

### THE REGIONAL CARDIAC CARE PROGRAM

NEWSLETTER MAY, 2008 VOL. 2, ISSUE 1



**SOUTHLAKE**  
REGIONAL HEALTH CENTRE

## PROFILES FROM THE HEART

**Dr. Warren J. Cantor, MD, FRCPC**



**D**r. Warren Cantor received his medical degree at the University of Western Ontario

in London, Ontario in 1991. He then completed his post-graduate internal medicine and cardiology training at the University of Toronto. After a clinical fellowship in interventional cardiology in Toronto, he pursued a two-year research fellowship at Duke University Medical Center, North Carolina. After completing the fellowship, he worked as Staff Interventional Cardiologist and Associate Director of the Cardiac Catheterization Laboratory at St. Michael's Hospital in Toronto from 2000 to 2005. He is currently a Staff Interventional Cardiologist at Southlake Regional Health Centre and was recently appointed Medical Director of the Interventional/Invasive Program at Southlake. He is also an Assistant Professor of Medicine at the University of Toronto.

His research interests include advances in percutaneous coronary intervention, coronary angioplasty for acute myocardial

*See DR. WARREN J. CANTOR, page 3*



## SOUTHLAKE PROVIDES GOLD STANDARD OF CARE IN PRIMARY PCI

**S**outhlake performed its first Percutaneous Coronary Intervention (PCI) or angioplasty in November 2003 soon after the launch of the Regional Cardiac Care Program. The number of patients treated with PCI has grown exponentially from over 400 in 2004 to a total of 1,757 in 2007-2008. Today, Southlake manages the fourth largest volume of PCI in the province.

To enable recently-proven optimal care for heart attack patients, the Interventional Cardiology Team introduced the Regional Primary PCI Program with the main goal of providing the best management for all STEMI (ST segment Elevation Myocardial Infarction) patients within the region.

*See GOLD STANDARD OF CARE, page 2*

**2** Page 1 Feature Story  
*Continued on pages 2 & 3*

**4** The Beat Goes On  
*A Look to the Future*  
**5** "World's First"  
*Southlake's New Procedure*

**6** Advisory Board  
Members

## GOLD STANDARD OF CARE Continued from page 1

“Recent studies have shown that angioplasty is the best emergency treatment for the survival of heart attack patients when performed in a timely manner, particularly for patients who have had pain for more than two-three hours. Patients who are treated with primary PCI experience higher survival rates and lower rates of stroke and repeat heart attacks,” states Dr. Warren Cantor, Medical Director of the Interventional/Invasive Program at Southlake.

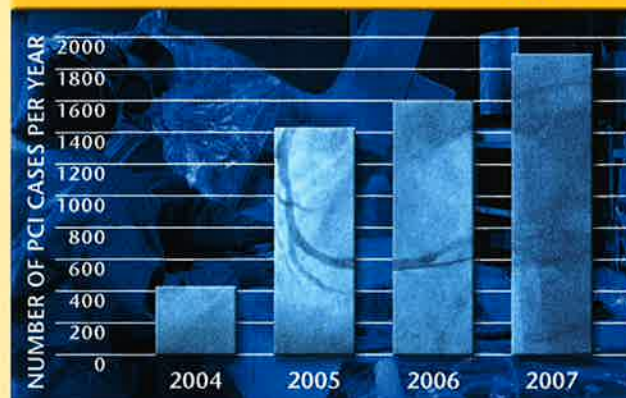
In March 2006, Southlake’s Emergency Room (ER) began identifying STEMI patients who would benefit from being treated with primary PCI instead of thrombolysis or clot-busting drugs on a 24-hour/7-day week basis. During 2007, Southlake’s ER had 69 STEMI patients needing primary PCI treatment pass through its doors within the median “door-to-balloon” time of 85 minutes. The combined efforts of the staff and physicians working in Southlake’s ER, catheterization lab, and Cardiac Care Unit (CCU) have contributed to the success of the program. Southlake is currently among one of only a few hospitals in Ontario to offer this service 24 hours/7 days a week.

The success in treating STEMI patients with primary PCI at Southlake’s ER quickly prompted the Interventional Cardiology Team and Senior Management to consider expanding the base of this emergency treatment across York and Simcoe counties. To initiate this emergency service, Southlake partnered with Simcoe EMS (Emergency Medical Services), Royal Victoria Hospital (RVH), and Stevenson Memorial Hospital to proceed with a six-month research study pilot in early 2007 with Simcoe County EMS and RVH. A preliminary EMS Bypass protocol was developed which involves ‘bypassing’ the local hospitals (where emergency heart attack patients of Simcoe County would normally be treated with clot-busting drugs), and taking these patients directly to Southlake’s catheterization lab for primary PCI treatment. One of the eligibility requirements was that the transport time should be within 45 minutes of Southlake. Similar criteria were used to triage patients directly from RVH Emergency. After the angioplasty, the patient is stabilized and then repatriated back to the local hospital within 24 hours.

