Abstracts of the 2008 Canadian Council of Cardiovascular Nurses Annual Scientific Sessions

Résumés des sessions scientifiques annuelles 2008 du Conseil canadien des infirmières(iers) en nursing cardiovasculaire

ORAL CONCURRENT SESSION I

N001

CARDIAC SURGERY IN THE AGING POPULATION: THE REALITY OF HEALTH CARE NOW

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In Canada, the population is aging and life expectancy continues to increase. In the next 20 years the number of elderly will increase to approximately 20% nationwide. Based on the findings of the 2006 Canadian census, Alberta has approximately 11% of the population over 65 years of age, with 3% of the population over 80 years of age. Cardiovascular disease remains a prominent cause of morbidity and mortality among the elderly. The incidence of invasive cardiovascular procedures performed on this age group is increasing. This population presents with a multitude of co-morbidities, which can lead to multi-system complications post-operatively. Post-operative care can be tailored to assist in bettering outcomes for this group. This presentation will discuss and highlight the management of patients over 80 years of age undergoing cardiac surgery; focusing on potential multi-systemic complications, pharmacological management, and patients expectations of functional status following surgery. Nursing care involves an awareness of this populations needs and heightened possibility for multi-system complications after surgery. Post-operative care of this age group also involves detailed planning for care after discharge from the hospital, need for rehabilitation and/or transitioning to an assisted living facility.

N002

A QUALITATIVE META-SYNTHESIS OF HELP SEEKING DURING HEART FAILURE: WHAT NURSES CAN DO TO REDUCE DELAYS

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Chronic Heart Failure (CHF) is a serious degenerative condition that requires extensive home-based self management. Surprisingly, research indicates patients often wait 5 days before seeking professional help for troublesome CHF symptoms. There is limited understanding as to why patients delay or how these delays can be minimized by health professionals. The objective of this qualitative systematic review was to identify the main influences of help-seeking behaviour in patients with CHF.

A qualitative systematic review using a meta-synthesis approach was used (Cochrane Collaboration 2007). Over 100 search terms pertaining to heart failure were utilized to comprehensively search multiple electronic databases. After screening 1951 papers, 37 studies (1028 participants: 821 patients (mean age: 70.4; 167 caregivers; 40 health professionals) were identified as containing data related to help-seeking.

Help-seeking behaviour is a complicated process. Main barriers include ambiguity and misattribution of symptoms, reliance on 'avoidance' and denial management strategies, fear of hospital, poor communication / unclear 'self care' responsibilities relative to health professionals, and inadequate knowledge levels of caregivers. Main facilitators involve: presence of acute dyspnoea, caregivers' concern and reliable relationships with key health professionals. Even after the decision is made to seek help, frequently patients are unclear what to do.

To reduce delay, patients and caregivers need specific guidance on the importance of rapid help seeking, the risks associated with avoidance strategies, how CHF links to symptoms, and support for objective symptom monitoring to recognize disease exacerbation. Effective communication and therapeutic relationships with health care professionals can be harnessed to reduce delays.

N003

REGIONAL STRATEGY SUCCEEDS IN ACHIEVING GOLD STANDARD FOR PRIMARY PCI

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Kitchener, ON

During the past 5 years, primary percutaneous coronary intervention (PCI) has gradually emerged as the preferred reperfusion treatment strategy for patients who have ST segment elevation myocardial infarction (STEMI). The standard for assessing the promptness of intervention is to measure the door-to-balloon time. A time of less than 90 minutes recently was established as the gold standard for primary PCI. While a few cardiac centers have been successful in achieving this standard, many others still find it a challenge. This presentation will highlight St. Mary's Regional strategy for primary PCI which is achieving outcomes well below the established gold standard of 90 minutes door-to-balloon time.

The presentation will identify the importance of teamwork, technology and training. We will outline our clinical process and decision points starting from Emergency Medical Services (EMS) in the field to when the patient arrives in the cardiac catheterization lab at the Hospital. Discussion will include the development and implementation of new protocols, practices and strategies that focus on processes within the hospital and the hospital's coordination with EMS.

A vital role within the primary PCI initiative is the Registered Nurse working in the emergency department and cathlab. The RN is the cornerstone in the initial phase of the primary PCI protocol. RNs are the first contact at triage or for EMS when directly contacting the cathlab.

The RN must posses the knowledge and clinical expertise to recognize and triage the primary PCI patient as well as anticipate further outcomes through critical thinking skills.

N004

TAKING OVER THE REST OF THE HOSPITAL: HEART FAILURE PATIENT EDUCATION OUTSIDE OF THE CARDIAC WARDS

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Vancouver, BC

Heart failure (HF) is a complex illness characterized by high mortality, decreased quality of life (QoL), and frequent hospitalizations. It progresses in an unpredictable course with periods of stability and exacerbation. Informed, proactive patients are essential to securing positive outcomes in chronic illness. QoL can be dramatically improved with proper self-management. The Canadian Cardiovascular Outcomes Research Team (CCORT) quality indicators for inpatient HF care includes pre-discharge education regarding medications, salt/fluid restriction, daily weight monitoring, identification of symptoms of worsening HF, and the importance of clear follow-up information. We hypothesize that empowering staff nurses to provide SM education and support for patients as they transition to the community will help to improve patient's knowledge of managing HF at home. Patients that manage HF well have vastly improved outcomes such as reduced hospitalizations, decreased length of stay, decreased morbidity and mortality and improved QoL over patients that don't engage in any SM activities. An initial survey found that in some areas of the institution none of the patients with heart failure surveyed were given any education about heart failure self management. This presentation will describe how our education tool will be implemented throughout the institution with

the hope that it will help already busy nurses provide this incredibly important information to patients. This paper describes a "plan, do, study, act" cycle that looks at successfully integrating our HF teaching tool into the staff nurses' daily work with patients with HF.

N005

PULMONARY HYPERTENSION: A CASE STUDY

Gillian Yates, Kelly Saunders
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Pulmonary hypertension (PH) is a progressive disease resulting from increased pulmonary vasoconstriction, vascular remodeling and thrombosis, leading to right heart failure. Symptoms at clinical presentation are often vague and difficult to differentiate from other diseases. A good history and identification of key physical findings will facilitate earlier diagnosis resulting in tailored treatment to alleviate symptoms and improve outcomes. This case-based presentation will provide an overview of PH including pathophysiology, clinical presentation and findings, diagnostic testing, treatment modalities and outcomes. Understanding the different classifications of PH will help guide practitioners in identifying and screening patients with associated diseases.

The main focus of this presentation is directed towards the care of a patient with pulmonary arterial hypertension (PAH). The nursing role in administration and monitoring of therapies is a major consideration. Nurses are in an excellent position to assist patients and families to navigate the system from diagnosis to treatment while sharing knowledge of medications, side effects and lifestyle alterations. As treatment options change, nurses must continually assess the impact of PH on quality of life. Monitoring coping skills and providing patient and family education and support will assist patients in dealing with this difficult disease.

N006

EVALUATION OF AN INTERACTIVE VOICE RESPONSE SYSTEM FOR CARDIAC SURGERY PATIENTS AFTER DISCHARGE

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A gap in the care of cardiac surgery patients transitioning from hospital to home was identified in our centre. Once discharged, it was uncertain whether patients received acceptable follow-up treatment in the weeks following discharge. In an attempt to address this gap, an interactive voice response (IVR) system was introduced (TelASK Technologies Inc., Ottawa). This system automatically phones the patient on day 3 and day 10 post-discharge and asks a series of "yes" and "no" questions. If the answers fall outside of preset parameters, an alert is generated to the NP in the cardiac surgery unit.

The purpose of this paper is to report on the outcomes of the first 20 patients enrolled in the IVR program and compare them with 20 patients receiving usual post-discharge care (UC).

The program commenced February 2008, the first 40 patients were divided into 2 groups: Group 1 - IVR system plus UC and Group 2 - UC.

Each patient will complete a short screening tool for depression and anxiety at discharge and 3 weeks post-discharge. Both groups will receive a follow up phone call 3 weeks post-discharge. The call will review patient experiences after discharge as well as visits to ER, GP and readmissions to hospital.

This paper will present the results of the project due for completion April 2008.

It is anticipated that this system will bridge the gap in transitioning patients from hospital to home and provide valuable information to enhance patient discharge planning and appropriate follow-up.

N007

PATIENT ANXIETY WHILE UNDERGOING PRIMARY (PCI) FOLLOWING AN ACUTE MYOCARDIAL INFARCTION (AMI)

Carol Laberge, Jackie Murray
New Westminster, BC

This study investigated anxieties of patients who experienced an Acute Myocardial Infarction (AMI) treated by Primary Coronary Intervention (PCI). The objectives were to understand the patient hospital experience during an invasive cardiac event and identify what caregivers could do to reduce anxiety and improve the patient experience. The study used a qualitative action research approach with 10 patient interviews and a focus group of 4 cardiac program leaders to analyze the data. Quantitative data were obtained by reviewing patient health records. Findings were that patient anxiety is highest on arrival, when chest pain is present, and prior to discharge; patients reported their care in hospital to be excellent. Cardiac program leaders believe additional post discharge support is warranted. Recommendations include developing a patient-centered care program, integrating quality improvement initiatives, providing a resource nurse for follow-up, developing a prescription for care prior to discharge, and developing a secondary-prevention clinic for high risk patients.

N008

TO FREEZE OR NOT TO FREEZE?

Allison Cook, Tammy Cosman, Leslie Gauthier, Marion Quirk
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A vasovagal reaction (VVR) with associated diaphoresis, nausea, presyncope, bradycardia and hypotension can be a disturbing experience. However, a VVR associated with femoral arterial sheath removal post percutaneous intervention (PCI) adds an unacceptable risk in these patients. The administration of subcutaneous local anaesthetic prior to sheath removal in the PCI patient population has been postulated to decrease the patient experience of pain and therefore reduce the incidence of VVR. The purpose of this pilot RCT was to asses the efficacy of local anesthetic in decreasing pain and VVR during femoral arterial sheath removal. Seventy-eight patients undergoing PCI were randomly assigned to receive either Lidocaine 2% without epinephrine or no local anaesthetic prior to sheath removal. Outcome measures included: 1/ patient report of pain using a numeric rating scale (0-10) and 2/ VVR occurrence, using preset criteria, during the observation period post sheath removal. The highest reported mean pain score occurred with initial compression during sheath removal (2.09 ± 3.126), mean pain scores between groups did not differ significantly at this time ($p = .378$). The overall incidence of VVR was 5.1% (n=4), with no significant difference in VVR between treatment groups, Fischer's Exact test ($p=.652$). This study adds to the growing body of knowledge regarding pain and VVR with femoral sheath removal. Nurses responsible for femoral sheath removal need to be aware of the potential for pain and VVR and consider alternative less invasive strategies for decreasing pain and VVR with sheath removal.

N009

HEART FAILURE SELF-CARE IN PATIENTS FOLLOWED BY TELEHOME MONITORING TECHNOLOGY: A CQI INITIATIVE

Christine Struthers, Kathryn Eastwood
Ottawa, ON

Heart failure (HF) is a complex disease associated with significant morbidity and mortality. Self-care is promoted to improve outcomes in this patient population. Education intended to promote self-care is a nursing focus in HF disease management and the education elements, such as monitoring daily weights, are well documented. The need for tailored and repeated patient education is also well known. However the determination of optimal delivery and frequency of repeated information presents challenges for the nurse caring for HF patients. In addition it is difficult to measure HF self-care.

Telehome Monitoring (THM) technology allows us to monitor patients and respond to their individual needs. Patients are provided with a home monitor to transmit vital signs and weight by regular phone line

to a central station monitored by a nurse. The nurse contacts patients in response to the data. In January 2008, a quality initiative began to examine the nurse's role in patient education including the delivery of information and the impact of THM on HF self-care. Patients are completing the Self-Care of Heart Failure Index (SCHFI) tool pre and post monitoring period.

This presentation will describe the technology, the self-care concept, the theoretical framework and the SCHFI tool. Results of the survey and THM interventions, including readmission outcomes, will be presented. Implications for the role of the home technology nurse and plans for future research will be shared.

