The Pain Centre: Reducing Pain for all Children

The Pain Centre strives to prevent and reduce pain for all children in a family-centred care environment. Through the integration of evidence-based practice and knowledge translation, the Centre is developing strategies to provide children experiencing pain with an improved quality of life.

Pain affects all children. It can be debilitating and can significantly reduce physical, emotional and psychological well-being. One of the most common symptoms experienced, pain causes anxiety and discomfort, yet it is challenging to understand and is frequently not well managed in children. The Pain Centre at SickKids strives to prevent and minimize pain for all children in a family-centred environment, following our belief that no child should have to endure pain.

The paediatric pain clinicians, scientists and educators that make up the Pain Centre remain committed to the Centre’s Mission to ensure the highest quality of clinical care through the support of integrated research, Knowledge Translation (KT), Quality Improvement Plan (QIP) and educational initiatives. This commitment ensures that the Centre continues to be a world-leader in child health and the development of interdisciplinary and inter-professional activities related to pain assessment and management.

Groundbreaking Research

As the pace of discoveries quickens, research has tremendous potential to impact child health by advancing our understanding of and ability to treat complex injuries and illnesses that result in pain for children. The ability to integrate care, research and learning is a valued component of our mission as we work to develop innovative ways to address major problems in children’s health. Some key initiatives from the past year are highlighted below.

Seed Grant Competitions

Exploring new, radical ideas can enable an abundance of opportunities to uncover revolutionary outcomes. Seed funding allows researchers, clinicians and educators to seize upon these radical ideas—ideas that can have a major impact on child health, but are inherently risky. Supporting a scientist’s research in the early stages of their study allows them to become more productive sooner, and enables them to continue developing and leveraging their ideas to impact child health in Canada and around the world.

Last year, the Pain Centre held two seed grant competitions, one in partnership with the Garron Family Cancer Centre and the other a General Pain Research Seed Grant. The winners were selected through a rigorous selection process where a number of reviewers with relevant knowledge in research, pain and oncology evaluated the applications.

Pain and Cancer Research Seed Funding Grants

Using a Humanoid Robot to Reduce Procedural Pain and Distress in Children with Cancer: A Pilot Randomized Controlled Trial (Stinson JN, Nathan PC, Jibb LA, Beran T).

This project will strive to answer the...
question, “What is the feasibility of the trial protocol to evaluate the impact of the humanoid robot (Medi-Port) on pain intensity and distress during intravenous needle insertion compared to usual care in children (four to nine years) with cancer?”; and the secondary question, “In four to nine-year olds with cancer undergoing intravenous needle insertion, does Medi-Port use reduce pain intensity and distress compared to usual care?”

Data will be collected and analyzed, and the knowledge gained from the study will be disseminated with key stakeholders, including families, the Canadian public, clinicians, scientists, and non-governmental organizations. Findings will also be presented at key international oncology conferences and published in open-access paediatric or oncology journals.

**Magnetic Resonance-Guided High Intensity Focused Ultrasound for Palliation of Painful Skeletal Metastases in Children (James Drake, Joao Amaral, Michael Temple, Fiona Campbell, Joost de Ruiter, Meredith Irwin, Alisha Kassam, Sevan Hopyan, Thomas Lool and Adam Waspe).**

This project strives to determine whether magnetic resonance-guided high intensity focused ultrasound (MRgHIFU) has a positive impact on health-related quality of life in paediatric cancer patients. Dr. Drake and his team will work to prove their two hypotheses, the first being that bone metastases can be targeted noninvasively using MRgHIFU without adverse event, and the other being the treatment of bone tumours using MRgHIFU will reduce pain, improve quality of life and reduce the need for pain killers (opioids and non-opioid adjuvants).

In collaboration with Sunnybrook Health Sciences Centre, the team will perform a pilot examining patients with new paediatric bone tumour cases of an estimated six patients in the year. Though there will not be enough patients in this pilot to conduct a quantitative analysis of the results, the team does intend to follow all patients for the duration of the study to record pain, medication usage and quality of life and provide a descriptive analysis to inform future studies.

Through the collection of data, the team will design a multicentre study to validate the hypothesis that MRgHIFU will be an effective intervention in this population. Dr. Drake and his team will ultimately translate their recommendations into policy and best-practice guidelines to inform adoption of an MRgHIFU treatment platform into appropriate cancer pain programs.

