

Sexual Health Knowledge: Survey of Grade 9 Students

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ABSTRACT

Background: It is essential for adolescents in our society to have reliable education and access to information regarding sexual health education. A significant portion of this education comes from school curriculums, as well as other sources such as physicians, friends, and the internet. With such a variety of sources of information, it is a challenge to ensure adolescents have adequate knowledge regarding sexual health.

Research Question(s):

1. Where do grade 9 students in Saskatoon search for information on sexual health?
2. Do they have an appropriate knowledge of sexual health required to make informed decisions regarding sexual behaviours?
3. Are there differences in sexual health knowledge between male and female students?

Methods/Methodology: Grade 9 students in five classrooms at one Saskatoon Public High School were invited to participate in a sexual health knowledge survey. Consent was obtained from parents/guardians prior to the survey being circulated in the classrooms that had been chosen to participate. Assent was implied if the Grade 9 students completed and submitted the survey. Data was analyzed using descriptive statistics. A Certificate of Approval was obtained from the University of Saskatchewan's Behavioural REB and Saskatoon Public Schools.

Results & Discussion: One hundred and three students were invited to participate and of these 22 students returned signed consent forms and subsequently completed the survey. Thus the response rate was 21% (22/103). Of those that participated, 27% (6/22) were not comfortable and 36% (8/22) were unsure of talking with their physician about sex. Only 50% (11/22) indicated that a person who has used drugs or alcohol is unable to give consent for having sex.

Conclusions: Given the results, it is important for family physicians to make a concerted effort to improve communication with adolescent patients.

Recommendations: Further studies with a larger sample size and a more diverse age range of participants would be helpful in better understanding how best to meet the sexual health needs of adolescents.

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DogTalk: Teaching Children the Basics of Canine Communication and Safety

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ABSTRACT

Background: Dog bite rates are estimated at 3/1,000 per year in North America, with the majority of victims being children under 12 years old. There have been several programs developed to reduce bite rates by teaching children dog safety and communication, but most do not evaluate the efficacy of their program. There is a need for well-designed programs and high quality studies that measure them to compare pre and post-intervention understanding of dog body language and subsequent health outcomes. This research is intended as a first step in this process.

Research Question(s): Will a classroom-based educational program teaching children aged 5-10 about dog body language improve participants' knowledge of dog communication and safety?

Methods/Methodology: A RCT was conducted as a pilot study. This was then furthered as a pre-post study. Participants first completed a quiz that assessed their attitude toward dogs, knowledge of basic dog language, and willingness/reluctance to pet a dog in several situations. Participants then received a presentation on basic dog communication and safety guidelines. Post-intervention, they took the quiz again to assess for change in score. Each participant was sent home with an information booklet that summarized the presentation.

Results: The pilot study showed improvement in the experimental arm, but none in the control arm. In the pre-post study, participants showed improvement in overall quiz scores post-intervention, with the greatest improvement being seen in 6 and 7 year olds. Post-intervention, there was an improvement in attitude toward dogs.

Discussion: The pilot study suggested that improvement in scores was related to the intervention. The pre-post study showed overall improvement, with statistically significant improvement in scenarios in which dogs were not amenable to being approached. The improvement in attitude suggests that the program did not instill fear in the participants.

Conclusions: A classroom-based educational program teaching children about dog body language improved participants' knowledge of dog communication and safety in the short term. However, long-term retention must be assessed, and program efficacy should be assessed in rural/remote areas. Many health benefits of dog stewardship have been described; further research will be needed to establish if this intervention will have any effect on bite rates.

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Using the WHY Test to Co-Create Individualized Smoking Cessation Plans: A Mixed-Methods, Prospective Study

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ABSTRACT

Background: Tobacco smoking contributes significantly to morbidity and mortality in Canada. Many methods pharmacological and behavioural interventions have been studied regarding smoking cessation exist. The Why-I-Smoke (WHY) test (WT) is a tool for stratifying potential intervention, but its effectiveness has not been studied among family physicians. This pilot research evaluates the effectiveness of WHY test in family medicine.

Research Question(s): Is the WHY test an effective tool to assist people who smoke to co-create an individualized smoking cessation plan, using existing interventions?

Methods/Methodology: Consecutive, consenting patients aged >18 years, with intent to quit smoking in Moose Jaw were recruited in this prospective cohort study. At enrolment, The Fagerstrom Test (FT) was used to quantify their smoking dependence and the WHY test used to stratify their smoking motivation. Follow-up visits (at 4 and 12 weeks) measured smoking dependence and qualitatively evaluated usefulness of WHY test. Data analysis involved descriptive statistics and content analysis.

Results: Twenty-nine patients (male-19, females-10) joined the study but 14 completed, with drop-out rate of 52% . At enrolment, average FT score was 5.8, 52% (15/29) lived with smokers, while the median attempts at quitting was ~6 times. Stress-relief, craving and pleasure were top motivations for smoking. Fifty-seven percent (8/14) of patients who completed the study successfully quit smoking. Their average end-of-study FT score was 3.6. and their median rating of WHY test effectiveness (on a scale of 0-10) was 6.4, compared with 4.9 for previous methods. "I think it's got value to it, (but) medication is probably most effective thing" – BA and "[It's] one more motivational tool to add to the rest" – SK, reflect some feedback.

Discussion: This pilot study is the first to evaluate use of WT in planning individualized smoking cessation plan in family practice. All participants who completed the study, including those who did not quit smoking, would recommend WT, showing that it has subjective value. High drop-out rate affects generalizability of findings, although our quit-rate was 57%. Most people who did not quit reduced and re-evaluated their dependence

Conclusions: The WT is a promising tool for co-creating an individualized smoking cessation plan, using existing interventions. Further studies are needed to test its effectiveness.

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Let's Talk: Effectiveness of a Structured Educational Session on Discussing Patient Goals of Care in a Family Medicine Residency

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ABSTRACT

Background: Prior studies suggest that patients would like to have early and authentic discussions regarding their goals of care (GOC) with their primary health care provider. Despite this, many physicians have indicated a sense of discomfort with facilitating these conversations due to a perceived lack of professional skill.

Research Question(s): Is a structured educational session, which provide suggestions for facilitating GOC discussions, a useful method for increasing family medicine residents (FMRs) comfort with these difficult conversations?

Methods/Methodology: A structured presentation combining multiple educational tools was delivered to a group of first and second year FMRs across distributed learning sites in Saskatchewan. Participants completed pre and post session questionnaires to assess changes in their degree of comfort and confidence with facilitating GOC, and were asked to evaluate the session.