N010
SHORT COULPED VARIANT OF TORSADES DE POINTES

Susan Morris, Christine Moffett, Marcie Crawford
Saint John, NB

The purpose of this case study is to discuss the clinical course, electrocardiogram (ECG) features and treatment modalities for short coupled variant of Torsades de Pointes (ScTdP), a relatively new electrophysiological diagnosis. This type of polymorphic ventricular tachycardia (PVT) easily degenerates into ventricular fibrillation causing a high incidence of sudden cardiac death (SCD). Patients whose first presentation is not SCD often seek medical attention for syncope, but may mistakenly be diagnosed with right ventricular outflow tract (RVOT) ventricular tachycardia, which typically does not lead to hemodynamic decompensation. However, a small percentage of these patients digress to a lethal polymorphic ventricular tachycardia initiated by closely coupled premature ventricular complexes (PVC) in the absence of a prolonged QT interval or structural heart disease. Diagnostic examination for ScTdP includes; 12 Lead ECG, transthoracic echocardiogram; exercise stress testing, right ventricular endomyocardial biopsy, and Holter monitoring. Often it is Holter monitoring that reveals the short coupling of PVC's associated with ScTdP. This case study will follow a patient admitted with a diagnosis of SCD. Review and discussion of diagnostic examinations and current treatment modalities will be included as well as an anecdotal discussion of nursing considerations related to providing advanced cardiac life support (ACLS) to this young father of two.

ORAL CONCURRENT SESSION II

N011
WHEN BLOOD RUNS COLD: CARDIAC SURGERY AND COLD AGGLUTININS

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Cold agglutinins describe a particular antibody that reacts with red blood cells when the temperature of the blood drops below normal body temperature causing increased blood viscosity and red blood cell clumping. Most individuals with cold agglutinins are not aware of their presence, as these antibodies tend to have little effect on daily living, often necessitating no treatment. However, when those with cold agglutinins undergo hypothermic procedures such as cardiopulmonary bypass for cardiac surgery, lethal complications of hemolysis, microvascular occlusion and organ failure can occur. By identifying those at risk for cold reactive agglutinins prior to surgery with a comprehensive nursing assessment and patient history, the utilization of normothermic cardiopulmonary bypass with warm myocardial preservation techniques can prevent these disastrous complications. Treatment continues in the post-operative period where it is essential to maintain the patient's blood temperature above the thermal amplitude through nursing interventions.

Using a case study approach, this presentation will review the mechanism, clinical manifestations, detection and nursing management of a patient with cold agglutinins undergoing scheduled cardiac surgery. Although this condition has a very low incidence, the extremely high risk to patients warrants increased awareness of cold agglutinins and active screening for patients identified as being at risk.

N012
THE PUBLIC-PRIVATE DIALOGUE OF NORMALITY: WOMEN'S EXPERIENCES OF UNDERGOING CORONARY ARTERY BYPASS GRAFT SURGERY

Davina Banner
Prince George, BC

Coronary heart disease (CHD) is a leading cause of morbidity and mortality for both sexes in Canada and globally. Traditionally, CHD has been viewed as a disease primarily affecting men with women being largely overlooked in the media, health education campaigns and clinical research. Despite a growing body of literature exploring gender differences, inequalities persist in the recognition, diagnosis and treatment of CHD in women. Further research is required to fully extrapolate women's unique experiences of CHD and coronary artery bypass graft (CABG) surgery. This presentation reports on a study that explored the experiences of women undergoing CABG surgery in the United Kingdom. Data were collected from 30 women preoperatively and at six weeks and six months postoperatively using in-depth semi-structured interviews. A constructivist grounded theory approach was adopted and data were analysed using extensive coding and constant comparison techniques. A substantive theory of the public-private dialogue of normality emerged. The findings demonstrated that women faced significant disruption of normality as they attempted to privately normalise and integrate limitations, whilst minimizing the public display of illness and vulnerability. Preoperatively, the women experienced difficulties recognizing and acting on symptoms of CHD and endured significant stress whilst waiting for CABG surgery. Following surgery, they experienced significant functional limitations that forced them to relinquish normal activities and roles. As recovery progressed, women came to accept their changed health status and renegotiate normality. The study uncovered the need for greater awareness amongst all stakeholders and the provision of gender sensitive supportive care.

N013
DEVELOPING CARDIAC CATH LAB NURSING CAPACITY: ACCELERATED TRANSITION OF NOVICE CRITICAL CARE NURSES

Margot Wilson, Sandra Lauck, Leslie Achtem, Jen Lindenberg, Julie Carleton
Vancouver, BC

The cardiac cath lab environment requires nurses to have the capacity to assess and intervene in cases where the potential for rapidly decompensating hemodynamic status, respiratory complications and other unpredictable clinical issues arise. In addition, the increasing complexity of procedures performed percutaneously, including the transcatheter management of valvular heart disease, and the selection of patients with severe comorbid burden call upon the nurse to incorporate multiple competencies and expert knowledge. The growing demands on the cath lab environment in conjunction with the decreased supply of nurses have challenged the sustainability and rationale for the traditional recruitment of experienced critical care nurses. New models are required to meet patient needs and optimize resource utilization. Our centre has implemented an innovative program to recruit, facilitate and support the integration of new critical care nurses in the interventional cardiology environment. Using a case study approach, we will discuss the educational resources, supports for practice, incremental competencies, and mentorship program designed to successfully develop a newly graduated critical care nurse in the cath lab role. We will report on findings of interviews conducted with this group of pioneering nurses to reflect on their critical appraisal of their transition. Although still at an early stage and limited in scope and in numbers, this novel approach to cath lab staffing is proving to be an exciting opportunity to support nurses to function in the full capacity of cath lab nursing while ensuring that processes are in place to support best practice and professional development.

N014
CARDIAC RESYNCHRONIZATION THERAPY FAILURE: WHAT SHOULD WE KNOW?
Andrew Gentilin, Sharlene Abdool
Toronto, ON

Cardiac resynchronization therapy (CRT) via biventricular pacing is fairly new treatment resulting in significant clinical improvement in patients with moderate-to-severe heart failure. Large clinical trials have reported the sustained benefit of CRT in heart failure to improve functional status, quality of life, exercise performance, and reduction in hospitalizations and mortality in patients with heart failure [New York Heart Association (NYHA) class III or IV]. Despite the accomplishments and positive effect of CRT on the aforementioned parameters, as many as 30% of patients do not respond to this therapy and continue to have worsening heart failure symptomatology. The prognosis of these patients with CRT failure depends on rapid diagnosis and appropriate interventions. Nurses are challenged with the care of these complex patients and require advanced knowledge to manage these patients appropriately. In this presentation we will discuss the origins of CRT, the mechanism of dyssynchrony, differentiating between mechanical vs. electrical dyssynchrony, the guidelines and indications for CRT, the benefits of CRT, and lastly, understanding and minimizing the rate of non-responders. In addition, we will present our experience at University Health Network on the pre-CRT screening and management of non-responders. Nursing implications for assessment and appropriate measures that should be considered to ensure proper functioning of the device and improved quality of life for patients will be discussed.

N015
2008 SURVEY OF CANADIAN PACEMAKER/DEFIBRILLATOR CLINICS: ACTIVITIES AND BEST PRACTICES
Lorraine Clark, David Birnie
Ottawa, ON

The steady increase in rates of implantation of pacemakers and defibrillators, as well as the increase in device complexity, is placing escalating demands on Canadian Pacemaker/Defibrillator Clinics. Furthermore, ongoing issues regarding device advisories are placing additional pressures on these clinics. Standardization, while maintaining individualization of care, is required in order to deliver quality patient care. Our institution contacted several pacemaker/defibrillator clinics across Canada (a mix of both small and large centres) to learn what their practices are. A survey was developed and delivered electronically to collect the following information: to identify current practice of the frequency, length and content of device patient visits; to examine device clinic workload (including patient visits to staff ratios); to investigate current practices of device patient education; and finally, to identify current practices of peri-operative (non-cardiac surgery) device management. This presentation will detail the following results of the survey: size of centres; number of patients seen; and protocols and/or standards of practice. This exercise may stimulate communication and collaboration among Pacemaker/Defibrillator Clinics across Canada. The results will provoke debate and communication within arrhythmia device nursing community.

N016
PLEURAL EFFUSION IN POST-OPERATIVE CARDIAC SURGERY PATIENTS: A CLINICAL REVIEW FOR REGISTERED NURSES
Karen Then, Jim Rankin, Faye Lazar, Nancy Gwadry, Nancy Briggs
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The pleura of the lungs are transparent serous membranes that have an inner (or visceral) layer and an outer (or parietal) layer. There is a potential space occupied by pleural fluid between the two layers; the primary purpose of this anatomical arrangement is to decrease friction between opposing surfaces i.e. the lung tissue and inner chest wall (Martini, 1995). In health the total pleural space holds approximately 0.26 ± 0.1 ml/kg of serous fluid (Noppen et al, 2000); there is a homeostatic balance between hydrostatic and oncotic forces in the vessels of the pleura and lymphatic drainage. When there is a disruption in the normal homeostatic mechanism pleural effusions occur.

A pleural effusion is an excess of fluid in the pleural space and there are many different reasons as to why this occurs. Pleural effusion is not an unusual postoperative complication following cardiac surgery and Registered Nurses are usually the first members of the health care team to conduct routine cardiac and respiratory assessments on these patients. Incidence rates of pleural effusion vary from 8% (on physical exam) to more than 60% (on ultrasonography) in ICU all patients (Azoulay, 2003). More recently, Peng (2007) and colleagues have documented a 3.1% incidence rate of symptomatic large pleural effusions at least 30 days post CABG.

The authors will describe the pathophysiological mechanisms involved in pleural effusion and include chest x-rays from cases. The assessment, diagnosis and management will be discussed through the use of case examples illustrating different causes of pleural effusion. In addition, the criteria proposed by Light and colleagues (1972) will be presented and the clinical implications of identifying transudative or exudative processes will be reviewed.

N017
WOMEN'S EXPERIENCES OF CARDIAC PAIN: A QUALITATIVE INQUIRY
Sheila O'Keefe-McCarthy
Toronto, ON

Acute myocardial infarction (AMI) is the leading cause of death in Canada. For women who survive, AMI is a traumatic experience associated with severe pain, disability, and psychosocial distress. Ischemic cardiac pain in women has been misunderstood by healthcare professionals, women, and society. The social construction of cardiac disease and its typical and expected manifestations of pain have prevented effective recognition of the signs and symptoms of chest pain in women. Women experience the pain of coronary artery disease (CAD) differently than men. Differing presentations of ischemic cardiac pain for women can include: extreme fatigue, shortness of breath or discomfort in the shoulder blades. The assessment, diagnosis, treatment, and rehabilitation for women with CAD presents a unique challenge for healthcare professionals because women experience a multiplicity of symptoms that are often not reported or recognized as cardiac in nature. The purpose of this literature review was to identify current qualitative research on women's experiences of ischemic cardiac pain, to describe the over arching themes across the literature, and identify areas for future research and implications for clinical practice. Pub Med, MEDLINE, CINAHL, PsychINFO, EMBASE and Cochrane collaboration were searched (1995-2007) for studies that were conducted using qualitative techniques that explored the cardiac pain experience. Six studies met the inclusion criteria. This presentation will highlight the review findings describing the variability of women's cardiac pain experience. Further, it will discuss implications for clinicians practice, ending with recommendations for future areas of research in cardiac pain for women.

N018
HEMATOMA AFTER CORONARY ANGIOGRAM AND PERCUTANEOUS CORONARY INTERVENTION: OCCURRENCE AND RISK FACTORS
Gillian Yates, Paula Yeates, Alision James, Sharron McNamara, Miroslaw Rajda, Michael Love
Halifax, NS

Hematoma is the most common vascular complication with femoral approach post coronary angiogram (CA) and percutaneous coronary intervention (PCI). The goal of this study is to determine the occurrence of hematoma development in patients receiving CA or PCI via femoral or radial approach. Potential risk factors associated with increased incidence of hematoma were examined and key predictors have been highlighted. Practice issues are identified to assist with predicting and preventing this complication.

The study took place in a tertiary care centre with 305 patients undergoing

the procedure. A further 21 patients were excluded from the study based on incomplete data, resulting in a sample size of 284. Variables such as age, sex, weight, body surface area, blood pressure (BP), medications, status of person performing intervention and sheath removal, size of sheath and type of pressure were examined for causal relationship.
Seventy-four percent (n=211) of patients had CA and 26% (n=73) received PCI, with 85% (n=241) femoral approach and 15.8 % (n=43) radial approach. Hematoma development was noted in 16% of cases with femoral approach. There were no hematoma cases with radial approach. Preliminary analysis suggests that the following risk factors may be associated with increased risk of developing hematoma: systolic blood pressure, femoral approach, aspirin use and Glycoprotein IIB/IIIA inhibitors.
Results of this study indicate increased incidence of hematoma development with femoral approach. Identification of variables that increase risk may lead to improved monitoring to minimize complication occurrence and change in practice. Lack of accurate documentation will direct future education and practice change.

