

## Department of Pediatrics Research Report

December 2020



#### Inside This Issue

Research Spotlight [P1] Pediatrics Covid-19 Research Update [P2]
Measuring Research Success [P3] Coming Events [P4]
Publications [P5] Making the Links conference wrap up [P6]
CHRTF [P7] Our Partners [P7] Contact Us [7]



# Changing to meet the needs of Saskatchewan's community: Dr. Mater's adaptive capacity to improve Emergency care in the Prairies.

Dr. Ahmed Mater is an Assistant Professor of Pediatric Emergency Medicine at the University of Saskatchewan, Dr. Mater graduated from College of Medicine and Medical Sciences. Arabian Gulf University in Bahrain and finished a pediatric emergency fellowship at the Hospital for Sick Children in Toronto. Prior to joining Saskatoon Pediatric Emergency, he practiced as an emergency pediatrician at CHEO in Ottawa until November 2008. He recently laid the groundwork to include Saskatchewan and JPCH in multiple national research studies. As the provincial lead for PERC, Pediatric Emergency Research Canada he is exposed to cutting edge research taking place in



Canada and around the world. Dr.
Mater's current study is a prospective
multi-centre Canadian study titled,
"PRIMED: Precision Medicine for
Improving the Diagnosis of Pediatric
Appendicitis in the Emergency
Department (PRIMED). The aim of the
study is to determine the bio-profiles of
children with true appendicitis versus
those with non-appendicitis abdominal

pain, determine the bio-profiles of children with perforated appendicitis versus simple appendicitis; and to compare the test performance characteristics of the bio-profiles we establish to those of traditionally used clinical prediction rules, laboratory investigations, and imaging tests in our population. Results of this study will support the future innovation of accurate, costeffective, and timely point-of-care diagnostic tools. These innovations can transform clinical care by reducing reliance on imaging studies that are costly, time-consuming, and potentially painful or harmful such as radiation associated with CT scan.

Continued on pg. 2...

#### **Department of Pediatrics Research Report**

...Mater, continued from pg. 1

Furthermore, ultrasound, although simple, fails to demonstrate the appendix in up to half of patients presenting with abdominal pain. Another benefit will be emergency department efficiency, decreased time to surgical consult, emergency department disposition, and definitive patient management. This study will improve the rapeutic decision-making by assisting community health centres with appropriate transfers, identifying severity of illness, and expediting management decisions. Finally, this study will improve patient outcomes through timely identification of causes, lower rates of missed/delayed diagnosis, fewer adverse events (rupture, abscess, sepsis), and lower negative appendectomy rates. Like many when the pandemic was declared in Spring of 2020, Dr. Mater shifted his research direction once again to focus on the needs at hand. He enrolled our site in three studies making our province part of the global pandemic conversation. Those studies are discussed in greater detail in Department of Pediatric's Covid-19 Updates.

Dr. Mater never imagined his research scope would include mental health but through his clinical work he found otherwise. After witnessing this community need day-to-day in the emergency department, he joined a national CIHR funded research study which will begin in early 2021 entitled, "A Multi-Disciplinary, Patient-Partnered, Pan-Canadian, Comparative Effectiveness Evaluation of an Innovative Acute Pediatric Mental Health and Addiction Care Bundle", MAPP. The primary objective of this trial is to compare the effectiveness of an acute mental healthcare bundle to standard emergency department mental healthcare in improving wellbeing 30 days after an emergency department visit among children and youth who sought care for mental health and substance use concerns. Secondary objectives include examining impacts on child /youth and caregiver satisfaction with care; family functioning; healthcare delivery (ED length of stay, access and time to follow-up care, ED revisits); and costs of care. Also embedded in this trial are strategies to evaluate implementation, the patient engagement process, and our training program.

Special Thanks to Dr. Ahmed Mater providing content for this article. Dr. Mater would also like to acknowledge Joan Dietz, Clinical Research Nurse for her help with PRIMED study and Dr. Anna Felstrum, child and youth psychiatrist at JPCH for her support with MAPP study.

