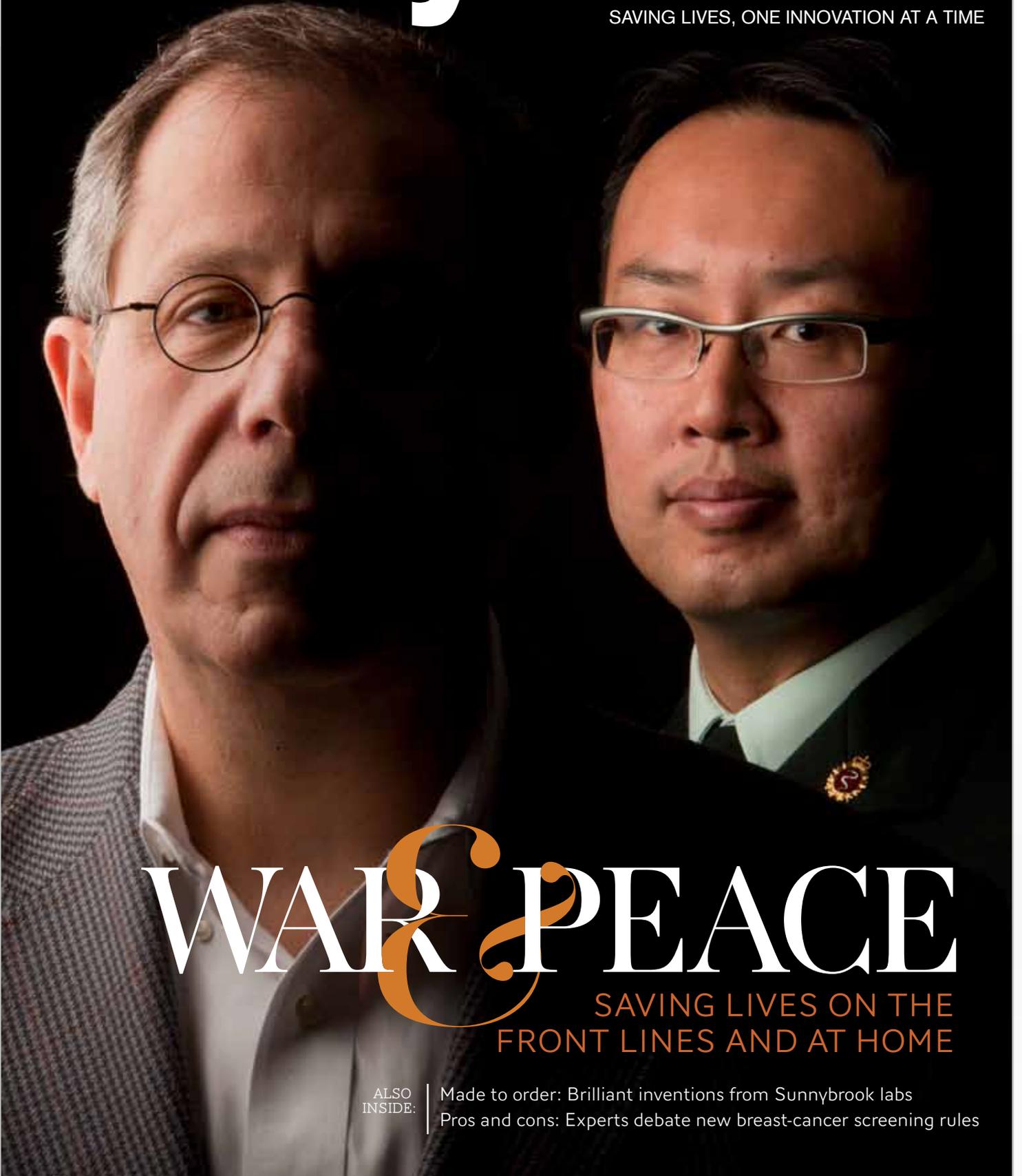


Sunnybrook

SAVING LIVES, ONE INNOVATION AT A TIME



WAR & PEACE

SAVING LIVES ON THE
FRONT LINES AND AT HOME

ALSO
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Pros and cons: Experts debate new breast-cancer screening rules



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ON THE COVER



Dr. Anthony Feinstein (left), producer of the Oscar short-listed documentary *Under Fire: Journalists in Combat*; and Dr. Homer Tien, National Practice Leader in Trauma for the Canadian Forces

COVER PHOTOGRAPH BY TIM FRASER

COMPASSION IS CRITICAL

WHEN I WALK THROUGH THE DOORS of Sunnybrook, I know I'm stepping into a special world with a culture, an ethos, of its own.

A culture like Sunnybrook's grows when we bring together people determined to accomplish one thing: providing innovative care at critical times in our patients' lives. The people of Sunnybrook come from across the globe but share the same values. One of the most important is compassion.

Every patient at Sunnybrook will get the best care available anywhere in Canada, if not the world. This is what's expected. It's a given. But, at Sunnybrook, excellence in medical care isn't enough. To be its best, our care must be compassionate as well.

In this issue, you'll read about how Sunnybrook works to ensure patients receive the most advanced treatments in a setting that is kind, caring and compassionate.

There's our new Office of the Patient Experience, which has one focus: to make sure patients know Sunnybrook cares not only about a medical condition, but about the person who has it. The team works with staff across the entire organization, helping give the best possible experience to all who count on us.

The big things make a difference, but we all know the small things are often just as important.

Technological advances go beyond life-saving treatments at Sunnybrook. We know there are few things more stressful to family and friends than waiting for word about a loved one in surgery. Now family and friends can track a loved one through surgery online, in real time. Yes, there's an app for that now; Sunnybrook created one to do away with that worrisome waiting. You can read about it in on the back page of this issue.

As always, we have stories of lives saved and changed forever because of the great medical minds at Sunnybrook. The war stories of Drs. Tien and Feinstein, highlighted on our cover, are compelling examples. If you take just one thing away from this issue, it is this: behind every life-saving medical intervention at Sunnybrook, there is a team of people who care deeply about those who count on them.

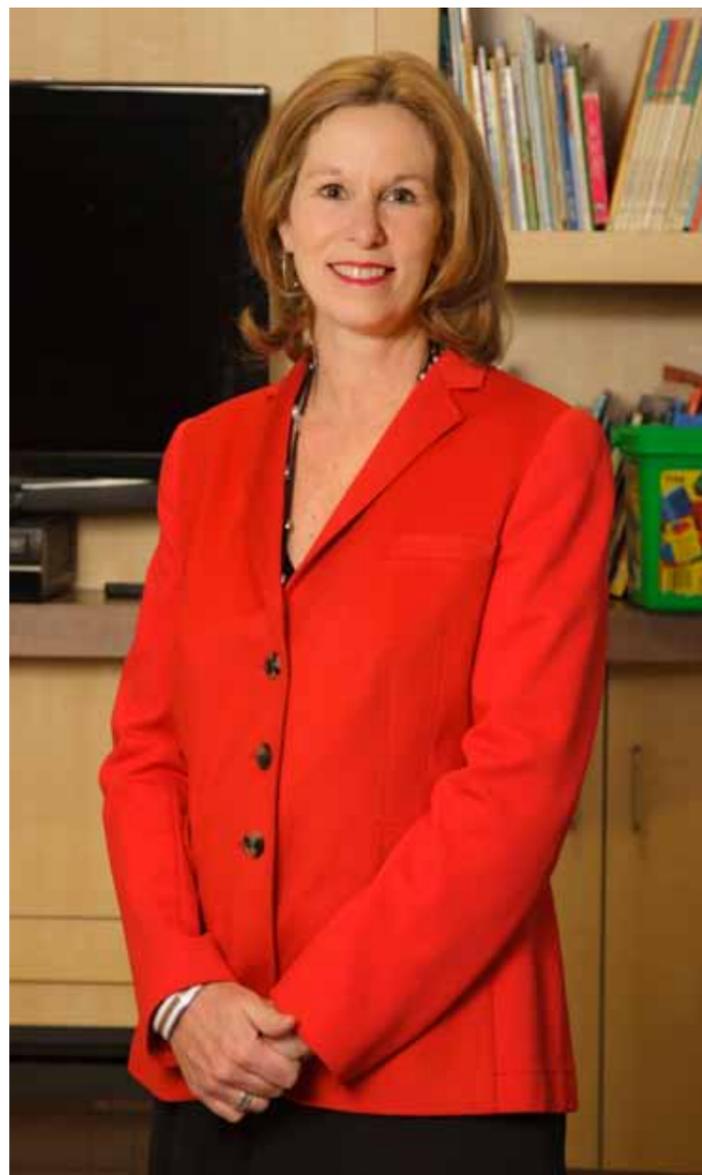
And that is what drives Sunnybrook. We are a world-renowned medical facility, but we are also much, much more than that.

In this issue I hope you find information that is helpful to you or someone you know. Because this magazine is meant to be a resource for you, please tell me what you'd like to know more about.

Just email me at jennifer@sunnybrook.ca.

Enjoy the read.

Jennifer Tory
Chair,
Campaign for Sunnybrook



Jennifer Tory in the NICU Family Room, which offers families a reprieve from the stress of the neonatal intensive care unit.

Sunnybrook

SPRING 2012

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Sunnybrook Magazine is designed and produced by
The Globe and Mail Custom Content Group
on behalf of Sunnybrook.

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Printed in Canada by tc • Transcontinental Printing
Prepress by DM Digital+1.

 Sunnybrook
in partnership with
THE GLOBE AND MAIL

WE ARE SUNNYBROOK

THE VOLUNTEER



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With love From Montserrat

MARY GLAVASSEVICH learned an important lesson early in her life, as a child on the island of Montserrat. Her mother would cook a meal and before sitting down to eat would ask Mary to see who in the neighbourhood would like to share their food. "Life is not all about just you," Mary recalls today.

That simple but powerful belief has shaped her life and work. As the Patient Care Manager for Surgical Oncology and Hearing Services, Mary not only gives her time and energy to her Sunnybrook family, but also to raising awareness of health issues

among the residents of Montserrat. For a developing country devastated by Hurricane Hugo and an active volcano, that assistance is especially precious.

In 2011, with support from Sunnybrook's Information Services, Mary traveled to Montserrat to provide the island's only hospital with its first computer. "I felt it was important for nurses and other health-care staff to keep in touch with what's changing in health care and also to understand the standards of care," says Mary, who used her own money to cover her travel and expenses.

Mary has also provided books on breast and other types of cancer, thermometers, eye examination equipment and educational material related to diabetes. During her last visit, she spent two weeks educating locals on cancer and diabetes. Next on her list is raising money to help nurses from developing countries attend an International Conference for Cancer Nursing in September 2012.

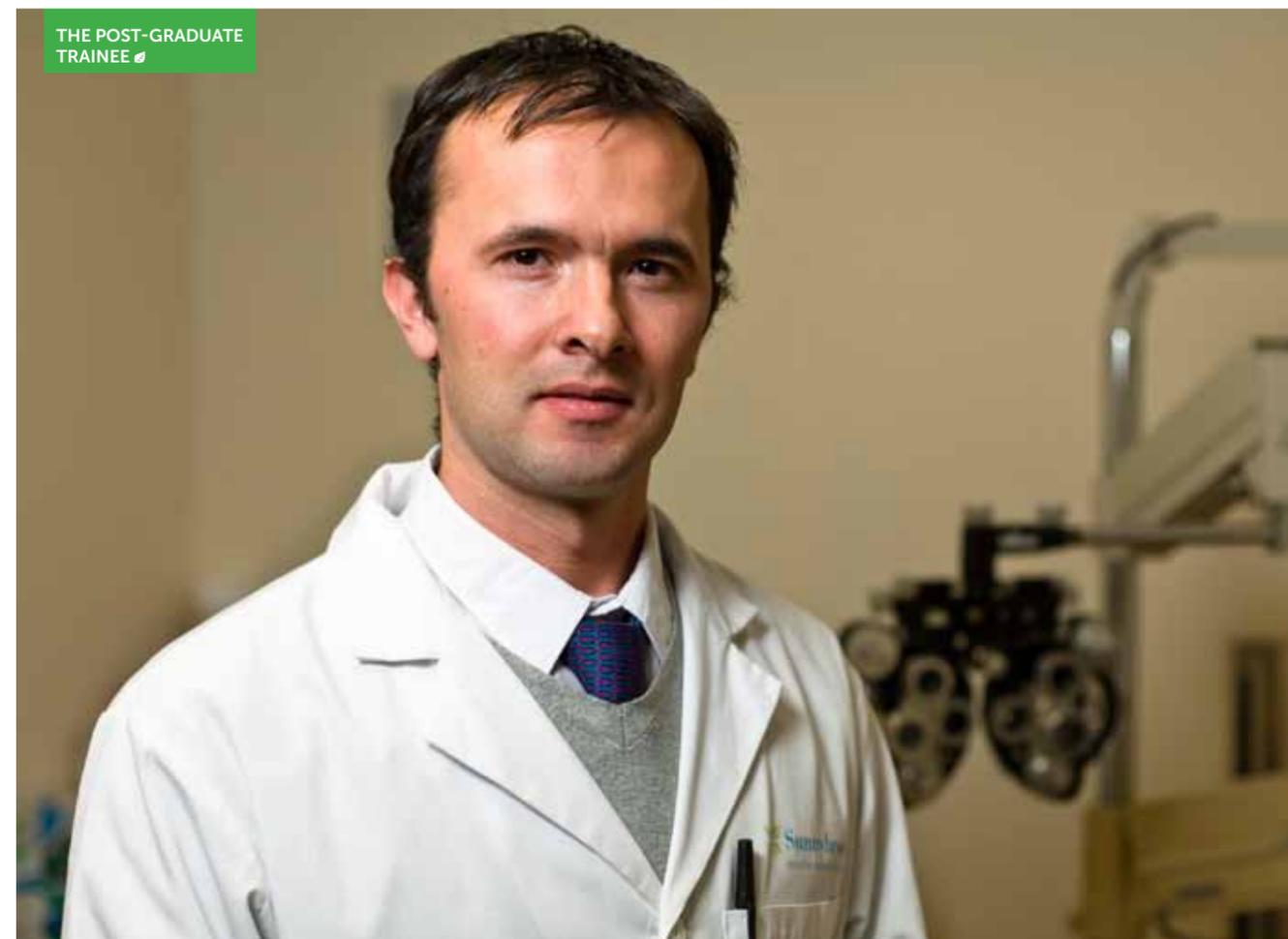
"Simply asking what is needed is the most effective way to help," explains Mary. During one visit, the nurses identified the need for breast cancer screening, and Mary

quickly raised \$1,000 to help 18 high-risk women travel to Antigua for mammograms; she continues to take in donations for this purpose.

