GRAND RIVER HOSPITAL

ACTION

INNOVATION & RESEARCH

Issue Six – 2022

The Office of Innovation & Research (OIR) coordinates all research and innovation-related activities at Grand River Hospital, one of the largest and busiest community hospitals in Ontario, with nearly 600 beds, approximately 4000 staff, and over 690 physicians, dentists, midwives and nurse practitioners. OIR supports and participates in multidisciplinary clinician-based applied research in each of GRH's eight Areas of Care. Through partnerships with institutions across the Waterloo-Wellington region, including the University of Waterloo and McMaster University Michael G. DeGroote School of Medicine Waterloo Regional Campus, OIR provides researchers and clinicians the opportunity to work together on groundbreaking studies that help GRH advance exceptional care.

CONTENTS

LETTER FROM THE DIRECTOR

Carla Girolametto, Director of Innovation, Research and Clinical Trials

Grand River Hospital (GRH) is committed to improving patient care through a number of innovative initiatives. We collaborate with our educational and corporate partners to identify and implement novel solutions to pain points experienced in health care. These innovations range from trialing new medical technologies to running clinical trials to learn more about COVID-19 and many others.

This edition of "ACTION at GRH" highlights a few of the numerous innovations that we launched with our partners to increase the number of positive patient outcomes and experiences at GRH, in the community, and at home. One of these initiatives is highlighted in our feature story, 'GRH Finds Its Voyce.' GRH completed a pilot program in late 2021 with Voyce, a telehealth platform that provides real-time translation services in over 235 languages and dialects. This technology system helped facilitate accurate and timely healthcare conversations and decisions between patients, their care partners, and healthcare team. The translation service was overwhelmingly well received by our staff and patients. It was also put to good use in the community with GRH partnering with various community services to expand the access to Voyce for to language diverse populations in our region.

Other innovations featured in this edition are products or programs that help improve transitions in care, streamline newborn data, reduce post-operative complications, and more. Grand River Hospital is steadfast in its courage to innovate and continuously raise the bar in providing world class patient care.

GRH FINDS ITS VOYCE

Voyce is a Canadian-based technology company that supplies professional and qualified language interpreters to provide healthcare related interpretations. Voyce operates across a variety of technology and telehealth platforms and offers services in over 235 languages and dialects, including American Sign Language and Canadian Indigenous languages such as Cree, Inuktikc, and Ojibwa. What makes Voyce different from traditional interpretation services used in healthcare? It's the use of virtual, real-time, face-to-face interpretation.

In the fall/winter of 2021, Grand River Hospital (GRH) hosted a pilot program of the Voyce system within hospital programs where access to qualified interpretation services are vital to providing excellence in patient care. Shival Seth, Integrated Director, Digital Services at GRH oversaw the implementation of this program within the Emergency Department (ED), Intensive Care Unit (ICU B) and Childbirth Programs. Training was led by Voyce staff for GRH team members, including registered nurses. As part of the pilot program, patients and care partners in the Childbirth, ED, and ICU B units who required interpretation services were provided a tablet device equipped with the Voyce app. These patients were able to speak directly with an interpreter, virtually, who was able to translate the patients' questions and concerns in English to their GRH healthcare provider in real-time.

Voyce interpreters are required to complete comprehensive testing and training in language fluency in both English and the target language and requires interpreters to display expertise in various healthcare areas, such as treatment and diagnosis. This specialized training is important to maintain high quality patient care and confidentiality.

The voice quality and service quality of the interpreter was rated at the end of the each use of the Voyce system via a 5-star rating system within the app. Further feedback was collected via discussions with the units involved in the pilot project.

In addition to benefits to the patients and clinicians, Voyce ensures excellences in terms of security. Voyce uses the DTLS (Datagram Transport Layer Security) and the SRTP (Secure Real-Time Protocol) methods for end-to-end data encryption between patients and translators to ensure safe, private, and secure real-time communications. Any information captured or recorded is saved in encrypted files that reside behind a firewall on a secure server.

Within the hospital walls, Kim Moran, Clinical Manager of the Childbirth unit and Jane Foster, Education Practice Leader for the Emergency Department, were especially pleased with the results of the Voyce pilot project.