N019
SCRAPBOOK: A JOURNEY OF HEART FAILURE

Serena Jang, Carrie Bancroft, Annemarie Kaan
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Biventricular Assist Devices (BiVADs) bridge patients with end-stage heart failure to transplant. The nurse's role in supporting patients and families through the physical and emotional rollercoaster resulting from sudden critical illness, major surgery with complications, and increased mortality cannot be overstated. This case study presents a unique situation where such issues challenged the accepted nursing role. Mrs. M was a 50 year-old, previously healthy teacher with two teenage children. She suffered an aortic dissection and subsequent MI. Attempted surgical revascularization was unsuccessful and a cardiac rhythm was unable to be restored. Mrs. M underwent urgent implantation of a BiVAD. Although asystolic, her status improved so that she was transferred to the ward and commenced rehabilitation. Two months post-surgery, a series of strokes caused irreversible neurological deterioration. This led to a change in focus of care, which included VAD support withdrawal. Preparing Mrs. M's children for her death was a major challenge for nurses. Guidance from pediatric palliative care experts and learning to "bend the rules" were key. Mrs. M died on the ward with family at her bedside. Individualized nursing care was essential in helping her family deal with end-of-life issues. Mrs. M's son coordinated the painting of messages on the hospital room's wall, which were displayed until after support withdrawal. Photographs taken by a nurse were compiled into a scrapbook for the family. These actions facilitated patient-centered care under difficult circumstances and highlighted the importance of open communication, clear goals of care, mutual trust, and thinking outside the box.

N020
IMPLANTABLE CARDIAC DEFIBRILLATORS: UNDERSTANDING REFERRAL GAPS

Heather Sherrard, Sharon Ann Kearns, David Birnie, Shu-Tim Cheung
Ottawa, ON

Insertion of Implantable Cardiac Defibrillators (ICD) is an established treatment for patients at risk of sudden cardiac death. While indications for these devices have been established the decisions taken by referring physicians and patients themselves are very complex. This has led to some concerns there may be referral biases. In Ontario the Cardiac Care Network makes population-based recommendations for ICD procedures. In fiscal 2006/2007 our institute had a recommended target of 265 based on population needs but inserted 235. This represents a treatment gap of 11%. This fiscal year the gap is increasing. There are guidelines which indicate that patients with an ejection fraction (EF) less than 30% should be considered for implantation. Given this population-based gap we undertook a one year review to determine the causes of the gap.
This presentation will review the results of a one year analysis of patients from April 1, 2006 to March 31, 2007. During this time frame 9,315 patients received an assessment of EF. Three hundred forty six patients (4%) were found to have EFs less than 30%. In the same year the institute performed 235 ICD procedures. A further analysis of the data by age, gender, most responsible physician was undertaken to better understand the referral gaps. The results of this analysis will be presented as well as a discussion of possible solutions to reduce this gap.

N021
EVALUATION OF A NOVEL POST-OPERATIVE ANTICOAGULATION PROTOCOL IN CARDIOVASCULAR SURGERY

Leasa Knechtel, Neill Adhikari, Colleen Alleyne, Sherri Tawfik, Julie Macdonald, William Geerts, Jeri Sever, Mina Tadrous, Ruxandra Pinto
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Unfractionated heparin is the most common drug administered to hospitalized patients (Spiess et al. 2006). Heparin-induced thrombocytopenia (HIT) is a serious complication of heparin exposure that occurs in 1-5% of patients undergoing cardiac surgery (Warkentin et al., 2004). The clinical consequences can be devastating and include new arterial or venous thrombosis, limb ischemia leading to amputation, and death (Francis et al., 2004). In cardiac surgical patients, HIT antibodies without the clinical syndrome of HIT occur in up to 50% of patients and are associated with worse outcomes and increased length of stay (Pouplard et al., 1999).
We implemented a primary prevention minimal-heparin strategy in the cardiac surgery at Sunnybrook Health Sciences Centre. This included avoidance of heparin exposure (unless supported by a risk/benefit analysis), limiting the duration of heparin exposure, and substitution of low molecular-weight heparin (LMWH) for prophylaxis and treatment in high-risk populations.
This retrospective before-after study compares the effects of a new 'minimal heparin' versus usual 'heparin' protocol for the anticoagulation of cardiac surgical patients. Primary outcomes are effectiveness (prevention of thrombotic events such as DVT, PE, CVA, MI, valve thrombosis, limb ischemia) and safety (HIT and major bleeding such as re-exploration, tamponade, retroperitoneal, CVA, hemothorax, gastrointestinal). Approximately 900 patients collected in each arm. Descriptive statistics summarize patient characteristics. Primary analysis compares incidence of HIT, thrombotic and bleeding complications using a Chi-square test and in an adjusted analysis. Secondary analyses compare number of HIT assays & hospital length of stay. Study results will be completed and presented.

N022
THE INFLUENCE OF WORK AND HOME DEMANDS ON CARDIOVASCULAR RISK IN FEMALE HOSPITAL EMPLOYEES

Joan Tranmer[1], Peter Katzmarzyck[1], Andrew Day[1], Monica Parry[1], Eleanor Rivoire[1], Chris O'Callaghan[1], Linda McGillis-Hall[2]
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An aging workforce, obesity, physical inactivity and poor quality work places are major issues impacting the heart health of working women. Working women have multiple work and home demands and may find it difficult to meet the recommended physical activity and nutrition guidelines. Consequently, working women may be at increased risk of heart disease, diabetes and stroke. The purpose of this study was threefold: (1) to determine the prevalence of cardiovascular disease risk factors, in particular those associated with the metabolic syndrome, in a representative cohort of female, hospital-based workers; (2) to determine the relationships between selected workplace attributes, home demands and cardiovascular risk profiles; and (3) to determine the impact of these factors and profiles on nurses' self reported health. Between January and December of 2007, measures related to personal sociodemographics; indicators of cardiovascular risk; lifestyle habits such as activity levels, alcohol consumption, smoking status, and dietary habits; psychosocial job characteristics and work characteristics; and family work load were collected through interview, administration of validated questionnaires and serum sampling. We will present: (1) the cardiovascular, work and home profiles of participants; (2) the associations of individual characteristics, job characteristics,

and cardiovascular health and (3) the multivariate model describing the independent and combined effect of each factor on indicators of cardiovascular risk and health. Information gained from this study is relevant to working adult women and to organizational decision and policy makers; and should contribute to the planning of heart healthy workplaces for working adult women.

N023

EARLY AMBULATION POST LEFT HEART CATHETERIZATION

Rodolfo Pike[1], Patricia Grainger[1], Donna Best[1], Karen Carroll[1], Cathy Eastwood[2]
St. John's, NF[1], Houston TX[2]

Despite a trend toward a reduction in bed rest time after left heart catheterization (LHC) in many Canadian centers, an evidence-based standard of practice has not been established. Canadian bed rest times range from 2 to 4 hours post LHC. Internationally, high levels of safety have been reported for ambulation at one to 6 hours post LHC. Safety, when compared with usual practice, is defined as the same or fewer complications requiring intervention. Two recent prospective non-randomized studies (N≥1000) indicate safety and efficacy of ambulation at 60 and 90 minutes post LHC. The current Study (EAST), with a finish date of February 29, 2008, is examining the feasibility/safety of ambulating patients at 90 minutes post LHC sheath removal compared to the current practice of ambulation at 3-4 hours post sheath removal. A prospective non-concurrent design with a retrospective control is being used. Retrospective data from the APPROACH database and chart reviews will be analyzed for a period of 6 months for the control group on the traditional 3-4 hour ambulation protocol. Data will be analyzed using descriptive and comparative statistics. To date, raw data has shown that it is potentially feasible and safe to ambulate patients at 90 minutes post LHC. The calculated complication rate thus far is 3.9% which is below the acceptable complication rate. This has major implications for practice. Earlier ambulation has the potential to increase both patient comfort and quality of care, increase cardiac catheterization laboratory utilization and improve cost effectiveness.

N024

RAPID RESPONSE TO DEVICE RECALLS: CLINICAL AND OPERATIONAL IMPLICATIONS

Margot Wilson, Sandra Lauck, Sandra Barr, Stanley Tung
Vancouver, BC

Recently, questions related to safety and reliability of permanent pacemakers and implantable cardioverter defibrillators (ICDs) have gained international attention. Despite technological advances, malfunction remains a major public health concern. The device failure may relate to device design, construction, or the manufacturing process. To protect the public, post marketing surveillance is essential for early detection and management. A recall, or an advisory, is an action taken in response to a medical device that fails to perform at the expected level to meet the Food and Drug Administration, or Health Canada standards. Recalls occur when evidence suggests a device is defective, with either manifest, or the potential of causing life-threatening event. A recall does not always involve removal of the device but may necessitate more frequent checks and adjustment. The rapid management of recalls when hundreds of clinic patients are potentially affected can be overwhelming for an organization. Development of a process to orchestrate such an endeavour is essential. In 2006, the Heart Rhythm Society (HRS) released the first comprehensive recommendations for the surveillance, analysis and reporting of issues and advisories related to implants. In 2007, a cross-Canada survey showed that most centres have some process in place for dealing with device recalls. Based on the HRS guidelines, our centre developed a program-wide approach algorithm to facilitate an organized rapid response. This process aimed at ensuring optimal patient care and effective resource utilization will be presented. Clinical practice issues and recommendations for comprehensive nursing interventions, patient teaching and support will be discussed.

ORAL CONCURRENT SESSION III

N025

COMPLEMENTARY AND ALTERNATIVE MEDICINES OR WELLNESS SUPPLEMENTS: CAN THEY INCREASE THE RISK OF OPERATIVE BLEEDING IN CARDIOVASCULAR SURGERY?

Heather Harrington, Leasa Knechtel, Andrea Ho, Jeffrey Carter, Rehana Rahaman
Toronto, ON

There is a known societal increase in the use of herbal medicines & supplements, but pre-operative assessment may not always elicit this information. Cardiac surgery patients are questioned about their prescribed medications and are routinely instructed to stop taking specific medications pre-operatively in order to decrease the risk of bleeding. The objective of this project was to determine if the routine screening for herbal medicine, vitamin supplement or specific food consumption pre-operatively will reduce bleeding. We wondered:

a. How many patients routinely take vitamin supplements, herbal supplements or consume foods that may increase their bleeding risks.

b. How many patients are ever questioned about these supplements by the healthcare team pre-operatively

c. How much the patient & healthcare team understand about these supplements and possible interactions or associated risks when undergoing cardiac surgery.

This project examined the standard pre-operative forms used at a large urban tertiary-care hospital and reviewed the pre-operative assessment process in order to determine what type of information was obtained from the client and how this might impact their bleeding risk. Common vitamin and herbal supplements were researched to determine any links to an increased risk of bleeding and a literature search was conducted to examine any previous studies examining this issue. Our findings were used to develop a comprehensive pre-operative assessment that could potentially reduce our clients' risk of bleeding. Evaluation of the effectiveness of this pre-operative assessment will include the number of blood product transfusions, associated hemodynamic instability, ICU stay, morbidity and mortality.

N026

LE DÉVELOPPEMENT DES COMPÉTENCES DES INFIRMIÈRES ET DES MEMBRES DE L'ÉQUIPE DE SOINS

Hélène Loiselle, Danielle Goupil
Sherbrooke, QC

Dans un contexte de réorganisation du travail, le choix du programme-clientèle cardiopulmonaire a été de mettre l'accent sur le développement et l'amélioration des compétences des infirmières ainsi que celles des membres de l'équipe de soins. Le partage de la démarche entreprise, des outils développés et des résultats obtenus à ce jour constitue le but de la présentation. Dans un premier temps, l'équipe a choisi de libérer une infirmière à temps complet. Cette dernière est dédiée entièrement au soutien clinique. Elle couvre deux unités de soins et une unité de soins intermédiaires. La clientèle hospitalisée des ces secteurs est la suivante : cardiologie incluant l'hémodynamie et l'étude électrophysiologique, chirurgie cardiaque, chirurgie vasculaire et chirurgie thoracique.

