

Research Showcase 2009: Putting RQHR Research on the Map

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I. Preliminary Results of the RQHR Bariatric Surgical Pilot Program

Jillian Wilmot, University of Regina, Dr. Regan Shercliffe, University of Regina, Ali Bell, R& PS, RQHR, Dr. G. Kaban, RQHR

Introduction: Success following Bariatric surgery is generally defined as: weight loss, resolution of comorbidities associated with obesity, and improved quality of life. There is a paucity of research on the effect of bariatric pre-surgical programs on post-surgical outcome, however, it is generally recognized that having a pre-surgical program is consistent with best practices as long term success following bariatric surgery is dependent in part on maintaining positive lifestyle changes. The purpose of the present study was to examine outcomes of patients who have completed a 6-month pre-surgical program, and compare the post surgical outcomes of these patients to those participating in other bariatric surgical programs using the Bariatric Analysis and Reporting Outcome System (BAROS).

Methods: The Regina Qu'Appelle Health Region (RQHR) piloted a 15 month Bariatric Surgical Program for 125 patients (the program concludes in June 2009), which includes a 6-month multidisciplinary-based pre-surgical program (Psychologist, Nutritionist, Physiotherapist and Exercise Therapist). The pre-surgical program provides thorough assessment and follow-up prior to bariatric surgery in order to identify and treat possible barriers to success, and to assist patients with making lifestyle changes in order to increase the likelihood of sustained weight loss and improved health outcomes post surgery.

Results: To date, 70 patients have completed the pre-surgical program. Preliminary outcome data suggests that these patients show a significant decrease in scores on measures assessing depression, increase in physical activity and a mean presurgical weight loss of 8.26 kilograms (SD = 8.46). Twenty percent of patients declined surgery upon completion of the 6-month program after achieving significant weight loss through the pre-surgical program.

Conclusion: To date, 22 patients have undergone surgery and preliminary post-surgery data suggests improved quality of life in a number of areas associated with physical and mental well-being. All patients report being satisfied with the outcome of their surgery thus far. Further analyses on post outcome measures such as the BAROS tool – a measure of % desired weight loss, surgical outcomes, comorbidities and quality of life is planned. Measures of food tolerance and mental well-being will also be examined as part of the post-surgical evaluation.

Potential Significance: A strategic objective of the RQHR Surgical Care Services is to increase patient access to surgical services. This project is a major step to meeting that objective by providing patients, general practitioners and bariatric surgeons with a documented set of patient criteria leading up to surgery. Furthermore, the provision of a multi disciplinary clinic where patient assessments can be performed provides valuable information with regards to improving the success rates of bariatric surgery by increasing our understanding of the physical and mental challenges associated with successful weight loss and maintenance, pre and post bariatric surgery.

2. The Challenge of Simultaneous Bilateral Knee Arthroplasty: A Pilot Study

William Silver MD, FRCSC, Associate Professor of Surgery, University of Saskatchewan, James Fraser MD, FRCSC

Introduction: Simultaneous bilateral knee arthroplasty is cost effective and appropriate for selected patients. The demand for this treatment is an expression of the severe disability caused by bilateral knee osteoarthritis or by polyarthritis as in rheumatoid arthritis. This pilot study is a review of our experience in the Regina Qu'Appelle Health Region.

Methods: Hospital charts were reviewed of all patients who had simultaneous knee arthroplasties over the past several years (48) and also those having staged bilateral arthroplasties (25). All patients were sent a questionnaire, most of those not responding were interviewed by telephone. The opinion of experienced care givers was obtained using a questionnaire.

Results: This small pilot study provided evidence to support some of the findings of large conclusive studies in the literature, and some of the recognized principles of knee replacement surgery. We present evidence for, but not conclusive proof of the following statements: Simultaneous surgeries are as successful as staged surgeries in our District, require less time for delivery of care, and are more popular. There is no formal provision for optimal timing for staged operations, as an alternative to simultaneous operations. Despite their complaints of severe pain and disability after simultaneous surgeries, patients do not regret their choice of either simultaneous or staged operations. The difficult challenge for patients and staff after simultaneous surgeries is the extreme pain and disability immediately after surgery. More education is required to allow patients to make an informed decision for

or against simultaneous surgeries. There is inadequate provision for the longer rehabilitative care which is desirable after simultaneous bilateral knee arthroplasties.

Conclusion: Public demand for simultaneous bilateral knee arthroplasties is established. The needs of these patients are greater than patients having unilateral surgery. Provision for these patients' special needs in education and care, both before and after surgery, is recommended. How this is best accomplished is yet to be established.

Potential Significance: Public expectations for replacement arthroplasty are growing, increasing the demands on staff and facilities. Improvement of the service available to these patients will be an improvement in quality of care and will likely reduce costs to our system.

Funding or other acknowledgement: Thanks to Medical Records, Regina Qu'Appelle Health Region, and to the patients and staff who participated.

References: Campbell's Operative Orthopaedics, Eleventh Edition, Volume I, Page 258, 2008.

3. Triple Therapy for Wet Age Related Macular Degeneration

Dr. Raúl García: co-author, David Ehmann, 3rd year medical student U of S

Introduction: Age-related macular degeneration (AMD) is the leading cause of irreversible blindness in the western world in people over 50. AMD is a multicomponent disease involving neovascular growth, vascular leakage, and inflammation. As a result, a rationale exists for investigating combination treatments to target the different pathological processes involved in AMD. This retrospective chart review serves to demonstrate the effectiveness of triple therapy consisting of verteporfin photodynamic therapy (PDT), intravitreal dexamethasone (IVD), and intravitreal bevacizumab (Avastin).

Methods: Thirty-two eyes of 30 patients with choroidal neovascularization (CNV) secondary to AMD were treated with triple-therapy consisting of one or more cycles of: 1) reduced-fluence PDT 2) intravitreal Dexamethasone 800 µg (0.08 ml); and, 3) intravitreal bevacizumab 1.25 mg (0.05 ml) one and six weeks later. The patients were treated between December 2006 and September 2007. Minimum follow-up was 12 months.

Results: Mean age was 81 years ± 6. CNV was 90% subfoveal and 10% juxtafoveal. The CNVs were: 56% occult, 34% predominately classic, and 10% minimally classic. Twenty-two eyes (69%) had 1 cycle of treatment, eight (25%) had 2 cycles of treatment, one (3%) had 3 cycles of treatment, and one (3%) had 4 cycles of treatment. The mean cycle treatments were 1.4 in 12 months. The mean number of bevacizumab injections was 2.8 per patient, with a range of between 2 and 8 injections in 12 months. The mean baseline greater linear diameter (GLD) was 3,093 µm ± 1,436 µm. Mean baseline visual acuity was 0.74±0.33 logMAR (20/100) and mean vision on final follow-up was 0.53±0.32 logMAR (20/70) (P<0.005). The baseline foveal thickness (FT) by OCT was 328±116 µm and the final FT was 216±85 µm (P<0.001). In this group of patients, 94% of the eyes lost <3 lines, 62% gained vision, 31% gain >3 lines and 6% lost more than 3 lines.

Conclusion: These results demonstrate the effectiveness of triple therapy for treatment of wet AMD.

Potential Significance: By combining agents with complementary mechanisms of action, triple therapy could maintain visual acuity and macular anatomy while allowing a reduction in the number of anti-VEGF (vascular endothelial growth factor) injections required.

4. Analysis of the Improvement in Pain: Function and Quality of Life in Patients with Failed Back Surgery Syndrome (FBSS) Following Spinal Cord Stimulation (SCS) and Conventional Medical Management (CMM)

Kumar K¹, Eldabe S³, Buchser E⁴, Taylor RS⁵

¹ Department of Neurosurgery, Regina General Hospital ²Centre for Health Economics, University of York, York, United Kingdom, ³Department of Pain & Anaesthesia, James Cook University Hospital, Middlesbrough, UK, ⁴ Pain Clinic, Morges Hospital, Morges, Switzerland, ⁵Peninsula Medical School, University of Exeter, UK

Background and aims: Patients with FBSS experience pain, disability and reduced health-related quality of life (HRQoL) despite successful spine surgery. This analysis evaluates changes in dimensions of HRQoL, function and pain for patients receiving SCS plus CMM or CMM alone.

Methods: RCT of 100 patients with persistent neuropathic pain, predominantly in the legs. Back and leg pain relief, change in dimensions of HRQoL (Short-Form 36 [SF-36], EuroQoL-5D [EQ-5D]) and function (Oswestry Disability Index [ODI]) from baseline to 6 months and 24 months was evaluated.

Results: 48% of the SCS-group experienced $\geq 50\%$ leg pain relief at 6 months (vs 9% in CMM-group). 38% of SCS-group achieved $\geq 50\%$ back pain relief at 6-months (vs 15% in CMM-group). In the SCS-group, 34% (vs 59% in the CMM-group) experienced worsening of back pain. No pattern in daily pain over the 4 day assessment period could be identified.

At 6-months, all dimensions of the EQ-5D, SF-36 and ODI improved with SCS compared with CMM. Main SCS effects were seen in the pain (EQ-5D, SF-36 and ODI), social life (ODI) and anxiety (EQ-5D) dimensions. On the EQ-5D, compared with baseline, the proportion of patients with no self-care problems increased from 41% to 67% and those with no anxiety increased from 24% to 48% at 24 months. On the ODI, the main areas where pain prevented activity were sex life (12%) and lifting (7%).

Conclusions: FBSS patients receiving SCS experienced improvement in leg pain relief, short- and long-term function and HRQoL compared with CMM alone. While SCS provided greater back pain relief for many patients than CMM alone, some patients in both groups experienced worsening back pain.

5. Injectable Silicone Implants for Augmenting the Fat Pad on the Bottom of the Foot

Axel Rohrmann, Clinical Head Podiatrist, Dale Young, Program Manager, Brendalynn Ens, Michelle Clark, Jessie Cunningham (CADTH)

Introduction: To determine the clinical effectiveness of injectable silicone implants for augmentation of the fat pad on the bottom of the foot. Plantar foot ulcer recurrence is a well documented complication for the adult patients presenting with abnormally high plantar foot pressure, and a challenge to all podiatrists and related health care workers. The potential value of this relatively new and innovative intervention is improvement in ambulation and a significant reduction in complications associated with common medical conditions including diabetes or arthritic deformities.

Methods: A limited literature search was conducted by CADTH through their Health technology inquiry service to identify international evidence on this invasive intervention. The HTIS service is a free literature search service provided to health care decision-makers and clinicians to support changes in practice or purchasing decisions. The evidence review was conducted by a PhD researcher in consultation with the local evidence requestor to ensure an accurate and focused search. Though no literature for health technology assessment reports, systematic reviews, and meta-analyses and controlled clinical trials were identified, randomized control trials and observational clinical trials have been identified and reviewed.

Results: Due to the relative newness of the technology being searched, only two randomized trials were found. No relevant health technology assessments, systematic reviews, meta-analysis, controlled clinical trials and two observational studies regarding the clinical, economic evaluations, or evidence-based guidelines were identified from the literature search results for the cost-effectiveness of the injectable silicone implants for augmentation of the fat pad on the bottom of the foot were identified. Evidence located suggested favorable short and long-term health outcomes, from injectable silicone implantation.

Conclusion: Newer technologies in fat pad augmentation implants are becoming readily available for the treatment of patients with pathologically high pressure areas to the feet.

The evidence, while limited at this time, suggests significant clinical potential and value for patients with few other options to manage these chronic conditions. The evidence has indicated the need for further controlled clinical trials and opportunities to move forward with evaluation of the latest fat pad augmentation technology. The podiatry program aims to participate in a controlled clinical trial for the efficacy of injectable silicone to reduce plantar foot pressures and reduce ulceration and re-ulceration rates.

Potential Significance: Improved treatment outcomes for at risk patients.

Funding or other acknowledgement: No Funding has been obtained at this point of the investigation. The Health Technology Inquiry Service (HTIS)

6. Practice Patterns in Cataract Surgery of Canadian Ophthalmological Society (COS) Members

Dr. Lindsay Ong-Tone, Department of Surgery; Ali Bell, Research and Performance Support; Yin-Yin Tan, Research and Performance Support

Introduction: Establishing trends in cataract surgery techniques in Canada provides valuable information with regards to the practice styles and preferences of practicing ophthalmologists. Annual surveys have been conducted of members of the American Society of Cataract and Refractive Surgery (ASCRS), and of the European Society of Cataract and Refractive Surgeons (ESCRS). To date, Canadian ophthalmologists have not been surveyed with respect to their practice styles or preferences for cataract surgery. The objective of this study was, therefore, to identify the practice patterns associated with performing cataract surgery in Canada.

Methods: A short 25 item multiple choice questionnaire was adapted from that used by Leaming (1984). Face validity and clinical relevancy to Canadian ophthalmologists was determined by independent review. The questionnaire covered distinct areas of practice: surgical volumes and profiles; anaesthetic techniques; cataract-surgery- phaco techniques; antibiotic/ anti-inflammatory use and intraocular lens use. The office of the Canadian Ophthalmological Society (COS) sent a copy of the questionnaire to all their current members with a valid e-mail address (N = 777). Respondents were asked to either e-mail or fax their completed survey to a private fax and password protected email address.

Results: Approximately 161 COS members returned questionnaires for a response rate of 21%, comparable to ASCRS surveys. Around 19% of respondents were retired or no longer performed cataract surgery. Preliminary analysis indicated that most surgeons (44%) perform between 25 and 49 surgeries a month, phacoemulsification being the procedure used exclusively. More detailed analysis comparing trends across the country surgical technique and pre/ post procedures is planned.

Conclusion: Cataract surgery techniques vary across the country. Establishing baseline information about those techniques affords us the opportunity to examine those trends nationally, internationally, and over time.

Potential Significance: Extending this survey to COS members provides important baseline information with regards to the current state of cataract surgery in Canada. The use of electronic survey collection tools will be considered for future rounds of this survey to potentially improve response rates.

References: Leaming, D. (1984)

7. Respiratory Outreach – The RQHR Home Ventilator Assistance Program

Mark Herzog, BAdmin, RRT, Community Respiratory Outreach Program; Sheryl O'Quinn, Respiratory Services

Project Description: In February 2008 the Regina Qu'Appelle Health Region (RQHR) identified a need to:

- provide improved community based respiratory services to ventilated clients living at home; and,
- develop a formal training program to support the educational needs of their caregivers.

A one-year pilot project was initiated to employ a Community Respiratory Care Consultant who would develop and implement a home ventilator program to address the above needs.

Objective: The project objective was to design and implement a support program for long term ventilated clients residing in the RQHR, in long term care facilities and in the community. This program was to provide routine clinical respiratory therapy services to home ventilator clients, and make available a formal ventilator training program for their caregivers (family members, home care staff).

Summary of Service: The RQHR has developed and implemented a program called the "Home Ventilator Assistance Program". The HVAP provides home respiratory care services (RRT home visits), caregiver training, and a 24 hour per day on-call service to long-term mechanically ventilated clients residing in the RQHR. The central philosophy of the HVAP is to empower home ventilator clients (and their caregivers) with the skills and abilities needed to care for themselves as independently as possible within the community.

Routine services typically required by these clients include respiratory assessments, tracheostomy tube changes, ventilator monitoring, supply replenishment, and regular ventilator maintenance/service exchanges. In addition, a Home Ventilator Management Training Course has been developed to address the educational needs of those who provide care to ventilated clients outside of the hospital setting.

Program Evaluation: A *Home Ventilator Management Course – Participant Evaluation* survey is being used such that participants/caregivers can provide feedback regarding HVAP training. To date, caregiver feedback has been positive and they are finding the training program useful.

Next Steps: The next phase of program evaluation will be the introduction of a *Home Ventilator Assistance Program – Client Satisfaction Survey*. Clients will be mailed a client satisfaction survey, such that the program can gain better client/family perspective on the services currently being provided.

8. Botulinum Toxin A Intradetrusor Injections for Non-neurogenic Urinary Urge Incontinence

Dr. Corrine F. I. Jabs, Section Head Gynecology; Jenifer Rodenbush, Research and Performance Support

Introduction: Non-neurogenic urinary urge incontinence (UUI) is a common quality of life disorder that becomes more prevalent with age. It is defined as urinary incontinence accompanied by a strong urge to void that cannot be deferred. The incontinence is due to muscle spasms in the bladder. Standard treatment for UUI includes behavior modification, pelvic floor exercises, anticholinergic medication, and less commonly, sacral neuromodulation. Unfortunately, anticholinergic therapy is only moderately effective and causes bothersome side effects, particularly at higher doses.

Botulinum toxin A (BTA or Botox®) injected into the detrusor muscle may be a useful treatment in patients that do not respond to standard therapy.^{1,2,3} Botulinum toxin A has been used in other studies to improve symptoms related to spastic skeletal muscle and various autonomically innervated organs^{4,5}.

Purpose and Objectives: The primary purpose of this study was to determine the efficacy of BTA in the treatment of non-neurogenic UUI. Primary outcome measures between BTA and the placebo include: 1) a 50 ml difference in maximum cystometric capacity 2) subjective benefit assessment of the treatment's efficacy (dry/complete response, partial response or failure.) 3) disease specific validated quality of life scores 4) voiding diary data and 5) 24 hour pad tests. Secondary objectives are to examine the tolerability and side effects associated with BTA treatment including complications related to voiding dysfunction and urinary tract infection.

Methods: This study employed a 12 month, double-blinded, randomized, cross-over design. In the first 6 months of the study, subjects were randomized to receive either detrusor injection of BTA or a placebo injection. Patients and investigators and unblinded at six months and subjects in the control group are offered the detrusor injection of BTA. All subjects were followed for a total of one year. 36 subjects are required to show a 50ml difference in maximum cystometric capacity based on a power calculation. 21 subjects have been enrolled to date.

Results: The results of the first 6 months of the first 14 enrolled patients will be presented.

Conclusion: Current anticholinergic therapy for non neurogenic UUI has limitations. In addition to significant systemic side effects, studies have shown that only 50% of patients improve with anticholinergic therapy, and continence is not always achieved. Detrusor injection of BTA is a technically easy and minimally invasive treatment that may be a safe and efficacious therapy for patients who have failed standard therapy with anticholinergic medication, resulting in an improved quality of life.