"The response from our team of nurses and physicians who use Voyce was overwhelmingly positive. The system is so simple to use and has clarity of translation, a quick connection, many options for translators, and the best part is that the app can be assigned to any device for ease of use. The Voyce translation app ensures patients who do not speak English are able to advocate for their healthcare needs and continue to receive high quality care," Moran explains. "Voyce has been instrumental in ensuring clarity of communication between the healthcare team and family during critical moments of care, such as emergency surgery. It's a very exciting innovation."

"The ED staff have nothing but accolades for Voyce," Foster says. "From the use of the system to accessing the correct interpreter in a timely fashion and the subsequent patient and staff interaction, Voyce has received nothing but superlative feedback. The additional feature of assisting our patients who are hearing impaired is also fantastic."

As a community partnership, GRH also provided the opportunity and training for the Kitchener Downtown Community Health Centre to pilot Voyce. Other local community organizations that look forward to the opportunity to pilot this system include Reception House, Woolwich Community Health Centre, and the Centre for Family Medicine.

"We have many clients at our Francis Street and Sanctuary locations who do not speak English so access to professional 'just in time' interpretation through the Voyce pilot was a wonderful addition to our interpretation choices," shares Jennifer Fillingham, Director of Primary Care at Kitchener Downtown Community Health Centre. "Through the pilot, we were able to access interpretation for over 50 client interactions over three weeks, including hard to access languages such as Rohingya and Tigrinya. We liked the service so much we have arranged for our own Voyce account. As a Co-Lead for the KW4 OHT Refugee Health Working Group, I think that Grand River Hospital's inclusion of KDCHC and other community health organizations in the Voyce pilot is a great step towards operationalizing our OHT's commitment to better interpretation access across healthcare in KW4."

BLOCK ROOM

An effort to limit aerosol-generating procedures (procedures that increase risk of transmission of contagious diseases) during the COVID-19 pandemic and improve our patients experience with their care has allowed Grand River Hospital (GRH) to streamline operations and reduce post-operative complications. A new innovative approach to care at GRH is the use of regional anaesthetic administered in the surgery program 'Block Room.'

Patients requiring surgery are traditionally provided with general anaesthesia, where the patient is fully unconscious and requires a breathing tube and a ventilator for the duration of the surgery. An alternative, but less well-known option for surgeries below the waist, is a spinal anesthetic, where the lower half of the body is "frozen" and the patient receives sedation but is still able to breathe on their own. Yet another option is regional anaesthesia, where local anaesthetic (akin to dental freezing) is given to a defined region of the body and is either used as the sole anesthetic, or coupled with a spinal anesthetic, depending on the procedure. Both regional and spinal anesthesia are generally safer options for patients who are at higher risk for surgery due to pre-existing conditions such as cardiac or respiratory disease.

The Block Room was designed to prepare patients for surgery who would benefit from a regional or spinal anaesthetic instead of a general anaesthetic. At GRH, these surgeries are often knee replacements or upper extremity surgeries.

The ability to offer patients anaesthesia that does not require short term intubation reduces their pre-procedure time in the operating room (OR). This frees up space in the OR to allow for an increase of 1-2 surgical cases each day, helping to reduce the backlog of patients that resulted during the pandemic. "This new model of care allows us to be more efficient in the use of our operating rooms, allowing us to perform more surgeries per day to help reduce wait times within our region" says Dr. Matthew Snider. A decreased usage in general anaesthetic also reduces the number of aerosol-generating medical procedures that clinicians need to conduct, resulting in a safer work environment for patients and staff.

At GRH, Anesthesiologist, Dr. Richelle Kruisselbrink and Orthodepic Surgeion, Dr. Matthew Snider oversee the majority of operations involving regional anesthetic. A unique option specific to regional anesthesia is the insertion of a small tube next to particular nerves to deliver local anesthetic via an automatic infuser. This provides excellent pain relief to a patient's surgical site for several days after the surgery without the need for opioids. Patients can take the infuser home with them and dispose of it on their own once it is empty.

Under the guidance of Dr. Kruisselbrink and Dr. Matthew Snider, GRH recently started a program of this nature for patients undergoing total knee replacements. Now, these patients have the option to have an infusion of local anesthetic following their surgery. In a survey of patients receiving this technique for their knee replacements, there was a significant reduction in opioid use, a decrease in patients' pain and a large increase in patient satisfaction.

