Peter Munk Cardiac Centre

CLINICAL AND RESEARCH REPORT

VOL. 8 NO.1 / SUMMER 2012

Keeping innovation on the right track

A *DRAGON'S DEN* OF EXPERTS MIX BUSINESS WITH SCIENCE

As part of its ongoing mandate to provide innovative, cutting-edge treatments for patients with cardiovascular conditions, the Peter Munk Cardiac Centre (PMCC) recently implemented a unique solution to a looming funding gap – an Innovation Committee that manages earmarked donor dollars to fund innovative treatments for cardiac and vascular disease.

The Innovation Committee brings together experts to discuss, debate and evaluate new ideas - similar to the popular CBC television show *Dragon's Den* - with an eye to determine how to best spend valuable donations.

Renal denervation, an advanced new procedure for treating unresponsive high blood pressure was a pproved by the Innovation Committee in March and is already being used to treat patients.

continued on page 2…

ABOUT THE PETER MUNK CARDIAC CENTRE

The Peter Munk Cardiac Centre is the premier cardiac centre in Canada. Each year, approximately 37,000 patients receive innovative and compassionate care from the Centre's world-renowned multidisciplinary cardiac and vascular teams. The Peter Munk Cardiac Centre is based at Toronto General Hospital and Toronto Western Hospital. Both hospitals, along with Princess Margaret Hospital and the Toronto Rehabilitation Institute, are part of University Health Network. All four are research hospitals affiliated with the University of Toronto.

…continued from page 1

Consisting of surgeons, cardiologists, nurses, hospital administrators, entrepreneurs, fundraisers, and business leaders, the committee meets on a quarterly basis to determine how to allocate the PMCC Innovation Fund. This fund aims to raise $2 million per year and already has pledges totalling $1.5 million for the first year and $1 million for the next four years.

With a goal to stimulate proposal submissions from PMCC staff and engage medical leadership, the PMCC Innovation Committee held its first meeting in December 2011, followed by one in January 2012, with its first official proposal discussion on March 26, 2012.

"It's a way to foster innovation while making solid business decisions about what new therapies to fund," says Dr. Harry Rakowski, Chair of the Innovation Committee and Director of PMCC's Hypertrophic Cardiomyopathy Clinic. "We also need to keep the patient experience top of mind and make all decisions in a thoughtful and moral way."

Before the committee was established, physicians would ask their division head or administrator for funding to support their idea and that individual would answer "yes" or "no". Dr. Barry Rubin, Medical Director of the Peter Munk Cardiac Centre, questioned whether this was an appropriate approach to allocating donor funds and was keen to minimize selection bias.

"This isn't just physician-driven innovation and it's not only device therapies that can apply for funding," says Dr. Rubin. "Innovative thinking from the entire multidisciplinary team is encouraged. It may not be an expensive proposal, but it may have significant patient impact and those are the types of ideas we're looking for."

Funded by philanthropy

Philanthropy is crucial to maintaining PMCC's spirit of innovation as provincial budgets tighten, especially when the government doesn't have confidence that a new therapy is effective, if it appears very expensive, or if it's very early in development. That's how innovation starts at PMCC - through philanthropy. Then as the program develops, hospital administrators can recommend the procedure to the Ministry of Health and Long-Term Care based on good patient outcomes and cost effectiveness.

PMCC's Mechanical Heart Program is a great example of philanthropy funding innovation. Between the program's launch in 2001 and June 2010, close to $2.7 million in donor support purchased 40 mechanical hearts. This commitment, combined with excellent patient results, enabled the Ministry to announce funding for the program in 2010.

Donor commitment is taken one step further with the Innovation Committee. Jeff Rubenstein, PMCC *Building The Future* Campaign Chair is one of the two fundraisers on the committee, and his role is crucial because of the ownership he takes of the cause of innovation.

"You really want to approve everything because everything is so important, but on the other hand you have a responsibility…there isn't an unlimited amount of funds," Jeff Rubenstein told the *Globe and Mail* after the latest meeting.

Dr. Harry Rakowski is Chair of the Centre's Innovation Committee.

Although Rubenstein and some of the committee's other business leaders may be unfamiliar with making life or death decisions from a medical care perspective, they're quite comfortable articulating concerns about spending habits. Innovation Committee member Jordan Dermer, managing partner for CD Capital, expressed concerns about front-loading spending in the first quarter, leaving insufficient funds for the end of the year. The recommendation was heeded by the Committee.

