

Healthier, Wealthier, Smarter Health Research Showcase

Hosted by the Council of Academic Hospitals of Ontario (CAHO), Dec. 6, 2016 at Queen's Park



@Baycrest

BAYCREST: The eye-tracking based cognitive assessment is a fast and easy-to-use tool that can assist family physicians in evaluating cognitive decline in clients. This screening software tracks a client's eye movements as they view images on a screen, offering insight into the performance of the brain's memory regions. This cognition test is not affected by language or education barriers or motor challenges and could provide more accurate cognition test results. Early detection of memory problems could lead to faster deployment of appropriate treatments and support for maintaining brain health.



@BruyereCare

BRUYÈRE CONTINUING CARE: The Champlain BASE™ eConsult service was developed in Ontario by Dr Clare Liddy and Dr Erin Keely to improve access to timely, patient-centered, high-quality specialist care (short-term) while decreasing clinical and system utilization (long-term) for Canadians. Our established collaborative multi-disciplinary team brings together partners from across Canada (BC, AB, MB, NWT, ON, QC, NL), the US and Spain; includes patients, researchers, front-line providers, and key decision makers from a variety of primary and specialty care settings and national organizations. We use the "Quadruple Aim" framework (patient experience, health system costs, population health outcomes, and provider experience) to continuously measure impact. 23 peer-reviewed journal articles are available. (www.ChamplainBASEeConsult.com).



@CAMHnews

CENTRE FOR ADDICTION AND MENTAL HEALTH: The goal of Dr. Fang Liu's research is to develop novel therapeutics for brain disorders using a completely new approach that selectively blocks aberrant protein-protein interactions in neurons. Dr. Liu's approach, which affects only the cell signalling cascade involved in disease, achieves higher efficacy and fewer side-effects than is possible with traditional drugs. Her group has developed several peptide/small molecules providing highly targeted treatments for multiple brain-based illnesses including multiple sclerosis, depression, schizophrenia and addiction. The nasal spray for depression, developed in partnership with a U.S. biotechnology company, has been licensed for further development.



@CHEOhospital

CHILDREN'S HOSPITAL OF EASTERN ONTARIO: CHEO researchers have developed, validated, and collaborated with industry for the successful commercialization of "SHOEBOX Audiometry", a semi-automated portable iPad audiometer for hearing loss, that has dramatically improved access to diagnostics in marginalized and urban populations alike. National and international hearing health programs are now delivering tests in communities and schools to help identify people at risk of problems due to poor hearing. This important data is creating an up to date and accurate picture of hearing in Canada and setting the stage for improved treatment.



@HamHealthSc

HAMILTON HEALTH SCIENCES: Sepsis is a potentially deadly complication of infection. It triggers inflammation throughout the body which can cause organs to fail. If it progresses to septic shock, blood pressure can drop to fatal levels. That's why it is so important to detect sepsis early. Hamilton Health Sciences provides sepsis simulation training using a high fidelity mannequin that mimics the real-life symptoms of early sepsis. In a realistic setting, the team identifies symptoms, and reacts quickly to prevent them from getting worse. Afterwards, the team debriefs to discuss how they can implement their new skills in frontline care. This is just one example of how Hamilton Health Sciences is finding new ways of doing things better to improve patient care.



@HSN_Sudbury

HEALTH SCIENCES NORTH: Northern and Indigenous health research is a priority for Health Sciences North Research Institute. Using a compassionate and collaborative community and team-based approach to healthy aging of older Indigenous adults in Northern Ontario, HSNRI continues to foster several positive relationships with community leaders and health care leaders helping to address multi-morbidity in older Indigenous adults. In the new Cultural Safety Evaluation, Training, and Research Lab, students and trainees will have opportunities to undertake innovative research that is impactful, relevant and applicable to communities in Northern Ontario.

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Holland Bloorview
Kids Rehabilitation Hospital

@HBKidsHospital

HOLLAND BLOORVIEW KIDS REHABILITATION HOSPITAL: Children with autism spectrum disorder (ASD) are at an increased risk for experiencing impairing anxiety symptoms. Yet, treatments for anxiety in ASD are very limited. To address this important health issue, researchers in the Autism Research Centre at Holland Bloorview Kids Rehabilitation Hospital have designed a wearable device to detect states of anxiety in children and youth with ASD to empower self-awareness of anxiety and improve health outcomes. Developed by scientists Drs. Azadeh Kushki and Evdokia Anagnostou, and funded by the Ontario Brain Institute, the Anxiety Meter is an app that detects states of anxiety in children with autism by measuring heart rate and converting it into a visual representation of a person's anxiety level. The app wirelessly connects to wearable sensors.