"I can't say it better than the patients themselves," says Dr. Kruisselbrink, "We have heard many, many times over that the experience of having a knee replaced with the infusion, versus without, is absolutely night and day. Patients are so appreciative of having this option at GRH and use descriptors like 'Unbelievable', 'Fantastic', 'Phenomenal', and 'No comparison.' Almost everyone coming for knee surgery either knows someone who has had it done or has had their other knee done in the past. They are all amazed at how much easier their experience is and what they are able to achieve with respect to post-surgery physio with the infuser." Patients going home with the infusers have also received daily phone support for the duration of the infusion. This has been tremendously appreciated by patients and is something GRH hopes to continue in the future.

There are several risks uniquely associated with general anaesthetic. Using regional and spinal anaesthetic decreases these risks and reduces the recovery time post operation. Regional anaesthesia also means that many patients are able to go home the same day of their procedure instead of having to stay overnight. In addition to the decrease in opioid use, these patients also experience a decease in side effects, such as nausea, post-surgery.

The Block Room, where regional anaesthetic is administered, requires the cooperation of multiple teams. An anesthesiologist administers the anaesthetic with the help of an anesthesia assistant, a circulating registered nurse and operating room attendant. The block room team then coordinates with the operating room team as the patient is transferred to the nearby OR. The program also requires the collaboration of clinical nurse specialists, acute pain services, pre-surgery clinic, medical device reprocessing, day surgery, admitting, post anesthetic care unit (PACU) and pharmacy.

"This type of care in community hospitals is very uncommon" says Dr. Snider, "we are lucky to have a great group of anesthesiologists, orthopaedic surgeons, and a department of surgery administrators who worked together to establish this great program to improve patient care".

"It has been a tremendous amount of work and coordination but the team effort at GRH has been absolutely amazing!" says Dr. Kruisselbrink. "I am so proud of our hospital for making this program a priority. It has and will continue to be incredibly beneficial to our patients."

TAKING CARE OF ONE'S OWN HEALTH

Did you know that options for rehabilitation devices to alleviate pelvic health problems haven't changed much since their initial invention in 1938?

Rachel Bartholomew, a graduate of the University of Waterloo with a Masters of Business, Entrepreneurship and Technology, and herself a patient of the Grand River Regional Cancer Center, founded Hyivy Health, a local KW start-up company, plans to revitalize the rehabilitation market so that new innovative tools are available. Hyivy Health has created a pelvic rehabilitation device with trackable data for patients who undergo radiation therapy for the treatment of pelvic cancers to help alleviate pelvic health symptoms after diagnosis, treatment or surgery.

Medical and Radiation Oncologists from the Grand River Regional Cancer Centre are excited to collaborate with Hyivy Health to conduct further clinical testing on this innovative pelvic rehabilitation device. Stay tuned for more information about this upcoming patient lead research project.

hyivy

PATIENT AND FAMILY ENGAGEMENT ACROSS CARE TRANSITIONS

Grand River Hospital (GRH) is a person-centred care hospital which means positive engagement with patients and their families is a core value of the hospital. That's why we are currently collaborating with the University of Waterloo on a three-year study to develop an in-depth understanding of patient and family engagement.

Jenna Merritt, Clinical Manager in the Medicine Program, Clinical Teaching Unit and Acute Care of the Elderly (ACE) for GRH, will serve as the Local Responsible Investigator, under the leadership of Principal Investigator, Professor Paul Stolee, School of Public Health Sciences at the University of Waterloo. The study aims to determine what engagement practices facilitate or hinder patient and family engagement during care transitions. A care transition occurs when a patient is moved within the healthcare system to better facilitate their care, which includes transfers between hospital programs, transfers to different institutions, and/or transfer to home.

"Engagement of patients in care planning and decision-making improves patient experience, adherence to treatment recommendations, quality of life and outcomes," Stolee says. "Patient and family engagement is particularly critical at points of transition between care settings, which are more common, and often more challenging, for older patients with complex medical problems."

"Our team is looking forward to working with Grand River Hospital on this study to help us find out what is working well to engage patients and families in care transitions, and where improvements might be possible."

The study team hopes to learn what resources and materials are needed to support engagement in care transitions and how those resources can best be implemented to enhance engagement practices. The study will be conducted in two phases, the first of which involves interviews with patients and their families following a transition during their care, and the latter which includes workshops comprised of patients, family caregivers, and health care providers.

