

JANEWAY PEDIATRIC RESEARCH UNIT

ADVANCING PEDIATRIC RESEARCH IN NEWFOUNDLAND AND LABRADOR



JANEWAY PEDIATRIC RESEARCH UNIT
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Cover image: Thanks to Kenny, 11 years old, who created this masterpiece while waiting for his appointment at the Janeway.

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A MESSAGE FROM THE DIRECTOR OF PEDIATRIC RESEARCH

Welcome to JPRU's second research update, a sampling of the various research projects underway within the Discipline of Pediatrics, Memorial University of Newfoundland and Labrador, and the Janeway Child Health Centre.

The last year and a half has been difficult for everyone. The pandemic has been particularly challenging for children and youth, evidenced by increasing rates of adverse mental health outcomes.

As we continuously adapt and shift our clinical practices to meet the needs of the families we serve, we must also shift our research priorities, as it is through research that we can inform ourselves and stakeholders, allowing us to move forward, creating logical solutions to complex problems brought on by the pandemic. As you will read, researchers working at the Janeway Child Health Centre and Memorial University have stepped up to the plate and are tackling these multifaceted issues with courage and passion. Whether its Dr. Surya Shah's participation in an international research collaboration studying the effects of COVID-19 on pediatric heart disease, or Dr. Anna Dominic's research on the alarming rates of eating disorders during the pandemic, our research teams are making a definitive contribution.

I hope you'll agree that despite the pandemic, perseverance and determination are ever present at the JPRU. Academic work by our trainees, clinicians, and researchers has not slowed down but has increased, demonstrated by growing numbers of new studies, research funding, and publications. A special thank you to the JPRU research staff, whose dedicated work and positive attitude keep our pediatric research moving forward. Many thanks to Stephanie Porter (editor) and Jennifer Armstrong (graphic design and photography) for their work putting the report together.

Dr. Leigh Anne Allwood Newhook
Director of Pediatric Research



A MESSAGE FROM THE PEDIATRIC RESIDENT RESEARCH DIRECTOR

Our residents have always made a significant contribution to the children's health research conducted at Memorial University and at the Janeway Hospital. Approximately a third of the projects ongoing within the JPRU at any time directly involve residents. Over the past few years, our residents have conducted research in most areas of pediatrics. They have examined ways to improve the training of residents and medical students, and they have developed a number of resources which directly help our patients.

As the Pediatric Resident Research Director, I see the hard work residents put in to completing their research projects while balancing other responsibilities, and the challenges they overcome along the way. As illustrated by the list of projects and publications, and by the stories of resident research highlighted in this report, their production is significant. I am always pleased by the quality of the work they complete and the contribution they make to our research culture.

We pride ourselves on the level of research training that our residents receive—and we constantly try to improve their training experience. Over the last two years, I have worked with residents to map learning objectives related to research in preparation for the adoption of competency-based learning (with Dr. Lisa Liang) and to expand the research resources to which our residents have access (with Dr. Andrew Borodovski, Dr. Alexis Sharp, and Dr. Rebecca Quilty). On a national level, we have worked with research program directors from all other pediatric residency programs to develop a shared set of national resources for pediatric residents (available <https://pedresresearch.ca/>). This work will lay the groundwork for even greater resident research success in the future.

COVID-19 has made it more difficult to see the contribution of individual research projects. To help promote our resident research, we aim to do a better job highlighting the accomplishments of our residents throughout the year. With the help of Dr. Laura Vivian, a section in the resident newsletter now focuses on resident research. MUNMED has published stories about our resident research day. We will continue to promote resident publications and presentations through social media.

Between the support of the JPRU, its staff, and the Discipline of Pediatrics, and the hard work of our residents and the clinical staff who mentor them, I am confident our residents will continue to help improve children's health in Newfoundland and Labrador and beyond. I look forward to helping them on this journey.

Dr. Roger Chafe
Pediatric Resident Research Director



A MESSAGE FROM THE CHAIR OF PEDIATRICS

Congratulations to the members of the Janeway Pediatric Research Unit (JPRU) on the latest Research Update. Within these pages, you will find a broad range of research initiatives happening right here that have a substantial impact on the health and wellbeing of children in Newfoundland and Labrador. A recent Pediatric Grand Rounds presentation by our research director, Dr. Leigh Anne Allwood Newhook, described the journey to establish this productive unit, and highlighted many of the exciting initiatives that are happening.



Established over a decade ago through the joint support of Memorial University, the Janeway Foundation, Eastern Health, and the Colonel Harland Sanders Foundation, the JPRU has been linked with over \$6 million in research grants. The creation of this space, and the associated funding, has brought together a variety of researchers and support staff leading to over 80 active projects, and more than 170 publications. Over 100 trainees including pediatric residents, as well as undergraduate and graduate students, have contributed to this work and benefited from the research support and training opportunities. From novel work on more common conditions such as childhood asthma, to projects looking at the impacts of COVID-19, the research taking place is in line with the JPRU vision: "To improve children's health in Newfoundland and Labrador and beyond through high quality health research." It's amazing to see the work that has been done since the last JPRU report in 2019.

We know that the years ahead will bring even more exciting accomplishments.

Dr. Paul Dancey
Chair of Pediatrics

PEDIATRIC RESIDENT RESEARCH DAY 2021

In April, Memorial University's Division of Pediatrics held its 2021 Pediatric Residents Research Day. The day began with a keynote presentation by Dr. Farah McCrate, Director of Research and Innovation at Eastern Health. Dr. McCrate talked about the contributions of her department toward the goal of fostering health research, and the type of partnerships Eastern Health can undertake with researchers at Memorial.

Next came eight presentations from second, third, and fourth-year pediatric residents. Topics this year included: examining the potential of video



education for pediatric asthma patients; developing an asthma registry for Newfoundland and Labrador; teaching learning theory to learners as a way to improve medical education; exploring patient perspectives on inflammatory bowel disease and its impact on daily living; determining the effect of a strict gluten free-diet on pediatric patients and families; and measuring antibiotic usage in a neonatal intensive care unit before and after the introduction of an antibiotic stewardship intervention. Abstracts were also presented for projects focused on creating an outcome-based curriculum map for a pediatric residency program and examining the correlation between adrenal suppression and quality of life for pediatric oncology patients.

The range of topics reflects the diversity of issues impacting children's health and pediatric training, with many of the projects focusing directly on improving how care is provided to children in our province.



Dr. Jennifer Mooney was awarded the prize for the best research proposal. Dr. Mooney is investigating the educational needs of older adolescents with eating disorders as they prepare to leave pediatric care and enter the adult system. Based on the first phase of her study, she will develop locally appropriate educational resources to better support patients with eating disorders. Her supervisors are Dr. Anna Dominic and Dr. Roger Chafe.



Dr. Allison Lamond was awarded the prize for the best completed project. Dr. Lamond developed and evaluated an on-line module to help pediatric, family medicine, and psychiatry residents learn how to better diagnose ADHD. Her supervisors are Dr. Sandra Luscombe and Dr. Tyna Doyle. Dr. Lamond went on to present her work at the National Pediatric Resident Research Competition to compete against the winners of research days at other pediatric residency programs across the country.

The judges for research day were Dr. Weldon Bonnell (Memorial / Eastern Health), Dr. Kathleen Hodgkinson (Memorial), and Dr. Rana Aslanova (Memorial).

