



SHOWCASE 2007 ABSTRACTS

#1 - Title: Mortality from Ruptured Abdominal Aortic Aneurysms in Southern Saskatchewan

Investigators: N. Peti; D. Kopriva; D.J. McCarville

Objectives: The Regina Qu'Appelle Health Region (RQHR) provides all specialist vascular care for southern Saskatchewan and portions of south-western Manitoba. The present study was undertaken to determine local morbidity and mortality rates following rupture of an abdominal aortic aneurysm, and to compare these rates with published literature.

Design and Methods: A chart review was undertaken on all cases of ruptured abdominal aortic aneurysms (rAAA) presenting to the RQHR between March 1, 1996 and February 28, 2006. Demographic and outcome data was collected from hospital charts by a single reviewer.

Results and Conclusions: One hundred and one cases of rAAA presented to the RQHR over this ten year period. Thirty seven percent of patients presented with blood pressure below 90 mmHg systolic. Seven percent had no recordable blood pressure. The overall mortality was 25%. Seven patients had no recordable blood pressure. The overall mortality was 25%. Seven patients were treated palliatively and 94 had open surgical repair of rAAA. The operative patients suffered 19% mortality. The mortality rate for rAAA seen in the RQHR is below the rate reported in the medical literature even though our patient demographics are comparable to other series. Mortality risk was not statistically different from patients presenting within the City of Regina and those presenting from a greater distance. We postulate that our favourable mortality risk implies that a large number of the most unstable cases of rAAA in southern Saskatchewan die in the community without the benefit of specialist evaluation in the RQHR. Further education of primary care physicians and patients might lead to the salvage of some of these patients.

#2 - Title: Incidence of YAG Laser Posterior Capsulotomy Following Cataract Extraction: Comparison of Two Intraocular Lens Implants

Investigators: L. Ong-Tone; J. Seida; L. Rotariu; A. Bell

Purpose: To determine if the change of the intraocular lens implant from SI40NB to Clariflex affected the incidence of YAG laser posterior capsulotomy following cataract surgery. In this procedure, the laser beam is used to open the thickened posterior capsule which is lying against the posterior surface of the lens implant. This laser procedure is associated with an increased incidence of retinal detachment. Advanced Medical Optics, the company that manufactures both lenses, changed the round edge of the SI10NB lens to square in the Clariflex lens. This was thought to prevent the migration of the cells that cause thickening of the posterior capsule. It was thus hypothesized that the rate of YAG laser posterior capsulotomy would be lower in patients who had received the new generation lens.

Method: A chart review was conducted comparing the incidence rates of YAG laser posterior capsulotomies at two distinct time periods (2000-2001; 2003-04). The review years were chosen to ensure that the primary lens type in use was either the SI40NB or the Clariflex. An equal number of cataract surgery patient charts were reviewed from each time period and the incidence rate of subsequent YAG capsulotomy recorded.

Results: There was a weak ($\phi = .246$), but significant difference ($\chi^2 = 158.9$, $df = 1$, $p < 0.001$) in the observed incidence of YAG procedure by lens type. Of a total of 1,319 cataract surgeries, 253 cases (19.3%) resulted in a subsequent YAG procedure when SI40NB was used, compared to only 48 of 1,319 cases (3.6%) when Clariflex was used.

Conclusion: The difference in incidence rates of YAG laser posterior capsulotomies resulting from lens type was large enough to reach significance. These results suggest that the new and improved lens type has the potential to improve patient outcomes and reduce health care costs associated with subsequent hospital visits and medical procedures. Further research into other factors that contribute to the need for subsequent YAG laser posterior capsulotomy following cataract surgery is required.

#3 – Title: The Aqueous Humour Penetration of Gatifloxacin and Moxifloxacin Eyedrops Given in Different Concentrations in a Wick Prior to Cataract Surgery

Investigators: L. Ong-Tone; M. Etter; A. Bell

Purpose: To determine if the penetration into the aqueous humour (AH) of the new antibiotics, gatifloxacin and moxifloxacin eyedrops is affected by the concentration of the antibiotic in the wick used to dilate the pupil prior to cataract surgery.

Method: 48 patients were randomized into 2 groups. One group received gatifloxacin and the other moxifloxacin eye drops. They all received either eye drops four times a day, starting 2 days prior to the surgery. About 2 hours before surgery, they received a wick soaked in a dilating mixture containing the antibiotic. The drops were instilled in the eye again just before surgery.

52 patients were randomized into the above 2 groups. The only difference was that the amount of antibiotic in the dilating mixture was doubled.

At the beginning of the surgery, 0.1 ml of AH was aspirated, frozen and analyzed at the Provincial Laboratory by high performance liquid chromatography.

Results: In the first half of the study, there were 23 samples for gatifloxacin and 25 for moxifloxacin. The mean concentrations of the antibiotic in the AH were 0.30 (± 0.2) $\mu\text{g/ml}$ for gatifloxacin and 0.97 (± 0.6) $\mu\text{g/ml}$ for moxifloxacin.

In the second half, there were 26 samples in each group. The mean concentrations were 0.34 (± 0.2) $\mu\text{g/ml}$ for gatifloxacin and 1.37 (± 0.8) $\mu\text{g/ml}$ for moxifloxacin.

Analysis of Variance (ANOVA) indicated a significant effect of antibiotic ($F_{(1,96)}=62.2, P<0.001$) and procedure ($F_{(1,96)}=4.2, P<0.05$) on absorption rates. Further statistical analysis using the Mann-Whitney U test, showed that the penetration of moxifloxacin into the AH increased significantly ($U=217.5, P<0.05$) when the volume of the antibiotic in the dilating mixture in which the wick was soaked was doubled. This was not so for gatifloxacin.

Conclusion: Moxifloxacin penetrated the AH better than gatifloxacin when given in a wick soaked in a dilating mixture containing the antibiotic eyedrops. When the volume of the antibiotic in the mixture was doubled, penetration into the AH was significantly increased for moxifloxacin but not gatifloxacin. Only moxifloxacin exceeded the minimum inhibitory concentration (MIC) levels for the most common ocular pathogens.

#4 – Title: Persistent Diplopia Following Cataract Surgery Using Retrobulbar Injections

Investigators: L. Ong-Tone; D. Hudson; L. Rotariu; A. Bell

Purpose: To determine the variances in incidence of postoperative persistent diplopia (double vision) among individuals who administered the retrobulbar injection prior to cataract surgery.

Method: All the operating room day sheets for author (1) between January to December 2005 were analysed. There were 1053 cataract surgeries performed. Of these, 14 were under general anaesthesia, 276 were with topical anaesthesia and 763 were with retrobulbar anaesthesia. The charts for the latter group were reviewed to identify the person who gave the injection. The total number of patients anaesthetised by each individual and the number of persistent diplopia were recorded.

Results: There was no diplopia in the groups that received general or topical anaesthesia. There were 13 cases of persistent diplopia from the 763 patients in whom retrobulbar blocks (1.7%) were performed. There was a significant ($\chi^2 = 51.6, df = 5, p < 0.001$) but weak (Cramer's $V = 0.26$) relationship between physician practice and the occurrence of diplopia. One physician had 13.5% of retrobulbar blocks result in diplopia. The majority of all procedures (range 86.5% - 100%), however, were performed without any incidence of diplopia being reported.

Conclusion: There are statistical differences between physician practice and the resulting incidence of double vision. Further review of other factors that may contribute to these postoperative conditions is needed.

#5 – Title: Reduction of Edema of Lower Extremities by Subcutaneous, Controlled Drainage: Eight Cases

Investigators: L. Clein; E. Pugachev

This paper discusses the pathophysiology and modern treatment of edema. Dissatisfied with the treatment available, the authors report on the use of a closed, controlled drainage procedure in eight patients with severe edema of the lower limbs. It is important to note that this technique is used as a palliative procedure. Seven out of the eight patients considered the procedure to have been worthwhile, experienced improvement, and ed comfortable.

Apart from actual pain and consequent insomnia, the discomfort and misery produced by the constant leaden drag of the paralyzed inflexible, and bolster-like limbs are important factors in the sum total of misery produced by the disease.

W. Sampson Handy 1908

#6 – Title: The Use of Intrathecal Bupivacaine, as the Primary Drug, in Refractory Small Fibre Neuropathy and CRPS I

Investigator: S. Bishop; S. Tracey

Objective: Our objective is to demonstrate the successful use of intrathecal Bupivacaine, as the primary drug, in patients with intractable neuropathic pain. A review of the literature revealed a paucity of information pertaining to this topic in this patient population.

Methods: We present 3 cases of small fibre neuropathy and 1 case of CRPS I, secondary to post herpetic neuralgia. They were initially tried on conventional medical management, and subsequently spinal cord stimulation without success. Hence, we then conducted a trial of intrathecal ropivacaine/opioid combination, for the duration of a 2-week period. Pain level was assessed using a Visual Analogue Scale (VAS) daily; the difference in mean score was 51.25 mm pre-trial Vs post-trial. At the conclusion of the trial all 4 cases were deemed successful when patients reported >50% pain relief, 3 have been permanently internalized, while the 4th has not yet made up her mind.

Results: The mean average dose of ropivacaine during trial was 4.8mg/day. After permanent pump implant, at last follow up, the mean VAS score was 29.5 mm. The patients presenting with small fibre neuropathy reported a marked improvement in the burning sensation in their feet. In the patient with CRPS I, the rash and edema improved, along with the pain.

Conclusions: In a select group of cases of neuropathic pain, especially patients with small fibre neuropathy and CRPS I, where SCS could not provide satisfactory pain relief, the use of intrathecal bupivacaine as the primary drug can successfully control pain.

#7 – Title: The Effect of Menstrual Phase and Hormonal Contraception on Successful Bilateral Placement of the Essure Micro-insert Tubal Coil

Investigators: C. Lett; J. Thiel

Objective: To determine the effect of menstrual phase and preoperative hormonal contraception on successful bilateral placement of the Essure micro-insert tubal coil.

Introduction: The Essure micro-insert coil tubal sterilization procedure is a hysteroscopic method of female sterilization which is becoming increasingly common. In order to improve rates of successful bilateral coil placement, it has been suggested that the procedure be done in the follicular phase or that the endometrium be hormonally suppressed preoperatively, in order to improve visualization of the tubal ostia. We hypothesized that neither menstrual phase timing nor hormonal contraceptive use would improve successful bilateral Essure coil placement.

Methods: A retrospective review of women undergoing the Essure hysteroscopic sterilization procedure from December 1, 2005 to November 30, 2006 in the ambulatory outpatient clinic at Regina General Hospital was performed (Canadian Task Force classification II-2). Ethics approval was obtained from the Regina Qu'Appelle Health Region Ethics Review Board.

The primary outcome measure was successful bilateral placement of the Essure micro-insert tubal coil, defined as bilateral visualization of the tubal ostia and cannulation with the Essure micro-insert coil. Success rates were compared based on the menstrual phase in which the procedure was performed as well as on the presence or absence of hormonal contraceptive use. Chi-square and student's t-tests were used for statistical analyses as appropriate.

Results: One hundred of 103 patients (97%) had successful visualization of the tubal ostia with bilateral placement achieved in 97/100 (97%). There was no significant difference in successful bilateral placement based on menstrual phase ($p=0.394$) nor where success rates improved among women using hormonal contraception ($p=0.466$).