La conseillère cadre clinicienne et l'infirmière en soutien clinique ont travaillé ensemble à revoir les stratégies utilisés lors de l'orientation et lors des activités de formation continue. De plus, la création d'un schéma illustrant les principales compétences en soins cardiovasculaires a été conceptualisé afin d'échelonner les niveaux de compétences attendues en fonction des champs d'exercice de l'infirmière et de l'infirmière auxiliaire ainsi qu'en fonction des secteurs d'activités. Les normes pour les soins infirmiers cardiovasculaires publiées en 2000 par le Conseil canadien des infirmières (iers) en nursing cardiovasculaire et la loi 90 ont servi de base à l'élaboration de ce schéma. Une meilleure compréhension et intégration des rôles attendues est alors possible.

N027

THE IMPACT OF NURSING INTERVENTIONS ON ACUTE CORONARY SYNDROME BEST PRACTICE GUIDELINES

Kathryn Eastwood, Heather Sherrard, Lloyd Duchesne, Christine Struthers, Sharon Ann Kearns, George Wells
Ottawa, ON

Cardiovascular disease remains the number one killer of men and women in Canada. Large clinical trials have established the best treatment for Acute Coronary Syndrome (ACS). Despite clear research-based guidelines there continues to be a significant "treatment gap".

A randomized control trial using Interactive Voice Response (IVR) technology as a care enabler in promoting compliance with ACS Best Practice Guidelines (BPG) is currently in progress at our hospital. Patients discharged home with a diagnosis of ACS meeting the inclusion criteria are enrolled. They are randomized to either "usual" treatment or to intervention, which includes 5 automated telephone calls over one year by the IVR system. The system asks a series of pre-determined questions related to recommended medication therapy. Responses are recorded in a data base and reviewed by a nurse. For patients who remain on BPG, intervention by the nurse is not required. If the call indicates a breach in BPG, a nurse contacts the patient and intervenes as required to help maintain or to return the patient to BPG.

The early results of the initial 281 patients in the intervention arm, who have completed the one year follow up will be presented. The technology will be described along with the algorithm of questions and the nursing interventions used to educate and empower the patient. These results indicate that the use of IVR for follow-up, improves adherence to BPG. Examples of the impact of nursing interventions on medication safety, patient education and compliance will be shared.

N028

ALCOHOLIC CARDIOMYOPATHY

Maureen Leyser
Kitchener, ON

Alcoholic cardiomyopathy (ACM) remains an important cause of dilated cardiomyopathy and in the latter stages can lead to heart failure. Long-term heavy alcohol consumption is the leading cause of nonischemic, dilated cardiomyopathy (Piano, 2002).

ACM is a specific heart muscle disease that occurs in two stages: an asymptomatic stage and a symptomatic stage. A case study will review the incidences and prevalence of ACM as characterized by an increase in myocardial mass, dilation of the ventricles and wall thinning. It will explore the relationship of alcohol abuse to the incidence of cirrhosis and cardiomyopathy. A description of how asymptomatic ACM is associated with diastolic dysfunction, whereas systolic dysfunction is a common finding in the symptomatic ACM patients will be reviewed. The discussion will include the pathological changes of ventricular function depending on the stage and the quantity of alcohol in relation to its harmful affects in cardiomyopathy.

In addition, alcohol abstinence, as well as the use of specific heart failure pharmacotherapy, may be critical in improving ventricular function and outcomes in these patients. A consistent approach towards this self-limiting disease may have positive effects towards the treatment and prognosis of this high risk population.

N029

FROM ICU TO HOME: A CASE STUDY OF ONE WOMAN'S HEART TRANSPLANT JOURNEY

Carrie Bancroft, Annemarie Kaan, Serena Jang
Vancouver, BC

End-stage heart failure and subsequent heart transplantation can place patients on a long and difficult journey to recovery. The purpose of this case study is to present one patient's story, highlighting the obstacles and triumphs that faced the patient and the team throughout her year long admission.

Mrs. H. was a 57-year-old patient with ischemic cardiomyopathy who lived at home for 8 months supported on a ventricular assist device while waiting for a heart transplant. Post-heart transplant her recovery was complicated by bilateral diaphragmatic paralysis and chronic renal failure. As a result, she required permanent mechanical ventilation and hemodyalisis. After 10 months in the ICU, it was becoming clear that discharge planning would be a challenge. In order to facilitate a smooth transition home, a plan was put in place to transfer Mrs. H. to the cardiology ward. Having a ventilated patient transferred out of a critical care area to a general nursing ward had many challenges and required close collaboration between interdisciplinary team members to maintain patient safety and staff comfort. This case challenged our traditional patient care plans. Due to the increasing levels of technology, acuity of illness and strains on the heath care facilities, interdisciplinary teams need to be prepared to think outside the box in order to provide safe and effective care for patient populations that are increasing in acuity and complexity.

N030

RANDOMIZED CONTROL TRIAL COMPARING STATIC VERSUS DYNAMIC STERNAL SUPPORT DEVICES POST CARDIAC SURGERY

Irene Travale, Richard Whitlock, Jackie Strauss, Laurie Smith, Kevin Teoh, Mary Helen Blackall
Hamilton, ON

Our center applies rib belts to patients deemed high risk for sternal wound complications post cardiac surgery. This static sternal support device (SSSD) restricts chest wall excursion and is applied for 24 hours a day. Some practitioners believe the SSSD delays recovery of lung function with little benefit on sternal discomfort. More expensive devices have recently been marketed to reduce patient discomfort and complications, but well-designed studies are lacking. The purpose of this study was to compare the efficacy of our current practice of rib binding with a newer, dynamic sternal support device (DSSD). In a randomized, open-label trial of 100 adult cardiac surgery patients at risk for sternal wound complications, a mixed methods approach was used to compare the SSSD to the newer DSSD through event tracking and a patient and healthcare worker questionnaire. Data was analyzed using SPSS. The treatment groups were similar with respect to preoperative and intraoperative characteristics except that the DSSD group had a higher rate of chronic pain syndromes (39% versus 15%, $p= 0.04$). There was no difference in the incidence of sternal wound complications including instability, infection, and reoperation between the groups. By regression analysis, the only predictor of postoperative narcotic use was preoperative chronic pain syndrome. There was no effect of treatment group, controlling for presence of chronic pain syndrome. Finally, the SSSD resulted in superior pain relief during deep breathing ($p= 0.05$). This randomized trial of sternal support devices demonstrated no benefit of the more expensive DSSD over our current SSSD.

N031

ULAANBAATAR, MONGOLIA A CANADIAN CARDIAC SURGICAL TEAM EXPERIENCE

Mary Kroh, Kim Simpson, Geri Juurlink, Mary Poole
London, ON

Our purpose in traveling to Mongolia on a medical mission was to administer much needed cardiac surgeries to patients of the Shastin-Medical Centre, Ulaanbaatar's hospital. The centre had been able to perform some rudimentary procedures for their cardiac patients but they were at a point where the patients could no longer wait and needed surgery.

Mongolia is located between Russia and China. Mongolia is slightly smaller than Alaska and is the 19th largest and least densely populated independent country in the world. The 2003 population of almost 2.9 million people has become more urbanized with only 15% of the people now living a nomadic life.

Our team consisted of 2 OR nurses, 4 ICU nurses, 2 Cardiac surgeons, 2 anesthetists and 1 perfusionist. In one week our team was able to assist, support and teach the Mongolian health care staff through six surgeries. What an experience!

The cardiovascular OR and ICU nurses will present the nursing perspective of stepping out of our comfort zone and entering into a healthcare

system that was so different from ours: severely compromised by such things as poverty, inadequate funding to maintain health care infrastructure, lack of education and training for health professionals and lack of medical supplies. We will describe the set-up and equipment, technique and our biggest challenge. Would we go again? Sure! But there are things that could be done differently, and we will share our advice for the next team.

N032
SIZE MATTERS
Marlene Adam, Jennifer Hunt, Erika MacPhee
Ottawa, ON

Patients who present with symptoms of acute coronary syndrome (ACS) with minimal delay from symptom onset have a significant outcome advantage from treatment options. Early intervention after ACS diagnosis has been well documented to reduce infarct size, prevent complications and shorten length of hospital stay. Realizing this advantage is in large part dependent on symptom recognition, initially by the patient and then by health care providers. Two decades of research has revealed that there is no single descriptor of chest pain, nor do clinicians have an absolute fail-safe way to exclude or confirm cardiac ischemia at the time of a patient's initial presentation (Goldman & Kirtane, 2003).

The purpose of this exploratory study is to determine if the size (surface area) of discomfort is a helpful descriptor to characterize cardiac ischemia, which would encourage early recognition by patients, thus reducing delay to treatment.

A detailed chest pain questionnaire was used to collect descriptors, locations, and surface area (determined using a descriptive scale developed by the investigators) of chest pain from the patient's perspective. Data collection included the results of diagnostic testing to confirm the presence of ischemic coronary artery disease (CAD). Early results demonstrate there is a positive correlation between the surface size of discomfort and a confirmed diagnosis of CAD ($p<0.05$).

The implications of these findings will be discussed in relation to symptom recognition by patients, health care professionals and its impact on timely intervention.

N033
MINIMALLY INVASIVE SURGERY FOR THE TREATMENT OF HEART FAILURE – USE OF THE HEARTNET DEVICE, A FIRST IN CANADA
Marg Holland
Calgary, AB

Heart failure continues to be a leading cause of hospitalization and death in Canada. Treatment is primarily centered around medical management, however the majority of these patients, even in spite of optimal medical management, continue to experience worsening symptoms due to progression of the cardiac dilation that occurs with heart failure. A clinical trial is underway using a superelastic silicone-covered nitinol mesh to surround the heart and provide passive restraint during both systole and diastole. It provides mechanical support to the heart and is designed to offload the ventricles and reduce wall stress. It is hoped the device will enable some reverse remodeling to occur, and that patients will experience fewer and less severe symptoms. A mini-thoracotomy is done to enable deployment of the device. This presentation will discuss: 1)the basic concepts of heart failure and the remodeling that takes place with long term failure 2) the basic concepts of treatment with a restraint device 3) a brief review of the history leading to development of the most current restraint device. Intra-operative digital photographs and real time video will be used to demonstrate the procedure. Also, fluoroscopy cine will be shown to illustrate deployment of the Paracor HeartNet device. A sample of the device will be available for viewing. Discussion of a case study will follow.

N034
HEART FAILURE AND END OF LIFE CARE ISSUES – A CASE STUDY
Dione Wilson
Vancouver, BC

Caring for patients with advanced heart failure in a critical care unit can generate specific clinical issues involving end of life care. Palliation and comfort measures can be forgotten in an environment of high technology that is immersed in a curative ideology. The objective of this case study is for the audience to gain a critical understanding of specific challenges related to end of life care that patients with advanced heart failure experience.

The case study involves a patient admitted to a tertiary care hospital after acute myocardial infarction. The patient experienced multiple cardiac arrests and was unable to be weaned off inotropic support. The patient was given a "do not resuscitate" order after consensus of the team but full medical management was continued. The team remained hopeful that the patient would recover enough to leave hospital, but the patient remained in the CCU for ongoing hemodynamic and arrhythmia issues. The final outcome was that the patient passed away in the CCU with minimal end of life care issues addressed.

The case study illustrates the potential for disparity of care in this unique patient population. It led to self-reflection of the nursing staff of our moral and ethical obligations as care providers. Nurses function as advocates for patients and are in a profound position to assess and communicate patient's needs to the multidisciplinary team. Individualization of patient care is an important factor that must be considered when making decisions that affect a patient's quality of life.

N035
REDUCING THE RISKS: OPTIMIZING YOUR PATIENT FOR CARDIAC SURGERY
Susan Feltham
Newmarket, ON

Along with regionalization for advanced cardiac procedures, repatriation is a common occurrence. Patients with ACS, and/or decompromized valvular heart disease come to regional cardiac centres for advanced diagnostics, such as angiograms, but are often times returned to their referring centres to wait for the surgical date. While this 'closer to home' care delivery approach can be more patient and family focused, and therefore more desirable for the patient, this is also a time when subtle missed changes in patient condition, or a less than thorough pre-operative work-up can significantly increase surgical risk and mortality.

This presentation will utilize a case study, incorporating the current ACC/AHA practice guidelines for cardiac bypass and valvular surgery, with particular attention on peri-operative risks and complications. It will outline the primary nursing considerations for the pre-operative cardiac patient, and strategies to reduce surgical risks and complications.

This presentation is applicable to any nurse or multidisciplinary team member caring for pre-operative cardiac patients in rural, community, or tertiary care settings. At the end of the presentation, attendees will be informed advocates for patients with respect to surgical risk reduction and potential peri-operative complications, in order to improve patient outcomes.