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9. Management of Ectopic Pregnancy: Can Improved Processes Improve Outcome?

Dr. Corrine F. I. Jabs, Section Head Gynecology; Jenifer Rodenbush, Research and Performance Support

Objective: To determine if the establishment of an early pregnancy clinic and the development of clinical pathways for the management of early pregnancy complications (e.g., ectopic pregnancy and threatened abortion) contribute to the reduction of ectopic pregnancy-related morbidity.

Materials and methods: A retrospective chart review of ectopic pregnancies presenting to Regina Qu'Appelle Health Region from July 1, 2006 to June 30, 2007 will be compared to a one year cohort of women presenting with ectopic pregnancy after establishment of an early pregnancy clinic and development of preprinted orders for management of ectopic pregnancy. An educational session for department members will be used to give feedback on current management based on the initial chart review. Data compared will include time from presentation to diagnosis, time from diagnosis to therapy, incidence of blood transfusion and tubal rupture.

Results: Results of the initial chart review are available. The preprinted orders for medical and surgical management of ectopic pregnancy are available in the emergency room at Regina General Hospital (RGH) and on the gynecology ward. The Early Pregnancy Clinic in the Women's Health Centre has been piloted but is not currently funded. The Regina Qu'Appelle Health Region (RQHR) managed 52 cases of ectopic pregnancy during the time of the initial audit. Medical methotrexate management occurred in 22 and surgical management occurred in 30 cases. Diagnosis occurred at the first visit in 48%, time to diagnosis was 1 day or less in 65.4%. Treatment occurred within 24 hours from the time from diagnosis in 96.2%. Optimal initial labwork prior to methotrexate treatment occurred in 73% of patients. Transfusion was required in 10% of surgically managed patients and 9% of methotrexate treatment patients. Tubal rupture occurred in 63% of patients managed surgically and 23% of patients with initial methotrexate management.

Conclusions: Results of the initial audit of management of ectopic pregnancy have identified significant areas of potential improvement where changes in processes may have a positive impact on patient outcome.

10. The Association of Body Mass Index with Airway Obstruction in Non-Asthmatics: Implications for the Inaccurate Differential Diagnosis of Asthma in Obesity

Andrew J. West MAppSc, RRT^{1,2}, Debbie Burton PhD³, Ali Bell MSc²

1. School of Medical Rehabilitation, Faculty of Medicine, University of Manitoba, Winnipeg, Manitoba
2. Research and Performance Support, Regina Qu'Appelle Health Region
3. School of Biomedical Sciences, Charles Sturt University, New South Wales, Australia

Introduction: An association between obesity and asthma has been reported, with disparity between males and females in this association that is not fully explained. Studies investigating the association typically have not identified asthma using accepted objective diagnostic methods. This may lead to the inaccurate diagnosis and management of asthma in those with obesity. This study investigated the association, including gender differences, between obesity and airway obstruction in non-asthmatics identified by spirometry.

Methods: The study reviewed the pulmonary function test results of 919 non-asthmatic subjects referred by physicians to a pulmonary function laboratory in Regina, Saskatchewan. Asthma status was determined by objective evaluation of these tests based on Canadian Thoracic Society diagnostic recommendations. Statistical analyses were employed to determine the association between measurements of pulmonary function and body mass index ranges.

Results: Significant differences in the pulmonary function values, measured as a percentage of predicted, existed between body mass index ranges including FVC ($p < 0.001$), FEV_1/FVC ($p < 0.001$), and $FEF_{50\%}$ ($p < 0.02$). Gender differences were evident in FVC, FEV_1 , FEV_1/FVC , $FEF_{25\%}$, and $FEF_{50\%}$ (all $p < 0.001$). When age and smoking were controlled for, gender differences remained in the pattern of the effect of body mass index on FVC. FVC was progressively compromised for females as body mass index increased above normal range ($\geq 25 \text{ kg/m}^2$), and was diminished in males with a $BMI \geq 30 \text{ kg/m}^2$.

Conclusion: Clear association was not found between indices of airway obstruction and increasing BMI in this non-asthmatic group. The study findings suggest a pulmonary function profile in obesity, representative of pulmonary restriction, that is specific to non-asthmatics and unique to each gender. The effects of BMI on FVC may be experienced at lower BMI in females than in males.

Potential Significance: These results offer rationale for underlying mechanisms that may be responsible for the different symptomatic patterns identified between the genders in obesity. Increases in asthma-like respiratory symptoms could cloud the differential diagnosis of asthma in overweight and obese females, and in obese males.

Funding or other acknowledgement: Financial assistance for this research was received from the Dolly Fleming Endowment Fund.

11. The Successful Use of I.V Sodium Thiosulphate in Calcific Uremic Arteriopathy in two Patients on Hemodialysis

Bonnie Geall, BSP Bruce Lang, BSP and Dr Bhanu Prasad, FRCPC. Section of Nephrology, Regina General Hospital

Introduction: Calciphylaxis or calcific uremic arteriopathy (CUA) is a disabling and life-threatening complication that predominantly affects endstage renal disease patients. This disease entity is clinically characterized initially by livedo reticularis, violaceous painful plaque-like nodules in the dermis and subcutaneous fat followed by non-healing ulcers and death usually secondary to sepsis. The current treatment options available, like parathyroidectomy, have not been consistently effective and may leave the patients with disabling morbidity.

We present two patients on hemodialysis with multiple large ulcers bilaterally in their legs which was associated with severe debilitating pain necessitating opioid use. Biopsies of the lesions were taken to confirm CUA. Both patients were treated with the relatively novel therapy i.v. sodium thiosulphate (STS). STS is a calcium chelating agent with anti-oxidant properties that has recently been reported to successfully treat CUA under calcium-restricted conditions. We chose to use STS under normal calcium-containing hemodialysis bath to further explore the application of this therapy for CUA.

Methods: 1 male and 1 female patient aged 62 and 72 respectively were initiated on i.v. STS at a dose of 25grams three times/wk. The drug was administered for a 45 minute period at the end of each dialysis session. The frequency of dialysis was left at three times/week. Normal calcium bath (2.5mmol/l) was maintained during dialysis and all calcium-containing medications plus vitamin D analogues were discontinued. Calcium, phosphorus, parathormone and bicarbonate levels were monitored on a bi-weekly basis.

Results: STS led to a remarkable visible improvement in ulcers and subjective pain improvement after one month and near complete resolution after three months. There was complete disappearance of ulcers after eight months of treatment. There were no expected adverse side effects and serum calcium and phosphorus levels remained unchanged. However, detectable increases were identified in both anion gap metabolic acidosis and PTH levels. PTH levels almost tripled in one patient leading to initiation of Cinacalcet to control this parameter.

Conclusions: The two CUA-presenting patients were successfully treated with STS concurrent with discontinuation of all calcium-containing medications and Vitamin D analogues while maintaining normal calcium bath during hemodialysis. The duration of therapy with STS for complete resolution was 8 months based on a three/week dosing regime (25 gms/week). Its mechanism of action remains unclear but recent reports indicate calcium thiosulphate being more soluble in aqueous solution than other calcium salts plus its role as an anti-oxidant. These reliable results further suggest STS to be an effective and safe therapy for CUA, a condition with near universal mortality.

12. Evaluating the Accuracy of the Temporal Artery Thermometer in Ambulance Usage

Brenda Fry,¹ Ashlee Mulligan², Cory Brossart¹

¹ EMS Professional Practice Committee, RQHR; ² Research and Performance Support, RQHR

Introduction: Emergency Medical Services (EMS) paramedics in the Regina Qu'Appelle Health Region (RQHR) are required to take patient temperatures in-ambulance but this does not always occur as consistently as it should. Currently RQHR paramedics utilize digital thermometry; however due to time constraints and patient comfort, it has been suggested that another measurement device may be better suited to the ambulatory environment. A potential system is the Exergen® Temporal Artery Thermometer (TAT; Exergen Corporation, Watertown, MA). EMS staff believe that the TAT's fast, non-intrusive means of obtaining a temperature would increase the occurrence of temperature assessment.

Background: The accuracy of the TAT has been questioned in studies comparing it to rectal, bladder, and pulmonary artery catheter devices.¹ Research-to-date cite patient sex,² ambient air,^{1,3} patient diagnosis,⁴ age,^{2,5,6} presence of perspiration,^{2,3,4,5} antipyretic drug use or treatment^{6,7}, and vassopressor use¹ as factors that may influence the accuracy of the TAT.

Purpose: The purpose of this study was to compare TAT readings to the digital device currently employed in RQHR ambulances using a large sample and controlling for factors that may affect temperature reading including additional variables body mass index and weather. We predicted that the Exergen© TAT would have similar temperature readings ($\pm 1.0^{\circ}\text{C}$) as the digital device currently being used in RQHR ambulances.

Methods: Temperatures were recorded from a total of 548 patients who were transported by a Regina EMS ambulance during a three-week period in October (mean outdoor temperature: 7.2°C ; SD 6.7), and 319 patients during a three week period in February (mean outdoor temperature: -14.3°C ; SD 6.9). The resulting data were analyzed with a series ANOVAs and t-tests.

Results: The TAT and the digital thermometry system currently in-use in RQHR ambulances have a statistically significant difference in temperature measurement, with the TAT approximately one-degree Celsius higher. The mean TAT reading was 36.7°C (SD = .93) and the mean for the digital system was 35.7°C (SD = 1.12). With the exception of weather and age, no relationships were found to be statistically significant. An independent-samples t-test revealed a significant difference in weather when there was an error reading on the TAT ($M = -15.18$, $SD = 7.86$) and when there was no error reading on the TAT ($M = -.097$, $SD = 12.25$); $t(826) = -6.68 = p = .00$ (two-tailed).

Conclusions: The TAT can be expected to read at approximately one-degree Celsius higher than the current digital device and should be monitored in weather conditions below freezing.

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13. Eliminating Waitlist Priorities by Reducing Backlog: The Sleep Disorders Centre Clinical Practice Redesign Experience

Leanna Florek CHIM, Kathy Cash CHIM, Dr. G. Sridhar, Medical Director, RQHR, Sleep Disorders Centre

Introduction: The Sleep Disorders Centre (SDC) was introduced to Clinical Practice Redesign through the Health Quality Council in April 2008. Through the use of measurement tools we have analysed our access, efficiency and flow of our department. The goal of this Quality Improvement project was ultimately to eliminate our waitlist priority system by reducing our backlog for initial access to the SDC.

Approaches:

- Measured our supply, demand and backlog.
- Increased supply.
- Reshaped demand.
- Streamlined clinic processes.
- Reduced no show and rescheduling rates.
- Conducted a no show and patient satisfaction survey.

- Calculated resource utilization requirements for clinic processes.

Results:

- Increased procedure minutes by approximately 3000 minutes per month.
- Decreased clinic delay by 122 days for non urgent referrals for initial consultation.
- Reshaped demand by reducing unwanted appointments which resulted in a 50.8% increase in the number of new patients being seen.
- Decreased our no show rate by approximately 42%.

Conclusion: Through the principles of Clinical Practice Redesign, the Sleep Disorders Centre has been successful in reducing our waitlist delay for initial access by approximately 56% as of January 2009. With the benefits we have experienced, we will continue to analyse and implement these principles and share our successes.

Some key concepts that have contributed to our successes are:

- Measure and monitor supply, demand and delay on a regular basis. With supply variability, advanced schedule planning is important to assist in maintaining gains.
- Be positive and realize that changes are not going to work 100% of the time and learn from changes that do not work.
- Share successes and accomplishments with your team.
- Obtain feedback from patients and co-workers through communication, questionnaires and surveys.
- Free up resources by streamlining processes.
- Less delay equals less no shows and rescheduling.
- Strive towards the concept of working smarter, not harder.

Acknowledgements: I would like to thank Val Davies, Executive Director, Specialty Care, Regina Qu'Appelle Health Region for her approval and funding to participate in the Clinical Practice Redesign initiative. I am also grateful to Sheryl O'Quinn, Manager, Respiratory Services, Denise Mackey, Supervisor, and all the staff of the Sleep Disorders Centre for their ideas, expertise and support.

14. Spinal Angiolipoma – A Case Report

Arbind Dubey, Asst Professor Department of Radiation Oncology, Allan Blair Cancer Center
Rashmi Koul, Asst Professor Department of Radiation Oncology, Allan Blair Cancer Center

Introduction: Spinal angiolipomas are rare benign tumors composed of mature lipocytes admixed with abnormal blood vessels. Spinal angiolipomas approximately accounts for 0.14 % to 1.2 % of all spinal axis tumors, about 2-3% of extradural spinal tumors. Extradural tumors usually predominate. It commonly presents with pain at local site, spastic or peripheral paraparesis of the lower extremities, paraesthesia and impaired sensitivity of the cord or root type.

Methods: A rare case of spinal angiolipoma in a 58 -year-old healthy male patient who presented with chronic epigastric pain for 3 years and then sudden onset of acute myelopathy. MRI confirmed a space occupying lesion identified at thoracic 7, 8 and 9 vertebrae levels. It was posterior in location with spindle shape measuring 6.5 cm in length. A laminectomy was performed with gross total resection of the mass. Pathology was consistent with angiolipoma.

Results: In post operative period his neurological symptoms improved dramatically. No adjuvant radiation was given. Follow-up scan at one year did not show any tumor.

Conclusion: MRI is the investigation of choice. The main stay of treatment is complete surgical extirpation. Radiation is not necessary even if patient has residual tumor as prognosis is excellent.

Potential Significance: Radiation is not necessary even if patient has residual tumor as prognosis is good regardless

15. A rare case series of Gliosarcoma

Rashmi Koul Astd Prof, University of Saskatchewan, Staff Radiation Oncologist, Allan Blair Cancer Center; P. Tai Associate Prof, University of Saskatchewan, Staff Radiation Oncologist, Allan Blair Cancer Center; M. Salim Associate Prof, University of Saskatchewan, Staff Medical Oncologist, Allan Blair Cancer Center; Arbind Dubey Astd Prof, University of Saskatchewan, Staff Radiation Oncologist, Allan Blair Cancer Center

Introduction: Gliosarcomas (GSa) are rare biphasic neoplasms of the central nervous system mainly composed of glial tissue admixed with sarcomatous component. There are varied reports regarding their aggressiveness and clinical behavior in the literature.

Methods: Five patients with histological diagnosis of gliosarcoma registered in Saskatchewan Cancer registry from 1980 till 2006 were retrospectively studied to understand their clinical presentation, pathology and radiology.

Results: Median survival was 10 months. Three gliosarcoma patients were male, two female, with a median age of 56 years (range 25-67 years). The median tumor size was 5.5 cm (range 3-8 cm). The locations were supratentorial and located in the temporal lobe. All patients underwent tumor resection followed by postoperative radiation therapy.

Conclusion: With regards to clinical features, pattern of recurrence and survival gliosarcomas and glioblastoma multiforme cannot be distinguished so the principles of treatment remain same.

Potential Significance: More patients of Gliosarcomas should be included in clinical trials to understand their clinical outcome which will help in tailoring their treatment.

16. Radio Chemotherapy in the Organ Preservation Treatment of Anal Carcinomas –A Regional Center Retrospective Analysis

1 Rashmi Koul, Astd Prof, University of Saskatchewan, Staff Radiation Oncologist, Allan Blair Cancer Center; 2 S. Mahmood, Astd Prof, University of Saskatchewan, Staff Radiation Oncologist, Allan Blair Cancer Center; 3 M. Salim Associate Prof, University of Saskatchewan, Staff Medical Oncologist, Allan Blair Cancer Center; 4 H. Chalchal, Astd Prof, University of Saskatchewan, Staff Medical Oncologist, Allan Blair Cancer Center; 5 Arbind Dubey, Astd Prof, University of Saskatchewan, Staff Radiation Oncologist, Allan Blair Cancer Center

Introduction: Anal cancer is a distinct entity from the more common colorectal neoplasms. The etiology, risk factors, clinical progression, staging, and treatment are all different. Local control and sphincter preservation are the two challenges of anal canal cancer treatment

Methods: Population based historical cohort with confirmed histological diagnosis of anal canal or anal margin cancer treated with organ preservation approach such as chemo radiation from 1985- 2006 registered in Saskatchewan registry and treated in Saskatchewan Cancer Agency were evaluated. We evaluated 152 patients who had diagnosis of anal carcinoma. However 102 patients were ineligible as they did not receive organ preservation radio chemotherapy. Fifty seven patients had abdominal perineal resection, 6 patients had palliative radiation, 6 patients had local excision requiring no adjuvant treatment, 10 patients had best supportive care, 3 patients had cesium implant, 15 patients had radical radiation alone and 5 patients had chemotherapy alone. At the end only 50 patients received radiation with chemotherapy with organ preservation approach. Primary end points were colostomy free survival, disease free survival and overall survival. The influence of tumor stage by AJCC, nodal stage, age, radiation dose, interruption during treatment on primary end points were also evaluated.

Results: Median age was 58 years (range 31-79 years). Thirty patients (60%) were under 60 yrs of age and 20 (40%) were above the age of 60 years. Mean follow up was 4.2 years (range 8-21 years). Twenty three (46% died during follow up. Overall 5 years survival was 53%, 5 year disease free survival was 67%, 5 year colostomy free survival was 83%. Stage at presentation was the only risk factor which showed statistically significant influence on disease free survival and overall survival.

Conclusion: Combined radio chemotherapy for anal cancer is effective therapy. Advanced stage at presentation has adverse effect on overall and disease free survival. However new chemotherapeutic drugs and IMRT (intensity modulated radiation) based radiation should be thoroughly investigated

Potential Significance: This approach can effectively achieve good local control and preserve organ thereby maintain good quality of life.

17. Nodal Ratios in Node Positive Breast Cancer – a Long-Term Study to Clarify the Discrepancy of the Role of Supraclavicular and Axillary Regional Radiation Therapy

Patricia Tai, M.B., FRCPC*, Kurian Joseph, M.B., FRCPC‡, Evgeny Sadikov, M.B.*, Shazia Mahmood, M.B.*, Francis Lien*, Edward Yu, Ph.D., M.D., FRCPC[¶].

*Dept. of Oncology, Allan Blair Cancer Center, University of Saskatchewan; ‡Dept. of Oncology, Cross Cancer Center, University of Alberta; [¶]Radiation Oncology Program, London Regional Cancer Center, University of Western Ontario.