Results: Forty-six FMRs from seven different training sites participated. Prior to the session, 63.1% (29/46) of participants indicated they were comfortable or very comfortable with facilitating GOC discussions with patients, despite 35.6% (14/46) indicating they had received adequate training. Improvement in the degree of comfort with facilitating GOC conversations with patients following the educational session was not significant, however confidence in ability to discuss the prognosis ($p=.000$) and comfort discussing GOC with families or proxies ($p=.006$) were. 71.8% (33/46) of the participants indicated that they felt what was presented would help improve their future practice.

Discussion: In contrast to the literature, it was surprising that the participants expressed a relatively high degree of comfort with their ability to facilitate GOC discussions. Interestingly, however, the majority of participants also indicated they were able to take away learning points that would help them with their future practice, suggesting that comfort with does not necessarily equate to mastery of this particular skill.

Conclusions: There was no statistically significant improvement in resident confidence facilitating GOC conversations with patients. Improvement was, however, noted with resident confidence in facilitating GOC discussions with families and substitute decision makers.

Recommendations: To ensure maximal benefit, this type of educational session should be presented to residents early in their training. Consideration should also be given to delivering the session in small groups, and in person, to promote active learner engagement. Future research could also be conducted to determine if reported comfort translates into actual objective skill.

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Post-traumatic Stress Disorder (PTSD) Prevalence in Saskatchewan: Physicians, Resident Physicians and Medical Students

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ABSTRACT

Background: Physicians suffer from high rates of depression, burnout, and suicide. They are repeatedly exposed to trauma and stress at work, which intensifies as trainees advance. Therefore physicians could be at risk for development of post-traumatic stress disorder (PTSD), which may contribute to other comorbid mental illness.

Research Question(s): What is the prevalence of PTSD in Saskatchewan physicians, resident physicians and medical students? Is there a stage in training at which PTSD symptoms are highest?

Methods/Methodology: The PTSD Checklist–Civilian Version (PCL-C) was e-mailed to all physicians, resident physicians, and medical students in Saskatchewan. A PCL-C score of > 44 was used to estimate probable PTSD and > 36 possible PTSD. Additional comments and demographic information were also collected.

Results: The prevalence of PTSD based on DSM-IV criteria was 11.4%. The prevalence of PTSD based on a PCL-C Severity Score of >44 was 10.8%. No significant differences in PTSD were identified for age, gender, level in training, time in practice, or type of speciality. One way ANOVA showed a statistically significant association between the DSM-IV cluster diagnosis and mean PCL-C Severity Score ($p < 0.001$). Results indicated physicians may not personally witness high amounts of trauma, but are exposed to the aftermath, reporting considerable exposure to severe human suffering and life threatening illness/injury.

Discussion: PTSD prevalence in the Saskatchewan physician population is comparable to the general population. Physicians have high symptom severity scores, but do not meet diagnostic criteria for PTSD based on the DSM-IV. This suggests the physician population is at risk for developing PTSD, but requires a different screening tool to assess symptoms. There is no specific “at risk” time in training for PTSD development.

Conclusions: Physicians are a unique population, who witness high levels of certain types of trauma and its aftermath at work, and therefore likely require a specialized PTSD screening tool for appropriate diagnosis.

Recommendations: Further research is needed to address the validity of the PCL-C in the physician population or to create a diagnostic tool suitable for this population. Upstream strategies aimed at education and prevention should be created to reduce PTSD in physicians.

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Pain Control with IUD Insertions: Intracervical Lidocaine Infiltration Prior to Tenaculum Placement

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ABSTRACT

Background: There is currently no formal guideline with regards to peri-procedural cervical analgesia for tenaculum placement and IUD insertion. Previous studies using lidocaine gel preparations applied to the cervix, infused into the uterus or a topical lidocaine spray have not demonstrated significant reduction in pain or improvement in procedural tolerance. This project evaluates whether intracervical injection (ICL) of 1% lidocaine at the 12 o'clock position prior to tenaculum placement results in improved procedural tolerance of IUD insertion compared with no analgesia (usual care - UC).

Research Question(s): Does an intracervical infiltration at the 12 o'clock position with 1% lidocaine (ICL) prior to tenaculum placement improve procedural tolerance, compared with UC?

Methods/Methodology: A prospective cohort study of 69 consecutive patients recruited from four clinics in Regina. Data included demographics; pain rating (on 11-point scale) prior to tenaculum placement and after procedure; and other symptoms associated with IUD insertion. Analysis involved descriptive statistics, Chi-square and t-tests.

Results: Of the 69 patients, 59.7% (40/67) received UC, and 40.3% (27/67) received ICL. Average age was 28 (± 7) years, 50.7% (35/69) were nulliparous and 63.8% (44/69) had no prior IUD insertion. Mean pre-tenaculum pain score was lower for ICL compared to UC (1.52 vs. 3.0, $p=0.01$), while there was no significant difference in post-procedure pain rating (ICL=3.89 vs. UC=4.85, $p=0.16$). Incidence of post-procedure symptoms (headache, dizziness and nausea) was higher in the UC group (77.5%) compared with 48.1% in the ICL group.

Discussion: Results showed no significant difference in pain scores post-IUD insertion, suggesting that intracervical lidocaine was not an effective analgesia. However, it significantly improved post-insertion symptoms. The small sample size limits the generalizability of the findings.

Conclusions: Using an intracervical infiltration of 1% lidocaine at the 12 o'clock position prior to tenaculum placement during IUD insertions was not beneficial for patient pain control but significantly improved tolerance for post-insertion symptoms.

Recommendations: Further studies are needed to evaluate use of 1% ICL for analgesia during IUD insertion.

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Postpartum Hemorrhage in Prince Albert, SK: Incidence and Risk Factors

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ABSTRACT

Background: Postpartum hemorrhage (PPH) is an obstetrical emergency and leading cause of worldwide maternal mortality that complicates 4-8% of deliveries in Canada. In Prince Albert the PPH rate seemed to be higher, warranting investigation. Although PPH is unpredictable, it is associated with a number of risk factors that can be identified prior to delivery. Previous studies have shown that coding of PPH into discharge databases tends to miss a proportion of PPH events.

Research Question(s): What is the rate of PPH in Prince Albert, SK based on chart data, and how does this compare to national figures? What is the difference between charted and coded PPH incidence? What is the prevalence of identified risk factors among women who experience PPH?

