Sunnybrook

HEALTH SCIENCES CENTRE

Sunnybrook Magazine: Information for Life 2007

Sunnybrook Trauma Surgeon Advises on the Best Way to Train Military Surgeons

Lance Armstrong Helps Sunnybrook Raise $1.2 Million for Cancer Care

Preventing Cervical Cancer: Sunnybrook's Colposcopy Unit Leads the Way

Improving Access and Reducing Wait Times for Hip and Knee Replacements

Managing Diabetes

Reducing Chronic Pain for Residents in Long-Term Care

Ultrasound: The Next Wave in Imaging Technology

Eating Right for Your Heart

Caring for Life's Smallest Miracles in Sunnybrook's NICU

Dr. Homer Tien, Sunnybrook Trauma Surgeon

A Message from Leo N. Steven, President & CEO and Virginia McLaughlin, Chair, Board of Directors

It is our pleasure to share with you the third edition of our *Sunnybrook Magazine*. This publication was created to reflect Sunnybrook Health Sciences Centre's excellence in patient care and safety, research and teaching that takes place at our hospital on a daily basis. Our theme this time is leadership. As one of Canada's most dynamic academic health sciences centres, Sunnybrook is fortunate to offer the many communities it serves an extensive range of highly specialized programs and services that care for some of society's most complex healthcare concerns.

With more than 8,500 staff members and 1,200 beds, Sunnybrook Health Sciences Centre is critical care central for the province and has the largest resources of intensive care beds in Ontario in addition to acute inpatient, chronic and palliative care, as well as outpatient services.

Sunnybrook is emerging as a strong and vital component of the Ontario healthcare system. Many of the hospital's programs provide care that is unavailable in communities throughout Ontario. Our seven strategic programs – Cancer, Cardiac, Musculoskeletal, Neurosciences, Perinatal and Gynaecology, Trauma and Critical Care and Aging and Population Health – are recognized for their leadership in the research they conduct, the educational opportunities they offer, and the care they provide.

As an academic health sciences centre, Sunnybrook is fully affiliated with the University of Toronto and our teaching and research mandates remain core expressions of our organization's purpose in the healthcare system. Our academic enterprise is growing exponentially and this year alone we have conducted nearly $100 million in research and provided more than 2,000 students from a wide variety of health professions with rewarding educational experiences.

Sunnybrook recently announced its long-awaited M-Wing expansion project, which is the most significant capital development initiative to take place at the hospital in the past 10 years. The four-floor expansion of M-Wing will provide a state-of-the-art home for the Perinatal and Gynaecology program currently located at 76 Grenville Street which will include a new Neo-Natal Intensive Care Unit and labour and delivery suites.

As well as expanded facilities for birthing and intensive care for premature newborns, the four-floor expansion will also be home to core research infrastructure, including Canada's largest and most comprehensive breast cancer centre, the Toronto Angiogenesis Research Centre, and world-leading research programs in neurosciences, which will be a cradle for the exploration of stem cells in areas such as regenerating brain tissue in stroke victims. In total

there are 10 major construction projects either under way or in the planning stages at Sunnybrook, including doubling the size of Sunnybrook's Emergency Department and the John and Liz Tory Regional Trauma Centre.

These new facilities will be state-of-the-art and will be a North American best practice in design that encompasses strict new infection control guidelines and a patient-focused environment that is sensitive to the needs of families with critically ill newborns and mothers who have high-risk and low-risk pregnancies. Not only is the end result of this development going to be state-of-the-art patient care and research facilities, the process of construction is certainly going to be an international best practice in project management, thanks to our corporate planning and development team.

In addition, we are creating a centre of excellence in hip and knee replacement surgery at the Holland Orthopaedic & Arthritic Centre that will nearly triple its surgical procedures over the next three years to become the largest program of its kind in North America.

An exciting future lies ahead for Sunnybrook. Within the pages of this magazine, you will see the breadth of service, talent, and commitment our staff take to serve our patients and the community. We are proud to lead the way in transforming the future of healthcare in Canada.

We would like to thank you for your continued partnership and support as we build our new organization. As members of our community, you continue to be an integral part of how we will achieve success.

Sincerely,

Leo N. Steven
President & CEO

Virginia McLaughlin
Chair, Board of Directors

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Sunnybrook
HEALTH SCIENCES CENTRE

Sunnybrook Builds Up… Waaaaaay Up

With several construction projects under way at Sunnybrook, we have a lot to be proud of. These projects include the long-awaited M-Wing Vertical Shell Expansion and P&G fit-out, the three M-Wing ground floor ORs, and expansion of the Emergency Department and John and Liz Tory Regional Trauma Centre.

M-Wing Expansion

Sunnybrook's M-Wing expansion will be a significant change to the landscape of the hospital. The project will create four additional floors on top of M-Wing at Sunnybrook Campus. Two of the four floors added to M-Wing will be the future home of the Perinatal & Gynaecology program in early 2010, including a state-of-the-art Neonatal Intensive Care Unit. The top two floors are currently planned for future use as new research laboratories and core technology facilities for Sunnybrook Research Institute (SRI).