Conclusion: Menstrual phase timing and hormonal endometrial suppression do not improve success rates for bilateral placement of the Essure device. Preoperative preparation for patients requesting Essure tubal sterilization should not be complicated by menstrual phase scheduling or mandatory initiation of hormonal endometrial suppression.

#8 – Title: A New Approach to the Earlier Diagnosis of Prostate Cancer: A Pilot Project
Investigators: A.K. Verma; J. Slater; J.D. Rodenbush; E.C. Paluck

Introduction: In the Regina Qu'Appelle Health Region (RQHR), prostate cancers are almost always diagnosed at a stage when treatment options are severely limited. The primary objective of this study was to evaluate an assessment process that could reduce the time required to receive a conclusive diagnosis following a positive screen for prostate cancer.

Methods: A prospective, randomized control trial involving 30 self-selected family physicians from 11 different medical sites in Regina was chosen. Practice sites were stratified by size and location, and then randomized in a 1:1 ratio to either the experimental or standard care condition. Patients of doctors in the experimental group were mailed a copy of their prostate-specific antigen (PSA) test results, and those with elevated test results were able to directly book an appointment with the Radiology Department for a further assessment without referral from a urologist. Patients of doctors in the standard care condition were referred to a urologist first, and then ultimately to a radiologist.

The study's primary endpoint, number of days required to receive a conclusive diagnosis, was defined as the number of days from the initial PSA test, up until the time when a conclusive diagnosis was made. Appointment dates and test results for the primary outcome were obtained from patient medical records.

Secondary outcomes pertained to patient perceptions of the prostate cancer assessment process and were obtained from telephone interviews conducted with all subjects who had abnormal PSA test results. Interviews were scheduled approximately two weeks after the conclusive diagnosis had been made and consisted of 21 open and close-ended questions covering all aspects of the prostate cancer screening process, including PSA testing, TRUS, and the biopsy.

Results: In total, 171 subjects over the age of 50 years participated in the study, of which 157 had normal PSA scores and 14 had abnormal scores. The median time to a conclusive diagnosis for subjects in the experimental group was 35.0 days (range 13.0-118.0) and 226.0 days (range 154.0-240.0) for the control group.

Follow up interviews revealed that participants believed that receiving their test results via mail and then being able to proceed to the Radiology Department for further follow up was beneficial.

Conclusion: Providing patients with their test results by mail and allowing them to schedule appointments directly with the Radiology Department shows great promise as a means to reduce the time required for a conclusive diagnosis. The findings of this study lend support to the goal of establishing a Prostate Assessment Centre in the RQHR that would allow for a timely and more accurate diagnosis of prostate cancer while also offering an appropriate deferral of biopsy on men at low risk for clinically significant cancer.

#9 – Title: Delaying Renal Replacement Therapy: Is Dialysis Destiny? Evidence from the Regina Qu'Appelle Health Region (RQHR) Chronic Renal Insufficiency (CRI) Program Population

Investigators: N. Aitken; C. Horton; D. Norton; C. Nadiger; E.C. Paluck

Background: A growing prevalence of end-stage renal disease (ESRD) in Canada has resulted in a surge of patients requiring dialysis. The overall goal of the RQHR CRI program is to delay and/or prevent the need for renal replacement therapy and to better prepare patients and their families to make treatment choices when kidney failure is imminent. The purpose of this study was to examine the extent the progression of chronic kidney disease (CKD) is delayed in patients referred to the CRI program.

Methods: A retrospective analysis of data maintained by the CRI program, MIQS (formally Medical Information Quality System), and Enovation® databases was undertaken. The delayed progression of CKD was the study's primary outcome and was measured by patients' change in glomerular filtration rate (GFR). 'Change in GFR' was defined as the GFR at the patient's initial CRI appointment minus their most recent value as of December 31 2004. GFR was calculated using the MDRD (Modification of Diet in Renal Disease) formula. Change in GFR was compared to an expected rate of decline of 7.56 ml/min/yr which is cited as the average decline in GFR experienced by CKD patients referred for specialist care.¹

Results: Complete data were available for 302 of the 402 CRI patients. Of this group, most (n=165/302) were classified at their first CRI visit as being in the latter stages of CKD (i.e., Stage 4/5; creatinine clearance < 30 ml/min/1.73 m²).

The overall median change in GFR for the study group was 1.6 ml/min (interquartile range = -6.9 to 11.8) reflecting that over half of CRI patients (n=175) experienced an increase in GFR. Of the CRI patients experiencing a decline in GFR greater than the expected rate of decline (n=85/302), the highest proportion of decline (n=22/23) occurred in patients in the early stages of CKD (i.e. Stage 1/2). The majority (74%) of patients in Stage 4/5 demonstrated an improvement in GFR since their first visit to the CRI program. Analysis of variance revealed that patients' initial stage of CKD, when they joined the program, had a significant effect on the median change in GFR (F (2,299) = 103.97, p<0.001). Tukey and LSD post-hoc tests showed all of the median changes in GFR between those in Stages 1/2, 3, and 4/5 to be significant (p<0.001).

Conclusion: As the prevalence of ESRD continues to grow, programs and interventions that prevent or delay the need for renal replacement therapy are needed. Previous research has demonstrated that interventions delaying the expected rate of kidney decline by as little as 10% per year have significant cumulative cost-savings to the health system.¹ This study demonstrated overall, the CRI program has delayed the progression of renal disease in 47% of their patients by substantially more than 10%. Cumulative cost-savings to the RQHR are likely to be substantial.

1Trivedi, H.S., Pang, M.H., Campbell, A., & Saab, P. Slowing the progression of chronic renal failure: economic benefits and patients' perspectives. *American Journal of Kidney Disease*. 2002 Apr;39(4):721-9.

#10 - Title: Near Vision as Predictor of Visual Acuity in Patients with Nuclear Cataracts

Investigators: K. Schweitzer; R. García

Purpose: To determine the value of near vision in predicting the post-operative visual acuity in patients with nuclear cataracts.

Method: A total of 53 patients undergoing cataract surgery had pre-surgery near vision scores recorded. The patients underwent cataract surgery and had visual acuity testing 2 months later.

Results: The mean difference in visual acuity between pre-surgery near vision scores and post-surgery visual acuity test scores was 9.6 (+/- 16.8). The median difference was 5.0 points. In 84.9% of the patients, the predicted visual acuity was within plus or minus 20 points. Over-prediction of the visual acuity occurred in the majority of the rest of the patients (15.1% of the total). A highly significant relationship was observed between pre-surgery near vision scores and post-surgery visual acuity test scores (Kendall's tau-b coefficient = 0.283, p=0.006).

Conclusion: The near vision eye chart is a rapid and inexpensive test that can be used to help predict visual acuity outcomes in patients with nuclear cataracts. Ophthalmologists should make use of the test to help in decisions concerning the benefit of cataract surgery and in ensuring the patient understands the degree of improvement that can be expected after their surgery.

#11 - Title: Selection of Appropriate IOL in Combined Procedures (Phacoemulsification and Vitrectomy) With and Without Gas Tamponade

Investigators: K. Schweitzer; R. Garcia

Purpose: To determine if a difference in postoperative refraction exists between patients undergoing combined surgeries with and without gas tamponade.

Methods: The study compares 26 subjects undergoing combined procedures without gas tamponade and 28 subjects undergoing the same combined procedure with gas tamponade. The preoperative anticipated refraction is compared with the postoperative measured refraction.

Results: The difference (Δ) between the predicted preoperative refraction and the resulting refractive status 2 months postoperatively was significantly different ($t = 2.66$, $df = 48$, $p < 0.01$) in eyes undergoing combined procedure with gas tamponade (mean $\Delta = -.30$, $SD = .66$) compared to those eyes not receiving gas tamponade (mean $\Delta = .16$, $SD = .55$).

Conclusion: Patients undergoing combined procedures with gas tamponade experience a statistically significant myopic shift compared with those patients not receiving gas tamponade. Ophthalmologists performing combined procedures with gas tamponade should be aware of this shift in order to select the appropriate IOL and to help ensure the best visual outcome postoperatively.

#12 – Title: Direct to Consumer Advertising of Antidepressant Medication: Infraction or Simply Marketing

Investigator: M. Gheis

Introduction: Direct-to-consumer advertising (DTCA) of prescription drugs is widespread in the United States. American television viewers see as many as 16 hours of prescription drug advertisements each year, Frosch *et al* 2007. Aside from US, New Zealand is the only industrialized nation that allows advertising of prescription drugs to the public, also with controversy. Health Canada has allowed two types of drug advertisements. The first are reminder ads, which promotes the brand of drug but do not make any direct health claims. The second are disease-oriented ads, which do not mention a brand but can highlight certain illnesses or symptoms and counsel viewers “to ask their doctor” about treatment. Despite the ban by Health Canada, Canadian consumers are strongly influenced by cross-boarder DTCA, particularly through cable television channels. In 2005, the debate around DTCA in Canada peaked when CanWest Global Communications initiated a bid to overturn Ottawa’s ban on DTCA of prescription drugs. This case is still being widely debated in different Canadian medical and healthcare advocacy for a, as not ruling has yet been reached.

Purpose: This study focuses on evaluating the views of the three parties most implicated in the process of DTCA: the physician, the patient and the patient’s caregiver. The study assesses the participants’ views on three factors related to DTCA: risk, doctor patient relationship and education as indicated by six dimensions: empowerment, pressure, acceptability and ethical stance, risk to patients, sales and over-prescribing collaboration and compliance.

Method: This study was approved by the research ethics board of the University of Regina for the purposes of partial fulfillment of the requirements on EMBA degree of the investigator. It was carried out in a private community psychiatric outpatient clinic in Regina, the Department of Psychiatry at Regina Qu’Appelle Health Region and the Department of Family Medicine at Regina Qu’Appelle Health Region. A total of 48 individuals were recruited for this study.

Results: Physicians, care givers and patients alike viewed direct to consumer advertising of antidepressants as an acceptable and ethical practice. Views of the three groups regarding impact on prescribing pattern, compliance and side effects significantly differed.

#13 – Title: Language of Emotional Expression in the Koran

Investigators: M. Gheis; A. Abed

Introduction: Language is the principal vehicle for emotional expression. The range of emotions expressed in any culture is significantly influenced by language. Determinants of development of emotional language vary from culture to culture and depend on factors such as stage of language development and descriptive characteristics of this language. The Arabic language is strongly influenced by the Koranic scriptures. The Koran, believed by Muslims to be a message from God to humanity, consists of 6,346 verses some of which directly address emotional matters.

Studies on the emotional expression in Arabic speaking patients frequently indicate a tendency to use language of Somatization in describing states of emotional distress, and their tendency to use various expressions in reference to depression.

Purpose:

- 1) To evaluate the prevalence of words of emotional expression in the Koran and attempt to correlate the characteristics of this language to the psychopathological characteristics in Arabic-speaking patients.
- 2) To investigate possible origin for the somatic presentation of mood disorders in Arabic-speaking patients as revealed by repeated studies on the psychopathology of mood disorders in the countries.

Method: Manual and computerized search of language of emotional expression in the Koran was carried out.