Methods/Methodology: A retrospective chart review was undertaken for the 2015 calendar year. Half of the PPH cases (118 of 235) were randomly selected for review, and matched by age and discharge date to controls who did not hemorrhage, resulting in a final dataset of 208 matched cases. Maternal, pregnancy, labour and delivery characteristics were entered into IBM SPSSv.24 for analysis.

Results: The PPH incidence for Prince Albert based on institutional data was ~16.7%; the study estimate was 19.4%. Risk factors for PPH found to be statistically significant included oxytocin induction, manual removal of placenta, high infant weight, prior PPH, and not receiving oxytocin with infant delivery. There was no significant association of PPH with parity, chorioamnionitis, gestational diabetes, or duration of third stage, but the duration of expulsive efforts for primiparas was clinically longer.

Discussion: The incidence of PPH is 1.5 to 4 times higher than other Canadian studies, possibly due to heavier infants, increased use of oxytocin induction, and longer duration of pushing for primiparas. Shoulder dystocia complicated 7-8% of all deliveries, a figure much higher than reported in the literature. Health Records is capturing roughly 70% of PPH cases.

Conclusions: The incidence of PPH in Prince Albert, SK exceeds national figures. These results suggest that there should be support for clinical efforts aimed at identifying potential risk factors, preparing for and managing PPH effectively; as well as, additional training of data coders to improve capture of PPH events.

Recommendations: Training physicians and nurses in accurate estimation of blood loss, and improved documentation of EBL would facilitate identification of PPH cases for both Health Records and future prenatal records. The use of oxytocin with delivery should be routine.

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Intrapartum Factors and Breastfeeding Discontinuation in the Cypress Health Region

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ABSTRACT

Background: Previous research reveals that breastfeeding rates in the Cypress Health Region (CHR) dropped from 91.2% at discharge to 36.1% and 22.3% at two and four months postpartum, respectively. Information is limited on the relationship between intrapartum factors and breastfeeding discontinuation in the CHR.

Research Question(s): Are intrapartum factors associated with breastfeeding discontinuation in the CHR?

Methods/Methodology: A cross-sectional, retrospective chart audit of all women who delivered live, term infants between January 1, 2014 and December 31, 2015 was performed. Variables considered were: duration of labour, route of delivery, skilled attendant at labour, Group B Streptococcus status, type of analgesia, induction versus spontaneous labour, presence of perineal laceration, shoulder dystocia, and presence of postpartum hemorrhage. Outcomes considered were breastfeeding status at discharge and at two and four months postpartum. Data was analyzed using descriptive statistics, t-test, chi-square test, and logistics regression.

Results: Seven hundred and sixty-two charts met the inclusion criteria. Ninety-two percent of mothers breastfed at discharge, while 44.6% and 37.5% were breastfeeding at two and four months post-partum, respectively. Women who had a normal vaginal delivery were more likely to breastfeed at hospital discharge (OR=3.03, 95%CI=1.76-5.21, p=0.001) compared to other routes. Significant multivariate predictors of breastfeeding at two months were type of analgesia (p<0.001) and presence of perineal tear (p=0.027). Women delivered by family physicians were three times more likely to breastfeed at four months post-partum compared to those who were delivered by obstetrician/gynecologists (95%CI=1.81-6.25, p<0.001).

Discussion: Two novel findings were that the presence of a perineal tear and being delivered by an obstetrician/gynecologist were associated with higher breastfeeding discontinuation rates. Further research is needed to fully evaluate the underlying cause of these associations.

Conclusions: Breastfeeding discontinuation rates at two and four months postpartum were noteworthy and may have been influenced by type of analgesia, presence of a perineal tear, and type of provider performing delivery.

Recommendation: Ensuring adequate follow-up and pain control are two simple, non-harmful principles that can be emphasized in postpartum care to help mothers continue breastfeeding.

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Exploring Pneumococcal Vaccination Coverage in the Recommended Population: A Multi-Site Retrospective Chart Review

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ABSTRACT

Background: Despite good evidence for their use, pneumococcal vaccination coverage rates (PVCR) are consistently low in Canada. Current evidence reports PVCR of 38% in patients aged >65 years (Group 1) and 19% in patients aged 18 to 65 years with chronic disease (Group 2). This study describes and compares PVCR between the Regina Family Medicine Unit (FMU) and Regina Community Clinic (RCC) in Regina, Saskatchewan.

Research Question(s):

1. What are the current PVCR at the FMU and at the RCC?
2. How do local PVCR compare with national rates?

Methods/Methodology: This was a retrospective chart review of all patients in the targeted age groups. Chronic diseases considered were coronary artery disease (CAD), congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD) and diabetes (DM). Analysis involved descriptive statistics, chi-square and a t-test.

Results: A total of 2281 patient charts were reviewed, as follows: Group 1 = 1834 (80.4%), Group 2=447 (16.6%); FMU=1261 (55.3%) and RCC=1020 (44.7%). Average age was 71 (\pm 12) years. Total PVCR was 57.3%, FMU = 60.9% and RCC =52.8%. Group 1: PVCR was 59.7% (both clinics), 65.2% (FMU) and 52.1% (RCC). PVCR among the refugees presenting to RCC was significantly lower than non-refugees (42.1% vs 53.9%, $p=0.03$). The odds of vaccination was lowest for people with DM (OR=1.5, 95%CI 1.21 - 1.74) and highest for those with CHF (OR= 2.0, 95%CI 1.20 - 3.39).

Discussion: Local PVCR were significantly higher than the national average but lower than the 80% target. FMU had better PVCR than RCC but this could be due to the large refugee population at RCC. PVCR for patients with chronic diseases was lower than those for patients aged >65 years. Patients with only DM were least likely to be vaccinated compared with other chronic diseases.

Conclusions: Local PVCR were better than the national rates. There is need to improve PVCR locally, especially for patients aged 18 to 64 with chronic diseases and the refugee population. Further studies should evaluate methods to improve PVCR at RCC and FMU.

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Opioid Substitution Therapy and Antiretroviral Therapy Adherence in HIV-Positive Individuals in a Rural, Northern Saskatchewan Community

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ABSTRACT

Background: Saskatchewan has had the highest rate of new HIV diagnoses in Canada for the past ten years. Opioid substitution therapy (OST) in urban settings has been shown to increase adherence to antiretroviral (ART) therapy in HIV positive individuals who use illicit opioids, and is a proven strategy for treatment and prevention of HIV. Studies on OST and ART adherence in rural and northern contexts are lacking, and rural research is needed to address the HIV emergency in Saskatchewan, which is predominantly driven by transmission via injection drug use.