N036
FROM NOVICE TO EXPERT: MAKING CODE BLUE'S COMFORTABLE
Karen Charron, Kara Murfitt
Ottawa, ON

Cardiac arrests are often described as intimidating and daunting regardless of the nurse's level of experience. In addition, they are an infrequent occurrence on this busy cardiac surgery in-patient unit, which is staffed with both novice, and expert nurses. Novice RN's report being less comfortable in these situations. A learning needs assessment clearly demonstrated a need for increased education in: pharmaceuticals, respiratory therapy, and the ACLS guidelines.

Using a '100 day goal' as the framework, the staff decided that they would approach becoming experts in 'code blue' using the ACLS guidelines. The various stakeholders were identified and engaged into the teaching, innovative equipment was used, and dedicated time was provided to ensure all staff members would have the opportunity to participate. These sessions were mandatory for all nursing staff.
Theory sessions, regular handling of the arrest cart equipment, mock codes, and debriefings have proved to be an effective means of taking a very stressful situation, and making it a routine process that should not be feared. Streamlining roles, identifying learning gaps, and ensuring that all staff regardless of their experience and education are comfortable in critical situations ensure that the delivery of emergency care is safe, efficient, and effective.
This presentation will demonstrate how annual education for all staff nurses can enhance learning in stressful situations such as code blues. Using the 100 day goal strategy allows the process to be approached in a systematic method, removing barriers to each aspect of the code blue, and yet still guaranteeing learning in a timely manner.

N037

CLOSING THE GAP BETWEEN EVIDENCE AND PRACTICE IN ACS CARE: NURSE LED INTERVENTIONS FOR SUCCESS – A PROVINCIAL EXPERIENCE

Cleo Cyr
Saint John, NB

The New Brunswick Heart Centre is the provincial provider of tertiary cardiac services with approximately 4000 patients per year presenting with Acute Coronary Syndrome (ACS) from eight regional health authorities. ACS encompasses thrombotic coronary artery disease, including unstable angina and both ST-segment elevation and non-ST segment elevation myocardial infarction. Treatment of ACS requires a coordinated effort between multiple services and health care practitioners. Barring contraindications, evidence based parameters for ACS care include administration of ASA, timely reperfusion, Beta Blockers, ACE Inhibitors, Statins and Clopidogrel. Other interventions that support ACS care include smoking cessation counselling, appropriate inpatient and discharge education and referral to cardiac rehabilitation.
In 2006 a retrospect chart review of 400 patients identified documentation discrepancies and gaps in ACS care with only 75% of patients receiving timely reperfusion, 78% smoking cessation intervention and 60% referral to cardiac rehabilitation. Nurse led interventions played an integral part in identifying and closing gaps in care resulting in improvement in all measures. This session will examine the care gap processes that were integrated into daily practice along the continuum of care from the emergency department through to discharge. As well, nurse led implementation of multiple processes has resulted in the development of an ACS care reporting mechanism to care providers in the provinces regional health authorities effectively creating a seamless transfer of knowledge. The nurses' role in assessment, treatment, ongoing management and discharge practice will be discussed.

N038

THE ELDERLY HEART FAILURE PATIENT: A GLIMPSE INTO THE UPCOMING EPIDEMIC!

Christine Struthers, Kathryn Eastwood
Ottawa, ON

Important clinical trends such as improved treatment for acute coronary syndrome (ACS) and demographic trends described as the "graying baby boomers" have contributed to a significant rise in the prevalence of heart failure (HF) cases. It is estimated that new cases of heart failure could double by the year 2025. Caring for the frail elderly HF patients is particularly challenging because of the high co morbidity burden, polypharmacy and fluctuating cognitive impairment that is associated with nonadherence to treatment. In addition cardiovascular medications are frequently associated with adverse drug events in the elderly. This case study will highlight the needs of an 86 year old female with HF, diabetes, prosthetic aortic valve and ACS. She lives alone in a small rural Ontario community. We needed to deliver her care in a novel way that suited her individual needs. Access to specialized care using Telehealth (TH) and Telehome Monitoring (THM) technologies ensured "aging in place" in her home community. Using a home monitor & scale, this patient transmits her vital signs and weight to a central station monitored by a nurse. Her follow-up using TH & THM systems will be described along with the interventions provided during the monitoring period. Challenges in her care will be reviewed and creative strategies such as collaboration with home health agencies will be detailed. The issue of isolation and poor social support frequently identified in this population will be highlighted in this case study.

N039

THORACOTOMIE D'URGENCE AUX SOINS INTENSIFS

Gaétan Deroy, Rachel Guay, Nicole Parent
Montreal, QC

Survivre à une thoracotomie d'urgence pratiquée aux soins intensifs après une chirurgie cardiaque est associé à un taux de mortalité très élevé. Nous présenterons l'histoire de cas d'un jeune homme de 40 ans qui a subi en 2007 des pontages aorto-coronarien et mamo-coronarien sans aucune complication per-opératoire à l'Institut de Cardiologie de Montréal (ICM), mais chez qui l'excellente évolution est le résultat de l'application d'un protocole d'intervention rigoureux.
Environ trois heures après sa chirurgie au cours de son éveil, le patient tousse en présence de son tube endo-trachéal. Subitement, la cascade des événements suivants est observée: hypertension, augmentation des saignements (plus d'un litre en 5 minutes), puis une chute de tension artérielle et perte des données hémodynamiques, et l'asystolie. Une thoracotomie d'urgence de plus de 50 minutes a été pratiquée avec massage interne et réanimation liquidienne importante aux soins intensifs. Le patient a survécu à cette situation critique; la récupération post-opératoire a été sans obstacle et il a obtenu son congé de l'hôpital après six semaines, avec seulement des séquelles mineures.
Cette présentation fera la revue des signes et symptômes de la tamponnade, de l'implication infirmière lors d'une thoracotomie d'urgence et de l'importance du rôle de leadership de l'assistant infirmier-chef dans toute la coordination du travail d'équipe pendant cette procédure.

N040

CLINICAL PATHWAYS IN CARDIAC SURGERY: WHY ARE SO MANY PATIENTS FALLING OFF?

Wynne Chiu, Jennifer Kealy
Vancouver, BC

Clinical pathways (CP) in cardiac surgery were implemented in an attempt to improve multidisciplinary coordination of care. It was also hoped that CPs could enable effective use of resources and assist patients to meet expected health outcomes. At St Paul's Hospital (SPH), the cardiac surgery team recognized a need to investigate the effectiveness of our current CP. Like other centers, we found that our CPs may no longer suit the increasingly complex population. Patients undergoing cardiac surgery are on average older and have more co-morbidities than in previous years. Because of these concerns, we undertook an exploration of the use of CPs in cardiac surgery units across the country.
Cardiac centers were contacted for the purpose of comparing and contrasting their CP to that of SPH's. The approaches used in each of the centers were somewhat different. Issues around individualized versus pathway care and potential concepts to care planning will be presented.
Interestingly, other than potential cost-saving, it appears that there is no strong support for the use of CPs in the increasingly complex cardiac surgery population from the literature. The effectiveness of CPs have been questioned as it is apparent that many institutions have begun to look into ways of better accommodating this changing population. Nurses play a significant role in influencing change in the delivery of care to this increasingly complex population. Taking an active role in examining alternatives to care planning and understanding the body of evidence to influence change is crucial.

N041
PUNJABI CARDIAC REHABILITATION EDUCATION PROGRAM: EVALUATION OF THE PILOT PROJECT

Claire Prentice, Harmeet Mundra, Terina Werry, Karol Ghuman
Surrey, BC

Literature confirms the South Asian population has a 3 to 5 fold increase in risk for myocardial infarction and cardiovascular death, and present with their first cardiac event at an earlier age compared with other populations. In Surrey, British Columbia it is estimated that 27,000 people speak Punjabi at home, and thirty to forty percent of clients accessing our centre are Punjabi speaking. Until this year cardiac rehabilitation education classes were offered in English only, limiting participation for Punjabi speaking clients. Given these factors, a pilot project offering culturally appropriate cardiac risk reduction education in Punjabi was developed. Content from the current program was reviewed and modified by a multidisciplinary Punjabi speaking team. The program includes lectures addressing aspects of cardiac risk reduction and the opportunity for individual consultations with the multidisciplinary team.

The 6 month pilot project sample will consist of individuals with known coronary artery disease, recruited to attend the program for 2 hours per week for 8 weeks. Aims of the pilot project include: evaluating participant satisfaction and impact of education on levels of knowledge of cardiac risk factors and measures to decrease future risk. Data collected will include: demographics, satisfaction levels, and administration of a questionnaire evaluating knowledge levels pre and post program.

Anticipated outcomes include demonstration of increased level of knowledge in participants of cardiac risk factors and risk factor modification. Discussion will include identification of barriers, areas of strength, and lessons learned from the pilot project, as well as discussion of future directions.

N042
TO MONITOR OR NOT TO MONITOR: THAT IS THE QUESTION

Yang Ja Park, Nancy Tee
Ottawa, ON

About four decades ago, electrocardiographic (ECG) monitoring in hospital settings was introduced to track heart rate and basic rhythm. With advances in technology it is now common to monitor more complex arrhythmias, detect myocardial ischemia and identify prolonged QT intervals. During this period, a plethora of electrophysiological interventions have been introduced and the demand for ECG monitoring out side of critical care units has increased exponentially. In addition, ECG monitoring practices are often inconsistent and arbitrary which can place strain on available resources.

In 2005 The American Heart Association (AHA) published a Scientific Statement of Practice Standards for ECG Monitoring in Hospital Settings. In the absence of any research evidence supporting ECG Monitoring, this statement articulated the best practice guidelines for ECG Monitoring based on consensus expert opinion. This document represents the best currently available sources to guide clinical practice in hospital settings. In order to provide safe, effective and efficient monitoring, it was decided to develop a hospital specific guideline for ECG monitoring in one tertiary cardiovascular centre.

This presentation will describe the process of guideline development, staff education and implementation. In order to evaluate the effectiveness of the guideline, a survey was developed and distributed to all nursing and medical staff. Results of the survey will be reported, strengths and weaknesses will be identified and strategies for improvement will be presented.

N043
A NEW TREATMENT APPROACH TO ACUTE DECOMPENSATED HEART FAILURE: THE DIURETICS HOLIDAY

Marie-France Ouimette, Sonia Heppell, Jacinthe Thibault
Montreal, QC

The actual treatment of acute decompensated heart failure is basically the administration of diuretics, which can have potentially serious side effects : deterioration of the renal function associated with a diuretic resistance, neurohormonal activation, and ultimately, left ventricular dysfunction. Given the therapeutic limits of the pharmacological treatment and the prevalence of heart failure (HF) in Canada, with over 40 000 hospitalisations annually, the ultrafiltration (UF) therapy appears promising in achieving fluid removal, as well as improving clinical results. On January 22nd 2008, the Montreal Heart Institute used, for the first time in Canada, an UF system that permitted fluid removal in a patient suffering from HF, in a hypervolemic state secondary to a cardio-renal syndrome. That UF system uses a filtration process by aquapheresis allowing excretion of volume overload, while preserving electrolytic and hemodynamic balance, without major deterioration of the renal function. This presentation will review the available literature on the use of UF, describe the nursing management of the patient as well as the nursing leadership required to implement such a technology in our center. To this day, two patients benefited from this technology. The preliminary results were a rapid resolution of their fluid overload state and symptoms, without a major alteration of their renal function. We believe that this new technology will impact the nursing practice regarding symptoms management and length of stay in the hospital of the HF patients. Its effects on improving their quality of life, and restoring responsiveness to diuretics will also be discussed.

WORKSHOPS

N044
ICDS FROM A TO Z: FROM DECISION-MAKING TO PALLIATION

Sandra Lauck, Jennifer Kealy, Jennifer Lindenberg, Cheryl McIlroy, Quincy-Robyn Young, Margot Wilson
Vancouver, BC

There is growing evidence supporting the use of implantable cardioverter-defibrillators (ICD) for primary and secondary prevention of sudden cardiac death. Beyond the convincing indications lie patients' decision to accept this form of therapy, their experience of living with it, and the implications at the end of life.

The purpose of this workshop is to provide cardiac nurses with an opportunity to gain tools in caring for patients with an ICD along the complex trajectory of their device implant. A panel of patient educators, advance practice nurses and nurse educators will aim at focusing the discussion on the implications for patients.

