

Neurosurgery Research Update

If you give a student data... The McMaster Pediatric Brain Tumour Study Group (PBTSG)

The McMaster Pediatric Brain Tumour Study Group (PBTSG) was founded in 2015, and represents a clinical research network of over 20 allied health professionals and 15 students who have developed a comprehensive brain tumor patient database, which has been interrogated and mined for clinical research questions generating multiple publications and presentations and will serve as a clinically annotated repository for future studies. The McMaster PBTSG found its roots in the amazing and thought-provoking discussions that emerged around the table at the Multi-disciplinary Longitudinal Pediatric Neuro-oncology clinic founded by Drs. Rob Hollenberg and Anthony Whitton, where over the past 30 years we have held extended case discussion of patients longitudinally followed for their lives after being treated for a childhood central nervous system tumour, among specialists of diverse backgrounds including pediatric neurosurgery, neuro-oncology, nursing and neuro-radiology; radiation oncology, neuro-psychology, occupational and physiotherapy, child life, social work, exercise medicine, nutrition and endocrinology. Dr. Singh originated the group after wondering at the untapped potential of the myriad of research questions that were raised at this table, but not undertaken due to lack of resources and time. Who better to take on and execute research investigations than a group of bright and energetic undergraduate, medical, MD PhD students, neurosurgery SSP residents, and clinical oncology fellows, who could seek training and mentorship from whichever multi-disciplinary faculty member was most expert in the line of inquiry at hand? Thus with the addition of the excellent clinical epidemiological and study design expertise of Dr. Farrokhyar, Dr. Almenawer and associates, the McMaster PBTSG was born.



Dr. Sheila Singh with Dr. Robert Hollenberg, the inspiration for the McMaster PBTSG!

Students are assigned broad readings on pediatric brain and spinal cord tumours, and are trained in database entry and data acquisition and extraction from medical records, while attending the pediatric neuro-oncology clinic weekly to hear patient case discussions. As they populate the database and work as a team, they organically develop their own research questions, which they check with PubMed and literature searches to ensure the novelty of the research question. Once a novel question is determined and vetted by the group, appropriate expert faculty mentors are assigned and study design, data analysis and manuscript and presentation preparation ensues. Undergraduate students may use their group participation and projects in the form of an undergraduate thesis

course, with every student aiming to prepare a manuscript for publication. To date, the productivity of the McMaster PBTSG has been very promising, with 5 national and international meeting presentations by students, 1 manuscript on neuroradiological correlates of cerebellar mutism under review at Journal of Neuro-oncology, and 6 more manuscripts in preparation. Next summer, a student alumnus returning from medical school will undertake the conversion of our database to a prospective database, and publishable protocols will be generated. The cerebellar mutism case-control study is being advanced into a putative multicentre cross-Canada retrospective case series by SSP and neurosurgery resident and PBTSG member Michelle Kameda, in conjunction with first author undergraduate student, Anjali Sergeant. Look for updates on the activity of this group in upcoming research days and national meetings!

Watch for more Neurosurgery Research Updates in the coming weeks!

Contact Amanda Martyniuk (martynia@mcmaster.ca; 95-521-2100 ext 44155) for contributions or more information.