
26th ANNUAL RESIDENT RESEARCH DAY

DEPARTMENT OF ACADEMIC FAMILY MEDICINE

Friday, May 27, 2016
Marquis Hall
University of Saskatchewan
Saskatoon, SK

- 0845 - 0900 Opening Remarks & Introductions
Dr. Vivian R Ramsden, Director, Research Division
Dr. Kathy Lawrence, Program Director
- 0900 - 0920 No-Shows in Primary Care as a Predictor of Increased Acute Care Visits and Hospital Admissions for Patients with Chronic Disease
Jonathon St. Onge, Melissa Nicholls, Barinder Brar, Jason Hosain, Shari McKay
- 0920 - 0940 Physician Understanding and Application of Evidence-Based Risk Communication
Ryck Schielke, Matt Kushneriuk, Amit Motwani, Jason Hosain, Shari McKay
- 0940 - 1000 Injury and Illness at the 2014 Regina North American Indigenous Games
Danielle Frost, Tyler Gorman, Martin Heroux, Kelechi Eguzo
- 1000 - 1020 A Retrospective Application of the HEART Score on Patients Evacuated from Northern Saskatchewan Communities due to Chest Pain: A First Step in Assessing the Utility of Point-of-Care Troponins for Outpost Nursing Stations
Julia Fox, Ankit Kapur, Kevin Sawchuk, Jeffrey Irvine
- 1020 - 1040 Analysis of Test-Ordering Patterns by Rural Primary Care Physicians specific to the Periodic Health Exam: An Action Research Project
Robert Haver, Brenton Janzen, Volker Rininsland, Vivian R Ramsden, Kelechi Eguzo
- 1040 - 1100 What factors influence physicians' choice of intravenous fluids perioperatively in adults?
Dana Hamm, Edward Krickan, Breanna Davis, Shari McKay
- 1100 - 1120 Patterns of Alcohol Abuse Related Disorders and Thiamine Administration in a Canadian Prairie Emergency Department: A Retrospective Chart Review
Kaalyn Humber, Bradley Joss, Randy Radford, Sarah Liskowich, Kelechi Eguzo
- 1120 - 1140 Hand Hygiene: Are we Doing it When Nobody's Watching?
Jon Starr, Isa Saidu, Hong Tran, Irene Lam, Aaron Prystupa, Shari McKay
- 1140 - 1200 Informed consent in a teaching clinic: do patients understand who provided their care?
Matthew R Johnson, Archie N Robertson, Desiree C Rouleau, Breanna Davis, Shari McKay

- 1200 - 1240 Lunch/Networking
- 1240 - 1300 The Prevalence of Coronary Artery Disease in a Saskatchewan Family Medicine Clinic
Natasha Desjardins, Kristine Pederson, Kevin Wasko, Kelechi Eguzo
- 1300 - 1320 Trends in Hospital Utilization for Residents of Long-term Care Facilities in Swift Current, SK
Omar Said, Jelisia Kamel, Tara Lee, Kelechi Eguzo
- 1320 - 1340 Methadone and Palliative Pain Management: Physicians' Perceptions of the Barriers to
Prescribing Methadone in Saskatchewan
Lisa Harasen, Jared Oberkirsch, Jennifer Kuzmich, Kelechi Eguzo
- 1340 - 1400 Effectiveness of Glyceral Trinitrate Patches (GTP) for Treatment of Tendonopathy in
Primary Care
Elizabeth Machnee, Lucas Zahorski, Martin Heroux, Kelechi Eguzo
- 1400 - 1420 Concept Maternal Serum Screening at West Winds Primary Health Centre
Kiran Greywall, Aileen Hamilton, Jenna Harden, Susan Hayton, Shari McKay
- 1420 - 1440 Impact of Pre-Natal Group B Streptococcus (GBS) Screening on Neonatal
Hospitalization following Caesarean Section and Vaginal Delivery: A Cohort Study
Heather Konkin, Amanda Waldner, Brad Thorpe, Cheryl Waldner, Kelechi Eguzo
- 1440 - 1500 Retrospective Chart Review: Contraceptive Use Prior to Termination of Pregnancy
(TOP) in a Canadian Urban Centre
Eve Marie Johnson, Harmonie Aito, Megan Clark, Kelechi Eguzo, Jean-Francois
Rostoker, Sarah Liskowich
- 1500 - 1520 Evaluation of the Use of the NuuNest™ App in Breastfeeding Mothers
Julia Geiger, Andrea Bishop-Martin, Breanne Silver, Jill Farrukh
- 1520 - 1540 Survey of Knowledge and Attitudes of Health Care Professionals towards Pasteurized
Donated Breast Milk (PDBM) and Breast Milk Banking (BMB)
Melissa Kuhn, Richelle Olson, Robyn Tenaski, Jill Farrukh, Shari McKay
- 1540 - 1600 The Effects of Tranexamic Acid in Ruptured Abdominal Aortic Aneurisms
Sheila Martinson, Jennifer St Onge, David Kopriva, Don McCarville, Suzanne Gulka,
Kylie Kvinlaug
- 1600-1630 Reflections
Jeannie Haggerty, PhD
Regina Taylor-Gjevre, MSc, MD, FRCPC (C)
Lorraine Holtslander, RN, PhD
Research Awards - A Danilkewich/SCFP Representative/VR Ramsden
Closing Remarks

Adjudicators

Jeannie Haggerty, PhD – Montreal, QC

Dr. Haggerty is a Professor in the Department of Family Medicine at McGill University. She holds the inaugural McGill University Chair in Family and Community Medicine Research, based at St. Mary's Hospital Centre. Her current research program focuses on measuring patient's experience with patient-centered and effective primary health care and how these measures relate to changes in organizational and professional practices. She is the Nominated Principal Investigator of a Canada-Australia research program that aims to improve access to primary health care for socially vulnerable populations. In addition, she is the inaugural Scientific Director of the Québec PHC Knowledge Network, Réseau-1 Québec.