Hotel Dieu
HOSPITAL

@HDHKingston

KG+ Kingston
General
Hospital

@KGHConnect

KINGSTON GENERAL HOSPITAL and HOTEL DIEU HOSPITAL: We developed a smarter way to help treat breast cancer, the second leading cause of cancer death in Canadian women. We present NaviKnife, an affordable \$5,000 system that will help surgeons to successfully remove tumors from the breast, and avoid the need for expensive and life-changing follow-up procedures such as breast removal. We've piloted this system in over thirty patients at our hospitals, and we invite you to learn more about this system and try it firsthand at our booth.

LAWSON
HEALTH RESEARCH INSTITUTE
The research institute of London Health Sciences Centre
and St. Joseph's Health Care, London

@lawsonresearch

LAWSON HEALTH RESEARCH INSTITUTE: The London Movement Disorders Centre is investing in the use and development of smart technologies to improve the treatment for Parkinson's Disease. Multi-sensors are being used to evaluate and assess patients with symptoms such as gait and balance, tremor, stiffness and slowness. This research has resulted in a new way of recording tremor and effectively treating it with injections of Botulinum toxin. Over 100 patients have experienced improvements to the severity of their tremors. A new technology for the freezing of gait with spinal stimulation has also been pioneered. The team continues to optimize current treatments and develop new methods to improve access to specialty health care and remote monitoring of patients.

Hôpital Montfort

@hopitalmontfort

HÔPITAL MONTFORT: *"Mind the Heart: Best Practices for Prevention, Early Identification, and Treatment of Mood, Anxiety, and PTSD in Men with Heart Disease"* - Physical health and mental health are fundamentally linked. After a cardiac event individuals are at risk of developing Depression, Anxiety and/or Post-traumatic Stress Disorder (PTSD). "Mind the Heart" aims to improve prevention, early detection, and treatment of Depression, Anxiety and PTSD in men via a Stepped-Care Approach. This approach will be sensitive to men's needs, and include community and workplace awareness campaigns, brief educational interventions, early identification tools, a group treatment that involves a significant other, and a more intensive individual or couple treatment based on patient preferences.

NORTH YORK GENERAL
*Making a World
of Difference*

@NYGH_News

NORTH YORK GENERAL HOSPITAL: We developed an innovative, web-based application that has the potential to address the specialized needs of older adults with multiple chronic conditions. Our tool is called "KeepWell", and it was co-designed by a working group of older adults. The innovative features of KeepWell include an Avatar coach that helps users to optimize their self-management activities, and gamification features to enhance interactivity and sustained use. KeepWell also incorporates the health priorities of its users to generate a self-management plan tailored to their disease and life-style risks, and its ability to integrate the care of any combination of disease clusters from among the top 10 high-burden chronic conditions affecting older adults (e.g., Diabetes, COPD, Dementia, Heart failure, Osteoporosis).

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The Ottawa Hospital | L'Hôpital d'Ottawa

@OttawaHospital

THE OTTAWA HOSPITAL: *Stem cell research at The Ottawa Hospital: paving the way for a new era in regenerative medicine* - Researchers at The Ottawa Hospital have used stem cells to develop a radical new approach for treating severe MS and other autoimmune diseases. They are also leading world-first clinical trials of stem cell therapies for heart attack and septic shock, with several other trials on the horizon. Laboratory discoveries are paving the way for new regenerative therapies for muscular dystrophy, stroke, Alzheimer's, diabetes, kidney disease and many other conditions. This research is making Ontario Healthier, Wealthier and Smarter.



@Providence_Care

PROVIDENCE CARE: Physician researchers at Providence Care and Queen's University have developed a new research study to benefit patients with Acquired Brain Injuries. Patients wear an ActiviPal – a small accelerometer (like a Fitbit) – during rehab, for the first seven days post-discharge and three months after discharge. Afterwards, the data is downloaded and analyzed. The device detects and records the body's motions in three different planes of movement. The research looks at how that activity data is associated with the patient's physical status and some of those other factors, their cognitive ability and some of their personal, social situations and see if that affects their activity patterns at different points in time.



Mental Health - Care & Research
Santé mentale - Soins et recherche

@TheRoyalMCH

THE ROYAL: Opioid abuse is a growing problem with Canada the world's second largest per capita consumer of opioids. Ontario tops the list in Canada. Prescription opioids have become the predominant form of illicit opioid use rather than heroin. Our research has found a substantial increase in the number of individuals seeking treatment for opioid use disorders in the last 15 years. Opioids are a commonly abused substance by youth, young adults, and women. The Royal launched a new service to treat opioid addiction and related mental health issues in people who are under 30 years old or who have been using opioids for less than five years. One of the first of its kind in Ontario, this program was awarded the Best Innovation in Mental Health Care Delivery by the Ministry of Health Innovation Fund.