Objective evaluations

Throughout the two-hour meeting in March, merits of each proposal were discussed by the 13-member panel. A proposal to fund a minimally-invasive procedure to reduce high blood pressure offered promise in societal

cost savings in terms of medication reduction, but these savings would be tough to measure, and the benefits would only be seen in the long term.

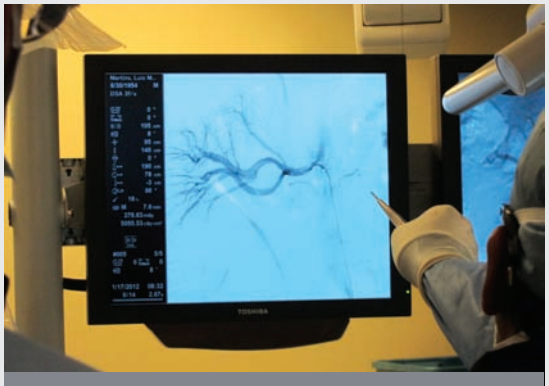
"There's a lot to be said about PMCC being a fast mover and first out of the gate in offering innovative procedures," said one of the committee members. At the meeting, an innovative procedure, known as renal denervation was approved. This has since been performed on three patients, and the Centre plans to treat two patients each week going forward (see below).

Not every application received an easy "A." For example, a proposal for a device to treat leaky mitral valves – described by Dr. Rakowski as looking like "a really good paper clip" - was heatedly debated and many committee members were skeptical of the device's $30,000 price tag. In the end, the committee asked authors of the mitral clip proposal to trim the budget and reduce the requested volume of procedures to see if it could be funded at a lower cost.

"We don't get all the right technology all at once," said Dr. Vlad Dzavik, Director of Research & Innovation in Cardiology at the Centre. "It's an incremental process and this is a step in the right direction if we want to maintain our leadership in leading-edge heart valve repair."

First Canadian renal denervation procedure performed

For the first time in Canada, doctors at the Peter Munk Cardiac Centre have performed a minimally invasive surgical procedure to treat unresponsive high blood pressure, called renal denervation. The procedure can significantly reduce high blood pressure in the approximately 250,000 patients whose hypertension cannot effectively be treated by drugs. These patients, endure an especially high risk of heart attacks and strokes, which continue to kill thousands of Canadians every year.



Denervation is an advanced procedure to treat hypertension in patients who don't respond to anti-hypertensive medications.

The first Canadian patient to undergo renal denervation, a 57-year-old male from Toronto, was discharged after overnight observation.

The procedure was performed by a multi-disciplinary team, led by Dr. Dheeraj Rajan, Interventional Radiology Specialist, Dr. Douglas Ing, Cardiologist, and Dr. George Oreopoulos, Vascular Surgeon. The team recently returned from Germany, where they trained for the procedure.

Said Dr. Barry Rubin, Medical Director at the Peter Munk Cardiac Centre: "Decreasing a patient's systolic blood pressure from 160 to 130 mm Hg over a period of six months, which this procedure has been shown to do, could prevent many heart attacks and strokes from ever happening."

"In addition, renal denervation could also save the health care system millions of dollars by minimizing the need for anti-hypertension drugs that patients have to take, often for the rest of their lives. Further, millions more could be saved from not having to treat heart attacks and stroke that don't occur in the first place."

The Centre's multidisciplinary renal denervation program, which also includes hypertension and kidney specialists, will treat many more patients with hypertension in the months ahead.

ELECTROPHYSIOLOGY

Building for the future

CHAIR PROVIDES FOUNDATION FOR UNLIMITED FUTURE

Dr. K. (Nantha) Nanthakumar views the establishment of the Thomas I. Hull Chair in Ventricular Fibrillation (VF) Research as a vital building block towards an exciting future for the Electrophysiology Program at the Peter Munk Cardiac Centre.

As a cardiac electrophysiologist, Dr. Nanthakumar specializes in the electrical conductivity of the heart. He received his training at the University of Toronto and spent time perfecting his skills at the University of Alabama.