Findings:

- 1) Fear was very widely described, occurring on 139 occasions in the Koran, mostly in the context of religious matters. Panic and anxiety were seldom used.
- 2) Sadness occurred on 14 occasions. There is no reference to depression. Sadness was highly associated with fear.
- 3) Other emotions addressed include despair, anger and misery.
- 4) Somatic vocabulary is used with origin of emotions including heart as well as head/mind. Heart occurred on 252 incidents and mind occurred on 202 incidents.

Limitations: Translation/work in equivalence.

#14 – Title: Change in Mood Variability After 3 to 6 Months of Treatment

Investigators: M. Gheis; R.C. Bowen; M. Baetz; Y. Mahmood

Objectives: Mood varies along at least 2 dimensions, intensity (level) and variability (MV). There is little research on mood variability compared with mood level. We assessed changes in mood variability and level, in patients with “mood swings”, over 6 months of treatment.

Method: Nineteen psychiatric patients with complaints of “mood swings” were assessed with the MINI diagnostic interview. Patients completed the: Beck Depression Inventory, Mood Disorders Questionnaire, State-Trait Anxiety Inventory and Trait anger scale from the State-Trait Anger Expression Inventory-2. They also completed a diary with 4 visual analogue scales for depression, high mood, anxiety and irritability, twice a day for a week. From this was calculated an index of mood variability the mean square successive difference. The rating scales and diary were repeated after 6 months of treatment.

Results: Most patients had diagnoses of bipolar spectrum and anxiety disorders. Patients had higher MV than controls on depression, anxiety and irritability. With treatment, patients improved on anxiety symptoms and there was a trend to improvement on depression, but on MV the improvement was on high mood and irritability.

Conclusions: MV may respond differently to treatment than mood level, even though they are correlated. MV contributes a distinct component to overall distress of patients who complain of mood swings.

Clinical Implications: Patients’ complaints of “mood swings” can be verified by a measure of MV. MV may respond to treatment differently from mood level.

Limitations: Small study. Treatment not standardized. Heterogeneous group of patients.

#15 – Title: Physician Cardiovascular Health Study: Are You at Risk? An Evaluation of the Metabolic and Inflammatory Risk Factors in Canadian Physicians

Investigators: S. Abdulla; P. Duffy; W. Semchuck

Purpose: Although physicians are highly involved in patient care and counseling, there is limited research investigating the physician’s ability to evaluate his/her personal risk for cardiovascular disease (CVD). Therefore, this study assessed individual physicians’ perceptions of personal cardiovascular (CV) health risk and correlated these impressions with objective metabolic and inflammatory markers for CVD.

Methods: Physicians were invited to participate in the trial and were asked to complete a questionnaire designed to address their perceived CV risk. Actual CV Risk was evaluated using Framingham Risk Score. Apolipoprotein B (Apo B) and hs-CRP were also evaluated. Systolic blood pressure was self-reported. Participants were grouped according to hs-CRP (</≥3.0mg/L) ± metabolic syndrome (MS) (≥3 ATP-III criteria).

Results: 33% of physicians contacted agreed to participate (n=69). 76.8% of physicians accurately predicted personal Framingham 10-year CV risk. 89.8% of physicians with perceived 10-year CV <10% accurately predicted personal Framingham 10-year CV risk while 45% of physicians with perceived 10-year risk .10% were accurate in their prediction (Pearson Chi-square = 10.63, p=0.001; Spearman R=0.378, p<0.01).

A linear relationship was observed between hs-CRP and number of ATP-III metabolic syndrome criteria present (r=0.345, p,0.01). Fasting glucose and triglycerides were significantly higher among physicians with MS regardless of his-CRP grouping (p<0.05).

Conclusions: The results of this study indicate that physicians of low CV risk are accurate in predicting individual CV risk; however, this prediction becomes less accurate with a higher perception of CV risk. Additionally, high levels of hs-CRP and metabolic syndrome may co-exist or may be mutually exclusive.

#16 – Title: Quality of Life after Coronary Intervention within the RQHR

Investigators: K. Dickson; W. Semchuk; R. Mikhail; G. Garbe; R. Zimmerman

Introduction: PCI provides no survival advantage compared to optimal medical therapy in patients with stable coronary artery disease, however, coronary intervention has been demonstrated to decrease anginal symptoms in this population.

Purpose: To compare quality of life indicators one year after cardiac catheterization for those patients who agreed to participate in a Health Status Outcomes survey and were investigated for suspected coronary artery disease at the RQHR and compare that between patients who received various interventions from April 2000 – March 2005.

Methods:

Using the Alberta Provincial Project for Outcomes Assessment in Coronary Heart Disease, SK database, a outcome initiative capturing all patients undergoing cardiac catheterization in RQHR, health status was measured using the Quality of Life Component of the Seattle Angina Questionnaire (SAQ). Patients completed the survey immediately before intervention and at one year. Crude were compared for different interventions versus medical therapy.

Results:

	Medical Therapy	OHS	PCI
Baseline	5.4	5.5	5.5
1 year	8.2	8.6	8.5
Responders Only			
Baseline	5.4	5.5	5.5
	8.2	8.6	8.5
Non Responders			
	4.8	5.0	5.0
	7.6	8.2	8.2

Conclusions: Our data clearly demonstrates the improvement in quality of life experienced in those who underwent either CABG or PCI with no significant difference experienced between the interventions.

#17 – Title: Optimizing the Warfarin Hospital Discharge Process to Facilitate Transition to the Community
Investigators: A. Simmons; A. Mercil; A. Reaume; B. Semchuk; L. Sulz

Background: Recent research within the Regina Qu'Appelle Health Region has found that among patients initiated on warfarin in the hospital, control of the International Normalized Ratio (INR) within the American College of Chest Physicians recommended range of 2.0-3.0 post-discharge was suboptimal. Only 32% of INRs were in the target range in the 3 weeks post-discharge. It was also found that family physicians accepting care did not receive information they needed to manage their patient's warfarin effectively, nor did they receive information in a timely manner. The purpose of this study is to enhance the management of hospitalized patients initiated on warfarin through their transition to the community by use of a standardized discharge process involving an anticoagulant monitoring form.

Methods: patients on Unit 3F and CSU at the General Hospital initiated on warfarin during the study period (March 5th – April 13th/07) were screened for study inclusion. For patients who met the inclusion criteria and provided consent, the revised anticoagulant monitoring form was added to their chart to be used instead of the existing Anticoagulant Monitoring Form. The revised form contained the information on the existing monitoring form plus additional information such as the patient's indication for warfarin, target INR range and duration of therapy required. The revised form was sent to the patient's family physician upon hospital discharge, along with a fax cover letter explaining the project. INRs are being followed for the three weeks after hospital discharge to determine the percentage within the therapeutic range. Surveys are being conducted with physicians who have received the form and nurses who have been involved with using the form to attain their opinions.

Results: The study has not yet been completed, but preliminary results have shown that physicians have been very satisfied with the information provided.

Conclusions: A modified anticoagulant monitoring form containing the patient's indication for warfarin, target INR range and duration of therapy required in addition to warfarin doses received and INR results was useful to family physicians to help them manage their patient's warfarin therapy after hospital discharge.

#18 – Title: Warfarin Management in the Peri-Discharge Period: It's a Bloody Mess
Investigators: A. Reaume; B. Semchuk; L. Sulz; A. Marcil; S. Poulin

Background: Warfarin is a challenging medication to use for many reasons including its narrow therapeutic range and the resultant risks if a patient is outside this range. Ineffective discharge planning and lack of timely communication between physicians may increase the risk of sub- or supra-therapeutic International Normalized Ratios (INRs) upon discharge from hospital and transition of care to community-based healthcare.

Objectives: The objectives of this study included: (i) Determine the essential components of an ideal patient discharge process (ii) Gather current discharge practices of internists, cardiologists, cardiovascular surgeons, orthopedic surgeons, neurologists, family physicians and nursing unit staff (iii) Obtain the patient's perspective on their discharge process as it relates to anticoagulant therapy (iv) Assess warfarin monitoring & frequency of INRs to calculate the fraction of INRs in the target range.

Methods: A literature review, a focus group discussion with family physicians and a survey of current discharge practices of hospital-based physicians were included in this study. Patients initiated on warfarin in the hospital who met the inclusion criteria were enrolled. All INRs performed in hospital until 3 weeks post-discharge were recorded and assessed. Patients were interviewed in the third week post-discharge.

Results: An ideal patient discharge process was not found in the literature. Family physicians reported not receiving important information in a timely fashion to manage their patients discharged from hospital on warfarin. Physicians based in the hospital described diverse practices and generally perceived that family physicians need very little information to manage patients discharged on warfarin. Only 32% (41/127) of patients' INRs obtained post-discharge were in the ACCP recommended therapeutic range; Fifty-three percent (67/127) were subtherapeutic placing the patients at significant risk of morbidity and mortality, whereas 15% (19/127) were supratherapeutic, but suffered no serious bleeds.

Conclusions: Warfarin management during the transition from hospital-based physicians to family physicians is less than optimal. Implementation of a standardized discharge process may be helpful to ensure appropriate dosing of warfarin, monitoring of INRs and to standardize what and how information is sent to family physicians in a reasonable time.

#19 – Title: Impact of a Collaborative Care Model in a Medication-Optimization Program: A Randomized, Standard-Care Controlled, prospective Study. The Saskatchewan Medication Assessment for Risk Reduction Target Therapies (SMART) Program

Investigators: B. Semchuk; T. Patel; A. Slopek; D. Blackburn; T. Blair; P. Duffy; J. McMillan; C. Nair; K. Townsend; R. Tsuyuki; R. Zimmerman

Introduction: The impact of cholesterol, blood pressure control and glycemetic control in patients with diabetes, as well as the additional use of antiplatelet agents and ACE inhibitors in patients who have suffered an ischemic vascular event has been validated through large well-designed trials. Numerous registries demonstrate suboptimal use of these agents at discharge. Other data indicates that as patients transition from hospital to community care, further drug related problems manifest and further, one year adherence to proven therapies decreases as compared to early utilization. Potential reasons include patient, caregiver and system related factors.

Purpose: The SMART study was designed to test whether a collaborative model using a hospital pharmacist as a “medication case manager” would result in a significant increase in risk reduction medications, one year adherence rates and control of physiologic variables such as blood pressure, cholesterol, serum glucose and weight as compared to standard care.

Design: Using a prospective, controlled design, endpoints will be compared at one year between those patients randomized to conventional care vs those randomized to the intervention arm. The intervention arm consists of a hospital pharmacist in a clinic setting who will see the patient at discharge and at three, six and twelve months to determine if opportunities exist to enhance medication therapies and collaborate with the most responsible physician as appropriate.

Results: To date, study recruitment is completed and 80% of patients have been closed out. Complete patient data will be available within the 2nd quarter of 2007. Interim data will be available at the time of the research symposia.

#20 – Title: Pharmacist Intervention in Risk Reduction Study: Clinical Outcomes

Investigators: B. Semchuk; J. Taylor; L. Sulz; M. Deschamps; R. Tsuyuki; P. Duffy; T. Wilson

Introduction: A multitude of clinical trials have demonstrated reductions in morbidity and mortality in high risk vascular patients when treated with antiplatelet therapy, angiotensin converting enzyme inhibitors, statins and agents that lower blood pressure in hypertensive individuals and control elevated blood glucose in those with diabetes. Despite the data and numerous guidelines for managing these high risk vascular patients more than half the at risk population remain undertreated.

