The Pediatric Diabetes Program in Saskatoon has seen significant change over the past three years, including a greater presence in current and future research in pediatric type 1 and type 2 care. With over 500 children with type 1 or 2 diabetes currently being followed by our clinic (and with many more children and adolescents with diabetes followed elsewhere in the province), there is ample opportunity to engage in research with this population.

In January 2014, Dr. Munier Nour joined the Department of Pediatrics as a Pediatric Endocrinologist and took over the care of children and adolescents with diabetes and endocrine disorders, working as the sole endocrinologist following the retirement of Dr. Tom Best in June 2014. In August 2015, Dr. Mark Inman joined the Department as the second Pediatric Endocrinologist. With the growth of the Division of Endocrinology, which also included increases in nursing, dietetic, and administrative support, Drs. Nour and Inman have been able to increase the output of clinical and translation research with several projects relating to pediatric diabetes.

Dr. Nour is the provincial lead for TRILNET – an international network of researchers involved in various research initiatives seeking to predict and prevent or delay the onset of type 1 diabetes (https://www.diabetestrialnet.org/). This project was recently approved and is now ready to begin recruitment of participants (local research nurse is Joan Dietz). In addition, Dr. Nour is the primary site investigator (and Dr. Inman as a co-investigator) for an international, multisite, randomized controlled trial that will be enrolling patients to examine the effect of novel therapeutics (GLP-1 agonist) in the management of adolescents with type 2 diabetes. Dr. Nour, working together with Dr. Saija Kontulainen (Faculty of Kinesiology), also plans to initiate a mixed-longitudinal cohort study examining bone micro-architectural development in children with type 1 diabetes in coming years.

Dr. Inman has recently published research that has assessed the impact of the social determinants of health on cardiovascular risk factors in children with type 1 diabetes. This research demonstrated the significant impact of social factors on early accumulation of risk factors for poorer cardiovascular health in this population. Currently, Dr. Inman – with Dr. Nour as co-investigator and in collaboration with individuals across the department – is working on the implementation and evaluation of a pediatric diabetic ketoacidosis (DKA) protocol. This quality continued on pg 3...
Providing timely and accessible pediatric acute care in Saskatchewan is challenging given the province’s geographical vastness and rurality. As 36% of Saskatchewan's children live in communities of less than 1,000 people, there is a high rate of medical transport from the periphery to tertiary care. Indigenous children are particularly vulnerable, as many live on remote reserves with limited access to health services. To add to this challenge, pediatric critical care and specialized transport were centralized to Royal University Hospital in 2014, resulting in a 70% increase in transport volumes over 2013. Thus, a solution was needed that facilitated early intervention at referring centres, triaged need for transport, and assisted in redistributing patients to regional hospitals.

A partnership between the College of Medicine and the community of Pelican Narrows allowed remote presence robotic technology (RPRT) to be investigated as a potential solution. RPRT is a form of telemedicine that creates the sense that the physician is at the patient’s side despite being distantly located. It enables remote visualization, examination, and diagnosis of the patient, as well as communication with local healthcare professionals and family members. Pelican Narrows, an isolated First Nations community in northeastern Saskatchewan, identified pediatric acute care as an urgent unmet need as 48% of the community’s population is under the age of 17.

During the 13-month study, 38 acutely ill children presented to the clinic in Pelican Narrows and were remotely assessed, managed, and triaged by a pediatric intensivist in Saskatoon through the RP-7i remote presence device. Only 42.9% of participants required transport, whereas all controls were transported. Participants who remained at the clinic stayed less than 24 hours, while controls stayed almost 5 days in tertiary care. 44.4% of transported participants were regionalized to Prince Albert Victoria Hospital, whereas no controls were regionalized. These results suggest that RPRT is a potentially transformative strategy to mitigate barriers to healthcare access in rural/remote Saskatchewan. By prioritizing early goal-directed interventions in the periphery, RPRT dramatically decreased the transport from a northern First Nations community to the tertiary hospital system.

Our Partners: Saskatchewan Health Research Foundation

The Saskatchewan Health Research Foundation (SHRF) has been a generous supporter of child health research. The activities of Saskatchewan’s child health researchers continue to be supported by SHRF through its various funding programs. The continuing support of SHRF is acknowledged with appreciation. Further information about SHRF can be found at: shrf.ca

Clinical Investigator Program (CIP) for Residents

The CIP at the University of Saskatchewan is available to residents enrolled in a Royal College accredited residency program who have interest and potential for a career as a clinician investigator or clinician scientist. CIP offers two streams: A Graduate Stream for residents who are interested in undertaking a structured research program, and a Postdoctoral Stream for residents who already hold a Ph.D. and are interested in undertaking a structured research program. For further information about CIP, please contact Dr. Alan Rosenberg, alan.rosenberg@usask.ca.
improvement initiative seeks to improve the care of children and adolescents with DKA in the Saskatoon Health Region and eventually across the province.