Introduction: To study nodal ratio (NR: absolute number of involved nodes/ number of nodes examined) in breast cancer. The primary study endpoint is to evaluate the role of supraclavicular and axillary radiotherapy (SART) according to nodal ratio.

Methods: From the Saskatchewan provincial registry of 1981-1995, charts of 5996 consecutive patients were retrieved to collect detailed prognostic factors. Among them, 1985 were node-positive. Since NR are more reliable with more number of nodes examined, we analyzed 1255 patients with ≥ 10 nodes examined; 667, 389 and 199 patients were categorized into three NR groups: low ($\leq 25\%$), medium ($> 25\%$ to $\leq 75\%$) and high ($> 75\%$) nodal involvement, respectively.

Results: NR significantly correlated with primary tumor size [≤ 2 cm, > 2 to ≤ 5 cm, > 5 cm] ($p=2.2 \times 10^{-16}$), clinical stage group ($p=5.5 \times 10^{-16}$), pathological stage group ($p < 2.2 \times 10^{-16}$) and chance of any first recurrence ($p=5.0 \times 10^{-15}$) by chi-square tests.

For low nodal ratio, ten-year overall survival (OS) with and without SART were 57% and 58% ($p=0.18$); and cause-specific survival (CSS) were 68% and 71% ($p=0.32$), respectively. For medium nodal ratio, ten-year OS with and without SART were 48% and 34% ($p=0.007$); and CSS were 57% and 43% ($p=0.002$), respectively. For high nodal ratio, ten-year OS with and without SART were 19% and 10% ($p=0.005$); and CSS were 26% and 14% ($p=0.005$), respectively.

Conclusions: This is the first study demonstrating that for patients with ≥ 10 nodes examined, SART significantly improves survival for median and high nodal ratio groups, but not for low nodal ratio group.

18. Prognostic Significance of number of Positive Nodes: A Long-Term Study of 1-2 Nodes Versus 3 Nodes in Breast Cancer Patients

Patricia Tai, M.B., FRCPC*, Edward Yu, Ph.D., M.D., FRCPC[¶], Kurian Joseph, M.B., FRCPC‡.

*Dept. of Oncology, Allan Blair Cancer Center, University of Saskatchewan; [¶]Radiation Oncology Program, London Regional Cancer Center, University of Western Ontario; ‡Dept. of Oncology, Cross Cancer Center, University of Alberta

Introduction: Previous reports in breast cancer have generally analyzed patients with 1-3 positive lymph nodes as a single group often leading to controversy in practical clinical applicability. This study separately analyzed the survival outcomes among T1-2 breast cancer patients based on whether 1, 2 or 3 axillary nodes were pathologically positive.

Methods: Records of 5,996 patients were available for analysis from the population-based Saskatchewan provincial registry for the period from 1981 through 1995. Since the reliability of nodal assessment depends on the number of nodes sampled, only those 755 patients staged as T1-2, with ≥ 8 nodes examined were further analyzed for overall (OS) and cause-specific survival (CSS).

Results: Patients with 1 and 2 positive nodes had nearly indistinguishable survival plots but the 3 positive nodes had a distinct trend towards worse survival. The OS of patients with 1, 2 and 3 nodes at 5-years were 82.7%, 77.0%, 79.0%; at 10-years: 64.8%, 60.9%, 52.8%; at 15-years: 48.8%, 48.0%, 40.9% ($P=0.11$). CSS rates at 5-years were 89.4%, 82.0%, 81.3%; at 10-years: 78.87%, 72.9%, 62.1%; at 15-years: 72.7%, 69.0%, 55.6% ($P=0.0004$). Utilization of regional radiotherapy did not confer any apparent survival benefit in terms of either OS or CSS.

Conclusion: Patients with 1 or 2 positive nodes have a similar CSS. However, those with 3 positive nodes fared worse with a significantly reduced CSS than those with 1 or 2 involved nodes. Hence survival data among patients with 1-3 nodes positive reveals clearly relevant differences when separately analyzed.

Potential Significance: This study challenges the controversies of different results of randomized studies on role of radiotherapy among patients with 1-3 involved axillary nodes¹. Patients with 1 or 2 positive nodes have a similar cancer-specific survival. However, those with 3 positive nodes fared worse with a significantly reduced cancer-

specific survival than those with 1 or 2 involved nodes. Hence survival data among patients with 1-3 nodes positive reveals clearly relevant differences when separately analyzed. Differing treatment results reported previously for this group of subjects with 1-3 involved nodes in the literature might be due to the inclusive analysis of differing proportions of patients having 3 involved nodes with significantly worse outcomes.

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19. Prophylactic Cranial Irradiation (PCI): Cost Effectiveness and Quality of Life in Small Cell Lung Cancer

T.H. Patricia Tai, M.B.¹, Edward Yu, PhD, M.D.², Peter Dickof, M.Sc.³, Glen Beck, Ph.D.⁴, Jon Tonita, M.Sc.⁵, Tete Ago, M.B.¹, David Skarsgard, M.D.⁶, Marlene Schmidt, C.H.⁵, Matthew Schmid, M.Sc.³, John S.K. Liem, M.D.¹
¹Dept. of Radiation Oncology, ³Dept. of Physics, ⁵Dept. of Epidemiology, Allan Blair Cancer Center; ²Dept. Of Radiation Oncology, London Regional Cancer Center; ⁴Dept. of Economics, University of Saskatchewan; ⁶Dept. Of Radiation Oncology, Tom Baker Cancer Center

Introduction: To investigate the therapeutic usefulness and cost-effectiveness of prophylactic cranial irradiation (PCI) in patients with limited stage small cell lung cancer (SCLC) who have achieved a complete remission (CR).

Methods: A retrospective chart review was undertaken of all patients diagnosed in Saskatchewan with SCLC between 1987 and 1998 inclusive. Patients who achieved a CR were divided into two groups depending on whether they had PCI (PCI + and PCI – respectively). The quality-of-life adjusted survival was estimated by the Q-TWiST method (quality time without symptoms and toxicity). The mean incremental costs per month of incremental overall survival (OS) were calculated in a cost-effectiveness analysis.

Results: Among the 98 CR patients, the median OS for PCI+ and PCI- patients was 20.0 and 19.0 months, respectively ($p > 0.05$, non-significant). The median disease-free survival was 14.7 and 10.0 months, respectively ($p < 0.05$). The difference in mean Q-TWiST survival was significant ($p < 0.01$). The mean marginal cost was \$18,834 per PCI+ patient and \$17,885 per PCI- patient ($p > 0.05$, non-significant). The cost-effectiveness ratio was \$70 per month of incremental OS if u_{tox} and u_{rel} were assumed to be 1.0.

Conclusion: PCI is a cost-effective treatment that improves quality-adjusted survival.

Potential Significance: This study puts into perspective the cost-effectiveness of prophylactic cranial irradiation and the survival benefit in a population database (Saskatchewan Cancer Registry). Despite prospective studies and metaanalysis showed a survival benefit, prospective studies may have potential bias of enrolling consenting patients with defined age range and performance status. Validation in a population database is more pragmatic.

Funding or other acknowledgement: Research grant from Saskatchewan Cancer Agency.

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20. Medication use in Long Term Care: An Examination of Medication Related Outcomes as Influenced by Different Pharmacy Care Models

Amy Wiebe, RQHR – RGH, Dr. Wm. Semchuk, Don Kuntz, Andrea Brewer, Murray Wolfe

Background: The Regina Qu'Appelle Health Region (RQHR) includes one long-term care (LTC) facility and ten regionally affiliated LTC facilities, each serviced by various types of pharmacy care models. There are no guidelines in the literature as to which model is the most effective. The purpose of this study was to compare medication-related outcomes as influenced by different models of pharmacy services provided to residents in long-term care.

Objectives: The objectives of this study were to: (i) Compare the mean number of medications per patient, differentiating between total, scheduled, written orders for “as needed” (PRN) medications and consumed PRN medications (ii) Compare the mean number of potentially inappropriate medications per patient, using the modified Beers List (iii) Assess the appropriateness of use for atypical antipsychotics and compare the percentage of inappropriate prescriptions for each facility (iv) Compare the existence of clinical chart documentation, as well as the estimated percent of patient care conferences with pharmacist attendance and contribution.

Methods: The study design utilized a retrospective audit and comparison of information gathered from questionnaires, the Minimum Data Set (MDS) database and a chart review for 59 patients who were ≥65 years of age and living in a long-term care facility. Pharmacy model A was a facility serviced by hospital pharmacists within the health region, model B contracted their services out to a community pharmacy which physically existed within the same facility and model C involved a facility which contracted their pharmacy services out to a community pharmacy which was off site.

Results: Model C had more mean total and scheduled medications than model B. Model B had fewer Beers List medications than both models A and C. In total, 72% of patients on Beers List medications were counted as such due to PRN dimenhydrinate. When excluding PRN dimenhydrinate, the overall use of Beers List medications was low, with 17% of patients receiving at least one. Atypical antipsychotics were used in 40% of cases, with more in model B (52%) than in the others. Antipsychotic use was deemed inappropriate in 87% of cases, where 60% of those were within model B. Pharmacist documentation was noted in 20% of cases, 75% of which were found within model A. All questionnaire respondents stated that pharmacists were present and making recommendations at >50% of patient care conferences.

Conclusions: Given the observational design, inferences made about the differences between the models is speculative, however some notable trends may be considered. Those patients with the highest cognitive performance scales and with the lowest nighttime nursing were the most likely to receive inappropriate antipsychotic prescribing. Lack of documentation was the main reason for inappropriate antipsychotic use, indicating that improvement in documentation may allow for safer and more appropriate medication use. Use of scheduled medications from the Beers List has declined since the Saskatchewan Health Quality Council's audit in 2004, suggesting that they were successful in promoting awareness of potentially inappropriate medication prescribing and lowering use in the elderly. Future research should evaluate the requirements set out by the Saskatchewan College of Pharmacists Standards of Practice to determine if functions described there are routinely being performed by pharmacists in long-term care.

21. Prevention of Iatrogenic Risk through Achievement of System Wide VTE Prophylaxis

RQHR Department of Pharmacy Practice: William Semchuk, MSc, PharmD, FCSHP; Carolyn Bubbar, BSP, PharmD; Lynette Kolodziejak, BSP, MSc; Susan Poulin, BScPharm, FCSHP

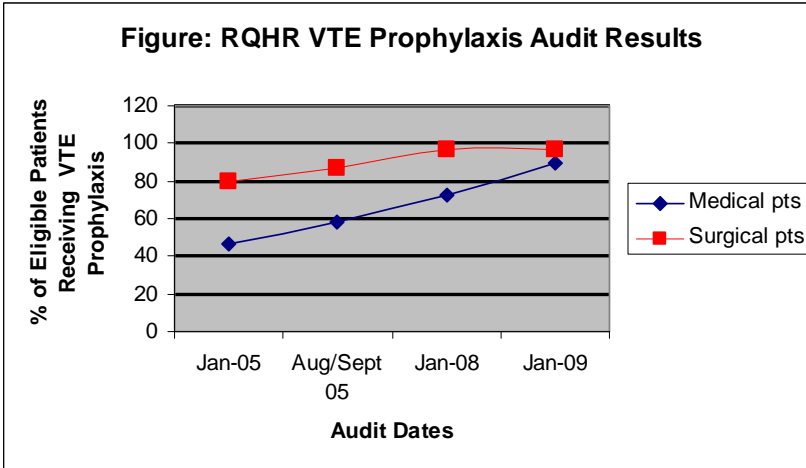
Introduction: The majority of hospitalized patients have numerous risk factors for the development of venous thromboembolism (VTE). Numerous clinical trials have demonstrated the efficacy of both nonpharmacologic and pharmacologic approaches to reducing VTE in hospitalized patients. Despite this, these strategies are often underused. In 2001, the American Agency for Healthcare Research and Quality highlighted the need for VTE prophylaxis in hospitalized patients and identified VTE prophylaxis as the number one preventative strategy to improve patient safety. In 2002, both the Pasqua Hospital and the Regina General Hospital were included in a Canadian audit of VTE prophylaxis in medical patient which demonstrated rates of less than 20%. Subsequently we began a process of improving VTE prophylaxis in our patients.

Methods: Strategies employed in improving VTE prophylaxis within the RQHR included:

- formation of a steering committee comprised of physicians, nurses and pharmacists

- development of preprinted order sets
- educational campaign directed at healthcare providers, patients and visitors
- series of PDSA cycles aimed at improving VTE prophylaxis rates
- series of annual one day audits of VTE prophylaxis within the RQHR

Results: Audits from 2005 to 2009 demonstrated a significant 43% increase in VTE prophylaxis in medical patients and 18% increase in surgical patients over the past four years.



Conclusion: The process utilized within the RQHR to improve VTE rates has been successful as greater than 90% of our inpatients are currently receiving therapies as indicated in current guidelines.

Potential Significance: These results are significant as the RQHR has achieved higher rates of prophylaxis than any published data. As VTE is a leading cause of iatrogenic illness, our patients enjoy higher levels of safety than prior to this implementation.

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22. Pharmacy Critical Care Pilot Project: The Addition of a Pharmacist in Emergency Department

Casey Phillips, B.Sc.Pharm., Clinical Pharmacy Services, RQHR; J. Dufton Lewis, M.A., Research & Performance Support, RQHR; Wm. Semchuk, M.Sc., Pharm.D., FCSHP, Clinical Pharmacy Services, RQHR

Introduction: Medication errors have been identified as a significant and often under-recognized cause of adverse outcomes in hospital patients. Providing emergency departments with an Emergency Pharmacist has been shown to improve medical care and knowledge transfer.¹ The purpose of this project was to validate the proposed role of an Emergency Pharmacist in the Emergency Department at the Regina General Hospital.

Methods: From June to December 2008, an Emergency Pharmacist (EPH) was added to the day shift at the Regina General Hospital to provide and participate in direct patient care services. Some of the roles of the EPH included medication consultation to patients and staff; provide seamless care; and to prevent, detect, manage and monitor adverse drug reactions. All clinical activities by the EPH were recorded and transferred to a database for analysis.

Results: During the 24-week pilot study, 761 patients and 1216 medication orders were reviewed by the EPH. A total of 821 (67.5%) drug related problems (DRPs) were identified, with *Lack of Therapy* (i.e., needing pharmacotherapy but not receiving it) being the most common (N= 325, 40.6%). Of the DRP cases with known outcomes (N=677), 97% of the EPH's recommended actions to address DRPs were accepted and implemented. Further analysis will explore the severity of the DRPs identified to examine the level of impact EPH intervention had on patient safety and well-being.

A staff satisfaction survey was distributed to Emergency staff after 15-weeks. The majority (97%) of the respondents (N=37) were satisfied of the EPH program. Eighty-seven percent of respondents believed that the EPH augmented the quality of care in the Emergency Department, 78% believed that the presence of the EPH reduced the likelihood of Adverse Drug Events, and 97% believed that the EPH was an integral part of the Emergency Department team.

Conclusion: The addition of an Emergency Pharmacist (EPH) to the Emergency Department (ED) staff was a positive experience. The EPH identified several drug related problems, and the majority of his suggestions were accepted by Emergency Doctors. When asked, Emergency staff were overwhelmingly satisfied with the addition of the EPH, they utilised him, and described the position as an integral part of the ED team.

Potential Significance: The success of the pilot study provides support for the addition of the EPH position to the ED team. It is believed that this position would augment patient safety and outcomes and improve workflow in the ED.

Funding or other acknowledgement: We would also like to acknowledge the other members of the Pharmacy Critical Care Pilot Project Steering Committee: Mr. Murray Wolfe, Mr. Glen Perchie, Dr. Francis Bowen, and Ms. Lois VanDervelden.

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23. Interventions in a Medical Teaching Unit: Effect of a Pharmacist Attending Rounds Versus Reactive Patient Care Efforts (INTERVENE)

Zack Dumont, BSP, Pharmacy Resident, RQHR Dept of Pharmacy Practice; Lynette Kolodziejak, BSP, MSc. Pharm – Pharmacy Development Specialist, RQHR; Nicole Bidwell, BSP, ACPR – Pharmacy Clinical Practice Group Leader, RQHR; Alex Martinson, BSP, ACPR – Staff Pharmacist, RQHR

Introduction: Several studies have shown that pharmacist participation on rounds may be associated with decreased medication errors, adverse drug events, and drug costs (1-11). The objectives of this study on a medical teaching unit (MTU) at the Regina General Hospital (RGH) were to determine the number, type, time taken to perform, and acceptance rate of interventions on MTU patient-care rounds; to compare the types of pharmacist interventions to what has been shown in the literature to have a positive impact on patient-care; and to compare interventions between a control phase and a study phase. We hypothesized that by attending rounds pharmacists could more effectively perform beneficial interventions.

Methods: During the control phase pharmacists provided standard service to the MTU and did not attend patient-care rounds. During the study phase, pharmacists prepared for and participated on daily MTU rounds in addition to providing standard services. Pharmacists recorded information about each intervention performed on

MTU patients for a total of four weeks; 2 weeks per phase. Interventions were categorized according to criteria previously identified in the literature to be of benefit to patients. Time taken to perform an intervention included the pharmacist's preparation in addition to the wait time for physician acceptance or rejection.

Results: Pharmacists performed 80 interventions while participating on MTU rounds, 90% of which were accepted. Of the interventions identified in the literature to be of benefit the most commonly recorded were "recommending alternative therapy" (44 interventions, 82% accepted), "clarifying/correcting an order" (20 interventions, 100% accepted), and "providing drug information" (6 interventions, 100% accepted). On average, the time required per intervention was 12.4 minutes. In comparison, during the control phase, pharmacists performed 18 interventions, 81% were accepted, requiring a mean of 177.2 minutes per intervention.

Conclusion: Proactive pharmacist participation on MTU patient-care rounds resulted in a larger number of beneficial interventions than reactive pharmacy patient-care. Furthermore, these interventions were performed in a shorter amount of time.

Potential Significance: Participation on rounds is not a required activity for RQHR pharmacists. This study suggests that participating in rounds results in more effective pharmacist patient-care and may result in further study and re-evaluation of the pharmacist's priorities.