Purpose: This community-based study was designed to measure the ability of a pharmacist-physician collaboration to positively affect patient care as indicated by utilization of broad array of drug-related endpoints previously demonstrated to decrease vascular risk.

Methods: A before-and-after design to assess pharmacists’ ability to affect drug-related endpoints was utilized. Patients were identified by various methods, one of which was medication profiles. Those providing consent were educated on risk factor modification and encouraged to consult their physicians. Pharmacists subsequently faxed the details of their assessments to the primary care physician, along with suggestions for therapy changes. The primary outcome measure was the proportion of patients who achieved a composite of either a dose increase or a new target medication as a result of pharmacist recommendation during the study.

Results: A total of 61 pharmacists recruited 217 patients, and of these, follow-up was completed on 216. Following pharmacist recommendation, 48.1% of patients had 1 or more target medications initiated or had the dose increased. In a further 5.6% of patients ($n = 12$), physicians accepted at least 1 pharmacist recommendation and altered at least 1 other component of the patient’s medication regimen with no pharmacist recommendation. Of the patients for whom a pharmacist made a suggestion, pharmacologic risk reduction therapy was initiated or enhanced in 53.7%.

Conclusion: This community pharmacist-based program improved utilization of therapies known to decrease vascular risk in patients considered high risk.

1. Regina Qu’Appelle Health Region
2. University of Saskatchewan
3. University of Alberta

#21 – Title: Pharmacist Intervention in Risk Reduction Study: Educational Outcomes
Investigators: J. Taylor; B. Semchuk; L. Sulz; M. Deschamps; R. Tsuyuki; P. Duffy; T. Wilson

Introduction: Pharmacists working in collaboration with physicians have demonstrated their ability to influence the management of patients at risk for vascular disease. It is unclear as to what the best method is to train pharmacists to take on an expanded medication optimization role.

Purpose: To assess the effect of intensive versus conventional training on pharmacist-suggested implementation of cardiac risk reduction efforts in community practice.

Methods: Sixty-one volunteer pharmacists from 40 pharmacies were randomized to one of two educational groups: intensive or conventional training in cardiac risk reduction. With training complete, pharmacists identified patients at high risk for coronary artery disease (CAD) at their practice sites and approached them to participate in the program. After a patient interview, pharmacists documented the relevant CAD risk factors and medication history, then faxed this information along with risk reduction recommendations to the primary care physician. Patients were then encouraged to make a medical appointment for further assessment and treatment, if warranted. Follow-up occurred at 4, 16, and 24 weeks to determine if any pharmacist-suggested risk reduction measures had been implemented. Pharmacists were reimbursed \$30 per patient accrued.

Results: Two hundred and seventeen patients were enrolled in the study, with 216 having follow-up data available for analysis. No significant differences were observed between the groups with respect to mean number of patients enrolled per pharmacist (4.3 versus 2.7) and the proportion of pharmacists completing at least one patient (17/27 versus 14/34). Feedback from pharmacists on program delivery found no significant difference in satisfaction with the training provided. Recommendations forwarded by pharmacists of the Intensive group (35.8%), however, were accepted by physicians to a significantly greater extent than those of the Conventional group (23.8%).

Conclusion: Intensive training for pharmacists was more likely to result in improvements in cardiovascular risk reduction therapy than conventional training.

#22 - Title: Assessment of Energy and Protein Recommendations of the Regina Qu'Appelle Health Region Dietitian Handbook for Pancreatitis, Spinal Cord Injury, and Multiple Trauma
Investigators: M. Flaman; J. Kambeitz; K. Pfeifer; D. Climenhaga; J. Bunney; R. Nasser

Objective: To determine if protein and energy requirements in the Regina Qu'Appelle Health Region (RQHR) Dietitian Handbook for pancreatitis, spinal cord injury, and multiple trauma are valid and evidence-based.

Methods: A review of literature from 1975-2006 was conducted using MEDLINE. Inclusion criteria were date published (1975-2006), primary research article, human adult subjects, applicable to disease state and nutrition (energy and/or protein requirements). Studies were critically evaluated and assigned a level and grade of evidence. The strengths and limitations of the studies were used to make recommendations.

Results: No recommendations were made for pancreatitis. For acutely injured individuals with paraplegia and quadriplegia, it should be considered that energy could be up to 54% less than predictions of standard formulas. It should be considered that 28 kcal/kg/day and 23 kcal/kg/day be used when calculating energy requirements for paraplegics and quadriplegics, respectively. For individuals mechanically ventilated with multiple trauma, it should be considered that 27 kcal/kg body weight/day could be used up to three days post injury.

Conclusions: Twenty eight studies met the inclusion criteria. Twenty six of these studies were Level 3, Grade C, one was Level 1, and one was Level 2. Recommendations were based on studies with Level 3, Grade C evidence.

#23 – Title: Post Discharge NICU Feeding Practices and Factors that Influence Caregivers' Feeding Decisions of Preterm Infants

Investigators: A. Broad; T. Hornung; J. Kidd; D. Bilan; N. Ferrara; R. Nasser

Introduction: The Regina Qu'Appelle Health Region (RQHR) is a Mother –baby friendly facility, encouraging breastfeeding before any other feeding practices. Research indicates that breast milk for preterm infants may not be sufficient in meeting the infant's needs for optimal growth. Therefore, supplementation must occur. Feeding recommendations upon discharge may include breast milk, expressed breast milk with fortification, preterm post discharge formula, or a combination of all three. The feeding practices of caregivers of preterm infants post discharge from the RQHR Neonatal Intensive Care Unit (NICU) are not well known.

Purpose: To determine if caregivers of preterm infants discharged from the NICU at RGH follow nutrition recommendations provided by health care professionals and to determine if there are factors that influence caregivers' feeding decisions.

Method: Caregivers of preterm infants born 34 weeks gestation or less and less than 1500 grams were included in the study admitted to the NICU in 2006. The NICU Dietitian mailed an information letter to 20 caregivers regarding the study and the telephone survey that would be conducted one week after the letter was received. The survey consisted of open ended questions regarding: feeding influences, feeding practices post discharge/current. Demographic information of preterm infants was collected once caregivers provided consent to participate in the study.

Results: The results are being tabulated and will be presented at the poster presentation.

#24 – Title: Client and Surrogate Decision Makers Perceptions of Percutaneous Endoscopic Gastrostomies and Percutaneous Endoscopic Jejunostomies

Investigators: H. Lines; M. Okwengu; S. Wan; C. Dunphy; J. Sanden; R. Nasser

Purpose: Recent studies have shown that the use of long term tube feeding has increased substantially. There is a need for improved education of physicians, patients and surrogate decision makers regarding percutaneous endoscopic gastrostomies (PEG) or percutaneous endoscopic jejunostomies (PEJ) and its implications. The Dietitians in the Regina Qu'Appelle Health Region would like to determine the perceptions of clients and/or surrogate decision makers regarding PEG/PEJ placement.

Methods: A 25 item survey was developed that consisted mainly of mainly closed ended questions and some open ended questions regarding length of time to eat before PEG or PEJ placement, health professionals who provided support or guidance, and quality of information provided to caregivers. Clients who are 18 years of age and older, living at WRC with a PEG or PEJ for greater than 6 months were included in the study. The Dietitian who works with clients with PEG or PEJ mailed the information letter, the survey and a stamped addressed return envelope to clients and/or surrogate decision makers.

Results: Data collection is on-going, and the results will be presented in June.

#25 – Title: Peripheral Parenteral Nutrition. The Use of Heparin and Hydrocortisone: Current Nutrition Practices

Investigators: M. Brasnett; J. Code; B. Poole; A. Stevenson; J. Striha; R. Nasser

Introduction: Peripheral parenteral nutrition (PPN) is administered to clients requiring short term nutrition support <14 days. Due to the risk of peripheral vein thrombophlebitis, it is recommended that osmolarity of the PPN not exceed 600-900 mOsm/L. Heparin and hydrocortisone are sometimes used to improve tolerance of a PPN solution greater than 900 mOsm/L.

Purpose: The purpose of the project is two-fold: 1) To determine current Canadian practices for peripheral parenteral nutrition regarding heparin, hydrocortisone, and osmolarity; 2) To determine whether these current practices are allowing clinicians to meet the energy and protein requirements in adults requiring short-term nutrition support (i.e., less than 14 days).

Methods: A 15-item multiple choice survey was sent by email to either the clinical manager or the manager of food services of acute care hospitals across Canada with 100 bed capacity or greater that employs one full time Dietitian. Managers were asked to forward the email to Dietitians working in the areas of surgery, intensive care, medicine or oncology.

Results: Thirteen percent (28/217) of respondents completed the survey. Seventy one percent (19/28) of respondents used PPN in their facility for less than 7 days. Only 5/28 dietitians indicated that heparin was used with PPN with different dosages and added directly to the PPN solution. Eight dietitians indicated that the osmolarity used in their facility was less than 900 mOsm/L while 7 respondents used PPN with osmolarity greater than 900 mOsm/L. The majority of respondents felt that PPN did not meet the energy requirements of clients.

Discussion: Due to the low response rate, it is difficult to make recommendations for use of heparin with PPN to Dietitians in the Regina Qu'Appelle Health Region.

#26 – Title: Comparison of Two Nutrition Education Approaches to Reduce Dietary Fat Intake and Serum Lipids Reveals Registered Dietitians are Effective at Disseminating Information Regardless of the Educational Approach

Investigators: R. Nasser; S. Cook; K.D. Dorsch; R.G. Haennel

Purpose: The purpose of this study was to compare an educational approach based on the stages of change (SOC) model to usual care education (UC) in reducing dietary fat intake and serum lipids in individuals with hyperlipidemia.

Methods: A 40-week randomized control study was conducted. Four education sessions were provided on an out-patient basis over a one-month period with follow-up every 6 weeks. The sample consisted of 141 males and females with hyperlipidemia (mean age 50 ± 11 years and a body mass index of 30 ± 6) randomly assigned to one of two education interventions. The stages of change group was provided with tailored dietary activities based on their readiness to change to reduce dietary fat intake. Dietary information and activities for the usual care program were developed for those individuals ready to make a change in their diets. Serum lipids, anthropometrics, readiness to change, dietary intake and exercise data were assessed at baseline, 4, 16, 28 and 40 weeks. A repeated measures analysis of variance was used to compare differences between groups across time.

Results: Total cholesterol, LDL cholesterol and body weight decreased significantly at 4 weeks ($P < 0.05$) for both groups and was sustained over time, with no differences between the groups.

Conclusions: The stages of change education approach was not more effective than the usual care education approach in decreasing dietary fat intake and serum lipids in a classroom setting. (J Am Diet Assoc 2006;106:850-859.)

#27 – Title: Effect of Nutrition Counselling on Client Perceptions and Eating Behaviour

Investigators: S. Cook; R. Nasser; B. Comfort; D. Larsen

Purpose: Demonstrating the effectiveness of nutrition counseling is imperative, not only to promote successful patient outcomes but also to secure funding. This study therefore assessed the value and effectiveness of nutrition counseling.