Both Drs. Nour and Inman are continuing to look for opportunities to establish collaboration within the Department of Pediatrics and across other departments in the College of Medicine as pediatric diabetes (types 1 and 2) has overlap across numerous specialty areas. Both recognize the vast opportunities that exist to collaborate with minds across the university to further push the boundaries of not just diabetes research, but clinical research in general. Beyond the boundaries of the College, Drs. Nour and Inman have been sought to engage with diabetes researchers across the country with interest to collaborate in hopes of including Saskatchewan diabetes data in national research endeavors. Unique aspects of Saskatchewan diabetes, including the high prevalence of type 2 diabetes, the vast geography that renders access to care a major challenge, and the centralization of pediatric services serve to enhance further interest in better understanding this population and seeking ways to improve the quality and quantity of their care.

In the years to come, Drs. Nour and Inman are keen to continue to develop the pediatric diabetes (and endocrine) research platforms to gain more provincial and national exposure. While both are front-loaded with clinical and educational responsibilities that limit time to push the barriers of their clinical research, it is their hope that further development and streamlining of their diabetes and endocrine programs, in addition to collaboration with other members within and outside of the Department, will facilitate a growing network of research in this area. Drs. Nour and Inman certainly welcome your discussion regarding potential projects in the future that may involve pediatric diabetes or endocrine-related disorders.

Dr. Munier Nour (MSc, MD, FRCPC) and Dr. Mark Inman (MD, FRCPC) are Clinical Assistant Professors in the Division of Pediatric Endocrinology (Department of Pediatrics) at the University of Saskatchewan. Along with Dr. Dan Au-Yeung (Pediatrics), they are the three physicians who manage the pediatric diabetes care program in Saskatoon in close collaboration with several nurses, dietitians, a social worker, and administrative staff support.

Recent Publications & Presentations from U of S Child Health Researchers


Pediatric Diabetes Research

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Robotic technology

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use of our transport service and tertiary care centre. This innovative technology also facilitated culturally safe care by minimizing displacement of indigenous children from their home community.

Following the success of this pilot project, the provincial government invested $500,000 to expand remote presence infrastructure in rural Saskatchewan.

Our study was presented at the American Academy of Pediatrics National Conference and Exhibition in San Francisco, California in October 2016, where the authors received the C. Robert Chambliss Best MD Paper Award from the Section on Transport Medicine.

 Supervisor: Tanya Holt MD-Director of Pediatric Critical Care and Pediatric Inter-facility Transport
 Student Researcher: Michael Prodanuk-Medical Student, Year 3
 Co-investigators: Nazmi Sari PhD, Rachel Johnson RN(NP), Veronica McKinney MD, Matthew Bradshaw MD, Erin Prosser-Loose PhD, Alan M. Rosenberg MD, Luis Bustamante MAsc, Ivar Mendez MD PhD

Michael Prodanuk was the recipient of a 2016 Dean’s Summer Research Project funding through The College of Medicine, with Dr. Tanya Holt as his supervisor. The program is intended to foster a spark and ignite a passion for research in our medical students, facilitating an understanding of the vital role research plays in today’s health care.

YOUR OPINION PLEASE!

We would appreciate your opinion about the Department of Pediatrics Research Report and suggestions for future editions.

Please complete a brief survey at: https://www.surveymonkey.com/s/NQVV6SB.

Thank you!

For more information about The Department of Pediatrics Research, SPRING, or to contribute content to The Department of Pediatrics Research Report, please contact:

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Online version of the newsletter:
www.medicine.usask.ca/pediatrics/research/newsletter

SAVE THE DATE!

THURSDAY, MARCH 23, 2017

Department of Pediatrics
Child Health Research Trainee Day!
More info TBA.

Dr. Eskiw

...continued from P2

approach could be as simple as restricting the amount of essential amino acids, such as leucine, for short periods of time. Furthermore, commonly used drugs, such as metformin (currently used to treat type-2 diabetes), which stimulates autophagy and already has been shown to have anti-aging and health span-promoting properties, could be repurposed as HGPS treatments. Dr. Eskiw is also interested in identifying naturally occurring compounds from dietary sources that mimic these effects. Although in the preliminary stages, early data looks very positive. It is a long way from the bench-side to the bed-side, however, it is hoped that these new strategies will have significant impact on the lives of HGPS children in the near future.

Dr. Chris Eskiw is an Assistant Professor in the Department of Food and Bioproduct Sciences, in the College of Agriculture and Bioresources. Dr. Eskiw’s HGPS research is funded by grants from the Saskatchewan Health Research Foundation (SHRF) and the Natural Sciences and Engineering Research Council of Canada (NSERC)

Research Project Opportunities

“Relationship of ESR and CRP with inflammatory cytokine biomarkers”

Study format: Database analysis

Contact: Dr. Alan Rosenberg, alan.rosenberg@usask.ca

Canadian Paediatric Surveillance Program (CPSP)

$3000 Research Grant for Pediatric Residents to enable a one-time CPSP survey.

Deadline March 1, 2017

Contact: Erin Prosser-Loose, erin.loose@usask.ca