Patients over seventy-years-old with complex health conditions will be recruited from the ACE or similar units in hospitals in Waterloo Region, Middlesex County, and Windsor-Essex Region.

Alexandra Whate and other members of the Geriatric Health System (GHS) Research Group will conduct the interviews. Interview questions will touch on the topics of engagement, admission, and discharge experience. Co-Investigator Dr. Jacobi Elliott, of St. Joseph's Health Care London, will conduct the workshops. The solutions-focused workshops will allow participants to discuss and share the implementation of better engagement practices.

"This project reflects the values of the staff at Grand River Hospital to work in partnership with our patients and their families to achieve the best possible outcomes, including a smooth transition home or to another part of the healthcare system," Merritt explains.

The study team hopes the results will enable better engagement practices to be implemented in order to reduce adverse outcomes associated with care transitions.

DIAGNOSTIC IMAGING DECISION SUPPORT FOR MRI PATIENTS WITH KNEE PAIN

While magnetic resonance imaging (MRI) is a highly effective and useful tool in determining the source of pain, for patients experiencing knee pain it can be a step in their path to recovery that is taken too early.

The source of knee pain can be successfully diagnosed with both clinical examination and radiography imagery (x-rays). Often, primary care physicians order MRIs for patients who present with knee pain in preparation for a consultation with an orthopedic surgeon. New evidence has shown that these requests may be unnecessary in the early stages of a diagnosis. With an increase in the volume of patients receiving MRI exams that may not always be indicated, the healthcare system experiences a strain on the resources and time available to see each MRI patient, resulting in longer wait times.

In order to help address this issue, "The eReferral team from the eHealth Centre of Excellence spent many months working with Diagnostic Imaging [clinics] and hospitals [within Waterloo Wellington] to develop eight common requisition forms across seven hospitals in the region," explained Lori-Anne Payson, Principal Investigator. "These forms included the Decision Support (DS) guidelines tool for ordering diagnostic images, which was developed by the Joint Department of Medical Imaging at the University Health Network (UHN)."

In order to explore the impact of these diagnostic imaging DS tools embedded in an electronic referral (eReferral) solution on the appropriate ordering of MRIs for patients with knee pain, a retrospective record review study was conducted at Grand River Hospital (GRH). The study was managed by the local onsite investigator, Diana Brodrecht, Team Lead for MRI in the Department of Medical Imaging at GRH, along with the study's research team: Lori-Anne Payson and Heba Tallah Mohammed from the eHealth Centre of Excellence, and Caitlin Gillan and Jislan Mathews from the University Hospital Network.

The study aimed to determine the impact DS tools have on reducing MRI requests when the clinical evidence does not support the exam. To do this, the research team compared the number of MRI requests made through eReferral with embedded DS tools versus requests made through traditional paper based referral that does not include DSs. The period of study was six months.

Three students with experience in medical imaging and orthopedics from the Michael G. DeGroote School of Medicine at McMaster University were also recruited to join the study team. Brodrecht trained the students on how to review patient charts using the records system at GRH.

"The DS guideline tool for diagnostic imaging is interactive," Payson continues. "Based on the clinicians' orders completed on the form, and symptoms associated with the referral, the tool exhibits evidence-based recommendations on diverse clinical scenarios related to the referral where imaging is not clinically indicated. The DS tool also provides recommendations on rehabilitation and conservative management plans when needed."

With the patient charts, the medical learners "used the collected data… and the knee pathway appropriateness guidelines to formulate an evidence-based decision on the necessity of the requested MRI exams," Payson explained.

Data collection and analytics has been finalized and a manuscript of the findings was published by the Journal of Evaluation in Clinical Practice. The research team reports that the study results provide supporting evidence on the positive impact of DS in ensuring MRI scans are appropriately requested. With appropriate ordering of MRI requests, the overall system benefits from appropriate MRI utilizations, increasing access for all patients.

COPE

THE COVID-19 ONTARIO PREGNANCY EVENT NETWORK

Every expectant parent wishes for a healthy pregnancy and newborn. However, many parents experienced additional uncertainty and anxiety delivering during a pandemic. To help mitigate these fears, the COVID-19 Ontario Pregnancy Event (COPE) Network, a provincial collaboration that was established in response to the pandemic, looks at how COVID-19 affects the health of mothers and their newborns. The COPE Network consists of twelve participating hospitals across Ontario. This research assessed the potential mother-to-infant transmission of COVID-19 among pregnant women delivering at hospitals across Ontario who were confirmed or suspected COVID-19 positive. At the onset of the pandemic, minimal data was available on how pregnant women and their babies may be affected by COVID-19 infection. Evidence has shown that women can be more susceptible to certain infections during pregnancy and the study aimed to determine if COVID-19 is one of those illnesses. Once more data becomes available, clinicians will be able to implement additional strategies to support mothers and their babies in this exciting life chapter while providing the best possible care.