Regina Taylor-Gjevre, MSc, MD, FRCPC (C) – Saskatoon, SK

Dr. Taylor-Gjevre is a Professor in the Department of Medicine at the College of Medicine, University of Saskatchewan. Her research interests are related to addressing rural and remote access disparities for patients with inflammatory arthritis through telehealth/videoconferencing and innovative inter-professional care models.

Lorraine Holtslander, RN, PhD – Saskatoon, SK

Dr. Holtslander is a Professor in the College of Nursing at the University of Saskatchewan. Her research and teaching interests include family nursing, community care, and qualitative methodology. She is currently using mixed methods to develop an intervention for older people who are bereaved after caregiving for a patient with advanced cancer.

Veronica McKinney, MD, CCFP – Saskatoon, SK

Dr. Veronica McKinney is the Director of Northern Medical Services in the Department of Family Medicine at the University of Saskatchewan. Her research interests include Indigenous health, remote presence and primary care.

Acknowledgements

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Master of Ceremonies – Dr. Greg Malin

Registration – Drs. Kelechi Eguzo and Kim Sanderson

Timer – Lisa Foster

No-Shows in Primary Care as a Predictor of Increased Hospital Admissions for Patients with Chronic Disease

Jonathan St. Onge, FMRII; Melissa Nicholls, FMRII; Barinder Brar, FMRII;
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ABSTRACT

Background: Missed appointments in the primary care setting negatively impact both patients and healthcare professionals. This study explores whether or not patients with a chronic disease who miss primary care visits (no-shows), are admitted to hospital more often than a comparable patient population who attend their appointments (control).

Research Question: Are patients with a chronic disease (coronary artery disease (CAD), heart failure (CHF), diabetes (DM), or COPD), who miss primary care appointments more likely than a comparable population, who attend their appointments, to be hospitalized?

Methods/Methodology: This retrospective cohort study consisted of an EMR chart review of 187 patients between the ages of 18-65 who attended West Winds Primary Health Clinic between January 1, 2013 and December 31, 2015 and had one of CAD, CHF, DM, or COPD. IBM SPSS v.23 was used for descriptive statistics, and Chi square and Pearson correlations ($p < 0.5$) were used to compare hospital admission numbers for chronic disease patients that had clinic no shows to a similar patient population that did not miss a primary care appointment. Further comparisons were made within chronic disease groups.

Results: Overall, there was a no-show rate of 6.5% (191/2957). Out of 197 patients, 41.17% had at least one missed visit. There was a small but statistically significant correlation between no-shows and hospitalizations in the overall chronic disease group (0.278, $p=0.014$) and for DMII patients (0.284, $p=0.034$) but not for hospitalizations specifically for their chronic disease. There was no statistically significant relationship between no-shows and hospitalizations for DMI, CAD, CHF or COPD.

Discussion: No-show behavior is associated with an increased number of hospitalizations in diabetics, and therefore could be approached as an easily identifiable risk factor. Limitations of study include small sample sizes, especially for patients with CHF, CAD and COPD, and reliance on proper documentation and coding in the EMR.

Conclusions: Diabetic patients who miss clinic appointments, specifically those that miss more than 2 appointments, are more likely to be hospitalized for any reason. Patients with DM, and specifically those who exhibit no-show behavior could be targeted to implement strategies to improve appointment compliance which would potentially improve health outcomes.

Recommendation: Further studies are needed to determine if these results are generalizable to patients with chronic disease over the age of 65 and patients with more than one chronic disease.

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Physician Understanding and Application of Evidence-Based Risk Communication

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ABSTRACT

Background: When the physician truly understands the risk of a procedure he or she can more confidently, accurately and reliably convey this risk assessment to patients and their families. Although several studies have assessed the use of evidence-based risk communication tools in the patient population, there is limited research as to whether or not educating medical residents on risk assessment can improve their appreciation and understanding of risk.

Research Questions: How do medical residents present risk in their practice? Does attendance at a seminar describing methods of evidence-based risk communication change how they plan to deliver this information?

Methods/Methodology: A survey was created to assess what risk estimation tools medical residents currently used. This was followed by an educational presentation on evidence-based risk communication techniques. Medical residents then completed a post-educational survey.

Results: All participants felt that physician-patient communication was very important, and 89% (17/19) of respondents indicated that accurately conveying information about risks and benefits was also very important. All residents indicated that the seminar on evidence-based risk communication improved their understanding around the topic, and that they would be inclined to change how they present this information to their patients. After the seminar, 68% (13/19) of respondents indicated that they would use absolute risk figures in their practice, compared to 32% (6/19) prior to the seminar ($p = 0.025$).

Discussion: The participants intended to use more appropriate methods of risk assessment after the seminar than they had used before, including increased use of simple frequencies, graphic display and absolute risk.

Conclusion: Results showed that the seminar successfully conveyed information about evidence-based risk assessment tools to medical residents which would potentially change practice.

Recommendation: It would be appropriate to deliver this seminar in the first year of residency, providing residents more time to develop their skill in communicating risk.

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Sports Injuries and Illnesses at the 2014 Regina North American Indigenous Games

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ABSTRACT

Background: Injury surveillance at sporting events provides important epidemiological data on injuries and illnesses both between and within sports. This helps in identifying risk factors and instituting preventative measures in order to improve the health and safety of athletes. This research project aims to provide evidence of the incidence of injuries and illnesses at the 2014 North American Indigenous Games (NAIG) held in Regina, Saskatchewan.