Additionally, the fit-out of 9,360 square feet on the west side of M-Wing's third floor houses the Schulich Heart Centre's world-class Imaging Research Centre for Cardiac Intervention (IRCCI), which opened its doors at the beginning of November 2006.

The early stage of construction will be visible from about April to July 2007. This stage includes installing protection of the Galleria roof, scaffolding, and bringing equipment on site. Work on M-Wing will be done primarily in the evening so that work and patient flow will continue as usual during the day.

M-Ground Operating Rooms and the Holland Centre

Our newest construction project, also in M-Wing, involves building three operating rooms at the east end of M-Ground. Upon completion, the new suites will help manage non-hip and knee cases that we will move up from the Holland Centre. This will create extra capacity at that site to handle increased patient volumes as the Holland Centre more than doubles its cases of hip and knee replacements over the next three years.

Construction began on the M-Ground ORs on January 29, 2007 and Bondfield Construction Ltd., the general contractor, has identified 22 weeks to total completion.

In terms of construction at the Holland Centre, which will expand OR capacity from four to six suites, it is expected that construction will get underway late in 2007 and will take two to three years.

Imaging Research Centre for Cardiac Intervention

Sunnybrook's Schulich Heart Centre is home to the state-of-the-art Imaging Research Centre for Cardiac Intervention (IRCCI), which brings together the latest imaging technology with the best minds in clinical care and research.

Uniquely designed to combine multiple medical imaging modalities such as X-ray, ultrasound and magnetic resonance (MRI), the IRCCI will provide clinicians and researchers with updated information to guide their decisions for optimal approaches and methods for cardiac investigation, which will improve the detection of cardiac disease and the outcomes of interventional procedures for patients.

The first patients enrolled in clinical trials are being examined and treated in the new space.

Emergency Department and John and Liz Tory Regional Trauma Centre Expansion

The Emergency Department expansion will double the size of the existing department and add:

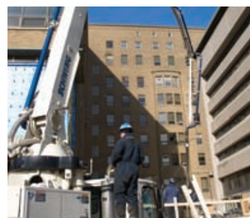
- Additional medical imaging equipment including a new CT Scanner Suite
- Increase the stretcher bays from approximately 30 to 48

The project includes the development of approximately 37,000 building gross square feet (bgsf), including Medical Imaging. Approximately 50 per cent of this space is new space and 50 per cent is existing space to be renovated. It is anticipated that the entire project will be completed by spring 2009, resulting in a department that is twice its current size.

These facilities will improve patient-flow at Sunnybrook and reduce ambulance off-loading delays.

A new CT Scanner was delivered to the Emergency Department on February 1, 2007. The CT Scanner Suite will be used for advanced imaging and diagnoses.

By Laura Bristow



Several construction projects are under way at Sunnybrook; MPPs David Caplan and Kathleen Wynne join Leo Steven and Virginia McLaughlin at the M-Wing launch.

Left to right: Larger-than-life cancer survivor, cancer activist and Tour de France champion Lance Armstrong; journalist, author and former Consul General of Canada, Pamela Wallin presents Lance with a Maple Leafs jersey

Cycling Champion Lance Armstrong Helps Raise $1.2 Million for Cancer Care at Sunnybrook

Tour de France Winner Inspires Guests at Strength When It Matters Most Event

On February 28, with Toronto's historic Fairmont Royal York hotel as the backdrop, Lance Armstrong captivated his audience with personal reflections of his triumphant battle with cancer to benefit the Toronto Sunnybrook Regional Cancer Centre (TSRCC). Pamela Wallin, called "Canada's Oprah" by Lance, presided over *Strength When It Matters Most*, which raised over $1.2 million to support renovation of the chemotherapy suite at TSRCC.

"At TSRCC, we have phenomenal oncologists, wonderful nurses and relentless researchers; we truly are leaders in the field," says Linda Rabeneck, regional vice-president, Cancer Care Ontario and vice-president, Regional Cancer Services, Sunnybrook. "We are very proud of what this event has accomplished in bolstering the profile of the TSRCC, while serving as a galvanizing event that all our staff could get behind. Lance's strength in overcoming his cancer and his subsequent successes are reflected every day at the TSRCC."

Guests of *Strength*, who included a broad cross-section of Toronto's business community, Sunnybrook supporters and winners of the "Win a Chance to Meet Lance" Contest, helped make this a tremendously successful evening.

"It's important for the Foundation to create events that successfully raise much-needed funding for the Hospital," says Kevin Goldthorp, CEO, Sunnybrook Foundation. "However, it's also important to build rapport with the communities we serve through these events, and reflect the incredible care, research and teaching taking place at Sunnybrook. In all respects, *Strength* was an unmitigated success."

$300 Million Campaign Update

Sunnybrook Foundation is nearing the close of the third year of the $300 Million Campaign for Sunnybrook and has surpassed one-third of Campaign goal. Still in the "quiet phase" of the campaign, the Foundation has raised $130 million to benefit capital, equipment and program investments at the hospital.

Notable recent gifts to the Campaign include funding for construction of the Breast Cancer Research Centre; research in spine care, heart and circulation and ALS (Lou Gehrig's disease); an expanded Emergency and Trauma Centre; and updated facilities at the Holland Centre to double the number of hip and knee replacement surgeries performed at the hospital.