NLCHI: CRUCIAL SUPPORT FOR JPRU RESEARCH PROJECTS

The Newfoundland and Labrador Centre for Health Information (NLCHI) provides quality information to health professionals, the public, researchers, and health system decision makers. Through collaboration with the health system, NLCHI supports the development of data and technical standards; manages provincial health data and information assets; carries out analytics, evaluation, and decision support services; and supports health research.

NLCHI is a custodian of many key data sources that capture health care interactions for all individuals accessing health care services in Newfoundland and Labrador. Some of the data held by NLCHI include vital statistics, fee-for-service physician billings, hospitalizations, prescriptions filled at community pharmacies, laboratory data, and emergency department visits. By extracting, linking, and de-identifying data from the sources listed above, NLCHI supports many research projects at JPRU. NLCHI offers a data navigation service, on behalf of NLCHI and the regional health authorities, to help researchers identify what data are available and



*Kendra Lester, PhD candidate (Clinical Epidemiology)
Manager of Data and Information Requests,
Data and Information Services, NLCHI*

how it can be used to help answer specific research questions. For anyone interested in arranging a consultation, please contact DataAccess@nlchi.nl.ca.

NLCHI has been leading efforts to advance the availability, quality, and use of health system data for decision making, research, and innovation through its Provincial Data Lab and Data Governance Framework. The Provincial Data Lab includes a data repository and secure, virtual environments that allow users to securely interact with data and information. Researchers who require access to record-level data are granted that access once required approvals are obtained. Various analytical tools and software are available in the Provincial Data Lab as is ability for project teams to access data, code, and output in common project spaces. Learn more at <https://datalab.nlchi.nl.ca>.



Some members of the NL Baby-Friendly Research Working Group (left to right): Clare Bessell, Rosmary Stanoev, Gisela Becker, Alicia Blackmore, Dr. Laurie Twells, Dr. Leigh Anne Allwood Newhook, Sharon Smith, Catherine Barrett, Dr. Samantha Woodrow, and Dr. Sara Dalley.

INVESTIGATING AND TREATING GENETIC EYE DISEASES

DR. DONNA BAUTISTA, PEDIATRIC OPHTHALMOLOGIST



Dr. Donna Bautista is a pediatric ophthalmologist at the Janeway Children's Health Centre and Clinical Assistant Professor with Memorial University. In her pediatric ophthalmology clinical practice, she encounters a wide range of eye conditions. Among the most interesting and challenging patients are those with genetic eye diseases.

One of Dr. Bautista's recent patients is a child diagnosed with plasminogen deficiency, a rare congenital disorder caused by a mutation in the plasminogen gene which can cause ligneous conjunctivitis, a potentially sight-threatening disorder. As part of the management of this child's condition, Dr. Bautista started a clinical trial, "The use of allogenic plasma aliquots as a source of plasminogen in the treatment of ligneous conjunctivitis, clinical trial of one case." She is currently collaborating with Dr. Josué Lily to publish the case report.

INVESTING IN HEALTHY BABIES AND HEALTHY MOTHERS: A PATIENT-ORIENTED APPROACH

ALICIA BLACKMORE, PHD CANDIDATE

Fourth-year PhD candidate (Clinical Epidemiology), Alicia Blackmore, is examining supports for infant feeding, as well as how decision makers and policy makers can be encouraged to invest in breastfeeding support as an investment in our mothers, infants, families, and communities.

Blackmore's dissertation, "Investing in healthy babies and healthy mothers: a patient-oriented approach," involves a systematic review and meta-analysis researching galactagogues, specifically Domperidone, as an "off-label" medication prescribed to mothers to help increase breast milk production. This meta-analysis reported a significant improvement in expressed human milk volume per day with the use of domperidone in mothers experiencing insufficient human milk production.

Blackmore has also conducted a cost analysis looking at the impact of infant feeding on total healthcare service use costs in a sample of infants in the province's Eastern Health Region. She found that even a comparison level of one month of exclusive breastfeeding brought differences in total cost to the healthcare system (including hospitalizations, as well as visits to family doctors, specialists, and the emergency room) when comparing mixed feeding and exclusive formula feeding. "Infant feeding mode predicts the costs of healthcare services in one region of Canada: a data linkage pilot study," was published in August 2020.

Carole Dobrich, director and professional development educator of the health e-learning of the International Institute of Human Lactation Inc. in Montreal, contacted Blackmore for an interview for Conversations with Colleagues. Since the beginning of October 2020, Dobrich has been virtually meeting with researchers, educators, and professors from all over the world and posting their talks. Conversations with Colleagues has covered topics such as coping with trauma and grief and COVID-19, COVID-19 and breastfeeding, anti-Nadel education and birthing, counselling and lactation training, and healthcare costs (Blackmore's area of research).

Blackmore's next steps will be to conduct a province-wide study examining the economic impact of infant feeding mode on healthcare system costs. This study will allow her to look at a much larger sample and longer exposure periods of infant feeding.



MOVING FROM PEDIATRIC TO ADULT CARE

DR. ROGER CHAFE, PHD



Adolescents with diabetes experience particular challenges as they transition into adult care. They need to manage their condition and have regular medical checkups while their care team is changing. They may move for work or post-secondary education, away from the supports they're used to. New health issues can arise for some young adults with diabetes, including those related to starting new relationships and the potential use of alcohol or drugs. As they move into the adult health care system, adolescents are expected to take on more responsibility for managing their care. This transition to adult care can bring both risks and benefits, of which everyone involved needs to be aware.

Dr. Roger Chafe recently led an adolescent diabetes transition research program involving the Janeway, Markham Stouffville Hospital (Markham, ON), and SickKids Hospital (Toronto, ON). The research team included Dr. Leigh Anne Allwood Newhook, Dr. Heather Power, Sharon Smith, and clinical staff from the other centres.

In Ontario, of 2,525 young adults with diabetes followed by the team, 47 per cent had a greater than 12-month gap in diabetes care following their transition, and 9.5 per cent had no primary care visits during the usual transition period, from 17 to 19 years of age. The rate of diabetes-related hospital admissions increased in the period following transition, with 17.7 per cent being admitted to hospital for diabetic ketoacidosis. In both Ontario and Newfoundland, the team found wide variation in the processes used for transitioning patients into adult care, including differences in the type of adult provider to whom patients are transferred. While many diabetes programs across the country now offer transition programs and dedicated resources for adolescents, this team's research illustrates the need for further work to ensure that young adults are well supported and receive regular diabetes care as they transition.

One initiative the research team undertook to improve the transition experience at the Janeway was the development and evaluation of a single-session transfer clinic. This clinic includes education sessions for young adults, group sessions with a psychologist for parents/guardians, meetings between patients and their new adult care providers, and tours of their new health-care facility. Adolescents with diabetes and their parents who attended the first several clinics reported satisfaction with the program. Initiating the clinic did not require additional staff or any significant expenditures. With a little planning, this type of clinic can be incorporated into a larger program of transition supports or be a first step to improving transition care at a smaller centre.

HOSPITALIZATIONS DUE TO SELF-POISONING AMONG ADOLESCENTS

REBECCA COLE

Adolescent self-harm is a serious mental health concern and is a major risk factor for suicide. Self-poisoning is the most common form of self-harm among adolescents; incidents and related hospitalizations are rising nationally. Research conducted at the Janeway Pediatric Research Unit found an increase in hospitalizations due to self-poisoning at the Janeway Hospital between 2008 and 2013, including high rates of recurrent admission.