Research Questions: What was the incidence of injuries and illnesses at the 2014 NAIG?

Methods/Methodology: This was a retrospective cross-sectional study of the injuries and illnesses occurring in all registered athletes ($n = 3,060$) at the 2014 NAIG. Data collected included: athlete demographics; sports/event; nature and details of index illness/injury; place of initial assessment; and, mode of transportation. Data was analyzed using descriptive statistics.

Results and Discussion: Clinical incidence (CI) was 171 per 1,000 registered athletes for injuries, and 27 per 1,000 registered athletes for illnesses. Muscle strains were the most common injury (30.5%, 160/542) and the knee injuries were the most commonly injured joint (15.6%, 82/524). Most injuries occurred with soccer (CI 334 injuries per 1,000 registered athletes), while rifle shooting had the lowest injury incidence (CI 190 per 1,000 registered athletes). Infectious etiology accounted for 35.2% (25/71) of all acute onset illness; the neurological system was the most commonly affected (35.3%, 9/82). Thirty-three percent (27/82) of illnesses presented with pain/ache/soreness. The majority of the injuries/illnesses were new (83%). The NAIG medical team performed 66% (400/606) of the initial assessments at the polyclinic. Injuries were more common with contact sports e.g. soccer; therefore, the NAIG-sponsored medical van was an effective means of transportation for injured/sick athletes.

Conclusions: Injuries were more common than illnesses at the 2014 NAIG. Soccer was most frequently associated with injuries compared to other sports; infections were the most common cause of illness. The results from this study provided a baseline for planning and evaluating injuries and illnesses at future NAIG.

Recommendation: Develop, implement and train the medical team to use a standardized reporting system for medical cases at future NAIG.

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A Retrospective Application of the HEART Score on Patients Evacuated from Northern Saskatchewan Communities due to Chest Pain: A First Step in Assessing the Utility of Point of Care Troponins for Outpost Nursing Stations

Julia Fox, FMRII; Ankit Kapur, FMRII; Kevin Sawchuk, FMRII; Jeff Irvine, MD, MPH, CCFP
Department of Academic Family Medicine, University of Saskatchewan

ABSTRACT

Background: In the face of the challenging clinical environment for diagnosing an NSTEMI, a landmark Dutch study in 2008 developed the HEART score. This scoring system codified the clinical gestalt used by many physicians with zero-to-two points assigned to five criteria (History, ECG, Age, Risk Factors, Troponin I). Notably, from the emergency medicine perspective, this scoring provided a prognostic tool that assisted in making disposition planning. The HEART score has been largely applied as a tool in urban emergency rooms, but for the purposes of our study, the use of a truncated HEART score, minus the troponin data (HEAR score) was used to mimic the clinical decision making process by which physicians from our rural northern hospital in La Ronge, Saskatchewan make evacuation decisions regarding patients presenting with chest pain at one of four outpost nursing clinics (Pinehouse, Southend, Wollaston Lake, and Stanley Mission). These outpost nursing stations have no onsite physician, and no ability to obtain any troponin data. In light of this clinical complexity, the purpose of this study was to determine if there was any utility in conducting PoC troponins in nursing outposts served by La Ronge.

Research Question: How would a troponin result affect the potential evacuation of patients with chest pain from nursing outpost clinics?

Methods/Methodology: Using the La Ronge Regional electronic medical record (MedAccess version 4.8), a search for all patients for whom outpost nurses had called an on-call physician to discuss symptoms of acute coronary syndrome between January 1, 2011 & December 31, 2015 was performed. After a retrospective chart review, the HEAR and HEART scores were calculated for each individual presentation of chest pain meeting the inclusion and exclusion criteria.

Results/Findings: From the patient's HEART score before evacuation (ie: without the troponin) and with the troponin data, it was determined that in 87% of cases (74/85), patients would require evacuation regardless of the troponin values due to a HEART score ≥ 4 . In 13% (11/85) of cases the patients who were evacuated had a HEART score of ≤ 3 and in no case did the troponin data increase this score.

Discussion: Our hypothesis that most of the patients who were currently being evacuated would continue to be evacuated regardless of the result of their PoC troponin and due to already elevated HEAR scores was supported. With regard to the utility of PoC troponins in evacuation reduction, it could be argued that 11 patients (13% of all included events) over five years could have avoided evacuation if a PoC troponin had been available at the nursing outpost.

Conclusions: Almost all evacuations currently taking place are appropriate in the context of using the HEART score as a prognostic tool, and the few incidences in which a point-of-care (PoC) troponin might have removed the necessity for evacuation are rare enough that any net financial savings would likely be minimal.

Recommendations: At this time, we would not recommend the use of PoC troponins as a cost saving measure for the reduction in evacuation of patients with chest pain from the nursing stations served by the La Ronge Hospital.

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**Analysis of Test-Ordering Patterns by Rural Primary Care Physicians
specific to the Periodic Health Examination (PHE): An Action Research Project**

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ABSTRACT

Background: The Periodic Health Examination (PHE) is a common clinical event that seeks to monitor current illness, screen for potential illness, and advice on lifestyle to optimize health. There is a tendency for over-investigating as current guidelines/evidence may not support some of the tests requested during a PHE. This research seeks to explore the PHE practice pattern of family physicians in Moose Jaw, Saskatchewan.

Research Questions:

1. What laboratory tests are routinely ordered following a PHE; are they consistent with the patient's age, sex, and medical history?
2. Do physicians order tests the same way each time or are there differences?