It's not just Montserrat that benefits from Mary's energy and fundraising skills. In one year alone, she raised \$10,000 through the Sunnybrook Run for Research. She points to a plaque on her wall reading "Top Staff Fundraiser for Sunnybrook's Run for Research." Mary's name is highlighted for every year from 1996 to 2004. "The Sunnybrook Foundation eventually said, 'Just keep it,'" she says proudly. •

This edition: To Sunnybrook from around the globe

THE POST-GRADUATE TRAINEE



Gaining a broader experience

DR. MARCELO STEVENSEN didn't pursue his childhood dream of becoming a veterinarian, or an engineer like his grandfather, or working in the family bakery in Mexico—but family certainly helped guide his fulfilling career in medicine and vision care.

It was his mother's acute angle closure glaucoma that influenced him to specialize in the disease, the world's leading cause of irreversible blindness, after earning his medical degree at the University of Monterrey. He specialized in ophthalmology at the Instituto Tecnológico de Monterrey, and then ventured north for a

year's study at the Ophthalmic Consultants of Texas, a leading eye care centre.

Last June, he left the sweltering heat of Monterrey (Mexico's industrial hub, brimming with rich history, culture and breathtaking mountains), to come to Toronto to complete his clinical fellowship in ophthalmology. "My first impressions were how incredibly large, busy and dynamic Sunnybrook was, and how well organized the ophthalmology clinic was despite the high patient flow and complexity of cases," says Dr. Stevensen.

Dr. Stevensen is now training under Dr. Catherine

Birt, a leading glaucoma and cataract specialist. His fellowship research project examines whether the anatomical preexisting conditions of each patient are related to the visual outcome of cataract surgery. "I focus on the fact each patient case is different, and can be controlled and treated with either drops, pills, a laser procedure or surgery. Glaucoma surgery is my main interest along with the post-operative care, which accounts for 50 per cent of the surgery's success."

At the age of 32, now Dr. Stevensen is winding down one leg of his professional

journey, only to soon begin another. In June, he will finish his fellowship at Sunnybrook and return 3,000 kilometres home to Monterrey, to realize his dream of joining an ophthalmology practice and becoming a part-time professor at his alma mater.

"Through Sunnybrook's leading innovation and real-life training, I have been fortunate to gain a broader international perspective, enhancing my knowledge and education. For me, it's about gaining the most current research and expertise to provide the best patient care, all in an effort to advance the science of medicine." •

THE ADVENTURER



Nerves of steel

THOUGH HE GREW UP in Sydney, Australia, Dr. Andrew Lansdown's favourite thing about Canada is the weather. An avid fan of winter sports, he excitedly watches the forecast for news of massive snowfalls—and it's this same sense of adventure that brought him to Sunnybrook.

As a clinical fellow with the Department of Anesthesia, he is halfway through a one-year fellowship in regional anesthesia, which involves delivering local anesthesia to block large areas of sensation.

"It's been just what I'd hoped it would be: it's been perfect," Dr. Stevenson says of his Sunnybrook experience, adding that he's already recommending it to others.

"What I've tried to do is develop a greater theoretical and practical knowledge, so I can take it back home as a better teacher and educator." Being exposed to a high volume of nerve-block procedures has helped him hone his skills and gain the necessary confidence to take his new expertise back to Australia.

Under the supervision of Dr. Colin McCartney, he has appreciated the effort of the entire Department of Anesthesia staff to provide education and guidance. He says he admires his Canadian colleagues for their ability to push themselves professionally beyond their everyday clinical roles, through side projects such as participation in research, councils and committees.

"Everyone has a special talent here, their own niche that they're really passionate about and working on; it makes for

great teamwork," he says.

Unlike most hospitals in Sydney, Dr. Lansdown says, Sunnybrook provides fellowship opportunities for international staff. Dr. Lansdown's keen interest in gaining a diverse professional experience, as well as fulfilling his sense of adventure, brought him to Sunnybrook. But ultimately, it is his own medical expertise and unique global perspective that enrich Sunnybrook's caring practices, and no doubt will better the entire hospital community. •

THE NIMBLE RESEARCHER



Rhythm doctor

FROM GUITAR RHYTHMS to circadian rhythms, Dr. Georg Bjarnason has come a long way in his life and career.

In 1965, he was just a 14-year-old guitarist when his band The Falkons opened for rock legends The Kinks in Dr. Bjarnason's native Iceland.

"It was amazing," he recalls. "I did not realize the significance of it until after the fact."

By age 17, he was already a gliding instructor, flying engineless over the local mountainside. He says that the trick to flying safely was staying nimble and adapting to the rhythms of nature's air currents.

After earning his medical degree in Iceland, he came to Canada in 1983 to complete his training in internal

medicine and medical oncology. Twenty years later, he's making his biggest mark yet as a medical oncologist with Sunnybrook's Odette Cancer Centre, an expert on kidney cancer and one of Canada's leading researchers in biological rhythms, or chronobiology.

Here, the responsive approach he learned from flying continues to guide his research in understanding the human body to better individualize cancer treatment.

All living organisms have a 24-hour biological clock or circadian rhythm. Dr. Bjarnason has studied these rhythms and the genes that control important biological processes such as cell cycle, and has found important gender differences in genes at different

times of the day that may explain gender differences in the activity and side-effects of most drugs.

Chronotherapy (therapy based on an individual's circadian rhythm) may help doctors improve drug therapies and minimize side-effects. "Chronotherapy will not cure cancer but may make the most of the few active drugs we have," says Dr. Bjarnason.

The senior scientist at Sunnybrook Research Institute has studied timing of radiotherapy in patients with head and neck cancer and timing of chemotherapy in patients with colorectal cancer. He and colleagues have confirmed that abnormal sleep patterns are associated with poorer survival in cancer patients.

Dr. Bjarnason, also an associate professor in the Faculty of Medicine at the University of Toronto, has focused his clinical work and research on kidney cancer. He is the inaugural recipient of The Anna-Liisa Farquharson Chair in Renal Cell Cancer Research. He continues his long-standing collaborations with Drs. Robert Kerbel, Peter Burns, Greg Stanisz and Stuart Foster at Sunnybrook Research Institute, most recently investigating innovative scheduling of drugs using imaging technologies to understand how to best deliver therapies that block the flow of blood to tumours.

He still finds time to pick up his guitar now and then, and to go gliding on annual summer trips to Iceland. •

THE PEDIATRICIAN



Dr. Paige Church, with husband Erik and their daughter, volunteered in Africa in 2011

Team player

IT MAY HAVE BEEN A CANADIAN who brought Dr. Paige Church to Toronto from Boston, but it's Sunnybrook that keeps her here.

Of course, it helps that it wasn't just any Canadian but her husband, Erik, whom she met even before earning her medical degree at the University of Vermont. And Sunnybrook isn't just any hospital either, she says, but one that stands firmly behind what she's trying to accomplish. "It's like playing tennis with people who are better than you every day. You know you're going to get better," Dr. Church says of the team at Sunnybrook's Neonatal Intensive Care Unit Follow-Up Clinic, of which she's director. "The team here is better than

any team I've ever worked with."

And Dr. Church has worked with some excellent teams. After medical school, she did her residency in paediatrics at the University of Chicago Children's Hospital. The experience helped her develop a keen interest in children with disabilities and ultimately brought her to Boston, where she became one of only two paediatricians in North America to complete dual fellowship training and board certification through the American Board of Pediatrics in Neonatal-Perinatal Medicine and Developmental Behavioral Paediatrics.

And she certainly grew up in a beautiful spot, Burlington, Vt., probably best known for being

the home of Ben and Jerry's ice cream; in fact, Dr. Church remembers having delicious ice cream scooped and served by Ben and Jerry themselves. But while she hasn't yet learned to ice skate and misses Vermont's beautiful ski slopes, she says she's happy to call Toronto home.

Credit her satisfaction to Sunnybrook's Neonatal Follow-Up Clinic, with its capacity to see up to 200 babies and children each month. The clinic is working to expand its exceptional follow-up care—already more extensive than at other centres—through collaboration within the community and schools, sharing its expertise and gaining additional expertise from community

partners.

"To find a hospital with a mandate to follow children to the age of six years is an incredible investment. It is unusual and is one reflection of the commitment by the hospital to provide comprehensive care to the infants in the Neonatal Intensive Care Unit and their families, even after discharge. There's a fundamental belief here that our clinic is essential for these children and that our care should extend to the early school years," she says.

"For me, it's a huge learning opportunity to work with the team at Sunnybrook and to practice what I've been trained to do in an environment that is very supportive." •

a quick look at some of the cutting edge research happening at Sunnybrook



ON THE TRAIL OF ALS

Until now, there was no known cause of amyotrophic lateral sclerosis (ALS), an incurable disease that over time causes a person's muscles to simply stop working.

That's changed with an international study that has discovered a gene that causes the majority of ALS. With only experimental drugs available to slow the progression of the disease, this discovery has enormous potential.

Sunnybrook researcher Dr. Lorne Zinman, a lead collaborator in the study, says, "There has never been more reason to be hopeful and optimistic that ALS research will provide effective therapies for those living with ALS."

With the identification of this genetic cause and effect, researchers can now find ways to slow the progress of this disease and continue to hunt for its cure.

EMOTIONAL RESCUE

People living with Alzheimer's disease (AD) can sometimes have a hard time describing how they feel and, in late-stage AD, may not be able to speak at all. To diagnose neuropsychiatric issues in patients with AD, doctors have only subjective tests to use and must rely on caregivers for information, which can be critical to developing an effective treatment plan.

Drs. Krista Lanctôt and Nathan Herrmann are hoping to change this with a study of new tools for testing patients. The study will measure the effectiveness of a new visual attention-scanning system by looking at AD patients' visual attention to sad, neutral and social pictures. "The tool we are studying is a more objective way of diagnosing emotional issues, which can help clinicians make more accurate treatment decisions," says Dr. Herrmann, who is also head of geriatric psychiatry at Sunnybrook.

DIAGNOSING DEMENTIA

With the number of people suffering dementia expected to double within a generation, family physicians will be swamped by demands for timely and accurate dementia diagnoses.

To help with this increase in demand, Drs. Mary Tierney and Jocelyn Charles are leading a group of researchers in a feasibility study of computer-administered cognitive testing called the Computerized Assessment of Mild Cognitive Impairment.

So far, 93 per cent of patients who tried it were able to complete it with minimal instruction. With an attendant to help those who need it, this assessment could work very well in a family practice setting. The next step is to compare the computer-administered test results with traditional paper-based results while asking the family doctors involved in the study if the new method of testing is useful.

TOPS IN RESEARCH

When you're sick and need help, the amount of research done at your hospital isn't the first thing on your mind. It probably isn't on your mind at all.

But it's that very research that saves lives at Sunnybrook: that's why research capacity is so vital. Sunnybrook was ranked fifth in the country by Research Inforsource Inc., a national research and development data firm. The 2011 ranking rates hospitals by total research funding from all possible sources in 2010. Sunnybrook's standing was based on 2010 funding of \$106-million. This is a 26 per cent increase from 2009—the highest growth among the top five hospitals.

Of the top five, Sunnybrook is the only general hospital with just one research institute. This research engine ultimately drives the innovative treatments Sunnybrook patients count on at critical times in their lives.



DUTY CALLS

THE ORDER OF MILITARY MERIT IS ONLY THE LATEST HONOUR IN THE DISTINGUISHED CAREER OF COLONEL, TRAUMA PHYSICIAN AND MILITARY MENTOR DR. HOMER TIEN, BOTH AT SUNNYBROOK AND ON THE BATTLEFIELD

By Alexis Dobranowski



PHOTO TIM FRASER



Lt. Trevor Greene doesn't know Dr. Homer Tien.

He knows Dr. Tien was at the Kandahar Base Hospital on March 4, 2006. He knows Dr. Tien prepped the trauma team when word spread that Trevor, on his first tour in Afghanistan, was en route to the base with a severe head injury. And he knows Dr. Tien stabilized him and stopped the bleeding.

Trevor doesn't know Dr. Tien, but he knows he saved his life.



Personnel enter the Role 3 Multinational Medical Unit (R3 MMU) in Afghanistan, where a drawing on a concrete protection wall serves as a welcome sign.

A soldier's story

It was Trevor's 50th day in Afghanistan. A Taliban-influenced teenager attacked him with an axe, leaving a three-inch gash in his brain. In the Kandahar Base Hospital, Col. (then Major) Homer Tien, a Sunnybrook trauma surgeon who was also on his first tour in Afghanistan, received word a casualty was on the way. It was a surgical priority, though details were unclear.