The research was led provincially by Dr. Darine El-Charr of The Ottawa Hospital. For GRH, Sheri Douglas, a Clinical Nurse Specialist in the Childbirth Program led the study implementation.

To assess possible transmission, maternal and neonatal biological samples were collected and tested for COVID-19 serology and viral load. The overall aim of this research was to generate much needed clinical evidence regarding the impact of COVID-19 infection during pregnancy on maternal, fetal and infant health. This data will be imperative for clinicians to determine at which point COVID-19 can be transmitted from pregnant women to their babies - during pregnancy, delivery, or postpartum feeding.

Provincially, 209 participants were enrolled and provided samples for analysis, 35 of which were from GRH. Samples were collected from both mothers and their babies. Clinical and demographic information on participants was collected from the Better Outcomes Registry and Network (BORN) Ontario birth registry. BORN provides organizations such as GRH with ongoing high-quality data and analysis essential to making quality of care better for maternal and newborn care.

"Participation in this study has allowed us to collect invaluable information about how COVID-19 affects pregnancy and the newborn and continues to provide information for health care providers in planning safe care for both mom and baby during this pandemic," explains Douglas.

This study will yield results that can inform clinicians of the most ideal strategies for delivery and feeding practices in future pregnancies with COVID-19 confirmed or suspected women.

BORN AGAIN: GRH IMPLEMENTS NEWBORN DATA INTEGRATION

The Better Outcomes Registry and Network (BORN) collects newborn data from hospitals across Ontario, including Grand River Hospital (GRH) in order to improve patient care and outcomes. PowerChart, the Electronic Health Information system used at GRH is now equipped to automatically send Maternal and Newborn data to BORN.

Maggie Hilton, Integrated Health Informatician Analyst at GRH, has spent the last two years coordinating this integration between GRH and BORN. With a background as a Registered Nurse in Labour and Delivery and now working to support the Childbirth Program from a digital perspective at the hospital, BORN is an organization that is close to Hilton's heart.

As GRH began the transition to a paperless data management system, BORN was transitioning to a less manual data collection process around the same time. This synchronicity allowed GRH to be the first hospital in Ontario to fully integrate with BORN using data interfacing and this process was highlighted in the BORN Annual Report, published in August of 2021. In September 2021, Hilton virtually presented 'Design to Support Provincial Reporting of BORN (Better Outcomes Registry & Network) Data' at the Cerner Canadian Collaboration Forum. This presentation included over 70 participants form hospitals Canada wide.

This innovative process allows for data to be transferred in a more efficient manner, as data was previously physically submitted. This process also reduces workload as clinical staff are able to enter the data directly within CERNER and clerical staff are not required to collect and manually submit the data. The electronic format prevents unnecessary duplication of records and reduces the chance of error.

The BORN Registry is a significantly useful tool for hospitals. For a busy birthing center like GRH where over 4200 births a year occur, contributing data to BORN allows healthcare providers to receive the information and tools to benchmark care amongst peer hospitals as well as providing alerts if maternal and/or newborn outcomes are straying from accepted norms. Transitioning to this integrated reporting system also easily identifies gaps in information. In addition to monitoring clinical performance indicators, the BORN data is also used for financial planning for the childbirth program.

"The most beneficial part of the integration with BORN has been the improvement to our workflow," Hilton explains. "The integration forced us to rethink and test our existing processes to find how we could become more efficient while maintaining high quality data collection."

COREG UPDATE

Grand River Hospital (GRH) and St. Mary's General Hospital (SMGH) in collaboration with McMaster University continue to work together on a case registry of patients who have been admitted to hospitals in Kitchener-Waterloo, Hamilton and Niagara with either suspected or confirmed cases of the novel coronavirus disease (COVID-19). The Coronavirus (COVID-19) Registry (COREG) - (pronounced as 'courage'), enables both local and global research efforts to monitor the clinical and epidemiological data gathered from COVID-19 cases while creating a robust data repository that can be used for future pandemic preparedness planning.