Research Question(s): Amongst HIV-positive individuals receiving care in a rural Northern community, are patients that are engaged with OST achieving $\geq 95\%$ adherence to ART?

Methods/Methodology: A retrospective analysis of HIV positive patients in La Ronge was performed via review of the clinic EMR to analyze adherence to ART as shown by prescription fill data in the Saskatchewan's Pharmaceutical Information Program (PIP). Inclusion criteria were HIV positive individuals who had been prescribed ART in La Ronge in 2016. The study group included patients participating in OST.

Results: Patients on OST were less likely to achieve $\geq 95\%$ adherence compared to those not on OST (NOST); 25.8% of the OST group achieved $\geq 95\%$ versus 56.3% in the NOST group ($p=0.042$). The OST group was younger with higher rates of documented illicit opioid, alcohol, and other substance use. When substance use disorders were combined into one variable, there was a tendency towards decreased adherence ($p=0.063$).

Discussion: Our unexpected findings were likely the result of having a NOST group that was more stable than the OST group which reinforced the clinical importance of stability in ART adherence. Due to the small sample size, we were unable to set opioid use disorder as an inclusion criteria.

Conclusions: Though these results differ from previous literature, they do not negate the previous studies as our NOST group was different from previous control groups. Our results emphasize the impact of instability (including active substance use) and the inherent limitations of small sample sizes in rural research.

Recommendations: Future research is needed to improve addictions treatment and ART adherence in rural contexts.

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Measuring Quality Indicators in Palliative Cancer Patients at Battlefords Union Hospital

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ABSTRACT

Background: Quality of life is improved at the end of life by providing adequate and appropriate palliative care and health care interventions. Assessing such palliative care services in objective quantitative measures has proven challenging, and has been inadequately researched in Canada. Thus far, quality indicators have been developed through literature reviews, lay focus groups and expert panels to assess and monitor the appropriate use of end of life resources.

Research Question(s): How are we utilizing our palliative resources relative to national top performers when we provide end of life care for cancer patients?

Methods/Methodology: A retrospective chart review of seventy three patients with confirmed cases of death secondary to various types of cancers from January, 1 2013 until December, 1 2015 was conducted with data extracted from charts obtained from Battlefords Union Hospital (BUH) health records. Data was collected from each chart on quality indicators, which included number of emergency department visits in the last 30 days of life, number of ICU visit in last 30 days of life, death in hospital, number of days in palliative care, and initial date of enrollment in palliative care. Statistical analyses, including ANOVA and Chi square tests, were carried out in IBM SPSSv.24.

Results: BUH quality indicator rates were compared to benchmark rates. Fifty-five of the seventy-three patients (75.3%) visited the ED at least once within the last thirty days of life compared to benchmark average of 34%. Overall, only 12.3% (9/73) of patients avoided hospital admission within their last thirty days of life. Four patients (5.5%) were admitted to the ICU compared to 2% benchmark average. Lastly, 86.3% (63/73) of patients died while hospitalized compared to the 38% benchmark average.

Discussion: Identified limitations included the lack of documented orders requesting a palliative care consult from the attending hospital physician, minimal documentation of home care visits, and a delay in timely palliative care consultation. A delay in diagnosis of advanced stage cancers may have led in to different expectations on prognosis which in turn increased the use of services such as ED visits and ICU admissions. In addition, data representing palliative chemotherapy and radiation therapy was not gathered for this research.

Conclusions: The marked differences between the quality indicator rates at BUH and the national benchmark rates set by the top performing health regions in the country demonstrate that there is opportunity for improvement in terms of palliative care provision for cancer patients.

Recommendations: More research involving rural health regions with larger sample sizes and access to more comprehensive charts ought to further clarify the nature of how well palliative care is being provided to those with this terminal disease.

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Knee Injection Simulation Model for Teaching Medical Learners

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ABSTRACT

Background: Residents report low levels of confidence with procedures and are supervising others before they feel comfortable. To help increase confidence, simulations can be used. Many studies have demonstrated that simulations are helpful in teaching medical students. Currently, knee simulations are used for medical student teaching; however, these knee simulations lack adequate feedback. This study will create a model which provides increased feedback, increasing the realism of our knee model.

Research Question(s): Can an anatomically correct model of the knee be created with tactile and auditory feedback that will enhance realism for learners when simulating knee joint arthrocentesis?

Methods/Methodology: A MRI image of a knee was used to create a 3D printed version of the knee bones. The bones were coated in conductive paint and wires attached. Knee ligaments, made from clay, were glued to the bones. The outer mold of the knee was created with a plaster cast and latex molding material. A window for the joint arthrocentesis was cut in the lateral side of the plaster cast. The knee bones, with ligaments and wires, were placed inside the outer mold. The wires from the femur and tibia were connected to an Arduino and a needle was attached to the circuit.

Results: When the needle for arthrocentesis passed through the skin and touched the femur or tibia the learner was notified via tactile and auditory output. The knee model provided both tactile and auditory feedback when practicing knee arthrocentesis.

Discussion: Real arthrocentesis, with people, provides both tactile feedback and the feedback provided by the patient. This knee simulation adds auditory feedback to the classic tactile feedback provided for learning, which will enhance the realism of simulated knee arthrocentesis.

Conclusion: It is possible to successfully build an accurate knee model with tactile and auditory feedback for simulated arthrocentesis in a manner that is more cost effective than buying less realistic models online.

Recommendations: It would be beneficial to have medical learners practice knee arthrocentesis with this knee model compared to traditional knee models and assess their preferences. Structural improvements to the knee could include a more realistic simulation of subcutaneous tissue; as well as, a joint capsule with synovial fluid.

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Characterizing Attitudes and Finding Best Practices for Prescription Fax Refill Requests at an Urban Family Medicine Practice

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ABSTRACT

Background: Prescription (Rx) refills represent a significant proportion of clinical practice. Anecdotal evidence at the Family Medicine Unit (FMU) suggests that fax refill requests (FRR) generate a considerable workload due to volume, time involved and technological challenges. This research describes FRR at FMU and ways to improve.