When Trevor, bleeding profusely, arrived with combat medics, it was clear he had significant injury to his head. "In the trauma bay, the priority was to secure an airway, and so he was intubated and resuscitated, as he had bled quite a bit and was in shock," Dr. Tien recalls. "We then took him to the operating room to stop the bleeding from the injury. We did this, and bandaged up his head. His vitals stabilized, but his level of consciousness was still low."

Dr. Tien and the team decided it best to have Trevor airlifted to Germany, where American neurosurgeons would assess him. There, he underwent surgery, and was later transported home to British Columbia, where he began his long road to recovery. Of course, Trevor doesn't remember the attack. With his wife,

Debbie, he's been retracing the events of that day. He learned it was Dr. Tien in charge of the trauma team that day in the hospital. "He kept me alive," Trevor says.

A doctor's story

Dr. Tien says he didn't join the Canadian military because of any grand ambition. "Embarrassingly enough, 20 years ago, I joined to pay for medical school," he says. At first, there was adventure, like parachuting and diving. But what really drew him in was the leadership training the military provided. "As a medical student, you don't really get formal leadership training," he says. "It's intriguing to be in a position as, say, a 25-year-old—which I was in Yugoslavia—and a medical platoon commander. I was the captain in charge of 40 medics. That, in itself, is quite the life experience for me. It wasn't just about how to treat a sprained ankle."

Now, two decades and many tours later, the colonel is the national practice leader in trauma for the Canadian Forces and

medical director of Sunnybrook's Tory Regional Trauma Centre. He was also recently a script advisor for the Global TV drama series *Combat Hospital*.

Leadership training has continued to serve him well. As national practice leader, he advises the Surgeon General of the Canadian Forces on issues surrounding trauma care, such as which trauma protocol should be used in a given situation or care for critically injured patients. As a result, Dr. Tien has witnessed—and brought about—many changes in combat care. He recently spearheaded a supplement in the *Canadian Journal of Surgery* examining "Lessons learned from the Afghan war." His research focuses on establishing and validating the guidelines soldiers use in caring for trauma patients on the battlefield as well as improving hospital-based care. "We are trying to always improve how we care for injured soldiers before they get to the hospital, because, if they are going to die, most die before they get to hospital," he says.

Bleeding is probably the leading preventable cause of death for the military, Dr. Tien says. While traditional civilian trauma medi-

cine has not advocated tourniquet use, Dr. Tien's research has helped validate the use of tourniquets for the Canadian Forces. "It's most people's opinion that tourniquets on the battlefield have saved many lives," he says.

Other research is focused on bleeding control once at the hospital. Dr. Tien has been working with Sunnybrook surgeon and researcher Dr. Sandro Rizoli to come up with different ways to diagnose clotting problems more quickly. "One of the things we know is that as both a reaction to the initial trauma and a consequence of the initial resuscitation, patients' blood becomes thinner and so they are not able to clot as well," Dr. Tien says. "If they are already bleeding and they aren't able to clot properly, it becomes a big problem to stop the ongoing bleeding." Dr. Rizoli, with Dr. Tien, has conducted the world's first randomized controlled trial looking at a novel way of treating this clotting disorder, called coagulopathy, in bleeding trauma patients.

In December 2011, Dr. Tien was honoured with the Order of Military Merit, awarded by the Governor General of Canada to Canadian Forces members who have demonstrated outstand-



"I admire the courage and tenacity Trevor has displayed in overcoming the adversity resulting from his injuries. It reminds me why I still serve in uniform, to support our fighting front-line troops."

DR. HOMER TIEN (speaking to another patient, above)

ing dedication and devotion beyond the call of duty. Now in his role as medical director of trauma at Sunnybrook, Dr. Tien helps prepare his brothers- and sisters-in-arms who want to follow in his footsteps.

A recruit's story

Andrew Beckett dropped out of high school. At 18, he joined the army as a medical assistant, or combat medic. When he was 22, Beckett went to Yugoslavia on his first rotation. "That's where the idea got planted," says Dr. Beckett, now 42. "I started making plans to go back to school. The army offered to sponsor my surgical training and then bring me back in as one of their surgeons," he recalls. "So I took that opportunity, and with the help of Homer Tien, I did my trauma fellowship at Sunnybrook and here I am today."

Sunnybrook has trained three Canadian Forces surgeons in the

past few years as well as Canadian Forces family physicians and nurses. "It was an amazing clinical experience with lots of really interesting cases," Dr. Beckett says. "Seeing up to 11 trauma cases a day really prepared me for Afghanistan."

In late 2011, Dr. Beckett completed his second tour there, this time as a member of Operation Attention, in which Canadian troops advise Afghan physicians and surgeons on providing better health care for their soldiers and the soldiers' dependants. Each day, he'd leave the NATO compound, armed with a pistol for his own protection, and head to the National Afghan Army base hospital. "We wouldn't take over operative procedures; we are just advising them on how to get better results for their patients," Dr. Beckett says. "It's quite different from Kandahar, where we were supporting our own coalitions' combat operations. In Kandahar, we'd be providing first-world care in the middle of a battlefield."

Dr. Beckett credits Sunnybrook research for changes he's seen in combat care. "I think definitely some of the research we've done at Sunnybrook has made a positive impact on the way ca-



Dr. Tien was a consultant on the Global TV series *Combat Hospital*.

sualties are treated in the field," he says. For instance, both Drs. Beckett and Tien were involved in a trial that examined the placement of needles decompressing trapped air around collapsed lungs. The study resulted in guidelines about needle placement and new protocols adopted by both the Canadian and United States militaries.

Dr. Beckett recently returned to Sunnybrook to begin a fellowship in critical care. "Homer Tien has been a real role model for me in terms of doing research about your clinical practice as well as writing about it—record and report what we are doing," Dr. Beckett says.

Trevor's story

Last year, Trevor married his wife Debbie, who has stood by his side with their daughter Grace, 6, throughout this ordeal. The pair has written a book titled *March 4* about the day Trevor was attacked, and about his remarkable recovery. They've also started a charitable foundation that will help women in conflict zones get access to education and teacher training. "We need a generation to grow up at peace," Trevor says.

Dr. Tien says it's stories like Trevor's that keep him in uniform. "For me, the story of his ongoing recovery is inspirational, and I greatly admire his courage for deploying in the first place," Dr. Tien says. "More importantly, though, I admire the courage and tenacity he has displayed in overcoming the adversity resulting from his injuries. It reminds me why I still serve in uniform, to support our fighting front-line troops."

Trevor says Dr. Tien and other military doctors perform miracles each day. "They put themselves at personal danger to save our soldiers' lives," Trevor says. "They would die if it weren't for people like Dr. Tien." Trevor and Debbie look forward to the day they can thank Dr. Tien face-to-face. For now, they express their gratitude from across the country about the day that will forever link them. Says Trevor: "On behalf of all wounded soldiers and their families, I would like to thank him for his dedication and devotion to duty." ■

PHOTO KERRY HAVES/GLOBALTELEVISION

BLOOD BROTHERS

Sunnybrook surgeon Dr. Sandro Rizoli is pioneering research into trauma bleeding, the leading cause of death in trauma patients



"EVEN IN THE 21ST CENTURY in Toronto, trauma patients die of bleeding," says Dr. Sandro Rizoli, a Sunnybrook associate professor, surgery and critical care. "After a trauma, the clotting system doesn't work properly," he explains.

Traditionally, these patients are given a high volume of blood—a treatment called damage-control resuscitation, which became standard in 2007, out of findings from treating traumatic injuries in the Iraq war. But using this method has consequences. "One massive trauma can practically drain the blood bank in Toronto, especially if it's a rare blood type," Dr. Rizoli says. "This has a trickle-down effect: someone here for elective surgery can't have it because there is no blood left."

With the help of military funding, Dr. Rizoli is studying the reasons trauma patients don't clot and whether damage-control resuscitation is the best method of treatment. He's using a ROTEM, a highly sophisticated piece of equipment that tests clotting abilities. Sunnybrook was the first hospital in North America to have the machine; while about 10 hospitals have it now, most use it only for research. "We have special permission to use it for clinical application. The beauty of this is, it's in the lab, but the results are transmitted in real-time to the trauma room and the operating room."

When a patient arrives in the trauma centre, the ROTEM tests his or her whole clotting system: whether clots are forming, the strength of the clots and how fast the clots are dissolving. It helps the surgeons decide how to treat the patient. This would be beneficial to the military, Dr. Rizoli says, where bleeding is the leading cause of death and blood-bank resources in combat zones are difficult to maintain.

Dr. Rizoli hopes Sunnybrook can become a centre for bleeding studies in the future. "This type of research cannot be done by a single person or even a single department in the hospital," he says. "It needs a place like Sunnybrook, which has the patients, the research infrastructure and many interested doctors and scientists who work together. Sunnybrook is the ideal place. You cannot even measure the value of the various teams working together."



War torn: the cost of bearing witness

Dr. Anthony Feinstein's research, treatment and an Oscar short-listed documentary focus on post-traumatic stress disorder often faced by journalists on the front line.

By Michael McKinnon

The Journalists Memorial in Washington's Newseum includes more than 1,800 names and hundreds of photos of journalists who died covering conflict.

It has long been understood that the atrocities of war don't always remain on the battlefield when soldiers come home, but a Sunnybrook psychiatrist is proving journalists suffer much the same damage as those behind the gun.

"If you're a journalist going off to war, you can experience horrible things that will lead you to be vulnerable to post-traumatic stress disorder [PTSD]," explains Dr. Anthony Feinstein, producer of *Under Fire: Journalists in Combat*, a documentary about the mental health risks these journalists face. "This is an issue that is clearly not going to go away. The world is in a big mess, and there's enough conflict in the world to make sure a lot of journalists are going to get hurt."

The documentary, short-listed for a 2012 Oscar nomination, examines the horrors of war through the stories of journalists sent to cover it—and these stories are indeed horrific. Viewers meet Jon Steele, for example, author of *War Junkie* and a cameraman for Independent Television Network, who describes a little girl injured in Sarajevo while waiting for him to bring her candy. He tries to visit her in hospital, but is brought to her dead body stretched out on the floor instead.

There is Ian Stewart, who was head of the Associated Press' West Africa bureau in 1999 when a young rebel—a boy, really—fired his AK-47 into Stewart's vehicle, killing another journalist and lodging a bullet in Stewart's brain. Partially paralyzed, he says he still pictures the screaming and agonized faces of war when he closes his eyes.

And there is the *Toronto Star's* Paul Watson, author of *Where War Lives*, who is probably best known for his 1994 Pulitzer Prize-winning photograph of a dead American soldier being dragged through the streets of Mogadishu, Somalia. Interviewed in *Under Fire*, he says he is still haunted by his decision to take that photograph, feels like a participant in the desecration of a body and longs for forgiveness.

"Every front-line journalist deals with these issues," says Dr. Feinstein. "I've spoken with many war photographers who tell me they have trays and trays of photographs that will never see the light of day. No newspaper will ever show them because they are unspeakably horrible, but

they've seen them. They're part of their memories."

As these front-line journalists attempt to combat the fallout from their experiences, the results can be devastating: substance abuse, depression, thoughts of suicide or a sense they no longer fit within society. Relationships crumble and sleep suffers.

"When I started out covering conflicts almost 25 years ago, few journalists spoke openly about the psychological risks," Watson says. "We self-medicated with drugs and alcohol. Talking about something like post-traumatic stress disorder would have been seen as a weakness. That has changed. And Dr. Feinstein's work must have helped make that change happen."

To be sure, the idea that journalists could suffer from PTSD (once called shell shock, battle fatigue and other names) was unheard of until a patient was referred to Dr. Feinstein in 2000. She presented with recurring neurological symptoms such as incoherence, agitation, sweating, occasionally lapsing in and out of consciousness, but her chart showed no physical abnormalities. Her personal history was typical of those he would hear from other journalists in the coming years: a decade-plus of cumulative stress, near-death experiences and conflict coverage, followed by self-medication with drugs and alcohol. It was an issue that no one—not journalists, their employers or trauma researchers—was addressing.

"Not only had most of the news organizations neglected to provide for the psychological welfare of their war reporters, but trauma researchers had ignored them too," Dr. Feinstein writes in his 2006 book *Journalists Under Fire: The Psychological Hazards of Covering War*. "Trawling through the literature, I could not find a single reference to the subject—no articles, chapters or abstracts. I had stumbled on a virgin topic, lying unrecognized within a larger literature devoted to the emotional consequences of traumatic events."

And so, backed by financial support from the Freedom Forum, a Washington-based organization focused on protecting freedom of speech, Dr. Feinstein interviewed 140 war correspondents by the end of 2001 and published his first book on the subject, *Dangerous Lives*, in 2003. He later received funding from CNN, the BBC and the Dart Foundation to further his work. "Journalists who



PHOTO: TIM FRASER

"When I started out covering conflicts almost 25 years ago, few journalists spoke openly about the psychological risks... That has changed. And Dr. Feinstein's work must have helped make that change happen."

Paul Watson, *Toronto Star* journalist

develop symptoms of PTSD can suffer greatly," explains Dr. Feinstein. "It's an occupational hazard, and the ones who are good know that and accept it. If they can't accept that, they simply can't do this work."

He is quick to point out that not all journalists who cover conflict are suffering; some return from the battlefield largely unscathed. That 29

per cent of war journalists develop PTSD, Dr. Feinstein notes, leaves more than 70 per cent who don't. Likewise, 76 per cent of journalists do not develop depression. Many do not develop drinking problems. But the rates are still significantly higher than those in the general population and higher, for example, than rates for police officers, fire fighters and veterans who have not seen active combat.

It is truly a dangerous time for journalists: 900 have been killed covering combat in the past two decades compared to just two killed covering the First World War. "Iraq has been by far the most lethal conflict for journalists, with close to 200 members of the press killed so far. This number exceeds the mortality rate for journalists from World Wars I and II and the Vietnam War combined," says Dr. Feinstein.