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24. The Essence of Advanced Practice Nursing

Dr. Glenn Donnelly, RN, Associate Professor, & Acting Associate Dean, Regina Site & International Student Affairs, College of Nursing, University of Saskatchewan

Introduction: The purpose of this research is to gain a deeper understanding of the clinical expertise exhibited through the lived experience of advanced practice nurses that develops as a result of integration of advanced theoretical concepts, added elements of practice from other disciplines and clinical practice into a nursing framework.

Methods: A hermeneutic phenomenological method was used to gain a deeper understanding of how advanced practice nurses practice nursing.

Results: Three themes characterize advanced nursing practice. APNs are leaders developing nursing practice by providing clinical leadership. Nursing values and perspectives ground advanced practice nursing and research utilization is a distinguishing characteristic of APN nursing.

Conclusion: Advanced Practice Nurses provide leadership in developing Nursing practice through their strong commitment to nursing values and perspective and their commitment to evidence based practice.

Potential Significance: Providing clarity and deeper understanding of advanced practice nursing

Funding or other acknowledgement: University of Regina Graduate Studies Scholarship
Saskatchewan Nurses Foundation.

25. Leading the Way: Using Audits to Influence Practice

Robin Evans, RN, PhD, Academic Professional Liaison, RQHR, College of Nursing, University of Saskatchewan;
Sharon Huber, RN, BEd, Perinatal Education Program, RQHR; Rae Lindsay, RN, Labour & Birth unit, RQHR;
Shirley Martin, RN, BScN, Mother Baby unit, RQHR; Gail Rosseker, RN, Labour & Birth and Fetal Assessment unit, RQHR

In 2002, the obstetrical services in the RQHR became a pilot site in the Managing Obstetrical Risk Efficiently (MORE^{OB}) program. Regular audits are an important part of this program and an audit committee was formed that has been responsible for the process. The committee was particularly interested in audits and results that would influence practice within the Labour & Birth and Mother Baby units.

While the MORE^{OB} program provided some audits, many created challenges to busy practitioners; they were complex and covered a number of concepts. This required a significant completion time for the practitioner and created challenges to analysis. Simplification of the audit process would encourage participation, be more directly practice based, and provide results that could be used to change or validate current practices.

A number of audits have been completed including management of labour, induction of labour, postpartum hemorrhage, dystocia, and newborn temperature. Results of the newborn temperature audit indicated that temperatures were being monitored more consistently with the guidelines than had been thought. However, because there were some incidents where this was not the case, a policy was developed for monitoring infant temperature in the first two hours after birth. The management of labour audit indicated that women were being admitted to the Labour & Birth unit when admission may not be appropriate. As a result, a triage area was set up to assess and manage the care of these women to avoid unnecessary admissions. In addition, a new patient teaching sheet was developed on Early Labour to ensure consistent, appropriate information was given on discharge.

The audits have been found to be helpful in validating or changing practice. The committee is now attempting to have potential audits identified and conducted by other staff members in an effort to increase participation and increase and diversify the pool of individuals directly involved. Members of the audit committee act as mentors and resources to these individuals.

26. Breastfeeding Rates During the First Six Months in Regina Qu'Appelle Health Region

Loreli Wright, Nursing Student (NEPS), College of Nursing, University of Saskatchewan; Laveena Tratch, RN, BA, BSN, Masters Student, College of Nursing, University of Saskatchewan; Marie Dietrich Leurer, RN, PhD, College of Nursing, University of Saskatchewan

Introduction: Previous research to determine breastfeeding rates in the RQHR was based on small sample sizes using data from the Canadian Community Health Survey. Research conducted using comprehensive, objective data collection methods would provide more in-depth information and reveal variations in breastfeeding practices within the health region.

Methods: A retrospective, descriptive study design was used to review individual public health records for one birth cohort (May 1, 2006 to April 30, 2007) across all the RQHR public health sites. Data regarding the extent of public health nursing contact, issues discussed with parents, timeliness of Child Health Clinic attendance and breastfeeding practices was extracted based on charting by public health nurses.

Results: In the RQHR, 83% of new mothers in this cohort initiated breastfeeding. By six months of age only 38-41% of these infants were still breastfed. Breastfeeding initiation and duration rates were slightly lower in the rural areas of the health region, and considerably lower in a low-income area of Regina.

Conclusion: RQHR breastfeeding initiation and duration rates continue to be lower than previously reported provincial and national rates. The majority of women who began breastfeeding had discontinued lactation before their infant was six months of age.

Potential Significance: Additional lactation supports have been shown to increase duration rates₁. Substantial healthcare cost savings from reduced lower respiratory tract and diarrheal hospitalizations could be realized if duration rates were improved₂. Program planning initiatives should consider the greater need for lactation support in low-income and rural areas of the health region.

Funding or other acknowledgement: Funding for this research was received from (1) The Nursing Research Endowment Fund, Hospitals of Regina Foundation, RQHR (2) University of Saskatchewan Vice-President Academic Research Start-up Fund

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27. Workplace Skills Initiative – New Skills for Nurses: A Partnership Approach to Professional Development

Gillian Oberndorfer – RQHR; Patricia LeBlanc – RQHR; Rosalee Longmoore – Saskatchewan Union of Nurses

Introduction: Recent data on the nursing workforce indicates that there will be increasing numbers of nurses exiting the workforce. Unions, government and employers are looking for innovative ways to solve the nursing shortages. The Workplace Skills Initiative (WSI) – *New Skills for Nurses: A Partnership Approach to Professional Development* is one.

The WSI project is a collaborative between the Regina Qu'Appelle Health Region, the Saskatchewan Union of Nurses and the Canadian Federation of Nurses Unions. There were partners from the Saskatchewan Ministry of Health and the Saskatchewan Registered Nurses Association.

Methods: The project took place from March 2007 to December 2008 and involved 20 new graduate nurses and 20 experienced registered nurses. The graduate nurses (protégés) were placed in supernumerary positions and partnered with experienced nurses (mentors) on several nursing units in the RQHR. The protégés worked in supernumerary positions for a period of 4 months, after which time they were expected to have found full-time employment. Mentors worked their scheduled shifts and were provided with professional development hours.

Results: Six months following the last intake of new graduate nurses, there were 19 of the 20 still employed in the RQHR. Fourteen of the nineteen remained employed on the originating unit.

Conclusion: The project evaluations indicated that this experience was an effective recruitment tool. There were challenges for mentors accessing the professional development time. Overall, the project is considered a success.

Potential Significance: As part of the commitment to the WSI Project, RQHR developed a web-based mentoring tool suitable for clinical nurses in rural and urban settings. It will allow the users to enter into and maintain their mentoring relationship. It offers a variety of tools to help the mentoring process. A user profile will be established for the mentor and protégé. A matching algorithm has been established to allow the match of mentor to protégé. This can occur in various ways. They can match themselves, they can have the computer match them, or they can have the Program Administrator (Regional Nursing Mentorship/Grad Nurse Job Program Manager) match them. Participants, who live in rural areas and are otherwise unable to attend a workshop, will be able to participate in a workshop on the Mentoring site. Other professional links will be available to provide quick access.

A current provincial nursing initiative modeled after the WSI Project in the RQHR is underway with funding until 2010. This initiative is available to all new nursing graduates.

Funding or other acknowledgement: Human Resources and Social Development Canada and Regina Qu'Appelle Health Region

28. Is Clostridium Difficile Colonization in Neonates as Benign as we Thought?

B. Deb¹, Z.Kalapesi,¹J.P.Bodani¹, N.Parvez¹, P.Subramanyam¹, Delpont²

(1) Division of Neonatology, Department of Pediatrics. Regina General Hospital, RQHR

(2) Department of pathology and Laboratory Medicine. Regina General Hospital, RQHR

Introduction: Historically Clostridium difficile is considered a harmless commensal in healthy newborns. It is estimated 25% to 70% of neonates are colonized with this organism. In the recent past, there is growing consensus of change in virulence of this organism especially amongst immunocompromised individuals.

Frequent use of broad spectrum antibiotics in neonates changes the gut ecology predisposing them to colonization with less friendly organisms.

Clinical manifestation is in the form of enteritis, pseudocolitis with bloody stools, intestinal perforation or life threatening necrotizing enterocolitis (NEC)

Objective: To determine the correlation of symptomatic enteritis with C.difficile cytotoxin.

Methods: This was a retrospective case review of all infants, term and preterm admitted to Neonatal intensive care Unit (NICU) of Regina General Hospital, Saskatchewan during the period April, 2002 to April, 2009 with symptomatic C.difficile enteritis.

Fecal samples were studied from patients with stools with fluid loss and or blood in the stool. PCR analysis was done for C.difficile cytotoxins. Other bacterial and viral etiology was investigated.

Results: 50 neonates with Gastrointestinal symptoms and C.difficile toxins were identified. All presented with abdominal distention, visible dilated bowel loops and feeding intolerance.

8 cases had NEC with or without Gastrointestinal perforation. One patient required extensive bowel resection resulting in short gut syndrome.

Patients were treated with Metronidazole for 10 days. Symptoms resolved among patients with enteritis.

Conclusions: Significant morbidity was noted among infants presented with Gastrointestinal symptoms and C.difficile cytotoxins. This is higher than previously identified. Further studies are recommended to identify the correlation between C.difficile toxin and NEC.

29. Effects of Energy Storage and Return Ankle Foot Orthoses on Gait in Individuals with Cerebral Palsy

Kyra Kane, BScPT RQHR Children's Program and University of Regina Faculty of Kinesiology and Health Studies; Tanya Priebe, BA, RQHR Orthotics Dept; John Barden, PhD, University of Regina Faculty of Kinesiology and Health Studies

Introduction: Energy Storage and Return ankle foot orthoses (ESR AFO) have been designed to promote a more energy efficient gait for individuals with movement impairments such as cerebral palsy (CP). Similar to a spring, this brace reportedly stores some of the energy that is generated as the body's weight moves forward over the foot during stepping. The intent is to release this energy at the end of the stance phase, thereby facilitating a more effective push-off.

The impact of ESR AFOs on walking mechanics has not been well-studied. Therefore, the purpose of this study was to examine the effects of ESR AFOs on gait kinematics in a group of participants with CP. We hypothesized that participants would demonstrate more typical gait kinematics when they wore the ESR AFOs.

Method: The study group consisted of 6 participants with CP, aged 7 to 20 years, who were referred for gait analysis following prescription of ESR AFOs. A three-dimensional optical tracking system was used to compare lower extremity kinematics associated with barefoot walking and ESR AFOs. Kinematics for an entire gait cycle were qualitatively assessed by comparing values between the gait conditions and normal kinematic curves.

Results: Compared to barefoot walking, ESR AFOs resulted in improved kinematics for at least one joint in all participants. In half of the limbs, dynamic ankle and knee range of motion and stance phase ankle dorsiflexion were improved, suggesting better control of ankle motion. Spatiotemporal parameters improved for 5 participants, with mean increases of 5% for gait velocity, and 6% for step length.

Conclusion: These preliminary results suggest that ESR AFOs can positively affect gait mechanics for a diverse group of participants with CP, with respect to improved gait velocity, step length, and dynamic ankle and knee motion. These changes appear to be consistent with the purported "spring-like" properties of the orthosis, which

in turn may be associated with improvements in terminal stance propulsion. Further research is needed to examine the impact on joint torques and power generation at push-off.

Potential significance: This information will assist doctors and clinicians in deciding whether to recommend ESR AFOs.

30. A Comparative Analysis of the Results of Vertebroplasty and Kyphoplasty in Osteoporotic Vertebral Compression Fractures

Rita Nguyen, Sharon Bishop, BNurs, MhlthSci.; Regina General Hospital

Objective: Our goal was to perform a prospective comparative evaluation of improvement in pain, functional disability, and quality of life following the treatment of osteoporotic vertebral compression fractures using kyphoplasty or vertebroplasty. To the best of our knowledge this is the first long-term study comparing these two treatment modalities using pain, functional disability, and quality of life as outcome measures.

Methods: The study population included 28 patients in the vertebroplasty group and 24 patients in the kyphoplasty group. There were 46 fractures treated by vertebroplasty and 39 fractures treated by kyphoplasty, with a mean follow-up period of 42.2 weeks in the vertebroplasty group and 42.3 weeks in the kyphoplasty group. Outcomes were measured pre- and post-operatively using the Visual Analogue Scale (VAS), the Oswestry Disability Index (ODI), the EuroQol 5-D (EQ-5D) questionnaire and the Short-Form 36 Health Survey (SF-36). A comparative analysis was then performed to compare the outcomes between the treatment options.

Results: In the vertebroplasty group, VAS scores improved from a mean of 8.0 to 5.5 at last follow-up ($p=0.001$). Pre-operatively the ODI was 57.6, which reduced to 38.4 post-operatively ($p=0.006$). The EQ-5D score pre-operatively was 0.157 and improved post-operatively to 0.504 ($p=0.001$). SF-36 showed greatest improvements in the areas of Physical Health, Role Physical, Body Pain, and Vitality. In the kyphoplasty group VAS scores improved from a mean of 7.5 pre-operatively to 2.5 post-operatively ($p=0.000001$). The mean ODI pre-operatively was 50.7 and post-operatively declined to 28.8 ($p=0.002$). The EQ-5D score improved from a mean of 0.234 pre-operatively to 0.749 post-operatively ($p=0.00004$). SF-36 showed greatest improvement in the areas of Physical Health, Physical Functioning, Role Physical, Body Pain, and Social Functioning.

Conclusion: Both vertebroplasty and kyphoplasty are effective at improving pain, functional disability and quality of life, however kyphoplasty provides better results, which are maintained over the long-term follow-up.

31. Spinal Cord Stimulation Wait Times

Rita Nguyen, Sharon Bishop, BNurs, MhlthSci.; Regina General Hospital

Introduction: We performed an analysis of the wait-times for patients experiencing chronic benign pain requiring a spinal cord stimulator. The current literature indicates that an average patient waits 5 years for their implant with the success rate of 48%. The longer the patient suffers with chronic pain the less likely they will return to work. There is no published Canadian research into wait-times for spinal cord stimulation and no benchmarks have been set.

Methods: A retrospective study of 171 spinal cord stimulation patients over a 29 year period was performed. Wait-times from initial referral to specialist and specialist to implant were studied. Other parameters evaluated: time required for further investigations; differences in wait-time depending on referral source; and duration of pain.

Results: The mean duration of pain symptoms was 5.6 years (1-40 years). Average time from initial referral to specialist appointment was 3.3 months (1 week – 1 year). From decision to treat to treatment, the mean wait-time was 4.0 months (1 week – 3 years). 46% of patients required further investigations before decision to treat. Time required to complete these investigations averaged 7.7 months. For patients not requiring further investigations, the average delay from initial referral to treatment is 7.6 months. In comparison, for patients requiring further investigations, the average delay being 15.4 months. Sub-analysis of our patients referred between 2004 – 2009 demonstrated an improvement in initial referral to treatment wait-time from 7.7 to 5.7 months with anticipated impact on success rate. Patients who were referred from anesthesia pain centers obtained specialist appointment in a shorter amount of time, required fewer further investigations, and obtained treatment in a shorter time.

Conclusion: As the efficacy of spinal cord stimulation is inversely proportional to the wait-time, it is proposed that patients awaiting spinal cord stimulation should be implanted within 4 – 6 months of initial referral.

32. WHO Surgical Safety Checklist: From Endorsement to Implementation: Saskatchewan's Perspective

Carla Ellis, CNE OR/RGH; Margaret Farley – CNE OR; Linda Socha, CNE Saskatoon City Hospital

Introduction: Implementation & Endorsement of the WHO Safe Surgery Saves Lives (SSSL) Perioperative Checklist in the province of SK for the 2 larger regions; similarities, differences, plans and progress

Methods: Success: Continuous Communication, Interdisciplinary teamwork, Powerful Data, The will to change & the support from theatre staff to Ministry of Health

Results: Multidisciplinary team plan to increase the safety & awareness the checklist for surgery within RQHR & SHR; as indicated in the research results from the 8 global trial site as published in the NEJM January 2009. the early data from the WHO work via the World Alliance

The CPSI was on the trial group via WHO ending in the creation of a WHO Checklist

Conclusion: It takes many strategies to affect change; mountains may be scaled with diligent groundwork to make it safely to the target!

Potential Significance: Reduced Surgical Site Infection in both regions; decreased adverse events; decreased surgical delays

References: WHO Safe Surgery Saves Lives Checklist initiative

33. Beneath the Surface of Surgical Site Infection Prevention: The Cardiac Surgery Program Embarks on a Journey to Uncover what Lies Beneath Surgical Site Infections

Susan Macknak, RN, QI Consultant, Sheila Anderson QI Consultant, Marg Farley RN, CPN(C), Brenda Zdunich RN, Cardiac Theatre, RQHR

The Regina Qu'Appelle Health Region (RQHR) Surgical Services and Quality Improvement Unit have embarked on a journey to uncover *what lies beneath* the prevention of surgical site infections (SSI). Embracing the *Safer Healthcare Now!* initiative, RQHR has discovered that communication, teamwork and data are the essential tools needed to impact both procedural and cultural change. By standardizing surgical practices, the team has made impressive improvements in the commitment to SSI prevention.

This presentation will address both superficial and deep barriers the project encountered and the methods used to expose workable sustainable solutions.

Our journey began in cardiac surgery, spreading to plastic surgery and neuro surgery: with the goal to reach all surgical specialties in 2 years. We will demonstrate how this project has helped our board, senior leaders, managers, physicians and front line workers to *look beneath the surface* to discover the layers of a successful patient safety initiative.

34. Evaluating Team Effectiveness in a Primary Health Care Team

Joyce Butler, Sharon Banning, Maggie Petrychyn, Primary Health Care, Regina Qu'Appelle Health Region (RQHR)

Introduction: Interprofessional (or interdisciplinary) service delivery is a key element distinguishing primary health care teams. A *Team Effectiveness Tool* has been developed to assist RQHR primary health care teams in periodically evaluating their interprofessional approach and progress in performing as an interdisciplinary team. The instrument provides an assessment of key elements of team functioning including team purpose and vision, roles, communication, service delivery, team support and partnerships.