By Stephen Williams

By Nadia Norcia Radovini

New Imaging Research Centre for Cardiac Intervention

Sunnybrook's Schulich Heart Centre recently officially became home to a state-of-the-art imaging research centre for cardiac intervention that is bringing together the latest technology and best experts in cardiac care and research.

Uniquely designed to combine a number of medical imaging tools such as X-ray, ultrasound and magnetic resonance imaging (MRI), the Imaging Research Centre for Cardiac Intervention (IRCCI) will put Toronto on the map as a leading centre for cardiac imaging. The IRCCI will act as a core resource for University of Toronto teaching hospitals, including Sunnybrook, University Health Network and St. Michael's Hospital.

"Heart disease remains the number-one killer of Canadians, and this research centre will help change that trend by developing breakthrough technologies for improving patient care," says Leo Steven, Sunnybrook president & CEO. "Sunnybrook is proud to be host to such a vitally important centre."

Combining the various imaging tools will provide cardiac specialists and researchers with updated information to guide their decisions for optimal approaches and methods for cardiac investigation. This will improve the early detection and treatment of heart disease and the outcomes of interventional procedures for patients, therefore improving their quality of life.

"Sunnybrook Research Institute's heart and circulation faculty are known as some of the best in the world for their pioneering work," says Dr. Michael Julius, vice-president of Research at Sunnybrook. "The IRCCI brings research and clinical teams even more closely together as they work towards their shared aim of developing and testing new diagnostics and treatments – and speeding those into the clinic for the benefit of patients that need them most."

One of the many novel features of the Centre is the imaging suite where patients involved in clinical trials will be examined with multiple imaging techniques before, during and after therapy without having to move to distant locations throughout the hospital. Essentially, the patient is literally moved through a conveyor-belt of imaging technology.

There are a number of organizations and individuals who have contributed to the development of the IRCCI including the Canada Foundation for Innovation (CFI), Ontario Innovation Trust (OIT), GE Healthcare, Dr. Seymour Schulich, Philips Medical, Novadaq Technologies, and BioSense Webster.

There are 15 researchers from three participating hospitals involved in the IRCCI, many of whom are members of the Ontario Consortium for Cardiac Imaging, a province-wide project funded by the Ontario government and investment from the private sector that is dedicated to the establishment of a world-leading centre in cardiac imaging information for use in patient management.

Pictured at the opening of the IRCCI, during a mock demonstration, are (L to R): Leo Steven, president & CEO; Dr. John Rowlands; Dr. Michael Julius, VP, Research; David Bogart, executive VP and COO, Ontario Innovation Trust; Dr. Alexander Dick, Cardiologist; 'patient' John Bracken.

Caring for Life's Smallest Miracles

Sunnybrook's NICU provides family-centred care

By Marie Sanderson

In the spring of 2005, Kate Robson was enjoying the second trimester of her pregnancy and beginning to make to-do lists for welcoming her first baby. Then, at just over 25 weeks into the pregnancy, her blood pressure skyrocketed and it became necessary to deliver her baby by emergency caesarean section.

"Our daughter Maggie was 500 grams, or one pound and an ounce, the same weight as a block of butter," says Kate. "Everything changed so fast, it was eye opening."

After the c-section, Maggie was admitted to the Sunnybrook Neonatal Intensive Care Unit (NICU). The NICU cares for babies that require special care, including those infants with low birth weight, with difficulty breathing, with low blood sugar or infection. Sunnybrook provides care for one in five of all babies born in Ontario weighing less than three pounds.

One of the guiding principles of the NICU at Sunnybrook is "family-centred care," meaning that families are not just visitors - they are key participants in the assessment and care of their infants at all times. For Kate Robson, this philosophy of care made all the difference during an extremely frightening and stressful time.

"Parents and families are given a lot of respect; you're really considered part of the healthcare team at Sunnybrook," explains Kate. "One of the difficult things about the NICU is that there is a lot of medical equipment. The nurses and doctors teach you to ignore the equipment and pay attention to your baby. Because you spend such quality time with your baby, you get to know her better than anyone else, and the staff take this into consideration."

One of the ways that Kate was able to spend quality time with Maggie was through Kangaroo Care. During Kangaroo Care, also known as skin-to-skin care, Maggie was placed on Kate's chest, clad only in a diaper and cap. Her head was turned to the side so that her ear was against her mother's heart.

"Kangaroo Care can lower oxygen requirements, stabilize heart rates, diminish pain response and seems to give premature babies an overall sense of peace," says Dr. Michael Dunn, Chief of the Department of Newborn and Developmental Paediatrics at Sunnybrook. "We and others have conducted studies that support the fact that this skin-to-skin contact can result in less instability, can lower the baby's response to pain and also assists with bonding." The constant encouragement of the NICU

> *"Parents and families are given a lot of respect; you're really considered part of the healthcare team at Sunnybrook,"* **says Kate Robson**

team meant the world to Kate and her family. "At first, the idea of removing her from the isolette or incubator to do Kangaroo Care was terrifying because she was so tiny. But the nurses kept repeating "you can do this" and, sure enough, we did. My husband Sean and I took turns holding Maggie skin-to-skin on a day-to-day basis. We both loved being so close to Maggie," says Kate.