Rebecca Cole is a Master of Medicine (Clinical Epidemiology) student and is basing her research on this study. Working under the supervision of Dr. Leigh Anne Allwood Newhook, she is completing a mixed methods study. The first phase of this study will include retrospective chart reviews of admissions to the Janeway Hospital due to self-poisoning among adolescents between 2014 and 2019. The aim is to investigate the epidemiology of hospitalization rates and explore common risk factors within this population. The second phase of the study will include qualitative surveys completed by adolescents and families who have experienced admission to the Janeway Hospital for self-poisoning. Participants will be asked questions about their experiences while in hospital and follow-up care related to the admission in order to gather patient satisfaction data.

This research aims to determine what populations are at risk and to work towards implementation of improved patient resources and preventive measures for the populations at risk. Gathering patient perspectives regarding their hospital admission experience may also lead to increasing awareness and understanding of health care providers and to inspire improvements in the clinical care and follow up of these patients.

Cole has been awarded a Janeway Foundation Trainee Award, as well as a Memorial University Faculty of Medicine Graduate Scholarship. She is also the recipient of a Eastern Health Quality Healthcare Scholarship. Her goal is to help create supportive and educated communities surrounding mental health in Newfoundland and Labrador, with connectivity between healthcare professionals and patients in bettering individual and community mental health in our province.



WIDE VARIATION IN CLINICAL MANAGEMENT OF PEDIATRIC EOSINOPHILIC ESOPHAGITIS: A CANADIAN EXPERIENCE

DR. JEFF CRITCH

Dr. Jeff Critch is a gastroenterologist at the Janeway and an associate professor at Memorial University. In 2020, Dr. Critch was part of a research team that studied the variation in clinical management of eosinophilic esophagitis (EoE) by pediatric gastroenterologists across Canada.

EoE is a chronic disorder treated by food elimination diet, topical steroids, and/or proton-pump inhibitors. Serial endoscopies and biopsies assess response to therapy. Management of the disorder has evolved as guidelines are updated.

An online survey about decision-making with regards to children with EoE and practice variations among Canadian pediatric gastroenterologists was distributed in November 2020—the first Canadian study of its type. Overall, pediatric gastroenterologists demonstrated good adherence to published guidelines in terms of initial diagnosis, but differences in maintenance therapy choice and timing of endoscopies. The results highlight a need for standardized management algorithms to deliver uniform care to this growing group. Grounding these guidelines in evidence will warrant a significant investment in further pediatric EoE research.

NEW PRESENTATIONS OF EATING DISORDERS ACROSS CANADA DURING COVID-19

DR. ANNA DOMINIC

DR. ZAHRA ALEBRAHEEM, MELISSA MANNING

Dr. Anna Dominic is an adolescent medicine pediatrician and assistant professor of pediatrics at Memorial. Dr. Dominic has been a member of the medical school faculty since 2000. With administrative support over the years, she helped to build a new interdisciplinary Adolescent Medicine team at the Janeway which provides specialized health care services for the adolescent population of Newfoundland and Labrador. Now, adolescents with a broad range of mental and physical health needs are able to access health care specific to their needs through the clinic and inpatient services. A significant portion of Dr. Dominic's clinical work is in the area of eating disorders. She has incorporated adolescent health topics into the medical school's academic curriculum and actively trains students and learners at all levels on adolescent health issues.

Dr. Dominic is currently the local Principal Investigator for a multisite research project examining the impact of COVID-19 on the onset of new diagnosis of anorexia nervosa. Local co-investigators are Dr. Zahra Alebraheem (an adolescent medicine pediatrician) and Melissa Manning (a nurse practitioner with the adolescent medicine team).

The project, "New presentations of anorexia nervosa and atypical anorexia nervosa across Canada during the COVID-19 pandemic" began as a multi-centre study with principal investigator Dr. Holly Agostino from the Montreal Children's Hospital and McGill University Health Centre. Other co-investigators were based at McMaster, the Hospital for Sick Children and University of Toronto, Children's Hospital of Eastern Ontario, Université de Montreal, Alberta Children's Hospital and University of Calgary, and Memorial University (Dr. Dominic's team). The study aims to assess the effect of the COVID-19 pandemic on the incidence, clinical characteristics, and medical severity of new onset eating disorders presenting to large, urban tertiary pediatric hospitals across the country.

The study will continue until December 31, 2021.



FINDING BETTER WAYS TO HELP AT-RISK MOTHERS

DR. ANNE DROVER

Pregnant and parenting women with opioid use disorder are an extremely vulnerable population. This group of patients is highly stigmatized and experience barriers to obtaining medical care. In collaboration with several medical students, Dr. Drover has looked at various aspects of this population.

Dr. Allison Lamond started the ball rolling with a survey of postnatal parents on the obstetrical unit that highlighted the need to collect better information about these families. She presented "Better Beginnings: At risk moms; what are we missing?" at the Canadian Pediatric Society annual meeting in 2016.

Sarah Manning, a third-year medical student, completed an anonymous online survey of pregnant and parenting individuals about their practices and attitudes towards cannabis use in pregnancy and breast-feeding. This research project was presented at the Canadian Pediatric Society annual meeting in 2020 as well as at the Society of Obstetricians and Gynecologists of Canada Annual Meeting in 2020. Sarah Manning won the CPS Neonatal Perinatal Medicine Research Award for the project, "Parental Perceptions and Patterns of Cannabis Use during Pregnancy and Breastfeeding at a Canadian Tertiary Obstetrics Centre."

Dr. Drover has a Janeway Research Award to complete a retrospective chart review of all women and newborns that were exposed to opioid agonist therapy in pregnancy at the Health Sciences Centre and Janeway between 2018 and 2021. She hopes that this project will determine factors that protect from or promote symptoms of NAS (Neonatal Abstinence Syndrome) in the opioid-exposed newborn. It will also evaluate the clinical management of NAS patients at the Health Sciences Centre compared with the Canadian Pediatric Society's best practice guidelines. Dr. Drover welcomes Denise Buglar-Shea, a retired NICU nurse, as the research assistant for this project with the support of Heidi Dunphy, a third-year nursing student.

Michael Hand, a second-year medical student, is also working with this population. He is doing a qualitative study on the preparedness of this population for the delivery of their newborns. He has completed several one-on-one interviews with mothers to determine their fears and concerns prior to delivery. Dr. Drover and her colleagues plan use this information to create a user-friendly information pamphlet for use by patients, pharmacists, methadone prescribers, obstetricians, nurses, and social workers, so that at-risk women can be better prepared for their hospital stay.

Dr. Drover is also actively working with inter-disciplinary groups to improve the education and understanding of neonatal opioid withdrawal syndrome among all providers to ensure a trauma-informed, evidence-based approach to this patient population.



STUDYING PEDIATRIC INFECTIOUS DISEASE

DR. CHERYL FOO

The primary academic interests of infectious disease physician Dr. Cheryl Foo are the surveillance of emerging infectious diseases and improving healthcare delivery to marginalized populations. Dr. Foo is an active member of the Canadian Immunization Monitoring Program, Active (IMPACT), and the Pediatric Investigators Collaborative Network on Infections in Canada (PICNIC). Dr. Foo's current research projects in collaboration with PICNIC are a cohort study of children hospitalized with COVID-19 infection, and a study of the risk factors of neurologic complications in children with COVID-19.