Since returning to Toronto, he has continued to build on the strong reputation as a researcher and clinician he earned in the US. This has included receiving the Researcher Award from the Ministry of Innovation, as well as the Clinician Scientist Award from the Canadian Institutes of Health Research (CIHR). His current work includes researching the mechanism of ventricular fibrillation in explanted human hearts - hearts removed during a transplant operation - and the electrophysiological consequences of cardiac regenerative therapy.

"The foundation here is already very strong," notes Dr. Nanthakumar, who was appointed to the Chair in 2011. "Our program in human ventricular fibrillation has evolved into one of the leading research programs, and has gained international recognition."

Dr. Nanthakumar (left) and Toby Hull - whose donation funded the creation of the Thomas I. Hull Chair in Ventricular Fibrillation Research - have built a partnership that could open the door to exciting advances in ventricular fibrillation.

An impressive research output

In fact, over the last five years, the VF Program has produced an impressive research output, with more than 40 papers published in the world's leading peer-reviewed scientific journals. "During that time, we have developed a number of innovative technology-based initiatives," he notes. "These include studying the explanted human heart and the first full optical mapping of the human heart. These, and other advances, were achieved using technology that wasn't previously available."

So, how will the Chair help add to this already impressive record of research achievements and clinical excellence for both Dr. Nanthakumar and the Peter Munk Cardiac Centre?

"Having a Chair position really helps to solidify the program," says Dr. Nanthakumar. "The Chair is also important for what else it can do; and how it can be leveraged to the overall benefit of the program. Essentially it allows us the opportunity to pursue all aspects of ventricular fibrillation research. It helps us to apply for and, hopefully, obtain research grants from other organizations like the CIHR or the Heart and Stroke Foundation. Naturally, this allows us to advance our research and our clinical programs. All this will help to create a truly cutting-edge and world leading electrophysiology training program."

Dr. Nanthakumar's vision is quite specific. He envisions a structure built on the firm foundation of the Thomas I. Hull Chair in Ventricular Fibrillation Research.

The program currently employs 10 Electrophysiologists, making it the largest electrophysiology centre in Canada and one of the largest in North America. There will be distinct programs - or 'pillars' - he explains that form the clinical program. These are ventricular tachycardia management, atrial fibrillation management,

implantable devices, arrhythmias in congenital heart disease, heart failure-cardiac resynchronization therapy, and heritable arrhythmias.

All of these pillars/programs will feature a strong research component which, in turn, will also help to leverage and support other vitally important pieces of the structure.

Exciting work underway

As Dr. Nanthakumar points out, the Centre is already doing some exciting work in each of these programs. "Heritable arrhythmias are a good example," he adds. "While there are many causes of arrhythmias, some people may have a predisposition, a genetic mutation that is passed down through generations. We are involved in setting up the very first adult program for this condition in the Toronto area, led by Dr. Danna Spears. It will involve international collaboration with groups in London, Nashville, and Italy.

"The data gained will help us in identifying people at risk and treating them accordingly – a form of personalized medicine. It will have direct benefits for the 6.5 million people in the GTA."