“It was clear from the onset that the success of the EMS Bypass program would depend on the extraordinary coordination of all the team members for it is crucial that heart attack patients receive

*See GOLD STANDARD OF CARE, page 3...*

### PCI VOLUMES AT SOUTHLAKE



#### What is PCI?

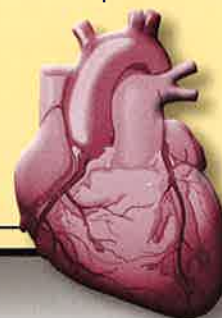
PCI or coronary angioplasty is a medical procedure used to open blocked arteries by inserting and inflating a tiny balloon where the blockage is located to widen the narrowed artery. A stent (a small metal mesh) is then implanted in the blocked artery to keep it open enabling blood flow to be restored to the heart.

**STEMI** is a type of heart attack that identifies the ST segment Elevation on the 12-lead electrocardiogram (ECG)—indicating a completely blocked artery that may result in irreparable damage to the heart muscle if blood flow is not restored soon after the patient experiences chest pain.

**Primary PCI** is angioplasty performed immediately by an interventional cardiologist on a STEMI patient (instead of thrombolysis) to quickly restore blood flow and minimize damage to the heart muscle.

In 2007-08, the following interventional procedures were performed at Southlake:

- 5,178 Catheterizations**
- 1,757 PCIs**
- 910 Drug Eluting Stents**
- 533 Bare Metal Stents**



## GOLD STANDARD OF CARE *Continued from page 2*

this optimum treatment within a short time span—any delays incurred would diminish its effectiveness and could result in irreparable damage to the heart muscle,” affirms Selma Mitchell, Southlake’s Project Lead responsible for primary PCI standards of care.

The continued success of the EMS Bypass program necessitated that paramedics in Simcoe County receive additional training to equip them with the expertise to interpret a more detailed electrocardiogram (ECG), which displays different views of the heart’s electrical activity. When paramedics, using this ECG interpretation, determine that the patient is having a STEMI, the bypass protocol is initiated and the ambulance is directed to Southlake where the interventional cardiologist and team members will perform the emergency angioplasty. This time-sensitive protocol ensures that patients in need of primary PCI have access to the procedure within


the shortest time constraints to achieve the best possible outcomes.

“We trained the paramedics on how to perform and interpret the ECG whenever they see a patient who is having chest pain, and we also have the other regional hospitals involved so they are aware that these patients will be coming to us,” says Dr. Cantor.

During the pilot phase of the EMS Bypass program, ‘mock’ runs were conducted to test that EMS paramedics were consistently interpreting ECGs correctly, and able to transport patients quickly to Southlake. The paramedics have demonstrated they are able to rapidly and accurately identify STEMI with ECG interpretation. Southlake has also recently partnered with York Region EMS to bypass patients with suspected STEMI for primary PCI. As of February 5, 2008, patients meeting the bypass criteria in York Region will now come directly to Southlake’s catheterization lab for primary PCI.

“As a regional centre and leaders in cardiac care, we are pleased to partner with our surrounding hospitals and paramedic services to provide this lifesaving treatment for STEMI patients in the region,” says Dr. Cantor.

Southlake’s EMS Bypass program has been applauded in the GTA, where only five other cardiac hospitals (Sunnybrook Health Sciences Centre, Toronto General Hospital, St. Michael’s Hospital, Rouge Valley Health System, and Trillium Health Centre) are performing angioplasty. At most of these centres, primary angioplasty is currently provided only on a limited basis; however, plans are underway to expand these programs in the very near future.


“The success of Southlake’s primary PCI model is attributed to the combined efforts of individuals across the region and within Southlake itself. It takes a dynamic and committed team to succeed in implementing a new model of care,” states Selma Mitchell. 

*Close to 1,500 stents are inserted each year at Southlake.*



## PROFILES FROM THE HEART: Dr. Warren J. Cantor, MD, FRCPC

*Continued from page 1*

infarction, and antithrombotic therapy for acute coronary syndromes. He is the Principal Investigator for TRANSFER-AMI, a large Canadian Institute for Heart Research (CIHR)-funded multicentre trial evaluating the role of routine early PCI after thrombolysis for ST-Elevation Myocardial Infarction. He has published over 80 peer-reviewed articles, book chapters, and abstracts, and is a member of the American Heart Journal’s Editorial Board. He has participated in several committees and working groups for the Cardiac Care Network of Ontario, and has contributed to the development of international guidelines on the treatment of myocardial infarction. 