Methods/Methodology: This was a mixed methods, action research study, involving four family physicians practicing at two clinics. Retrospective data about PHEs conducted between January 1 and December 31, 2014 were gathered from the EMR. Analysis involved descriptive statistics, chi-square and t-tests. Results were returned to the physicians for discussion during a Focus Group.

Results/Findings: A total of 366 patients were included in the analysis, with average age as 53 (± 16) years. One thousand and thirty-nine tests were ordered with an average of five tests per patient. Only 63.3% of patients aged >35 years had a lipid profile done. Significant differences existed in the pattern of glucose studies for patients aged >45 years ($p < 0.01$). *"There may be an element of automatic testing, as a common practice is to have patients use the same labs as what was done a year prior"*.

Discussion: Results showed a significant variation in the test ordering pattern amongst the physicians involved, which could be due to differences in guidelines. One limitation of this study is that data was collected using four physicians practicing at two clinics in a city of approximately 50,000 residents. Participants expressed a willingness to improve their practice related to PHEs.

Conclusions: As evidence continues to evolve, it is important for clinicians to improve their practice in order to reduce the number of unnecessary tests ordered. PHE patterns appeared to be related to habit and a desire to avoid missed diagnoses.

Recommendation: There is a need to develop an evidence-informed intervention that could improve the test-ordering pattern of physicians.

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What factors influence physicians' choice of intravenous fluids perioperatively in adults?

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ABSTRACT

Background: Physicians' choice of intravenous fluids (IV) in adults perioperatively has been an ongoing debate for decades. The current studies available focus on the individualization of therapy, the side effects of therapy, and the wide variation in prescribing practices among physicians. The purpose of this research was to further assess the subjective factors behind the choice of IV fluids, in addition to other factors such as the influence of preoperative labwork.

Research Question: What factors influence physicians' choice of IV fluids perioperatively in adults?

Methods: Ethical approval was obtained from the University of Saskatchewan Biomedical Research Ethics Board (Bio-REB). An original 10-question questionnaire was distributed to physicians at the Prince Albert Victoria Hospital. Questionnaires were collected anonymously, and the data was analyzed using IBM SPSSv.23.

Results: Of the 27 questionnaires distributed, 19 were returned (Response Rate=70.4%). Ringer's Lactate (RL) was the predominant fluid chosen by 73.7% (14/19) of the physicians. The main factors influencing this choice were "Prior Experience" (63.2%, 12/19), "Habit" (47.4%, 9/19), "Preoperative Labs/Electrolytes" (47.4%, 9/19), "Other" (36.8%, 7/19), and "Standardized Guidelines" (10.0%, 2/19). Only 47.4% (9/19) of physicians "Always" checked preoperative labs/electrolytes. Although 72.7% (13/18) of physicians responded that they were not using a standardized guideline, 88.2% (15/17) indicated that they would like to see an evidence-based, practical guideline implemented. The central theme identified in the qualitative data was the perceived need for a perioperative fluid guideline, co-existing with the idea that "guidelines are suggestions for good practice, not rules of engagement": Individual patient factors, including preoperative labs and electrolytes, need to be considered in each case.

Discussion: Almost three quarters of the physicians used RL, which is in keeping with the literature. Interestingly, only one physician considered cost. A standardized guideline could be beneficial to all physicians, and especially trainees.

Conclusions: As expected, there were not a wide variety of IV fluids chosen by physicians, with numerous factors affecting this choice. Very few physicians were using a standardized guideline, as none have been established in Canada. This illustrates the need for an evidence-based guideline upon which future practice may be based.

Recommendation: Further research is needed to develop a standardized guideline for perioperative fluid prescribing.

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Patterns of Alcohol Abuse Related Disorders and Thiamine Administration in a Canadian Prairie Emergency Department: A Retrospective Chart Review

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ABSTRACT

Background:

Alcohol abuse is a problem in Saskatchewan with about 14% of residents self-reported as 'heavy drinkers'. There is need to ensure that people presenting with alcohol abuse disorders (AAD) receive adequate administration of thiamine to prevent Wernicke's encephalopathy (WE), a potentially fatal consequence of alcohol abuse. In the absence of a widely accepted North American thiamine administration guideline, this research sought to compare thiamine administration patterns in a prairie Emergency Department against the Royal College of Physicians' 2002 Report on Alcohol Guideline (Thiamine 500mg IV 3 times daily for ≥ 3 days).

Research Questions:

1. What were the physicians' practice pattern regarding thiamine administration for patients visiting a prairie Emergency Rooms?
2. How does this compare with the British guidelines for thiamine administration in alcohol abuse?

Methods: A retrospective chart review of 211 consecutive patients managed for AAD. Data included: demographics; medical and social history; as well as, details of thiamine administration (route, dose, frequency). Patients were divided into low- and high-risk categories as per the guideline. Data was analyzed using descriptive statistics, Chi-square and t-tests.

Results and Discussion: Most patients were male (64%, 135/211), middle-aged (36-54 years, 44.1%, 93/211), and resided in an urban underserved community (28%, 59/211). Most patients (80.6%, 170/211) abused only alcohol. Alcohol intoxication was the most common diagnosis (45%, 95/211) followed by alcohol abuse (22.7%). Almost 82% (172/211) of the patients were 'high-risk' and homeless ($p=0.001$). Only 29% (61/211) of patients received thiamine but none of them met the British Guideline. Most patients received intravenous thiamine, but 45.9% of them had oral doses. Most patients who received thiamine were given 100mg once only. Significantly fewer homeless patients received thiamine when compared to those with addresses ($p=0.022$).

Conclusions: Physicians in a Canadian prairie Emergency Department did not meet the British Thiamine Administration Guidelines for high-risk patients. Homelessness was identified as a contributing factor to alcohol abuse.