Whether steered by confidential help lines established by news outlets, or encouraged by Dr. Feinstein's books, his documentary or his reputation, journalists are turning to him in increasing numbers. He responds, depending on the severity of their symptoms, with an array of treatment options including cognitive behavioural therapy, cautious use of medication and counselling. For those with full-blown PTSD or depression, taking a break is often his first



Left to right: *The Globe and Mail's* Graeme Smith in Kandahar and, in stills from the film *Under Fire: Journalists in Combat*, Paul Watson from the *Toronto Star* and Reuters cameraman Finbarr O'Reilly.

recommendation. "If someone is acutely traumatized and in a war zone, my advice to them is, 'You need to take a break from this and look after yourself,'" he explains. "That's common sense; if you're a long-distance runner and you've developed a fractured leg, you're going to take a break from running."

For those in remote areas, he will set aside an hour a week to counsel them remotely, over the phone; he has treated journalists this way for several months at a stretch. (The opening scene in *Under Fire*, for example, shows Reuters photographer Finbarr O'Reilly preparing for an assignment in West Africa by packing his flak jacket and calling Dr. Feinstein in Toronto.) For those whose problems turn out to be more acute, he recommends returning home—wherever home might be—to seek local expertise.

Graeme Smith, who covered the war in Afghanistan for *The Globe and Mail* from 2005 to 2009, visited Dr. Feinstein at his Sunnybrook offices as a precaution. "I wanted to get my head checked, to put it bluntly, and he assured me I'm not suffering from PTSD or depression," says Smith, adding that the session gave him a clear picture of what he should be watching for: changes in sleeping habits, relationships or appetites for food or sex. "He also told me to watch for any irrational avoidance behaviour, a tip-off that somebody can be scarred by a particular experience and unwilling to repeat it."

But much of Dr. Feinstein's work is more proactive than reactive, working with news outlets and journalists before problems arise.

In 2007, Dr. Feinstein designed and helped launch a confidential online self-help resource (conflict-study.com) that allows journalists to complete self-assessments of PTSD symptoms, depression, general psychological well-being and alcohol and substance use. Users receive immediate feedback that can be used to facilitate access to a family doctor or an employee assistance

program for therapy, if needed.

And Dr. Feinstein spreads the word through in-depth educational seminars, such as the one he led at the New York offices of CNN in December. There, he offered a series of two-hour sessions in which he presented data from his research; explained PTSD, depression and substance abuse; and facilitated a Q&A. The format benefits journalists who cover conflict far from home, he says, but also those who cover domestic events such as 9/11 and Hurricane Katrina.

Perhaps the most unusual seminar he led was in Boston, by invitation from National Public Radio, which involved Israeli and Palestinian journalists across from one another at one table. "Interestingly, the issue of PTSD was very familiar to the Israelis, but it was a completely new issue among the Palestinians; they were fascinated by it," recalls Dr. Feinstein.

He was a keynote speaker at the 2008 Journalism in a Violent World conference, part of the Canadian Journalism Forum on Violence and Trauma, of which he is director.

His message is sinking in, and *Under Fire* should help spread that message with screenings in New York, Los Angeles, England and Toronto. Canadian media are behind the curve, Dr. Feinstein admits, while organizations such as CNN are leading the way. "It's people's personal responsibility whether they want to look after themselves or not. The way you break through the barrier and convince people to take the issues seriously is through education," he says. "And the culture is changing—and that's been very rewarding."

Changing, but still with far to go, as one journalist points out. "I'm stunned to hear that media professionals who have seen the film are shocked," says the *Toronto Star's* Watson. "Which tells me that even people in the business, who I assumed knew what we were going through, largely didn't." ■

INSIDE THE INGENUITY SHOP

Innovative device-building labs create new, commercial medical equipment for patients at Sunnybrook and around the world **By Hannah Hoag**



PHOTOS RYAN ENN-HUGHES

SOMETIMES THE DEVICE a doctor needs to provide patients with the best treatment possible simply doesn't exist.

The clinician-scientists at Sunnybrook overcome these gaps by collaborating with the hospital's device-building teams. Even ideas scribbled onto napkins have been transformed into commercial devices that improve quality of care for patients at Sunnybrook and around the world.

Some tools offer diagnostic or treatment advantages to the patient, such as a new method to image tumours or a system that offers oncologists a way to precisely place radioisotopes into the tumour. Others allow technicians to ensure their machines are well calibrated so diagnostic images or

interventions are accurately targeted. Still others help researchers study disease in animals.

The machine shop in the Odette Cancer Centre at Sunnybrook has been churning out life-changing devices for over a decade. Inventor Harry Easton and his medical physics team have turned ideas into devices that decrease the number of visits a breast cancer patient needs for treatment or deliver radiation doses to patients with inoperable brain tumours with sub-millimetre accuracy. Such innovations can make a dramatic difference in patients' lives.

In 2007, Sunnybrook was awarded \$74-million from the federal government's

Canada Foundation for Innovation to expand the hospital's research facilities, including opening the Centre for Medical Device Design. The new facility (which is slated to open in mid-2012) will be a hub of activity for the design, fabrication, testing and validation of medical devices, bring team members together, and provide them with state-of-the-art equipment. It will have new, automated, powerful equipment to make parts and highly precise tools for miniature components. The new designs that spill out of the lab will offer more effective ways to diagnose disease, deliver therapy and guide interventions.

Here are a few innovative new devices from Sunnybrook's device labs.



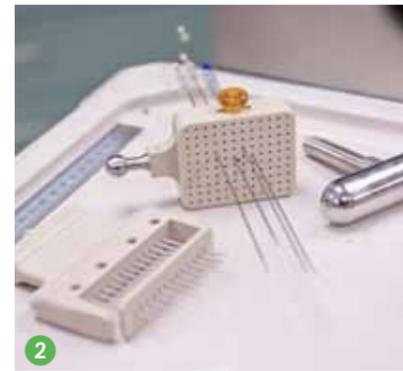
1 Standing in for treatment

WHAT IT IS The Lucy Phantom helps treat inoperable brain tumours or arterial venous malformations that can be attacked with an intense, pencil-thin X-ray beam. The more focused the beam, the better the treatment.

WHAT IT DOES The Lucite globe has roughly the same density as the brain (1.1 g/cm³). The oncologist can use the Lucy Phantom to tweak the x, y and z coordinates of the radiation beam so it will hit precisely the right spot in the brain during the patient's treatment.

WHO CREATED IT Easton's lab developed the Lucy Phantom, one of the best-known devices to come out of the machine shop at Odette.

THE PAYOFF Oncologists can better plan the treatment for each patient. "The tool provides quality control and quality assurance on the system and simulates the treatment," says Easton.



2 Building better MRIs

WHAT IT IS Specially designed coil-and-bed system to improve the detection and biopsy of breast cancer.

WHAT IT DOES MR images help doctors detect cancerous lesions in the body. Specially designed coils surround the body part of interest and receives the signals that are transformed into images. For years, breast MRIs were done using coils designed for something else.

WHO CREATED IT Twenty years ago, Dr. Don Plewes, a senior scientist at the Sunnybrook Research Institute, with then-graduate student Cameron Piron, began developing a system that would improve MRI results, particularly among women with a high risk of developing breast cancer. "The design optimizes the signal-to-noise ratio to improve the image quality and puts it into an elegant package that could be coupled to any commercial hardware," says Dr. Stuart Foster, the head of the Centre for Medical Device Design.

THE PAYOFF The work was spun off into a company called Sentinelle, was acquired by Hologic Inc. in 2010 for \$85-million.



3 Sowing seeds of treatment

WHAT IT IS A stable platform (a flat, square block of ultra-lightweight plastic) punched with a grid of small holes, allowing needles tipped with radioactive pellets

to be inserted into precise locations in or adjacent to cancerous tissues in the breast. An ultrasound machine visualizes the work.

WHAT IT DOES It makes it possible for breast cancer patients to receive what used to be a daily six-week treatment all in one afternoon.

WHO CREATED IT Inspired by a prostate cancer treatment, the device was first modified and custom-designed at Sunnybrook by Easton's machine shop at Odette with Dr. Jean-Philippe Pignol.

THE PAYOFF The machine shop in Odette Cancer Centre has manufactured three sets for Sunnybrook and additional devices for other hospitals. Core Oncology now markets the device.

4 Lining up the lasers

WHAT IT IS Oncology treatment machines must be calibrated before treatment can begin, but rarely are there physical devices that ensure the machines are in peak shape.

WHAT IT DOES A transparent block allows technicians to calibrate the lasers used to position a patient in before his or her treatment. If the lasers are off even slightly, the radiation beam won't hit its target precisely. When the block is in place, clinicians can see that immediately: the laser beams won't line up with the marks on the block.

WHO CREATED IT Easton and his crew at the Odette lab.

THE PAYOFF The device is now being used in locations in Canada and in Florida.

5 Shooting microimages

WHAT IT IS The world's first high-frequency ultrasound tool.

WHAT IT DOES It uses high-frequency transducers, making it possible to see tiny features in real time. Clinical applications include neonatal imaging and the diagnosis of eye and skin diseases.

WHO CREATED IT When Dr. Stuart Foster couldn't find a device that would allow him and his team to look at the tiny blood vessels that feed blood into a mouse tumour, he decided to build it himself.

THE PAYOFF Universities and national health labs wanted them and hundreds were sold. The company, VisualSonics Inc., was bought by Sonosite Inc., in 2010 for \$71-million. ■

BABY STEPS

Sunnybrook guides older mothers through the challenges, possible complications—and, of course, the joys—of pregnancy **By Michael McKinnon**



Eva Mpardakis, 42, turned to in vitro fertilization treatments to start her family, but faced complications early in her pregnancy and was admitted to Sunnybrook's Aubrey & Marla Dan Program for High Risk Mothers & Babies. While complications are common with moms-to-be in their late 30s and 40s, the proper care and approaches can lead to a healthy birth, says Dr. Arthur Zaltz, Interim Chief of Obstetrics and Gynaecology. On Jan. 31, Eva gave birth to a healthy boy, Konstantinos Jr. Mpardakis.

FORTY MAY INDEED BE the new 30, but some women are surprised their bodies haven't "gotten the memo" when it comes to having a baby. Women who decide to start a family in their late 30s or 40s often learn even conceiving is out of the question without assistance, and that getting pregnant is only the beginning; older moms-to-be face increased risks of gestational diabetes, hypertension and premature births, among other concerns.

"This is not groundbreaking news: the average age of women getting pregnant for the first time is going up and that can lead to consequences," says Dr. Arthur Zaltz, interim chief of Obstetrics and Gynaecology. "The older you are, the greater the probability you're going to have the whole gamut of issues."

Dr. Zaltz is quick to point out this demographic has its advantages, too. "The reality is that most of the women in my practice are older, 35 and beyond, and sometimes they are healthier and take better care of themselves than the younger women I look after," he says. "Women who are getting pregnant at a later age are often highly educated, less likely to be smokers or overweight, and are in physically better condition."

To be sure, Sunnybrook—with a \$160-million, state-of-the-art Women & Babies space, including the country's most modern neonatal intensive care unit (NICU) and a program focused on high-risk moms—is uniquely positioned to care for these patients should complications arise. Here's how Sunnybrook helps.

FERTILITY

A woman's ability to get pregnant naturally begins declining at age 30; that decline speeds up at 35, plummets to about five per cent after 40 and continues dropping. By age 45, according to 2009's *Raising Expectations: Ontario's Recommendations of the Expert Panel on Infertility and Adoption*, the likelihood of a first-time mom getting pregnant with her own eggs is virtually zero.

"The degree to which a woman's fertility declines after 40 is shocking—and it's a conversation I have with patients daily," says Dr. Marjorie Dixon, a specialist in reproductive endocrinology and infertility at the Sunnybrook-affiliated First Steps Fertility, a staff physician in Sunnybrook's OB/GYN department and co-author of *Raising Expectations*. She points out that the number-one determinant of success with any type of fertility therapy is the woman's age.

Partnered with Sunnybrook, First Steps has the advantage of being part of a broad spectrum of seamless care, Dr. Dixon says. Patients may first go to Sunnybrook for gynecologic surgery, be referred to First Steps to conceive and then head to Sunnybrook's state-of-the-art labour suite again to deliver. Sunnybrook has an arsenal of world-class experts and cutting-edge technologies ranging from obstetricians and specialized gynecologic surgeons, maternal-fetal medicine specialists, experts in the management of menopause, gynecologists and also fertility specialists.

"Certainly, the assistive reproductive technology has changed our thinking; people are able to get pregnant through those modalities who would not have been able to 40 years ago," says Dr. Zaltz. "Most problems can be dealt with." But both Drs. Zaltz and Dixon urge women to start the conversation long before starting a family is even on the horizon. "And this is to empower women," says Dr. Dixon. "In your 20s, when finishing your education and starting your first job and thinking about buying a home, you need to also have the thought: 'Do I even want a family?' If you do, be proactive about it

and be sure the clock isn't ticking faster than you expect it to."

GESTATIONAL DIABETES

Older women are three times more likely to develop gestational diabetes than their younger counterparts, according to *In Due Time: Why Maternal Age Matters*, a September 2011 report by the Canadian Institute for Health Information. Using 2007 data, the report indicates women over 40 have a one-in-eight chance of gestational diabetes, compared to a one-in-12 chance for women 34 to 39, and one-in-24 for women 20 to 34.

And poor blood sugar management can lead to problems for both mom and baby, explains Julie Paterson, a Sunnybrook diabetes nurse educator. Babies can grow too large, for example, causing trauma during delivery, or suffer a low-blood sugar reaction during delivery and require care in the neonatal intensive care unit. These patients are also more prone to breathing problems at delivery and developing jaundice, while larger babies can lead to an increased risk of Caesarean sections.