Methods: Between January and March 2009, 3 RQHR primary health care teams completed the Team Effectiveness Tool survey. Team members independently rated the degree to which each component has been

implemented within their team using a scale ranging from 1 (*Just Started*) to 7 (*We're There*). Responses were combined and provided as overall team results for each individual team. Each team engaged in facilitated discussion to make meaning of the results and plan future directions; the team determined areas for focused attention and formulated an action plan.

Results: Results were provided to each team according to the mean, standard deviation and range for each of the key elements and individual components. As each team's results were unique, so too are the areas for focused attention and action plans.

Conclusion: As a result of this initiative each RQHR primary health care team has a measure of where the team is on the path to a high performing interprofessional team with opportunity to focus team development on specific identified areas. Over time completion of the Team Effectiveness Tool will strengthen the team by measuring its progress and providing members with practical guidance for future direction.

The information gathered will also be used in aggregate form as part of the evaluation of individual primary health care sites as well as broader evaluation of the RQHR primary health care agenda.

35. Stakeholders Analysis as an Innovative Methodology for Building Health Research Capacity in Saskatchewan

Beth Horsburgh, Jim Thornhill, Ben Daniel and Alana Ferguson

Introduction: In 2007 the University of Saskatchewan and Saskatoon Health Region, with modest support from the Saskatchewan Health Research Foundation, pooled resources to create the Office of the Associate Vice-President Research Health (AVPR-H), University of Saskatchewan/ Vice-President Research and Innovation (VPR&I), Saskatoon Health Region. The goal was to support excellence in health research and innovation and to identify and catalyze synergies across the two partner organisations and other health research jurisdictions.

Methods: In order to develop its business plan, the office undertook a broad-based consultative study with 150 stakeholders, through a series of interviews and focus group meetings.

Results: Though the main objective of the study was to gain insights to better develop the Office's business plan, other findings emerged:

- Additional ways to engage health researchers and to enhance provincial health research capacity;
- Understanding and managing divergent stakeholders' needs;
- Articulation of current systemic barriers to health research and innovation in Saskatchewan;
- Potential indicators for measuring the performance of health research and innovation in the province.

Conclusion: Health research and innovation is primarily conducted to discover and develop better methods, procedures and practices for maintaining and achieving a greater quality of life through improved health of people. The establishment of the office was seen instrumental to the enhancement of health research and utilization of its outcomes in Saskatchewan.

Potential Significance: This presentation highlights key findings from the study, emphasizing the methodology employed as an innovative approach to engaging health researchers and build health research capacity in Saskatchewan. The talk will also present current systemic barriers as well as challenges the Office is likely to face and the role of the office. Potential indicators for measuring the impact of health research will be discussed as well as possible.

Funding or other acknowledgement: We would like to thank the participants who took part in the study, along with the many other individuals and organizations who provided their support and assistance. This project was sponsored by the University of Saskatchewan, Saskatoon Health Region and Saskatchewan Health Research Foundation.

36. Examination of the Utility of Respite Services on Stress Reduction for Parents of Children with Attention Deficit/Hyperactivity Disorder

Tamara Ruzic¹, Kristi D. Wright, Ph.D.^{1,2*}, Shelley Stulberg² & Stephanie Kaiser¹

¹Department of Psychology, University of Regina; ²Child and Youth Services, Regina Qu'Appelle Health Region

Introduction: Attention-deficit/hyperactivity disorder (ADHD) is one of the most common childhood disorders, occurring in 3% to 7% of school aged children (Weyandt, 2007). Children with ADHD are prone to experiencing social problems that result in troubling peer relations. In addition, they have a more difficult relationship with their parents and siblings (Kendall, 1999). Consequently, parents of children with ADHD experience higher levels of stress than parents of typically developing children.

One intervention that may help relieve some of the stress that parents of children with mental health disorders experience is respite care. Specifically, one type of secondary respite that has been proven to be successful in reducing parental stress is community-based respite programs (Deater-Deckard, 2004).

The purposes of the present study were threefold: (1) to provide parents whose children have mental health disorders, specifically ADHD, with respite; (2) decrease observed psychopathology (e.g., ADHD symptoms) in the children; (3) provide children with mental health disorders with the skills and training necessary for them to effectively participate in structured prosocial activities. We hypothesized: (1) parental stress will decrease as a function of participation in the respite program; (2) levels of child psychopathology will decrease as a function of participation in the respite program.

Methods: *Participants:* Participants consisted of 8 males (mean age = 9.00 years, $SD = 1.77$) and 1 female (age 8.00 years). All had a clinical diagnosis of ADHD or ADHD comorbid with oppositional defiant disorder (ODD).

Measures

- ❖ Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983).
- ❖ Questionnaire on Resources and Stress – Friedrich Short Form (QRS-F; Friedrich, Greenberg, & Crnic, 1983).
- ❖ Child Behavior Checklist (CBCL; Achenbach, 2001).
- ❖ Client Satisfaction Survey (CSS; Larsen, Attkisson, Hargreaves & Nguyen, 1979)

Procedure: The children participated in a structured athletic activity (i.e., basketball) delivered over a twelve-week span. Children attended two sessions per week, each lasting approximately two hours. Every session was comprised of instruction of basketball skills, various games, and a nutrition break. Ehrlo Community Services delivered the program.

Parents completed measures of child psychopathology and parental stress at Time 1 (pre-group) and Time 2 (post-group). Parents also completed a measure of client satisfaction at Time 2.

Results: Dependent sample t-tests were computed to assess changes over time for both child psychopathology and parental stress.

No significant differences were observed across CBCL DSM-Oriented Scales from Time 1 to Time 2 (see Table 1). However, a slight decline was observed across almost all scales between Time 1 and Time 2.

Likewise for the parental stress component, results revealed no statistically significant changes across both the PSS and QRS from Time 1 to Time 2. A slight decline was observed in PSS scores from Time 1 to Time 2; however a slight increase was observed for the QRS.

Descriptive statistics were computed to examine parental satisfaction via completion of the CSS. Results of the CSS were very positive, with 100% of the parents stating they were either “mostly satisfied” or “very satisfied” with the program; 100% of parents indicated that they would recommend the group to other parents; 100% of parents indicated that would come back to the group if they were to seek help again; and 88% of parents indicated that they (parent and child) got the service they wanted.

Conclusion: Though the results of the current study were not statistically significant, many aspects of the study reveal that the proposed program was beneficial. There were visible decreases in parental stress and child behaviours from Time 1 to Time 2 as measured by the PSS and CBCL. It is important to note that behaviour change was not a primary concern of the project, rather respite for the parents was the focus.

A major limitation of the study was its small sample size. Our anticipated sample size was 30 children; however, only 13 children completed the program, and of those only 9 parents filled out the necessary measures. In the future, it may be beneficial to offer an incentive such as a monetary reimbursement in exchange for completion of the measures.

As the CSS results demonstrated, the program was considered helpful to parents, albeit not in reduction of parental stress. There are a number of changes and additions that can be made to the program in the future.

Some ideas include: a more comprehensive summer program, a greater amount of activities (e.g., arts and crafts), broadening inclusion criteria for the program, and concentrating more heavily on child behaviours.

37. Evaluation of an Adapted DBT Skills Group for Clients with Symptoms of Borderline Personality Disorder and Co-Morbid Anxiety and Depression

Regan Hart-Mitchell, PhD; Regina Qu'Appelle Health Region & University of Regina; Regan Shercliffe, PhD; University of Regina; John Brown, PhD; Regina Qu'Appelle Health Region

Introduction: There has been a growing body of research demonstrating the efficacy of adapted Dialectical Behaviour Therapy (DBT) Skills Groups in reducing symptoms associated with Borderline Personality Disorder (BPD) as well as comorbid psychopathology. The present research was an evaluation study of an adapted DBT Skills Group Program that was implemented as a "value-added" component to Treatment As Usual (TAU) within existing mental health services in the Regina Qu'Appelle Health Region.

Methods: The DBT Skills Group was implemented with a few minor adaptations to the skills as manualized, and provided a brief "orientation" to DBT Skills (8 weeks; 16 sessions). A total of N=34 women completed treatment. Group participants were administered measures of BPD symptoms, anxiety, and depression at pre- and post-group treatment, as well as at three months following treatment.

Results: During the treatment process, repeated measures ANOVA showed overall reductions in scores on measures of BPD, anxiety, and depression symptoms. At three-month follow-up, mean scores showed slight elevations in symptoms.

Conclusion: The results of this study provide support for the use of adapted DBT Skills Training Groups as a supplement to TAU. However, the finding that symptoms measured at three-month follow-up began to increase in magnitude likely suggests that longer-term Skills Training is required if treatment gains are to be maintained.

Potential Significance: The benefits of implementing adapted DBT treatment approaches will be discussed.

Funding or other acknowledgement: Health Quality Council Innovation Funding for first year of project.

38. Mental Health Care Utilization and Psychiatric Disorders in Childhood and Early Adolescence of Premature Babies Discharged from Neonatal Intensive Care

Marla Erdelyan, Health Information Management Practitioner, RQHR; Lee-Ann Carr, Health Information Analyst, RQHR; Susan Bobbitt, Medical Student, University of Saskatchewan; Konnie Falkenberg, RQHR

Introduction: *Hypothesis/Purpose:* Research has shown that children born preterm, especially those born very prematurely (before 28 weeks) are at higher risk for Attention Deficit Hyperactivity disorder in childhood and Depressive disorders in adolescence (e.g., Bhutto et al 2002; Watts & Saigal 2006). Most of the studies have been long term follow up studies of pre term infants conducted in academic settings. In terms of health care utilization, it has been shown that about 42% of those born at 24-28 weeks accessed special health-care services at 5 years, with two-thirds being cared for by psychologists or psychiatrists. Of those children born later (29-32 weeks), 31% needed special health care, with two-thirds receiving support from a psychologist or a psychiatrist at 5 years (Platt, 2008). The purpose of the study therefore is to investigate if similar trends are observed locally, i.e, in Regina Qu'Appelle Health Region.

Objectives: Study the mental health care utilization related to behavioral and psychiatric disorders in children and adolescents born prematurely.

Methods: The study is being conducted using data collected from administrative databases. A retrospective cohort of babies born to mothers residing at the Regina Qu'Appelle Health Region (RQHR), who were subsequently discharged from Neonatal Intensive Care with a discharge diagnosis related to premature birth based on ICD-9-CM codes (see below), will be identified. A control group of normal new born babies delivered at the Regina General Hospital during the same time period identified through discharge ICD-9 CM codes, V30-39; during the same time period to mothers residing in the RQHR health region will be assembled. Using administrative databases, the health care utilization and the psychiatric diagnoses will be collected for the cases and controls at Child and Youth (a mental health facility for the health region).

Results: The data set will be analysed comparing the rates of mental health care utilization between cases and controls.

Potential Significance: This research will highlight local trends in regards to mental health care utilization and practice patterns in this vulnerable population.

Funding or other acknowledgement: Susan Bobbitt was funded through Dean's summer project

39. A Spiritual Art Group: A Journey in Care

Brenda Valiaho Art Therapy Practicum Student Department of Spiritual Care and Volunteer Services

The focus of this study is on collaboration between Art Therapy and Spiritual Care in providing support to those experiencing life transitions. A volunteer group of World War II Veterans who reside on two units designated as Veterans' units in a long-term care facility were the participants in a 'Spiritual Art' group. Though the group has been meeting once a week for a year, a snapshot view of one period that covers the liturgical calendar, Lent, was the time focus of this phenomenological examination of the intersect of Art Therapy and Spiritual Care in a health care setting. Lent is the period of time (40 days) where introspection, self-examination, and reconciliation take place. This research is a study of the residents' experiences in the 'Spiritual Art' group, their images, and their stories; the Art Therapist's observations and aesthetic responses; the Chaplain's observations and theological reflection, and the interdisciplinary conversations that ensued during the construction of the 'Bridge from Lent into Easter.'

40. Fatigue in First Time Mothers and Fathers

Loutzenhiser, L. & Thompson, M, University of Regina.

Introduction: Research has shown that fatigue is associated with poor parental functioning, yet little is known about the nature and predictors of fatigue in new parents (Elek, Hudson, & Fleck, 2002). As part of a larger longitudinal study on fatigue in new parents, this poster examines fatigue at one month post-partum with the following research questions:

1. Do both mothers and fathers experience fatigue following the birth of their first child?
2. Which psychological and situational factors are the best predictors of fatigue at one month post-partum?

Methods: At one month post-partum 94 couples completed questionnaires and an interview. Questionnaires completed include:

1. Fatigue: *Visual Analogue Scale for Fatigue (VAS-F)*; Lee, Hicks, & Nino-Murcia, 1991)
2. Depressive symptoms: Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977)
3. Home-work interference: *Survey Work-home Interaction Nijmegen Questionnaire (SWING)*; Geurts, Taris, Kimpier, Dikkers, Van Hooff, & Kinnunen, 2005).
4. Sleep quality: *General Sleep Disturbance Scale (GSDS)*; Lee, 1992).
5. Infant temperament: *Infant Characteristics Questionnaire (ICQ)*; Bates, Freeland, & Lounsbury, (1979).

Infant sleep behaviours: *Infant Sleep Diary* (Hunziker & Barr, 1986).

Results:

1. Do Both mothers and fathers experience fatigue following the birth of their first child?

Both mothers and fathers experience fatigue at one month post-partum (mothers: M 50.6, SD 16.0; fathers M 45.3, SD 13.6).

2. Which psychological and situational factors are the best predictors of fatigue at one month post-partum?

Variables tested as potential predictors of maternal and paternal fatigue include third trimester fatigue, one month post-partum depressive symptoms, negative home-work interactions (only tested for fathers), sleep quality, infant temperament, and infant sleep behaviours. For mothers, the overall model was statistically significant and accounted for 30% of the variance in fatigue scores. Sleep quality and infant temperament were significant predictors of mother fatigue. For fathers the overall model was statistically significant, and accounted for 37% of the variance in fatigue scores. Pre-natal fatigue, depressive symptoms, sleep quality, and infant sleep were all significant predictors of father fatigue.

Conclusion: This study has shown that both mothers and fathers experience significant fatigue at one month postpartum. Consistent with expectations, poor sleep quality and negative infant temperament predict fatigue in both fathers and mothers. However, while poor infant sleep behaviours predicted paternal fatigue, they did not predict maternal fatigue. Given that mothers in this study reported doing the majority of night-time infant care, it was surprising infant sleep behaviours were associated only with father fatigue levels. Potential explanations for this finding include differing expectations of mothers and fathers regarding infant sleep, fathers being negatively impacted by infant night-time sleep even if they are not physically tending to the child, and/or the fact that the majority of the fathers in this study were employed full-time outside of the home. Future research is necessary to shed light on these findings.

Potential Significance: By expanding what we know about associations with fatigue, we may be able to implement strategies that would make the transition to parenthood easier. Informational and instructional approaches on infant temperament and infant sleep behaviours, as well as how to manage depressive symptoms, may lower parents' fatigue levels, and help with this transition.

Funding or other acknowledgement: Funding for this research was provided by a Saskatchewan Health Research Foundation New Investigators Establishment Grant.

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41. Empowerment through Breastfeeding: Exploring the Benefits of Breastfeeding for Core Area Mothers

Debbie Schroeder

Healthiest Babies Possible Program (HBPP) provides prenatal and postnatal support to expectant mothers in a disadvantaged area of Regina. Activities to promote breastfeeding have been initiated with this population and have resulted in an increase in the initiation and duration of breastfeeding. Along with the increased rates, benefits of breastfeeding have been noticed. These benefits include an anecdotal observation made of mothers who breastfeed. They are proud of their breastfeeding success, attend more programming, misuse substances less, and are more active in family care. These changes are consistent with the “empowerment process” identified by Labonte. A measurement of empowerment has been set up for HBPP using changes to self esteem and other functioning achievements identified as indicators of empowerment. Hypotheses to be evaluated are: 1) changes showing empowerment are more frequent for a woman during the period that she is breastfeeding than when she is not; and 2) changes showing empowerment happen more frequently for a woman when she chooses to breastfeed than when she uses artificial feeding. The study design is longitudinal. Participants are interviewed once during their pregnancy and again during the postpartum period. Comparisons are being made between the prenatal and postnatal interviews. Further comparison is between mothers who breastfeed and those who do not. The results of the study will be used to advocate for the breastfeeding rights of this population.

Funding or other acknowledgement: Canadian Prenatal Nutrition Program

References: Labonte, R. (1996). Community Empowerment and Leisure, *Journal of Leisureability, 23*(1).

42. Deprivation, Self reported Health and Health Service Utilization, Regina (2003-2005)

Tania Diener, Maurice Hennink and Bob Layne, Population and Public Health Services

Introduction: There is a substantial body of evidence that people of lower socio-economic status have poorer health outcomes and access health services more often compared to those of a higher socio-economic status.

Objective: This study compared the impact of socio-economic status on self-reported health, health risk behaviours and health services utilization of residents in the City of Regina.

Methods: The city population was divided into three socio-economic status (SES) groups using a deprivation-index, developed by Pampalon and Raymond to measure socio-economic status.¹ Using data made available to us by the Canadian Population Health Initiative as part of a Pan-Canadian project,² we examined differences in age-standardized hospitalization rates and self-reported health indicators among the three different SES groups within the City of Regina. Rate ratios were used to describe the inequities in health between the SES groups. Hospitalization data for ambulatory care sensitive conditions (ACSC) were analyzed for 2003–2004 to 2005–2006, as well as the pooled data across those years. Indicators from the Canadian Community Health Survey (CCHS) were used to examine self-reported health by respondents aged 12 years and older on eight indicators. CCHS data from cycles 2.1 (2003) and 3.1 (2005) were combined to tabulate the percentage of people reporting “excellent” or “very good” health, as well as reporting certain health-related behaviours.

Results: The low-SES neighbourhoods had significantly higher rates than the average-SES neighbourhoods, which in turn had higher rates compared with the high-SES neighbourhoods for each of the hospitalization indicators examined. Of all the hospitalizations rates, those for all injuries and mental health were the highest for the low socio-economic group.

People from low-SES group were less likely to say that their health was “excellent” or “very good,” and they were more likely to report engaging in unhealthy behaviours such as smoking. Self-reported smoking prevalence among the low-SES neighbourhoods was more than twice that found in the high-SES group.