Methods: To measure clients' perceptions of the value of inpatient counseling, the Clients' Perceptions about Nutrition Counselling (CPNC) instrument was administered to 164 clients one week after hospital discharge. To determine if inpatient counseling is effective in promoting changes in eating behaviours, the same clients were asked to complete the Health Habits and History Questionnaire (HHHQ) before counseling and then at three and six months following discharge.

Results: The majority of respondents who completed the CPNC indicated that the information provided by the dietitian was useful, that the dietitian was knowledgeable, and that they knew what to eat after speaking with the dietitian and had changed their diet according to the recommendations. From the HHHQ respondents counseled for heart health diet modifications ($n = 45$) significantly lowered their intake of energy ($p < 0.0002$), fat, saturated fat, sodium, and cholesterol (all $p < 0.001$) over time.

Conclusions: These results suggest that inpatient nutrition counseling is perceived as valuable and results in positive dietary behaviours, the majority of which are sustained at six months. (Can J Diet Prac Res 2006;67:171-177).

#28 – Title: A Multidisciplinary Approach to Delaying Renal Replacement Therapy: An Evaluation of the RQHR Chronic Renal Insufficiency (CRI) Program

Investigators: C. Horton; D. Norton; C. Nadiger; N. Aitken; E.C. Paluck

Background: The CRI program provides a multidisciplinary approach to clients with chronic kidney disease (CKD) that are referred to the program by nephrologists. The overall goal of the CRI program is to delay and/or prevent the need for renal replacement therapy and to better prepare patients and their families in making treatment choices when kidney failure is imminent.

Purpose: The primary purpose of this project was to provide a benchmark of the CRI Program's performance against a set of 39 quality indicators developed by the Saskatchewan Integrated Renal Program (SIRP) Steering Committee.

Methods: Retrospective data for the evaluation were obtained from health records maintained by the CRI program as well as data managed within the MIQS (Medical Information Quality Systems) and Enovation databases. Data collection focused on patient outcomes from the period September 01 to December 31 2004.

Results: In 2004, there were 402 registered clients in the CRI program. Just over half (53%) of the active CRI population was male and 49% were diabetic. The mean (\pm SD) age of clients was 72.0 (\pm 13.71) years. Of the 396 CRI clients for whom the necessary data for the Modification of Diet in Renal Disease (MDRD) calculation were available, the majority (n=347) were classified as being in Stage 3 or 4 of CKD.

Twenty-one (54%) of the 39 quality indicators developed by SIRP could be measured with an acceptable level of precision at the time of the evaluation. Of these 21 indicators, the CRI program either fully, or partially (within 10%), met 81% (17) of the targets. The program was most successful in maintaining measurements for activities providing preventative care to maintain/maximize renal function (e.g. Have initial clinic appointment within 3 months of referral for 90% of clients).

Areas for improvement identified included maintaining documentation for psychosocial care activities (e.g. At least 50% of clients exhibit an improved self-reported quality of life within 12 months of enrolment) and blood pressure tracking.

Conclusion: Overall the program is measuring and maintaining established goals and activities successfully. Future directions of the Regina CRI program pertain to activities facilitating the early identification of clients with CKD, as well as improving documentation and tracking to assist with performance benchmarking.

#29 – Title: Regina Qu'Appelle Health Region Health Sciences Library Usage Survey

Investigators: S. Olfert; J. Mason; S. Powelson

Objectives: The Regina Qu'Appelle Health Region (RQHR) Health Sciences Library provides library services for physicians, staff, and medical residents. In order for the library to provide good service to library patrons, it is necessary to better understand who these people are, what their information needs are, and how the library can best meet those needs. The main purposes of the study are to determine, among library patrons, the following: (1) the level of awareness of library services, (2) the use of library services, (3) the frequency of library patrons requiring information, and (4) the reasons why library patrons require information. Additional purposes of the study were to determine the use of the electronic resources among library patrons, and the impact of being able to access information for physicians, staff, and medical residents.

Design & Methods: In order to get a sense of the level of awareness of, use of, and need for services, a survey of RQHR physicians, staff, and medical residents was conducted. The survey was designed and pilot tested by staff in the Research Services Unit, Strategic Health Information & Planning Services, Saskatoon Health Region, and then adapted to fit the needs of the RQHR. The survey was sent to all physicians and medical residents in the RQHR (n=564), and a random sample of RQHR staff who may have the need to access the library (n=1200). The list of physicians was obtained from the Intranet; names of residents were obtained from the College of Medicine (RGH); and a list of current RQHR employees was obtained from Human Resources. The surveys were sent with a cover letter and a self-addressed return envelope, and postage was paid for subjects who would not return the completed survey via interoffice mail. A reminder letter was mailed two weeks after the survey.

Results & Conclusions: The response rate among physicians and staff was 35% and 43%, respectively, with surveys continuing to be returned by staff. Complete results available by May 1, 2007.

#30 – Title: Core Stability and Task-Specific Intervention for Children with Developmental Coordination Disorder: A Pilot Study

Investigators: K. Kane

Purpose: This pilot study examined the effects of a group intervention program on children with developmental coordination disorder (DCD). DCD is known to affect approximately 6% of children. These individuals demonstrate coordination problems that interfere with everyday activities and create barriers to physical activity participation. They experience difficulties with motor learning and execution of controlled movement that may be associated with altered patterns of muscle recruitment and secondary impairments such as reduced muscle strength, balance and physical fitness. Core stability training is frequently used in athletes and the general population to improve strength, balance, and endurance. To date, however, research addressing the use of core stability training in pediatric or DCD populations is limited. The current initiative used an adapted program of core stability and skill specific training to determine if it had an impact on motor skills, self-perceived adequacy for physical activity, motor proficiency, and core strength in children with DCD.

Methods: Five children aged 9 to 13, identified by a developmental paediatrician as meeting the criteria for DCD, participated in a 6-week program of adapted physical activity. The program consisted of two group sessions per week and a home program of core stability activities. The sessions were led by a Physical Therapist and an Exercise Therapist and incorporated a modified core stability program, fitness activities, and task-specific intervention based on child-chosen goals.

Results: Improvements in motor proficiency, as measured by the Bruininks-Oseretsky Test of Motor Proficiency (BOTMP-SF), varied from child to child. Measures of self-efficacy for physical activity also indicated that most children made small gains in movement confidence. Larger gains in self efficacy were noted by children who practiced the home program more frequently. Performance on several of the core stability exercises also suggested that children either maintained or improved their ability to execute these tasks over the course of the program.

Conclusions: Further investigation of this type of program is warranted for children with coordination difficulties such as DCD. Physical activity promotion in this population has the potential to improve quality of life and reduce health risks associated with sedentary lifestyles.

#31 – Title: EMG Activation of Selected Trunk Muscles: A Preliminary Comparison of 7 to 13 Year Old Children

Investigators: K. Kane; J. Barden

Purpose: Proximal (i.e., trunk) stability is necessary for force production and generation of coordinated, efficient movement of distal body segments. As children develop, even into adolescence, postural control mechanisms become more efficient; however the maturation of these processes has not been well described, particularly for older children. The purpose of this pilot study was to observe the activity of two trunk muscles during selected postural tasks.

Method: Nine children ranging in age from 7 to 13 years (3 males, 6 females; mean age 10 years; SD \pm 2 years) participated in this cross-sectional study. Surface electromyography (EMG) was used to record the activity of bilateral rectus abdominis (RA) and lumbar erector spinae (ES) muscles while the children performed 6 postural stability tasks, including one-leg balance (eyes open vs. closed) and tandem stance. EMG and videotape recordings were analyzed.

Results: Mean and peak EMG values for each muscle were calculated for each task. RA activity appeared relatively consistent between children, regardless of age. ES activity was higher than RA activity during most tasks. The results suggest a general reduction of stabilizing activity, particularly from ES muscles, with increasing age and postural stability. Higher levels of ES activity were noted for the youngest children and for children who utilized more frequent, higher magnitude postural adjustments during the tasks.

Conclusion: The findings of this pilot study suggest that postural control mechanisms (as evaluated by ES and RA activity) continue to develop between 7 and 13 years of age, although other factors such as balance ability may also be involved. EMG analysis suggests similarities between the muscle activation patterns of younger children and some older children who utilize more significant postural adjustments to maintain equilibrium. The results are consistent with previous findings that the ES muscles play an important role in the maintenance of stable postures. Understanding how children activate their trunk muscles has the potential to help physical and occupational therapists design assessment and treatment interventions for children with developmental disabilities.

#32 – Title: Travel Immunization Acceptance Rates Among Immigrants Visiting Friends or Relatives in Their Home Countries as Compared to Business and Those Traveling for Work/Study Abroad

Investigators: T. Diener; Z. Abbas. D. Martin

Objectives: To prospectively assess the acceptance rates of recommendations made in terms of immunization and malaria chemoprophylaxis among immigrants and their Canadian born children visiting friends and relatives in their countries of origin compared to people who travel for business or work/study abroad.

Methods: Data was collected from clients attending the Travel Health Centre at Population and Public Health Services, Regina, Saskatchewan from beginning of September till end of November, 2006. It was collected and analyzed for age, gender, country of origin, annual household income, purpose of travel, destination, duration and type of accommodation during the trip. Data was also collected on immunizations and malaria chemoprophylaxis recommended/prescribed and accepted/declined, as well as the reason for decline.

Results: The overall response rate for the larger compliance study was 95.7%. Although 993 clients took part in the survey, only a subset of 66 VFRs, 43 business travelers and 27 travelers going abroad for work or study was analyzed for this part of the study. VFRs are predominately females (54.5% Vs. 25.6% business travelers), have less annual household income (30% earning less than \$40,000 compared to 71% of business travelers earning more than(\$70,000) and spend more time abroad (70% of VFRs away for 4 or more weeks vs. 33% of business travelers). Most VFRs planned to visit Central Asia (28.8%). VFRs consulted their physicians for travel advice, before visiting the Travel Health Clinic, more often (40.9%) than business travelers (27.9%). VFRs tend to rather stay at the homes of their friends and relatives (90.9%) as compared to other groups. All respondents refused rabies vaccination despite being made aware of travel associated rabies risks. Compliance with malaria chemoprophylaxis was the same in VFRs and other travelers. Cost was a significant factor in non-compliance with prescribed immunization among VFRs.

Conclusions: VFRs constitute a risk group for contracting and importing communicable diseases during their travels abroad. The results of this survey will be used in formulating recommendations for pre-travel assessment and counseling in terms of immunization and malaria chemoprophylaxis for VFRs planning to visit their countries of origin.

#33 – Title: Evaluation and Comparison of the Food Safety Training Courses Offered by the Regina Qu'Appelle Health Region

Investigators: J. Lee; Y. Graff; G. Koutsoulis

Objectives: The Regina Qu'Appelle Health Region offers two types of food safety courses that vary in length, which include the four hour, and seven hour courses. Currently, the seven hour course is recognized throughout the province of Saskatchewan, while the four hour course is only recognized within the Regina Qu'Appelle Health Region. The purpose of this study was to evaluate and compare the impact of the two types food safety courses on the attitudes and knowledge of participants, as well as to identify areas of improvement.

Methods: The study used a one group pre test-post test quasi-experimental design, and was conducted on the food safety courses taking place from September to October of 2006. Participants were grouped according to the course they registered for and were given self administered pre and post course questionnaires. These questionnaires were scored using percentages, and measured the participants' attitudes and knowledge towards food safety. Participants were also asked to give their feedback on the courses in order to identify areas of improvement.

