in mentorship of her junior colleagues in the Emergency Department through the Western Mentorship Program as well as the Peers to Peers program and acts as an informal mentor to many. As part of this work she advocates for equity, diversity and inclusion as cornerstones of a strong residency program. Her colleagues say she leads with humility and by example and knows when it is helpful to use words and when it is best to lead through action.

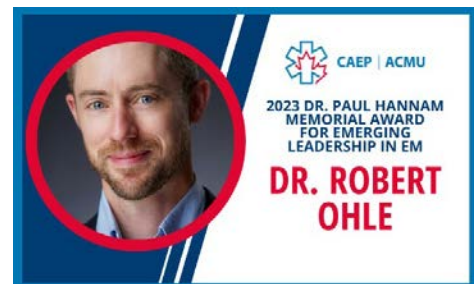


Dr. Robert Ohle

Health Science North, Sudbury

Dr. Robert Ohle is an Emergency Physician at Health Science North (HSN), Director of Emergency Medicine Research at Health Science North Research Institute (HSNRI) and HSNRI Lead, Emerging Areas of Research. Dr. Ohle helped form the Northern Network of Emergency Medicine Research, part of the Northern Ontario Health Innovation Cluster, to build research capacity in the region for existing clinicians and learners. Dr. Ohle is a member of the Network of Canadian Emergency Medicine Researchers. This initiative offers mentorship and support to emergency medicine researchers across Canada.

Dr. Ohle is committed to ensuring a voice for marginalized communities in the development of clinical guidelines, recognizing that Northern Ontario is not often at the table when it comes to generating such guidelines. He is in the process of increasing the engagement, focus and infrastructure to direct increased research priorities to First Nations, Inuit and Métis communities in Northern Ontario. He also has a passion for mentoring and supervising medical students and residents, and has help grow HSN's resident research program.



Innovation





RBC Pathway to Peers

Bice Amoroso

The RBC Pathway to Peers (P2P) program is focused on supporting young adults aged 16 to 29 years who seek care at Mount Sinai Hospital's emergency department (ED) for mental health, substance use and/or chronic health issues. The program's peer support workers are available up to 10 hours per day, seven days a week, collaborating with the clinical team to help youth navigate the health-care system. They provide in-person, real-time, emotional support, advocacy, and coping strategies to young adults during and after their ED visit. The RBC P2P support workers also use their lived experience and knowledge of available outpatient services to connect patients with community-based resources.

This past summer, the RBC P2P program hired a new RBC P2P Research Project Manager, Bice Amoroso, and three new part-time peer support workers: Chloe Chalmers, Mahfam Nikoo and Stef Figueiredo.

The new peer support workers completed our recently updated RBC P2P training and orientation sessions provided in partnership with Peer Support Canada. Our ally and certified peer support mentor, Allison Dunning (Director of Peer Support Canada), facilitated group training sessions that were completed over four days. The curriculum was centered on the Peer Support Canada Code of Ethics, knowledge matrix and competencies. The new peer support workers also completed ED specific training which also involved one-on-one shadowing and training on multiple shifts with our experienced RBC P2P peer support workers and debriefing with the program manager. Subsequently, they also completed training in Naloxone kit distribution and Non-Violent Crisis Intervention to enhance their skills in the ED.



Our RBC P2P team are recognized as leaders and advocates for young adult patients with mental health and addictions problems within Sinai Health. Our peer support workers have presented at the hospital's systemic basis and racism committee and the ED's substance use committee. They have used their peer lens and lived experience to inform the development of specific in-situ ED simulation education modules for our ED staff. These simulations focus on mental health and addictions and have helped our staff to learn to better communicate with young people in crisis.

Our team continues to reach out to other community agencies servicing young adults to share information regarding the P2P model, and offer support to their young adult clients should they need to come to the ED. As community-based resources and organizations continue to change, the peer support workers play a vital role in reaching out community agencies and updating the P2P community resource list to provide up-to-date and directed resources to youth.



and provincial agencies to fund expansion of our program. Finally, in 2023 we obtained funding from The Slight Family Foundation to expand our P2P program to a second hospital ED in the greater Toronto area. This next phase in the growth of our RBC P2P program will serve as a "proof of concept" to demonstrate it is possible to recreate this program at additional sites, in preparation for further expansion should funding become available.

