

Health Outcome Improvement Fund 1 (HOIF1) Project Findings

The following three HOIFI projects have been completed:

Dr. Spencer Proctor – University of Alberta – Remnant Cholesterol and Fat Intolerance Causes Sub-Clinical Cardiovascular Risk in Overweight Children

It was discovered that, similar to adults, overweight youth are fat intolerant and have postprandial dyslipidemia. This increase in cardiovascular risk occurs in the absence of elevations in other classic/traditional risk markers such as LDL-C. This is the first time it has been documented for this age group and has major implications for clinical practice and primary care of overweight youth to manage cardiovascular disease risk.

I was also discovered that it is not required to measure multiple non-fasted samples over the course of a day and that a single ambulatory non-fasted sample can inform health care professionals on the extent of post-prandial dyslipidemia.

This impacts patients' experiences of care by:

These new data provide proof-of-principal that lipid screening in overweight youth is essential (regardless of age), and that non-fasting measures may provide more information than classic fasting measures.

Findings:

Overweight youth are at risk of cardiovascular disease and we now have the tools to identify the condition.

Next Steps:

Dr. Proctor was successful in the HOIFII Funding competition and will be continuing this work.



Kim Brunet Wood – AHS Edmonton – Pediatric Malnutrition Screening

The primary objective of this study was to determine which screening tool, STRONGkids or the PNST, is best able to identify pediatric medical/surgical patients at risk for malnutrition, compared to SGNA and anthropometrics, on admission to tertiary Alberta pediatrics. The team answered this question and found the PNST to function best related to assessing sensitivity, specificity and inter-rater agreement. It is incorporated into Connect Care as part of the Admission Navigator.

Secondary objectives were to determine the prevalence and severity of malnutrition in this population of pediatric medical/surgical inpatients, and assess the impact of malnutrition on length of hospital admission. The study found the rate of malnutrition to be 29% of hospital admissions and found a significant increase in length of stay, an increase of two days, for patients admitted malnourished compared to those admitted well nourished.

This impacts patients' experiences of care by:

Malnutrition is associated with complications such as infections, poor wound healing, delayed development, increased length of stay and mortality. Identifying children that require nutrition interventions can improve outcomes which should lead to a decrease in health costs and improved care and experiences.

Findings:

Malnutrition exists in pediatric inpatients. Care can be improved when we identify which children need nutrition interventions to improve outcomes.

Next Steps:

Getting the pediatric screening tool integrated into Connect Care to allow further study of pediatric malnutrition and development of interventions to address this problem are the next steps.

Dr. Melanie Noel – University of Calgary – The Role of Parent Child Narratives in Children’s Pain Memory Development

The ways in which parents and children reminisce together following surgery has a strong influence on children’s memories for pain. The goal of this project was to examine the mediating role of parent-child narrative style in the relationship between child and parent anxiety and pain memory biases. Findings from this study have shown that parents differ in how they talk about past painful versus sad events. Specifically, parents were less elaborative, used fewer negative emotion words/explanations and were less supportive of child autonomy while talking about past painful as compared to past sad events. However, a more elaborative style and use of emotional words was predictive of more accurate/positively biased pain memories. Moreover, greater parental use of pain words predicted more negatively biased pain memories. Thus, this project has demonstrated that parent-child narrative style plays a role in children’s pain memory development, which may affect developmental/health outcomes.

This impacts patients’ experiences of care by:

Parent/child reminiscing following surgery has enormous clinical relevance as it underscores the importance of assessing and addressing parental anxiety prior to children’s surgeries. It also delineates the specific ways in which parents should talk to children after these painful experiences to foster more adaptive pain memories. Given that pain memories are one of the most powerful predictors of future pain experiences (including the development of phobias and chronic pain), this reveals a potentially fruitful avenue for pain management interventions to improve child outcomes.

Findings:

This project was the first to demonstrate that how anxious parents are before their child’s surgery has a powerful influence on how their children’s remember pain. Parents who reminisce adaptively (less topic-switching, less content about pain, more explanations) have children who have more accurate/positively-biased pain memories. Given that memories for pain are a powerful predictor of future pain experiences, parent-child reminiscing style could be an effective target to improve future health outcomes for children.

Links to Articles:

Noel, M., Pavlova, M., Lund, T., Jordan, A., Chorney, J., Rasic, N., Brookes, J., Hoy, M., Yunker, W., & Graham, S. A. (2019). The role of narrative in the development of children’s pain memories: Influences of father- and mother-child reminiscing on children’s recall of pain. *PAIN*. 160(8), 1866-1875.

Fischer, S.D., Vinall, J., Pavlova, M., Graham, S., Jordan, A., Chorney, J., Rasic, N., Brookes, J., Hoy, M., Yunker, W.K., & Noel, M. (2019). The role of anxiety in young children's pain memory development after surgery. *PAIN*. 160(4), 965-972.

Pavlova, M., Graham, S. A., Jordan, A., Chorney, J., Vinall, J., Rasic, N., Brookes, J., Hoy, M., Yunker, W., & Noel, M. (2019). Socialization of pain memories: parent-child reminiscing about past painful and sad events. *J Pediatr Psychol*. 44(6), 679-691.