The workshop will begin with a review of the evidence supporting ICD therapy, including a summary of the major trials and existing consensus guidelines. This will guide the discussion on how patients make the decision to receive an ICD. After providing some practical guidelines on facilitating the implant procedures, the discussion will focus on living with an ICD. Led by a patient educator and a clinical psychologist, the topics explored will include common themes and concerns, psychoemotional adjustment, and self-care issues, while focusing on resources available to support patients and their families. We will specifically address ways to coach patients to respond to the device alert functions of the ICD to minimize distress and optimize response. We will conclude by discussing the implications of ICD treatment in end of life decision-making, and provide participants with proposed practice guidelines to support patients and practice.

N045

THERAPEUTIC HYPOTHERMIA POST CARDIAC ARREST WORKSHOP

Marleen Spencer, Carol Meade-Corkum
Halifax, NS

Deliberate induction of moderate hypothermia (lowering core body temperature to 32-34 degrees Centigrade) had been used since the 1950's to protect the brain from injury because of ischemia related to anesthesia and cardiac surgery with varying results.

In 2002, two randomized studies, published in the New England Journal of Medicine, identified that cooling patients after cardiac arrest increased their chances of leaving hospital with mild to no neurological deficits. The results of these trials led the American Heart Association (AHA) and the International Liaison Committee on Resuscitation (ILCOR) to develop recommendations and guidelines for induction of hypothermia in select patients post cardiac arrest.

In 2007 our tertiary care institution established a working group of nurses and physicians to develop a protocol, physician standing orders and plan of care for the induction of therapeutic hypothermia for out of hospital cardiac arrest patients. This work has resulted in an efficient and expedient implementation plan that has been utilized by our Coronary Care Unit (CCU).

Patients who have undergone induced hypothermia pose unique challenges in their overall care. This workshop will be interactive and provide participants with knowledge and appreciation of the management of therapeutic hypothermia post cardiac arrest. Objectives will include the nursing care involved, practice implications and workload for managing the induction and support of the hypothermic patient from the initial hours to their recovery. Potential benefits, complications and nursing challenges will be identified.

The outcome of the workshop will be to share our protocols with cardiovascular nurses across Canada. Consequently providing nurses with a better understanding of therapeutic hypothermia post cardiac arrest, in an effort to make this therapy more available for select patient populations.

N046

END OF LIFE CARE IN HEART FAILURE: MAXIMIZING PATIENT'S QUALITY OF LIFE.

Estrellita Estrella-Holder, Glen Drobot
Winnipeg, MB

Heart Failure (HF) is an increasingly common syndrome in which the diseased heart is unable to meet the body's demands. It accounts for almost 10% of hospitalizations over the age of 65, and hence is an important cause of morbidity and mortality. In Canada, the first HF hospitalization is associated with an approximate 33% mortality at one year, a poorer prognosis than many malignant diseases. Using real-life cases and interactive discussion with front-line practitioners, this workshop aims to review the stages of HF, prognosis of patients with HF, and goals of HF management when approaching end-of-life. Topics will include: control of congestion, function of implantable defibrillator and how to discuss deactivating the defibrillator, use of oxygen and opioids in HF, and rationalizing cardiac medications in end-stage HF. The participants will be encouraged to express their opinions and share their experiences in dealing with end of life care in the hopes of improving care in patients with end-stage HF.

N047

IS THERE A TRANSCATHETER AORTIC VALVE REPLACEMENT PROGRAM COMING TO YOUR HOSPITAL? PRACTICAL TIPS FOR INNOVATIVE APPROACHES TO VALVULAR HEART DISEASE

Sandra Lauck[1], Margot Wilson[1], Carol Galte[1], Brenda Ridley[2]
Vancouver, BC[1], Toronto, ON[2]

Aortic stenosis (AS) is the most prevalent valvular heart disease and cardiovascular condition after coronary artery disease and hypertension. Acquired AS primarily affects the elderly and causes debilitating symptoms and decreased quality of life. In most cases, surgical valve replacement is the treatment of choice for patients.

Since 2005, Canadian centres have been worldwide leaders in introducing a new option for the management of severe aortic stenosis using transcatheter techniques. Percutaneous and transapical aortic valve replacements have emerged as increasingly feasible options for patients at high surgical risk.

This workshop is aimed at cardiac nurses with an interest in innovative approaches to heart disease, and who may become involved in the care of patients undergoing transcatheter heart valve (THV) replacement. The workshop will be jointly presented by a team of advance practice nurses, nurse educators and managers at two large centres in British Columbia and Ontario. We will initially provide an overview of the underlying disease, percutaneous and apical procedures as well as patient outcomes to date. We will then discuss the implications for program development including processes, nursing competencies and trajectory of care. Finally, we will conclude by sharing the care map that we have developed to support practice.

In this interactive workshop, a case study approach will be used. Participants will have an opportunity to discuss issues of interest with the panel of presenters, and will receive education tools that outline the nature of THV procedures, implications for program development, and a copy of the care map.

N048

USING TECHNOLOGY TO ENHANCE NURSING EDUCATION: THE NECESSITY OF INVENTION

Susan Morris
Saint John, NB

The New Brunswick Heart Centre (NBHC) Clinical Nurse Educator was prompted to develop a creative strategy to improve staff performance in emergency situations. This followed identification of needs related to Code Blue: staff confidence during Code Blue resuscitation (reported as number one priority by 69% of nursing staff [registered and licensed practical nurses] of the NBHC during a recent learning needs assessment); additional education on documentation during Code Blue resuscitation recognized through patient chart audits; and need for revision of the Atlantic Health Sciences Corporation (AHSC) Code Blue Resuscitation Sheet. To help address these needs fellow nurse educators were invited to participate in the development of a video depicting a variety of Code Blue scenarios, to help staff to understand the Code Blue process and allow practice for documentation. Nurse educators also revised the Code Blue Resuscitation Sheet. For the final step of education preparation, the Biomedical Department of the Saint John Regional Hospital (SJRH) was asked to construct a "quiz box" that could be used interactively during education sessions. It was modeled after the Jeopardy!® game show, and is used in conjunction with a previously developed computer game. This workshop will allow participants to view the Code Blue scenarios on DVD and the Code Blue Resuscitation Sheet. Three lucky audience members will also be able to try their hand at "New Brunswick Heart Centre Cardiopardy".

ORAL CONCURRENT SESSION IV

N049

GENDER DIFFERENCES IN THE INFLUENCE OF PERSONAL, CLINICAL AND SOCIAL FACTORS ON LONGTERM PHYSICAL FUNCTION IN OLDER PERSONS LIVING WITH HEART FAILURE

Joan Tranmer, John McCans, Chris O'Callaghan, Patti Staples, Margaret Harrison, Diane Groll, Andrew Day
Kingston, ON

Older women with heart failure (HF) represent a unique and highly vulnerable group as underlying pathophysiology may be different, diagnosis may be delayed, and access to, and utilization of, informal and formal support systems may be less. The primary goal of this study was to determine the gender differences in personal, clinical and social factors associated with 12-month physical function in older persons living with symptomatic

HF. We conducted a prospective, one year follow-up study. 400 hundred patients, greater than 65 years of age, admitted to hospital or seen in emergency, with a complaint related to heart failure, from 4 hospital sites in southeastern Ontario were recruited between January 2004 and April 2007. Clinical, demographic, quality of life and social support measures were collected via structured survey at baseline, 6 and 12 months post emergency visit. Of participants enrolled at baseline, 38% were female. Mean left ventricular ejection fraction was 43% with 95% of participants meeting the Framingham criteria for HF. One year outcome analysis is currently underway. We will present the multi-variable model examining the dependence of 12 month physical function on sex and selected personal, clinical and support factors. This research is relevant to the increasing number of older women and men with HF, their caregivers, and to health care providers. The information gained from this study will contribute to the future planning of regionally based, gender sensitive health services for older persons living with heart failure.

N050

THE DEVELOPMENT OF DISCHARGE CRITERIA FOR VENTRICULAR ASSIST DEVICE (VAD) PATIENTS AWAITING HEART TRANSPLANTATION OUTSIDE THE HOSPITAL SETTING

Sonya Osmond
Halifax, NS

This presentation will highlight the transition of Ventricular Assist Device (VAD) patients from an inpatient unit to an independent living situation outside the hospital setting. The presentation will explore the challenges, the benefits and limitations to waiting in the community with a VAD, as well as patient's perspectives with this transition process. Our centre is the only transplant/VAD centre, serving the vast geographic area of four provinces (2 provinces are islands). The Ventricular Assist Device Program began in 2004 joining the cardiac transplantation program that was established in 1988.VAD patients remained in hospital awaiting transplantation, which in many cases resulted in an extended length of stay. However our VAD patients began to question why they couldn't live outside the hospital? The presentation will outline the process which resulted in the development of discharge criteria, recommendations and implementation steps to achieve a safe transition of VAD patients from the inpatient unit to independent living.

N051

PRIMARY ANGIOPLASTY FOR INPATIENTS: A HOSPITAL WIDE INITIATIVE

Ancy Sookraj, Sarah Telfer
Mississauga, ON

In order to provide PPCI within 90 minutes to an inpatient adult population it requires coordination across departments and disciplines. The major factor in timely treatment is the data-to-decision time. Delays can occur in obtaining an EKG, diagnosing ST elevation Myocardial Infarction (STEMI), and transferring patients to the catheterization lab. This presentation will outline the following steps that were taken to ensure timely access to angioplasty for inpatients experiencing STEMI.

1. Development of a chest pain protocol for management of the adult inpatient having chest pain, in consultation with the Cardiology Operations team, Interventional Cardiology, Medical Emergency Team, Internal Medicine, Cardiac Educators and the PPCI workgroup.
2. Development of an educational roll-out plan hospital wide, which targeted the Clinical Educators, Clinical Leaders, Nursing Advisory Committee and Medical Emergency Team.
3. Expansion of the roll-out to include the creation of a PPCI roadshow, developed to take to all inpatient units and taught by a team of CCU, and Cath Lab nurses and Clinical Educators.

This presentation will be of interest to all centres providing PPCI and all centres simply endeavouring to get patients suffering from Myocardial Infarction access to the care they need. This unique approach to hospital wide education will be of interest to nursing leaders and educators. Data will be presented to demonstrate the success of this program.

N052

DEVICE REMOVAL AND LEAD EXTRACTIONS: IMPLICATIONS FOR NURSING PRACTICE

Jennifer Kealy, Wynne Chiu, Georgina Chapman
Vancouver, BC

Pacemakers and implantable cardioverter defibrillators are a mainstay of arrhythmia management. In 2006, there were more than 120,000 Canadians living with pacemakers and 15,000 with defibrillators (Simpson & Gillis, 2006). While most devices perform reliably throughout their expected life, there is a risk of failure or complications requiring device removal.

Typical indications for device or lead removal include septicemia, endocarditis, pocket infection, vein thrombosis, and lead failure or recall. With the recent unprecedented number of device recalls and increased longevity of patients, there will be an increased demand for these procedures.

Following device removal or lead extractions patients require critical care, as there are potentially serious complications. Frequently, a new device is not implanted at the time of removal, posing rhythm management challenges. For example, our protocol for patients with systemic infections caused by infected pockets is antibiotic therapy for five to seven days before re-implantation of a new device. During this time, patients dependent upon pacemakers may not be able to sustain a heart rate and cardiac output, consequently requiring close hemodynamic monitoring and intravenous chronotropes or temporary pacing.

The postoperative nursing care of these patients is unique and complex, as it varies depending on the type of device removed and the indication for removal. These patients require specialized care, however there are limited resources specifically addressing device removal or lead extractions. This presentation will offer comprehensive guidelines for nurses, enabling them to provide optimal care for this patient population.

N053

100 DAY GOALS: HOW TO KEEP YOUR STAFF AND MANAGER ON TRACK

Karen Charron, Heather Sherrard
Ottawa, ON

Keeping a busy cardiac unit, its staff and manager on track and motivated can be a daily challenge. Breaking strategic and operational tasks into manageable bundles becomes a strategy that is of benefit in today's complex patient care environments.

This clinical manager surveyed staff in order to determine what changes they felt was necessary in the unit. From this survey, a wide range of topics were identified: Professionalism, environmental issues, continuous quality improvement projects, and equipment maintenance. The list was put into a 100 day chart of realistic and achievable goals that was posted in the unit. As achievements were accomplished, they were dated and eliminated from the list and posted for all to view. This served as an excellent motivational tool. This reinforced that regular contributions to the improvement of the unit. This enhances both professional and personal development, thus improving the quality of patient care delivered.