Recommendation: Explore interventions that could improve physicians' practice pattern regarding thiamine administration for patients presenting with alcohol abuse.

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A Comparison of Hand Hygiene Rates Through Direct and Indirect Observation in a Small Community Hospital

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ABSTRACT

Background: Hospital-associated infections (HAIs) impact patient morbidity, mortality, and health care costs. Proper hand hygiene is an integral part of preventing HAIs, but most of the current data on hand hygiene practices is confounded by the Hawthorne effect, whereby hand washing behavior is modified in response to being observed. Thus, current data may inaccurately represent real world practices. Research that addresses this incongruence will provide information that will support better hand hygiene and a reduction in HAIs.

Hypothesis/Research Questions: The purpose of this research was to determine the rate of proper hand hygiene when individuals were not directly observed and compare it to the local direct observed hand washing rate. Institutional hand washing rates are often reported as those before and after patient contact. In this health region, the average of the before and after events was 89%. We postulated that hand hygiene rates would decline when individuals were being indirectly observed.

Methods/Methodology: This non-participant observational study was conducted at a small city hospital. The observed were healthcare workers (HCW) and non-healthcare workers (nHCW) in the ED and a 10 bed patient floor of the hospital. Hand hygiene compliance was defined as using alcohol gel before and after entering a patient room. Indirect observations were made by unmarked Family Medicine residents.

Results/Findings: Over three days 954 events were collected in the ED and a medical floor. The overall hand hygiene rate was 31.2% (298/954). The hand hygiene rate for nHCW of 7.3% (13/175) was significantly lower than the rate of 36.7% (285/776) for HCW ($p=.000$) and the HCW rate was 2.43 times lower than the health region observed hand hygiene rate of 89%.

Discussion: The low hand hygiene rate for nHCW workers was in part explained by the inclusion of non-health care hospital staff, many of whom did wear gloves but did not practice hand hygiene as they moved from room to room. The lower rate for HCW relative to health region statistics suggests that current data collection methods need adjustment, and indicates a need to better understand and address barriers that prevent good hand hygiene.

Conclusions: Hand hygiene rates decreased when there was no knowledge of being observed. Therefore, current means of data collection using direct observation may not reflect hand hygiene rates accurately.

Recommendation: Hand hygiene practices for non-medical personnel need to be addressed, as do alternative methods of hand hygiene data collection.

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Informed consent in a teaching clinic: Do patients understand who provided their care?

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ABSTRACT

Background: Distributed medical education (DME) is a model in which medical learners spend time working outside of academic centers. In these circumstances patients may not be familiar with medical learners or their level of training. In addition, there may not be policies in place to inform them about who is providing their care.

Research Questions: After being seen in a Prince Albert medical clinic were patients aware that they received medical care from a family medicine resident (FMR)? If so, were they informed when they booked the appointment or when they arrived? If given the option, would patients choose to see a resident for their care? We hypothesized that a substantive portion of patients would be unaware that a family medicine resident (FMR) provided their care.

Methods/Methodology: Patients over the age 18 who had received care from a FMR received a survey after leaving the exam room. Completed surveys were collected and stored securely and anonymously. Clinic staff were unaware of the survey content. IBM SPSS v.23 was used for the descriptive analysis.

Results: Out of 111 patients, 79 surveys were completed, resulting in a response rate of 74.5%. Ninety two percent of the respondents (73/79) were aware that they had received care from a resident. Of those who were aware, 56.2% (41/73) were informed when they booked their appointment, and 67.1% (47/70) were informed when they arrived. If given the option, 95.7% (66/69) indicated that they would choose to see a resident.

Discussion: In this clinic, patients were aware when they were under the care of a FMR. They may have been informed by the receptionist, Medical Office Assistant, signs, or the resident themselves. Regardless of when patients were informed, they appeared satisfied with their care.

Conclusions: Most patients seen by residents in this study were aware that they received care from a Family Medicine Resident. These patients were not always aware of this until they arrived at their appointment. This is a well-established training site, in which patients appear to be habituated to the presence of medical residents. A study in a less established DME site may be useful to determine if these findings are typical for all sites.

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The Prevalence of Coronary Artery Disease in a Saskatchewan Family Medicine Clinic

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ABSTRACT

Background: There is limited information on the prevalence of coronary artery disease (CAD) and its risk factors in southwest Saskatchewan. The unique population characteristics of Cypress Health Region (CHR) are that two-thirds of the population is older than 45 years, 14% are Aboriginal, 6% are Hutterites and it is largely rural which makes it important to better understand the context of CAD in this region.

Research Question: What is the prevalence of CAD among the patients receiving ongoing primary care at the Associate Family Physicians Clinic (AFPC)?

Methods/Methodology: A retrospective chart review of all patients aged 40 years of age or older and who received ongoing care at AFPC between January 1, 2013 and December 31, 2014 (n=2373). Data collected included diagnosis of CAD and its risk factors inclusive of hypertension, hyperlipidemia, age, sex, diabetes mellitus, family history, active smoking status, body mass index, and residence (rural/urban). Data was analyzed using descriptive statistics.

Results and Discussion: A total of 357 patients were diagnosed with CAD during this time, with a prevalence of 15% (357/2373). The average patient with CAD was 71 (± 11) years old with average BMI of 29.8 (± 5.8) kg/m². Up to 257 patients (71.9%; 257/357) had at least three risk factors. Hypertension was the most commonly identified risk factor (n=310), followed by hyperlipidemia (n=307), while active smoking was the least common (n=43). Each patient attended an average of 11 (± 6) clinic visits during the time frame. Individuals who resided in the urban center (Swift Current) had a significantly higher clinic attendance when compared with patients from rural areas (p=0.02), but this did not significantly affect their outcome (alive or deceased; p=1.0).