As a case registry, COREG documents and charts information related to the course of the COVID-19 disease, the disease spread, and possible outcomes in a comparative format. The goal of COREG is to collect and organize the data of COVID-19 patients in a way that can inform local pandemic evaluation and decisions, including: clinical course, incidence, complications, and vulnerability. The analytics from COREG will target several areas of focus, including characteristics and microbiology of the COVID-19 disease; treatments, time trends and symptomatic disease course of patients, including length of hospital admission, critical care bed usage, and ventilatory support, if needed; and the comparative outcomes of patients.

Locally, the registry is led jointly by Dr. Rebecca Kruisselbrink, Chief of Academic Affairs at both GRH and SMGH, and Andrew Costa, PhD, Associate Professor in the Department of Clinical Epidemiology and Biostatistics at McMaster University and the Research Director for the Michael G. DeGroote School of Medicine, Waterloo Regional Campus. Under the lead of Drs. Kruisselbrink and Costa, the registry is updated and reviewed by trained research staff and fourteen McMaster medical students. COREG has allowed GRH to engage with more medical learners, leverage and combine knowledge sources with the Waterloo Regional Campus through the partnership with McMaster University, and increase learning opportunities for students.

"Case registries and the resulting studies, such as [these], provide a wealth of new information for clinicians. Involving medical residents in this process not only enhances and reinforces their learning but helps provide an introduction to research inquiry for the next generation of clinicians," says Dr. Kruisselbrink.

The following local sub studies were developed using data from COREG and several manuscripts have been published thus far with more manuscripts to follow.

Inflammatory Biomarkers as Independent Prognosticators in the Disease Course of COVID-19 Patients Admitted to ICU or Medicine Units: This study will better inform and prepare clinicians for the management and treatment of COVID-19 patients. COVID-19 disease affects patients across many different demographics and evidence is lacking to determine biomarkers that could reveal which patients require different courses of treatment in the hopes of producing better outcomes. The age of COVID-19 patients and admission and discharge dates from the hospital will be key information to analyze. In particular, age is a strong predictor linked to the prognosis of patients who have tested positive. The study will also analyze comorbidities and population demographics. The manuscript of this study is complete and published by Springer. Dr. Tyler Pitre was the lead author. Research Team: Dr. Andrew Costa, Dr. Tyler Pitre, Dr. Rebecca Kruisselbrink

Epidemiology and Prognostication of Acute kidney Injury in COVID-19 Patients: This study looks to determine the prevalence, disease characteristics, and degree of recovery of acute kidney injury (AKI) in hospitalized patients with COVID-19. The data will also reveal the independent association between AKI and outcomes such as length of hospital stay, in-hospital mortality, and ventilator free days in the subgroup of patients with COVID-19 admitted to the intensive care unit. The outcome of the study will be used to determine the benefit to patients, which will allow clinicians to have a better prognostic tool to act on when patients arrive in the ER with COVID-19 symptoms and the data can help identity which patients may need earlier and aggressive treatment strategies. The manuscript of this study is complete and published by the Canadian Journal of Kidney Health and Disease. Dr. Tyler Pitre was the lead author. Research Team: Dr. Andrew Costa, Dr. Tyler Pitre, Dr. Rebecca Kruisselbrink.

Predicting Mortality Risk within the McMaster Multi-Regional Hospital Coronavirus Registry (COREG): The purpose of this study is to derive and validate a clinical risk prediction model for in-hospital mortality among patients presenting to the emergency room with symptomatic COVID-19. The study data will help develop a predictive statistical tool that will accurately predict mortality risk and guide patient treatment. The manuscript of this study is complete and published by the Nature Publishing Group and has also been featured by the Research, Analysis & Evaluation Branch (RAEB) of the Ministry of Health. Research Team: Dr. Aaron Jones, Dr. Tyler Pitre, Dr. Rebecca Kruisselbrink.

Emergency Department Presentation and ICU Admission in COVID-19 within the McMaster Multi-Regional Hospital Coronavirus Registry (COREG): This study aims to determine if there is any relationship or predictive value between COVID-19 initial emergency department presentation including vital signs, symptomatology, laboratory values and medical imaging on whether a patient will require admission to the ICU. There is a lack of knowledge on the predictive value of emergency department presentation on prognosis and the identification of which patients will likely become critically ill. By risk stratifying this information, clinical decision making in the ED will become clearer. Research Team: Dr. Aaron Jones, Edward Feng, Zak Zia, Dr. Rebecca Kruisselbrink.