Since its introduction in the Mount Sinai Hospital ED, the RBC P2P program has supported over 5,500 young adults. This program has enhanced services for youth and collaborative care in ED. The peer support workers create safe spaces for youth and help foster a sense of hope and recovery. We would like to thank the RBC Foundation for their generous ongoing support of this program.



Within the broader health-care system, we have submitted abstracts to several local, provincial and national conferences and have delivered multiple presentations and workshops to date. These presentations have focused on how we conceived and implemented the RBC P2P program at Sinai Health. At the virtual 2023 META:PHI conference, the P2P team gave a talk entitled, "Peer support in the emergency department: An innovative role, complimenting care for young adults presenting with mental health and/or substance use", which was well attended and received from the audience. Enthusiastically, the P2P team accepted an invitation on a panel for the 2023 Peer Support Insight Assembly in Moose Jaw, Saskatchewan. Dr. Bjug Borgundvaag and Jordyn Ethier discussed the benefits of peer support services in ED, and the advocacy work and support required to create a peer support service in ED. As with other such presentations, there was a great deal of interest in learning how to recreate a similar program at other hospitals.

In 2023, Dr. Borgundvaag and Dr. Shelley McLeod met with the Honorable Dr. Carolyn Bennett, Federal Minister of Mental Health and Addictions, to discuss our program and seek advice on how to partner with federal



Research Publications November 2022 – October 2023

COVID-19 (n=7)

1. Casalino S, Frangione E, Chung M, MacDonald G, Chowdhary S, Mighton C, Faghfoury H, Bombard Y, Strug L, Pugh TJ, Simpson J, Arnoldo S, Aujla N, Bearss E, Binnie A, Borgundvaag B, Chertkow H, Clausen M, Dagher M, Devine L, Di Iorio D, Friedman SM, Fung CYJ, Gingras AC, Goneau LW, Kaushik D, Khan Z, Lapadula E, Lu T, Mazzulli T, McGeer A, McLeod SL, Morgan G, Richardson D, Singh H, Stern S, Taher A, Wong I, Zarei N, Greenfield E, Hao L, Lebo M, Lane W, Noor A, Taher J, Lerner-Ellis J. Genome screening, reporting, and genetic counseling for healthy populations. *Hum Genet.* 2023 Feb;142(2):181-192.
2. Archambault PM, Rosychuk RJ, Audet M, Bola R, Vatanpour S, Brooks SC, Daoust R, Clark G, Grant L, Vaillancourt S, Welsford M, Morrison LJ, Hohl CM; Canadian COVID-19 Emergency Department Rapid Response Network (CCEDRRN) investigators; Network of Canadian Emergency Researchers; Canadian Critical Care Trials Group. Accuracy of Self-Reported COVID-19 Vaccination Status Compared With a Public Health Vaccination Registry in Québec: Observational Diagnostic Study. *JMIR Public Health Surveill.* 2023 Jun 16;9:e44465.
3. McAlister FA, Hau JP, Atzema C, McRae AD, Morrison LJ, Grant L, Cheng I, Rosychuk RJ, Hohl CM; Canadian COVID-19 Emergency Department Rapid Response Network (CCEDRRN) Investigators. The burden of incidental SARS-CoV-2 infections in hospitalized patients across pandemic waves in Canada. *Sci Rep.* 2023 Apr 24;13(1):6635.
4. Morgan G, Briollais L, Clausen M, Casalino S, Mighton C, Chowdhary S, Frangione E, Fung CYJ, Arnoldo S, Bearss E, Binnie A, Borgundvaag B, Dagher M, Devine L, Friedman SM, Khan Z, McGeer A, McLeod SL, Richardson D, Stern S, Taher A, Wong I, Zarei N, Bombard Y, Lerner-Ellis J, Taher J. Public knowledge of SARS-CoV-2 serological and viral lineage laboratory testing and result interpretation: A GENCOV study cross-sectional survey. *Clin Biochem.* 2023 Aug;118:110607.
5. COVID-19 Host Genetics Initiative (Borgundvaag B, McLeod SL). A second update on mapping the human genetic architecture of COVID-19. *Nature.* 2023 Sep;621(7977):E7-E26.
6. Morgan G, Casalino S, Chowdhary S, Frangione E, Fung CYJ, Haller S, Lapadula E, Scott M, Wolday D, Young J, Arnoldo S, Aujla N, Bearss E, Binnie A, Bombard Y, Borgundvaag B, Briollais L, Dagher M, Devine L, Faghfoury H, Friedman SM, Gingras AC, Goneau LW, Khan Z, Mazzulli T, McLeod SL, Nomigolzar R, Noor A, Pugh TJ, Richardson D, Satnam Singh HK, Simpson J, Stern S, Strug L, Taher A, Lerner-Ellis J, Taher J. Characterizing Risk Factors for Hospitalization and Clinical Characteristics in a Cohort of COVID-19 Patients Enrolled in the GENCOV Study. *Viruses.* 2023 Aug 18;15(8):1764.
7. Grewal K, Atzema CL, Sutradhar R, Yu W, Chartier LB, Friedman SM, Landes M, Borgundvaag B, McLeod SL. Hospital admission from the emergency department for selected emergent diagnoses during the first year of the COVID-19 pandemic in Ontario: a retrospective population-based study. *CMAJ Open.* 2023 Oct 24;11(5):E969-E981.