Conclusions: There was a high prevalence of CAD risk factors especially hyperlipidemia and hypertension. Given the unique populations, it is important that clinicians be diligent in screening at-risk individuals.

Recommendation: Further research is required to study the distribution of CAD and its risk factors among specific population groups.

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Trends in Hospital Utilization for Residents of Long-term Care Facilities in Swift Current, SK

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ABSTRACT

Background: About 35% of all hospitalizations in Canada were for persons >75 years, 10% of whom were transferred from long-term care (LTC) facilities. It is assumed that some of these cases could have been managed by Registered and/or Licensed Practical Nurses at LTC facilities. This study aims to understand the trends in hospitalization of LTC residents, and to estimate the burden of potentially avoidable hospitalizations.

Research Question: What is the trend in hospital admissions for residents of LTC facilities in Swift Current between January 1, 2014 and December 31, 2015, in terms of diagnosis, patients' profile and care provided?

Methods/Methodology:

This was a retrospective chart review involving all residents of LTC facilities, aged >18 years who were transferred to the Cypress Regional Hospital during January 1, 2014 and December 31, 2015. Data collected included: demographics; diagnosis; care provided; duration of hospitalization; and, an assessment of treatability at LTC facility. Data analysis involved descriptive statistics, Chi-squares and t-tests.

Results and Discussion: A total of 149 patients met the inclusion criteria. The average age was 83 (± 10) years, and 56.1% (83/148) of them were female. The three top diagnoses involved the musculoskeletal (26.2%, 39/149), respiratory (15.4%, 23/149) and urogenital (14.1%, 21/149) systems. Most patients (75.8%, 113/149) required no procedures while 34.9% (52/149) received antibiotics. Half of the patients spent one day at the hospital (range 0-65 days). There was no significant seasonal variation in the presentation of these illnesses ($p=0.085$).

Patients with a respiratory illness stayed significantly longer than those with urogenital complaints (9 vs 5 days, $p=0.005$). Eighty percent (120/149) of cases were not treatable at the LTC facility, especially those with respiratory illnesses. Most patients were elderly and required complex care.

Conclusion: Musculoskeletal and respiratory system complaints were the most common reasons for seeking care, and only 20% of the cases could be classified as potentially not requiring hospitalization.

Recommendation: Improve the capacity in LTC facilities to treat and manage patients at the LTC facility.

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Methadone and Palliative Pain Management: Physicians' Perceptions of the Barriers to Prescribing Methadone in Saskatchewan

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ABSTRACT

Background:

Effective pain management is an essential component of palliative care. Opioid analgesics are widely utilized in this setting. Methadone is less commonly prescribed despite research that demonstrates its efficacy, favourable side effect profile, and cost effectiveness when compared with other opioids. Canadian physicians require special authorization/exemption to prescribe methadone for analgesia. This research aims to explore the perceptions of family physicians in Saskatchewan regarding use of methadone for pain management in palliative care.

Research Questions: What are the practice patterns/attitudes of family physicians in Saskatchewan regarding use of methadone for analgesia in palliative care?

Methods/Methodology: This was a cross-sectional, mixed methods study involving a survey with open-ended questions. Data collected include demographics, methadone prescribing awareness, practice and perception, as well as potential barriers encountered. At least 600 family physicians across Saskatchewan were invited to participate in the online and mail-based survey.

Results and Discussion: The response rate was 17.8% (107/600). Most respondents (55.6%, 55/99) practiced in the urban centers, and half of them had practiced independently for at least eight (range 1-45) years. Up to 83% (88/107) of respondents were involved in some level of palliative care while 15% (16/107) had the methadone prescription exemption. The most common reasons for not possessing the exemption were 'lack of time' and the perception that 'it was not relevant to their current practice'. There were concerns that prescribing methadone 'would attract drug seeking patients to their practice and increase the demand for their involvement in addictions medicine'. Most respondents (72%, 44/61) were interested in more training on the subject, especially as 'self-directed learning'.

Conclusions: Most family physicians in Saskatchewan have practices that involve palliative care, but do not hold a methadone prescription exemption. Concerns about the time required for training were among the reasons for not holding the exemption.

Recommendation: Create an online, self-directed learning course related to methadone use for palliative pain management.

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Effectiveness of Transdermal Nitroglycerine Patch for Treatment of Tendinopathy in Primary Care

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ABSTRACT

Background:

Tendinopathies involving the rotator cuff, elbow, knee and heel are common musculoskeletal problems in family practice. Previous clinical trials on the efficacy of transdermal nitroglycerin patch (GTN-P) on tendinopathy yielded equivocal findings, in terms of pain relief, range of motion and muscle strength. This study aimed to explore the effectiveness of GTN-P for management of tendinopathy in a primary care setting.

Research Question:

Is the use of GTN-P effective in managing tendinopathy in the primary care setting?

Methods/Methodology:

This was a retrospective chart review of 70 consecutive patients with a diagnosis of tendinopathy in a primary care setting. Some patients (n=25) were exposed to GTN-P while others (n=45) received conventional treatment (physiotherapy or analgesia). The outcomes studied were self-reported pain, range of motion (ROM) and muscle strength; measured at baseline, 6, 12 and 24 week follow-up visits. Data analysis involved descriptive statistics, Chi-square, Mann-Whitney U and t-tests.