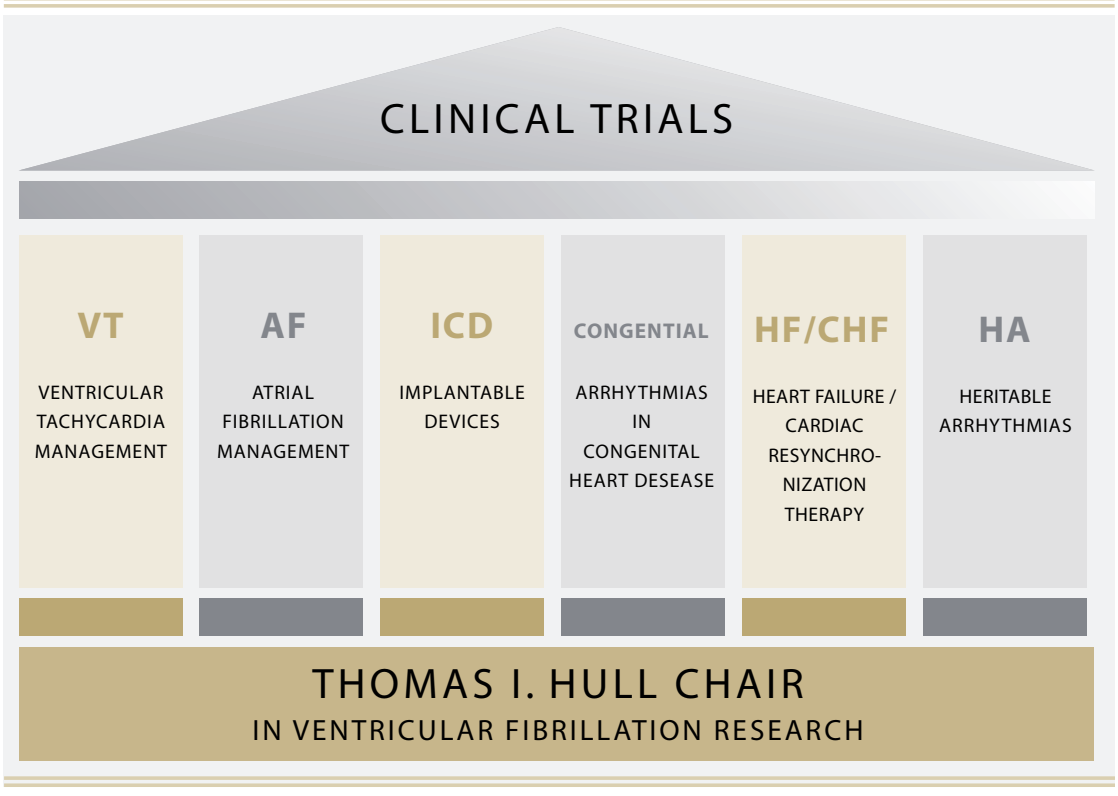
With regards to arrhythmias in congenital heart disease, Dr. Krishna Nair is doing some exciting work in congenital heart disease in arrhythmia under the tutelage of Dr. Louise Harris and Dr. Eugene Downar from PMCC, and collaborating with colleagues at Sick Kids Hospital.

The value of clinical trials

"Sitting above those six pillars will be an additional level: clinical trials," Dr. Nanthakumar explains. "Clinical trials are crucial to our ongoing progress in patient care. While they are well established in pharmaceutical-based medicine, clinical trials are a relatively new concept in interventional electrophysiology, but they are extremely important. For example, clinical trials can now tell us which clot buster medication to choose when one is needed, but in interventional electrophysiology, we don't have the data to support whether we give the patient medication or use catheter ablation. We need the important data that only clinical trials can supply."

"Dr. Andrew Ha, who is currently finalizing his training in this area in Boston, will be returning to PMCC to oversee the Program's clinical trials, as well as atrial fibrillation management in collaboration with Dr. Vijay Chauhan. The Centre's heart failure program is one of the biggest in Canada. We are working to apply our expertise in implantable devices to this area under the leadership of Dr. Doug Cameron," he adds.

With the Chair providing the foundation, Dr. Nanthakumar foresees exciting advances in electrophysiology for the future.



PREVENTION AND MANAGEMENT

Leading a global approach to cardiac rehab

PMCC ENGAGES PARTNERS AROUND THE WORLD

PMCC's Dr. Sherry Grace co-hosted an international meeting on cardiac rehab in Vancouver last fall.

Dr. Sherry Grace, Director of Research for the Cardiovascular Rehabilitation and Prevention Program at the Peter Munk Cardiac Centre (PMCC,) is engaging national cardiovascular rehabilitation (CR) associations, such as the American Association of Cardiovascular and Pulmonary Rehabilitation, the British Association for Cardiovascular Prevention and Rehabilitation and the World Heart Federation, in a global conversation about CR's role in preventing and managing heart disease.

Together, these associations will encourage global collaboration about CR access for everyone to manage the "epidemic" of heart disease. This conversation comes at a crucial time given the United Nations current focus on non-communicable diseases.

"Cardiac rehab knowledge has increased exponentially in the last decade, but we still don't have global cooperation among high-income countries, let alone low-to-middle-income countries, or agreement on how we should leverage the evidence to ensure rehab is funded for every patient in need as the standard of care around the world," says Dr. Grace, who co-hosted an international meeting in Vancouver in the fall of 2011, with over 11 countries represented.