Conclusions : The analysis has shown that health inequities do exist between high, average and low SES neighbourhoods. Low SES is associated with a large proportion of the disease burden within the total population. It is important to keep monitoring these indicators as program and services are directed to narrow the gap between SES groups.

References:

¹ R. Pampalon and G. Raymond, “A deprivation index for Health and Welfare planning in Quebec,” *Chronic Diseases in Canada* 21, 3 (2000)

http://www.phac-aspc.gc.ca/publicat/cdic-mcc/21-3/b_e.html

² Reducing Gaps in Health: A Focus on Socio-Economic Status in Urban Canada URL:

http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=PG_1690_E&cw_topic=1690&cw_rel=AR_2509_E

43. Pre-travel Immunization Acceptance Rates Among Travelers Visiting a Travel Health Clinic, Regina, Saskatchewan, Canada

Tania Diener, Zahid Abbas and Donna Martin. Population and Public Health Services, RQHR

Background: In 2006, an estimated 6.7 million Canadians traveled overseas.¹ Many Saskatchewan residents also travel to overseas destinations for vacation where they are at risk of contracting malaria, hepatitis A, hepatitis B and other vaccine preventable diseases. The objective of this study was to determine immunization and malarial chemoprophylaxis acceptance rates among those traveling abroad on vacation.

Methods: Between October and November 2006, travelers attending the Travel Health Clinic, Regina, Saskatchewan (THC) were invited to fill out a self-administered questionnaire. Data was also collected by a public health nurse on immunizations and malaria chemoprophylaxis recommended/prescribed, accepted and reasons for non-acceptance.

The demographic profile, itinerary, reason (s) for and duration of travel, immunizations and malarial chemoprophylaxis recommended and accepted were reviewed.

Results: A total of 827 records were selected for travelers going overseas for vacation. The mean age was 40.9 years (SD 18.7 year); 46.6% were male. A majority (70.4%) were traveling with family or a companion. Pre-travel advice was sought by 39.4% before consulting the THC. The most frequently consulted source of pre-travel advice elsewhere was their physician (28.6%) followed by friends or family (26.4%). The main travel destination was

Mexico, Central America and Caribbean (69.6%) followed by South, South East and East Asia (13.0%). The majority (68.7%) planned to travel for up to 2 weeks, and only 14.3% were planning to travel for more than 4 weeks. The most frequently administered vaccines were Tetanus/Diphtheria, influenza and Hepatitis A. The uptake of travel immunization varied by types of vaccine recommended. Uptake was high for Tetanus/Diphtheria, 96.9%; Hepatitis A and B combined, 96.6%; Hepatitis A, 96.5% and Influenza, 66.5%. The main reason for non-compliance was lack of perceived need for the recommended vaccination. Cost was not a significant factor in non-compliance.

Conclusion: Despite appropriate advice, a considerable proportion of the travelers were not adequately protected against malaria and other travel-related vaccine preventable diseases. There is a need for increased awareness about travel related infectious diseases and raising the profile of pre-travel vaccination.

¹ Statistics Canada, International Travel, 2006 Catalogue no. 66-201-X. URL: <http://www.statcan.gc.ca/pub/66-201-x/2006000/4090275-eng.htm>

44. Demographic Characteristics of Individuals Visiting Travel Health Centre Regina Qu'Appelle Health Region, Regina Saskatchewan

Tania Diener, Zahid Abbas and Donna Martin

Background: An estimated 6.7 million Canadian travelled abroad in 2006.¹ A vast majority of these trips are to tropical and less developed countries. The Travel Health Centre (THC) of the Regina Qu'Appelle Health Region (RQHR) is the most comprehensive resource on travel-related health issues in Southern Saskatchewan.

Objectives: To characterize the demographic profile, itinerary, duration and reason for travel of all clients seen at the THC

Methods: The routinely collected data from all new clients visiting the travel health centre from April 1, 2007 to March 31, 2008 was imported into a standardized data base. The data for repeat visits was excluded from the analysis. Information examined included demographic characteristics, awareness of the travel health centre services, itinerary, duration and reason for travel was examined.

Results: A total of 4,649 new clients were seen at the THC from April 1, 2007 to March 31, 2008. New clients are those who have never been to the THC before or those who are returning but for a new episode. Almost 70% of the travellers were less than 50 years old. Seventeen percent had previously visited the THC and 42.3% were referred by a friend or relative. Of the travellers with known postal codes, 87% were for leisure/vacation (75.1%) and 9.5% were visiting friends and relatives (VFR). The majority of the travelers (62.5%) intended to travel for up to 2 weeks and 15.7% for more than 4 weeks. The most frequent reported destinations were: Caribbean, South or Central America (65.2%), Asia (17.7%) and Africa (8.9%). All other countries contributed to less than 12% as a travel destination. A vast majority of the travellers were from the City of Regina (78%).

Conclusion: Travel health services are not funded through provincial health services. It may be worth noting that vaccination uptake rates were higher for those vaccines funded by the provincial health plan. Caribbean and Central and South America were the preferred destination. We have not looked at the public health consequences of travel-related illnesses in this study. Although, the travel health centre is providing pre-travel advise to an increasing number of new clients, there is a need for increased awareness about travel-related diseases and greater uptake of pre-travel vaccination and malaria chemoprophylaxis.

Reference:

¹ Statistics Canada, International Travel, 2006 Catalogue no. 66-201-X. URL: <http://www.statcan.gc.ca/pub/66-201-x/2006000/4090275-eng.htm>

45. Injury Hospitalizations, Regina Qu'Appelle Health Region, 2001-2005

Tania Diener, Zahid Abbas, Heather Dorgan and Anna Engel, Population and Public Health Services

Background: Injury is a major public health problem in Regina Qu'Appelle Health Region (RQHR). One of the goals of the RQHR is to reduce injury and injury-related hospitalizations and deaths in RQHR residents. We routinely analyze injury related hospitalization and death data to show the demographics and causes of injuries as a basis for developing program and services to reduce injuries in our residents.

Methods: Information on hospitalizations was provided by the Ministry of Health, Saskatchewan (MOH). Cases in this report include all RQHR residents who were hospitalized as in-patients in Saskatchewan and out of province/country hospitals with an external cause of injury (E800-E999). Injuries due to medical or surgical complications were excluded from analysis by ICD-9 E Codes:

- Misadventures in medical care E870 - E879
- Drug's adverse effects in therapeutic use E930 - E949

Descriptive data analysis was done to compare the City of Regina burden of injury with that of the rural RQHR and to describe variations of injury hospitalization patterns within the health region.

Results: From 2001 to 2005, an average of 2,842 hospitalizations per year for injuries occurred in RQHR. From 2001 to 2005, a majority of injury hospitalizations were due to fall (49.1%), transport related accidents (11.2%), self-harm (7.5%) and assault (6.4%). Males had a higher overall injury hospitalization rate compared to females. Females had a higher injury hospital separation rate than males for falls and self-harm. From 2001 to 2005, an average of 182 hospitalizations for assault related injuries occurred in RQHR. Males were almost three times as likely to be hospitalized as a result of assault compared to females (118.1 and 40.2 per 100,000 population, respectively). Transport related hospitalization was approximately twice as high among males compared to females (165.3 and 98.7 per 100,000 population, respectively). Rural males had the highest rate of transport related hospitalizations between 2001 and 2005.

Discussion: The results are being utilized to develop policies and programs to prevent and/or reduce injury hospitalizations among RQHR residents. The data provide quantifiable evidence and trend of injury hospitalizations that may help in designing programs to change behaviour that contributes to injuries.

46. A Travel Related Possible Case of Vaccine Associated Paralytic Poliomyelitis (VAPP)

Diener, Tania. Population and Public Health Services, RQHR; DESAI, Shalini, Vaccine Preventable Diseases, Centre for Immunization and Respiratory Infectious Diseases Public Health Agency of Canada, Ottawa; LOWRY, Noel J. Neurology, Department of Pediatrics, University of Saskatchewan; TALUKDAR, Chiranjib, Pediatrician, Regina, Saskatchewan; CHRUSCH, Wendy M. Physical Medicine and Rehabilitation, RQHR; TAN, Ben J-K, Infectious Diseases, Department of Pediatrics, University of Saskatchewan

Background: A previously healthy 6 month old Canadian-born Chinese boy developed fever and acute flaccid paralysis (AFP) two weeks after receiving oral polio vaccine (OPV) in China. In Canada, prior to travel, he had received 2 routine doses of inactivated polio vaccine (IPV) at 2 and 4 months.

Purpose: To determine the etiology of AFP.

Methods: Investigations were conducted during two time periods - during his acute illness in China (immune work-up, stool culture, cerebrospinal fluid (CSF) cell count and chemistry and magnetic resonance imaging (MRI)) and in November-December 2007 upon return to Canada (serology, cultures, electromyogram (EMG) and MRI).

Results: In China, the baseline immune work-up, was normal. Stool culture was only positive for poliovirus3; the isolated strain showed 99.7% homology with the Sabin 3 OPV strain used in China. The CSF white cell count was $12 \times 10^6/L$, protein was 1.43 g/L, and glucose level was normal. CSF viral culture and polymerase chain reaction were not conducted. The MRI in China showed enhancement of the cauda equina, whereupon a diagnosis of Guillain Barre Syndrome (GBS) was made. He was appropriately treated. Canadian investigations revealed polio antibody titers of <1:8 for poliovirus1, 1:32 for poliovirus2 and 1:128 for poliovirus3. The EMG demonstrated denervation to muscles of the left leg, and repeat MRI revealed enhancement (inflammation) of left-sided anterior horn cells of the spinal cord at two levels. Repeat cultures were negative. By May 2008, the child still has only motor paralysis of the left leg.

Conclusion: While initial Chinese investigations were consistent with a diagnosis of GBS, the above clinical, laboratory and imaging findings makes this a possible case of vaccine-associated paralytic poliomyelitis (VAPP). "Although the seroconversion to polio 1 and polio 2 were reported to be >90% after two doses of IPV, the response to polio 3 was significantly less in one study, i.e. 74%. It is therefore possible that a poor response to polio 3 contributed to this patient developing VAPP."

Potential Significance: Future change in recommendation as it relates receiving immunization while travelling abroad.

References: (1) Austrias et al, JID. 2006; 196 : 692-698

(2) Alexander et al. JAMA. 2004; 292(14) : 1696-1701

47. Tobacco Smoking in the Regina Qu'Appelle Health Region 2005

Tania Diener, Zahid Abbas, Anna Engel, Dale Young and Lynn Greaves, Population and Public Health Services

Introduction: Tobacco smoking is the leading cause of preventable death in Canada. Smoking is responsible for one in five deaths in Canada. This is roughly five times the number of deaths caused by car accidents, suicides, drug abuse, murder and AIDS combined. Deaths from smoking result in 15 years loss of expected life, on average.¹

Objectives: To provide an overview of the prevalence of tobacco smoking and demographic characteristics of smokers in the Regina Qu'Appelle Health Region (RQHR) for 2005.

Methods: Data from the Canadian Community Health Survey (CCHS) Cycle 3.1 was used. The CCHS provides health information, including estimates of health determinants, health conditions and health system utilization. Data was collected in 2005 from persons aged 12 years and over. The survey methodology is described elsewhere.² A comparison of the distribution of age, education, income, self-reported health and prevalence of risk factors among the survey respondents was made. Smoking status was not imputed for survey respondents who did not answer the relevant questions.

Results: According to the Canadian Community Health Survey, 22.2% of RQHR population aged 12 and over were current smokers (men 22.8%; women 21.6%) in 2005. Approximately 17% reported being daily smokers and 40.3% reported never smoking. Smoking rates were highest in the 20 to 34 year age group. Males had their first cigarette at age 15.2 years on average and females at age 15.7 years. Only 12% of men and 2.5% of women who were university graduates smoked. Lower prevalence of smoking was seen in high income earners in both genders. Approximately 59% of current smokers reported excellent or very good health, compared to 64.3% of non-smokers. Fifty-seven percent of current smokers reported no leisure time physical activity compared to 57% of non-smokers.

Conclusions: Population and Public Health Services, RQHR is working in areas of policy and programming to encourage smoking cessation and decrease the number of youth becoming addicted to tobacco. This will decrease the burden of tobacco related illness and associated health care costs.

References: ¹ Physicians for a Smoke-Free Canada. *Tobacco and the Health of Canadians*. http://www.smoke-free.ca/health/pscissues_health.htm

² Statistics Canada. *Canadian Community Health Survey. Definitions, data sources and methods*.

<http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=3226&lang=en&db=imdb&adm=8&dis=2>

48. Animal Bites in Regina Qu'Appelle Health Region, an Important Public Health Problem (2006-2008)

Maurice Hennink, Zahid Abbas, George Koutsoulis, Population and Public Health Services, RQHR

Background: Animal bites are a substantial public health problem in the Regina Qu'Appelle Health Region (RQHR). Rabies is a deadly viral disease that can be prevented but not cured. Although, rabies is uncommon, injuries due to animal bite are becoming a health burden in the region. The aim of this study is to describe animal bites and post-exposure prophylaxis practices in the health region between 2006 and 2008.

Methods: The Population and Public Health Services (PPHS) collect information on all reported cases of animal bites in the health region. Animal bite data from January 1, 2006 to December 31, 2008, were analyzed. This data set included information on the victim's age, gender, place of occurrence and the type of animal. Information also included animal vaccination status, quarantine, post exposure prophylaxis and the outcome.

Results: There were a total of 1,052 animal bites reported between January 1, 2006 and December 31, 2008. Adults 20 years and over accounted for more than 60% of the bite victims. The frequency of bites was higher for the months of April to August in 2006 and 2007 and from May to September in 2008. Almost 70% of the animal bites were among City of Regina residents. Seventy percent of the bites were attributed to dogs. The number of reported animal bites not due to dogs or cats represented 8.9% of the total reported during the three year period. Ten percent (106) of cases were referred for rabies vaccine series. Nine percent (10) of those referred for rabies vaccination declined vaccination. Eighty-eight percent of the bat bites were referred for rabies vaccine series. The ownership status could not be determined in 20% of the cases. Follow-up was completed in 82% of the cases within 10 days.

Conclusions: Because of the increase in the number of animal bites and the health care costs associated with the animal bite injuries, accurate data and surveillance is needed.

49. Epidemiological Profile of HIV in Regina Qu'Appelle Health Region 2008

Maurice Hennink, Zahid Abbas, Susanne Nasewich, Population and Public Health Services, RQHR

Background: The Regina Qu'Appelle Health Region (RQHR), Human Immunodeficiency Virus (HIV) Surveillance Report, 2008 describes the occurrence of reported HIV infections in RQHR by person, place, and time through December 31, 2008.

Methods: Population and Public Health Services (PPHS) is responsible for region wide surveillance of HIV infections. Confidential, name-associated reporting of confirmed HIV infection to PPHS is required by law. Standardized case report forms are used to collect demographic information, mode of exposure, laboratory and clinical information. All surveillance data collected is maintained in the HIV database and also entered in the Integrated Public Health Information System (iPHIS). The data was analyzed to describe demographic characteristics and risk behaviours associated with HIV infection.

Results: A total of 62 laboratory confirmed cases of HIV were reported between January 1, 2008 and December 31, 2008. This number reflects those persons whose HIV infection was first diagnosed in 2008. The number of persons newly infected with HIV in RQHR has increased nearly every year since 2003. Of the 62 HIV cases 61 (98.4%) resided in the City of Regina at the time of diagnosis. Aboriginal identity population compose 9.3% of all persons living in Regina and 71% of all newly diagnosed HIV cases in 2008. The proportion of newly diagnosed HIV cases reported among women in RQHR during the last six years (2003-2008) has consistently been above 45%, except for 41.6% in 2003 and 40% in 2005. In 2008, the highest proportion of cases was in 40-49 year age group (29.0%) as compared to other age groups. The majority of persons newly diagnosed with HIV in 2008 were between the ages of 25 and 49. In 2008, among the newly diagnosed HIV cases, 75.8% reported injection drug use alone or in combination with other risk factors.

Conclusions: Over the past six years, RQHR has seen a steady increase in the number of people being newly diagnosed with HIV infections. The Aboriginal population is disproportionately affected with HIV that poses challenges to both prevention and service delivery. The epidemiological profile will serve to modify/design prevention services for high risk groups.

50. Evaluation of a Needle Exchange Program Regina Qu'Appelle Health Region, 2009

Maurice Hennink¹, Zahid Abbas¹, Susanne Nasewich¹ and Brandi Hegyi²

¹ Population and Public Health Services; ² Health Information Management Program, SIAST

Objective: To provide an opportunity to the needle exchange program (NEP) users to give their views on service accessibility, service utilization and introduction of new services specifically the safe-crack kits. The survey will also contribute to program improvement.

Methods: All clients attending NEP were invited to take part in the survey. After providing informed consent, participants completed a short self-administered questionnaire. The data collection was done over approximately a two week period from March 25, 2009 to April 3, 2009. Anonymous data collection included demographics, NEP utilization, and needle sharing behaviour and the previous and current HIV and HCV status. Respondents were also asked about the provision of safer crack use kits.

Results: At the time of submission of this abstract data from 45 respondents were included in the analysis. The gender ratio of the sample was 42.2% males and 55.6% females. Fifty-three percent were between 19 to 34 years of age. Almost 90% had an annual income of less than \$20,000. More than 73% of the respondents use NEP every week or almost every week. Thirteen percent use needles more than once and 4% (2) had shared needles with others. Almost all of the respondents thought that NEP services are easily accessible. Of the respondents who smoke crack cocaine, 23% had used a pipe that was already used by someone else and 31% shared the pipe they had used with others. Twenty percent of the respondents who smoke crack cocaine were interested in a safer crack use kit. More than 80% of the respondents knew of their HIV and HCV status prior to starting using the NEP. Reported HCV prevalence in the respondents was 26.7% prior to the use of NEP services. Access to NEP was sufficient for the majority of the respondents; however, 15% suggested expanding the provision of NEP.

Conclusions: The study indicates that NEP provides a valuable service for IDU in Regina and for a majority of users this may be their main source of clean needles (particularly for those with low income). The findings support an expanded role of NEP in the distribution of necessary injecting equipment including safer crack cocaine kits.