## THE BEAT GOES ON: A LOOK TO THE FUTURE

**W**ho could have foreseen that, within less than a decade of being officially designated as a Regional Cardiac Care Centre, Southlake would emerge today as a full-scale, state-of-the-art facility and the 4th largest provider of cardiac services in Ontario? Southlake's commitment to excellence in providing patient care services has now earned it the reputation of being 'a premier provider of advanced cardiac services' in cardiac surgery, electrophysiological studies (i.e., The Heart Rhythm Program), and interventional cardiology (PCI—Percutaneous Coronary Intervention) to the over one million people who reside in York, Simcoe, and Muskoka regions.

The success of Southlake's Regional Cardiac Care Program is grounded in:

- the exceptional expertise of its highly qualified team of healthcare professionals.
- the strong collaborations that have been established with the partnering hospitals in the three regions, whose residents today have 'close-to-home' access to some of the most specialized tertiary cardiac services available in Canada.
- the foresight of its leadership team to continuously evaluate, improve, and expand its cardiac services to meet the healthcare needs of the growing regions it serves.

"Since the launch of the Regional Cardiac Care Program in 2003, Southlake has established and maintained the highest level of advanced cardiac services offered anywhere in the country. We firmly believe that we have a responsibility to continue this valued tradition," states Dr. David Fell, Physician Leader of the Regional Cardiac Care Program. "As we look forward to the 10 years ahead, we are poised to



embark on the next phase of the cardiac program—how it will support the delivery of advanced cardiac services to the rapidly increasing population living within York, Simcoe and Muskoka."

Projected demographic changes in the population, coupled with the dramatic increase in the 50–69 age segment within Southlake's service area, indicate that there will be a 35% increase in the demand for cardiac services at Southlake over the next 10 years. In addition to having a significant impact on the prevalence of heart disease and stroke in the region, this increase amounts to a total of 93,429 inpatient and out-patient cases, necessitating a comprehensive recruitment plan for medical staff and allied health professionals at Southlake.

In light of the exponential increase projected in the population, Southlake's Regional Cardiac Care Program has responded by developing a Future Vision Plan that proposes a comprehensive and consolidated approach to regional cardiac care. The essential components of the plan are:

- **Heart Healthy Communities:** The proposed model focuses on building heart healthy communities and fostering healthy lifestyle choices that will result in reducing the risk factors of heart disease.
- **Community Cardiac Care:** Building on the success of the York Simcoe Muskoka Rehabilitation Network, cardiac rehab services could be established in some community centres to

See *THE BEAT GOES ON*, page 6...

# SOUTHLAKE'S 'WORLD'S FIRST' IS SAVING LIVES



**I**n 2007, people who suffer from debilitating arrhythmias had reason to celebrate – after three years of research, Southlake's Heart Rhythm Program was the first worldwide to introduce a new, groundbreaking technology that vastly improves their treatment.

In Canada, between 5% and 7% of our population will suffer from debilitating arrhythmias, including atrial fibrillation, ventricular arrhythmias, and other common atrial arrhythmias. Left untreated, these conditions have the potential risk of stroke or heart failure.

Now, a new cardiac catheter ablation procedure that utilizes real-time, intra-cardiac ultrasound technology is changing the way these arrhythmias are being treated. At the forefront of this innovation are Dr. Atul Verma and Dr. Yaariv Khaykin. "Both Dr. Verma and I trained extensively on the technology that was the predecessor of this new procedure," says Dr. Khaykin. "When the new technology was developed, we were absolutely thrilled to be asked to initiate its use in real-life, real-time situations."

Southlake and Drs. Khaykin and


Verma were given the opportunity to perform the 'world's first' for a number of reasons. "Southlake is not only a highly published medical facility, but the medical centre was already a leader in Canada for treating arrhythmias," says Dr. Khaykin.

The use of intra-cardiac ultrasound technology combines a cardiac ultrasound probe with specialized heart-mapping software so that physicians are able to pinpoint exact locations requiring treatment. It allows physicians to navigate a patient's heart in real-time, using live three-dimensional ultrasound images.

Previously, cardiac centres relied on high resolution CT Scans and MRIs to provide images of the heart. While these are effective, since these images are taken days before the procedures, subtle changes to the heart could have taken place. "The heart rhythm and heart size are constantly changing; even from beat to beat, and even the smallest change can make a difference during intricate surgeries," says Dr. Verma.

