the art and science of caring

Nurses Advancing Practice Through Research
A message from Jeff Lozon, President and CEO, St. Michael’s Hospital.

St. Michael’s Hospital takes great pride in its evolving culture of discovery. Finding ways to improve patient outcomes and ensure patient safety is at the heart of how we strive to provide excellence in health care every day.

Nurses at St. Michael’s Hospital play a vital role in this endeavour. As a cornerstone of our hospital, nurses are driven by the compassion, personal commitment, and curiosity to ensure that patients and their families receive the highest levels of care. Asking the “what”, “how” and “why” questions, and answering these through engagement in the research process is one way in which nurses contribute to innovation and excellence in the care of our patients.

St. Michael’s Hospital has committed to supporting nursing research by creating a Director of Nursing/Clinical Research position, appointing our first Clinician-Scientist in Nursing, engaging in joint research ventures with our academic partners, and by launching the Nursing Research Advancing Practice (RAP) program for clinical nurses. These initiatives are aligned with the vision of St. Michael’s Hospital’s Keenan Research Centre of the Li Ka Shing Knowledge Institute, and our evolving strategic direction of accelerating the translation of knowledge into clinical practice.

Building on a legacy of caring rooted in the Sisters of St. Joseph, together with our culture of discovery and innovation, the work of nurses profiled in this booklet is inaugural proof of the Hospital’s strategy that calls upon all health care professionals to ask questions and seek answers to enhance patient care.
A message from Ella Ferris, Executive Vice-President of Programs and Chief Nursing Executive, St. Michael’s Hospital

St. Michael’s Hospital is committed to pursuing an agenda of excellence in nursing research. In keeping with the directives of our corporate Strategic Plan (2009–2013) and our Nursing Strategic Plan (2005–2010), the Hospital continually strives to create opportunities for nurses to formulate questions at the point of care, to find answers through scholarly inquiry, and to ultimately translate those answers to patient care.

Guided by the values of empathy, insight, and advocacy, our nurses are seeking answers to important questions that can lead to a healthier, safer hospital experience for patients and their families. The recognition and support of this work by both internal and external funding partners attests to the important role that our nursing community plays in improving the patient care experience. Since 2006, our nurses have been involved in over $2 million dollars of funded research studies as principal and co-investigators. We are winning awards for our research and sharing the knowledge generated on the local, provincial, national, and global stage. Building on this strong foundation, we will continue to cultivate investment opportunities with funders and donors, and work closely with academic partners and government agencies to further develop the nursing profession.

In this booklet we highlight some of the important research contributions that nurses have made in the advancement of patient care and for the health of our communities. We invite you to learn about the knowledge that is being generated in a variety of clinical areas by our nursing researchers and clinical nurses who participated in the inaugural Nursing Research Advancing Practice (RAP) program – and to consider the role that you can play in advancing the growth and sharing key learnings from this work.
The Nursing Research Advancing Practice Program

St. Michael’s Hospital’s Nursing Research Advancing Practice (RAP) program was designed to equip participants with the competencies to develop, implement and evaluate a research project focused on a question arising from their clinical practice. Through a series of learning modules and a mentorship relationship with an internal researcher, RAP participants transformed their clinical questions into research studies with the goal of generating practice knowledge that can be translated into useful measures for patient care. The studies of RAP participants in this booklet are denoted with an asterisk*. 
“I continue to be impressed by the commitment and passion of our nurses. It is truly inspiring to see the dedication they’ve shown in developing nursing research capacity for the betterment of our patients.

John King – Executive Vice-President of Hospital Services and Chief Administrative Officer

“St. Michael’s Hospital’s nurses are recognized for their commitment to high quality patient care. The Research Advancing Practice program leverages this commitment to care and applies it to the research process. The results have been fantastic.”