Research Question(s):

1. What is the pattern and impact of FRR during a typical work week at FMU?
2. How can this process be improved?

Methods/Methodology: This was a quality improvement study using mixed methods design. All FRR at FMU during a three-week period were monitored, including: time received; processing interval; request outcome; and, communication with patient/pharmacy. Quantitative outcomes were discussed in separate discussion groups involving physicians, residents and office assistants, respectively. Analyses involved descriptive statistics and inductive, thematic analysis.

Results: During the study period, 230 FRR were processed (Week 1=81; Week 2=71; Week 3=78, for each week; average=77). These involved 351 unique medications (Week 1=126; Week 2=103; Week3= 122; average =117 weekly). Seventy-two percent (165/230) of all FRR involved attending physicians (vs. 28% involving residents). Residents achieved same-day response more frequently than attending physicians (39% vs 25%). “[It’s time consuming] if the profile’s not filled out and you’re not sure what the [specific] indication is...” (Physician). It took an average of 17 (\pm 3) hours between receiving the FRR and provider response. The pharmacy was called in 33.5% of FRR (77/230). “Given the technology that we have nowadays, why are we still faxing paper copies?” (Resident)

Discussion: Stakeholders thought FRR was important, especially for patients with mobility issues. Average FRR turn-around time was 17 hours. Findings emphasized the need for a local standardized approach for handling of FRR to optimize care. There is need to adopt modern technology in handling prescription refill requests.

Conclusions: The volume of FRR was lower than initially perceived. Most FRR involved attending physicians, with about a 17-hour turn-around time. There is a need to standardize the process using modern technologies.

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The Effect of Advanced Access Medical Booking in Local Primary Care Clinics on the Number of Low Acuity Emergency Department Visits

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ABSTRACT

Background: Timely access to a patient's family doctor in Canada's overcrowded healthcare system is problematic. Low acuity patients often present to the Emergency Department (ED), contributing to problems with flow, overcrowding and increased wait times.

Research Question(s): What effect does advanced access medical booking in local primary care clinic have on the number of low acuity Emergency Department visits by patients of the clinic?

Methods/Methodology: This was a quality improvement study, undertaken in a small community in which family doctors are notified if their patients are seen in the ED. On November 1, 2016, one clinic converted approximately 60 appointments a day to same day booking. The number of medical clinic patients who presented to the ED with low acuity complaints (e.g. CTAS 4/5) between the periods of November 1, 2014 to August 31, 2015 was collected and compared to the number of lower acuity patients who presented to the ED from November 1, 2015 to August 31, 2016. The data was entered into IBM SPSSv.24 to generate the descriptive statistics and paired sample t-test, and an IHI Run Chart Calculator was used to determine if the change represented true improvement.

Results: The number of CTAS 4 and 5 patients who were seen in the ED in the 10-month period in the year prior to the change in clinic booking was 2103. After same day booking was implemented, 1624 low acuity patients were seen in the ED, a reduction of 22.78%. The average monthly difference was -47.90 (SD=39.14) visits.

Discussion: Results of the test of change using the Run Chart indicated that the change was a true improvement. The consistency of the change shows that the change is likely sustainable and fairly stable.

Conclusions/Recommendation: The results show that advanced access booking is advantageous to local EDs. Adoption of this practice by clinics across the Region could lead to a substantial reduction in ED use by low acuity patients.

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Factors Associated with Prolonged Length of Stay of Discharged Patients in a Tertiary Care Emergency Department

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ABSTRACT

Background: Extended length of stay (LOS) in emergency departments (ED) and overcrowding are a problem for the Canadian healthcare system, which creates an access block, reduced health outcomes, and decreased satisfaction.

Research Question(s): What are the factors related to prolonged length of stay for a patient, who falls in the highest 10th percentile for Length of Stay, discharged from an urban, tertiary care Emergency Department over a period of one month?

Methods/Methodology: Six hundred and three charts of discharged patients from Regina EDs were reviewed. Included charts in this study were from the 90–100th percentile of time-stayers, who were registered during February, 2016 and seen by an ED Physician. Patient demographic data and ED time stamp data were collected. T-tests and multiple regression analyses were conducted to identify any significant predictors of the outcome variable, LOS.

Results: Demographic variables and ‘Door to Doctor’ did not have a significant relationship with LOS. Time from ‘Consult to Discharge’, Ultrasound and CT Scan Time Interval showed a significant relationship with LOS ($p < 0.01$). Using hierarchical multiple regression showed no change in significance of the above-mentioned variables after adjusting for confounding variables.

Discussion: “Consult to Discharge” needs further evaluation due to the lack of information regarding when the consultant was contacted, when they had assessed the patient, when they completed their assessment and whether a learner consultant was involved. Ultrasound and CT Scan Time Interval significance could be explained by limited access to the investigation, awaiting Radiologist reports for making clinical decisions and increased demand on the investigation from departments outside of the ED.

Conclusions: “Consult to Discharge”, Ultrasound and CT Scan Time Intervals are the only significant predictor variables of Length of Stay (‘Door to Discharge’); this remains true when taking into account the identified significant confounding factor, ‘Hour of Day’ of Registration.

Recommendations: Future areas of interest include establishing a standard reference for the variables, a further analysis into why consult requests were a major predictor, and how to alleviate this in the future.

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Intervention Times: Does Arrival by Private Transportation Influence Patient Outcome?

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ABSTRACT

Background: Stroke is common in Canada, with 50,000 strokes occurring yearly. Every minute that a patient goes untreated during a stroke they lose 1.9 million neurons, and patients lose a month of healthy life for every 15 minutes treatment is delayed. Intravenous recombinant tissue plasminogen activator (IV rtPA or “needle”) remains the gold standard for acute ischemic stroke treatment. Consequently, door-to-needle time can be used to determine outcome. Patients arriving by EMS have been shown to experience better outcomes as compared to arrival by private vehicle.

Research Question(s): How do the door-to-needle times compare for patients arriving by private vehicle to those arriving by EMS? How do they compare to target?

Methods/Methodology: Using retrospective data, the door-to-needle times were compared to two gold standard targets: 50% of patients receiving treatment by 30 minutes and 90% of patients receiving treatment by 60 minutes. Data was gathered from the charts of patients seen at the Prince Albert Victoria Hospital Emergency Department. The data analysis, including descriptive and inferential statistics, was conducted using IBM SPSSv24.

Results: Overall, door-to-needle time was 74.5 (sd =24.1) minutes. The difference between EMS (64.6, sd =16.1) and Private Transportation (101.75, sd =22.1) was statistically significant ($p=.003$). Overall, no patients met the 30 minute target and 18.8% (3/16) met the 60 minute target. No one arriving by Private Transportation met the 60 minute target.