"A global charter is a crucial step in convincing governments that cardiac rehab is a cost-effective, proven approach to treating patients after they've had their initial medical therapy for a heart attack or cardiac episode, and results in fewer deaths and repeat cardiac problems over the long-term."

In fact, if we look at cardiac care that patients receive today, adding CR would be the most effective treatment to prevent and postpone the greatest number of deaths.

In a recent study by Dr. Kottke and colleagues in the U.S., a mathematical model was created to calculate the number of deaths that would be prevented or postponed if perfect care for heart disease were achieved, i.e. the elimination of risk factors, the prescription of all effective medications, and the delivery of all effective therapies to individuals suffering a heart problem.

In the study, cardiac rehabilitation (CR) was the one area that would save the most lives and have the most impact. If implemented, CR would prevent or postpone 33 per cent of all deaths in people with heart disease.

In a 2009 landmark study, researchers found that patients hospitalized for major cardiac events who underwent cardiac rehabilitation cut their risk of dying from another heart attack in half.

In a landmark study, conducted by Dr. Paul Oh of the Toronto Rehabilitation Institute, the long-term survival rate of more than 4,000 people who had been hospitalized due to a heart event, such as a heart attack, was examined. Half of the study cohort completed a one-year cardiac rehabilitation program while the other half did not. The participants who underwent/completed cardiac rehabilitation received information and coaching about the changes they needed to make to live heart-healthier lifestyles. Consequently, they experienced a decreased mortality rate.

Then why aren't more people engaged in preventative measures such as cardiac rehabilitation?

"We need to spread the word that adding broccoli and running shoes works and healthcare providers should encourage all their patients to participate," says Dr. Caroline Chessex, Clinical Director of PMCC's Cardiac Rehabilitation Program (see below).

"I hope that one day people will view cardiac rehabilitation as an integral part of the medical treatment process, and that not offering a patient access to rehab will be considered negligent."

Heart disease and stroke cost the Canadian economy more than $22.2 billion every year in physician services, hospital costs, lost wages, and decreased productivity. In 2020, total costs are expected to reach $28.3 billion (The Canadian Heart Health Strategy, 2010). Internationally, the figures aren't much better. According to the 2004 World Health Organization (WHO) Health Report, heart disease results in 17.1 million deaths worldwide each year.

Key to ongoing cardiac care: prevention

Every seven minutes, someone dies from heart disease or stroke in Canada, according to the Heart and Stroke Foundation.

And, a disturbing new trend is emerging: cardiologists are now seeing people in their 30s and 40s coming into hospital with heart attacks and clogged arteries. For the first time, people are dying before their parents and it's because of heart disease.

In spite of these frightening statistics, the answer to this global epidemic can be simple – just add broccoli and running shoes. Preventative measures, including eating well and exercising, are effective in preventing heart problems and crucial for individuals living with heart disease.

Cardiac Rehabilitation (CR) is an individualized, outpatient chronic disease management program that is designed to help patients live a healthier life while reducing their risk of another heart event (i.e., heart attack or stroke). CR professionals ensure patients reap all the benefits of modern medicine (i.e., medications and tests), along with the simple, and proven basics – diet and exercise. Dietitians develop a nutrition plan, that increases the intake of vegetables and fruits, and reduces salt. Exercise physiologists work with patients to develop personalized "exercise prescriptions" that are tailored to each patient's fitness level.

Exercise and proper nutrition are effective in preventing heart problems.

NEW THERAPIES

Leading the way

PMCC AT THE FOREFRONT OF CARDIOVASCULAR INNOVATION

Since the beginning of the year, the specialists at the Peter Munk Cardiac Centre (PMCC) have already achieved an impressive number of clinical 'firsts', adding to the its growing reputation as a centre of innovation and advancing the field of cardiovascular medicine. Here are some of the achievements from the first six months of 2012.

Ontario's first cardiac stem cell transplant

As part of the ongoing IMPACT-CABG clinical trial to treat advanced heart failure, physicians at the PMCC performed the first cardiac stem cell transplant in Ontario using stem cells derived from the patient's own bone marrow, isolated completely within the operating room, and implanted into the heart at the time of coronary bypass surgery.