#### **Pediatrics Covid-19 Research Update**

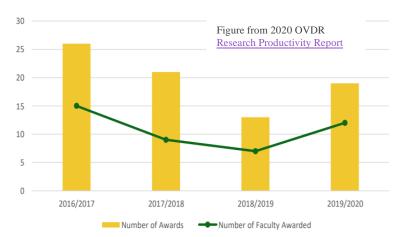
#### Pediatric Emergency Division:

COVIPAS: COVID 19 Parents Attitude Survey was a timely study with the objective of assessing parental attitudes towards COVID-19, to understand the reasons they decided to come to the emergency department and to learn about their attitudes about vaccination during a global pandemic. This was an international study including participants from: Canada, United States, Israel, Japan, Spain, and Switzerland. In the first paper published from this study, results showed that less than half of caregivers in this worldwide sample were willing to accept abbreviated COVID-19 vaccine testing. <u>In another publication</u>, results of 2,422 surveys, 1,314 (54.2%) caregivers stated they plan to vaccinate their children against influenza next year, an increase of 15.8% from the previous year. Of 1,459 caregivers who did not vaccinate their children last year, 418 (28.6%) plan to do so next year. In a third publication, 65% (n = 1,005) of caregivers reported that they intend to vaccinate their child against COVID-19, once a vaccine is available. A univariate and subsequent multivariate analysis found that increased intended uptake was associated with children that were older, children with no chronic illness, when fathers completed the survey, children up-to-date on their vaccination schedule, recent history of vaccination against influenza, and caregivers concerned their child had COVID-19 at the time of survey completion in the ED. The most common reason reported by caregivers intending to vaccinate was to protect their child (62%), and the most common reason reported by caregivers refusing vaccination was the vaccine's novelty (52%).

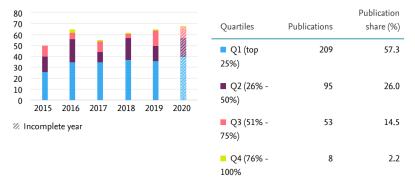


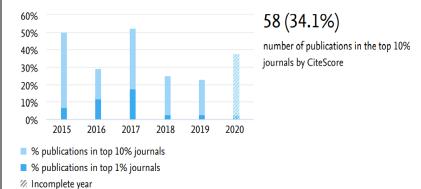
Measuring Research Success, a Snapshot of 2020 Although 2020 has brough some unique challenges the Department of Pediatrics Research division has continued to produce in the face of adversary. Although the initial shock of the pandemic put a pause on almost everything in the world, the department's researchers quickly adapted to new ways of discovering and shifting focus to the Covid-19 pandemic. The Office of the Vice Dean of Research recently put together a research productivity report of all the departments in the College of Medicine from 2015 to 2020. The report measured internal and external funding, number of awards, and publications. SciVal is based on output and usage data from Scopus, the world's largest abstract and citation database for peer-reviewed publications. Using data from the OVDR research productivity report and SciVal, the department was able to provide an overview of Research Funding, Publications and Citations, Collaborations, and Interdisciplinary research.

Figure 5.2: Department of Pediatrics Research Projects Awarded



Share of publications per Journal quartile by CiteScore Percentile





#### Research Funding & Awards

In the 2019/2020 fiscal year, Department of Pediatrics researchers were awarded a total of \$313,061.75. In 2019/2020 faculty received 19 awards, received by 12 unique award recipients exceeding the previous year. Publications and Citations

The OVDR productivity report also measured the number of publications per department, per year. The number of publications have increased from the 2015/2016 to 2019/2020 periods. To further explore this metric, the Department of Pediatrics faculty list was uploaded into SciVal. Due to the influx of new faculty over the past 5 years, a home institution filter was included to ensure only publications produced at USask were measured. As the number of publications increased in the department it was exciting to note that 58 of these publications authored by faculty of the Department of Pediatrics are among the Top 10% most cited publications worldwide. This refers to the number of publications by a selected journal that are highly cited. This is up from last year's 26 publications. Share of publications per Journal quartile by citescore percentile is also on an upward trend from 2015 to 2020. Publications in Journal Quartiles in SciVal indicates the extent to which an entity's publications have been published in the selected journal

quartiles. The journal quartiles are defined by

the journal metrics CiteScore, SNIP (Source-

Normalized Impact per Paper) or SJR

(SCImago Journal Rank).