Discussion: There were large discrepancies in door-to-needle times between arrival modalities for patients presenting with stroke-like symptoms. However, regardless of arrival modality, there was a severe delay in door-to-needle times compared to Canadian gold standards.

Conclusions: Patients having a stroke and arriving by EMS were treated more quickly than privately transported patients. It is apparent that the Canadian gold standard target rates are not being met.

Recommendations: Further investigation will need to be done to determine areas of the process in which delays can be minimized when patients present with signs and symptoms of acute stroke. Protocols specific to patients arriving by private transportation should be developed to bring their door-to-needle times closer to the target and EMS patients.

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Exploring the Potential Role of Primary Care Same Day Appointments and its Effect on Non-Urgent Emergency Department Visits in Moose Jaw, Canada

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ABSTRACT

Background: Emergency Department (ED) overcrowding is a major concern that leads to congestion, disrupted coordination of care, and escalating healthcare costs. Use of the ED for non-urgent conditions (CTAS 4&5) contributes to overcrowding. This project seeks to evaluate the impact of same-day access (walk-in spots – WIS) on use of ED for non-urgent conditions in Moose Jaw, SK.

Research Question(s): Is there a difference in the use of the ED for non-urgent conditions for patients whose physicians offer walk-in spots versus those who do not?

Methods/Methodology: This study was a retrospective chart review of all patients presenting to the Moose Jaw ED in a randomly-selected 30-day period between September 1, 2016 and April 30, 2017. Data collected from the electronic medical records include demographics, clinical details about the emergency visit and family physician on record. Data on availability of walk-in spots during the study period (March 1-31, 2017) was collected from family physicians. Analysis involved descriptive statistics, Chi-square and t-tests.

Results: A total of 901 patients (48.3% females, 51.7% males) and 19 clinics (offering 2400 WIS during study period) were included in the analysis. About 18% (165/901) of people who presented to the ED with non-urgent conditions had no family physicians. Physicians with no WIS had significantly more patients presenting to the ED with non-urgent conditions than those with WIS (55% vs 45%). Average daily clinic volume for physicians offering WIS was 33 (± 8) patients per day vs 41 (± 12) patients for those not offering WIS ($p < 0.001$). Clinics which offered WIS had significantly fewer patients (1864 ± 856) than those who did not (3182 ± 701), $p < 0.001$.

Discussion: Availability of WIS reduced ED use. There was no significant difference in ED use for patients whose clinicians provided WIS based on sex and CTAS category at presentation. About one-in-five patients (18%) who used the ED for non-urgent conditions did not have a family physician. The short study period (1 month) was a limitation.

Conclusions: It is possible that ED use could be reduced by having more clinics providing WIS; this study could not determine that. Further studies, over a longer period are needed.

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Exploring the Trends and Impact of Clinic Non-Attendance (No-Shows) at a Canadian Academic Family Medicine Clinic

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ABSTRACT

Background: Missed appointments, colloquially called “no-shows” are problematic in the medical system. They constitute significant waste of man-hours and other resources within the system. Patients who miss primary care appointments have been shown to attend emergency departments more frequently. There is limited evidence about the impact of no-shows on academic family medicine units in Canada.

Research Question(s): What are the demographic trends in no-shows at Family Medicine Unit – Regina (FMU-R)? What interventions could be employed to improve clinic non-attendance?

Methods/Methodology: A retrospective chart review of all clinic appointment utilization at the FMU-R between January 1, 2014 and December 31, 2016. Variables considered were: appointment (time of day, day of the week, season of the year, booking interval); provider involved (Resident, Physician and Nurse Practitioner); and, patient profile (age, sex, location, chronic diseases status). The stakeholders will meet to discuss results and possible interventions.

Results: Given the inclusion criteria, 51,635 visits met the criteria, with the rate of no-show as 5.8% (2998/51,635). Patient age was 39.47 years for non-attendees and 48.47 years for attendees ($p < 0.001$). Non-attendees are 64.2% (1924/2998) female. More patients who attend have chronic conditions (CHF, DM, HTN, COPD) than those who do not attend; 19.7% vs 16.6% ($p < 0.001$). There is a significant difference in attendance based on the interval between booking and appointment; 16.63 days for non-attendees versus 12.51 days for attendees ($p < 0.001$). The winter season contributes fewer no-shows to the annual total at 21.1% ($p = 0.02$), compared to spring (26.0%), summer (25.2%), and fall (27.7%). Trends in no-shows are not significantly different based on geography or service provider (attending physician vs resident vs. RN vs. nurse practitioner).

Discussion: There are identifiable demographic trends in non-attendees (age, sex, chronic condition). There are trends in appointment characteristics (booking interval, season, time of day). The focus group felt the prevalence of no-shows is acceptable and major intervention is not felt to be an appropriate allocation of resources.

Conclusions: FMU-R non-attendance rates are acceptable. There are significant characteristics identified for non-attended appointments.

Recommendations: Display an information poster on clinic non-attendance in the patient waiting area.

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Social Media: Physician Perceptions and Experiences!

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ABSTRACT

Background: Social media has become a widespread phenomenon in our generation. Understanding physicians' current perspectives and experiences regarding social media will inevitably help us to navigate this new technology in clinical practice. Social media is undeniably setting its roots in our daily life, but how to incorporate its use in clinical practice is still up for debate.

Research Question(s): What are rural physicians' perceptions of social media within the realm of medical practice and what are the effects on physician practices including personal and professional use?

Methods/Methodology: A cross-sectional analysis of data collected from questionnaires delivered to family physicians in Prince Albert, Saskatchewan was analyzed using SPSS.

Results: We distributed 49 surveys to Family Physicians and 19 respondents. The most commonly utilized social media tools reported were Skype, YouTube, and Facebook. The vast majority of the cohort used social media for personal use. Some physicians believed their practice benefitted from social media, while one physician believed it hurt the practice. Common themes noted in the commentary regarding negative physician perceptions included fear of disciplinary repercussions, patient and professional privacy concerns, lack of compensation for time spent on platforms, and inexperience with social media in practice.

Discussion: Social media is a diverse umbrella term used to describe the latest mass media platforms available in our present age. As with all new technologies, identifying appropriate use and professional conduct with new resources requires information relating to current uses and concerns. The research looked at a small, rural population to get a snapshot of current trends regarding social media use in the medical community.