Dr. Robert Howard – Executive Vice-President of Programs and Chief Medical Officer

Nurses have made and will continue to make a huge contribution to the health outcomes of our patients by engaging in the research process. Congratulations to all for participating in the Research Advancing Practice program.

Dr. Arthur Slutsky – Vice-President of Research
**BRENDA STADE**

*How do we ensure that infants get a healthy start in life?*

According to the Health Agency of Canada, upwards of 300,000 Canadians today are living with Fetal Alcohol Spectrum Disorder (FASD), a term used to describe the effects of drinking during pregnancy.

Dr. Brenda Stade, a Clinician Investigator – Nursing at St. Michael’s Hospital, has developed a funded program of research around FASD, prenatal substance abuse and neonatal care. Her research includes examining the neurodevelopment of infants and children exposed to alcohol and cocaine; sleep disturbances in children with FASD; and the presence of seizures among children with FASD. Brenda has also conducted studies evaluating the burden to Canada of prenatal exposure to alcohol. A deeper understanding of FASD can lead to better prevention, diagnoses and intervention, and enable us to provide optimal care to both the women and children who experience this disorder.

Brenda is an Adjunct Scientist in the Keenan Research Centre, Li Ka Shing Knowledge Institute of St. Michael’s Hospital and a lecturer in the Lawrence S. Bloomberg, Faculty of Nursing, University of Toronto.

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**JUDY SAVIN AND MARTHA SCHRODER***

*Teaching heart patients about the risks of high blood sugar*

Abnormal blood sugar levels are a major risk factor for heart disease. In the Coronary Care Unit, all non-diabetic patients undergo glucose tolerance testing to measure their blood sugar levels and identify either the presence of diabetes or their risk for developing diabetes (pre-diabetes). Oftentimes, these patients are symptom-free and unaware of their abnormal sugar level.

The purpose of Martha and Judy’s study is to examine the effectiveness of a structured teaching intervention on patients’ knowledge of risks and complications associated with abnormal blood sugar levels as well as preventative strategies. Increasing patient understanding of the risks associated with abnormal blood sugar levels may lead patients to make positive lifestyle changes and thus decrease their risk of another heart attack or developing diabetes.
**Designing and implementing a hospital-wide pain management strategy**

KiANDA SNAITH & GAIL WILSON

Assessing and managing pain is an important part of nursing care. The best way to assess a patient’s pain is to ask. But when patients are unable to communicate, the recommended practice is to examine their behavior and body language. Currently there is no standard evaluation tool for nurses to use in their daily assessments of non-communicative patients.

Aligned with the corporate Interprofessional Pain Council (IPC) priorities, a three-phased study is currently being undertaken to explore effective pain management assessment in non-verbal patients. Funded by the Canadian Nursing Foundation, Registered Nurses Association of Ontario Best Practices Guidelines Competition, the first phase involved a concept analysis of relevant literature that identified objective and measurable behaviours that people exhibit when they are in pain. The second phase involved a development of a pain assessment tool that includes a repertoire of behaviours associated with pain in non-verbal patients. The tool is being pilot tested to assess its effectiveness in helping nurses determine a patient’s level of pain and ultimately to enable us to provide the best care possible.

**Relieving thirst in dialysis patients**

PATRiciA WATTS, hoNG GAo & AliSoN ThoMAS*

Hemodialysis patients are required to limit their fluid intake in order to minimize weight gains between dialysis treatments. However, limiting fluid intake predisposes patients to the sensation of thirst. In an effort to alleviate thirst and avoid excess fluid ingestion, patients often employ strategies such as sucking on hard candy or eating ice chips. The ‘Sugarless Candy Study’ will evaluate the impact of sugarless candy on perceptions of thirst in this patient population. Should the study demonstrate that using sugarless candy indeed relieves the feeling of thirst experienced by hemodialysis patients, nurses may recommend this widely available and cost-effective treatment to their patients.