Results: The study found that the participants in the four hour courses had a small, but non-significant increase in mean attitude scores ($p = 0.096$), while participants in the seven hour courses experienced a significant increase ($p < 0.05$). The mean knowledge scores in participants were observed to have significantly increased in both the four hour ($p < 0.05$), and seven hour courses ($p < 0.05$). There was no significant difference in the mean post test attitude ($p = 0.468$) or knowledge scores ($p = 0.881$) between the four hour and seven hour course participants. Feedback included obtaining a larger television screen for instructional videos, enlarging the font on lecture slides, and implementing more interaction between course instructors and participants.

Conclusion: The results of the study indicated that both courses were effective and comparatively equal in terms of the level of attitudes and knowledge that participants were able to attain. These results could potentially offer support for provincial recognition of the four hour course. The feedback from participants could also lead to extra funding to improve upon the courses.

#34 - Title: Exploring Issues of Work/Life Balance in Healthcare Employees in Canada
Investigator: J. Okroj

Introduction: The importance of balancing paid work and life roles and responsibilities has come to the fore in the past two decades. When individuals have difficulty with this balance, there can be negative health consequences for employees, and subsequent costs to the employer such as decreased work performance and job dissatisfaction. Further, most of the research on work/life balance has focused on the corporate, for-profit sector. The purpose of this research is to examine how employees in the healthcare sector workplace perceive work/life balance issues.

Method: This is a case study of a single health region in a province in Western Canada. Through one-on-one interviews, ten professional healthcare workers, five male and five female, provide their perspectives on work/life balance. They describe the meaning of balance, the strategies they consider towards achieving balance, and how the conditions of the workplace/job affect that balance.

Results: The results indicate that in the life sphere, the participants have to consider many factors when developing strategies towards work/life balancing, including their spouses, children and their financial situations. In the work sphere, the participants' impression of the job conditions in this healthcare workplace is that it is fairly rigid, and not expected to assist them in work/life balancing.

Conclusions: The responsibility for balancing work and life lies in both spheres. In the life sphere, each individual, while considering the requirements of the other people in their lives, has to determine what strategies work best for them. In the work sphere, the workplace is responsible for providing options that assist individuals in the balancing process. The employer could address the shortcomings of the healthcare system as portrayed by the participants, which includes inflexible hours, unavailability of part-time work when desired, and lack of job autonomy. Although the employer has budgetary restrictions, they may want to determine whether these are outweighing their primary motivation, that of enhancing the health of individuals and the population, which includes their own employees.

#35 – Title: Understanding Nurses Practice with Adolescent Mothers: A View from Both Sides
Investigator: R.J. Evans

At the present time, the majority of births take place in hospital where adolescent mothers come into frequent contact with nurses. However little research has looked at what occurs between these two groups, suggesting that the experiences of adolescents are similar to older mother when this may not be the case. This study addressed the questions; how do adolescent mothers understand nurses' practice with them in hospital and how do nurses understand their practice with adolescent mothers in the hospital?

Seven mothers between the ages of 14 and 18 and thirteen nurses who worked with adolescent mothers at one hospital were interviewed. Thematic analysis was used to examine the interviews through the lenses of discourses of the good mother, adolescent motherhood, and nursing.

Four key findings emerged: power/privilege, supporting/teaching, responsibility/respect, and challenges of time. Nurses used strategies to develop equitable relationships with the adolescent mothers, while the young women used their own power to decide how to engage with the nurses. At times, recognition for their authority as mother or respect for their own decision making was problematic for the adolescent mothers.

Nurses acknowledged that their perceptions of support may be different from the young women's perceptions, adjusting the support and teaching they provided to deal with their concerns. The young women relied on nurses for information, but were also quite clear about how they wanted to receive the information, which at times was inconsistent with the way it was delivered.

Nurses' understandings of respect and responsibilities for themselves and the adolescent mothers were complex as were the challenges for adolescent mothers as they worked within these expectations. Of particular importance, nurses' interest in being good nurses at times actually interfered with the ability of the adolescent mothers to fulfill their roles as good mothers.

The importance of nurses paying attention to trust, respect, and power within relationships with adolescent mothers was identified. Results further indicated the importance for nurses to attend to and support adolescents in their role as mothers. The importance of promoting evidence informed best practices, including strategies to facilitate empowerment of those likely to be marginalized within relationships, was reinforced.

#36 – Title: Completing the Circle: End of Life Care with Aboriginal Families

Investigators: M. Hampton; A. Baydala; C. Bourassa; G. Saul; K. McKay-McNabb; K. Goodwill; B. McKenna

Results of previous research conducted by our team validate findings from other researchers who consistently suggest that end of life services based on palliative care philosophy are underutilized by ethnic minorities due to cultural barriers. Our project focused on one culture in need of these services: Aboriginal cultures in Canada. Using Community Action Research methodology, this research put into action recommendations made in the literature to: (1) inform end of life health care providers of culturally sensitive protocol when dealing with Aboriginal families through videos, lectures and pamphlets; (2) inform the community of end of life care services (increase awareness); and (3) increase Aboriginal families' use of these services. Our research team produced a video (23 min.) for health care providers containing messages from Aboriginal Elders about end-of-life. We have also prepared a brief powerpoint presentation that expands on some concepts presented in the video. Research partners are available to deliver and distribute these materials to health care providers and recipients of health care. A second video (56 minutes) entitled "Completing the Circle: Healing Words Spoken to Aboriginal Families about End of Life" contains more words from Elders to bereaved family members. Our findings contribute knowledge to the cross-cultural palliative care conceptual theoretical model used in this research. The poster we have prepared for the RQHR Research Showcase presents pictures and quotations shared by Elders that illustrate concepts they hope non-Aboriginal health care providers will understand about end of life for Aboriginal peoples. The results are specific to these Saskatchewan Elders and cannot be generalized; however, the process by which we conducted our research may be of interest to researchers in other areas. (Funded by Canadian Institutes of Health Research, 200309PEP).

#37 – Title: Implementation and Evaluation of a Family and Adolescent Skills Training (FAST) Group for Use with Multi-Problem Adolescents in an Outpatient Community Mental Health Setting

Investigators: M.P. Tuttle; R. Shercliffe; M. Hampton

There is a fundamental need for specialized treatments targeting suicidal adolescents with borderline symptomatology; however, there is a scarcity of empirically validated or established efficacious treatments for this challenging population (Macgowan, 2004). Preliminary research supports the use of Dialectical Behaviour Therapy (DBT) interventions with multi-problem adolescent clients who present with high diagnostic comorbidity, suicidality, and other forms of extreme dyscontrol (Miller, Rathus, and Linehan, 2007; Rathus and Miller, 2002). In addition, the DBT skills training component appears to play a fundamental part in effecting positive behavioural change with such clientele (Koerner and Linehan, 2000), particularly when family members are involved in the treatment (Miller, Rathus, Linehan, Wetzler, and Leigh, 1997; Miller and Glinski, 2000). Given the relevant literature in this area, the evaluation of a DBT-based family skills training approach is not only warranted, but also an area of both significant importance and timeliness.

The current research project will assess the effectiveness of a 12-week outpatient Family and Adolescent Skills Training (FAST) Program for the use with suicidal adolescents with features of borderline personality disorder. Pre- post-treatment effects of symptoms and level of functioning will be collected and analysed, as will follow-up data. The comparison condition will include a wait-list control group. The results will offer vital empirical evidence regarding the use of DBT-based approaches that have been adapted for use with adolescents and their families, as well as contribute to a more comprehensive understanding of what outcomes can be attained as a result of the group treatment process.

#38 – Title: Pain and Dementia: The Effects of Systematic Assessment on Clinical Practices and Caregiver Stress

Investigators: S. Fuchs-Lacelle; T. Hadjistavropoulos

Background: Under-managed pain has serious negative consequences for the quality of life of seniors with dementia. Several studies have shown that such patients are less likely to receive analgesic medication than cognitively intact peers despite a similar prevalence of pain-related conditions (Kaasalainen et al., 1998; Morrison & Sui, 2000; Scherder et al., 1999). Moreover, under-managed pain can lead to patient aggression and behavioural problems. The verbal communication impairments that characterize severe dementia make pain assessment complex and difficult and pain problems often go undetected. The Pain Assessment Checklist for Senior's with Dementia ([PACSLAC]; Fuchs-Lacelle & Hadjistavropoulos, 2004) was developed as a clinically useful tool designed to assess pain among seniors with severe dementia.

Objectives: The goal of this study was to determine whether systematic pain assessment (i.e., regular use of the PACSLAC in long-term care facilities) leads to improved pain management practices compared to a control condition involving the recording of pain behaviors that are not directly related to pain. The Communications Model of Pain (e.g., Hadjistavropoulos & Craig, 2004; Prkachin & Craig, 1995) was used as a theoretical basis for the pain assessment and management portion of the study. Lazarus and Folkman's (1984) Stress Appraisal Model was used to conceptualize the potential impact of better pain assessment on nurse work-related stress and burden.

Results: As hypothesized, regular use of the PACSLAC by nurses improved pain management practices over time as reflected in increased usage of analgesic medications (prescribed on "as needed" basis) in comparison to a control group. As pain interventions increased, a corresponding decrease in observable pain behaviours (as reflected on the PACSLAC assessments that were completed by the nurses) occurred. In addition, as hypothesized, based on the Stress Appraisal Model, nurses who used the PACSLAC reported decreased distress and burden over time (presumably better pain management led to decreased behaviour disturbance among patients).

Conclusion: This investigation provides strong support for the clinical utility of the PACSLAC in improving pain management practices and decreasing caregiver distress and burden.

#39 – Title: Distribution of HPV Subtypes within a Saskatchewan (Canada) Colposcopy Population Shows an Increase in the Prevalence HPV Type 31 and Associated High Risk Lesions

Investigators: N.A. Antonishyn; G.B. Horsman; R.A. Kelln; J. Saggar; B. Limmer; A. Severini

Context: Impact studies of the new human papillomavirus (HPV) vaccines will be biased unless local base-line distribution studies are conducted. Vaccine cross protection for other important oncogenic HPV types and the emergence of potential genotype replacements require the knowledge of the pre-vaccine epidemiology of HPV.

Objectives: To determine the pre-vaccine distribution of HPV types in Saskatchewan, using a subpopulation of women referred to a colposcopy clinic.

Methods: 1355 specimens obtained during colposcopic examination were typed for HPV using L1 or E1 gene PCR and direct sequencing. HPV-16 and HPV-31 infections were confirmed with real-time E6 PCR. Indeterminate samples were analyzed using Luminex® technology. Correlations of the HPV type and histology were examined for statistical significance.

Results: The most commonly identified genotype in patients with severe cervical intraepithelial neoplasia (\geq CIN2) was HPV-16 (46.7%) followed by HPV-31 (14.7%) and then HPV-18 (3.9%). Fifteen of 330 specimens that were positive for HPV-16 or HPV-31 were further resolved to be mixed 16/31 infections by real-time PCR. The risk of CIN associated with HPV-18 infection (0.4-1.7) is substantially lower than either HPV-16 (3.6-11.0) or HPV-31(1.8-12.6).