Conclusions: Although results are not generalizable, this study suggests that physicians are exploring social media. Furthermore, there was recognition among the group that the use of social media for business purposes will increase in the future. Enhanced training in social media use may prove instrumental for engaging physician bodies into accepting social media as tools for practice. A key element will be to create guidelines that generate a safe environment for both practitioners and patients.

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How Comfortable are Physicians with Performing Speculum Exams in the Emergency Department?

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ABSTRACT

Background: Women commonly present to the Emergency Department (ED) with a variety of health issues which may require sensitive examinations including speculum exams (SE). Wait times in the ED are affected by many factors, including not only clinical status but also physician practice patterns. This research seeks to explore physician comfort levels performing SE's in Regina EDs, and to suggest ways for improvement.

Research Question(s):

1. How comfortable are physicians with performing SEs in Regina EDs?
2. How can their SE practice patterns and comfort-levels be improved?

Methods/Methodology: This continuous quality improvement study was conducted as an online survey of all residents and physicians in Family Medicine, Emergency Medicine, and Obstetrics/Gynecology in Regina, SK. Data analysis involved descriptive statistics and Chi-square tests.

Results: Fifty-one participants responded to the survey. Ninety-two percent (47/51) were comfortable performing SE. About 41% (21/51) had done ≥ 11 SEs in an ED in the previous six months, 26% (13/51) did not use chaperones and 52.9% (27/51) 'sometimes' defer SE. Challenges facing SE in the ED were absence of a dedicated gynaecological (gyne) exam room (58.8%, 30/51) and a gyne bed (19.6%, 10/51); as well as, time and difficulty of finding supplies (41.2%, 21/51). Some survey respondents (23.5%, 12/51) stated that there are adequate resources for performing speculum exams in the ED. Comments also included, "Currently adequate but could be made better with a gyne bed. However, ER funding likely more useful in other deficient areas given the current budget".

Discussion: It is important that clinicians are able to perform SE in the ED when clinically indicated. Although most participants were comfortable with performing SE, they faced challenges in availability of adequate space and resources in the ED. Being able to perform SEs in the ED could reduce the number of deferred SEs and improve the ED experience for women. Ways to improve SE-related comfort-level include training and provision of resources.

Conclusions: Most physicians are comfortable performing speculum exams in Regina EDs. There is a need to improve resources available for SEs, including a dedicated room, a well-

stocked gyne cart and a gyne bed. However, resource allocation must take into consideration the budget and other resource needs in the ED.

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Antepartum Vitamin D Levels as a Marker for Risk of Postpartum Depression: A Systematic Review of the Literature

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ABSTRACT

Background: Thirty-two percent of Canadians are Vitamin D insufficient. This figure is particularly high in those of childbearing age, and pregnant women tend to be relatively vitamin D insufficient during the first trimester. Low levels of vitamin D have been linked with higher levels of depression, and vitamin D supplementation may have a therapeutic effect on depressive symptoms.

Research Question(s): We sought to answer the hypothesis that low levels of vitamin D in women in the antepartum period are associated with postpartum depression, and in doing so to assess the value of vitamin D screening in pregnancy and the value of supplementing vitamin D to prevent postpartum depression.

Methods/Methodology: Systematic review of the literature yielded four cohort studies, of which three were fully published; two randomized controlled trials; and one case-control study.

Results: Of the six fully published papers, three gave statistically significant results in favour of a link between vitamin D deficiency in pregnancy and postpartum depression. Analysis of vitamin D supplementation was possible in two papers, both of which demonstrated a statistically significant reduction in postpartum depressive scores in patients who received supplements of at least 1,200 IU daily.

Discussion: Due to heterogeneity between the studies, a meta-analysis was not obtained. The studies were not representative of a typical cross-section of Canadian pregnant women in terms of demographics, but similar in terms of vitamin D exposure at baseline. Overall, the risk of bias in the studies was low.

Conclusions: The balance of evidence neither supports nor refutes the initial hypothesis. There is some evidence that supplementation of vitamin D is protective against later development of postpartum depression.

Recommendations: Further research is required to establish the presence and nature of the association between vitamin D deficiency and postpartum depression. Further experimental studies are required to reproduce the preventative effect of vitamin D supplementation in pregnancy.

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Incorporating Knowledge of the Human Biome into Primary Care Clinical Practice

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ABSTRACT

Background: Researchers continue to elucidate the complex ways in which the biome interacts with human physiology and are working on developing innovative therapeutic approaches to address disorders of the biome, a state sometimes referred to as dysbiosis. In the meantime, family physicians have an exciting opportunity to play a critical role in the prevention of diseases related to biome disruption and the promotion of health in patients with diseases associated with dysbiosis.

Research Question(s): Is there sufficient evidence to warrant the recommendation of therapies that support the biome to patients with a variety of medical conditions?

Methods/Methodology: This review was prepared by assessing medical and scientific literature from MEDLINE/PubMed, several books and government publications. References cited in identified publications were examined for additional relevant writings. Search techniques including keyword searches with terms related to: biome, microbiome, dysbiosis and virome.

Results: Identifying patients at risk of dysbiosis and appropriately counseling patients to employ lifestyle practices to support a great number and diversity of beneficial species could have a substantial and enduring effect on patient wellbeing.

Conclusions: A growing body of literature continues to support evidence highlighting the importance of the biome to human health in both disease prevention and management. Given the benign nature of most of these recommendations, it seems prudent for family physicians to incorporate them into their regular clinical care in appropriate patients.

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Improving Health Literacy: A Participatory Study with Settled Refugees in Regina

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ABSTRACT

Background: Canada welcomed 260,404 newcomers in 2014, 4% of which located to Saskatchewan. These newcomers may be subdivided into immigrant and refugee classes though both groups seem to struggle with health literacy upon arriving to Canada. Using a participatory approach, we hoped to identify tools that will aid in facilitating health literacy to these newcomers.

Research Question(s): What is the health related experience of immigrants in Regina in terms of challenges and barriers faced in accessing health care, and how can that be improved? What are the tools we can provide to facilitate their health literacy?

Methods/Methodology: Using a mixed methods approach, a survey was conducted; as well as, interviews with a sample of the immigrants and refugees accessing services at the Regina Immigrant Women's Center (RIWC). These interviews were transcribed and an inductive analysis was done.