Dr. Foo is supervising Dr. Marika Hirtle-Lewis on a study of antibiotic usage in the Janeway's NICU pre- and post-stewardship intervention, which has been accepted as a poster presentation to the Association of Medical Microbiology and Infectious Diseases' (AMMI) annual national conference. In February 2017, the NICU and pediatric infectious disease physicians began weekly discussions about every infant on antibiotics in the NICU. The study determined there was a significant reduction of infants started on antibiotics after this antibiotic stewardship program was initiated. However, there was no change in the duration of antibiotics use. Although only infants on antibiotics were discussed, this study suggests the presence of the low-cost antibiotic stewardship intervention was associated with reduction in antibiotic initiation.

EVALUATING OUR NICU'S ANTIBIOTIC STEWARDSHIP PROGRAM **DR. MARIKA HIRTLE-LEWIS, FOURTH-YEAR PEDIATRIC RESIDENT**

Antibiotics are the most commonly used medication in Canadian neonatal intensive care units (NICUs). In 2017, the Janeway's NICU team established an antibiotic stewardship program (ASP). The program consists of weekly rounds between infectious disease staff and neonatal physicians. The program certainly addresses an important issue, but it was not clear if it was having the intended impacts.

Dr. Marika Hirtle-Lewis, a fourth-year pediatric resident, conducted an evaluation of the ASP. Using Canadian Neonatal Network data, she and her team compared antibiotic usage in the two years before the ASP started to the two years after implementation. 1,380 infants were admitted to the Janeway NICU during the study period. The number of infants treated with antibiotics was significantly less in the post-ASP cohort (78.6% vs. 61.1%, $p < 0.001$). The mean length of therapy was also significantly lower in the post-ASP period.

The introduction of ASP did not require significant additional expenditures, but was associated with decreased antibiotic usage within the NICU. The adoption of similar programs should be explored in other NICUs across Canada. Dr. Hirtle-Lewis' supervisors on this project were Dr. Natalie Bridger, Dr. Roger Chafe, Dr. Julie Emberley, and Dr. Cheryl Foo.



CHILDREN'S ONCOLOGY GROUP: ENABLING GOLD-STANDARD PEDIATRIC CANCER CARE **DR. LISA GOODYEAR**

The Children's Oncology Group was formed to pool resources and knowledge in order to develop the gold standard of care for the treatment of children with cancer. The group has over 200 centres across Canada, the United States, New Zealand, and Australia. Pediatric oncologist Lisa Goodyear is the principal investigator at the Janeway for the group.

In most pediatric hospitals across Canada, including at the Janeway, a number of clinical trials are ongoing. Eligible patients can choose to enroll in these open studies as a treatment option. This allows oncologists like Dr. Goodyear to offer state-of-the-art treatment to patients, the same treatment that other children are receiving elsewhere across North America. Being involved with the Children's Oncology Group also gives Dr. Goodyear and her colleagues access to experts in the field to assist with unique cases. Thanks to this relationship, Dr. Goodyear says the outcomes for children with cancer have been steadily improving every year; in certain areas the focus is now on tailoring treatments based on how a patient responds and aiming to decrease both acute and late effects.

Dr. Goodyear collaborates with other physicians, including fellow pediatric oncologists Dr. Lynette Bowes and Dr. Paul Moorehead, clinical research nurse Bev Mitchell, oncology nurse Stephanie Eason, as well as pharmacists, pediatric surgeons, orthopedic surgeons, radiation oncologists, and others. Dr. Goodyear and her research team are planning to increase their portfolio of open studies and aim to have between 10 to 15 open clinical trials at the Janeway. Having a larger portfolio of studies open locally will allow the team to offer patients the best available treatment options, close to home.

Dr. Goodyear also participates in oncology research outside of Children's Oncology Group trials as well as in hematology research. She is involved in a national bone marrow failure registry, looking at bone marrow failure patients, and collaborates on research projects led by Dr. Moorehead and Dr. Bowes.

EMBRACING A NEW ROLE AS RESEARCH ASSISTANT

DONNA HAGERTY RN, CDE, BED

Registered nurse and certified Diabetes Educator Donna Hagerty recently retired as the Pediatric Nurse Coordinator for the Janeway Diabetes Program and now works as a JPRU research assistant. Hagerty is currently working on three projects. “These studies are not only very interesting,” she says, “but have certainly provided me with a new learning curve of education that is a rewarding new experience.”

Type 1 Diabetes TrialNet is an international study looking at the development and progression of diabetes in first and second-degree relatives of people with Type 1 diabetes. Hagerty is engaged in recruiting eligible participants and monitoring them annually for diabetes. This study aims to help in learning more about the causes of diabetes, testing ways to delay the progression of the disease in people at risk, and ultimately preventing it.

Canadian Hemophilia Management in the Perinatal Setting (CHiMPS) is a pilot study that evaluates the feasibility of enrolling newborns with hemophilia and their mothers in a registry. The study also estimates the rate of accrual of patients, and evaluates the quality and completeness of data collection, in this prospective registry. Hagerty’s role is to ensure that all Canadian sites remain current with their documentation and to keep all sites up to date throughout the study. She also enters all data of the eligible participants into the CBDR-R portal from the Eastern Health site.

Children and Youth in Alternative Care (CAYAC) is a cross-sectional chart review aimed at identifying the medical, behavioural, and mental health issues, needs, and outcomes of children and youth who attend the CAYAC clinic at Eastern Health. The review also aims to identify the sociodemographic and clinical factors of children and youth in alternate care that increase the risk of developing medical, behavioural, and mental health problems.



IFEED STUDY: SUPPORTING PARENTS TO MEET THEIR INFANT FEEDING GOALS

BRITTANY HOWELL, MSC

DR. LAURIE TWELLS, DR. LEIGH ANNE ALLWOOD NEWHOOK

The Infant Feeding eHealth Resource to Assist Expecting Parents Achieve Desired Goals (iFEED) pilot study supports women in achieving their breastfeeding goals through knowledge, access to support, and an understanding of the common challenges other mothers have faced. Dr. Laurie Twells, Dr. Leigh Anne Allwood Newhook, and Master of Science graduate Brittany Howell have been working on the study.

Previous research has found that maternal attitudes towards breastfeeding are the strongest predictor of both initiation and duration of breastfeeding. These attitudes can be measured by the Iowa Infant Feeding Scale (IIFAS), a questionnaire validated for use in the Newfoundland and Labrador population. Current breastfeeding research recommends interventions that provide access to education and support to pregnant parents in the postpartum period. Timely interventions that educate mothers about the importance of breastfeeding while respecting their decisions and providing the correct supports are recommended.

In line with the World Health Organization and Baby-Friendly Initiative, this study explores the clinical applicability of the IIFAS, and whether personalized technologically based interventions result in increased initiation rates and longer duration of breastfeeding.



The pilot will evaluate the feasibility and effect of the IIFAS and an eHealth information resource on women's breastfeeding intent, efficacy, and perceived support. This pilot will precede a larger provincial pragmatic randomized control trial that will follow mothers over a period of time to explore the impact of the intervention on their infant feeding.

The eHealth resource will inform pregnant parents about infant feeding and help them feel supported in their decisions. The researchers hypothesize that by providing pregnant parents with more information on the benefits of breastfeeding, as well as the common barriers and challenges they may face, that they will feel more prepared to initiate and continue breastfeeding. This will benefit parents and their infants while reducing costs to the health-care system.

As of spring 2021, the study protocol has been approved and the intervention is in the final stages. Once the intervention is complete, the study will begin recruitment. This study has received HREA ethics approval and NLSupport and Janeway Research Grant Funding.