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#### **Coming Events**

Jan 7	Visiting Scholar Series Pediatric Grand Rounds – Dr. Ronald Epstein
	A family physician, palliative care physician, writer, researcher and teacher of communication and
	mindful practice in medicine.
Jan 14	<u>Pediatric Grand Rounds</u> – Drs. Richard Huntsman and Senthil Damodharan
Jan 21	Visiting Scholar Series Pediatric Grand Rounds – Drs. Katie Birnie & Fiona Campbell
	Overview of Pain Task Force and Solutions for Kids in Pain (SKIP)
Feb 2-3	SAVE THE DATE for the 4 <sup>th</sup> annual <b>People Around the World (PAW) Conference</b>
Feb 4	Special Guest Pediatric Grand Rounds – Jeremie Saunders
	An award-winning actor, producer, and host of popular Canadian media, including film, television,
	and podcasts. Living with a genetic disease called Cystic Fibrosis, Jeremie is passionate about shifting
	the perspective and stigma around chronic illness and death.
April 15	Save the Date! Department of Pediatrics' Child Health Research Trainee Day

#### ...COVID-19 research continued

Another piece under Dr. Mater's umbrella of COVID related study involvement is one entitled, Clinical Characteristics and Outcomes of Children Potentially Infected by SARS-CoV-2 Presenting to Pediatric Emergency Departments in Canada. This study is a Pediatric Emergency Research Canada (PERC) - Public Health Agency of Canada (PHAC) COVID-19 Surveillance Collaboration that will create a registry including both SARS-CoV-2 test positive and negative children thereby creating a detailed repository of data that allows us to compare children with COVID-19 infection to those infected with other viruses or have no pathogen identified. This surveillance includes all pediatric emergency departments across Canada and Dr. Mater is the site lead in Saskatoon.

Finally Dr. Mater is one of several researchers across Canada who plan to begin a study titled, "Impact of the COVID-19 Pandemic on Pediatric Utilisation of Canadian Emergency Departments" with the objective to quantify and characterize emergency department visits by children from Jan 1, 2020 through to Mar 31, 2021 to determine associations of mean daily visit volumes across three pandemic phases: a) pre-pandemic, b) pandemic with strict social distancing measures, and c) pandemic recovery with relaxation of public health measures.

#### Pediatric Cardiology Division:

The Division of Cardiology participated in the 'Canadian COVID-19 CHD Surveillance Program', led by the Canadian Pediatric Cardiology Association (CPCA) from March 2020. This National Surveillance Program was setup due to reports of heart disease in adults being an increased risk factor for COVID-19. However, there were only 5 cases of COVID-19 reported nationally in children and adolescents with congenital heart disease over the next 3 months (none locally). This was not thought to be higher than the population risk, nor were the cases identified thought to be worse affected by the disease, so this was discontinued. Given the main COVID-19 cardiac-related clinical issue at the time had been identified as multisystem inflammatory syndrome in children (MIS-C), the CPCA instead recommended that we report any identified MIS-C cases to the International Kawasaki Disease Registry, which are now leading this surveillance program.

Thank you to **Dr. Ahmed Mater** for contributing to the Pediatric Emergency Division Covid-19 research update and to **Drs. Tim Bradley** and **Gitanjali Mansukhani** for their contributions to the Pediatric Cardiology Division Covid-19 research update.