For families of premature babies, the early timing of the delivery often prevents them from taking prenatal classes. Nurses in the NICU often double as supportive prenatal instructors. "The nurses showed me how to bathe her, breastfeed, how much clothing was appropriate and even how to interpret her cries. They taught me how to be a parent," says Kate.

After babies are discharged from the hospital, the support continues for families. The Neonatal Follow-Up Clinic at Sunnybrook provides assessment of physical, motor and cognitive development, with referral to community services and specialized professional consultation. The clinic schedules visits for infants with birth weights less than 1,500 grams, who were born at less than 30 weeks of pregnancy; or, who were very ill during their stay in the NICU.

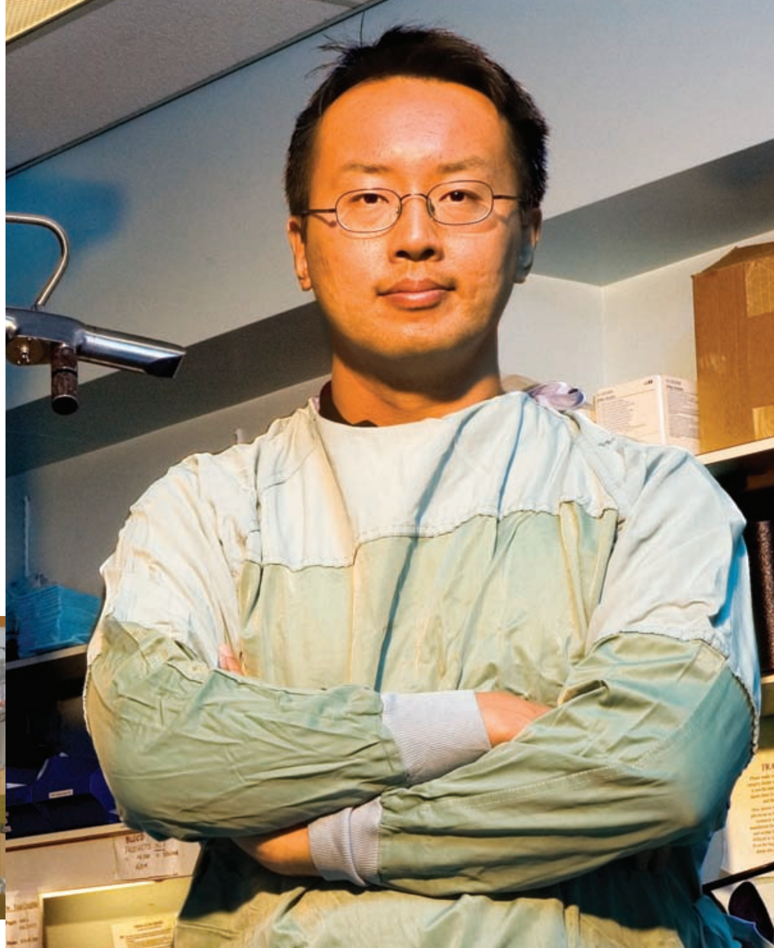
"When your baby is in the NICU, she's surrounded by experts. Then you get home and feel a bit bereft of support. But the Neonatal Follow-Up Clinic is wonderful – we visit regularly and now Maggie has totally caught up in her development."

One look at Maggie, a giggling little girl handing her mother a piece of orange, signals that she certainly has caught up. She's talking, walking, singing and playing like any other two year old.

Maggie spent four months in the NICU. But that didn't signal the end of the relationship with the nurses, doctors, respiratory therapists and other healthcare providers. "We'll have a lifelong connection with Sunnybrook now. We visit the unit, Maggie brings the nurses treats on her birthday," adds Kate. "I often say that I'm not a very Disney-esque person, but the staff in the NICU are truly her team of fairy godmothers. They saved her life."

Left to right: Sean Jensen and Kate Robson with their daughter Maggie, NICU nurse Meghan Kline and Maggie, all at the Sunnybrook M-Wing launch in May 2007; Sunnybrook's NICU.

Sunnybrook Trauma Surgeon Advises on the Best Way to Train Military Surgeons



As a trauma surgeon for both Sunnybrook Health Sciences Centre and the Canadian Forces (CF), Dr. Homer C. Tien has unique insight into how military surgeons should be trained in order to best manage the injuries they will see during a deployment to Kandahar, Afghanistan.

"The more time a military surgeon can spend learning in a busy trauma or critical care centre, the more equipped that individual will be to manage the traumatic injuries that Kandahar hospital is currently seeing," says Dr. Tien, who is also a lecturer in the Department of Surgery at the University of Toronto. "Civilian trauma centres present a wide range of severe injuries, and that kind of exposure is invaluable when you're working in a military field hospital."