Sunnybrook gestational diabetes patients receive a blood glucose meter with which to test and record levels. They also attend educational classes about healthy eat habits, and are followed every two weeks in the obstetrics endocrine clinic until they deliver, and then post-partum. "If we can control the blood sugars, we can prevent these things from happening," says Julie.

HYPERTENSION

Older moms are also at an increased risk of developing gestational hypertension, which can lead to low birth weight and

early delivery. *In Due Time* indicates 20- to 34-year-olds have a 3.9 per cent chance of getting gestational hypertension, 35- to 39-year-olds a 4.2 per cent chance, and those 40-plus a 5.6 per cent chance. The risk of pre-eclampsia also increases significantly for those over 35.

While the condition is treatable, the tricky part for some is trading that business trip or important trial for much-needed bed rest. While these patients may not be used to losing control of their careers, Dr. Zaltz says most realize getting off their feet and slowing down is for the best. "It becomes about the baby and not them," says Dr. Zaltz.

PRETERM

Women 35 and over have an increased risk of preterm births, with rates more than 20 per cent higher than for those 20 to 34, according to *In Due Time*. This demographic is also more likely to have multiples due to their increased use of assistive reproductive technology, and *Raising Expectations* points out more than 50 per cent of twins and 90 per cent of triplets are born prematurely.

Prematurity comes with a long list of complications, including lung infections and learning disabilities. Sunnybrook's NICU, which opened in September 2010 and is the newest and most modern level III facility in the country, cares for 20 per cent of all infants in Ontario weighing less than three pounds.

Sunnybrook is also the only hospital in Ontario using human donor milk, which has proven to drastically reduce infections and improve patient outcomes, and is among the top three hospitals in Canada for healthy lung outcomes.

And the NICU Follow-Up Clinic tracks the progress of each child at least until the age of six, working to ensure these patients have the support they need within their communities; follow-up care for preemies elsewhere typically ends at the age of two. The clinic is directed by Dr. Paige Church, one of only two pediatricians in North America and the only one in Canada with a combined fellowship in Neonatal-Perinatal Medicine and Developmental Paediatrics.

The good news is that, with the help of Sunnybrook's multidisciplinary team, starting a family can absolutely be a dream come true for these patients. "Despite the increased concerns with advance maternal age, good preventative care, good health and supportive obstetrical care can lead to the birth of a healthy baby," says Dr. Zaltz. ■



Dr. Arthur Zaltz

LIVING WITH HEART

Patients can live a normal life with an implanted defibrillator device, with some awareness and basic precautions **By Alexis Dobranowski**



RUDY NUSINK LIVED EACH DAY with a looming fear of dying when an ICD (implantable cardioverter defibrillator) was first put into his chest. “When it was first in there I was scared to death,” Rudy, 63, recalls. “It’s the unknown. You’ve gone through an episode [heart attack] where the bulk of people never make it past the stretcher. And now they are going to put this in you with the fear that when it happens again, is it going to work? Every little twitch you think, ‘Oh my God. This is it. This is the end.’” But after nearly two decades of living with heart disease and heart attacks, Rudy has grown to trust the little device that can save his life.

ICDs monitor the heart, shocking it into rhythm if needed. They are implanted when a patient has survived a cardiac arrest or a life-threatening heart rhythm and is at risk of it happening again, or if a patient is deemed high-risk but has never had a cardiac arrest. That’s true of about 90 per cent of people with ICDs, who have

them preventatively, says Dr. David Newman, a cardiologist at Sunnybrook’s Schulich Heart Centre. “It’s a safety net. For some patients, adapting to the fact that you might have to jump into the safety net is difficult,” says Dr. Newman. “We all walk around knowing we will someday die, but we don’t all have an ongoing physical and psychological reminder that the sword, so to speak, is over our head at this moment. People have to cope with the possibility that this machine may go off.”

And by “go off,” Dr. Newman means a 600- to 700-volt shock to the heart. Most often, ICD patients receive appropriate shocks: the machine detects a life-threatening arrhythmia and shocks the heart back to normal, usually after the failure of less painful rapid pacing manoeuvres to try to restore normal rhythm. On rare occasions some patients will get a shock when it’s not really needed, due to machine malfunction or a quick but benign heart rhythm.

“Getting a shock—appropriate or inappropriate—allows some patients to feel greatly reassured,” Dr. Newman says. “For other patients, getting a shock is a reminder of their frailty.”

Rudy, for instance, has received nine shocks—all of them deemed appropriate. “It feels like my chest is exploding,” he describes the ICD action. “Now I’m starting to feel like I can go around without any fears, without any apprehension of having to rely on someone else with an external defibrillator. I know I’ve got my little buddy inside of me that can give me a whack.”

But while living with an implantable heart device has complex psychological effects, it shouldn’t stop patients from living a full life. Sunnybrook nurse practitioner Suzette Turner meets with patients in the arrhythmia clinic to help them deal with their ICDs in a positive way. Many patients suffer from shock anxiety and behavioural avoidance, she says. “They may



think it’s something they did that caused the shock, and so they want to disengage in life,” she says. “We encourage people to carry on living their lives fully. This is there as an emergency system and if it were to happen, know you are protected.”

It’s an adjustment for the whole family, Rudy says. His adult children might wonder if it’s safe for him to hold an infant grandchild, for instance, or to babysit.

The fear factor can affect intimate relationships as well, Dr. Newman and Suzette point out. “There’s the patient’s perceived sense of frailty. There’s angst over proximity to death,” Dr. Newman says. “There’s the physical fear of getting shocks, or even of giving their partner a shock—which is not a realistic or practical concern, but you can imagine where that goes in someone’s imagination.”

Suzette encourages patients to start with simple acts, like hugging, cuddling and kissing. And Rudy says his treatment has brought him closer to his wife Petra. “With a lot of [heart medications], there are secondary impotency problems. And it’s more in my mind than in hers. But it hasn’t destroyed anything between us. I’m happy to say I actually think it’s brought us closer together. We talk about everything; she’s very accepting that way and she’s very supportive.”

For other patients living with heart devices, Rudy offers some advice: “A lot of people may want to just go in the corner and die but I’ve tried to maintain as much

as I possibly could,” he says. “Relax. This is just another additive to the whole regime—the drugs, the counselling, the diet. It’s a security thing, and the alternative isn’t any good. It’s not always easy but it’s worth it.”

4 Tips for Living with an ICD

- 1 **ASK QUESTIONS** Be assertive in expressing your concerns to your health-care provider in the device clinic. Write down your questions in between appointments. Seek support from a counsellor or psychologist if you are having difficulty coping or having trouble with intimacy.
- 2 **PARTICIPATE IN PHYSICAL AND SOCIAL ACTIVITIES**
- 3 **TRY RELAXATION TECHNIQUES LIKE YOGA OR BREATHING EXERCISES**
- 4 **FOCUS ON THE POSITIVE ASPECTS** “Everyone has a different notion to living a life. Live your life. And engage your life,” nurse practitioner Suzette Turner says. •



DRIVING WITH AN ICD

After receiving a shock, ICD patients are unable to drive for one to six months, depending on why a device was originally implanted and if the shock was deemed appropriate. Generally, the recommendation not to drive is communicated to the Ministry of Transportation, which then decides what to do about the patient’s driver’s licence status.

“The machine, you will recall, is not necessarily there to prevent an [abnormal rhythm or heart attack], it’s generally there to treat after the fact,” Dr. Newman says. “So imagine, you are driving along on the 401 and the machine works. It’s still going to take eight to 10 seconds, at the shortest, to sense that there’s an abnormal rhythm and charge up and shock your heart back to normal.”

During this time, the patient may feel dizzy, lightheaded and may feel a shock. “If you are behind the wheel, this may impair you. We tell patients they shouldn’t swim by themselves or ride a horse by themselves,” Dr. Newman says.

Rudy has been cleared to drive, but limits his trips. “Personally I won’t drive in to the city. I’ll drive just close to the coffee shop,” he says. “I don’t want to endanger anybody else. I know what could happen.” Rudy relies on public transit or his wife, Petra, to take the wheel on longer trips. •

'THREE STROKES, YOU'RE OUT'

A Sunnybrook team detected one patient's high risk factors, performing delicate surgery that saved him from a massive stroke. Here's how the stroke team did it **By Celia Milne**



ON CANADA DAY 2011, Robert Fitzgibbon held onto life by a thread. While other families frolicked in the sunshine, enjoying a national holiday, Robert underwent a delicate procedure at Sunnybrook while his daughter Joy paced the halls.

The surgery—which went well and, by all accounts, saved Robert's life—was a carotid endarterectomy. It was needed to remove a large blockage in his left carotid artery, the major supply of blood flow to the brain. While the operation itself is a minor miracle, the detective work involved in figuring out that Robert needed this life-saving surgery is a modern medical marvel.

The joy of Robert's story is that astute doctors in Sunnybrook's Regional Stroke Prevention Clinic realized he was a ticking time bomb, and that they had to act with lightning speed.

"If we had done nothing, I fear he would have suffered a major disabling stroke," says Dr. David Gladstone, a stroke neurologist and director of the clinic.

Robert's whirlwind story began in June 2011, when he had a knee replacement operation at a hospital near his home. He was long overdue for this surgery, but had been consumed for years with caring for his wife, who died of acute leukemia in 2009. Two days after Robert's knee surgery, he had a transient ischemic attack (TIA, a minor stroke), resulting in sudden weakness, loss of feeling and incoordination of his right arm and hand. A week after that, he had another TIA, this time affecting vision in his left eye. These were stroke-warning events.

When his doctors consulted colleagues at Sunnybrook about his case, he was assessed right away at Sunnybrook's Dr. Thomas and Harriet Black High-Risk TIA Unit. This innovative outpatient service is part of the Scotiabank Rapid Investigation & Stroke Prevention Program, one of only a few such specialized rapid-response clinics in the country dedicated

Robert Fitzgibbon and his daughter Joy, who waited anxiously while her father had carotid endarterectomy surgery on Canada Day 2011

to high-risk stroke prevention.

Here, stroke neurologists Drs. Gladstone, Julia Hopyan, and Rick Swartz, assisted by Drs. Karl Boyle, Vince Basile, Layla Safinia, Marc Narayansingh and Mark Boulos, clinical nurse specialists Armi Armesto and Cathy Bouthillier, and medical secretaries, run one of the busiest stroke clinics in Canada and work in close collaboration with expert neuroradiologists and imaging technologists, cardiology non-invasive lab, psychiatrists, rehabilitation therapists, and surgical colleagues like Drs. Leo da Costa, Andrew Dueck and others. This interdisciplinary team is dedicated to condensing months of tests and appointments into a single day so patients are fast-tracked to "same-day

"I don't know if I would have lasted another day. Another stroke would have been fatal. Three strokes, you're out. They saved my life, literally."

“ Robert Fitzgibbon
patient, Stroke Prevention Clinic

diagnosis" and initiation of a treatment plan for aggressive risk reduction. "I call it one-stop shopping for stroke prevention," says Robert. The clinic is a teaching ground for international trainees and Accreditation Canada praised the clinic as a "leading practice" in its external review of Sunnybrook last year.

State-of-the-art diagnostic imaging includes MRI scanning of the brain and blood vessels, specialized neuro-Doppler ultrasound studies performed by Diane Brodie and colleagues to identify dangerous blockages, and cardiac testing. "With the advanced diagnostics at our disposal we aim to obtain the most rapid and accurate assessments for patients with stroke warning symptoms," says Dr. Gladstone.

This is important because research

shows up to 80 per cent of strokes that occur after a TIA may be prevented if the underlying causes can be found and treated right away—a significant statistic, given strokes are very common: someone dies or is disabled by a stroke every 10 minutes in Canada, making it a leading cause of death, disability and dementia.

Robert and Joy remember many staff members staying late on that late June night to complete tests, adjust Robert's medications and compile a detailed report on his condition. "Dr. Gladstone and his team moved with such urgency and such efficiency, it's hard to believe," says Joy. Robert's tests revealed his mini-strokes were coming from a heavily calcified atherosclerotic plaque blocking 80 per cent of his left carotid artery, an extremely precarious and life-threatening situation.

"When a plaque starts to rupture like this," says Dr. Gladstone, "there is an immediate risk of more strokes, so it had to be treated right away."

Joy, who has a PhD in political science and works in public health policy, remembers Dr. Gladstone telling her that her dad had leap-frogged to the top of the surgical list. "He was very calm. He didn't alarm us, but he was very serious. I've never thought medical exams could be graceful and fluid. Dr. Gladstone was poetry in motion," she says.

Surgeon Dr. Dueck was brought in to perform Robert's carotid endarterectomy on the July 1 statutory holiday, just two days after the diagnosis was established. In contrast, provincial wait times for this procedure have averaged 30 days, according to Dr. Gladstone's research—a statistic he wants to see improve province-wide.

Robert, who is now fully recovered after rehabilitation therapy, continues to operate two book stores and has not had any more attacks. He is grateful to the team at Sunnybrook, knowing how close he came to death.

"I don't know if I would have lasted another day. Another stroke would have been fatal. Three strokes, you're out. They saved my life, literally," says Robert.

"In my case, Dr. Gladstone and his associates took what was a terrifying experience that was perilously close to a tragic ending and turned it into a success story of great blessing. And they did it all with such professionalism, sensitivity and gentleness," wrote Robert in a letter to Sunnybrook after he recovered.

"If Dad had not been connected at the Stroke Clinic at Sunnybrook, I don't think he'd be with us," says Joy. "It was extraordinary care—off the charts incredible." ■

WARNING SIGNS

How to spot a possible TIA – and how to prevent one

Having a mini stroke is a warning sign the big one might be coming. A transient ischemic attack (TIA, or mini stroke) occurs when a blood clot prevents blood flow to the brain for a short time, depriving it of oxygen and glucose. Symptoms are the same as in stroke, but they generally disappear within a few minutes or hours. That's where the expression "transient" comes from.