Projects often get started and never finished, and as a result, staff motivation and participation often wax and wane. Using 100 day blocks of time, is a strategic way of setting objectives, and deadlines, in a timely manner, which not only ensures the success of the project but also allows the staff to observe regular progress, and celebrate their successes.

This case study reviews how a new manager used the 100 day goal methodology to set direction for the unit and engaged front line staff.

N054

CORONARY ARTERY BYPASS GRAFT SURGERY OUTCOMES: GENDER DIFFERENCES REVISITED

Jo-Ann V Sawatzky, Barbara J Naimark
Winnipeg, MB

Coronary artery bypass graft (CABG) surgery is the most frequently performed intervention for coronary heart disease. Although much research attention has been directed towards gender differences in post-operative recovery, there are still concerns that women may have worse outcomes.

Therefore, the purpose of this research was to explore gender differences in pre-operative status and post-operative CABG surgery outcomes. A purposive sample (N = 195; 157 males; 38 females) was recruited at the time of placement on the waiting list for CABG surgery. Procedures included mail-out questionnaires at baseline, 6 weeks and 6 months, chart review, and a 2-week post-discharge telephone interview. Data analyses included bivariate, as well as multivariate procedures ($p<0.05$). At baseline, differences in age and most physical risks were non-significant; however, females had lower incomes and were more likely to be unemployed; they had lower physical functioning scores and were more likely to be on topical nitrates than their male counterparts. Post-operatively, females had more respiratory complications and longer hospital length of stay. At 2 weeks post-discharge, females reported more symptoms and required more home care. While perceived quality of life improved over time for both males and females, lower baseline physical functioning and female gender were significant predictors of lower physical functioning at 6 weeks and 6 months post-operatively. Our findings provide important insights for predicting and improving the CABG surgery outcomes for both men and women. In particular, implementing strategies to improve physical functioning pre-operatively, may improve post-operative quality of life outcomes in this population.

N055

DELEGATED BY DEFAULT: A CASE STUDY OF A REGISTERED NURSE ADOPTING THE NEW VENTRICULAR ASSIST DEVICE IMPELLA 5.0

Stefanie Lutz
Vancouver, BC

Registered nurses in critical care are “delegated by default” to manage new advanced life support technology. Registered nurses are almost always the first to encounter and troubleshoot problems with new technology because of their position at the bedside.

A case study will describe how a nurse cared for a patient with severely unstable cardiogenic shock. A very new ventricular assist device - the Impella 5.0 - was inserted transfemorally as a bridge to transplant. Implementation of the device occurred earlier than anticipated with little time for in-servicing or dissemination of information for the nursing team. Given these limitations, the nurse had to simultaneously anticipate any potential problems and troubleshoot real problems as they arose. Some of these problems included: titrating systemic heparin with bleeding issues, understanding placement alarms, changing the function of the device according to hemodynamic instability, and teaching colleagues about the device.

The nurse used her past experience, hemodynamic theory, intuition and trial and error in order to solve these problems. Colleagues, cardiologists, surgeons and clinical consultants adequately supported the registered nurse at the bedside and made it a positive experience. This case study is an example of how registered nurses at the bedside can be supported in an environment where they are continually asked to take on new technology like the Impella 5.0.

N056

STRATEGIES FOR MANAGING REFERRALS OF OUTPATIENTS AWAITING CARDIAC CATHETERIZATION

Beverly Barbato, Mat Mercuri, Leslie Gauthier
Hamilton, ON

In Ontario, the Ministry of Health and the Cardiac Care Network have undertaken an initiative to minimize wait times for cardiac procedures. Acceptable wait times have been targeted for cardiac catheterization, percutaneous coronary interventions (PCI) and cardiac surgical procedures. With the opening of a new facility and newly established triage processes, the Hamilton Health Sciences (HHS) has been very successful is decreasing our wait list from over six hundred patients to under one hundred patients. This dramatic reduction in the number of patients awaiting cardiac services at HHS has been achieved through both increased capacity and improved system design. Elective patients can often be scheduled within 2 days of referral. New challenges arise with scheduling. Patients may not be ready or willing to undergo their procedure on short notice. In addition, patients may be referred with clinically significant concerns that may need to be addressed prior to the cardiac catheterization.

At HHS we have identified that there is a wait period in which patient readiness, education, pre-procedure bloodwork and discharge planning can be safely facilitated. This presentation will describe the newly established processes and strategies for managing elective outpatients awaiting cardiac catheterization at HHS. The role of regional coordinators for triage in cardiac catheterization/PCI services will be presented.

N057

THE DIPSTICK: THE 5TH VITAL SIGN FOR IDENTIFYING CARDIOVASCULAR RISK

Sandra Skerratt, Colleen Clark
Newmarket, ON

Proteinuria (protein in the urine) or microalbuminuria (microscopic protein in the urine) is an established marker for renal disease and for the progression of renal disease in patients with diabetes and in those with hypertension. However, recent research has demonstrated that proteinuria or microalbuminuria constitutes an independent predictor of cardiovascular (CV) morbidity and mortality risk in patients with or without evidence of diabetes, hypertension or renal disease.

Proteinuria measured by standard urine dipstick at baseline in patients with acute coronary syndrome and subsequent CV disease is predictive of all-cause and CV mortality, independent of baseline serum renal function. Hence, this common dipstick urinalysis which is simple and noninvasive for the detection of proteinuria can be performed by nurses to provide another window of opportunity to screen for and modify CV risk factors in the patient population.

This presentation will be clinically significant for nurses working with patients with CV disease. It will explore the significance of proteinuria as a strong and independent indicator of increased CV risk among individuals with and without other risk factors. The presentation will identify how nurses can perform common dipstick analysis which can be used to screen and stratify patient’s CV risk. Lastly, it will outline the nurse’s role in educating patients and families about the pharmacological and other risk factor modification strategies to reduce the risks associated with CV disease.

N058

APPRECIATIVE INQUIRY – THE VISION BASED POSITIVE APPROACH TO CHANGE

Linda Belford, Peter Nielsen, Kaye Benson, Petrina McGrath
Toronto, ON

Fostering the development of new technologies and therapies, in today’s health care environment, is paramount to best respond to the care needs of increasingly complex patient populations. Successful integration of and contribution to this knowledge in clinical practice environments requires a culture that is receptive to change. Health care organizations continuously strive to find ways to facilitate necessary change believed to maximize healthy work environments for staff and deliver quality care to patients. Traditional change theories are typically focused on the identification of a problem or what is not working as the initial phase of the change process only then to move onto generating solutions to “fix” the problem. Such approaches funnel energies into negative thought processes that often limit motivation, inspiration and innovation. Appreciative Inquiry (AI) is a philosophy and methodology that offers a distinctly different vision based positive approach to change. This approach facilitates sustainable change by encouraging and engaging participants to reflect on experiences of success creating an infectious and generative spirit of possibilities.

The objective of this presentation is to introduce participants to the AI philosophy, by sharing an overview of this process and will include examples in a Cardiology setting of a large teaching hospital that highlight the benefits in using this approach over traditional approaches. The understanding and utilization of this philosophy in the clinical practice environment will foster an environment of motivated, inspired and engaged nurses to facilitate change by identifying and celebrating past success to

build on a momentum of future success, ultimately contributing to greater staff satisfaction and excellence in patient care.

N059

NON-INVASIVE DIAGNOSTIC STRATEGIES FOR SUSPECTED CORONARY HEART DISEASE IN WOMEN

Jacqueline Stoop
Edmonton, AB

Selection of appropriate diagnostic testing for the evaluation of women presenting with chest pain or other symptoms suggesting coronary heart disease (CHD) is challenging. Women overall have a lower incidence of CHD than men, yet cardiovascular disease remains a leading cause of death for women. Early diagnosis of CHD and assessment of potential risk of CHD are vital for improving outcomes. Non-invasive diagnostic and prognostic testing provides the potential of identifying women at increased risk for CHD. This presentation will explore and compare the accuracy and prognostic ability of non-invasive cardiac testing. A diagnostic algorithm will be presented along with recommended management strategies based on test results. Case studies will examine how women with CHD differ from men in terms of age of presentation, presenting symptoms and the presence of co-morbidities. Clinical presentation and risk factors offer predictive value of CHD in women and provide initial risk stratification to guide appropriate cardiac testing.

N060

PROVIDING OUTPATIENT SUPPORT FOR PATIENTS ON MECHANICAL CARDIAC SUPPORT: AN EVALUATION OF THE LAST 5 YEARS

Annemarie Kaan, Nicole Gauthier, Holly Andrews, Carrie Bancroft
Vancouver, BC

The ventricular assist device (VAD) program commenced in 2002 in BC. Since then, 35 VADs have been implanted and of those, 22 patients were discharged, resulting in 9 patient years at home. The program provides a “24/7” VAD hotline for emergency calls. This phone is carried by appropriately prepared RNs from the cardiology unit. This paper will analyze the calls received via the VAD hotline and review current practice. From March 2003 to February 2008 a total of 135 calls for VAD support were logged. Resulting in an average of 2 calls per month. Calls were reviewed as to their level of urgency - level 1 being minor technical assistance and support, level 2 being calls that required non-emergent discussion with a physician and level 3 being pump failure or other emergency requiring immediate action and/or admission to hospital. Activity was higher during times of high volume (2004 and 2006). Of the 135 calls logged, 30 (22%) calls were graded at level 3. Ten of these calls were for pump failure of some description (ranging from compressor failure to major bearing wear and pump stoppage), 11 were for either thromboembolic event or hemorrhage, 4 for acute infective illness and 5 others. The 105 remaining calls were graded at level 1 (n=60) or level 2 (n-45).

The role of VAD on-call RN is a demanding one, requiring expert knowledge of devices as well as astute triage skills. This emerging area of telemedicine requires regular review and accurate documentation of actions.

N061

WE’RE OPEN. THE IMPACT OF A NEW DIAGNOSTIC CARDIAC CATHETERIZATION LAB ON A RAPIDLY EXPANDING COMMUNITY

Rachael Ramsamujh, Inderjit Sahota, Susan Castle
Etobicoke, ON

October 29, 2007, saw the long awaited opening of the $790 million William Osler Health Centre (WOHC) Brampton Civic Hospital (BCH). The population of Brampton is currently in excess of 450,000 and is one of the fastest growing cities in Canada. With 479 beds and covering 1.3 million square feet, this institution boasts the largest healthcare infrastructure in Canada. This opening included the addition of a department new to WOHC; a diagnostic Cardiac Catheterization Laboratory (CCL). Previously, inpatients from the old hospital site, or those from local cardiologist’s offices were referred for diagnostic coronary angiography outside the city of Brampton.

So, what does this new CCL mean for those in the Brampton community who have heart disease?

This presentation will describe the impact of the CCL on the inpatient and outpatient cardiac population of Brampton. This will include how the length of hospital stay has been decreased from levels that were above the current benchmark guidelines; how patients have been given the opportunity to have diagnostic cardiac testing closer to their home; and how the ER department has been assisted in the expedition of diagnostic coronary angiography directly from the ER and thus also for referral for revascularization.

We will also give an overview of our unique Cardiology System which allows the integration and viewing of all diagnostic cardiology. This system also enables instant faxing of reports, with findings, recommendations and images, to referring physicians which further expedites the course of treatment for the patient.

N062

GENERATION Y IN EP: CARING FOR YOUTH IN AN ADULT-ONLY WORLD

Jen Lindenberg, Sandra Lauck
Vancouver, BC

In sharp contrast to the services provided in many cardiac clinical areas, nurses working in electrophysiology (EP) labs frequently care for young patients. This patient population, commonly referred to as “Generation Y”, poses unique challenges and opportunities for nursing practice, as nurses, patients and families find themselves “out of their element” in a clinical setting geared towards older adults. We will report on the experience of providing “Gen Y Care” at our centre located in Vancouver, British Columbia (BC). Our hospital is a quaternary care referral facility that provides adult-only cardiac services for the province of British Columbia. Using a case-study format, we will discuss the unique patient and family needs of Gen Y patients undergoing EP procedures, and the implications for practice. With the support of a literature review, we will examine how youths’ developmental process and experience of cardiac disease impact EP care in a clinical setting without pediatric programs or support. We will debate the ethical implications pertaining to the consent procedure, privacy issues and working with family members. Lastly, we will discuss nursing competencies, practice guidelines and professional support required to facilitate the care of this unique population in adult facilities. The case study will demonstrate that caring for a young patient population in an older adult environment has implications for patient teaching, admission and discharge procedures, staff development and the use of evidence-based practice. We will conclude the presentation by providing a series of recommendations on implementing a comprehensive “Gen Y” EP program.