Results and Discussion:

Of the 70 patients studied, 27.1% (19/70) had lateral epicondylitis; 24.3% (17/70) had medial epicondylitis; 4.3% (3/70) had patellar tendonitis; 2.9% (2/70) achilles tendinopathy; and, 41.4% (29/70) had rotator cuff tendinopathy. There was no significant difference in average pain scores at six weeks ($p=0.309$). Patients exposed to GTN-P had significantly better muscle strength at six weeks ($p=0.036$). Loss to follow up rate at six weeks was 70% (49/70), and 87.1% (61/70) at 12 weeks. There was no significant difference in ROM at six weeks ($p=0.58$). Headache was the most common side effect associated with GTN-P. Patients exposed to GTN-P used fewer adjuvant treatments.

Results were similar to that reported in the literature; however, the high loss of follow up limited the generalizability of the findings.

Conclusion:

Rotator cuff was the most common site of tendinopathy in the practice. GTN-P did not significantly change pain scores but improved muscle strength. This study could not ascertain if GTN-P was effective in managing tendinopathy in the primary care setting due to high loss of follow up rates.

Recommendation:

Further studies are needed to evaluate the effectiveness of GTN-P in managing tendinopathy in a primary care setting.

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Informed Decision Making About Maternal Serum Screening in Pregnancy

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ABSTRACT

Background: This chart review was an investigation of maternal serum screening (MSS), informed consent and screening uptake at the West Winds Primary Health Centre (WWHPC).

Research Questions: 1) Are physicians providing information/counselling to all patients regarding MSS? 2) What patient characteristics affect the decision to undergo screening? 3) What do WWHPC physicians document regarding their MSS discussions? 4) Is a formal documented physician/patient discussion associated with that patient's decision to undergo MSS? 5) Relative to the 2011 and 2014 SOGC guidelines for prenatal screening are the screening practices appropriate? 6) Relative to results in the literature, are we providing sufficient information and discussion on MSS?

Methods/Methodology: Charts were selected using filters in the electronic medical record and excluded if not prenatal or if the patient had a termination or a miscarriage before 11 weeks gestation. Data collected included patient age, parity, record of MSS in a previous pregnancy, gestational age at first prenatal visit, screening tests undertaken, documented screening counselling and whether the most responsible physician was one who held obstetric privileges. The data was entered into IBM SPSS v.23 for analysis. The Chi-squared test was used to compare groups and to compare the results with similar studies in the literature.

Results: Of the 320/677 identified charts reviewed, 113 were discarded, resulting in an n of 207 for all proportions. MSS screening uptake was 32.7%. The age distribution of patients was 88.7% <35 and 11.3% >35. Women >35 had greater uptake of MSS than women <35 (65% vs. 28.7%). Having a physician with obstetric privileges resulted in less MSS uptake (28.9% vs. 37.5 %). Documentation of MSS counselling (DMSSC) was present in 29.6% of patients who did not undergo MSS. For those with MSS results in the laboratory section of their chart, 50% had DMSSC in their clinic visit and 54.3% had DMSSC in their prenatal record sheet. For patients with no MSS results in their chart, 90.4% had no DMSSC in their clinic visit or prenatal record sheet.

Discussion: There was insufficient data to conclude that physician counselling had an effect on uptake of MSS in the WWHPC population.

Conclusions: The WWHPC patient electronic medical records are lacking adequate documentation of maternal serum screening discussions, decisions and patient experiences. This documentation has not only legal importance, but is also important for patient care.

Recommendation: For future research: Do prenatal patients feel they had enough information to make a decision regarding prenatal screening? Which types of educational information would patients find most helpful?

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Impact of Group B Streptococcus (GBS) Screening on Neonatal Hospitalization following Caesarean Section and Vaginal Delivery

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ABSTRACT

Background: Group B streptococcus (GBS) is a leading cause of neonatal mortality and morbidity. There is limited research on the importance of GBS screening for women with planned Caesarean section compared to a vaginal delivery on neonatal outcomes.

Research Question: Is failure to screen for GBS associated with increased duration of neonatal hospital stay, clinical suspicion of neonatal sepsis and transfer to a neonatal intensive care unit (NICU) after Caesarean and vaginal deliveries?

Methods/Methodology: A retrospective chart review of 688 intrapartum patients admitted from July, 2013 to June, 2015 was conducted in Moose Jaw, Saskatchewan. Inclusion criteria included births of ≥ 36 gestational weeks and singleton gestations resulting in a live birth. Logistic regression was used to examine the association between GBS screening, pertinent risk factors, and birth outcomes including extended neonatal stay, suspicion of neonatal sepsis, and transfer to a NICU.

Results: Lack of GBS screening (OR = 1.71, CI = 1.05-2.80, $p = 0.032$), low parity ($p < 0.001$) and male sex ($p = 0.006$) were associated with an extended neonatal stay. Lack of GBS screening was not associated ($p = 0.73$) with suspicion of neonatal sepsis, but failure to screen the mother for GBS (OR = 3.55, CI = 1.05-12.1, $p = 0.042$) and low 5-minute APGAR score ($p < 0.001$) were associated with transfer of the baby to NICU.

Discussion: The findings support the importance of screening for GBS in planned vaginal and Caesarean deliveries to attempt to reduce the length of newborn hospital stays and minimize transfer to the NICU. To our knowledge, no prior studies have looked at the association between a failure to screen for maternal GBS colonization, and increased neonatal hospital stay and NICU transfer.

Conclusions: Failure to screen for maternal GBS colonization was associated with increased duration of neonatal hospital stay after Caesarean Section and vaginal deliveries in babies delivered ≥ 36 weeks gestation and with increased likelihood of transfer of the neonate to a NICU.

Recommendation: Based on the results, all pregnancies should be screened for GBS between 35-37 weeks, regardless of planned method of delivery.