51. Profile of Patients with Diabetes Attending the Regina Qu'Appelle Health Region Regina Podiatry Clinic, 2008

Dale Young¹, Becky Scobie², Zahid Abbas¹, Axel Rohrmann¹, Brenda Robinson¹

¹Population and Public Health Services; ²Health Information Management Program, SIAST

Introduction: The purpose of this study was to determine key demographic characteristics, diagnoses and treatment activities, wait times and compliance with clinical practice guidelines with respect to foot screens for diabetic patients attending the Regina Podiatry Clinic in 2008 in the Regina Qu'Appelle Health Region.

Methods: The retrospective data was extracted from the patient charts attending the Podiatry Clinic from January 1st, 2008 to December 31st, 2008. The data was extracted for age, gender, location, diagnosis, initial treatment and referral source. Data was also collected for foot screen and average wait times. The data was entered into a standard database and was analyzed using SPSS Windows Version 13.0.

Results: The number of diabetic patients seen in the Regina Podiatry Clinic in 2008 was 278, an increase of 52 % when compared to the numbers seen in 2006. The majority of cases (94%) were 45 years of age or older. Fifty-seven percent were male and 89% were from the City of Regina. There were more males than females in all age groups, except for 75 years of age and older where both genders had an equal number of cases. The primary diagnosis in 33% of cases was corns and calluses, dystrophic nails in 27%, neuropathic ulcer in 14%, and 10% had biomechanical problems. The proportion of patients with corns and calluses and neuropathic ulcer was higher in 60-75 age group. Thirty-six percent of patients were treated using sharp debridement and 31% had nail work done. Foot screening was done in 91% of cases. The average wait time was less than four weeks in 77% of the cases compared to 71% in 2006.

Conclusion: The number of diabetic patients seen at the Regina Podiatry Clinic has more than doubled since 2006 and the average wait times have improved. The RQHR Podiatry Program works closely with other specialties to prevent and manage diabetic foot complications. The findings in this study will be used to inform future service delivery planning for the Program.

52. 8 Prescriptions for Health: Reducing Tobacco's Deadly Impact in Saskatchewan

Lynn Greaves BA BEd, Population and Public Health Services, Regina Qu'Appelle Health Region; Donna Pasiechnik, Canadian Cancer Society; Rhae Anne Bromley, Heart and Stroke Foundation of Saskatchewan

Introduction: Population and Public Health Services, RQHR, has produced two reports on 'best practices' in tobacco control. The 2004 report "*Best Practices in Tobacco Control: a Vision for Saskatchewan*" became a benchmark for tobacco control. The report, "*Building on Success: Reducing Tobacco Use in Saskatchewan, 2008-2010*" addresses the challenges Saskatchewan faces. Provincial smoking prevalence decreased from 2000(28%) to 2005(22%) but leveled off or increased somewhat in subsequent years. A January, 2009 announcement by the Minister of Health indicated the government will develop a provincial tobacco reduction strategy.

Methods: Representatives of health groups reviewed the above reports and tobacco reduction literature; and tobacco reduction standards including the World Health Organization's Framework Convention on Tobacco Control and Canada's draft Platinum Standards for Tobacco Control Policy. Tobacco reduction measures from these reports were assessed for their impact on reducing smoking rates, cost effectiveness, ease of implementation and public support. Recommendations for new measures to reduce Saskatchewan's smoking prevalence and to strengthen existing measures were developed.

Results: The strongest deterrent in tobacco reduction is taxation. A 10% price increase causes a 3-5% reduction in consumption. Since 2002, Saskatchewan has been in the top three provinces with the highest taxation. However, evidence of tax exempt tobacco sales increasing from \$3 million to \$52 million, anecdotal information of non-First Nations people purchasing tax exempt tobacco and a lack of regulation compared to other provinces leads to the suggestion tax exempt tobacco is leaking to non-First Nations individuals sabotaging Saskatchewan's taxation policy. Recommendations include regulation for the above area, increasing smoke-free spaces, limiting where tobacco is sold and mass media campaigns. Flavoured tobacco, the industry's new starter product, appeals to children and should be banned. Bans on vending machines and tobacco sales in certain areas and support for cessation and community-based programming is also recommended. Saskatchewan's tobacco control funding of \$0.59 per capita should be increased.

Conclusions: Tobacco reduction measures have had some effect in Saskatchewan but additional recommended measures and funding are required if smoking rates and tobacco-related diseases and deaths are to continue decreasing.

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53. Caregivers of Persons with Alzheimer's Disease: Personal Hardiness and Perspective of Personhood

Maureen Coulthard, M.A. Gerontology (Candidate), University of Regina and Manager, RQHR Advisory Committee; Derrick Larsen, PhD, Research & Performance Support, RQHR; Dr. F. Veloso, RQHR; David Malloy, PhD, Acting Director Research Services and Graduate Coordinator for Gerontology, University of Regina; Gord Asmundson, PhD, Professor, Faculty of Psychology, University of Regina

Introduction: Background: The incidence of Alzheimer's disease (AD) in Canadians over age 65 is expected to reach 750,000 by 2031 (AD Society, 2008). The majority of this population reside in the community and are cared for by family members (Parks & Novielle, 2000). Various factors influence the quality and outcome of the caregiving experience for both the caregiver and recipient of care. Much Alzheimer research has addressed quality of life and caregiver burden. There is a paucity of research regarding caregiver hardiness and perception of personhood as factors that may impact the caregiving experience and outcome. Croog (2000) suggested that caregiver response impacts care recipient behaviour and ultimately the outcome of the caregiving experience. Exploration of caregiver hardiness and perception of personhood may guide health care providers in the development of care plans that address the needs of both the care recipient and caregiver (Baxter, 2000; Carradice, Beil & Shankland, 2003).

Theoretical Framework: One's definition of personhood may impact how one perceives, treats and responds to an individual with AD. Kitwood (1999) described 3 premises of personhood (1) transcendence (life is sacred);

(2) ethical (respect is inherent); (3) Social Psychological (self esteem, integrity). Kobassa (1979) defined personal hardiness as the relationship between stressful life events and personal well being and identified three elements to personal hardiness. (1) Commitment (perseverance/ dedication); (2) Control (influence over contingencies of life); (3) Challenge (change presents opportunity for growth vs. threat). Exploration of perception of personhood and caregiver hardiness may reveal opportunity for healthcare providers to fortify caregivers for the journey.

Research Question: Is the caregiving experience influenced by the caregiver's personal hardiness and perception of personhood?

Methodology: A phenomenological approach to explore caregiver experience of 15 primary caregivers recruited via purposeful sampling. Confidential handling / storage of data and the opportunity to withdraw without consequence will be assured. Informed consent, semi structured interview process and deGroot's Interpretative Theoretic Model Construction will guide the research process. Application to RQHR and U of R Ethics Review Boards pending. Participant risk is low.

Potential Outcomes of Research: Findings may evolve into (1) development of a theoretical framework addressing the relationship between hardiness and personhood in the caregiver/care recipient relationship (2) interview questions may serve as groundwork for development of a screening tool for clinicians to assess caregiver coping via aspects of hardiness and perspective on personhood.

Funding or other acknowledgement: Royal Bank Financial Group Foundation Research Grant

54. A Qualitative Investigation of Injurious Falls in Long Term Care: Perspectives of Staff Members

Jaime Williams¹, Sharon Kaasalainen², Thomas Hadjistavropoulos³, Rhonds Scudds⁴, Lilian Thorpe⁴, Susan Neville⁵, Juanita Tremeer⁶, Devon Andersen¹

¹Department of Psychology, University of Saskatchewan, ² School of Nursing, McMaster University, ³Department of Psychology, University of Regina, ⁴College of Medicine, University of Saskatchewan, ⁵RQHR, ⁶Saskatoon Health Region

Introduction: Falls commonly result in injury and multiple pain problems among seniors residing in long-term care (LTC; Rubenstein et al., 1996) and are a leading contributor to hospitalization and death (e.g., Rice et al., 1989; Tinetti & Williams, 1997). There is a paucity of research about perceptions of LTC staff concerning the gravity and consequences of falls. The purpose of this investigation was to elicit opinions of LTC staff about the magnitude of the problem and prevention given a "least restraint" policy.

Methods: Within seven LTC facilities, data was collected from administrators and a variety of clinical staff using 13 focus groups (licensed nurses, special care aids) and 28 interviews (e.g., administrators, physiotherapists, activity/recreation, physicians). Questions were asked about their practices related to quality of life and falls, using a semi-structured interview guide.

Results: We employed thematic analysis, allowing us to ascertain primary and secondary themes within the data.

Conclusion: Participants viewed falls as a major challenge in their workplace. They expressed concerns about their limited ability to control falls and manage consequences, of which injury and pain are most significant. Participants viewed the "least restraint" policy overall as positive, acknowledging beneficial effects of resident independence and increased activity. However, they considered the impact of pain resulting from falls as a complicating factor, noting the necessity of both independence and living pain-free as essential to quality of life. Participants discussed the concept of "living at risk" (for falls) as necessary within client-centered practice.

Potential Significance: These findings have potential implications for falls management and prevention.

Funding or other acknowledgement: Saskatchewan Health Research Foundation Health Research Team Grant (\$2 408 501.00 over five years) – Principle-Investigator: Thomas Hadjistavropoulos

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55. Cardiac Cycle Timing Events are Reliably Measured Day to Day Using Digital Ballistocardiography

J. Patrick Neary, David S. MacQuarrie, Edward F.G. Busse, Faculty of Kinesiology & Health Studies, University of Regina, RQHR

Human myocardium has an amazing ability to contract reliably day-to-day as reflected by the timing events of the cardiac cycle. We measured the mechanical activity of the heart to record cardiac cycle timing events using digital ballistocardiography (dBG) in a group of healthy subjects (N=7; 3 females) with no known cardiovascular disease. We hypothesised that dBG would reliably record the timing events of the cardiac cycle from day-to-day. Subjects (mean \pm SD, age= 31.7 \pm 10.5yrs) were assessed on three consecutive days (D1, D2, D3), at the same time of the day and under similar conditions in a quiet laboratory setting. Each subject had the dBG-300 sensor attached to the skin using solid gel electrodes (single lead EKG). The dBG-300 sensor was placed over the sternum approximately 2cm above the xiphoid process. Thereafter, a 30-second ballistocardiogram was recorded and stored for later analysis. A total of 15 dBG waveforms (heart beats) were analysed for each subject per day and then averaged (Mean \pm SD). Results showed that average heart rate on D2 (58.4 \pm 11.7 bpm) was significantly (ANOVA) lower from D3 (60.2 \pm 7.7 bpm), but not D1 (59.1 \pm 8.2 bpm). When the dBG data was then corrected for heart rate there were no significant differences between any of the cardiac cycle timing intervals, including Q-wave (EKG) to: atrial systole (AS) (D1=-40.6 \pm 12.6msec; D2=-43.5 \pm 13.9msec; D3=-44.9 \pm 11.5msec); mitral valve close (MVC) (D1=42.6 \pm 9.8msec; D2=41.3 \pm 11.5msec; D3=42.2 \pm 8.1msec); aortic valve open (AVO) (D1=75.5 \pm 8.0msec; D2=75.4 \pm 9.6msec; D3=72.0 \pm 9.8msec); rapid ejection period (REP) (D1=145.1 \pm 10.9msec; D2=141.5 \pm 10.0msec; D3=138.7 \pm 5.7msec); aortic valve close (AVC) (D1=329.7 \pm 30.3msec; D2=333.3 \pm 28.9msec; D3=331.0 \pm 27.2msec); mitral valve open (MVO) (D1=433.7 \pm 31.3msec; D2=435.1 \pm 29.5msec; D3=436.2 \pm 16.0msec); early diastole (ED) (D1=518.9 \pm 33.2msec; D2=518.3 \pm 29.3msec; D3=519.2 \pm 23.6msec); and late diastole (LD) (D1=995.2 \pm 160.2msec; D2=1025.6 \pm 236.2msec; D3=996.1 \pm 139.6msec). The percent difference for these variables day-to-day was 9.7% (AS), 3.1% (MVC), 4.6% (AVO), 1.9% (REP), 1.1% (AVC), 0.6% (MVO), 0.2% (ED), and 5.7% (LD). These data suggest that: 1) day-to-day cardiac cycle mechanics in human subjects is reliable; and 2) the digital ballistocardiogram can be used to reliably monitor differences in cardiac cycle timing intervals from day-to-day.
Support: Canadian Institutes of Health Research, NSERC, Heart Force Medical

56. A Surveillance Study of Fall Injury Hospitalizations and Their Risk Factors Among Older Adults in Saskatchewan, Canada 1995/96 – 2004/05

1. Sheila Kelly, primary author and study contact, Masters Candidate, Faculty of Kinesiology & Health Studies, University of Regina
2. Dr. Shanthi Johnson, Professor & Associate Dean (Graduate Studies & Research), Faculty of Kinesiology & Health Studies, University of Regina
3. Dr. Drona Rasali, Provincial Chronic Disease Epidemiologist, Population Health Branch, Saskatchewan Ministry of Health

Introduction: Across Canada, falls are the most common cause of injury-related hospitalization among older adults. Fall-related injuries result from a complex set of risk factors and are costly to the individual and healthcare systems. Common fall-related injuries requiring hospitalization include those to the pelvis, hip or thigh. Fractures, especially of the hip, are among the most devastating injuries to older adults. Gender and age groups are known to be important risk factors for fall injury¹. Notably, Saskatchewan has one of the highest percentages of older adults across the provinces in Canada. Previous research has shown that the presence of chronic, co-morbid conditions, such as diabetes, further increase the risk of fall-related injury². The purpose of this study is to explore selected risk factors of fall-related injury hospitalizations, such as hip fracture, among older adults in Saskatchewan. The project is a follow-up to the recently completed Saskatchewan Comprehensive Injury Surveillance Report, 1995 – 2005³.

Methods: A retrospective, secondary analysis of the Saskatchewan Ministry of Health's Hospital Separations Database for injury hospitalizations from 1995/96 to 2004/05 will be conducted. Fall injury hospitalization data and associated risk factors among those aged 65 and over in Saskatchewan for the 10-year period will be examined. Two, separate Logistic Regressions will determine if the frequency of fall-related injury and hip fracture are predicted by age-group, gender, urban-rural distribution, the presence of diabetes, and other chronic, co-

morbid conditions. Common fall-related injuries, rates of first proximal hip fracture, and associated risk factors will be detailed. Survival analysis will determine the probability of death to a given time for older adults who experienced a fall-related hospitalization.

Results: In 2005, the Canadian Community Health Survey's (CCHS) self-reported rate of falls serious enough to limit normal activities in Saskatchewan older adults (aged 65 and over) was 69%³. The crude rates for older adults hospitalized with a fall injury in Saskatchewan (from 1995/96 to 2004/05) was relatively stable at 20-22 falls per 1,000 residents¹. Information on risk factors influencing fall injury hospitalizations will be available upon completion of the data analysis in May, 2009.

Conclusion: Preliminary conclusions will be drawn in May, 2009, with final conclusions expected in August, 2009.

Potential Significance: Detailed surveillance of those hospitalized with a fall-related injury may inform fall and injury prevention policy in Saskatchewan and across Canada.

Funding or other acknowledgement: This study forms part of the primary author's Master's thesis in the Faculty of Kinesiology and Health Studies at the University of Regina.

Acknowledgement of data source: Saskatchewan Ministry of Health Hospital Separations for 1995/96 – 2004/05.

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57. The Influence of Social Determinants of Health on Osteoporosis Screening Management

Katherine M. McLeod, M.S.; Dr. Shanthi Johnson, Ph.D., R.D., Saskatchewan Population Health and Evaluation Research Unit and Faculty of Kinesiology and Health Studies, University of Regina.

Introduction: Osteoporosis is a chronic disease burden affecting 1.4 million Canadians and the incidence continues to rise. To strive for optimal prevention and management of osteoporosis, a population health perspective is necessary. Evidence suggests osteoporosis incidence is largely influenced by the social determinants of health. However, there is little evidence regarding how the social determinants directly influence osteoporosis screening.

Methods: This paper critically reviews literature on the influence of social determinants of health on osteoporosis screening management. Based upon the synthesis of evidence, priorities for addressing inequalities and future research are also identified.

Results: Rural residence, lower socioeconomic status and unemployment are significantly associated with under-screening.

Conclusion: Based on the evidence osteoporosis screening management is largely influenced by the social determinants of health. There is a need for osteoporosis education programs and DXA machines, especially in rural areas. Future research should address the interaction and influence of the social determinants of health on the continuum of care for osteoporosis.

Potential Significance: This is a major public health concern and improvements in access to osteoporosis screening must be made. If a large percent of the population is not being screened, than a large percent are not engaging in health behaviours for osteoporosis prevention and management.

58. Nutrition Knowledge and Information Access of Nursing Staff in the Regina Qu'Appelle Health Region (RQHR)

Nasser R¹, Bell A², Bradley C³, Cook SL¹, Chipanshi M⁴, Kraemer J⁵, Powelson S⁶

¹Clinical Nutrition Services, ²Research and Performance Support, ³Dr. John Archer Library, University of Regina, ⁴Health Sciences Library RQHR, ⁵College of Nursing University of Saskatchewan, ⁶Health Sciences Library University of Calgary

Introduction: Nutrition is paramount to health promotion, disease prevention and treatment. Ensuring that patients receive nutrition information that is appropriate to their needs is, therefore, an important aspect of quality health service provision. Nursing staff frequently receive nutrition questions from their clients. Thus, good nutrition education and accessibility to reference literature and resources is of vital importance for nurses and licensed practical nurses. The purpose of this study was: 1) to determine how nursing staff respond to patient inquiries for nutrition information; 2) to determine perceived confidence of nursing staff in nutrition knowledge as well as their knowledge of nutrition topics; 3) to understand how nursing staff normally seek information; and 4) to determine if there are any perceived barriers to obtaining reliable and credible sources of nutrition information.

Methods: A prospective questionnaire study was conducted in March 2009. A 22-item questionnaire was developed and reviewed for face and content validity with nursing staff, dietitians and librarians. The questionnaire was sent to nursing managers for distribution on their units in rural and urban RQHR health care sites. Participation of nursing staff was completely voluntary and included nursing staff who provide direct care and had been employed in the RQHR for at least one year.