If you've had a TIA, you are five times more likely to have a stroke over the next two years, according to the Heart & Stroke Foundation. Each year 15,000 people in Canada experience TIAs.

If you or someone you know is experiencing the sudden onset of these symptoms, even temporarily, call 911.

- Sudden weakness, numbness or tingling in the face, arm or leg
- Sudden loss of speech or trouble understanding speech
- Sudden loss of vision, particularly in one eye, or double vision
- Sudden severe and unusual headache
- Sudden loss of balance, especially with any of the above signs

To prevent strokes, factors you can control include maintaining a healthy lifestyle, ensuring good blood pressure control, healthy diet, exercise, and not smoking. •

MESH FOR SUCCESS

A new high-tech biologic mesh is making hernia surgery safer, and recovery time quicker, for patients **By Alexis Dobranowski**



IF IT WEREN'T FOR a pioneering abdominal wall reconstruction (AWR) surgery, a complex hernia may have prevented Peter Landers from playing with his grandchildren in the sand this past spring break.

"This hernia was debilitating: on a scale of one to 10 it was a 10," Peter says. "I had to wear the girdle 24/7 to hold my stomach in. To do anything was extremely uncomfortable." But thanks to the surgery, which uses mesh to hold together a separated abdominal wall muscles, the 65-year-old Barrie resident was excitedly heading south after a long string of health problems kept him laid up for nearly four years.

After a series of surgeries related to cancerous tumours on his bowel and liver, Peter developed an abdominal hernia so big he had to wear pants five sizes larger. "My stomach was cut up pretty good," Peter recalls. "When I was rehabbing,

the incision in my stomach didn't really heal properly so there was a three-inch gap there."

Peter spent five and a half months in a Barrie hospital waiting for the incision to heal. The waiting added to his fear and frustration about being ill. "The oncology team came in because I was supposed to start chemotherapy, but I couldn't get chemo because of the incision not healing," Peter says. "I wasn't in good enough health."

When Peter visited Odette Cancer Centre, Dr. Calvin Law suggested he visit Dr. Fred Brenneman, a Sunnybrook trauma surgeon skilled in complex hernia repair who is pioneering the AWR surgery that uses mesh to hold together the separated abdominal wall muscles. "Hernia surgery is the most common operation that general surgeons do, but these are the most complex hernias that require more

resources to look after," Dr. Brenneman says. "They are more complicated and they are often associated with bowel surgery at the same time."

AWR is performed at specialized health centres in the United States, but few are done in Canada. "We are working to help bring this to Canada," Dr. Brenneman says. "There are identified leaders across the U.S. that do this and they are in the same situation as I am, where they will take referrals for the most complex hernias from other surgeons."

Most of these patients are burdened with abdominal pain or discomfort and a heavy feeling, because the hernia is large and hangs from their abdominal wall muscles. "They struggle to do anything that involves straining or engaging abdominal wall muscles," says Dr. Brenneman—even functions as basic as urinating or bowel movements can be difficult.

There was a need to establish an AWR program at Sunnybrook because of the oncology program and trauma expertise there, Dr. Brenneman says. As of February 2012, he has performed 96 complex AWR

Abdominal wall reconstruction surgery changed his life. "All of a sudden there's a light at the end of the tunnel."

“ Peter Landers
surgical patient

surgeries. "There are patients coming out of those programs after their cancer surgery or after their trauma surgery and they develop these complicated abdominal wall hernias. We developed expertise in looking after those patients and that became well-known. And then the referrals

started coming essentially from across Ontario and, really, from even further." Dr. Brenneman has travelled to other hospitals throughout Ontario and as far away as Nova Scotia and Newfoundland to help surgeons learn AWR techniques.

For patients with extremely complex hernias and risk of infection, such as Peter, biologic mesh made from real human or animal tissue is used. When Peter heard about Dr. Brenneman's expertise, he was optimistic. But funding limitations threatened his chance of getting the surgery, which is not yet covered by the government. "I was getting very adamant about getting it done to improve my quality of life," Peter says. "After three and a half years, you get depressed."

Peter finally underwent chemotherapy early last year. In September, when funding was secured, Dr. Brenneman performed a seven-hour-long surgery. Six months later, Peter had his bags packed for Florida, brand new beach buckets for his grandchildren and his golf clubs waiting by the door.

"All of a sudden there's a light at the end of the tunnel, and somebody else doesn't have their hand on the switch," Peter says. "My hand is on the switch now, and it's a matter of taking my time and doing it right and we don't end up with a problem again." ■



Caption here for the image (above). Caption here for the image (right).

WHAT IS BIOLOGIC MESH?



An abdominal wall reconstruction (AWR) procedure generally involves synthetic mesh, which reconnects the separated sides of the abdomen and corrects the hernia. But in some patients, the surgeon can't use synthetic mesh because of a high risk for infection—which can mean more surgery and a long, painful recovery. Biologic mesh is made from human or animal tissue and is resistant to infection.

Without biologic mesh, these high-risk patients (patients with infected mesh, those undergoing bowel surgery, the immunosuppressed and others) can't have the procedure at all. "We use either a synthetic or a biologic mesh and our decision on which one to use is determined by the risk of surgical site or wound infection," Dr. Brenneman says.

Both synthetic and biologic meshes are improving every year. "There's a lot of research and development put into these meshes," says Dr. Brenneman. "The synthetic meshes we are using today are a lot better than the synthetic meshes we were using 10 years ago, even five years ago," he says. "There's continual innovation. The biologic mesh, although expensive, has meant a huge improvement to the AWR surgery that we are now able to do at Sunnybrook." •

TO SCREEN OR NOT TO SCREEN?

BY DAN BIRCH

Last November, a Canadian task force of medical professionals concluded women in their 40s at average risk of developing breast cancer should not be routinely screened with mammography. The potential harms of so-called false positives and unnecessary biopsies outweighed the potential benefits of screening in average-risk women, the Canadian Task Force on Preventive Health Care guidelines said, stoking an ongoing and contentious debate.

The task force made five additional breast cancer screening recommendations for average-risk women, including on the use of magnetic resonance imaging and breast self-exams. Three Sunnybrook staff with expertise in breast cancer care and imaging recently sat down to discuss all the recommendations.

“Women should really seek out information to find out if they really are average risk, because many women aren’t aware of the full impact, for example, of family history on both sides of the family and other risk factors that may increase their risk of breast cancer.”



DR. ANDREA EISEN
co-chair of Cancer Care Ontario's Breast Site Group, is head of Sunnybrook's Familial Cancer Program, which provides risk assessment of hereditary cancer syndromes to patients and their families with a focus on breast, ovarian and colorectal cancers.

“From personal experience, having had callbacks for mammograms and biopsies that turned out to be benign, it's incredibly stressful... There are more women who have the stress that turns out to be for nothing, than there are women who actually have their cancer diagnosed.”



DR. ELLEN WARNER
is a medical oncologist at Sunnybrook's Odette Cancer Centre who led a study proving the benefits of adding MRI to mammography for screening very high-risk women. She is also the author of a recent review article in the *New England Journal of Medicine* on breast screening for average-risk women.

“The reason the Canadian Task Force on Preventive Health Care have taken this position is they believe the benefits of the lives saved through screening are not much greater than those harms. I disagree strongly with the recommendations.”



DR. MARTIN YAFFE PhD
and senior imaging scientist at Sunnybrook Research Institute, led the invention of digital mammography and is co-leader of the Smarter Imaging Program, an initiative of the Ontario Institute for Cancer Research.



EARLY SCREENING: ONE WOMAN'S STORY

Susan Silverman, 62, watched with concern late last year as the debate over screening mammography was making headlines. More than a decade earlier, when the Thornhill, Ontario, resident was 48, a mammogram detected a tumour in her breast. "It showed right away," says Susan, a mother of three who has been married to her husband, Albert, for 42 years. She opted to have a mammogram after two family members were diagnosed with breast cancer in their 30s and 40s.

Further imaging and surgery followed, plus post-surgical chemotherapy and radiation at Sunnybrook, leaving Susan cancer-free to this day. At the time of her diagnosis, she was in the category the task force now says should not be routinely screened with mammography. "That's a very bad idea," she says of the recommendation average-risk women should wait until their 50s to get mammography screening. "Just like any other part of your body, you have to be on top of everything."

Susan worries about the impact the recommendation will have. She wonders if it will discourage women in their 40s from being proactive about their breast health. She also thinks the health-care system will be worse off if breast cancers are discovered later. "To save a few pennies at the front and then pay for it at the end, what are they achieving? I don't get that."

She is thankful the mammogram 14 years ago detected the cancer that might have robbed her of the chance to see her grandchildren. Susan was finishing up her breast cancer treatments in 1998 when she learned she would become a grandmother for the first time. "I said, 'I want to see this little boy grow up, and be at his bar mitzvah.'" She is getting her wish this spring. •

benefits. And it's possible that 15 per cent mortality reduction due to screening mammography today is even less. So, we don't really know, and that's why I think that for women in their 40s it should be between the woman and her doctor to discuss the pros and the cons, and let each individual woman decide if she wants a screening mammogram.

What does the task force mean when it refers to terms like false positives and over-diagnosis?

DR. YAFFE: When screening is done two pictures are taken of each breast. Using those images, about 93 per cent of women can be told they do not have cancer. In the other seven per cent, the radiologist would like the woman to come back for additional images to make absolutely sure there is no cancer. In only about one per cent of those women screened is a needle biopsy performed, and depending on their age, one-quarter to one-third of that one per cent is found to have cancer.

So when women are called back for imaging and don't have cancer, that's called a false positive. Certainly, being recalled induces stress. But typically it's a relatively short-lived stress, and once you have the answer that stress disappears. It would probably be helpful if when women are called back they are informed that there is only about a one in 20 chance they have cancer.

DR. WARNER: From personal experience, having had callbacks for mammograms and biopsies that turned out to be benign, it's incredibly stressful. There are women who have an abnormal mammogram and then come back months later for an ultrasound or something else. There are more women who have the stress that turns out to be for nothing, than there are women who actually have their cancer diagnosed.

What are your thoughts on the task force's recommendation on screening mammography for women who are in their 40s?

DR. YAFFE: I disagree with the task force recommendations. Most women don't have breast cancer. The whole idea behind screening is that you're trying to find breast cancer in the few women who do, so there is the opportunity to save their lives through earlier treatment.

The task force looked at eight trials of screening with mammography and they pooled the data from those eight trials. Across the board they found about a 15 per cent mortality reduction from screening women in their 40s. They compared that to what they considered to be the harms of screening, including what we refer to as false positives, over-diagnosis and over-treatment.

The reason they have taken this position is they believe the benefits of the lives saved through screening are not much greater than those harms. I disagree strongly with the recommendations. First of all, the 15 per cent mortality reduction they identified is a gross underestimate because it's based on old mammography done in a time when imaging was primitive compared to what it is today. Seven of those trials were done in the 1960s, '70s and '80s. The eighth and most recent one finished just after 2000, and there, when you look at the women who actually did receive the mammography, the result was a 24 per cent mortality reduction from screening women in their 40s.

DR. WARNER: Treatment of breast cancer has tremendously improved. Back in the 1960s, we weren't giving adjuvant therapy to anybody. We were doing surgery and then saying good luck. Now, most women will get some kind of additional treatment, with huge



DR. EISEN: The other thing about over-diagnosis is the concept that maybe we're picking up latent breast cancer that would never clinically cause a problem—much along the lines of the prostate cancer screening issue, where we know there's a very high prevalence of indolent [slow-growing] prostate cancer.

DR. YAFFE: Part of the challenge of dealing with breast cancer once it's detected is figuring out which breast cancers are going to be the aggressive ones that really need to be treated aggressively and which ones aren't. If we could do that—and that's really the subject of ongoing research—I think it would be possible to do something closer to "watchful waiting."

What strategy should a woman in her mid-40s, with little knowledge about her breast cancer risk, take?

DR. WARNER: She needs to be what we call "breast aware." We used to recommend that women do monthly breast self-examination in a very diligent manner. Randomized trials have shown that doesn't reduce mortality, but that doesn't mean a woman shouldn't be able to find lumps as early as possible.

She needs to know what her breasts normally feel like, so that if something changes she can say, 'Hey, that wasn't there a month ago; I better go see my doctor right away.'

Plus, there are various lifestyle things women can do that are helpful: avoiding hormone replacement therapy if they go into menopause and don't need it, minimizing alcohol consumption, exercising and keeping their weight down, especially after menopause.

DR. EISEN: Women should really seek out information to find out if they really are average risk, because many women aren't aware of the full impact, for example, of family history on both sides of the family and other risk factors that may increase their risk of breast cancer. There is a program in Ontario now to start screening with mammography and MRI at age 30 for women who are at very high risk, mostly for hereditary reasons.

What are some benefits of early breast cancer detection?

DR. EISEN: The prognosis is better and the treatment required may not be as intensive as for someone diagnosed at a later stage. At the most basic level,

if you have a very large tumour you may require a mastectomy instead of a lumpectomy or breast conserving therapy. You may require chemotherapy versus no chemotherapy, or if you do need chemo you may need a more aggressive chemo regimen.

What impact could the mixed messaging around mammography have on breast care in Canada?

DR. YAFFE: In the United States, the volume of mammography in women in their 40s has gone down, despite the fact the U.S. federal government almost instantly rejected the American task force recommendations in 2009 [that suggested screening every other year for women aged 50 to 74]. Nevertheless, just because of the publicity, fewer women—not just in their 40s but for all ages—are actually getting mammograms in the U.S.