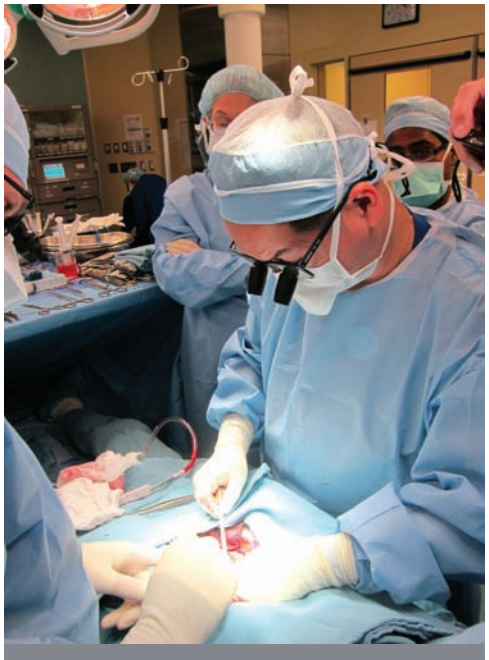
The first patient to receive this type of stem cell therapy, James Culross, a 67-year-old man from Etobicoke, was discharged later the same week after 2.83 million stem cells were injected into seven sites where his heart had been damaged by a heart attack in November 2011. The stem cells were injected following coronary artery bypass graft (CABG) surgery, by a multidisciplinary team led by Dr. Terrence Yau, Cardiac Surgeon and Director of the Cardiac Stem Cell Therapy Program at the PMCC.

"When a patient suffers a heart attack, part of the heart muscle dies and is replaced by scar. The larger the heart attack, the more likely that patient is to develop heart failure, in which the heart becomes progressively weaker. Patients develop shortness of breath, initially during activity but later at rest as heart failure progresses, and they can ultimately die of this disease," says Dr. Yau, who holds the Angelo & Lorenza DeGasperis Chair in Cardiovascular Surgery Research.

After a diagnosis of severe heart failure, the average life expectancy is one-and-a-half years for men and three years for women, a prognosis worse than most cancers. Current treatments for heart attacks, including angioplasty, stenting and coronary bypass surgery, have saved many lives and prevented further heart attacks, but they cannot reverse the effect of heart attacks that have already occurred. While researchers are hopeful stem cell therapy will improve the function of hearts injured by heart attacks, the safety and efficacy of stem cell therapy must first be clearly demonstrated in clinical trials such as the IMPACT-CABG Trial.

Using a novel process, unique in Canada, in which stem cells are isolated by means of a rigorously-tested process in the University Health Network's Organ Regeneration Laboratory, located entirely within the operating room suite, researchers removed, prepared and injected the stem cells back into the patient on the same day.

"Manipulating the cells in the OR preserves cell viability. Injecting the stem cells into the heart as soon as possible after they are isolated from the patient's bone marrow may improve their ability to improve heart function," says Dr. Richard Weisel, Cardiovascular Surgeon at the Peter Munk Cardiac Centre and Senior Scientist at the McEwen Centre for Regenerative Medicine.



Dr. Terry Yau, Cardiac Surgeon and Director of the PMCC's Cardiac Stem Cell Therapy Program, injects stem cells into the patient's heart.

Minimally-invasive device to treat abdominal aneurysms used for the first time in North America

In a North American first, vascular specialists at the Peter Munk Cardiac Centre used a new stent graft system to treat a patient with an abdominal aortic aneurysm. With this new device, patient wait times are reduced from months to weeks, the risk of complications is reduced and patients are able to come home earlier.

In December 2011, a 72-year-old male patient from Toronto, was diagnosed

with a 5.8-centimeter (larger than a golf ball) abdominal aortic aneurysm - an outward bulging or ballooning of the large blood vessel supplying blood to the abdomen, pelvis and legs. An aneurysm can rupture and if it does, about 80-90 percent of individuals will die. After undergoing a five-hour procedure on March 1, he was sent home and is doing well.

Abdominal aortic aneurysms (AAA) are among the leading causes of death in Canada because they rarely show symptoms before they rupture and the person is often unaware of the problem until it is too late.

In Canada, about five per cent, or one in 20, men over 65 have an AAA. Many of those are former or current smokers, have high blood pressure or have a genetic predisposition to developing these aneurysms.