Conclusions: HPV-31 is contributing significantly to the proportion of women with CIN in our population. The new HPV vaccines are generally expected to reduce cervical disease by 70% but HPV-16 and HPV-18 only represent 55% of the high-risk HPV types in our colposcopy clinic. The clinical significance of HPV-31 may be underestimated and its continued significance will depend on the level of cross protection by the new vaccines.

#40 – Title: Nurse Retention Strategies: Advice from Experienced Registered Nurses
Investigators: G. Donnelly; L. Domm; M. Dietrich Leurer

Purpose: To explore the insights of experienced nurses regarding initiatives they believe would effectively retain nurses like themselves in the nursing profession.

Design/methodology/approach: As part of a qualitative investigation into the perceptions of Nurses regarding issues affecting their profession, experienced nurses were asked to describe what retention strategies they would recommend to policy-makers. Sixteen semi-structured interviews were conducted with long-term nurses in a health region in Western Canada.

Findings: Seven retention strategies were commonly mentioned by the participants. The qualitative mode of inquiry allowed the nurses to convey the context, attitudes and feelings behind their recommendations.

Research limitations/implications: The work environments and accompanying retention policies experienced by nurses varies widely according to the specific employment context. As is typical with qualitative research, the findings of this study cannot be considered as generalizable to all nurses in all health care settings.

Practical implications: The results of this research provide a deeper understanding of the attitudes, emotions and contextual issues behind the nurse retention strategies seen as most appropriate by the target audience of long-term nurses.

Originality/value: While there is much literature advocating for the implementation of nurse retention strategies, very little evidence was been presented from a qualitative lens. It is necessary to directly listen to the voices of those impacted by policies in order to better appreciate the motivations and perceptions underlying their policy recommendations from a bottom-up perspective.

#41 – Title: A Comparison of Two Hydraulic Prosthetic Knee Devices Using Three-dimensional Gait Analysis

Investigators: J.M. Barden; C. Barnett; M. Coulthard; C. Issel

Purpose: In the past decade, the technology supporting the analysis of human movement has advanced dramatically. Three-dimensional clinical gait analysis has become an established and routine procedure for the evaluation of a wide variety of locomotor and balance disorders. One advantage is that it provides objective scientific data as opposed to qualitative methods, which rely on the interpretive skill of the practitioner who may be required to view and assess up to 30 gait parameters per second. The purpose of this case study analysis was to use standard 3D gait analysis techniques to compare the lower limb joint kinetics of two different prostheses, the microprocessor-controlled Otto Bock C-Leg and the Mauch SNS knee, in a transfemoral amputee.

Method: A male transfemoral amputee subject (49 yrs., 94 kg) completed 2 test sessions (one for each prosthetic device), each of which consisted of 6 walking trials. Both limbs (prosthetic and contralateral) were analyzed (3 trials for each limb) following a standard period of accommodation. A 6-camera 3D optical motion capture system tracked 15 lower extremity markers at a sampling rate of 60 Hz. Joint kinetics were calculated using a subject-specific, 7-segment lower extremity anthropometric model along with ground reaction force data that were sampled at 900 Hz.

Results: The sagittal plane joint kinetics (joint moments and powers) were different between the two prostheses. In particular, the net joint moment curve at the knee joint was substantially different for the C-Leg than for the Mauch SNS knee. The flexor and extensor joint moment patterns for the C-Leg more closely approximated those associated with normal gait.

Conclusion: The results of this study demonstrate that walking with a microprocessor-controlled prosthetic produces lower extremity joint mechanics that are more representative of normal gait patterns than a conventional hydraulic-knee prosthetic. The findings also demonstrate how quantitative 3D gait analysis can provide individualized assessments to help clinicians select the most appropriate prosthetic to provide the greatest therapeutic benefit to the patient.

#43 – Title: Rapid, High Throughput Screening of 34 Drugs of Abuse using LC/MS/MS: Can Immunoassay Techniques be Replaced?

Investigators: J.C. Eichhorst; D.C. Lehotay; M.L. Etter

Introduction: We investigated whether or not tandem mass spectrometry techniques can completely replace the current immunoassay screening methods employed in most laboratories performing drugs of abuse testing.

Immunoassay - drugs of abuse screening is used to detect drug use in employment, drug treatment, in correctional institutions, in medical emergencies and in forensic testing. The rate limiting steps in using LC/MS/MS has been sample preparation (extraction/derivatization) steps. The advantage of immunoassay systems is its sensitivity and high throughput with very little sample preparation. With fast chromatography, rapid scanning mass spectrometers and relatively little or no sample preparation, high throughput screening and identification of drugs of abuse with LC/MS/MS is within the reach of most clinical laboratories.

Method: 20 uL of clear urine was diluted with 480 uL of LC mobile phase containing labelled internal standards. 10 uL of this dilution was injected directly into the UPLC/MS/MS system and 9 different windows of SRM transitions were monitored. Standard curves were incorporated, which encompassed the cut-off levels. Quantitation was not performed if analytes exceeded the linear range. Results were reported as Positive (at or above the cut-off level) or negative (below the cut-off level). This allowed sensitive measurement of 34 different drugs of abuse at or below widely accepted cut-off levels.

Results: Serial dilutions of several species of drug were spiked into urine to determine matrix effects and optimum analytical sensitivity. Method validation was performed assessing accuracy, precision, quantitation limits, carry-over and robustness. Matrix effects were easily compensated for by sample dilution and the use of labelled internal standards. After a one - hour incubation of one mL of urine with beta glucuronidase, drug screening including identification was performed in less than 10 minutes with a 5.5-minute chromatographic run time and less than 5 minutes required for sample preparation and result interpretation.

Three case histories will be described which illustrate the functionality and practical application of these types of routine analyses in clinical toxicology laboratories where LC/MS/MS is available. These cases involved direct analysis of urine specimens following dilution in mobile phase containing isotopically labelled internal standards.

Novel Aspect: Our data indicate that rapid LC/MS/MS may be a viable alternative to immunoassays for DOA testing.

#44 – Title: Inter-Professional Classroom Experiences in Southern Saskatchewan

Investigators: S. Bassendowski; P. Petrucka

Introduction: In an effort to address the classroom and clinical outcomes of the inter-professional (IP) initiatives throughout Saskatchewan, a group of clinicians, educators, administrators, and stakeholders representing Regina Qu'Appelle Health Region, Saskatchewan Health, SIAST, University of Regina, University of Saskatchewan, and First Nations University of Canada submitted a proposal for funding to the provincial Patient Centred Interprofessional Team Experiences (P-CITE). The proposal described the team's approach to presenting a series of classroom experiences to provide a template for wider-scale and sustainable classroom IP experiences throughout the province. The team identified the targeting of two themes for topics, specifically in the areas of Aboriginal Youth and Child and Youth Mental Health, for undergraduates in the professional areas of education, medicine, kinesiology/health studies, justice, social work, nursing, and psychology.

Method: The project team conducted two inter-professional (IP) classroom experiences (each session was 3 hours in length) that were delivered through the use of theatrical presentation of short vignettes. Three hundred undergraduate and graduate students from education, medicine, kinesiology/health studies, justice, social work, nursing, and psychology participated in the IP experience.

The students, who consented to be part of the research project for the experience, completed pre- and post- surveys asking about their perceptions about the IP experience. The students were encouraged to work through possible IP approaches to address the needs and care of the 'portrayed' characters and communities. During the six weeks between the experiences, the students continued the dialogue with each other and group facilitators. The approach was evaluated in order to ascertain the quality of learning in an IP experience and the potential for having an impact on client outcomes.

Results: The results of the IP experience have been compiled but not analyzed in detail with research team members at the time of submitting this abstract. At the next meeting in late April, 2007, the team will focus on the results of the evaluation and surveys. The presentation will describe the strengths of the IP experience, the challenges, and the general outcomes of the project that the research team believes will inform future IP educational initiatives (classroom and continuing education) and potential changes to health care practice and client outcomes throughout Saskatchewan. The research team members believe that the IP experience will demonstrate a positive response from students about the value of participating in an IP experience.

Conclusions: Due to the fact that the results from the students have not been analyzed at the time of writing this abstract, the team members cannot respond to the question about the potential implications. The conclusions will be available for presentation on the conference.

#45 – Title: Enhanced Vehicle Safety for Canadian Children: A National Survey
Investigators: K. Knibbs; C. Anderson; L. Leeseberg Stamler; N. Hagerty; A. Snowden

Despite the existence of national child safety seat legislation, the leading cause of death among Canadian children continues to be motor vehicle collisions. When compared to seat belt use, child safety seats significantly reduce the risk of injury by correcting the biomechanical vulnerability of children. Staggeringly high rates of misuse and underuse have been previously evaluated through data collection strategies involving the observation of moving vehicles.

Examination of knowledge and ability to correctly employ child safety seats, and accurate assessment of their use were critical factors to explore. With funding from Transport Canada through the Network Centre of Excellence, Auto 21, an interprofessional team of researchers conducted a national child safety seat survey that included the Regina Qu'Appelle Health Region. Researchers examined safety seat use and driver knowledge and beliefs in 200 Canadian cities randomly selected by Transport Canada, based on Census data. Interviewers collected data from drivers regarding their knowledge and perceptions of correct safety system use for children traveling in motor vehicles, while observers collected data on actual use among those who participated in, and refused participation in, the interview process.

The overall rate of correct use for the interviewed sample was 78.4% (n=1877) out of the total 2395 child occupants, which was much higher than 58.4% (n=6815) of 11676 child occupants for the observed only sample. The interviewed sample may represent a sector of the population with greater awareness of child seat safety who seek out opportunities to expand their knowledge through participation in safety research. Thus, for families who seek out such opportunities, their use of safety seats for their children is substantially higher than the general population traveling through intersections. However, the rates of correct seat use remain far below the target of 95% for Road Safety Vision 2010. Additional findings indicate significant regional differences in child safety seat use and a low rate of booster seat use nationally. Findings specific to the City of Regina, will be compared with provincial and national findings. An enhanced understanding of child safety seat use may lead to improved intervention, and thus enhanced vehicle safety for Canadian children.

#46 – Title: Social Marketing Use Among Public Health Nurses in Saskatchewan
Investigator: K. Knibbs

Social marketing, a branch of health communication, involves the use of marketing principles and media to positively influence behavior change in a target population. The consumer focused, client centered nature of social marketing is congruent with the accepted paradigm and mandate of health promotion in public health nursing. Despite this, recent literature reports a general misunderstanding and under-use of the strategy. In an effort to better understand this divide, factors associated with social marketing use among public health nurses in Saskatchewan were explored. Employing a qualitative, community-based action research approach, data were collected using focus group methodology. Given that managers have been identified as being highly influential in the use of social marketing strategies among public health nurses, public health managers were specifically targeted to participate in this study. Complete population sampling was employed (within the two health regions studied) resulting in a sample group of 11 public health managers representing rural, small urban, and large urban centres.

Data were analyzed by means of nominal group process and content analysis, revealing three themes related to the use of social marketing: enablers, barriers and strategies. Identified enablers included: baccalaureate preparation, client-centered and evidence-based practice, established community relationships, nature of health challenges, and support of nursing organizations. Identified barriers included: human resources, financial resources, familiarity with the strategy, and formal process to maintain momentum. Strategies for reinforcing enablers and overcoming barriers included: a social marketing elective in health sciences, an increase in the number of public health nurse and support staff, core funding for social marketing, in-service training, and the integration of a social marketing consultant. Ultimately, an increase in awareness related to social marketing among upper-level health management was identified as a necessary precursor to the successful implementation of all the identified strategies. Should these strategies be embraced and employed, any resulting increase in social marketing use by public health nurses could have significant potential for the promotion of health in Saskatchewan.