**Exploring and improving training in night time dialysis**

ALISON THOMAS

Implementing new treatment programs often requires extensive additional training for hospital staff. When St. Michael’s Hospital introduced its unique In-Centre Nocturnal Hemodialysis (INHD) program, registered nurses from the Inpatient Nephrology Unit needed to undergo a six-week orientation in providing hemodialysis to patients over night. This transition posed challenges to nurses who were also responsible for providing care to nephrology, urology, ophthalmology and endocrinology patients during admission.

This qualitative study sought to understand the perspective of nurses being trained to carry out hemodialysis. The findings of this study may assist in planning for future INHD programs, and provide insight into the transitional processes that staff undergo when required to learn and perform additional skills in the provision of care.

**Understanding menopause in women with CF**

ANNA TSANG & THE CANADIAN CF NURSES INTEREST GROUP

Thanks to advances in treatment, people with Cystic Fibrosis (CF) are now living well into their forties and fifties. These aging CF patients face a new set of challenges with respect to their quality of life. There is currently no literature addressing the issue of menopause in women with CF. The theory is that onset of menopause may come earlier in this population than the general population.

The purpose of this study was to gather information on the timing of perimenopause (the period before menopause) in women with CF, and to identify the symptoms present in this stage of its development. With a deeper understanding of the onset and complications of the perimenopausal period in women with CF, healthcare providers will be better able to address the related health issues with their patients. Research in this area will help determine strategies for improving the patient’s experience with menopause, and help evaluate the use of educational materials to increase understanding of this changing period of life.
Pain and the palliative patient

How do you know when patients are in pain if they are unable to communicate? St. Michael’s Hospital’s Palliative Care Unit provides end of life care to a variety of patients with end-stage illness. For these patients, pain management is a priority. Assessing pain in these patients can prove especially difficult as they are often unable to speak or gesture due to advanced neurodegenerative or neurovascular disease, or cognitive impairment.

Mary’s study, conducted on our 10-bed Palliative Care Unit, evaluated the perceptions of 12 staff nurses on pain assessment in non-verbal end-of-life patients. The nurses completed a questionnaire to: assess their comfort level in the care; identify specific pain behaviours; and determine the relative importance of each behavioural indicator for non-verbal end-of-life patients. The aim of the study was to enhance understanding of pain behaviour assessment in this patient population.

Quality of life for patients living in the community with Enterocutaneous Fistulas

Enterocutaneous Fistulas (ECF) are open wounds that persist after surgery or trauma. They can be an unexpected and devastating event for patients. Over 80% of ECFs occur as an early complication from abdominal surgery, often resulting in prolonged hospitalizations, nutritional compromise, sepsis and further surgery. Other sources of fistulas include complications from chronic illness, trauma or mesh erosion.

Patients suffering from ECF often experience emotional and physical difficulties, including: significant pain; trouble containing the effluent without leaks or odour; difficulty managing the fistula independently and/or trouble getting access to skilled nursing services to assist with pouching. These complications can have a negative impact on family and work, and also affect a patient’s body image.

Until now, the quality of life for this patient population has never been investigated. The purpose of Jo and Melodie’s study is to measure and qualify the experiences of patients living with ECF and to share the findings with colleagues who provide care for this patient population so that adequate resources can be identified and diverted to their care.
INSIGHT

Improving care through knowledge
Advancing knowledge in patient and organizational safety

As one of the chief architects of the Nursing RAP program and Director of Nursing/Clinical Research, Lianne Jeffs believes in a health care system in which nurses have opportunities to advance their knowledge and excellence in patient care through research.

Lianne is a scientist with the Keenan Research Centre, Li Ka Shing Knowledge Institute at St. Michael’s Hospital with an evolving program of funded research on patient safety and professional nursing practice. Specifically, her work is focused on exploring how organizations learn from “near miss” occurrences and evaluations of educational interventions including team-based disclosure and nurses’ engagement with safer health care initiatives. Funding sources for her research include: Canadian Institutes of Health Research (CIHR); Ministry of Health and Long Term Care; Canadian Council on Learning; Canadian Patient Safety Institute; Canadian Nurses Foundation; and the Canadian Health Services Research Foundation.