DR. EISEN: I think that is really a concern in general because the uptake of screening mammography, even for women eligible for the organized screening program in the over-50 category, is far from ideal. In Ontario, it's about 70 per cent of women who are eligible that obtain routine screening mammography.

What about using mammography to diagnose a breast concern, such as a lump? Is there any debate?

DR. YAFFE: There is no controversy whatsoever about the value of diagnostic imaging if a woman has symptoms or any kinds of signs of breast cancer. Even those who most strongly oppose screening don't dispute that. The issue is really screening. But frequently, when the media conveys that message to the public, they will simply say something like, "Mammography not useful, experts say." ■

PATIENTS FIRST

The new Office of the Patient Experience focuses on the whole Sunnybrook experience, from a fresh new point of view **By Allison Dunfield**



FOR THE PAST DECADE, Sunnybrook's Trish Lospinuso had been asking staff and patients to put her out of business. The former patient relations advisor finally got her wish in November (in a sense), when the new Office of the Patient Experience was created this past November.

Patient Relations, says Trish, who is now one of the hospital's three Patient experience advisors, was basically a complaints department: when a conflict or difficulty arose, patients would be directed there, and she and her co-workers would smooth things over. But the new office comes with an entirely new philosophy toward improving patient satisfaction, in which staff and patients work together to resolve minor concerns before they escalate into major disagreements.

The new centre is based on principles of customer service. Trish admits, "It's a real culture shift." The idea came from a

recent visit to the Cleveland Clinic, where a similar office vastly improved the treatment centre's overall patient satisfaction, as measured by surveys. A Sunnybrook team decided the idea would translate here, where patient surveys find clinical care exceptional but the "softer side" of care was sometimes found lacking.

Sunnybrook staff will take ownership of patient experience, using tools acquired in courses designed to improve patient interaction in situations such as dealing with grief, managing angry people and telephone communications. It's a more proactive approach. "We don't have to wait for the patient to tell us they are unhappy," says Trish. As well, compliments for positive actions will be highlighted to patients and staff through recognition programs.

Nicky Holmes, patient care manager of the hospital's D4 ICU, says patients and

visitors on her unit are under duress. "It's a very stressful time for patients and their families. They are going through a lot, they are processing a lot of information." Often, she says, patients are unwilling to "bother" the nursing staff, knowing they are extremely busy. She sees the new office as "a win-win for everybody."

A major aspect of the new office is training an army of volunteer ambassadors, who will fan out into the various wards to talk to incoming patients and loved ones about everything from parking to where to get a good meal to the unit's structure. (During the pilot phase, they're in the D4 ICU, the C5 Trauma Unit and the D5 Orthopaedic and Neurosurgical unit). While the volunteers are not expected to resolve conflicts, they can inform the Patient Experience office if someone is unhappy, hopefully preventing a larger issue from ever arising.

Bob Crookston, one of the newly trained ambassadors, has been also been a Sunnybrook patient. "A new patient coming in is under enough stress as it is, just getting a TV and finding out about parking. If we can have somebody alleviate that concern a little bit, it's a good thing." He says one of the most important things to a patient is simply "knowing someone cares about them."

Celine Peterson is a former patient who has already been helped by the Patient Experience office. The 20-year-old was in a serious car accident in 2009 that shattered her pelvis. She was rushed to Sunnybrook, where she spent a week in traction followed by surgery and then another week in recovery. She was upset to learn, upon looking at her own medical reports, that some of the nurses had characterized her as a difficult, uncooperative patient. She thought those accounts were unwarranted—she was in a great deal of pain at the time—and they made her feel angry and felt powerless.

When she called Trish to discuss her reports she received a quick response, resulting in a meeting for Celine and her mother to discuss her Sunnybrook stay and treatment. She was very satisfied with the outcome, which she hopes will help future patients. "We sorted things out and talked things out. It was really nice to know they are really working to change."

THE RIGHT PATH

Sunnybrook experts to guide teens with mental illness through the health-care system
By Michael McKinnon

THE FIRST SIGN CAME when 13-year-old Mark* lost interest in his beloved soccer. By age 14, his straight-A grades were a thing of the past and his attendance at school was sporadic. He had a new group of friends, and irrational arguments with his parents and siblings were the new norm. His parents tried to connect Mark with a psychiatrist after finding drug paraphernalia in his room, but Mark would refuse to follow through with appointments. Then one night, he just didn't come home at all.

"The parents were in absolute panic," says Dr. Anthony Levitt, Sunnybrook's psychiatrist-in-chief. "Mark arrives home the next morning around 10 a.m., still inebriated and with scratches and bruises, and can't recall the last 10 hours. The nature of both his mental illness and his drug addiction are now life threatening. The parents are in crisis and have no idea what to do."

For families like Mark's, figuring out Canada's complicated mental health-care system is a struggle. Parents piece together information about resources and programs from hospitals, community agencies and social services but are ultimately left on their own to make sense of the approximately 400 treatment programs throughout Canada and the U.S.

And just getting a youth into the system isn't enough; choosing the wrong plan means unnecessary financial strain on the family and, even more damaging, the wrong treatment for the patient. Too many false starts may make the teen give up on trying new treatment options altogether, and the entire family suffers. It's a common situation: Statistics Canada points out that while up to 20 per cent of youths suffer mental health issues, only 20 per cent of those patients get the attention they need.

Dr. Levitt aims to ease the burden on these families with the Family Navigation Project, a Sunnybrook-based resource that would partner families with experts in the mental health-care system. "We're trying to create a place where families in crisis can connect and find the right resources,"



Dr. Anthony Levitt, left, and Dr. David Kreindler are part of Sunnybrook's efforts to improve treatment for youths with mental health and their families

explains Dr. Levitt. "The mental health system is a bit of a black box for many people. The point of the Family Navigation Team is to shed light on what's inside the black box, helping parents to access the information and resources that will best meet their needs and to stay engaged with the family to make sure that care is effective."

"For many adolescents, if they had found the right person at the right time right at the beginning of their journey, years of struggling would have been resolved"

“ Dr. Anthony Levitt
psychiatrist-in-chief, Sunnybrook

These navigators will do the legwork families can't possibly do themselves, such as physically visiting program sites to learn the nuances families won't find by researching them online. Parents will no longer throw darts at a list of treatment options, but rather work with an insider who intimately knows the approaches of individual therapists at clinics out-of-province—and details right down to, for instance, who is in the program at a given time and whether those individuals might enhance or interfere with Mark's treatment. "There's no clear path or place to go for the family or Mark, really, and that's what we're trying to create: a place where families in crisis can connect and find the right resources," says Dr. Levitt, adding that families often consult a long list of options before finding the right one.

While new to Canada, the Family Navigation Project model is common in the U.S., where therapeutic placement specialists connect youths and their patients with the right treatment programs. Sarah Finney, a consultant with Salt Lake City's Educational Consulting Services, says

the model works because families simply cannot do everything themselves. The legwork required is simply too extensive and family decisions are often clouded by emotion. Having an impartial guide goes a long way to find the right treatment at the right time. "What's on the web is only what anyone wants to show, and it's very difficult for families to distinguish what's real and what's not real about these programs," she explains. "Also, it's not the program's job to say out of the hundreds out there whether they are the best program for you or not, because they don't know. They may think they can do a great job with your child, but they don't know that I know that five places can do better."

And while Dr. Levitt will continue to benefit from consultants in the U.S., the Family Navigation Project will finally allow consultants to learn from our knowledge at home. Sunnybrook, with the largest youth psychiatry division in Canada, is a natural location for the Family Navigation Project. Sunnybrook oversees North America's largest mood and anxiety disorders clinic for adolescents, and its Centre for Youth Bipolar Disorder, the only program of its kind in Canada, provides comprehensive and highly specialized care for adolescents between 13 and 18 with bipolar disorder. Dr. Levitt expects the project will improve access to services and enhance resource-matching for youths with mental health issues across Canada and will be duplicated elsewhere.

That will save a lot of heartache and wasted time for teens like Mark and their families. "For many adolescents, if they had found the right person at the right time right at the beginning of their journey, years of struggling would have been resolved. We know that's an issue," says Dr. Levitt. "With the Family Navigation Project, we're getting in the boat with the parents, families and youths. We're helping to take them and lead them in the right direction—and we stay with the family until we find the right path." ■

**Name changed to protect privacy*

FRESH START

A unique Sunnybrook school program is helping students with mental health issues by focusing on how they're functioning, rather than their grades.

"There is quite a gap in how sick you need to be on the inpatient unit and how well you need to be to be functioning at school—and there isn't a whole lot out there for teens who need to fill that gap," explains Dr. David Kreindler, consulting psychiatrist with Sunnybrook's Fresh Start program.

The program features the only Section 23 classroom in Toronto with a parallel focus on functioning and mental health. (Section 23 is the Toronto District School Board's designation for any alternative classroom that includes a therapeutic component targeted at, for example, mental illness, teen pregnancy or a severe learning disability.) Through its multidisciplinary team (a teacher, a child-youth worker, three social workers and a psychiatrist), Fresh Start creates a clearer picture of why these students are struggling.

"Even though our students get a Grade 10 credit toward their high school diploma, the focus is not on getting homework done or doing essays," says Linda Conn, Fresh Start's coordinator. "All the work is done in the classroom because the teacher wants to determine what is getting in the way of students doing work."

Enrolment is capped at eight students at a time (maximum age 20) and the program can last up to 12 weeks; students are transitioned back into regular or alternative schools early when appropriate. Students work with the Fresh Start teacher and a child youth worker in the morning, learn life skills in the afternoon and see Dr. Kreindler one-on-one once a week. If the student consents, there can also be a family therapy component that focuses on student-parent communication concerns.

"We work as a team, and we're all able to share our professional expertise and perspectives to develop a really good idea as to how that student is functioning and how they're interacting with their peers," says Dr. Kreindler. "And that really sheds a lot of light on what it is that is getting in the way of them functioning academically and socially." •

BLOOD RELATIONS

The first-ever Canadian registry and research project for myelodysplastic syndromes will study Canadians with the stem-cell disorders, leading to improved care **By Dan Birch**



TORONTO-AREA RESIDENTS Clara De Abreu and Albert Love are not related, but they share a tie through their blood: they are just two of the thousands of Canadians living with myelodysplastic syndromes (MDS), a collection of stem cell disorders caused by poorly developing and dysfunctional blood cells. Each of them has decided not to let MDS get the better of them—no small feat considering the energy-sapping nature of this incurable disease. “I decided to turn my whole life around and just live for the day,” says Clara, 69, a North York resident diagnosed with MDS in 2004.

With MDS, patients produce too little of one or more types of healthy blood cells in the bone marrow, requiring many to

depend on regular blood transfusions to survive. MDS often becomes acute myeloid leukemia (AML), the most common type of acute leukemia in adults. “You live one day at a time,” says Albert, a 69-year-old Oshawa resident diagnosed in 2010. “You wake up in the morning and when the end of the day comes, you say, ‘Thanks for today.’”

The two are participating in a first-ever Canadian MDS registry and research project spearheaded by Sunnybrook Drs. Rena Buckstein and Richard Wells, co-directors of the hospital’s MDS Research Program. Because MDS is a disease that typically strikes older Canadians, Sunnybrook has partnered with geriatric specialists Dr. Ken Rockwood from

Dalhousie University and Dr. Shabbir Alibhai from the University of Toronto, who have provided key input into the study’s design.

In addition to more traditional disease-specific characteristics and prognostic factors, the national project is studying factors such as quality of life, frailty and concurrent illness among MDS patients. The objective is to develop a much better understanding of disease burden and prognosis in relation to overall and leukemia-

Myelodysplastic syndromes patient Clara De Abreu (above) is part of the first-ever Canadian registry for patients like herself. Dr. Rena Buckstein (right) is one of the doctors spearheading the registry and related research.

free survival and quality of life. “We have representation from almost every province in Canada,” says Dr. Buckstein. With her partners from across the country, she aims to enroll about 500 MDS patients.

“People should listen to their bodies, and for some reason if they feel something is wrong, do not hesitate and wait like I did.”

“ Clara De Abreu
participant, MDS registry

Already, Sunnybrook has enlisted more than 250 patients for the project, which has received seed funding from the Canadian Institutes of Health Research. The project, which could present results in about three years, will help medical professionals interpret the relevance of new clinical trial results. It will also lend insight into MDS disease burden in Can-

ada and how management and outcomes may vary from province to province. This knowledge is essential to guide cost-effective care, Dr. Buckstein notes.

For some patients, an MDS diagnosis is a death sentence carried out in just a few months. For others, the condition lingers for 10 years or more before another illness, or the burden of transfusions or transformation to AML, causes them to succumb. Knowing how to prognosticate between these extremes is crucial to patients, families and physicians, but remains a challenge, Dr. Buckstein says.

Clara and Albert each say they’re taking part in the project because they want to help improve care for future MDS patients. “It will give the research team a better idea of how patients fare,” Clara says, pointing to simple but very telling physical tests that participants complete. For some patients, participating in the project could also lead to improved care now, says Dr. Buckstein, as all participants will be connected to MDS centres of excellence that practice the best, most up-to-date care for the disease and offer clinical trials.

Life with MDS has been difficult. “I started with headaches, and I thought it was migraines so I just ignored it for awhile,” Clara says, recalling her first symptoms in the summer of 2003. Within a few weeks, she was having difficulty walking because of fatigue but continued working. Before switching her care to Sunnybrook in September 2004, a long series of blood and bone-marrow tests, imaging and hospital stays culminated in

Clara’s MDS diagnosis in early 2004. She has been receiving regular red blood cell transfusions (currently every three to four weeks) ever since. “Once I have my blood transfusion, I’m wiped out for that day,” she says, adding she is also very tired the few days preceding transfusion.