#47 – Title: Comparison of Two Approaches to Basal-bolus Insulin Therapy in Patients with Type 2 Diabetes and Inadequate Glycemic Control on Oral Therapy: Comparison of Premixed Insulin Lispro Mid Mixture with Separate Basal and Bolus Insulin Injections

Investigator: P. Duffy; H. Rehman; C. Coulson

Primary Objective: To test the hypothesis that, for patients with type 2 diabetes who have inadequate glycemic control and are taking maximally tolerated doses of oral anti-hyperglycemic medications without insulin, initiating insulin use with one injection of insulin lispro mid-mixture (MM), and progressing to up to three daily injections of premixed insulin lispro, is non-inferior to initiating insulin use with once-daily insulin glargine and progressing to up to one to three additional injections of insulin lispro added to existing oral therapy, as measured by hemoglobin A1c at endpoint.

Secondary Objective: To compare the insulin lispro MM arm and the insulin glargine arm with respect to:

- HbA1c at 12 weeks and 24 weeks
- In separate analyses, the percentage of patients who achieved HbA1c \leq 6.5%, $<$ 7%, and \leq 7% at 12, 24 & 36 weeks and at endpoint.
- The 7-point self-monitored blood glucose profiles at baseline, 12 weeks, 24 weeks, 36 weeks and at endpoint including glycemic variability and M-value.
- Insulin dose: total, basal and prandial
- Number of injections per day
- Safety, as measure by the incidence and rate of self-reported hypoglycemic episodes, including nocturnal (and non-nocturnal) hypoglycemia: the incidence of severe hypoglycemia; weight change; and treatment-emergent adverse events.

This study is a randomized, multicenter, multinational, open-label, two-arm, active control, parallel study. 500 subjects will be recruited, with 50 coming from Canada. To date, there are 9 individuals enrolled in the Regina site. Enrollment continues until August 1, 2007. The study is 36 weeks in duration from patient randomization at visit 2.

#52 – Title: Collaboration Between Microbiology and Infection Control in MRSA Detection and Control
Author Block: E. THOMAS, C. BARTH, L. DAWSON

Regina Qu'Appelle Hlth.Region, Regina, Canada.

Background: Methicillin Resistant *Staphylococcus aureus* (MRSA) is a significant nosocomial pathogen. Spread of MRSA in hospitals is controlled by timely institution of Infection Control (IC) precautions. In 2003 the IC department at the Regina Qu'Appelle Health Region introduced an "ARO Tool" to identify and screen patients at high risk for MRSA carriage. In 2005 in order to facilitate rapid detection in these patients the laboratory implemented a PCR method. **Methods:** Since the first significant isolation of MRSA in our facility in 1999 we evaluated several methods for accurate detection of MRSA from carriers. Nare and groin are the primary screening sites. The media evaluated were Mannitol Salt agar (MSA), MSA with 4 mcg/ml oxacillin, Oxacillin Resistant *Staphylococcus aureus* (ORSA) (Oxoid), and MRSA Select (BIO-RAD). Most recently we evaluated the PCR methodology IDI-MRSA (GeneOhm Sciences Inc.). **Results:** Microbiology

Year / Media	Positive Predictive Value (%)	Negative Predictive Value (%)	Turn Around Times (Receipt to final report)			Cost per test	
			24 hours	48 hours	\geq 72 hours	positive	negative
Up to 2001 MSA	100	97	0	6.5	93.5	\$8.10	\$0.44
2001 MSA + 2ug/mL oxacillin	95	100	0	84	16	\$9.36	\$1.77
2001 ORSA + Broth	96	100	0	0	100	\$16.58	\$1.07
2004 MRSA Select + Broth	96	100	0	1.0	99	\$22.52	\$2.36
2005 IDI-MRSA PCR	60	99.8	98	0.5	1.5	\$40.98	\$20.82

Infection Control

	2001	2005
Total number of MRSA detected	203	206
Total number MRSA hospital acquired	97	109

Total number MRSA detected in infected sites	27	37
Total number MRSA detected on screening:	* Not is use	75
ARO tool	70	28
Ward screening of contacts		

Conclusions: The current system using the 1) ARO Tool to screen high risk patients, and 2) IDI-MRSA to detect the organism, have facilitated timely IC precautions thus controlling the spread of the organism in the hospital. In 2001, prior to the implementation of the ARO tool, a major outbreak occurred. This was traced to the transfer of a patient from another hospital. In 2005, after implementation of the tool, and IDI-MRSA testing there were no outbreaks.

#53 – Title: Distribution of Extended Spectrum Beta-lactamase Producing *Enterobacteriaceae* (ESBL-E) in Specimens Submitted from Patients in the Community and in the Hospital of the Regina Qu’Appelle Health Region

Revised Abstract

Objective:

ESBL-E has been reported world-wide occurring mainly as nosocomial pathogens. In our laboratory we have isolated these organisms since 2001 from patients in the community and in the hospital.

The study was undertaken to 1) determine the distribution of ESBL-E in our patient population, 2) identify the gene producing ESBL, and 3) evaluate the screening for ESBL-E in stool specimens.

Method:

Between January 2001 and November 2006, 78 strains of ESBL-E were isolated in our laboratory. These were identified as ESBL producers on the Vitek (bioMerieux) and confirmed using the Clinical Laboratory Standards Institute (CLSI) disc diffusion test. Of these 66 were tested for the presence of *bla*_{TEM}, *bla*_{SHV}, and *bla*_{CTX-M} genes using universal primers followed by sequence analysis conducted at the National Microbiology Laboratory (NML). The distribution of ESBL-E in our patient population was determined by location of patient, source, age, and sex.

A total of 383 stool specimens submitted to the laboratory for *C. difficile* toxin testing were screened for ESBL-E. Two plates, UriSelect 4 (BIO-RAD) containing 1) 4mg/L cefotaxime, and 2) the same media containing 4mg/L ceftazidime, were used for each specimen.

Plates were incubated for 24 hours and 48 hours. Suspect colonies were sub-cultured onto Tryptic Soy Agar with 5% Sheep Blood (PML) and MacConkey agar (PML). Identification, susceptibility testing, and ESBL confirmation was performed as above.

Results:

Organism	Patient Location	Specimen Type	CTX-M positive	SHV positive	TEM positive	CTX-M + SHV positive + TEM positive	OXY	OXY + CTX
<i>E. coli</i>	Community 46	Urine 46	22	16	6	2		
	Hospital 19	Urine 16 Fluid 1 Skin 1 Blood Culture 1	6	7	6			
	LTC 6	Urine 6	6					
<i>K. oxytoca</i>	Community 2	Urine 2					2	
	Hospital 2	Urine 1 Fluid 1					1	1
<i>K. pneumoniae</i>	Hospital 3	Skin 2						
		Urine 1	3					

The CTX-M gene types identified were CTX-M 9, CTX-M 14, and CTX-M 15.

The SHV gene types identified were SHV-2a, and SHV-12.

The TEM gene types identified were TEM-1, and TEM-52.

Stool culture

	Total # of stools tested	# ESBL Positive	% ESBL Positive
In Patient	184	0	0
Out Patient	199	4	2%

Conclusion:

The majority of ESBL producing organisms were isolated from mid-stream urine specimens obtained from patients in the community indicating that these organisms are commoner in the community than in the hospital. This was corroborated by the results of the stool cultures.

The ESBL types circulating in the community and in the hospital are similar.

54 – Title: Comparison of Culture Methods for the Detection of Group B Streptococcus from Vagino-rectal Specimens

Dr. E. Thomas
Regina Qu'Appelle Health Region, Regina, Sask. Canada

Revised Abstract:

Objective:

Group B Streptococcus (GBS) is an important pathogen in neonates. The Centre for Disease Control (CDC) revised guidelines in 2002 recommend screening women for GBS carriage at 35 to 37 weeks gestation by culture of a vagino-rectal swab using a selective broth with subculture onto a plate. The objective of our study was to compare our current method (selective broth with subculture) with others available so as to improve the sensitivity of detection of GBS in our laboratory.

Method:

Vagino-rectal swabs (200) were screened for GBS using direct inoculation to 5% sheep blood and SXT (BA + SXT) (PML); swab was vortexed in 2mL of Tryptic soy broth and inoculated into Group B Selective Broth and StrepB Carrot Broth (Hardy Diagnostics). Following incubation the broths were tested with Prolex Streptococcal latex agglutination (LA) (Prolab), subcultured onto Tryptic soy agar with 5% sheep blood (BA) (PML) and onto Granada Medium (Hardy Diagnostics). Plates were examined at 24 and 48 hrs.

Results:

	Direct Plate	BA Subculture	Granada Medium Subculture	GBS Selective Broth LA	StrepB Carrot Broth LA
Total number tested	200	200	200	63	63
Sensitivity (%)	71	86	89	77	100
Specificity (%)	99	83	96	98	98

Conclusion: The sensitivity of direct plate was low. The agglutination tests direct from the Group B Strep broth improved sensitivity, but the specificity was low. Granada medium showed improved specificity compared to BA plates. Preliminary data using StrepB Carrot broth indicated both improved sensitivity and specificity. Continued testing with this media is ongoing and if preliminary findings are confirmed, this media will be incorporated into our routine for GBS screening.

#55 – Title: Evaluation of the Multigent™ microalbumin assay on the Architect ci8200 analyzer

B.Mali, T.Ottenbreit, E. Serediak. Laboratory, Regina General Hospital.

Objective: To evaluate the performance of the Multigent™ microalbumin assay on the Abbott Architect ci8200 analyzer, implement process changes to improve turnaround time and meet growing demands of service.

Clinical relevance: Screening and monitoring microalbumin in urine is an important part of treatment for Type I and Type II diabetes. The ratio of microalbumin to creatinine in a random urine specimen corrects for errors associated with 24 hour urine collection and hydration status.

Methods: Multigent microalbumin assay is a turbidimetric immunoassay that uses anti-human antibody (goat) against human albumin. The degree of turbidity measured at 340/700nm is proportional to the concentration of albumin in the specimen. Forty nine urine specimens were analyzed on the Architect ci8200 and Dade Behring II nephelometer (range 2-1350mg/L). Imprecision was determined using two levels of BioRad Liquichek urine chemistry controls (mean 39.6mg/L and 129.0mg/L).

Results: Within run imprecision was 0.59% and 0.41%. Total imprecision was 9.9% and 6.2%. The Multigent microalbumin assay correlated well with the Dade Behring II method, slope 0.925, intercept 2.20, correlation coefficient 0.997. The analytical sensitivity was determined to be 1.0mg/L and analytical measurement range of 1.15-500mg/L.

Conclusion: We decided to implement the Multigent microalbumin assay on the Architect ci8200 analyzer based on the analytical performance as well process improvement. Specimen handling is reduced as the same specimen tube is used for microalbumin and creatinine analysis on a single workstation. We have also achieved cost savings in reagents and consumables and improved turnaround time.