Until the mid-1990s, CF surgeons had been training exclusively in tertiary level CF hospitals. However, due to low volumes of complex cases, among other reasons, these hospitals closed and military surgeons began completing trauma and critical care fellowships at civilian hospitals. It is Dr. Tien's observation that this type of training is proving to be excellent preparation for overseas deployments. The benefits are even greater if the surgeon remains on staff at a civilian centre, as the individual will stay in practice for the conditions of a military field hospital.

"The current deployment of Canadian Forces Health Services (CFHS) personnel and equipment to Kandahar is the largest since the Korean War," says Dr. Tien. "This is indicative of the volume of severe injuries that the area is experiencing and the need for expert care."

Between February 7 and July 20, 2006, 248 injured patients, most of them Afghan civilians, were treated at the Kandahar hospital and required a trauma team's involvement. Of these patients, most of whom suffered either blast or penetrating injuries, 94 per cent survived.

"Considering the difficult field conditions, long pre-hospital transport times, and other environmental impacts, these survival rates are excellent outcomes," says Dr. Tien. "I would suggest that it is because our military surgeons are consistently training and working in excellent civilian trauma centres before they come to Kandahar that we are able to provide a high level of care."

Based on feedback from other CFHS personnel and first-hand experience, Dr. Tien recommends that the CF should remain focused on this integrated approach with civilian trauma centres for preparation and training.

Dr. Tien is a regular Force member of the Canadian Forces and was deployed to Kandahar, Afghanistan in February 2006 for two months of service.

By Laura Bristow

L to R: Dr. Homer Tien, trauma surgeon for Sunnybrook and the Canadian Forces, in Kandahar, Afghanistan; Dr. Tien in the trauma room at Sunnybrook.

Sunnybrook Trial Finds Hypertonic Saline Solution May Improve Outcomes for Trauma Patients

A highly significant trial led by trauma experts at Sunnybrook Health Sciences Centre, shows that trauma patients suffering from severe hemorrhage due to blunt trauma, such as a motor vehicle collision, might have a better chance of survival when a mixture of Hypertonic Saline in Dextran 70 (HSD) is administered.

The study shows that trauma patients suffering from severe hemorrhage due to blunt trauma have a more balanced inflammatory response when a mixture of Hypertonic Saline in Dextran 70 (HSD) is administered. It is often the inflammation caused by the shock of trauma that is responsible for late complications and even death. In this trial at Sunnybrook, HSD reduced organ failure, particularly respiratory, and the need for artificial ventilation in the Intensive Care Unit by one day on average.

"These are the first trials in years to look at the effects of Hypertonic Saline in Dextran 70 (HSD) on humans, and the results are extremely encouraging," says Dr. Sandro Rizoli, Sunnybrook trauma surgeon and director of research, Trauma. "They indicate that when HSD is administered, the overwhelming inflammation triggered by shock can be reduced, resulting in less damage to the patient's own body."

There has been building interest in exploring the effects of this simple solution made of water and a higher concentration of salt (hypertonic saline) all over the world. The reasons being that on top of stemming inflammation and reducing organ failure, hypertonic saline is also inexpensive to produce.

"Essentially, more salt is being added to the solution we've always been using," says Dr. Rizoli, associate professor of surgery and Critical Care Medicine, University of Toronto. "It seems basic, but it's proving to be very effective."

Another interesting characteristic of this hypertonic solution is that a small infusion (less than a full glass) corrects the state of shock in the same way as three litres of the regular solution would. Consequently, transporting small bags of this solution is much more efficient than litres of the regular solution. There is a great deal of interest in the study from the military and pre-hospital care, as this solution would facilitate care provided in the field and EMS vehicles.

For this particular work, Dr. Rizoli received national recognition from the Royal College of Physicians and Surgeons of Canada (RCPSC) for leading the highly significant trauma study entitled "The Immunomodulatory Effects of Hypertonic Saline Resuscitation in Patients Sustaining Traumatic Hemorrhagic Shock - a Randomized, Controlled, Double-Blinded Trial," published in *Annals of Surgery* in January 2006. The RCPSC was particularly impressed by the fact that this study was entirely funded and conducted within Canada.

Dr. Sandro Rizoli, Sunnybrook Trauma Surgeon

This study was funded by Defense Research and Development Canada and the inflammation tests were performed at their laboratory by Drs. Pang Shek and Shawn Rhind, co-authors in the study.

Sunnybrook has completed two trials with hypertonic saline, the most recent involving the pre-hospital group (Dr Laurie Morrison) and St. Michael's Hospital (Dr. Andrew Baker). The results of these trials and many exceptional others, have raised interest in more definitive and larger trials, including the upcoming multicentre National Institutes of Health (NIH) and Canadian Institutes of Health Research (CIHR) funded pre-hospital study, led in Toronto by Drs. Morrison (Sunnybrook) and Slutsky (St. Michael's). This multicentre study will involve about 3,000 patients in 10 centres across Canada and the United States. The results of this study are expected to be conclusive in determining if indeed HSD changes mortality and organ failure in trauma.

By Laura Bristow

A Healthy and Smoke-Free Environment at Sunnybrook

Sunnybrook leads the way with smoke-free initiative

By Christine Henry

At Sunnybrook Health Sciences Centre, the health and safety of our staff, volunteers, students, visitors and patient population are very important to us. As a healthcare facility, we strive to assist in the prevention of medical diseases such as lung cancer and chronic pulmonary diseases, asthma and other respiratory conditions that can be caused by smoking and the effects of second-hand smoke.