@SickKidsNews

SICKKIDS: Researchers at SickKids are using 3D printing and silicone casting technology to create patient specific models which consist of bone, soft tissue and anatomical features. The models are used to help train, teach and rehearse medical procedures so that they improve patient outcomes and educate the next generation of physicians.



@SinaiHealthTO

SINAI HEALTH SYSTEM: Dr. Robert Maunder and Dr. Jonathan Hunter's research examines how physical health is influenced by mental health and by what happens between people in their relationships and social context. They present a demonstration of the Self-Assessment Kiosk, a free online resource that allows people to assess their physical health, mental health, coping and relationship style and offers evidence-based feedback to guide their health choices. Dr. Maunder is Head of Research for the Department of Psychiatry at Mount Sinai Hospital and Professor in the Department of Psychiatry at the University of Toronto. Dr. Hunter is Head of Psychosocial Services in the Marvella Koffler Breast Centre at Mount Sinai Hospital, and heads the Division of Consultation-Liaison Psychiatry at University of Toronto.

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@stjoeshamilton

ST. JOSEPH'S HEALTHCARE HAMILTON: The Integrated Comprehensive Care (ICC) project is an innovative patient-centered model of care that directly integrates hospital and community care services – creating a smooth transition for patients from hospital to home and has been tested across a number of clinical disciplines. Designed by the St. Joseph's Health System, the program pairs patients with a single Care Coordinator — usually a registered nurse — who coordinates a multidisciplinary team to provide service from pre-operation treatments to post-surgical home care. Research conducted on the ICC project pilot in thoracic surgery has demonstrated that ICC results in a shorter hospital stay, significantly fewer readmission and ER visits, significant cost savings and no increase in adverse post-discharge outcomes after major chest surgery.



@StMikesHospital

ST. MICHAEL'S HOSPITAL: BlueDot is a social enterprise that uses big data analysis and visualization to help decision-makers prepare for and respond to infectious disease outbreaks – in real time. Housed at St. Michael's Hospital's Li Ka Shing Knowledge Institute, BlueDot models how pathogens can spread by analyzing the movements of travelers on commercial flights; human, animal and insect population data; climate data; and news reports of disease outbreaks. BlueDot was one of the first 100 companies in Canada to incorporate as a "social benefit corporation," a new type of corporation that uses the power of business to confront social and environmental problems.



@Sunnybrook

SUNNYBROOK: Sunnybrook Research Institute is at the vanguard of an historic sea change in medicine. Focused ultrasound harnesses the power of sound energy to perform surgery completely noninvasively and to deliver therapies directly to the brain. Our scientists are inventing the technology, validating it in the lab and sweeping it into translation via clinical trials. This full-spectrum expertise is why Sunnybrook was recently named a Centre of Excellence in Focused Ultrasound by the world's leading advocacy body in the field. We are the only site in Canada to receive this designation. Last year alone, we achieved firsts in Alzheimer's disease, brain cancer, depression and essential tremor. What once was untreatable has hope.



@TBRHSC_NWO

THUNDER BAY REGIONAL HEALTH SCIENCES CENTRE: Dr. Ingeborg Zebhe and her team are marrying molecular biology and technology to deliver a protein directly to the HPV, preventing it from becoming cancerous. High intensity focused ultrasound (HIFU) will create a temporary opening in the membrane of diseased cells. This allows a targeted drug therapy – generally delivered by needle - to enter the cells and kill the HPV, without damaging the healthy cells nearby. The goal is to make the therapy a part of every-day health care, giving women better experiences, with the added benefit of significantly lower costs to the health care system. Applied research, with an interdisciplinary approach, is bringing discovery to life.



@UHN_News

UNIVERSITY HEALTH NETWORK: Dr. Shaf Keshavjee's research, funded in part by Ontario's Ministry of Research and Innovation, has culminated in the development of a portable Toronto Ex Vivo Lung Perfusion system. Created in collaboration with XOR Labs Toronto, this "mobile operating unit" enables clinicians the incredible ability to repair donor lungs outside of the body from the time of organ harvest, thus creating better and healthier lungs for life-saving transplantation.



@WCHospital

WOMEN'S COLLEGE HOSPITAL: Research has shown that the flu vaccine may prevent heart attacks. Dr. Jacob Udell, a scientist at Women's College Research Institute, is leading a study to test whether a stronger dose of the flu vaccine could protect heart disease patients from hospitalization or death from a heart attack, heart failure, stroke or pneumonia. Over the next four flu seasons, some 9,000 patients will be enrolled in INVESTED across 180 clinics and hospitals across North America. The study is part of the Influenza Vaccine to Effectively Stop Cardio Thoracic Events and Decompensated Heart Failure (INVESTED) trial, a collaboration among a network of healthcare centres in Canada and the United States.