#### 2020 September - December Publications

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- o Kobussen TA, Hansen G, Brockman RJ, Holt TR. <u>Perspectives of Pediatric Providers on Patients With Complex Chronic Conditions: A</u> Mixed-Methods Sequential Explanatory Study. Crit Care Nurse.
- o Gunton A, Hansen G, Lynn Schellenberg K. <u>Photovoice as A Participatory Research Tool in Amyotrophic Lateral Sclerosis</u>. J Neuromuscul dis.
- o Goldman RD, Yan TD, Seiler M, Parra Cotanda C, Brown JC, Klein EJ, Hoeffe J, Gelernter R, Hall JE, Davis AL, Griffiths MA, Mater A, Manzano S, Gualco G, Shimizu N, Hurt TL, Ahmed S, Hansen M, Sheridan D, Ali S, Thompson GC, Gaucher N, Staubli G; International COVID-19 Parental Attitude Study (COVIPAS) Group. <u>Caregiver willingness to vaccinate their children against COVID-19: Cross sectional survey.</u> Vaccine.
- o Goldman RD, Marneni SR, Seiler M, Brown JC, Klein EJ, Cotanda CP, Gelernter R, Yan TD, Hoeffe J, Davis AL, Griffiths MA, Hall JE, Gualco G, Mater A, Manzano S, Thompson GC, Ahmed S, Ali S, Shimizu N; International COVID-19 Parental Attitude Study (COVIPAS)

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- o Choinière M, Peng P, Gilron I, Buckley N, Williamson O, Janelle-Montcalm A, Baerg K, Boulanger A, Di Renna T, Finley GA, Intrater H, Lau B, Pereira J. Accessing care in multidisciplinary pain treatment facilities continues to be a challenge in Canada. Reg Anesth Pain Med.
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- o Christensen C, Sivapatham G, McKinney ML, Stammers D. <u>Sulfhemoglobinemia associated with meconium ileus in cystic fibrosis.</u> Pediatr Pulmonol.
- o Jariwala M, Laxer RM. Childhood GPA, EGPA, and MPA. Clin Immunol.
- o Rezaei E, Newkirk MM, Li Z, Gordon JR, Oen KG, Benseler SM, Boire G, Cabral DA, Campillo S, Chédeville G, Chetaille AL, Dancey P, Duffy C, Watanabe Duffy K, Houghton K, Huber AM, Jurencak R, Lang B, Morishita KA, Petty RE, Ramsey SE, Roth J, Schneider R, Scuccimarri R, Spiegel L, Stringer E, Tse SML, Tucker LB, Turvey SE, Yeung RSM, Rosenberg AM; for the BBOP Study Group. Soluble Low-density Lipoprotein Receptor-related Protein 1 in Juvenile Idiopathic Arthritis. J Rheumatol
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### Making the links in Canada and Africa: Community engagement to improve maternal and child health Conference Wrap-up

On October 15<sup>th</sup>, 2020 over 100 researchers, students, health workers, donors, decision-makers, community members, and civil society organizations gathered for a three hour virtual global conference called, "Making the Links in Canada and Africa: Community Engagement to Improve Maternal and Child Health." This event was held as part of a knowledge translation activity from the Innovating for Maternal Child Health in Africa initiative (IMCHA) supported by IDRC, Global Affairs Canada and Canadian Health Institutes for Research. The conference was cohosted by University of Saskatchewan Department of Pediatrics and International Development Research Center (IDRC). The conference covered the world but originated from Treaty 6 territory, traditional Homeland of the Metis in Saskatoon, Sk.

The Making the Links in Canada and Africa virtual conference offered an opportunity for global exchange of community engagement experiences in the context of maternal and child health. Some feedback from participants on what they learned included:

- "Communities are key for better scientific research"
- "Youth engagement and empowerment experiences and tips"
- "The general thinking about incentivizing CHWs with nonfinancial incentives and how it can motivate them even when they are volunteering"
- \* "How to engage men and the mechanisms to incentivize CHWs"
- "The fundamental nature of respect for culture, including traditions, native language and socialization/belonging"
- \* "Dr. Ron Siemens sharing of their teams research and community engagement narrative and lessons. I enjoyed the breakout session to hear from community members as key to effective solutions."