CASE STUDY: TWO CONFIRMED CASES OF A RARE GENETIC DISORDER **DR. ALLISON LAMOND**

Congenital myasthenic syndromes (CMS) are a group of genetic disorders caused by dysfunction of neuromuscular transmission at the level of the synapse. Dr. Allison Lamond, a third-year pediatric resident, along with Dr. David Buckley, Dr. Jennifer O'Dea and Dr. Lesley Turner published a case report describing the variation in presentation of two unrelated patients found to have a rare form of CMS.

Whole exome sequencing showed both patients had the same likely pathogenic variants of gene SLC18A3; a specific mutation that had not to date been described in the literature. Both patients showed feeding issues and failure to thrive with generalized weakness. The second patient also had life-threatening apneic events. While both patients have the same genotype, their presentations, response to treatment, and progress varied. Treatment with pyridostigmine was helpful for both patients, with the second patient's life-threatening apneas stopping once pyridostigmine started.

The case studies also indicated the use of 3,4-diaminopyridine in treatment should be done with caution due to the potential of insufficient acetylcholine release, but it can be considered in children older than two years for symptom improvement.

With only five described clinical cases of CMS in the literature, Dr. Lamond and her colleagues added two further clinical cases confirmed through genetic diagnosis. Their case study was published in BMJ Case Reports.

MEETING THE EDUCATIONAL NEEDS OF ADOLESCENTS WITH EATING DISORDERS WHEN THEY LEAVE PEDIATRIC CARE **DR. JENNIFER MOONEY, SECOND-YEAR PEDIATRIC RESIDENT**

Eating disorders, such as anorexia nervosa and bulimia nervosa, are complex illnesses accompanied by serious medical, psychological, and social impairments. They usually present during adolescence. Because eating disorders can be chronic conditions with lasting functional and medical issues, many patients will require a transition to adult medicine for follow-up when they age out of pediatric care.



Dr. Jennifer Mooney, a second-year pediatric resident, noted some of the difficulties encountered during this transition while working in adolescent medicine eating disorders clinics at the Janeway and elsewhere. Locally, many patients with eating disorders transitioned back to their family physician, who may or may not have experience working with this population. Some individuals who are in recovery may be followed by the HOPE program, while others who have more serious issues may be admitted into an adult care program. Stringent rules on who can access these programs and lengthy wait times can place real burdens on these patients.

A recent systematic review demonstrated that patient education is a vital component in optimizing health and empowering adolescents with eating disorders during their transition. But what information and education do our patients want and need? Dr. Mooney's study aims to better understand this population's educational needs as a first step in improving the supports they receive as they leave pediatric care. "I want to discover what adolescents with eating disorders identify as being their educational needs for transitioning to adult care," says Dr. Mooney. "From the data I receive, I hope to begin a phase II project, where I will develop a document that will meet the needs they have identified and improve the transitioning process."

In Phase I, Dr. Mooney plans to interview 20 to 25 participants with a diagnosis of anorexia nervosa and/or bulimia nervosa who were previously seen by the Janeway adolescent medicine team for at least two years. With insight into the population's educational needs, health care providers can better prepare adolescents for the transition and connect them with the appropriate follow-up supports to start the next phase of their care journey. Her supervisors on this project are Dr. Anna Dominic and Dr. Roger Chafe.



PEDIATRIC INTENSIVE CARE: OUTCOMES AFTER CRITICAL ILLNESS

DR. JESSICA NICOLL

Dr. Jessica Nicoll joined the Pediatric Intensive Care team at the Janeway in January 2021. Her research program is focused on describing and improving outcomes after pediatric critical illness. Since her arrival, she has submitted a cohort study describing the relationship between postoperative vital signs and new brain injury in children with critical congenital heart disease and a multi-centre, multinational study describing death and dying in hospitalized children.

As part of her goal of understanding outcomes after pediatric critical illness, Dr. Nicoll is leading a national longitudinal population study examining death, hospital utilization, and acquired medical complexity in neonates and children after index critical illness. She is also completing a systematic review and meta-analysis describing functional outcomes of children in the first year after critical illness. These projects are part of the PhD in Clinical Epidemiology and Health Care Research that she is completing at the University of Toronto, supervised by Dr. Christopher Parshuram. Her PhD work is funded by a Clinician Scientist Training Program Scholarship through the SickKids Research Institute.

Dr. Nicoll is the Janeway Principle Investigator recruiting families of children admitted to the PICU for a web-based survey to better understand the impact of restricted family presence at the bedside during COVID-19, led by the IWK in Halifax. Dr. Nicoll is also collaborating on two cohort studies that describe the relationship between socioeconomic status and nutrition in PICU and patient outcomes after critical illness. She is part of the team reporting a survey of overnight in-house physician coverage in NICUs and PICUs across Canada and a cohort study examining the intubation rates in children with bronchiolitis overtime. She is also a part of the Canadian Critical Care Trials Group team developing a national Pediatric Critical Care database.

Dr. Nicoll is thrilled to be in Newfoundland and is looking forward to collaborating with JPRU-affiliated researchers. She is currently working on study protocols to better understand and improve the outcomes of critically ill children at the Janeway.

MAPPING THE EFFECTIVENESS OF AN INNOVATIVE MENTAL HEALTH AND ADDICTION CARE BUNDLE

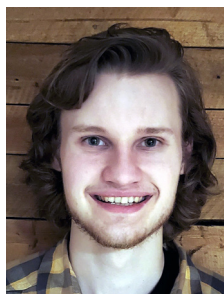
DR. ROBERT PORTER

MAPP Mental Health Care aims the spotlight at, and bring rigorous analysis to bear on, the care of children and adolescents presenting to the emergency department with mental health and addictions issues.

The study, “A multi-disciplinary, patient-partnered, pan-Canadian, comparative effectiveness evaluation of an innovative acute pediatric mental health and addiction care bundle,” is funded by CIHR with matching funds from a number of partners. At the Janeway, matching funding is provided by the Department of Health and Community Services and Memorial University. The study is endorsed by the Pediatric Emergency Research Canada; the lead site is at the University of Calgary with Principal Investigators Dr. Stephen Freedman and Dr. Amanda Newton. Dr. Robert Porter, the Janeway site Principal Investigator, is working with the other site leads, Dr. Margaret Steele, Dean of Medicine, and Dr. Kim St. John, Division Head for Child and Adolescent Psychiatry.

MAPP Mental Health Care is a four-year cluster randomized controlled trial involving eight Canadian pediatric sites—four control and four intervention. The Janeway was randomly allocated to the intervention arm of the study, so we will be implementing the intervention, a “bundle of care” for eligible children eight to 18 years of age with mental health or addiction-related complaints presenting to the Janeway Emergency Department. The bundle of care brings together multiple evidence-based assessment tools to ensure efficient, high-value care. The bundle prioritizes family engagement and uses a shared decision-making framework to promote children and youth as stewards of their care, and to support partnership between emergency departments and follow-up services with the duration of care determined collaboratively by the patient and their provider.

The primary outcome of this study will be a measure of well-being 30 days after the emergency department visit, ascertained through a telephone interview, along with a number of secondary outcomes, including costs of care.