Lianne recently received the Registered Nurses Association of Ontario (RNAO) Leadership Award in Nursing Research in April 2008.

Improving nursing assessment and treatment of Alcohol Withdrawal Syndrome

The Clinical Institute Withdrawal Assessment for Alcohol Revised (CIWA-Ar) is a tool used to assess patients for symptoms of alcohol withdrawal syndrome (AWS) and to provide direction to RNs for the administration of pharmacological treatments to manage these symptoms. The CIWA-Ar tool was recently introduced in our General Internal Medicine Unit and all RNs received structured education on alcohol withdrawal and use of the tool. Gloria’s study was undertaken to evaluate the effectiveness of the formalized education program for the CIWA-Ar protocol, to identify barriers to using the tool for at-risk patients, and to identify recommendations to enhance the utilization of the CIWA-Ar protocol.
Mary Lanceta & Analyn Patag*

Teaching nurses about vasospasm

Brain hemorrhage, specifically subarachnoid hemorrhage (SAH), is unpredictable, often occurring without any warning. SAH occurs when a weakened blood vessel (aneurysm) in the brain ruptures and bleeds leading to stroke, coma, and death. While recovering from SAH, patients may experience vasospasm. Nurses in the neurosurgical unit at St. Michael’s Hospital monitor SAH patients closely for vasospasm because of its potential to cause additional complications.

Nursing competency plays a major role in the early detection and prevention of vasospasm after SAH. As such, it is important that neurosurgical nurses have the knowledge and skills to manage this potential complication. The purpose of Analyn and Mary’s study was to explore the knowledge and skills of trauma neurosurgery nurses in the care of patients with vasospasm following SAH before and after a structured educational intervention. Analyn and Mary were awarded the Novice Presenter Award at the Mobility-Trauma Program Culture of Discovery Event in June 2008.

Maria Teresa Diston & Allison Rankine*

Preventing and treating pressure sores in the Intensive Care Unit

A pressure ulcer is an area of skin that breaks down when a person stays in one position for too long without shifting their weight. Patients in the Medical Surgical Intensive Care Unit (MSICU) are particularly at risk for these types of sores. Past pressure sore surveys have shown that the most common areas of skin breakdown are the tailbone area (sacrum) and the heel. The prevention of these pressure-related skin breakdowns is an ongoing challenge for critical care nurses.

Led by a member of the Wound Care Team and a staff nurse in the MSICU, this study followed all new admissions to the MSICU over a 2-month period for the development of new pressure ulcers. The results of the study demonstrate that pressure ulcer incidence remains a significant problem in the critically ill and calls for increased vigilance in assessment of risk and utilization of preventative therapies.
Focus on knowledge, perception and decision-making to optimize patient safety and improve quality of care

**LAURA TEAGUE & THE WOUND CARE TEAM**

**Wound Prevention and Treatment Program**

Since 1997, pressure ulcer prevention and treatment has been a focus at St. Michael's Hospital. Through implementation and continuous evaluation of best practices, the Wound Care Team has improved patient safety outcomes by reducing the prevalence of pressure ulcers from 29% to 12.2%.

Research has played an important role in improving outcomes. Some examples of research include annual pressure ulcer prevalence studies, development and validation of a new pressure ulcer surveillance tool, and monitoring the incidence of pressure ulcers using a new gelastic foam mattress in a neuro trauma intensive care setting.

Led by Laura Teague, advanced practice nurse in wound care, these studies have made a significant impact on our practice while also enabling the Hospital to make informed acquisitions of materials and equipment for the greater benefit of patients and health care staff.