ED Administration (n=6)

1. McLeod SL, Mondoux S, Hall JN, Dainty K, McCarron J, Tarride JE, Abraham L, Tse S, Lim R, Fitzgibbon M, Montpellier RA, Rivlin L, Rodriguez C, Beck L, McLean L, Rosenfield D, Mehta S, Welsford M, Thompson C, Ovens H. Demographic characteristics, outcomes and experience of patients using virtual urgent care services from 14 emergency department led sites in Ontario. *CJEM.* 2023 Jan;25(1):65-73.
2. Rosenberg H, Snider C, Schull MJ, Ovens H, Lang E. Emergency department leadership considerations for the next phase of the COVID-19 pandemic. *CJEM.* 2023 Feb;25(2):110-114.
3. Bandiera G, Ovens H, Revue E. One size does not fit all: the complexities of addressing flow in contemporary EDs. *CJEM.* 2023 Mar;25(3):185-186.
4. Varner C. Emergency departments are in crisis now and for the foreseeable future. *CMAJ.* 2023 Jun 19;195(24):E851-E852.
5. Varner C. Without more acute care beds, hospitals are on their own to grapple with emergency department crises. *CMAJ.* 2023 Sep 5;195(34):E1157-E1158.
6. Dainty KN, Seaton MB, Hall JN, Mondoux S, Abraham L, McCarron J, Tarride JE, McLeod SL. "It saved me from the emergency department": A qualitative study of patient experience of virtual urgent care in Ontario. *PLoS One.* 2023 Sep 22;18(9):e0285468.

Cardiovascular (n=6)

