UNPLUGGED IS PROUDLY SUPPORTING VITAL RESEARCH AND TALENTED RESEARCHERS AT HAMILTON HEALTH SCIENCES:

Esther Coker, Clinical Nurse Specialist, St. Peter's Hospital
Engaging Patients Living with Dementia in Meaningful Activities

For hospitalized patients living with dementia, loss of meaningful roles and activities can contribute to feelings of frustration and fear that may be expressed as behaviours such as agitation, repetitive requests or trying to get home.

The team at St. Peter's will implement *DementiAbility Methods*, a program comprising person-centred, non-pharmacological approaches to dementia care. This program provides a framework to engage patients in meaningful activities according to their needs, interests, skills and abilities; helping to promote physical, cognitive and social stimulation.

As there is limited research on how best to implement such a program, an examination of factors that contribute to successful implementation and how the program impacts the experience of patients, families, staff and volunteers will be undertaken.

Dr. Jennifer Couturier, Psychiatrist, McMaster Children's Hospital
Eating Disorders: Supporting children and youth awaiting treatment for an Eating Disorder

The COVID-19 pandemic has created even longer wait times for patients needing treatment for eating disorders. Only the most urgently ill children are currently being seen. With a waitlist of 12-18 months, the need for support is critical and the risk to patients dangerous. We will study the implementation of a waitlist intervention which provides tools to support and educate parents on how to start re-nourishing their children and interrupting eating disorder behaviours.

The intervention will consist of a series of educational videos and a book on how to help their children. It is hoped that this intervention can lessen the need for hospitalization and can change the trajectory of symptoms while waiting for treatment. A plan for managing each patients' treatment will also be developed to ensure those waiting receive the most appropriate care.

Dr. Hira Mian, Hematologist, Juravinski Cancer Centre
Multiple Myeloma: Helping Patients Adhere to their Oral Chemotherapy

Multiple myeloma (or myeloma) is the second most common blood cancer with 8 Canadians diagnosed every day. Myeloma causes many problems including low blood counts leading to fatigue, kidney failure and fractures. Patients require chemotherapy for treatment. Previously, these chemotherapy drugs were given intravenously, now these drugs can be taken by mouth. Although oral chemotherapy pills may be easier for patients, they also represent a challenge as we need to ensure that patients are taking them correctly, and not missing doses.

The current pilot study will help us determine if patients are taking their pills correctly. We also want to determine whether certain factors like age, social supports, and side effects affect patients' adherence to their medication regimen. We will also test a new educational tool to see if it helps patients feel more confident, and as a result if there is an increase adherence in taking their chemotherapy pills correctly. The study results are expected to have a direct impact on patients who are on oral chemotherapy.

Dr. Bram Rochwerg, Intensivist, Hamilton Health Sciences
Non-invasive Ventilation Helmets: Assessing the efficacy and safety in critically ill patients with respiratory failure

Patients who need more supplemental oxygen than through a nasal cannula may require more invasive methods, such as intubation and a ventilator. There are multiple forms of non-invasive ventilation that can be used to avoid intubation, such as facemasks. A new oxygen helmet is being tried as an alternative to facemasks for delivering non-invasive ventilation. The helmet looks like an astronaut helmet and delivers the same pressurized oxygen without limiting a patient's ability to communicate. It is thought to be more comfortable, with a lower risk of transmission for communicable disease like COVID.

Through this research program, Hamilton Health Sciences would be one of the first hospitals in Canada to acquire and test these helmets. An observational study describing both institutional and patient experience will be conducted, while collecting relevant data on patient outcomes and caregiver risks.

Dr. JD Schwalm, Interventional Cardiologist, Hamilton General Hospital
Machine Learning To Enhance The Diagnosis of Coronary Artery Disease

Coronary artery disease (CAD) is the leading cause of death worldwide. Conventional methods of diagnosis are proving sub-optimal in predicting CAD, resulting in unnecessary invasive diagnostic procedures. Using research strategies that harness the powers of artificial intelligence (AI), we have developed a powerful model that is more accurate.

This predictive model, coupled with an online evidence-based decision support program, will help ensure the right patient gets the right diagnostic test. Research to assess the accuracy of this tool will enable its integration into existing referral processes. There would be a subsequent evaluation in a sample population to ensure optimal uptake and sustainability. Once assessed, this tool could potentially be adopted by cardiac centres at the provincial- and national-level, resulting in improved patient safety, reduced healthcare costs and fewer deaths from strokes or heart attacks.

Honourees:

Dr. Aristeidis Katsanos
Neurologist/Clinical Fellow
Hamilton Health Sciences

The New Investigator Fund was the catalyst for Dr. Katsanos' research, enabling the start of his first pilot clinical trial: blooD prEssure management in sTroke following EndovasCular Treatment (DETECT). DETECT is an effort to investigate the impact of blood pressure control in the outcomes of stroke patients being treated with acute interventional procedures to remove the clots from blocked brain vessels. DETECT is actively recruiting patients and is expected to provide significant insight on whether further exploration and an expansion of this question is warranted through a larger national scale study.

Dr. Katsanos' research illustrates the utmost importance of early-phase clinical studies as a precursor to the successful design and execution of large-scale research projects that aim to improve patient care and outcomes.

Dr. Gita Wahi
General Pediatrician
McMaster Children's Hospital

With the support of Research Early Career Award (ECA) funding, Drs. Marjerrison and Wahi have founded HATCH (Hamilton Advocating Together for Child Health), a research program to improve health outcomes of children by addressing social needs.

The first HATCH projects include a pilot randomized trial that will determine the feasibility of an intervention to address social needs of children with obesity enrolled in the Children's Exercise and Nutrition Centre at McMaster Children's Hospital. A second study will examine whether children with cancer and chronic illness living in marginalized geographic areas as compared to affluent regions experience more complications of their illnesses resulting in ER visits, hospitalizations and deaths.

Dr. Stacey Marjerrison
Pediatric Hematologist/Oncologist
McMaster Children's Hospital

HATCH will build on the initial findings of these studies to identify and address the social needs of children with chronic medical conditions and improve health outcomes in Hamilton (and beyond)

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