HOW EXTREME EVENTS AFFECT HEALTH CARE USE

TIMOTHY PORTER, BSC

Interruptions to normal health care services often have unexpected consequences. Newfoundland and Labrador experienced two major interruptions in 2020 with a large January snowstorm (Snowmageddon) and COVID-19, making it a particularly interesting year to study health-care utilization. Precisely how events like these affect health-care utilization is unknown. Timothy Porter, a research assistant at the JPRU, is working on a project studying health-care utilization in Newfoundland and Labrador during 2020-2021 under the supervision of Dr. Leigh Anne Allwood Newhook, Dr. Rana Aslanova, Dr. Roger Chafe, Dr. Zhiwei Gao, and Dr. Vicki Crosbie. Porter developed the proposal for this project during the Summer Undergraduate Research Award (SURA) program at the JPRU after finishing a BSc in physics at Memorial University in 2020. He is currently collecting data for the study.

Porter will examine areas including hospitalizations, emergency department visits, radiology, medical laboratory use, and telehealth services. The study will provide a better sense of how patients and health care services are affected by extreme events, so that everyone can be better prepared for future interruptions to regular health care services. Factors such as urban/rural and socioeconomic status will be explored as well.

Given the wide scope of areas affected, the data collected will allow for a number of interesting studies of pediatric healthcare in the province to be conducted in the future. Porter is planning to start an MSc in Clinical Epidemiology next year, and will use the data from this study to examine how mental health was affected by the events of 2020-21.



KNOWLEDGE TRANSLATION IN TYPE 1 DIABETES AND DIABETIC KETOACIDOSIS

AARON RAINNIE

Newfoundland and Labrador has one of the highest incidences of Type 1 Diabetes (T1D) in the world, making it a particularly relevant area for research and local initiatives. Of utmost importance with T1D is Diabetic Ketoacidosis (DKA), a potentially life-threatening complication of T1D that can usually be prevented through prompt recognition of symptoms and effective diabetes control. Unfortunately, despite medical management, DKA continues to cause significant morbidity and mortality.

Aaron Rainnie, a third-year medical student at Memorial University, hopes to help reduce rates of DKA in the province. Prior to medical school, Rainnie worked as an Emergency Department Registered Nurse, where he saw numerous cases of DKA. Under the guidance of Dr. Leigh Anne Allwood Newhook, Rainnie is working to create and validate knowledge translation resources aimed at bringing awareness of T1D and DKA to the general public.

Young adults currently have the highest rates of hospitalization due to DKA in Newfoundland and Labrador, suggesting further need for initiatives with this age group. Additionally, with almost one-quarter of DKA cases presenting in individuals not previously diagnosed with T1D, further education on the signs and symptoms of T1D and DKA is warranted. Rainnie's literature review of knowledge translation strategies for adults aged 20 to 24 indicated that short, action-oriented messages delivered through high quality online resources such as videos, websites, or apps are effective strategies to disseminate information to younger adults.

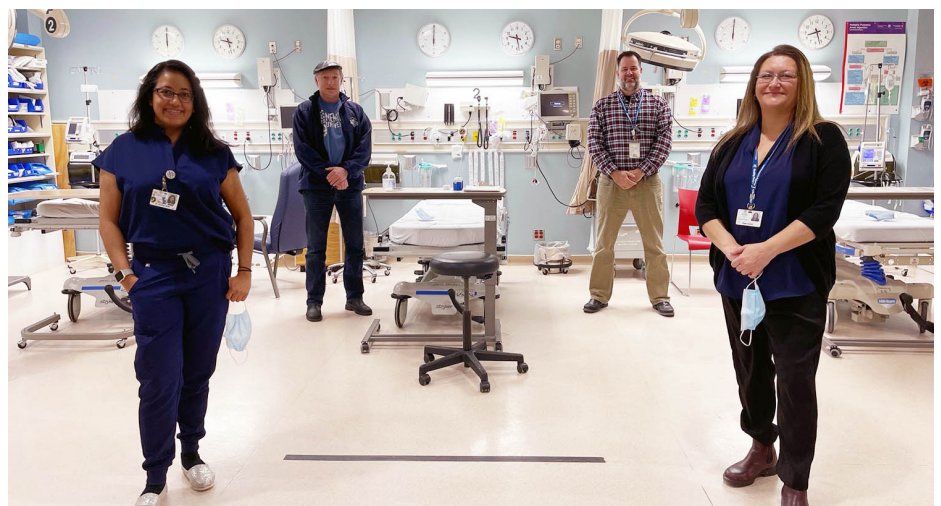
Rainnie is continuing his work in this area through assessing the efficacy of educational videos as a means of knowledge translation of T1D and DKA. As a relatively novel field, he is hoping this project will help add to the growing body of knowledge translation research as well as increase awareness and knowledge of T1D and DKA in Newfoundland and Labrador.

THE CANADIAN HOSPITALS INJURY REPORTING AND PREVENTION PROGRAM (CHIRPP)

DR. ARCHNA SHAH

CHIRPP is an injury and poisoning surveillance system that collects and analyzes data on injuries to people who are seen at the emergency rooms of 11 pediatric hospitals, one children's outpatient clinic within a general hospital, and nine general hospitals in Canada. CHIRPP is federally funded by the Public Health Agency of Canada.

Data collection started in 1990 with the Janeway Children's Hospital being one of the original 10 participating institutions. The program has expanded since then: new hospitals have joined the program, injury capture rates have increased, and the increasing numbers of records led to a database migration. To date, we have over 3.3 million CHIRPP records.



CHIRPP has played an integral role in reporting on specific injuries caused by sports and everyday items such as: injuries caused by children's play spaces and equipment; trampoline injuries in school physical education programs; concussions in contact sports; baby walker injuries; ATV injuries; and single-pronged hook injuries in retail settings. As a result, legislation has been enacted to change safety requirements for use during these activities and helped inform Canadian Standards Association Guidelines.

During the biennial CHIRPP conference in 2019, mental health and substance abuse-related injuries were brought to light, and the Janeway commenced reporting on this June 2019. A news release on the Public Health Infobase reports on the results of the Janeway team's research and data collection on substance use-related injuries and poisonings in Canada (July 2020).

The Janeway team is contributing to the national platform. The data collected is used by external and internal departments for use in decision support and applied health research. We have been contacted by other centres to review and track specific injuries; if trends are identified in other provinces, we make comparisons to add to the national database.

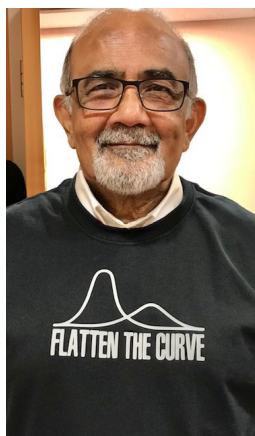
Some local initiatives have been featured as news briefs with NTV and VOXM on trampoline use and injuries in the province, and information requests for an orthopedic research project. To date we have completed two poly-substance use/misuse reports, and have contributed progress reports to the national surveillance program. In doing so, we have received \$40,000 in grants for the years 2019 and 2020 for the Janeway.

The Janeway CHIRPP team is Dr. Archana Shah (site medical director), Phil Murphy (site manager), Leonard Gallant, and Dawn Durdle (site coordinators).

KAWASAKI DISEASE, COVID-19, AND CARDIAC COMPLICATIONS: A SUB-STUDY OF THE INTERNATIONAL KAWASAKI DISEASE REGISTRY

DR. SURYAKANT SHAH, PRINCIPAL INVESTIGATOR

DR. PAUL DANCEY AND DR. LEIGH ANNE ALLWOOD NEWHOOK, CO-INVESTIGATORS



Kawasaki disease (KD) is a rare childhood illness that affects blood vessels and can harm the coronary arteries, which carry blood to the heart muscle. An acute self-limited inflammatory condition, KD is identified annually at a rate of 20 to 30 cases per 100,000 children under five years of age. Although the cause of KD is unknown, evidence suggests it is a severe inflammatory response to environmental or infectious triggers in young children who have a genetic and developmental susceptibility and adverse environmental immunomodulation. The most important complication of KD is the development of coronary artery aneurysms, which occur in about 25 per cent of patients. This risk is reduced to closer to 5 per cent for those treated early with intravenous immunoglobulin (IVIG).