1. Cheskes S, Verbeek PR, Drennan IR, McLeod SL, Turner L, Pinto R, Feldman M, Davis M, Vaillancourt C, Morrison LJ, Dorian P, Scales DC. Defibrillation Strategies for Refractory Ventricular Fibrillation. *N Engl J Med.* 2022 Nov 24;387(21):1947-1956.
2. Fernando SM, Mathew R, Sadeghirad B, Rochweg B, Hibbert B, Munshi L, Fan E, Brodie D, Di Santo P, Tran A, McLeod SL, Vaillancourt C, Cheskes S, Ferguson ND, Scales DC, Lin S, Sandroni C, Soar J, Dorian P, Perkins GD, Nolan JP. Epinephrine in Out-of-Hospital Cardiac Arrest - A Network Meta-Analysis and Subgroup Analyses of Shockable and Non-Shockable Rhythms. *Chest.* 2023 Jan 31;S0012-3692(23)00165-4.
3. Ferguson E, Yadav K, Sharma M, Sivilotti MLA, Émond M, Stiell IG, Stotts G, Lee JS, Worster A, Morris J, Cheung KW, Jin AY, Oczkowski WJ, Sahlas DJ, Murray HE, Mackey A, Verreault S, Camden MC, Yip S, Teal P, Gladstone DJ, Boulos MI, Chagnon N, Shouldice E, Atzema C, Slaoui T, Teitelbaum J, Nemnom MJ, Wells GA, Nath A, Perry JJ. Prospective Validation of Computed Tomography to Identify Patients at High Risk for Stroke After Transient Ischemic Attack or Minor Stroke. *Stroke.* 2023 Apr;54(4):1030-1036.
4. Sem M, Mastrangelo E, Lightfoot D, Aves T, Lin S, Mohindra R. The ability of machine learning algorithms to predict defibrillation success during cardiac arrest: A systematic review. *Resuscitation.* 2023 Apr;185:109755.

5. Wilson G, Sharma M, Eagles D, Nemnom MJ, Sivilotti MLA, Émond M, Stiell IG, Stotts G, Lee J, Worster A, Morris J, Cheung KW, Jin AY, Oczkowski WJ, Sahlas DJ, Murray HE, Mackey A, Verreault S, Camden MC, Yip S, Teal P, Gladstone DJ, Boulos MI, Chagnon N, Shouldice E, Atzema C, Slaoui T, Teitelbaum J, Wells GA, Nath A, Perry JJ. Ninety-Day Stroke or Transient Ischemic Attack Recurrence in Patients Prescribed Anticoagulation in the Emergency Department With Atrial Fibrillation and a New Transient Ischemic Attack or Minor Stroke. *J Am Heart Assoc.* 2023 Apr 18;12(8):e026681.
6. Kavsak PA, Clark L, Arnoldo S, Lou A, Shea JL, Eintracht S, Lyon AW, Bhayana V, Thorlacius L, Raizman JE, Tsui AKY, Djiana R, Chen M, Huang Y, Booth RA, McCudden C, Lavoie J, Beriault DR, Blank DW, Fung AWS, Hoffman B, Taher J, St-Cyr J, Yip PM, Belley-Cote EP, Abramson BL, Borgundvaag B, Friedman SM, Mak S, McLaren J, Steinhart B, Udell JA, Wijeyesundera HC, Atkinson P, Campbell SG, Chandra K, Cox JL, Mulvagh S, Quraishi AU, Chen-Tournoux A, Clark G, Segal E, Suskin N, Johri AM, Sivilotti MLA, Garuba H, Thiruganasambandamoorthy V, Robinson S, Scheuermeyer F, Humphries KH, Than M, Pickering JW, Worster A, Mills NL, Devereaux PJ, Jaffe AS. Analytic Result Variation for High-Sensitivity Cardiac Troponin: Interpretation and Consequences. *Can J Cardiol.* 2023 Jul;39(7):947-951.

Early Pregnancy (n=5)

1. Varner CE, Lee S, McLeod S, Bearss E, Singwi A, Hu S, Nahiddi N, Borgundvaag B. Point-of-care ultrasound for evaluation of vaginal bleeding or abdominal pain in early pregnancy: Use by family physicians following focused training and certification. *Can Fam Physician.* 2022 Nov;68(11):e326-e332.
2. Varner CE, Park AL, Ray JG. Maternal Emergency Department Use Before Pregnancy and Infant Emergency Department Use After Birth. *JAMA Netw Open.* 2023 Mar 1;6(3):e232931. doi: 10.1001/jamanetworkopen.2023.2931.
3. Kaur J, Thompson C, McLeod S, Varner C. Application of the Modified Early Obstetrical Warning System (MEOWS) in postpartum patients in the emergency department. *CJEM.* 2023 Jun;25(6):481-488.
4. Brown HK, Varner C, Ray JG, Scime NV, Fung K, Guttman A, Haverkamp SM, Vigod SN, Lunsby Y. Comparison of Emergency Department Use Between Pregnant People With and Without Disabilities in Ontario, Canada. *JAMA Netw Open.* 2023 Aug 1;6(8):e2327185.
5. Brown HK, Fung K, Cohen E, Dennis CL, Grandi SM, Rosella LC, Varner C, Vigod SN, Wodchis WP, Ray JG. Patterns of multiple chronic conditions in pregnancy: Population-based study using latent class analysis. *Paediatr Perinat Epidemiol.* 2023 Oct 21. doi: 10.1111/ppe.13016. Epub ahead of print.