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**HEATHER RAWNSLEY & AMY BROWN**

**Examining the use of physical restraint in psychiatric settings**

Clinicians report that despite the use of least restrictive interventions in acute care psychiatric settings, physical restraints are still necessary when such techniques fail to ensure the safety of both patient and others. Legislation from the provincial government has called for the adoption of “least restraint” policies in hospital settings. In order to implement “least restraint” in practice, it is first important to understand the human and situational factors which precipitate the use of physical restraint.

As part of the Nursing RAP program, Amy and Heather devised a qualitative interview which was conducted with RNs working in our acute care psychiatric in-patient unit and psychiatric emergency services. Study participants were prompted to reflect upon and describe the factors that contributed to the use of physical restraints within the context of a particular restraint episode.
ADVOCACY
Advancing patient safety
Avoiding distractions in the emergency department

The Canadian Adverse Events Study identified medication errors as a significant cause of adverse events among hospitalized patients. In the Emergency Department (ED), medication errors are often associated with distractions, which are prevalent within this environment. Currently, there is a lack of data on the occurrence of distractions during medication preparation.

This study sought to quantify the type and number of distractions encountered by ED nurses during medical preparation. The study results demonstrate that distractions during the medication preparation process are common in our ED. The frequency of distraction, and the known potential for error, warrants consideration of a “no interruption” policy during medication preparation to ensure patient safety. In addition, interprofessional education on safe medication practices could be instituted with an emphasis on the risks of distractions.

Physical restraints in critical care

Hospital intensive care units use a number of devices, such as arterial lines and central lines, to treat and monitor patients. These life support systems can be uncomfortable for patients who are often in and out of consciousness. Delusional or restless patients may inadvertently or purposefully dislodge these devices. Physical restraints are sometimes used to prevent patients from causing themselves harm in this manner.

To better understand nursing practice related to physical restraint, a descriptive observational study was conducted to measure the prevalence of physical restraint use in three critical care areas (cardiovascular, medical/surgical and trauma/neurosurgery intensive care). The data collected will inform the development of a minimal restraint policy for the intensive care units at St. Michael’s Hospital.
Patient and family experience of decision making in the Intensive Care Unit

Because of the severity of their illnesses and the need for life support interventions, patients in the ICU are seldom able to interact with health care professionals. As a result, decisions about care options, including research participation, must be made by families and loved ones. This process, known as substitute decision making, is necessary to ensure that the patient’s voice is heard in the decision making process, but can be stressful for families.

Under the auspices of the Canadian Critical Care Trials group, Orla Smith is collaborating in the design and execution of a series of studies investigating the decision making preferences of ICU survivors and their substitute decision makers. Specifically, the studies seek to gain insight into patient and family member perceptions of the process of requesting consent to participate in critical care research and how this process might be improved in the future.

Orla is an Adjunct Scientist in the Keenan Research Centre, Li Ka Shing Knowledge Institute of St. Michael’s Hospital.

Should family members attend bedside rounds?

When critically ill patients are unable to participate in decisions about their treatment, family members or loved one are often called upon to make decisions on their behalf. These substitute decision makers (SDMs) will seek vital medical information to make informed judgments. Such medical information is typically provided in bedside updates and formal family meetings; however, time constraints and availability of key health care providers, especially physicians, can limit the frequency of these exchanges.

In the Medical Surgery Intensive Care Unit (MSICU), family members have traditionally not been invited to attend bedside multidisciplinary rounds. While the practice has been considered beneficial by medical bodies such as the American College of Critical Care Medicine Task Force, the perception of the practice among health care providers has not been widely studied. This cross-sectional self-administered survey investigated the attitudes and perceptions of MSICU health care providers regarding family presence at bedside rounds. The results of this study will help inform our understanding of the practice and further the development of a more patient-centred ICU model of care.
Identifying fall risk among heart surgery patients

Falls are a common occurrence in acute care hospitals, particularly amongst the elderly population. The first step in fall prevention is the identification of “fall risk”. At present, fall risk among post-cardiovascular surgery in-patients has not been measured. A prospective, cross-sectional observational study of fall risk and delirium prevalence amongst the post-cardiovascular surgery population was conducted using the Chicago Assessment Tool (CAT) and Confusion Assessment Method (CAM). The results of the study may be used to inform the development and implementation of a comprehensive falls assessment and prevention program for cardiovascular patients thus leading to a safer environment for our patients.