Results: Of 136 returned surveys, 80.1% were completed by RNs, and 16.9% by LPNs. Eighty-six percent of nurses indicated that they feel confident or somewhat confident answering questions about nutrition; however, the mean score for nutrition knowledge was 64.7%. Fifty percent of nurses reported that they use dietitians to access nutrition information at least monthly. Ninety-one percent of nurses do not use the RQHR librarians to access nutrition information. Reported barriers to accessing nutrition information were lack of computer access, uncertainty of where to look and lack of time.

Conclusion: The results identify areas of opportunity to improve the nutrition knowledge of RQHR nursing staff. Education is required to encourage nurses to seek information regarding nutrition topics and to access available resources.

Potential significance: The results can be used by dietitians, nutritionists and librarians to provide education to nursing staff to ensure that clients receive optimal care and advice.

Funding: Clinical Nutrition Services and Research and Performance Support, RQHR

59. Regina Consumers' Knowledge of Trans Fatty Acids and its Impact on Consumer Food Choices

Megan Bashutski¹, Karen Hill¹, Darci Norton¹, Dr. Sylvain Charlebois², Jean Coleman³, Stephanie Cook³, Roseann Nasser³, Sharon Walker³

¹ RQHR Dietetic Intern, ² University of Regina, ³RQHR Clinical Nutrition Services

Introduction: Industrial trans fatty acids (TFA) are formed during partial hydrogenation of vegetable oils to create semi-solid fats which are used in food manufacturing¹. There is a significant and growing body of evidence confirming that TFA consumption poses a greater risk for coronary heart disease (CHD)² and weight gain³ than saturated fat. A priority of the Canadian Government is to decrease the TFA content in the food supply⁴. In 2007, Health Canada adopted the recommendations of the Trans Fat Task Force to limit the TFA content in foods to 2-5% of total fat content⁵. While government regulations may impact what food is available, consumer knowledge still determines food purchases and intakes. The purpose of this study was two-fold: 1) to determine what Regina consumers know about TFA and 2) to determine if consumer knowledge and perceptions of TFA affect their reported food purchases.

Methods: Two hundred and eleven grocery shoppers were surveyed at three Regina grocery stores. Shoppers were asked about their knowledge of TFA, their level of concern regarding TFA, and whether TFA content of food would impact their food choices. They were also asked where they locate information regarding TFA on food packages.

Results: Ninety-eight percent of the surveyed shoppers in Regina had heard of TFA, with the majority (79%) stating that they knew a little about TFA. 73% of shoppers reported that they had made changes to their diet to

try to decrease TFA consumption. 42.2% of shoppers reported believing that TFA are found in non-hydrogenated margarines, indicating an erroneous belief.

Conclusion: The findings suggest that Regina consumers are aware of TFA and some have a basic understanding of the negative health effects. However, consumers are still subject to misinformation regarding this topic. The findings will be useful to plan education strategies to clarify which foods contain TFA and why TFA consumption should be reduced.

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60. Yogurt Prophylaxis and Antibiotic Associated Diarrhea: A Prospective Study

Roseann Nasser, MSc, RD, CNSD; Jean Coleman, MSc, RD; Laura Allan, RD; Carmen Ho, Martina Sellinger, Bryna Wack, Sherry Yip

Introduction: It has been the experience of nursing staff on ward 3D at Pasqua Hospital (PH) that patients commonly experience antibiotic-associated diarrhea (AAD) as a result of antibiotic therapy for a variety of infections. Several studies involving hospitalized patients experiencing AAD who consumed yogurt found a reduced frequency of gastrointestinal (GI) disorders, such as diarrhea¹. It is thought that yogurt may lessen the effect of the antibiotics on the intestinal microflora². The aim of this study was to determine if a yogurt prophylaxis decreases the incidence of diarrhea related to antibiotic therapy on ward 3D at PH. This was compared with a benchmark incidence of 24% found by Beniwal et al. (2003)³.

Methods: Nine patients receiving oral or intravenous antibiotics consented to participate in the study, however only six patients completed the study. Participants were given 100g Astro BioBest Vitalite yogurt twice a day for eight days.

Results: The mean age of the study group was 63 years, four participants were male and two were female. All participants met the compliance criteria of consuming at least 11 out of 16 yogurt doses. Thirty-three percent of participants experienced diarrhea but no differences could be found between these participants and those who did not experience diarrhea. No statistical analysis was performed due to the small study size.

Conclusion: The benchmark of less than 24%, as set by Beniwal et al. (2003), was not achieved. Yogurt prophylaxis' effects on AAD in this study are inconclusive due to small sample size and short study duration of four weeks.

Funding or other acknowledgement: Funding provided by RQHR Nutrition and Food Services

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61. Development of a Service Delivery Model to Ensure Culturally Appropriate Home Care Services to First Nations/Métis/Inuit Population within RQHR

Dawn McNeil, Executive Director, Family Medicine, Homecare, Palliative Care, RQHR; Roxanne Boekelder, Aboriginal Health Transition Fund Home Care Project Coordinator, RQHR; Dawn Calder (*Executive Director, Medical Administration, SWADD, Native Counselling Spiritual Care & Volunteers*); John Paul Cullen (*Director, SWADD*); Betty Lou Whitley (*Director, Home Care*); Glorianne Bjerland (*Manager, Home Care*); Dorothy Lloyd (*Consultant, Eagle Moon Health Office*); Elan Paluck (*Research Scientist, Research & Performance Support*)

Introduction: The prevalence of chronic diseases such as diabetes within the First Nations and Métis is well documented and emphasises the need to have home care services available and delivered in a culturally appropriate manner. Unless changes to the system occur to accommodate those with the greatest health needs, their health needs will continue to increase. The overall goal of this project is to strengthen home care services delivered through the RQHR to ensure that First Nations and Métis people are able to access them in a timely manner, and to ensure that the available services are holistic with an emphasis on improved chronic disease management.

Methods: Key strategies for strengthening the home care service delivery model include:

- Development of a holistic screening tool to identify spiritual and cultural needs of referrals.
- Provision of cultural awareness training to home care staff.
- Broadening the scope of Home Health Aides to include basic foot screening and foot/nail care.
- Provision of diabetic/foot care education to clients/family members to facilitate early identification of foot problems.
- Strategically locate the home care team in the area of most need to ensure best access.
- Develop a comprehensive directory of on and off reserve services for home care staff.
- Develop clear channels of communication between urban homecare and First Nations community health services to decrease gaps in service.

Evaluation of this project involves a blend of qualitative and quantitative methods such as baseline and follow up interviews with clients to identify gaps in screening and satisfaction with the resultant service delivery model, case studies, and pre/post audits of the number and types of home care services being provided.

Results: RQHR Research Ethics Approval has recently been obtained and the project is now underway. Evaluation results are expected to be available by June 2010.

Potential Significance: As clients, families, extended families and other community members become more knowledgeable and confident with self-care, not only will the health of the individual improve, but also the health of the community. By changing the way home care is delivered to First Nations and Métis people, it is hoped that an increased utilization of appropriately targeted services will result in an optimum level of health and independence being achieved, and ultimately easing demands on acute care programs.

Funding or other acknowledgement: Funding provided by The Aboriginal Health Transition Fund. Evaluation provided in-kind support from RQHR Research and Performance Support.

62. A Gathering of Support: Developing an Aboriginal Grassroots Research Network on HIV/AIDS

Margaret Akan, Executive Director, All Nations Hope Aboriginal HIV/AIDS Network (ANHAN); Lana Holinaty, Health Promotion Coordinator, ANHAN; Dr. Carrie Bourassa, First Nations University of Canada; Audra-Jo Isaac, Student Researcher, First Nations University of Canada

In October 2006 the research team (see below) and the community co-PI, Margaret Akan, All Nations Hope AIDS Network (ANHAN) and the academic co-PI, Dr. Carrie Bourassa, First Nations University of Canada (FNUUniv) were awarded \$25,000 from the Canadian Institutes for Health Research (CIHR). The purpose of the research proposal was to consult with key Aboriginal (First Nations, Métis and Inuit) including people living with HIV/AIDS (APHA's) to develop a research agenda. We worked with APHA's, community-based organizations, and community members using action-oriented research to develop this agenda and move it forward by applying for a CIHR operating grant. This grant built on work facilitated by All Nations Hope AIDS Network (ANHAN) whom has assisted with the development of a Network of Aboriginal community-based agencies and organizations that promote and initiate Aboriginal HIV/AIDS awareness programs and who work with APHA's on a regular basis. We

continue to build relationships, based on the work that the Network began, that will facilitate a cooperative, coordinated, community-based action with the goal of developing a research agenda that will facilitate positive change in the Aboriginal community.

Stakeholders as identified by ANHAN were invited to attend a gathering on June 25, 2007. Invitees included Aboriginal people living with HIV/AIDS (APHA's), community service providers, academics, professionals and students from Regina, Saskatoon, and Prince Albert and also included four Elders. We held four talking circles in the community and they represented four clans (Buffalo, Bear, Eagle, Wolf). The talking circles were based on the following four questions:

- 1) What is your knowledge about HIV/AIDS among Aboriginal people?
- 2) How do you think our research can assist in reducing rates of HIV/AIDS among Aboriginal people?
- 3) What kinds of services or supports regarding HIV/AIDS and Aboriginal people exist in your area?
What kinds of services or supports would you like to see?
- 4) What should our research priorities be over the next year? 3 years? 5 years?

Participants were presented with consent forms and they either signed them or indicated verbal consent on the recorders (all sessions were recorded and transcribed). The gathering was very successful and five key themes emerged:

- 1) Individual, family, community, (2) Support, (3) Barriers, (4) Education, (5) Research

Our poster display will highlight the findings and next steps of this important, community-based research project.

Research Team Members: Margaret Akan – Executive Director, ANHAN, Dr. Carrie Bourassa – FNUUniv, Ron Horsefall – ANHAN, Lana Holinaty, ANHAN, Dr. Mary Hampton – University of Regina, Randy Jackson - Canadian Aboriginal AIDS Network (CAAN), Prof. Kim McKay-McNabb – FNUUniv, RQHR Native Health Services

Collaborators: Rick Kotowich – Métis community; activist; National Aboriginal Council on HIV/AIDS (NACHA), Diane Kaiswatum - First Nations Elder; ANHAN, Dr. Leo Lanoie - Medical Health Officer, Prince Albert Parkland Health Region; addictions specialist: Wanda Rockthunder - Foster Care Coordinator, Aboriginal Family Services

63. Métis Diabetes Education and Awareness Project

Stephanie Cavers, Director, Eagle Moon Health Office; Cheryl Troupe, Consultant, Eagle Moon Health Office; Lorraine Boucher, Consultant, Eagle Moon Health Office; George Fayant, Consultant, Eagle Moon Health Office; Dorothy Lloyd, Consultant, Eagle Moon Health Office; Judy Bird, Consultant, Eagle Moon Health Office

Introduction: The critical rise in diabetes and diabetes complications among Metis people is well documented. Through consultation efforts on the part of the Eagle Moon Health Office (EMHO), the Metis community has voiced the need for diabetes services that are culturally appropriate and accessible. Appropriate services need to acknowledge Metis history and recognize Metis cultural uniqueness and diversity. The knowledge held by the 'old people' or Elders in the community must be sought.

Methods: The research will be conducted through qualitative interviews with 15-20 Elders and community members. Information will be gathered that helps to determine how cultural practices play a role in healthy living. Elders will be asked to share information on Metis traditional land use practices and cultural practices in gathering, preparing and sharing food. Community members who have been diagnosed with diabetes, or who have family members diagnosed with diabetes, will be asked to share their thoughts on the impact of diabetes on themselves, their family and community. Both Elders and community members will be asked to share their understandings of "health" and "what it means to be healthy" from a Metis perspective.

Metis cultural protocols for research will be followed and will be guided by EMHO's Metis Health Working Group and Metis Women Elder's Group. EMHO is currently seeking RQHR Research Ethics Approval for this project and expect to complete this process in April 2009.

Results: A general content analysis will be used to analyze the information gathered from the interviews. The anticipated result of the research is the increase in knowledge of Metis cultural practices as they relate to health, healthy living and diabetes care, and an increase in knowledge and awareness of diabetes risk factors, prevention strategies and nutrition. Metis people will be better equipped to use cultural practices in their diabetes maintenance and prevention and will be more able to make positive informed choices.

Potential Significance: It is anticipated, that through this research, the Metis community will be better engaged in diabetes programs, will have greater capacity to combat Type 2 diabetes, and by use of culture, will be empowered to take ownership of diabetes programs.

Funding or other acknowledgement: Funding provided by Health Canada – Metis Off-reserve Aboriginal Urban Inuit Prevention and Promotion, Aboriginal Diabetes Initiative

64. Contrasting Policies and Administration of Sexually Transmitted Infection Programs in Saskatchewan First Nations and Alaska Native Communities

Rick Kotowich, Aboriginal Community Development Coordinator, Environmental Health Department, RQHR; Dr. Mike Fisher, FACMPE, Associate Professor, School of Management - College for Professional Studies, Regis University, Denver, Colorado

Introduction: Our objective was to compare policy-making and administration within the context of initiatives designed to address Sexually Transmitted Infections (STI) in the aboriginal populations of the Regina-Qu'Appelle Health Region (RQHR) and the Copper River Native Association (CRNA) in Alaska.

Methods: Information on delivery of health services in the RQHR and Alaska, and chlamydial infection, gonorrhoea and HIV in Alaska, RQHR and the province were collected from a variety of sources. Rates for RQHR, and Saskatchewan were obtained from the Saskatchewan Ministry of Health and for Alaska from publicly available data from the Centres for Disease Control, Atlanta, USA (CDC) website. The socio-demographic data and the type of services delivered by the CRNA were obtained from the 2007 Report of the (CRNA) Association to gain insights into target populations for community interventions. We identified key informants within the Population and Public Health Services (PPHS), RQHR and the CRNA and interviewed them using semi-structured interviewing techniques to gain basic insights into delivery of sexual health program and services, STI transmission dynamics and STI risk behaviours in the respective geographic areas.

Results: Separated by national borders, the communities of Alaska Natives and Saskatchewan's Treaty 4 First Nations peoples share many deeply rooted cultural values. Though heritage is shared, the policies governing access to health care services are clearly divergent. Alaskans suffer one of the highest rates of STIs in the United States. Native American/Alaska Native females are infected at a rate of about double that for non-Native females, 7.5 vs. 3.0 per 100,000, respectively. Statistically profiling STI epidemics amongst Saskatchewan First Nations population is challenging because the STI data is not analyzed by patient ethnicity. However, Aboriginal people are over-represented among HIV/AIDS cases in Canada. In 2005, there were an estimated 2,300 to 4,500 new HIV infections in Canada, of which an estimated 200 to 400 (9%) were in Aboriginal people.

Conclusion: The funding mechanisms are clearly divergent for the administration of STI programs in the RQHR and CRNA health delivery systems. In contrast, this presentation implies that social and cultural attitudes, scope of services, and administrative challenges are similar for the two populations.

Potential Significance: Applied research provides a valuable opportunity to better appreciate health care systems and their organizational issues. For inquirers, contrasting study is an impetus for gathering information and focused consideration of health service arrays and delivery challenges.

Funding or other acknowledgement: With appreciation of support and guidance of Zahid Abbas, epidemiologist, PPHS - RQHR.

65. Saskatchewan Aboriginal Women's Postpartum Depressive Experiences: A Qualitative Exploration

Dr. Pamela Clarke, Adult Mental Health Clinic; Dr. Mary Hampton, Luther College, University of Regina

Introduction: Postpartum depression is considered the most frequent serious clinical mood disturbance among postpartum women (Beck, 1995; O'Hara & Swain, 1996). Despite extant quantitative and qualitative data examining postpartum depression across cultures (Beck, 2002b), there are no published data investigating qualitatively the experiences of postpartum depression among Indigenous women in Canada. The aims of the present study were to explore, understand, and describe nine Saskatchewan Aboriginal women's perceptions and beliefs regarding the nature and perceived cause of their depression post-birth, and to examine the role of socio-cultural factors related to the onset and maintenance of perinatal depression.

Methods: Qualitative interviews were conducted with nine Aboriginal women with postpartum depression from the province of Saskatchewan. An interview was also conducted with an Aboriginal Elder to understand traditional

childbearing practices and to explore the socio-cultural implications of maternal depression among Aboriginal women.

Results: Central to the theoretical model derived from the qualitative data analysis conducted in this study was *Ambivalence and Conflict Surrounding Motherhood*. Four interdependent themes were identified within the core element: *Becoming a Mother*, *Being a Mother*, *Partnership: Being and Feeling Alone*, and *Lack of Support*. Lastly, *Ambivalence and Conflict Surrounding Motherhood* emerged amid three socio-cultural constructs: *Cultural Disconnectedness*, *Socio-demographic Barriers*, and *History of Abuse*.

Conclusion: The results of this study shed light on the importance of obtaining a deeper understanding of the socio-cultural implications in the onset and maintenance of postpartum depression among women of Aboriginal ancestry. The development of the theoretical framework in the current study sheds light on the importance for healthcare providers to consider Aboriginal women's psychological adjustment to and acceptance of pregnancy, childbirth, and motherhood. This study also highlights the importance for healthcare providers to consider factors such as anxiety and depressed affect, the quality of maternal attachment and the spousal relationship, and the level of emotional and practical support offered and provided by partners, family members, and greater cultural network during pregnancy and in the postpartum. Consideration of the presence of specific personality constructs (i.e., self-criticism and low self-esteem), chronic stressors such as financial hardship/poverty, single marital status, and lack of previous employment during pregnancy, and exposure to or experience with child abuse and/or domestic violence may also be prudent in detecting vulnerable women. Furthermore, having a greater understanding and respect for Aboriginal worldviews by being cognizant of traditional maternal practices and support may alleviate the risk of perpetuating oppression and marginalization of Aboriginal mothers.

Potential Significance: It is anticipated that the results from the current study will be used to construct a perinatal depression screening scale that is culturally appropriate for postpartum Aboriginal women living in rural, northern, and urban areas of Saskatchewan. The provision of prenatal and postnatal depression screening by healthcare providers may serve to identify and reduce the impact of postpartum depression among Aboriginal women, particularly those women who are exposed to adverse socio-economic and healthcare conditions in remote and isolated communities.