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Retrospective Chart Review: Contraceptive Use Prior to Termination of Pregnancy (TOP) in a Canadian Urban Centre

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ABSTRACT

Background:

Evidence shows that 45 to 62% of women presenting for termination of pregnancy (TOP) used some method of contraception. Low socioeconomic status, non-Caucasian ethnicity, younger age and cohabitation have been associated with repeat abortion and contraceptive failure.

Research Questions:

1. What were the methods of contraception used by women who have undergone TOP at the Women's Health Center (WHC)?
2. Is there a relationship between TOP and self-reported contraceptive use or socio-demographic characteristics?

Methods/Methodology:

This was a retrospective chart review of 382 women who accessed TOP at the WHC from October, 2014 through to March, 2015. Data included demographics, methods of contraception and medical history. Data were analyzed using descriptive statistics and chi-square testing.

Results and Discussion:

The average age was 25 (± 6) years, with 60.7% (232/382) being multiparous. About 33% (127/382) of clients were from outside of the urban centre. Sixteen percent (61/382) were married. Although 64.6% (244/382) were not using any form of contraception prior to the TOP; barrier (15%, 60/278) and hormonal (17.7%, 67/278) were the most common methods of contraception used. Thirty-seven percent (142/382) had one or more previous TOPs. There was no significant relationship between method of contraception and residential area ($p=0.14$), relationship with partner ($p=0.14$) or age group ($p=0.36$).

Conclusion:

There was no relationship between TOP and contraceptive use in terms of age, parity, previous TOPs or residential area.

Recommendation:

Improve awareness about and access to contraceptives.

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Evaluation of the Use of the *NuuNest*TM App in Breastfeeding Mothers

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ABSTRACT

Background: Smartphone apps may be beneficial in the early postpartum period to new mothers who are intending to breastfeed. The *NuuNest*TM mobile app was developed to educate and support mothers in breastfeeding and other key areas of early life. The purpose of this study was to pilot an evaluation of the app, and to provide feedback to the developers.

Research Questions: Did mothers use the *NuuNest* app and did they find it useful? If so, which aspects did they find useful? What information was lacking that they would like to see in future revisions of the app?

Methods/Methodology: Mothers who delivered at the Royal University Hospital, Saskatoon in February and March 2016 were recruited. A 21 item questionnaire was emailed to 25 women via <http://fluidsurveys.usask.ca> regarding the *NuuNest* app version 1.3.3. Eighteen of the 25 women were sent the questionnaire at 2, 4 and 8 weeks postpartum. The remainder received questionnaires at 2 and 4 weeks only since data collection ended before their 8th week postpartum. Data analysis was performed using Microsoft Excel 2010.

Results/Findings: A total of 11 participants responded to at least one survey. At two weeks, 10 responded to the survey, and at four weeks, 8 responded. Eight of the 11 women (72%) were primiparous.

Discussion: All 11 respondents would recommend the *NuuNest*TM app to new mothers. All educational aspects relating to the breastfeeding features and the maternal health concerns were accessed by some, as evidenced by the response to the question about their utility.

Conclusions: Despite a small sample size (n=11), reduced response rate and short duration, this study has provided us with some helpful feedback to the developers of the *NuuNest*TM app. Breastfeeding mothers find this app useful and would recommend it to other mothers.

Recommendations: A future evaluation with a much larger sample size and modifications to some of the questions is recommended. In addition, we recommend including maternal demographic details that could influence use of the app and uptake of exclusive breastfeeding.

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Perceptions of Breast Milk Banking by Health Care Providers in Saskatchewan

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ABSTRACT

Background: Compelling information about the benefits of breast milk for babies is widely available; however, data on the knowledge and perceptions of physicians around the concept of breast milk banking is lacking. With only four certified milk banks in Canada, none of which reside in Saskatchewan, further investigation into their utility is warranted. Studies have shown that physicians with uncertainties are less likely to encourage the utilization of donor milk. As physicians play a crucial role in the success of breast milk banks, we were interested in their perceptions and support for a breast milk bank in the province.

Research Questions:

1. What is the current level of knowledge and attitude towards breast milk banking and pasteurized donated breast milk (PDBM) amongst Saskatchewan physicians?
2. Would Saskatchewan physicians encourage the mothers of infants to consider the use of PDBM prior to formula?

Methodology: A survey adapted from the Australian National University study was sent to family physicians and obstetricians in Saskatchewan. The survey included three sections: participant demographics, physician knowledge of milk banking and opinions on developing a human milk bank in Saskatchewan. Items were either yes/no or 5-point Likert scales ranging from Strongly Disagree to Strongly Agree.

Results: The response rate was 24.8% (74/299). Combining the Strongly Agree and Agree categories, 28.4% (21/74) of the respondents agreed that infants could contract diseases such as HIV from PDBM, but 86.3% (63/73) agreed that PDBM would not increase the risk of allergies in infants. 56.8% (42/74) of the physicians would encourage mothers to consider donated breast milk over formula, with 52.7% (39/74) recommending it to mothers of term babies, and 79.7% for preterm babies (59/74).

Discussion: Results indicated that the physicians agreed that breast milk is more nutritious than formula and associated low risk with the use of PDBM. Participants disagreed that the costs associated with set up and maintenance of a milk bank would outweigh the benefits, thereby showing support for the future development of a PDBM centre in Saskatchewan.

Conclusions: The Saskatchewan physicians who responded were aware of the numerous advantages of breast milk, believed regulated breast milk donation in Canada is safe and would encourage their patients to use PDBM over formula, all of which are favourable in terms of support for the development of a breast milk bank in the province.

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