Results: Over two days, 26 participants were interviewed. The average age of participants was 38 years old and ranged from 23-67 years and most were female (84.6%, 22/26). Twenty-three of the participants were married (88.5%) and 21 had children (80.8%). Only 12 of the participants felt comfortable visiting a doctor alone (46.2%) and the remaining 14 felt that they needed someone to accompany them (53.8%). Seven themes evolved from the qualitative analysis. The themes were: health literacy; access to health information; access to health care; language barrier; cost; support; and, solutions to the language barrier.

Discussion: The participants felt that they had sufficient health literacy to maintain health since moving to Canada. Though there were barriers in moving, they have found solutions to each. They would appreciate having a tutorial on specifics to health care in Canada and participants would find it useful to have this teaching early on.

Conclusions: Though the obvious barrier to access was language, another key factor was differences between Canadian health care and health care in their home countries.

Recommendations: Information should be shared about the tools accessible to newcomers including libraries, buses, internet, phone apps and English language instructors.

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Characterizing how Institutionalized and Community-Dwelling Elderly Patients use Emergency Department Services in Regina, Saskatchewan

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ABSTRACT

Background: Elderly patients, particularly those in long term care (LTC), are a growing proportion of patients who present to the Emergency Department (ED) and are often medically complex. Recently there have been local initiatives aimed at improving patient flow and care in the EDs of Saskatchewan. The existing literature has shown that there is no standardized approach to best manage these patients. Given the paucity of local data in this demographic, we sought to investigate ED use for both LTC and community dwelling (CD) seniors.

Research Question(s): How do patients older than 65 years old who reside in LTC facilities use ED services compared to a similar population in Regina, Saskatchewan?

Methods/Methodology: A retrospective chart review of two groups, those 65 years or older who reside in any of the Regina Qu'Appelle Health Region run LTC facilities and those who fit the same age criteria but live in the community, with approximately one hundred patients each. A variety of different demographic, clinical and administrative parameters were collected.

Results: Statistically significant differences between groups were noted for patient age, repeat visits to the ED, and use of EMS. The mean age was found to be 82.6 for the LTC population and 77.3 for the CD group ($p < 0.001$). There were 27 repeat visits amongst the same group of patients in the LTC group, compared to 6 from the CD patients ($p < 0.001$). In the LTC population, 75 patients required transport from Emergency Medical Services (EMS) compared to 41 from the control group ($p < 0.001$).

Discussion: Differences between LTC and CD populations were identified. While the discrepancy in age is non-modifiable, representation to the ED and EMS usage are areas where interventions may be applied. Improving on-site care at LTC facilities through more progressive EMS management of acute issues and more accessible multidisciplinary teams for chronic concerns has the potential to reduce the effect on both issues. In turn, this has the potential to improve ED patient flow and provide better patient centered care. Initiatives to start these interventions and measure outcomes may be the next step.

Conclusions: Elderly populations of LTC and CD origins were studied, with significant differences noted in their use of the ED. Areas for intervention were identified that have the potential to improve ED flow and patient care.

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Community Mail Boxes: A New Falls Risk?

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ABSTRACT

Background: Falls and injuries are a major source of morbidity in Canada. In 2010 in Saskatchewan, falls accounted for 52% of hospitalizations due to injury, with 25% of these resulting in death. The 2013 decision by Canada Post to end door-to-door mail delivery in favour of community mailboxes (CMB) could transfer the risk of falls to the population especially the elderly. To date, there have been no studies focusing on falls related to mail retrieval from CMB, although there are speculations about this potential impact of the CMB. This study seeks to estimate the incidence of falls associated with the CMB among patients in Moose Jaw, SK.

Research Question(s):

1. What number of falls by Moose Jaw residents requiring hospital assessment were related to mail retrieval during the winter?
2. What other factors were associated with falls among individuals whose injuries occurred during mail retrieval during the winter?

Methods/Methodology: This retrospective chart review will collect data on all patients presenting to the Dr F.H. Wigmore Regional Hospital via Moose Jaw EMS after a fall between November 2016 and March 2017. Data collection will include age, sex, location and circumstances of the fall, type of injury and clinical outcome. Data analysis has yet to be defined.

Results: Given that the study has to be changed, at the time of this submission, ethical approval was pending.

Discussion: Numerous Canadians have echoed their displeasure over the widespread introduction of CMB. This study aimed to explore the relationship between CMBs and falls in Moose Jaw. It was initially designed as cross-sectional study but had low response rate to the survey with only one individual responding to the online survey. It was expected reviewing hospital and EMS data would provide significant details that would answer the research question. Hence, the study was redesigned as a retrospective chart review.

Conclusions: Results from this study could contribute to the discussion on the risk of falls.

Recommendations: Completion of the study when ethical approval has been received.

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Emergency Physicians as Human Billboards for Injury Prevention: A Randomized Controlled Trial

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ABSTRACT

Background: Injuries are a leading cause of morbidity and mortality seen in Emergency Departments (ED). In Saskatchewan, there were on average 75 bicycling injury hospitalizations among people aged 12 and up during the years 2006-2011 inclusive. Wearing a bicycle helmet is a simple, affordable injury prevention action that can be taken by any cyclist. Injury prevention counselling and health promotion are important components of the health care system, and the ED has an important role to play in these activities. The objective of this study was to evaluate the impact of a novel ED intervention designed to prompt patients to initiate an injury prevention discussion with the emergency physician (EP).

Research Question(s): Did patients exposed to the intervention initiate an injury prevention discussion? Was bicycle helmet use increased among patients?

Methods/Methodology: A repeated measures 2x3 randomized controlled trial (RCT) design was used. Fourteen EPs were observed for two shifts each between June and August of 2013. Each pair of shifts was randomized to either an injury prevention shift, during which the EP would wear a customized scrub top, or a control shift. The outcomes were physician time spent discussing injury prevention, current helmet use, and self-reported change in helmet use rates at one year. Logistic regression analyses were used to examine the impact of the intervention.

Results: The average time spent on injury prevention for all patients was 3.3 seconds. For those patients who received counselling, the average time spent was 17.0 seconds. The scrub top intervention did not significantly change helmet use rates at one year. It had no significant impact on patient decisions to change or reinforce helmet use.

Discussion: We assessed our intervention on almost all patients seen by each EP. It is possible that this intervention would have shown greater effect had we targeted the teachable moment and only analyzed patients who were presenting to the ED with a trauma or bicycle-related issue.

Conclusion: This study showed that the intervention did not increase physician injury prevention counselling or self-reported bicycle helmet use rates among patients. Given the limitations, replication and extension of the intervention is warranted.

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