Characteristics and Outcomes of Older Ontarians Presenting with COVID-19 Infection within the McMaster Multi-Regional Hospital Coronavirus Registry (COREG): The COVID-19 virus has both a significant age gradient and has easily spread in the vulnerable in care homes, which has culminated in older Canadians and those living in long-term care homes being most affected. While COVID in other cohorts have been described, it is unknown if presentation in older adults differs in Canada, and how their presentations and outcomes differ based on their care setting. The objectives of this study are to describe the presentations of COVID-19 in older Ontarians who are admitted to the hospitals included in the COREG registry and how their presenting symptoms differ from those who are younger than 65; understand if these differ based on different admitting origin (retirement home vs. community. vs long term care); and understand if the admission origin impacts their outcomes. Research Team: Dr. Mats Junek and Dr. Rebecca Kruisselbrink.

The Interplay between Hypercoagulability and Hypoxia in COVID-19 Patients Within the McMaster Multi-Regional Hospital Coronavirus Registry (COREG): Hypoxia (when not enough oxygen reaches cells and tissue) and thrombosis (the formation of a blood clot) are prominent features of COVID-19 disease. Both thrombophilia and hypoxia are common complications in admitted patients but the way these two conditions affect, mitigate or aggravate each other remains unclear. As such, this study seeks to address the relationship between markers of coagulation and hypoxic deterioration in hospitalized patients with COVID-19. Once identified, coagulation biomarkers can be used to better prognosticate COVID-19 patients and identify those who may benefit from intensive care, more aggressive anticoagulation strategies, or a diagnostic evaluation for venous and/or arterial thromboembolism. Research Team: Dr. Mats Junek, Noam Raiiter, and Dr. Rebecca Kruisselbrink.

Drs. Kruisselbrink and Costa would like to extend special acknowledgement to all the medical residents and learners who have been involved in the data collection process for COREG. Without their contributions these research studies would not have been possible:

c2020
Tyler Pitre

c2021's
Laura Dawson
Adhora Mir
Adib Shamsuddin
Catherine Lee
Grace Xu
Edward Feng
Sarah MacGregor
Cooper Webb
Michael Mallender
Nivedh Patro
Rina Patel
Vivek Patel
Xinxin Tang
Zak Zia

c2023's
Ian Shao - new Operations Lead
Jack Soeder - new Operations Lead
Hongbo (Steve) Qiu
Deejesh Subramanian
Devika Singh
Ehsan Yavari
Gabrielle (Gabby) Herman
Jeffrey Wang
Nikhil Patil
Preet Bath
Richard Cheng

c2024's:
Amanda Paynter
Amin Hatamnejad
Jack Zheng
Pardeep Gill
Sarah Roberts

GRH staff member:
Elyse Wellhauser

At Grand River Hospital Foundation, we are committed to doing everything in our power to support the staff at the hospital through yet another challenging phase of the COVID-19 pandemic—that's why we established a new team member well-being role. Seeded by the Hallman Foundation, the Team Member Wellbeing Consultant is a full-time permanent position that is dedicated to mental health support and team member well-being at Grand River Hospital. It will be pivotal in promoting awareness and well-being for staff in many ways including:

- Implementing mental health supports that align with creating a psychologically healthy workplace
- Coordinating programs that promote and support staff well-being
- Establishing a health education curriculum, including components related to nutrition, exercise, stress management and mental health awareness
- Establishing community partnerships that support staff well-being

As the pandemic continues, doctors, nurses and health care workers at Grand River Hospital are doing everything they can to care for us all as the last line of defense. They have worked tirelessly and risen to every challenge, but our health care system is overwhelmed, and they cannot continue to carry this burden indefinitely.

SCAN ME

Take action and help us help hospital staff

Not only will you make a difference for each of the team members at Grand River Hospital, but you will also help us build a stronger health care system for our community when we need it most.

innovationneverstops.ca

INNOVATION & RESEARCH

ACTION

ISSUE 6 - 2022

Office of Innovation & Research

Grand River Hospital

grhosp.on.ca/research

@GRHresearch OIRGRH