Community Alert Hospital Project was sponsored through the Innovating for Maternal Child Health in Africa (IMCHA) initiative funded by IDRC, GAC and CIHR. The project team was a collaboration between USask and UniLurio



Healing Mothers and Children produced by Kenecia Anderson

Feedback from one participant highlighted what the conference meant to them: "This conference was one of the most informative, exciting, diverse and beautiful I've attended. Thank you for bringing these experts and their learning to a larger audience, and thanks to all participants, including Elder Judy and the beautiful dancer. I learned and was very moved by this event!"

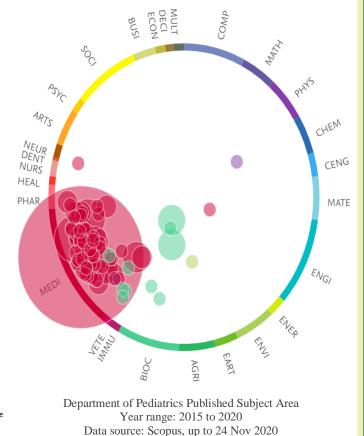
This event was well attended and was also given media attention including a CBC radio interview on <u>Point du jour</u>, two CTV interviews (<u>CTV news at 6</u> and <u>CTV news at noon</u>), and a podcast interview on <u>Researchers under the scope</u>. This three-hour event gave participants an opportunity to reflect on what is working but also what research gaps persist for

on what is working but also what research gaps persist for community engagement in maternal and child health as well as in sexual and reproductive health and rights. It is the intention of this event that the virtual conference, conference report, wrap up video and resources on the <a href="IMCHA website">IMCHA website</a> will stimulate continued discussion, ignite new partnerships, and forge new links in improving maternal and child health through community engagement.

#### ... Metrics continued from pg. 3

Collaborations and Interdisciplinary Research SciVal metrics also showed publications by subject area. The Department of Pediatrics publishes largely in the subject area of medicine. Other areas that reflect where the department has strong interdisciplinary collaborations are nursing, neuroscience, chemistry, biochemistry, and immunology. It also showed, based on scholarly output, that 13.7% represented University of Saskatchewan collaboration, 44% represented national collaboration, and 40% represented International collaboration. The top ten collaborating institutes include partnerships across Canada.





What's next? Although this year was marked by many hurdles, the department carries forward the prairie ethic outlined in <u>USask's Research Plan</u> which is to work hard today for a fruitful future. Publication metrics are the backbone of measuring research productivity, but it is also important to highlight the translation of research to the community at large. Many faculty in the department have excellent relationships with health charities including; <u>Lung Association</u>, <u>Cystic Fibrosis Canada</u>, <u>Diabetes Canada</u>, <u>Lupus Canada</u>, <u>Arthritis Society Jim Pattison Children's Hospital Foundation</u>. Through these connections, among others, the department engages with the general public and other stakeholders by advocating for improved access to medications, showcasing cutting edge research at community events, presenting to school age kids in a classroom setting, inviting patients to participate on research projects as coapplicants, and hosting a global health conference about community engagement research. These are just a few examples of how the Department of Pediatrics Research Division continues to strive for societal impact.

The Children's Health Research Trust Fund (CHRTF) was established in 1983 to help raise funds to support child health research at the University of Saskatchewan. As all donated funds are endowed, the CHRTF has continued to grow to become an important part in helping advance research in the Department of Pediatrics. For further information about the CHRTF and to donate:

https://donate.usask.ca/online/chrtf.php



#### Our Partners:

The Jim Pattison Children's Hospital has historically provided strong support for child health research in Saskatchewan. The recent \$50 million donation from Jim Pattison allows for a steady stream of revenue to help meet research and programming needs for generations to come. Groundbreaking opportunities for pediatric researchers in Saskatchewan are on the horizon!



#### Contact us

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