As a result, on April 1, 2007, the Sunnybrook Campus at 2075 Bayview Avenue was declared a totally smoke-free environment, taking one step further the Ontario Smoke-Free Legislation Act from May 31, 2006, which reduced where people can legally smoke. Sunnybrook is pleased to take a leadership role and work towards the prevention of illnesses.

Effective April 1, 2007, smoking is prohibited in all areas of the hospital which will include, but not be limited to, the inside of the building in its entirety, exterior grounds, parking garages, vehicles and bus shelters. This policy applies to staff, volunteers, students, visitors and patient populations that are within the boundaries of Sunnybrook Health Sciences Centre.

According to the Smoke-Free Act special consideration will be given to our Veterans, and we will accommodate our Veteran population living at Sunnybrook in either George Hees or Kilgour Wing.

Benefits of Quitting Smoking:

For the vast majority of smokers, quitting smoking is the best single thing they can do to improve the length and quality of their lives. Individuals who quit smoking immediately begin to reduce their chances of developing heart disease, cancer, breathing problems, or infections.

The health benefits of quitting occur for all types of smokers, men and women, young and old. Even those who have developed smoking-related problems like heart disease can benefit. For example, compared to continuing smokers, people who quit smoking after having a heart attack reduce their chances of having another heart attack by 50 per cent. They also reduce their risk of dying prematurely by 50 per cent.

Additional benefits:

- You will save money on tobacco, lighters, ashtrays, etc.
- Your sense of taste and smell will be enhanced; you will enjoy your food more
- You will look and feel younger; smoking causes wrinkling and the appearance of premature aging
- You will have more energy to do the things you love

With information from Health Canada

More information on the Smoke Free Ontario Act may be obtained by visiting the Ontario Government's website at: www.health.gov.on.ca.

Links to information on smoking cessation:

Canadian Cancer Society's Smoker's Helpline:
www.smokershelpline.ca

Quit Smoking Resources in Toronto
www.toronto.ca/health/quit_smoking.htm

The Lung Association's Smoking and Tobacco Info. Centre
www.on.lung.ca/nosmoking

Heart and Stroke Foundation of Ontario
www.heartandstroke.on.ca

Preparing for Code Orange:

Mock disaster exercises provide crucial hands-on training

By Megan Easton

Recent critical events such as SARS and the 9-11 terrorist attacks have fuelled a growing effort among healthcare organizations to optimize their preparations for potential disasters. Emergency physician Dr. Laurie Mazurik is at the forefront of these initiatives in Ontario, promoting a decidedly hands-on approach to disaster response planning.

As the Strategic Lead for Disaster and Emergency Preparedness at Sunnybrook, Dr. Mazurik, also emergency medicine specialist, University of Toronto, has led 12 mock disaster exercises involving hundreds of participants across the province since 2002. These mass casualty scenarios have ranged from pandemics and terrorist attacks to chemical spills and school shootings. “Realistic pressure-filled situations expose what’s wrong with a plan, what’s inefficient and what could cost lives,” she says.

Dr. Mazurik’s interest in mock disaster exercises sprung from her role in emergency medicine education. She wanted to make learning more engaging for students. Lectures and books just don’t capture the intensity of the experience, she says. “I was looking for ways to expose students to the visceral effect that comes with making critical decisions under pressure.” The emergency medicine disaster planning curriculum she has developed over the last few years is the first of its kind to take students from developing a plan right through to implementing it in a simulated tragedy.

The medical students and residents who take part in the simulations consistently rise to the challenge, says Dr. Mazurik. “We see exactly what they can do and are better able to define how they could extend our resources and save more lives in the event of a real disaster.” It’s also an opportunity for participants to learn how to collaborate with the diverse professionals who are involved in critical situations, from police and paramedics to social workers and chaplains.

Inter-professional training is vital in emergency planning, she says. “These exercises bring people from all different areas together to talk about the issues. It often identifies common ground for future projects.” This type of teamwork is how progress has been made – and will continue to be made – in the province’s level of preparedness, she says.

Building on the success of the last few years, Dr. Mazurik recently worked with Centennial College, the Michener Institute, George Brown College, Ryerson University and the University of Toronto to create IDEAS Network (Interprofessional Disaster and Emergency Action Studies). The program received a grant from Health Canada to create a web-based disaster response course for students in health, security, safety and psychosocial programs. She is also in the process of redesigning Sunnybrook’s Hospital Disaster Plan. “My motivation is to see how effectively people can come together as a team in a disaster.”

Participants in a Code Orange mock disaster exercise organized by Sunnybrook emergency physician Dr. Laurie Mazurik

A Better Quality of Life

Improving access and reducing wait times for hip and knee replacements

The ability to move freely and without pain is something many of us take for granted. But as many Canadians suffering from an injury, arthritis or other degenerative conditions know, a painful hip or knee can keep you from doing the things you enjoy.

For Donna Yates, timely access to quality care meant the difference between being able to connect with friends during long walks and feeling isolated in her bedroom, unable to go downstairs without experiencing considerable pain.