N063

BACK TO BASICS: IMPROVING COMMUNICATION THROUGH VERBAL REPORTS

Cheryl Beemer
Hamilton, ON

The Heart Investigation Unit (HIU) at the Hamilton Health Sciences (HHS) services the second largest Local Health Integration Network (LHIN) in the province of Ontario. This LHIN covers 7,000 square kilometers encompassing 2.3 million people. As a regional tertiary cardiac center in this LHIN, the HIU will perform approximately 7,650 cardiac catheterizations and 2,600 angioplasties in 2008/09 and provide services to 17 referring hospitals. Historically, patient reporting between the referring sites and the HIU staff has been incomplete and inconsistent. In 2007, a template was developed to aid in the communication between the sending and receiving hospitals. Since the introduction of this tool, a process has been established for a nurse to nurse verbal report prior to the patient being transferred for the procedure. This presentation will discuss how a simple change in nursing practice and a thorough verbal report can

increase patient safety, add efficiencies to the system, encourage professional accountability and collaboration, improve communication and, most importantly, enhance the quality of patient care.

ORAL CONCURRENT SESSION V

N064

IDENTIFICATION DES PERCEPTIONS ET DES CROYANCES DES INFIRMIÈRES AU SUJET DES PRÉCAUTIONS ADDITIONNELLES EN CHIRURGIE CARDIAQUE

Chantal Soucy, Nicole Parent, Dubeau Réjeanne, Sylvie Théoret, Chantal Cara, Antoinette Lambert
Montreal, QC

L'Institut de Cardiologie de Montréal (ICM) est un centre universitaire ultra-spécialisé de soins tertiaires en cardiologie, dont 75% de sa clientèle y est référée d'autres établissements de santé à travers la province pour le cathétérisme ou la chirurgie cardiaque. Dans un tel contexte, la diversité au niveau de la provenance de sa clientèle ainsi que la vulnérabilité dans un milieu de chirurgie cardiaque, amènent une préoccupation particulière à l'aspect de prévention des infections. De plus, l'ICM a connu plusieurs éclosions en 2007 telles qu'une éclosion d'entérocoque résistant à la vancomycine, de gastro-entérite virale et de Clostridium difficile.
Bien que certaines études aient documenté les perceptions des infirmières dans la pratique du lavage des mains, aucune étude n'a exploré les perceptions en regard des précautions additionnelles (mesures d'isolement). De plus, des études ont révélé des lacunes au niveau de l'application des mesures additionnelles, sans toutefois avoir exploré les raisons associées. Une étude ayant pour but d'explorer les perceptions, les croyances et les significations des infirmières en regard des pratiques reliées à l'application des précautions additionnelles a été réalisée en utilisant un échantillon de convenance auprès des infirmières de chirurgie cardiaque. Quatre groupes d'infirmières ont été interviewées sous forme de focus groupe. Inspiré du Health Belief Model et de la philosophie du Caring de Watson, le questionnaire a fait ressortir des données qualitatives qui ont été analysées et seront présentées. Des recommandations ont été énoncées afin de favoriser le changement de comportements en regard des précautions additionnelles dans l'unité de chirurgie cardiaque.

N065

PERCUTANEOUS LEFT VENTRICULAR ASSIST DEVICE (LVAD) IN THE CARDIAC CATHETERIZATION LAB – MEETING THE CHALLENGE FOR NURSES

Brenda Ridley, Wendy So
Toronto, ON

High-risk Percutaneous Coronary Intervention (PCI) is associated with greater morbidity and mortality outcomes for patients (ACC/AHA 2005). Innovative technology using advanced hemodynamic support devices has paved the way for safer high-risk procedures and better hemodynamic support than Intra Aortic Balloon pump (IABP) alone. As the first Canadian center to use the Percutaneous Left Ventricular Assist Device (LVAD) system in the Cath Lab the purpose of our presentation will be to describe the development of our collaborative educational and patient care programs. The process involved a collaborative approach of perfusion, nursing and medical staff to care for these high-risk patients. The patients underwent PCI in the Cath Lab and then transitioned to the Coronary Intensive Care Unit (CICU) for ongoing monitoring and care. The presentation will reveal our three key components for developing a successful program: nursing educational program development, advanced clinical skill development for Cath Lab and CICU nursing staff and integration of new technology into Cath Lab and CICU nursing practice standards. The clinical outcomes of the patients will also be presented who all underwent successful angioplasty.

N066

NURSING SUPPORT WITH FAMILIES OF CRITICALLY ILL CARDIAC PATIENTS

Virginia Vandall-Walker[1], Alex Clark[2]
Athabasca, AB[1], Edmonton, AB[2]

Critical illness poses a threat to the integrity of the family as well as to that of the patient. Researchers have explored family members' perceived needs, experiences, satisfaction with care, and interventions for them. Recently, the process of "Lightening Our Load" was revealed, engaged in by intensive care nurses in support of family members (Vandall-Walker, Jensen, & Oberle, 2007). However, there is a lack of knowledge regarding the overall process cardiac nurses are involved when they are perceived as supportive by family members.
The purpose of this study was to explore the process of nursing support from the perspective of family members of critically ill cardiac patients. Grounded theory informed the data collection and analysis. Regional and institutional ethical approval was received. Family members were recruited from four hospitals in one urban centre using posters and word-of-mouth. After consenting, participants were involved in open-ended interviews. Preliminary results are supporting previous findings about family members' 'work' to 'get through' the experience (Vandall-Walker, 2006). However, it appears that cardiac nurses are supporting family members more readily than has been reported, leading to research questions for a subsequent study investigating barriers to the provision of nursing support.
Results of the current study will further extend the understanding of nursing support and the relationship of this concept to concepts of social and professional support, caring, and comfort. This theoretical knowledge is needed to help guide further research and practice with these family members, and to support the development of interventions amenable to testing.

N067

MANAGING HEART FAILURE AS A NEW MOTHER: WHAT A CHALLENGE!

Mélanie Théoret, Tanya Lachapelle
Ottawa, ON

Peripartum cardiomyopathy (PPCM) is a complication of pregnancy that can be life threatening. PPCM is defined as the deterioration of cardiac function due to left ventricular dysfunction. The prognosis of PPCM is correlated with the severity of the ventricular dysfunction. The etiology is unknown and the prevalence varies from country to country. The incidence varies between 1 in 1,300 to 1 in 15, 000 pregnancies and is usually diagnosed by echocardiography during the last month of the pregnancy or within the first five months after delivery. The symptoms of PPCM are often non specific and may appear early in the pregnancy. Diagnosis is not always made at the time of initial symptom presentation.
Once PPCM is diagnosed, new mothers face many unexpected challenges balancing motherhood and a new illness. Patient and family education is a key element in assisting patients to live with this new diagnosis. Although this diagnosis is uncommon our institution recently had experience with three cases of PPCM. This presentation will detail 2 case studies. The first case was a 31 year old primigravida and the second was admitted with an ST-elevation myocardial infarction two weeks postpartum. We will discuss the challenges faced when caring for these mothers when their primary concern is their newborn. With the help of telehome monitoring and the involvement of a multidisciplinary team individualized evidence-based care plans were created for each of the patients to facilitate the transition from hospital to home.

N068

DIRTY LAUNDRY: STRATEGIES TO ELIMINATE BIOBURDEN IN A CARDIAC INTENSIVE CARE UNIT

Mary Kroh, Sheila Hunt
London, ON

Resistant organisms are here to stay. The impact in terms of patient outcomes, hospital length of stay and health care dollars are in the hundreds, thousands and beyond! Health care associated infections (HAIs) have a significant impact on both patients and the province's health system. For

patients, HAIs can negatively impact quality of life (due to isolation or long-term health effects) and are an increasing concern with the appearance of antibiotic resistant organisms such as methicillin-resistant staphylococcus aureus (MRSA) and Vancomycin-resistant Enterococci (VRE).
For the health care system, such infections drive up health care costs through increased patient length of stay, longer wait times for admission and increased treatment costs. In 2006 our cardiac unit experienced a major outbreak of MRSA. We implemented infection control rounds; team members included RN, RRT, PSA, coordinator and infection control staff. We went from bedside to bedside gathering input from front line staff and reviewing unit practices. Suggestions for improvement were plentiful, bad habits and false assumptions were identified. It was apparent that not only did we have to improve our isolation techniques but educating all staff would be a huge part of the process.
In December of 2006 our unit part was part of a Ministry of Health Hand Hygiene Improvement Project. Lessons learnt and quality improvement initiatives that demonstrate improved outcomes in decreasing bioburden thus patient risk will be discussed.

N069

CHALLENGES OF ORIENTING INTERNATIONAL NURSES TO A CANADIAN CARDIAC SURGICAL UNIT

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Cardiac Surgical Units have traditionally recruited experienced nurses who were educated in either a Canadian or American institution. Over the past several years, the nursing shortage has changed the pattern of recruiting. The Canadian Healthcare System, once accustomed to hiring for specialized areas from experienced nurses, is now hiring new graduates and newly certified Canadian Registered Nurses.
The hiring of International professionals has raised a number of issues: language barriers, diverse skill sets and training from abroad, and cultural differences. While International nurses must meet the Canadian Nurses Association criteria for licensing, this examination does not fully evaluate experience or skills. Closer evaluation of basic skills, expertise and what is taught in the nursing programs in other countries needs to be evaluated to ensure that these nurses are able to perform in an already stressful environment. Language testing must be mandatory and administered in such a way as to reflect the workplace terminology as well as the subtleties of the English language. Mentoring International nurses with others who have experienced this integration issue may also support a more smooth transition.
This presentation will review the limited literature available on the integration of International Nurses into the Canadian Healthcare system, how to promote this integration and a case study demonstrating the successful integration of an Internationally trained nurse into a busy cardiac surgical unit.

N070

A COMPARISON OF SOCIAL SUPPORT IN MALE AND FEMALE CARDIAC PATIENTS AND THEIR SPOUSE-CAREGIVERS

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Few studies have compared social support in the cardiac patient and his or her spouse-caregiver despite evidence that men and women use their networks differently. This study examined perceptions of support (PS), conflict (PC) and reciprocity (PR) in 114 male and 91 female patients and their spouses at 2 months (T1) and 1 year (T2) post-myocardial infarction (MI). Patients and spouses were interviewed at 2 months and 1 year post-hospitalization. They completed the Interpersonal Relationships Inventory twice, first for support received from their spouse and then for support received from others. Six separate two-way (male versus female, spouse versus other source of support) multivariate repeated measures analyses of variance examined changes in support from 2 months to 1 year for patients and for spouses. Significant sex by support source interactions ($ps<.001$) for PS and PR for both patients and spouses suggested that male patients and spouses perceived more support from and less conflict with their spouse compared to others, whereas female patients and spouses reported no differences. A time by support source by sex interaction was found for PR in spouses ($p=.03$). In order to interpret the interaction, changes in PR from T1 to T2 were examined for spouses. Male spouses reported increases in reciprocity, particularly from their MI spouse over time whereas female spouses reported decreases in reciprocity with their MI husband. Social support does play out differently in male and female MI patient couples and over time and should be considered when planning interventions.

N071

DISCUSSING CONTRACEPTION – THE NURSE'S ROLE IN THE ACHD CLINIC

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Issues of contraception can be a hot topic in the adult congenital heart disease (ACHD) clinic. This is especially true when young patients are transitioning from a paediatric centre to adult care and are accompanied by parents. Open discussions about contraception are important so that an unplanned pregnancy can be prevented. This important subject traditionally has been the domain of family physicians who have become increasingly scarce, while cardiologists have little time to devote to the topic. Advance practice nurses are well positioned to educate ACHD patients on the multiple methods available as well as their safety with respect to restrictions imposed by their heart condition. This presentation will offer a review of the literature including guidelines from the Society of Obstetricians and Gynaecologists of Canada (SOGC) and World Health Organization (WHO). Contraceptive methods including, barrier, combined hormonal contraception (oral, vaginal ring, patch), progesterone only (oral, injectable), intra-uterine devices, sterilization and emergency contraception (morning after pill, IUD) will be reviewed. Special considerations for the patient with congenital heart disease including risk of thrombosis and infection will be addressed. Finally strategies to deliver the information that is age appropriate and understandable while being sensitive to parental protectiveness will be discussed.