Given the rarity of KD, and the further rarity of coronary artery aneurysm, any clinical centre has few patients. The International KD Registry (previously the North American KD Registry) was formed to pool data on these patients to determine factors associated with long-term coronary artery outcomes. Newfoundland and Labrador has recorded a number of KD cases, including a few with large coronary arteries; the international registry is a good way to become part of the international registry and manage such patients as per guidelines.

The Janeway is also involved in a KD sub-study that was designed and implemented near the start of the COVID-19 pandemic. Through this multi-centre study, researchers are collecting data for analysis about pediatric patients with Kawasaki disease (KD) who have pediatric multisystem inflammatory syndrome (PMIS aka MIS-C) and/or confirmed or suspected COVID-19 infection. Researchers hope to learn more about cardiac complications, including those associated with KD, in pediatric patients with COVID-19. The Janeway team is working with Dr. Brian McCrindle at the Hospital for Sick Children, University of Toronto, the data coordinating centre.

FROM INFANT FEEDING TO DISEASE REGISTRY DEVELOPMENT **SHARON SMITH, RN, MN**

Sharon Smith, RN, MN, has been working in the Janeway Pediatric Research Unit for nearly seven years. She has worked on a number of studies and projects, including disease registry projects such as the Canadian Alliance of Pediatric Rheumatology Investigators (Capri) and the Canadian Children Inflammatory Bowel Disease Network (CIDSCANN). Both of these projects involve data collection and the development of infrastructure to support ongoing research in both childhood arthritis and childhood inflammatory bowel disease. Smith has also been involved in diabetes research, with a particular focus on genetics, which led to the development of a transition program for children with diabetes as they moved to adult care. She has completed a number of other projects related to diabetic ketoacidosis, self-harm in children, and others. She also helped coordinate a national infant feeding conference.



EFFECTS OF DELAYED NEWBORN BATHING ON BREASTFEEDING, HYPOTHERMIA, AND HYPOGLYCEMIA **SUSAN WARREN, RN, MSC**

Delivery room and postpartum hospital routines and practices impact a newborn's adjustment to the extra-uterine environment. They also impact early maternal-infant interactions, including breastfeeding. Infant birthing and care practices continue to evolve based on emerging evidence in an attempt to achieve the healthiest birthing and neonatal care possible. One such practice is that of newborn bathing. Newborn bathing imposes a physical separation of the mother and newborn and impedes skin-to-skin contact. Bathing also removes biological substances such as amniotic fluid and vernix caseosa, which may play a role in the newborn's adaptation to the extrauterine environment.

In 2015 the Janeway adopted a new policy to delay newborn bathing until at least 24 hours after birth. Susan Warren, RN, MSc (Clinical Epidemiology) evaluated this policy change by conducting a retrospective cohort study examining the effects of delayed newborn bathing on breastfeeding, hypothermia, and hypoglycemia. Published in the *Journal of Obstetric Gynecology and Neonatal Nursing* (JOGNN) in March 2020, the study found that the odds of exclusive breastfeeding at discharge were 33 per cent greater when bathing was delayed. Delayed bathing was also found to be associated with decreased incidence of infant hypothermia and hypoglycemia. Whether because of the decrease in the separation of mother and newborn, the maintenance of biological cues, or the decrease in newborn stress, the practice of delaying the newborn bath may play a role in providing the best possible conditions for breastfeeding, thermoregulation, and glycemic control in healthy newborns.

Warren and her co-authors, Dr. Laurie Twells, Dr. Leigh Anne Allwood Newhook, Dr. William Midodzi, and Phil Murphy were recently nominated for the 2021 Best of JOGNN Writing Award for the "originality of the work, potential to significantly affect the care of women, infants and/or child-bearing families, and the interdisciplinary importance of the work."



NEW INDEPENDENT INVESTIGATORS AND PROJECTS

Pediatric CNS tumours, Symptom Diagnostic Interval (SDI), delayed diagnosis, Atlantic Canada. **Lynette Bowes**

New presentations of anorexia nervosa and atypical anorexia nervosa across Canada during the COVID-19 pandemic. **Anna Dominic**

SARS-CoV-2 and COVID-19 in children admitted to Canadian hospitals: understanding clinical spectrum and severity. A Paediatric Investigators Collaborative Network on Infections in Canada (PICNIC) study. **Cheryl Foo, Natalie Bridger**

Vitamin D and bone mineral density in pediatric inflammatory bowel disease. **Ara Healey, Pushpa Sathya**

Multicentre randomized double-blind placebo-controlled

clinical trial to investigate a new medication in participants ages 15-45 years with Autism Spectrum Disorder. **Sandra Luscombe**

GRADE: GRADED Challenge for Drug Allergy Evaluation. **Andrew O'Keefe**

What happened to the sick and injured children in 2020? A study on the pediatric healthcare utilization during and after Snowmageddon and COVID-19. **Tim Porter, Leigh Anne Allwood Newhook, Rana Aslanova, Victoria Crosbie, Roger Chafe**

The association of Kawasaki disease and COVID-19 with cardiac complications: a focused sub-study of the International Kawasaki Disease Registry (IKDR). **Suryakant K Shah**

PROJECTS BY RESIDENTS, MEDICAL SCHOOL & GRADUATE TRAINEES

Establishing correlation between adrenal suppression and quality of life in pediatric oncology patients. **Andrew Borodovski**

Hospitalization due to self-poisoning among adolescents in NL. **Rebecca Cole**

Meeting the need: a cross-sectional study of the children and youth in alternate care clinic's services and ability to meet the needs of its patients. **Jane Cooze**

Breastfeeding challenges and risk of depression in women at 6 months postpartum. **Sara Dalley**

Prevention of Diabetic Ketoacidosis in Newfoundland and Labrador: Hospitalization Rates Pre and Post Multiphase Provincial Knowledge Translation Program. **Georgia Darmonkow**

Celiac disease in children: correlation between tTG levels and severity based on marsh criteria. **Camila de Lima**

Preparing Pediatric Residents for Transition to Practice: A Survey of PGY4 Curriculum Design in Canadian Pediatric Residency Programs. **Joanne Delaney**

Effect of maintaining a strict gluten-free diet on Newfoundland children with Celiac Disease: a qualitative study. **Sarah Dinn**

Choosing Wisely: Improving prescribing patterns of NL physicians by reducing the use of acid blockers and motility agents for the treatment of gastroesophageal reflux (GER) in healthy infants. **Tracey Dyer**

Improving the transition of patients with mental health issues from pediatrics into adult care. **Grayson Gould, Sarah Williams**

Be prepared: a qualitative study on prenatal education for pregnant parents on methadone maintenance treatment. **Michael Hand**

Implementation of the infant driven feeding guideline at the Janeway NICU and its effects on breastfeeding rates in the late preterm infant. **Nadine Houlihan**

Antibiotic stewardship in the NICU: retrospective analysis of antibiotic usage rates in the NICU before and after institution of an antibiotic stewardship program. **Marika Hurtle-Lewis**