"About a year before the operation, my ability to walk was so limited that I was a bit of an invalid for a few months. My whole world shrunk to a room in my house, I felt truly disabled," says Donna, who experienced periodic flare-ups of severe pain before having a total knee replacement at the Holland Orthopaedic and Arthritic Centre at Sunnybrook in May 2006. "Since the surgery, I am back at work, taking long walks with my friends again and have even enrolled in a Pilates class."

Timely access to quality care

Ensuring that patients like Donna receive timely access to quality care is the goal of the Joint Health and Disease Management Program of the Toronto Central Local Health Integration Network (LHIN). The Toronto Central LHIN is one of 14 new agencies in the province whose mandate is to bring planning, integrating and funding of healthcare services to a local level. In consultations with the local community over the last year, the Toronto Central LHIN identified reducing wait times for hip and knee surgery as a local priority.

To tackle this issue, the Toronto Central LHIN is working with surgeons at hospitals across the LHIN, including the Holland Centre, and has developed a Joint Health and Disease Management Program. By providing a standardized process of joint care that includes health promotion and injury prevention strategies, awareness programs for early detection of arthritis, medical management of those who don't require surgery and improved access to surgery for those who do, the hospitals hope to benefit more patients like Donna each year.

In late 2006, the Toronto Central LHIN hospitals began to implement the program, beginning with the surgical component. Called the Hip and Knee Replacement Project, this first phase has identified a way to increase capacity for joint replacement and improve patient outcomes by developing a single standardized referral, intake and assessment process for patients. The Holland Centre has been chosen as the future site of the "central intake" centre and will be one of the first two assessment centres.

Referring physicians will first send a standardized referral form to the Holland Centre where it will be reviewed for completeness of information. Patients will then be seen at an assessment centre where a team of professional staff will evaluate the patient to ensure that they are a good candidate for surgery. If the patient requires a hip or knee replacement, the assessment centres will offer the patient the choice of access to the surgeon to

whom they have been referred, or to the first available surgeon at one of six acute care hospitals in the Toronto Central area.

"The primary goal of the central intake and assessment centre model is to reduce wait times and improve access to total hip and knee joint replacements while retaining patient choice," says Barry Monaghan, Chief Executive Officer of the Toronto Central LHIN. "The Holland Centre, with its team of multidisciplinary staff, including advanced practice physiotherapists, was an ideal fit to assess patients and provide care planning and referral to services. This will result in orthopaedic surgeons spending less time in the office and more time in the operating room, helping to increase the number of cases performed and improving access for patients."

New model of care

Donna was one of the first patients to participate in the Holland Centre's new model of care, a component of which extends the scope of physiotherapists and nurses. These expanded roles represent a shift in traditional responsibilities in order to meet the high demand for hip and knee replacement surgery.

A key member of the new assessment team is the advanced practice physiotherapist who has been specially trained to conduct a comprehensive physical assessment to confirm the need for surgical consultation. The goal is to ensure that each patient is assessed promptly after referral, managed proactively and triaged to a surgeon based on urgency and appointment availability.

The role of the advanced practice physiotherapist is intended to reduce the time spent by orthopaedic surgeons seeing new patients who are not surgical candidates and to develop non-surgical treatment plans for these patients. The advanced practice physiotherapists are also playing a key role in patient education and in conducting the routine follow-up assessments for patients after surgery.

"The assessment function of the advanced practice physiotherapists ensures that surgeons are not spending time assessing patients who don't actually need or want surgery," says Susan Robarts, the centre's first advanced practice physiotherapist, who received specialized training based on a residency model. "It also provides an ideal opportunity to educate patients on treatment options and how to manage their symptoms. You can imagine how frustrating it must be to wait and wait for a surgical consultation only to be told you don't need surgery and then be sent away."

For patients like Donna, the new model of care provided more time to ask questions about exercise and lifestyle, both before surgery and during her postoperative follow-up assessments. "My concerns about whether what I was going through was the "normal experience" were always answered, and the physiotherapist also helped me to develop an exercise program. I felt relaxed asking detailed questions that I felt the surgeons may not have the time to answer."

And in the operating room…

Other innovations at the Holland Centre, such as those in the operating room, are having a big impact. In keeping with the need to reduce wait times and increase surgery volumes, expanded roles for surgical nurses and respiratory therapists are in place. New anaesthesia and pain management techniques are improving the patient's experience and reducing recovery time. Anaesthesia assistants, which include both registered nurses and respiratory therapists, also build on the overall expertise of the team.

The Holland Centre has pioneered the use of a registered nurse first assistant (RNFA) in an orthopaedic setting in Canada. An RNFA is an experienced operating room nurse who has additional education, knowledge and judgment, along with advanced technical skills to function effectively as an assistant to the surgeon.

"The RNFA functions collaboratively with the entire operating room team, including the surgeon, nurses, anaesthesiologist, medical and auxiliary staff," explains Helen Vandoremalen, patient care manager at the Holland Centre. "Optimizing the surgeon's time is a major benefit. For example, the RNFA can help to position and prep the patient, which helps to ensure the most efficient use of the surgeon's time."