The device that the patient received, known as the Fenestrated Anaconda, is the world's first fully repositionable stent graft system, meaning that it has technical advantages that allow surgeons greater freedom and accuracy when positioning the device inside the patient. Given that the abdominal aorta has vessels that feed blood to the kidneys, the stent graft must fit inside the aorta perfectly. Even millimeter (about the width of a hair) inaccuracies where the fenestrations, or punctures on each side of the device that allow blood to flow to the kidneys, are situated inside the body can result in kidney problems.

The device takes two to three weeks to manufacture, compared to two to three months for the older models.

Dr. Leonard Tse, vascular surgeon, PMCC (left) and Dr. KT Tan (centre) Vascular and Interventional Imaging Divisional Head, Toronto General Hospital.

This improvement in production time is impressive as each stent graft device is custom made for each patient. Decreasing patient wait times is extremely important because aneurysms can rupture while patients wait for surgery.

"This is truly an example of personalized medicine. The 3D model allows visualization that is simply not possible on a 2D screen," says Dr. Leonard Tse, Vascular Surgeon at the Peter Munk Cardiac Centre and Assistant Professor of Surgery at the University of Toronto, who performed the first procedure. Special access from Health Canada allows PMCC to provide this device, as each is custom made for each patient.

The fenestrated anaconda device has been used in about 80 patients in Europe.

"The 3D model allows vascular specialists to anticipate how the graft will deploy and sit inside the patient - something that previously only came with experience and intuition," says Dr. KT Tan, Chief of the Division of Vascular and Interventional Radiology, who is one of the most experienced radiologists with advanced endovascular stent grafts in Canada.

OUTCOMES RESEARCH

Investment in Ontario hospitals pays off

STUDY SHOWS SPENDING LINKED TO BETTER PATIENT OUTCOMES

Does spending more on hospitals improve patient care? While the answer may appear obvious to most, the subject is much more complex than it seems, and is major cause for concern in the North American health care system. The good news is that, as an important new study involving Dr. Douglas Lee of the Peter Munk Cardiac Centre has shown, higher spending in Ontario is clearly associated with lower mortality, readmissions and cardiac event rates.

Dr. Lee is a cardiologist and health outcomes researcher at the Peter Munk Cardiac Centre. He also holds a research appointment at the Institute for Clinical Evaluative Sciences (ICES). In this capacity he joined lead author Dr. Therese Stukel of ICES and colleagues in conducting the study, adding his particular expertise in heart failure and cardiovascular disease. The study, Association of Hospital Spending Intensity with Mortality and Readmission Rates in Ontario Hospitals, was published in the March issue of the prestigious *Journal of the American Medical Association,* and is gaining considerable attention.

A negative correlation

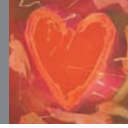
"It's important to understand the background of this study, " explains Dr. Lee. "For the past few years, there has been tremendous interest in the relationship between hospital spending and outcomes. This has been especially prevalent in the U.S. since President Obama took office. The interest stemmed from evidence that high hospital spending did not improve outcomes. In fact, it was the opposite. Some of the highest spending American health centres had the poorest outcomes. "

> Dr. Atul Gawande, a U.S. surgeon and public health researcher, wrote an article in the *New Yorker* magazine focused on a Texas community where hospital spending was twice the national average, but outcomes were among the worst in the state.

With hospital spending representing such a large component of overall health care budgets, this raised a few flags. In fact, the evidence pointing towards a negative correlation between spending and outcomes has already had an effect on policy in the U.S. In addition to closer scrutiny, there have been cuts - frequently indiscriminate - in hospital spending in the U.S.

Naturally, the echoes have been felt in the health care sector north of the border. Questions are being asked if there was a similar situation in Canada, or if the inherent differences in our healthcare systems (i.e., universal access in Canada) and approaches to patient care translated into a more positive spending-outcomes correlation.

According to Dr. Doug Lee, the high number of in-patient consults, follow-up specialist visits, and follow-ups with family doctors at the Peter Munk Cardiac Centre directly contributes to lower mortality and readmissions.



Clear results

It was in this context that the study was designed. Its objective was to assess whether acute care patients admitted to Canadian hospitals that treat patients more intensively (and at higher cost) have lower mortality and readmissions and higher quality of care.