MUN pediatrics residency program curriculum map. **Ryann Kwan**

Improving ADHD diagnosis and management: Creation of an ADHD online module for use by Pediatric, Family Medicine and Psychiatry Residents at Memorial University of Newfoundland. **Allison Lamond**

Pediatric emergency department asthma clinical pathway. **Noelle Marsh**

What are the health problems and outcomes of children and youth attending the Children and Youth in Alternate Care (CAYAC) Clinic at Eastern Health? **Kayla McNally**

Autism Registry for Newfoundland and Labrador. **Jenna McWhirter**

Improving the transition to adult medicine for adolescents with eating disorders: what are the educational needs of this population? **Jennifer Mooney**

The patient perspective of inflammatory bowel disease and its treatment: a qualitative study. **Morgan Morrissey**

Comparing clinical assessment of psychological distress in long-term survivors of childhood cancer with a standardized psychological questionnaire. **Matthew Quann**

The effect of cannabidiol in the treatment of pediatric epilepsy. **Rebecca Quilty**

Increasing the awareness and knowledge of Type 1 Diabetes and diabetic ketoacidosis prevention in Newfoundland and Labrador through a novel educational video targeted towards adolescents and young adults. **Aaron Rainnie**

The natural History and phenotype of Paediatric ARVC caused by TMEM43 mutation. **Sowmith Rangu**

Raising awareness about benefits and safety of skin-to-skin contact immediately following birth for all babies and mothers, including birth by C-section. **Amalia Riggs**

Accessible Learning Theory for Medical Educators. **Alanna Roberts**

Improving the transition from pediatric to adult care for childhood cancer survivors in Newfoundland. **Devonne Ryan**

Practice patterns and parental attitudes with respect to hydration for infants admitted with bronchiolitis. **Saima Saqib**

How can we identify and improve the barriers which are causing delays and/or errors in the transition of care of pediatric patients from the Janeway emergency department to the J4 medicine inpatient unit? **Danielle Seviour**

Parents' Experiences of Advocating for Children and Adolescents Diagnosed with Autism Spectrum Disorder. **Joanne Smith-Young**

Vertebral compression fractures monitoring in children with cerebral palsy. **Sarah Spenard**

Impact of midwifery in NL on infant feeding outcomes. **Rosemary Stanoev**

Infant feeding and its impact on health care services use in infants for the first year of life in the Eastern Health Region of Newfoundland and Labrador. **Alicia Taylor**

High Cost / High Use Pediatric Hospital Patients in Canada. **Ryan Tiller**

Examining differences between levels and types of physical activity in children and youth with Autism Spectrum Disorder compared to their typically developing peers on the Avalon Peninsula. **Melissa Tobin**

The "VEPAP" study: Video Education for Pediatric Asthma Patients. **Claire Wallace**

Assessment of Knowledge and Attitudes of Health Care Professionals and Determining Barriers to Implementing Immediate Skin to Skin Contact following Cesarean Section Delivery in the Health Sciences Centre Case Room Operating Room, Eastern Health. **Samantha Woodrow**
IMPACT core surveillance program. **Natalie Bridger**

Determining the gut microbiome profile of Newfoundland and Labrador children in the Janeway Lifestyle Program. **Tracey Bridger**

The effectiveness of support programs for young mothers in metro St. John's. **Roger Chafe**

Improving outcomes for youth with Type 1 Diabetes in transition to adult care through strengthening integration with primary care: an exploratory, cross-provincial study. **Roger Chafe**

ONGOING PROJECTS BY INDEPENDENT INVESTIGATORS

Canadian Children Inflammatory Bowel Disease Network (CIDSCANN). A joint partnership of CIHR and C.H.I.L.D foundation: multicentre inception cohort study. **Jeff Critch**

ARCHIVE (A Registry for Children with Vasculitis: e-entry): an international US/Canadian registry of children with chronic vasculitis. **Paul Dancey**

CAPRI Registry: The ondansetron premedication trial in juvenile idiopathic arthritis (OPT-JIA). **Paul Dancey**

UCAN CAN-DU: Canada-Netherlands personalized medicine network in childhood arthritis and rheumatic disease. **Paul Dancey**

Management of the opioid exposed newborn: How are we doing? **Anne Drover**

Vertical transmission in Canada: Canadian perinatal HIV surveillance program: web-based database. **Cheryl Foo, Natalie Bridger**

Canadian hemophilia management in the perinatal setting (CHiMPS): a pilot feasibility study of a prospective national registry. **Paul Moorehead**

TrialNet: natural history of Type 1 Diabetes, pathway to prevention. **Leigh Anne Allwood Newhook**

Increasing the awareness and knowledge of Type 1 Diabetes and diabetic ketoacidosis prevention in Newfoundland. **Leigh Anne Allwood Newhook**

Correlating TTG levels to disease severity on biopsy in celiac disease. **Pushpa Sathya**

Genetic intrahepatic cholestasis: pediatric disorders leading to bile canalicular dysfunction in Canada. **Pushpa Sathya**

Role of omega-3 PUFA in controlling inflammation in pediatric NAFLD. **Pushpa Sathya**

The burden of chronic hepatitis C infection among children in Canada and the "real world" pediatric effectiveness of new therapies. **Pushpa Sathya**

Effectiveness of a mobile health intervention in improving the technique of inhaled medications among children with asthma: a pilot study. **Mary Jane Smith**

Children's Oncology Group Studies:

Local Principal Investigator: **Lisa Goodyear**; Sub-Investigators: Lynette Bowes, Paul Moorehead

- Every Child A Registry, Eligibility Screening, Biology and Outcome Study
- Trial Investigating Blinatumomab in Combination with Chemotherapy in Patients with Newly Diagnosed Standard Risk or Down syndrome B-ALLB-LLy
- A Randomized Trial for Newly Diagnosed High-Risk B-ALL
- Neuroblastoma Classification Biology Studies
- Utilizing Response and Biology-Based Risk Factors to Guide Therapy in Patients with Neuroblastoma
- A Study of 131I-MIBG or Crizotinib for Children with Newly Diagnosed High-Risk Neuroblastoma
- A Randomized Study of Vincristine, Dactinomycin, Cyclophosphamide (VAC) Alternating with Vincristine and Irinotecan Versus VAC/VI Plus Temsirolimus in Patients with Intermediate Risk Rhabdomyosarcoma
- A Study of Reduced Therapy for Newly Diagnosed Medulloblastoma
- A Study of Veliparib and Local Irradiation, Followed by Maintenance Veliparib and Temozolomide, in Patients with Newly Diagnosed High-Grade Glioma
- A Phase III Randomized, Open Label, Multi-center Study of the Safety and Efficacy of Apixaban for Thromboembolism Prevention in Children with Newly Diagnosed ALL or Lymphoma
- A Study of Active Surveillance for Low Risk and a Randomized Trial of Carboplatin vs. Cisplatin for Patients with Germ Cell Tumors
- A Randomized Web-based Physical Activity Intervention among Children and Adolescents with ALL

Open C17 Studies:

Local Principal Investigator: Lynette Bowes; Sub-Investigators: **Lisa Goodyear**, Paul Moorehead

- PRrecision Oncology For Young peopLE project
- A Canadian Pediatric Brain Tumour Consortium Study of Re-Irradiation as Treatment of Progressive or Recurrent Pontine Glioma
- Local Principal Investigator: Paul Moorehead; Sub-Investigators: Lisa Goodyear, Lynette Bowes
- Neuroblastoma Maintenance Therapy Trial Using Difluoromethylornithine (DFMO)

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