Albert has had more than 90 transfusions since his diagnosis in March 2010, and had to be hospitalized due to transfusion complications and pneumonia. He recovered and went five months without a transfusion in the summer of 2011. Being transfusion-dependent is difficult for more than one reason. “It means your level of energy is always fluctuating,” Dr. Buckstein points out, adding that patients must have frequent blood tests, which ties them to the laboratory and can make travel a challenge.

A consequence of blood transfusion is iron overload, adds Dr. Buckstein. “The body has no good way of getting rid of iron, and with time, iron will build up in important organs and eventually shorten life.” To counter this, iron-chelating drugs such as Desferal and Exjade are prescribed.

However, Ontario’s drug plan doesn’t cover Exjade (a newer and much less-onerous treatment) for all MDS patients. Patients take Exjade tablets by dissolving them in water, whereas Desferal is delivered by injections lasting at least eight hours, five to seven days a week. Large welts and skin infections sometimes result.

“I could hardly sleep at night” while on Desferal, Clara says. Fortunately, her private insurance plan covers Exjade (as does Albert’s).

Increased risk for infection, fever and heart problems are among the side-effects of MDS. “There is also the anxiety of developing acute leukemia,” Dr. Buckstein says. Despite the challenges MDS poses, both Clara and Albert are living life to the fullest. Clara devotes time to her many hobbies—making stained glass, volunteering, cooking and going out with friends.

“There are a lot of things that you have to give up,” says Albert’s wife, Katherine, who is deeply involved in her husband’s care. But there is one thing the couple won’t pass up: travel. The two still regularly fly south for quick trips to Caribbean islands.

Clara urges other people to be vigilant. “People should listen to their bodies, and for some reason if they feel something is wrong, do not hesitate and wait like I did.”



HAIR AND NOW

After his own close call with cancer, Michael Suba brought his family's wig salon assets into the Sunnybrook fold—first as a patient service and now as a donor **By Allison Dunfield**



SUNNYBROOK DONOR Michael Suba found his calling through what he remembers as a “terrifying experience”—being diagnosed with Hodgkin’s Lymphoma at 25. Instead of sending him into a depression, Michael says, having cancer and undergoing treatments at Sunnybrook in 1990 gave his life a new direction.

“In hindsight, when I look back on it, it’s the best thing that ever happened to me, being 25 and living like I was in a beer commercial. It has a way of focusing you. Two years later I was married and running off and building something,” says the upbeat Toronto native.

That something was taking on a full-time role at his parents’ medical wig salon, Continental Hair, where he is now president. Michael, who has been cancer free for two decades, grew up immersed in an unusual world: being around wigs, extensions and hairpieces in his parents’ Yorkville salon, established in 1964. But he gave little thought to the family business, or its positive impact on many people (women, in particular), until he was going through chemotherapy treatments at Sunnybrook. During those treatments, Michael heard snippets of conversations from women who had lost their hair and were clients at his father’s salon. Many of

them recognized him from the salon as well, where he was then working part time.

He remembers hearing how much the wigs improved the women’s self-confidence and helped them maintain a sense of normalcy, because they were able to keep their chemotherapy private. “It just showed me how much of a difference it made.”

It was then that Michael, who had a degree in politics from Brock University, decided he needed to take on a larger role in the family business. Being a patient spurred the opening of another Continental Hair salon location. One Sunnybrook staffer overheard that Michael worked in wigs and noted that someone had donated a box of them. He cleaned and washed the wigs for the cancer centre and began sending more used, donated wigs from Continental Hair to Sunnybrook.

Once he completed treatment, he put in a bid to open a second Continental Hair in the hospital. That location has now been at Sunnybrook for 15 years, and Michael says he was honoured to have been able to open a business at the facility that provided him with superior care. “They were so professional and caring that it was calming,” he recalls.

Two decades in the medical wig industry along with his personal experience with cancer have given Michael perspective on the emotional upheaval that hair loss can cause (although, ironically, he didn’t lose any hair himself during chemotherapy). He is enthusiastic about his line of work, despite the fact that many clients are going through a traumatic time. “They feel really comfortable coming here because they know that all the women around them are going through some sort of hair loss. They are not in a regular salon—everybody is in the same boat and we are very sensitive to that.”

At times, there is a festive atmosphere. Women bring husbands, wives, sisters and friends and try on different colours and styles. “They see that they’re not going to look foolish; they’re going to look good. All of a sudden their shoulders get more square and they breathe easier.”

He is now looking forward to a new Continental Hair salon location at Sunnybrook: it’s moving from the Odette Cancer Centre to the new breast cancer centre, opening this year. Michael has a special connection to the new cancer facility, since Continental Hair has donated \$75,000. “They’ve done so much for my family,” explains Michael.

Besides his own cancer treatments at Sunnybrook, his mother, Emma, has had a doctor at Sunnybrook for years and his father, Peter, had quadruple bypass surgery at the hospital and later passed away there, following an aneurysm. “It was very emotional and the medical teams really were very exceptional in helping us through that.”

After his father died, Michael called the hospital and asked how he could help, and they suggested donating to the new breast cancer facility. Michael, whose passion and enthusiasm for Sunnybrook is infectious, says he can’t wait until it opens. “It’s kind of neat to pass by, seeing it being built and look up and say, ‘You know what? I helped out with that.’”

It’s obvious from the way Michael talks about his experiences with Sunnybrook over the years that he is a “superfan.” “If we could all go through life and not know the work that they do, that would be great. But when you need them, it’s wonderful to know that they are there for you.” 🌱

A STRONG FOUNDATION

The new president and CEO of Sunnybrook Foundation has personal motivation behind his professional commitment.



For Jon Dellandrea, there are 1.2 million reasons why Sunnybrook needs investment from our community. They are the patients who count on Sunnybrook each year, and their stories will help Sunnybrook Foundation's new president and CEO make a world-renowned hospital even better.

"Sunnybrook is already a first-rate institute, and I'm inspired by its commitment to doing great things even better," says Jon. "What we do—our bench-to bedside care, our incredible research and innovations—ultimately reaches every patient who walks through our doors."

Jon's commitment to Sunnybrook is as personal as it is professional. "My wife was once one of these patients, and so was my brother. They received excellent care here, like countless others do each and every day. We need to do everything we can for our patients; the foundation's role is to provide the resources to make this possible.

"Sunnybrook's clinical and research achievements are extraordinary, and I look forward to putting all I have to offer behind our pursuit of world-leading health-care innovation. Because, in the end, it's not about the money we raise, but what the money can do."

Jon is recognized as a pioneer in Canadian philanthropy, having been named to the Order of Canada in 2006 for his efforts. He led the University of Toronto's \$1-billion campaign, the largest in the history of Canadian universities, completing it a year ahead of schedule. He followed this success by leading the University of Oxford's unprecedented \$2.5-billion campaign.

"Sunnybrook's aim is to invent new ways to care for the people who count on us at the most critical times in their lives," says Perry Dellelce, chair of Sunnybrook Foundation's board. "We can only do this with investment from our community, and there is no other person in the country more qualified than Jon to build that investment in Sunnybrook."

Sunnybrook president and CEO Dr. Barry McLellan agrees. "We need a strong base of philanthropic support to deliver the innovative care our community needs. Jon has successfully tackled this challenge at other complex, internationally renowned organizations, and there's no question he will succeed at Sunnybrook." 🍀

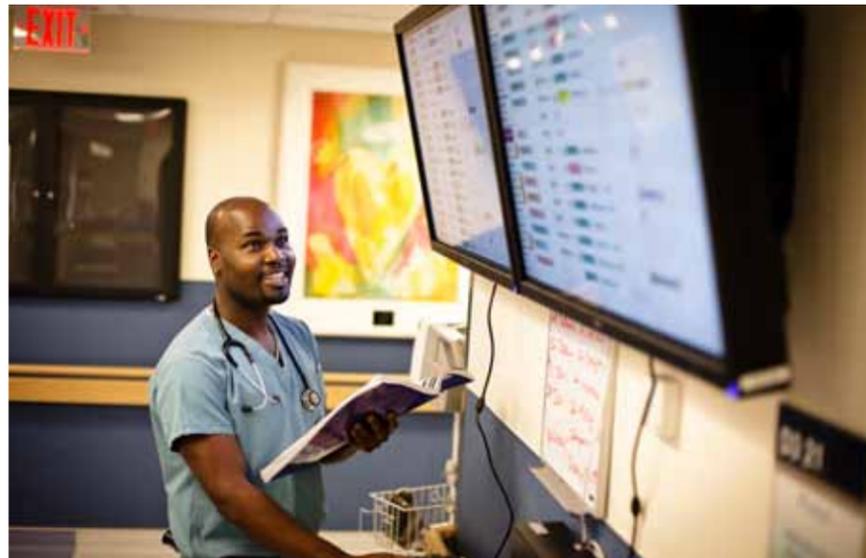
WRITING ON THE WALL

Sunnybrook's acute medical-surgical inpatient units are tackling occupancy challenges with electronic whiteboards, which provide a modern approach to care planning. "With this technology we're developing an excellent visual cue for the care team, which will help identify barriers to discharge earlier, and allow for better planning," says Bev Waite, manager of patient flow. "We think this new system will improve patient care and help the care team communicate."

Part of the hospital's Bed Management System (BMS), the boards replace the dry-erase whiteboards on each unit. Information is fed from the BMS and includes patient-specific information (such as allergies and risk of falls), nursing assignments and a memo board. The new boards also show upcoming events, including tests the patients must go to, and the unit's pending admissions. Milestones the patients must meet before discharge are also visible to the care team.

SMALL TOOL, BIG SENSITIVITY

Dr. Robert Nam is always thinking of the next best thing. "Men deserve better than the PSA test to predict prostate cancer," says Dr. Nam, a Sunnybrook Odette Cancer Centre urological oncologist and Sunnybrook Research Institute scientist. He has already developed the Sunnybrook Prostate Cancer Risk Calculator, a checklist to more accurately determine in minutes a man's risk for the aggressive disease. He is now applying his expertise of prostate cancer biomarkers to a microchip tool (developed by University of Toronto scientist Dr. Shana O. Kelley) that promises to detect very low levels of circulating tumour cells in the blood. The tool promises to help identify early stage and aggressive forms of the disease. Dr. Nam led studies showing several prostate-specific genes strongly associated with the disease, and the hybrid gene TMPRSS2:ERG is a strong predictor of disease relapse.



TIMELY ACCESS IN A TIME OF NEED

A Sunnybrook program is being praised for pairing newly diagnosed colorectal cancer patients with a friendly resource to ease them through a difficult time. "I have to tell you, your role is an absolute gift—the term 'navigator' is perfect," wrote one patient to Barbara-Anne Maier, a specialized oncology nurse with the Colorectal Diagnostic Assessment Program, who has more than 25 years of experience in colorectal cancer care. "Knowing there is someone there with a 'map' to help guide me through all of this makes me feel safe. I feel confident I can focus on other things and not get lost."

The Odette Cancer Centre program reduces anxiety by providing patients with access to a nurse right after diagnosis and before meeting with the oncologist. The nurse offers emotional support and symptom management, books appointments, orders the needed imaging and acts as a general navigator for patients who often feel overwhelmed.

"It really helped my father that things were streamlined and so patient friendly," Bill Panagopoulos says. Bill's father received the unfortunate diagnosis in early January, "but Barbara-Anne helped put us at ease and told us more about what to expect," says Bill.

The program is a collaboration with North York General Hospital.

MOVE ON

A Sunnybrook project is making sure seniors "use it" and don't "lose it" during hospital stays—"it" being their precious mobility. "The ability of seniors to be mobile is tied to their independence, and that can greatly suffer during a hospital stay," says Dr. Barbara Liu, a Sunnybrook geriatrician and executive director of the Regional Geriatric Program of Toronto. "Resting in bed isn't the best medicine for these patients."

Move On (short for Mobilization of Vulnerable Elders in Ontario) aims to make sure seniors are urged, helped and allowed to get out of their hospital beds to stay as active as possible. Too often these patients have one condition treated in hospital, only to find lying in bed for days has severely hurt their mobility. With Move On, staff and family members become partners in getting the patients active. Patients are assessed daily, and expectations are adjusted as mobility increases. Dr. Liu is a lead investigator on a study assessing the program.

"Through the Move On project in Toronto, we have seen the positive impact simply being more active within the hospital can have on our patients. Being active keeps them functional and increases the chances they'll return to the community once the initial condition is treated."

WAITING ON THE O.R.: THERE'S AN APP FOR THAT

A revolutionary, free Sunnybrook operating-room app allows loved ones to track a patient's surgical process in real time. Peace of mind: priceless.



IF YOU'VE EVER BEEN STUCK in a waiting room while a loved one undergoes surgery, you know updates can't come quickly enough.

To alleviate the stress, Sunnybrook staff developed an online tool to keep family and friends in the loop electronically. It's called OR Status.

Each patient gets a booking number upon registering for surgery which can be shared with family and friends. With this number, the patient's progress can be tracked in real time.

Debra Anger, who registers patients for surgery, says the tool makes for a more caring environment for family members at the hospital. "It eases their anxiety because once the patient is behind closed doors, their anxiety starts," she says.

Cynthia Holm, Ms. Anger's teammate, can testify to the impact the tool has had for families. She says, "They can share this number with other members of the family who may not be present. Because it's hard for everyone to take a day off, to wait for four hours or a full day in a waiting room."

Families who have used OR Status are happy to have the new technology. Christine Andrews, who tracked her mother during a knee surgery, says, "You don't feel like you don't know what's going on until the surgeon comes out for you hours later. We knew that things were progressing and going fine, so that was nice." 📧

Sunnybrook's OR Status tool can be found at sunnybrook.ca/orstatus