Geriatric EM (n=4)

1. Lanoue MP, Ho J, Melady D. Just the facts: geriatric pharmacology for the emergency department. *CJEM.* 2023 Jan;25(1):14-16.
2. Goldstein J, Rockwood K, Lee JS. Pre-arrest frailty and implications for cardiac arrest care. *Resuscitation.* 2023 Jun;187:109793.
3. Russek NS, Skappak C, Scheuermeyer F, Brousseau AA, McLeod SL, Melady D, Spencer M. Pharmacological Management of Agitation and Delirium in Older Adults: a Survey of Practices in Canadian Emergency Departments. *Can Geriatr J.* 2023 Sep 1;26(3):405-409.
4. Melady D, Schumacher JG. Developing a Geriatric Emergency Department: People, Processes, and Place. *Clin Geriatr Med.* 2023 Nov;39(4):647-658.



General EM (n=2)

1. Goldstein J, Lajeunesse D, Abawajy K, Luan A, Hancock K, Carter A, Greene JA, McVey J, Lee JS. Paramedic supportive discharge programmes to improve health system efficiency and patient outcomes: a scoping review protocol. *BMJ Open.* Feb 16;13(2):e066645.
2. Harish V, Grewal K, Mamdani M, Thiruganasambandamoorthy V. Teaching old tools new tricks-preparing emergency medicine for the impact of machine learning-based risk prediction models. *CJEM.* 2023 May;25(5):365-369.
3. Gregory C, Chorny Y, McLeod S, Mohindra R. Letter in Reply: First-line Medications for the Outpatient Treatment of Alcohol Use Disorder: A Systematic Review of Perceived Barriers. *J Addict Med.* 2023 May-Jun 01;17(3):372.
4. Boucher V, Frenette J, Neveu X, Tardif PA, Mercier É, Chauny JM, Berthelot S, Archambault P, Lee J, Perry JJ, McRae A, Lang E, Moore L, Cameron P, Ouellet MC, de Guise E, Swaine B, Émond M, Le Sage N. Lack of association between four biomarkers and persistent post-concussion symptoms after a mild traumatic brain injury. *J Clin Neurosci.* 2023 Oct 17;118:34-43. doi: 10.1016/j.jocn.2023.10.007. Epub ahead of print.

Cancer Care (n=2)

1. Grewal K, Herrity E, Pasic I. Tumour lysis syndrome. *CMAJ Apr 2023, 195(14):E1515; DOI: 10.1503/cmaj.221433.*
2. Kang S, McLeod SL, Walsh C, Grewal K. Patient outcomes associated with cancer diagnosis through the emergency department: A systematic review. *Acad Emerg Med.* 2023 Sep;30(9):955-962.

Pillars of Inquiry

-  **Rigour & Quality**
We pursue scholarly rigour and quality in the development and implementation of robust and impactful emergency medicine research and education.
-  **Patient-Centered Care**
We hear patient voices and change emergency care to improve patient outcomes and health.
-  **Priority Community Health Concerns**
We focus on the health and health system concerns that are the greatest challenge to our patients, communities, and populations. We recognize emergency medicine as a leader in addressing these concerns.



www.sremi.ca



@SREMI_MSH



SREMI@SinaiHealth.ca



416.586.4800 ext 8330



Schwartz/Reisman
Emergency Medicine Institute
600 University Avenue
Toronto, Ontario M5G 1X5