Exploring telehomecare for brain-injured individuals and their families transitioning to community living

For patients who have suffered brain injuries, the transition from hospitalization to community living can be stressful and uncertain. Sonya Canzian is leading a team that is exploring the use of telehomecare to support individuals and their families through this transition period.

Funded by the Ontario Neurotrauma Foundation, the two-part project will study the feasibility of a telehomecare program in supporting the emotional adjustment of patients with moderate to severe brain injury and their family caregivers. Findings from the first phase will inform the development of an interdisciplinary support program using telehomecare technology. The study will evaluate the impact of telehomecare on the emotional well-being of patients and family, as well any possible differences between patients discharged in rural and urban locations.

An alcohol screening program for trauma patients

Thirty percent of our trauma patients have positive blood alcohol levels on admission; the risk of re-injury among trauma patients with alcohol use is two times greater than for those without. This nurse led study, in coordination with a interdisciplinary trauma team, was designed to evaluate the patient response to and ease of implementing an alcohol screening and brief intervention (ASBI) program. The ASBI is designed to raise the patients’ awareness of their alcohol consumption and the related risks. The ASBI initiative has been shown to reduce alcohol consumption, number of binge drinking episodes, recurrent driving under the influence charges and the risk of re-injury and trauma.

The researchers determined that ASBI implementation is uncomplicated and patients find it acceptable to be approached about alcohol use despite the differences in their perceptions about the contribution of alcohol use to their injury. The study results have enabled the team to improve the delivery of, and access to, the ASBI program.
Message from The Foundation

At St. Michael’s Hospital, we are proud to support nursing development and the advancement of knowledge for the benefit of all patients. But we couldn’t do it without you. Thanks to the overwhelming generosity of our supporters, we continue to lead the way in translating innovative research into the highest quality of patient care. We are grateful to all of those who have contributed to our cause.

Special thanks to St. Michael’s Hospital Foundation donors for their support through the Intrepreneurship (TIP) Grant Program to make this publication possible. The TIP Grant Program provides funding to staff for pursuing an initiative that positively impacts patient care.

“Nurses at St. Michael’s are outstanding. They provide exceptional care to our patients and are leaders in their profession. St Michael’s Hospital Foundation is proud to support them.”

Alayne Metrick
President, St. Michael’s Hospital Foundation

To help, please call us at 416-864-5000, visit us at the Hospital on the first floor of the Queen Wing, or make a donation online at www.stmichaelshospital.com
LI KA SHING KNOWLEDGE INSTITUTE AND INTERPROFESSIONAL COLLABORATION

In 2010, research and education at St. Michael’s Hospital will find a new home with the opening of the Keenan Research Centre and the Li Ka Shing International Centre in Health Care Education, that together form the Li Ka Shing Knowledge Institute of St. Michael’s Hospital. The 335,000 sq.ft. global facility will be an incubator of research, education and practice.

Fusing University of Toronto expertise in research and education with the tradition of patient care of St. Michael’s Hospital, the Li Ka Shing Knowledge Institute will be dedicated to accelerating the impact of research discoveries and best practices on the front lines of care.

“Nurses have a unique perspective on health care. I am delighted that nurses at St. Michael’s Hospital are increasingly involved in research, the results of which will lead to better opportunities for prevention and improved patient care.”

Dr. Andreas Laupacis
Director, Li Ka Shing Knowledge Institute of St. Michael’s Hospital
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For more information, please email: nursingresearch@smh.toronto.on.ca

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