**It's really about the patients ...**

"No matter what we achieve in terms of publications or being a

'world's first', patients always come first for us," says Dr. Verma. "It is very fulfilling to know that we can help improve a patient's quality of life and also help many to live longer by treating their arrhythmias." Dr. Verma remembers one such patient in particular who had suffered from debilitating atrial fibrillation for many years. The condition limited his ability to help his wife raise their child who has Down Syndrome. This procedure eliminated his atrial fibrillation and as a result, he has been living a much more active life with his family. It should come as no surprise that prominent vascular physicians all over the world are closely watching Southlake's progress. Since its first step here at Southlake, the procedure has now been adopted in select centres in Europe and the U.S., including the world-renowned Mayo and Cleveland Clinics and at Stanford. 

## Did You Know?

- Southlake's Heart Rhythm Program (HRP) is #1 in Canada for treating the most complex arrhythmia conditions and for performing the highest number of electrophysiology studies.
- Thanks to the recent acquisition of a Laser Lead Extractor, the HRP is now able to perform minimally-invasive lead extractions on patients with infected ICD systems. This sophisticated technology is only available in two other Ontario hospitals, both of which are teaching centres.
- In 2007-08, the HRP performed:  
620 EPS ablations  
230 ICD implants  
528 Pacemaker implants


## THE BEAT GOES ON Continued from page 4

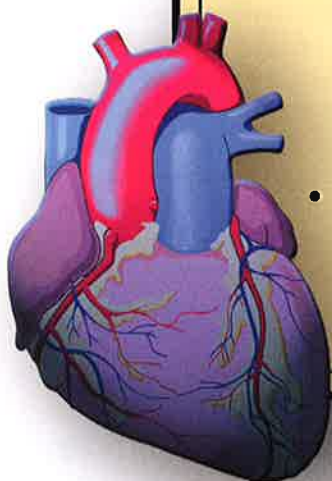
bring such services 'closer to home' for residents. And, in response to the growing population's need for standard implantations of pacemakers and pacemaker clinics, the creation of satellite cardiac care centres across the region would alleviate the in-patient caseload at Southlake.

- **Tertiary Cardiac Specialized Care:** As the demand continues to grow for catheterizations and PCIs within the region, these services necessitate the addition of two more catheterization labs at Southlake. Longer term projections call for consideration of a catheterization lab in the Royal Victoria Hospital in Barrie. All the labs in the region would operate on standard, evidence-based, patient-care pathways to ensure that the standard of care is consistently excellent.
- **Human Resources Strategy:** A "human resource strategy" has been proposed of recruiting "only the best" to the region,

and building on a professional practice model that enables all professionals to function at their maximum scope of practice.

- **Technology Enablers:** To create a network of closely-allied health-care communities, the integrated model proposes a standard patient-care chart that will facilitate transfers of patients to and from the community healthcare centres and partnering hospitals to Southlake. And, the development of an information technology system would help to monitor access to care, wait times, quality, and outcome indicators that would help in making improvements.

"Clearly, the proposed model supports the continued advancement of cardiac services in York, Simcoe, and Muskoka. This comprehensive cardiac care model recognizes the pivotal role of Southlake as the provider of specialized cardiac services supported by firm partnerships with the 'partnering' hospitals," confirms Dr. David Fell. 



### ADVISORY BOARD MEMBERS

#### **Dr. Warren Cantor**

*Medical Director*

Interventional/Invasive Cardiology

#### **Dr. David Fell**

*Physician Leader*

Regional Cardiac Care Program

*Head*

Division of Cardiology

#### **Janis Klein**

*Program Director*

Regional Cardiac Care Program

#### **Tammy La Rue**

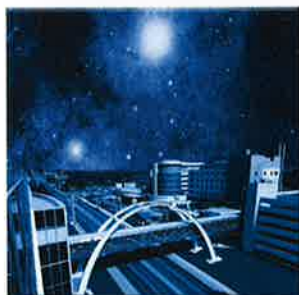
*Manager*

Corporate Communications

#### **Dr. Zaev Wulffhart**

*Medical Director*

Heart Rhythm Program  
and Electrophysiology



**Heart Matters** is published by Southlake Regional Health Centre. All rights reserved. No part of this publication may be reproduced without written permission from:

Corporate Communications  
Southlake Regional Health Centre  
596 Davis Drive  
Newmarket, Ontario  
L3Y 2P9

Tel: 905-895-4521, ext. 2541  
communications@southlakeregional.org  
[www.southlakeregional.org](http://www.southlakeregional.org)



**SOUTHLAKE**  
REGIONAL HEALTH CENTRE