A full and active life

For the centre's patients, it boils down to the little things that many of us without bone and joint disorders take for granted: signing up for yoga class, strolling through shops or enjoying gardening. "Each time I'm taking a walk in the forest, or doing other things that I now have the freedom to do without feeling pain, I'm thankful to the staff at the Holland Centre," says Donna. "Because of the nurses, physiotherapists and surgeons, I'm able to lead a full and active life. I couldn't ask for more."

By Marie Sanderson

Assessing an Aging Population

Research predicting driving cessation in patients with dementia will ultimately offer safe alternatives

As our population ages, more age-related diseases present themselves. As a result, ongoing medical research is taking place on the effect of diseases such as dementia, and the ability to carry out daily tasks such as driving.

Psychiatry researchers at Sunnybrook have for the first time provided findings that could help doctors identify patients with dementia where driving cessation will be more likely, or more predictable. This important information will ultimately be used as a guideline to help doctors make recommendations as to when a patient should stop.

In the first large-scale study of research participants, psychiatry researchers found that participants hesitated to stop driving and that behavioural disturbance was a strong predictor in driving cessation.

"There is little information available on dementia and its association with driving cessation," says Dr. Nathan Herrmann, principal investigator of the study, geriatric psychiatrist, and head of the Division of Geriatric Psychiatry at Sunnybrook. "Guidelines for primary care doctors are not specific enough, they need more guidance in determining when it is necessary for a patient to stop driving. Our research can help doctors predict which patients may be at risk in order to help them begin planning for alternatives."

It is well known that there is an association between the risk of being involved in a motor-vehicle collision and the severity and duration of one's dementia. The study's purpose, therefore, was to explore factors affecting the likelihood of driving cessation in a group of elderly people in the community with dementia.

"We found that patients with dementia who continue to drive are very reluctant to give up their keys; they stay on the road for years before stopping," says Dr. Mark Rapaport, Sunnybrook geriatric psychiatrist, and assistant professor in the Department of Psychiatry, University of Toronto. Other research from the United States indicates that driving skills decline much faster. Therefore, indicators are that driving continuation declines very slowly and driving skills decline very rapidly.

The research found that increased mental and physical impairment and the presence of a greater number of behavioural disturbances all increased the likelihood of driving cessation over the years of the disease progression.

Apathy and hallucinations were significant predictors of driving cessation in patients with a mild to moderate degree of dementia, which the authors believe may be because it led drivers to quit on their own or these behaviours may have alerted physicians and families to the severity of the disease and the need for the patient to quit driving. The presence of agitation or aggression on the other hand, showed an association with patients who continued to drive possibly because families and physicians might be more uncomfortable confronting such people with the need to stop driving.

The study also questions the various types of assessments that can be used including neurological, geriatric medical, or psychiatric assessments. "This study does not provide information on how to assess the safety risk, or which method of testing is best to predict collision risk, but the fact that cognitive impairment and behavioural disturbances – both easily measurable in the clinician's office – are strong predictors of driving cessation suggests that measures already in use by doctors to monitor patients may also serve to warn of increases in the risks of driving as patients' abilities decline," says Dr. Herrmann, also a professor in the Department of Psychiatry at the University of Toronto.

Patients at centres across Canada were studied over a three-year period. Every six months, researchers checked in to see if participants were continuing to drive. In 1992, approximately 316,500 Canadians over age 65 had dementia, with the risk of the disease doubling for every five years of age after 65. It is estimated that 500,000 Canadians will have dementia by 2021, and 750,000 by 2031.

By Erin Molloy

SUNNYBROOK AUTHORS

Author: Dr. Robert Myers, cardiologist, Schulich Heart Centre

Title: ***Heart Disease***

Book Description:
Dr. Myers answers questions on heart disease that patients should know, such as, what is coronary artery disease?

Author: Dr. Ivy Fettes, director of the Division of Endocrinology and Metabolism

Title: ***Thyroid Problems – A Guide for Patients***

Book Description:
This guide offers concise information about thyroid problems and their treatment.

Author: Dr. Laurence Klotz, uro-oncologist, TSRCC

Title: ***Prostate Cancer – A Guide for Patients***

Book description:
Dr. Klotz encourages men, as well as their family members, to be involved in the process of tackling the disease – from the first screening test to choices of therapy.

Author: Dr. Anthony Feinstein, neuropsychiatrist

Title: ***Journalists Under Fire: The Psychological Hazards of Covering War***

Book description:
This is a book that chronicles war journalists, their experiences in war zones and their experiences once they come home.

Co-authored by: Dr. Kathleen Pritchard, head, Sunnybrook Clinical Trial and Epidemiology and other leading specialists.

Title: ***The Intelligent Guide to Breast Cancer, 4th Edition***

An illustrated book for people with cancer and their families, by physicians and surgeons that provides information patients need to take an active part in their treatment.

Author: Dr. Jeannie Callum of Transfusion Medicine and Dr. Peter Pinkerton of Clinical Pathology

Title: ***Blood Easy: A Guide To Transfusion Medicine***

Book Description:
A quality resource on blood transfusion, blood alternatives and transfusion reactions.

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