**General Seed Funding Grant**

**A Pilot Study of Lidocaine Infusions for the Management of Chronic Pain in Children (Lisa Isaac, Shinya Ito, Carolyn Pehora and Mark Crawford).**

The primary objective of this project is to determine the effect of intravenous lidocaine by short term infusion on pain scores in children and adolescents with chronic pain.

The team will develop an open label study that will include 21 children aged eight to 18 with chronic pain. Data from the study will be collected and the results will be presented at institutional rounds, local, national and international meetings and the finding will be published in a peer-reviewed journal.

**Pain Squad App**

Dr. Jennifer Stinson, Mary Jo Haddad Chair in Nursing and Clinician Scientist, and her team have created an award winning mobile application called Pain Squad, designed for young people with cancer. Pain Squad is a tool that these children can use to track their pain, as the App allows them to pinpoint where on the body they are experiencing pain, how much it hurts and which medication is providing the most relief. Pain Squad then generates reports that can be sent to their health-care provider to provide valuable insight into the effectiveness of their treatment plan.

Dr. Stinson and her team are building off the success of Pain Squad to develop Pain Squad Plus. The new version will provide advice based on what has been input into the tool on how to manage their pain in the home setting. To evaluate the updated version, the team is performing a pilot trial with 40 children at SickKids. To date, the study has shown that the children are really enjoying the app and finding it useful to manage their pain and other
For research to be meaningful, we must be able to translate what we know into what we do.”

~Bonnie Stevens, Pain Centre Co-Director

symptoms, such as anxiety. Looking forward, Dr. Stinson strives to adapt the tool for other conditions, for example, to help children who are facing chronic and post-operative pain.

EDUCATIONAL INITIATIVES

Last year, the Pain Centre focused on advancing the understanding of paediatric pain for patients, families, health professionals and the general public through conferences, workshops and innovative educational initiatives, which will help raise awareness about pain in children and provide the tools to improve pain management. With a focus on internal and external partnerships, members are working to increase the reach and impact of the work taking place within the Centre.

Some significant educational initiatives that occurred over the past year include:

- Collaborations with AboutKidsHealth, SickKids’ online health resource to upgrade and update the Pain Resource Centre on the website. The resource contains a kids-only section with interactive educational videos about pain. The website, http://www.aboutkidshealth.ca/En/ResourceCentres/Pain/Pages/default.aspx, has an impressive global reach with more than 97,000 views between 2010-2014.

- The Annual Scientific Meeting, a partnership between the Pain Centre and The University of Toronto Centre for the Study of Pain (UTCSP), took place in February 2015, with approximately 55 regular and trainee members. Keynote speaker, Dr. Mark Ware gave a talk on the use of cannabinoids in pain management, and Drs. Michael Salter, Hance Clarke, and Andrea Furlan presented. The UTCSP Scholarship recipients (2014-2015) gave presentations on their research.

CLINICAL ADVANCEMENTS

At SickKids we are committed to providing world-class care, and the Pain Centre team continues to have a significant impact on pain prevention and management at the hospital to improve patient outcomes.

Some achievements over the past year include:

- The Chronic Pain Program at SickKids and Holland Bloorview Kids Rehabilitation Hospital collaborated on an initiative called the Intensive Pain Rehabilitation Program. This initiative focuses on the development and implementation of an intensive two-week inpatient, followed by a two-week day-patient program for the
most seriously affected children with chronic pain, and their families who previously had to go to the United States for programs that could cost as much as $70,000 per patient.

- Partially funded through the Ontario Ministry of Health, the Chronic Pain Clinic at SickKids was able to increase multidisciplinary support and add two new clinics per month to assist paediatric patients with persistent chronic pain. The expansion will have the capacity to decrease wait times and minimize the number of patients required to receive treatment in the U.S.

**THANK YOU**

We are incredibly grateful for your support. Your commitment to the Pain Centre has a transformative effect on pain management and prevention as we work to eliminate pain in children. Thank you for your remarkable generosity.

**MEDI THE ROBOT**

Humanoid robot for Dr. Stinson’s pilot project that is used to distract children with cancer during painful procedures.
Philanthropy is what enables SickKids to lead.

Behind each groundbreaking discovery; the global reach of our education initiatives; and the life-saving clinical care provided to our patients, are donors like you. Thank you for your commitment to child health.