The study looked at 129 Ontario hospitals, focusing on a select number of conditions: acute myocardial infarction, congestive heart failure, hip fracture, and colon cancer. Researchers studied one month and one year mortality and readmissions, as well as major cardiac events in the studied patients.

The conclusions were clear: among Ontario hospitals, higher spending intensity was associated with lower mortality rates, readmissions, and cardiac events.

"There were a couple of striking observations," says Dr. Lee. "The first is that mortality and readmission rates for the measured conditions were considerably lower in Ontario as hospitals increased treatment intensity and spent more on care. The second was that U.S. hospitals spent as much as four times more than Ontario for similar disease conditions, on a per capita basis."

While he is quick to point out that the purpose of the study was not to speculate on reasons for the findings, Dr. Lee does have some personal thoughts on the matter.

"There are obviously several elements at play," he comments. "Some Ontario hospitals can offer greater intensity of care. Here at the Peter Munk Cardiac Centre, for example, we have an on-site cath lab and access to the latest technology for revascularization and other procedures. We have more specialists offering continuity of care. "The number of in-patient consults, follow-up specialist visits, and follow-ups with family doctors is very high, so our readmission rates are low. And of course, it's not just spending money, it's how you spend it and who you spend it on."

Using dollars wisely

In an era where hospital budgets are more often targeted for cuts than expansion, Dr. Lee hopes this study will help reinforce the value of putting money into health care.

"If you use the dollars wisely, the outcomes will more than justify the spending," he says. "And private sector donations are a huge part of that. A lot of the technology that is so important to better outcomes is funded by donors. Those dollars make a huge impact on our ability to provide the best patient care."

PETER MUNK CARDIAC CENTRE - CLINICAL & RESEARCH REPORT

Editorial Advisory Board

Dr. John Floras
Director, Cardiology Research

Dr. Thomas Lindsay
Head, Division of Vascular Surgery

Dr. Gary Newton
Head, Division of Cardiology
The Pfizer Chair in Cardiovascular Research

Dr. Vivek Rao
Head, Division of Cardiovascular Surgery
Alfredo and Teresa DeGasperis Chair in the Surgical Management of Heart Failure

Dr. Barry Rubin
Program Medical Director, Peter Munk Cardiac Centre

Acknowledgments

Dr. Caroline Chessex
Dr. Vlad Dzavik
Dr. Doug Lee
Dr. Sherry Grace
Dr. K (Nantha) Nanthakumar
Dr. Harry Rakowski
Dr. Barry Rubin
Dr. KT Tan
Dr. Leonard Tse
Dr. Richard Weisel
Dr. Terry Yau

The content of this newsletter is for information purposes only. It is not intended to represent or replace the advice of your health professional.

In the news

Dr. Sanjay Gupta (left) and PMCC's Dr Barry Rubin.

DR. SANJAY GUPTA VISITS PMCC

World-renowned neurosurgeon and CNN medical correspondent, Dr. Sanjay Gupta visited the Peter Munk Cardiac Centre this month, where he spoke to staff and benefactors.

Dr. Gupta, who has recently released a new book, *Monday Mornings*, has a personal connection to heart disease: his father had cardiac bypass surgery in his 40s and his grandfather died of heart disease in his 50s. Dr. Gupta believes that except in rare instances, heart disease is entirely preventable with diet and exercise, and his lifestyle reflects this stance: he's removed animal products from his family's diet and minimizes sugar and fat intake.

"I'm not always the most popular person at home," he confesses.

Dr. Gupta was impressed by what he saw at the Centre. "A part of me never wants to be in a place like this because of my own concerns about my family history," he said. "But it's exciting to see that places like [the Peter Munk Cardiac Centre] exist to be able to take care of patients."

BROMPTON FUNDS

Brompton Funds is proud to celebrate the accomplishments of the Peter Munk Cardiac Centre

The Peter Munk Cardiac Centre gratefully acknowledges the generosity of Judy and Peter Braaten and the Brompton Group for their generous sponsorship of this Clinical and Research Report.

For more information, please visit **www.petermunkcardiaccentre.ca**
To support the PMCC through a donation, please visit **www.inaheartbeat.ca**
or call **416-340-4056**

Thank you – our donors – for your continued support of the Peter Munk Cardiac Centre.

Peter Munk Cardiac Centre
There's always an answer. *We'll find it.*