



# CCORT PULSE

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## CCORT Objectives

- Improve the quality of cardiovascular care in Canada
- Work with local, provincial and national partners on policy-relevant research projects & knowledge exchange
- Train future leaders of cardiovascular outcomes research in Canada
- Make a measurable impact on the cardiovascular health of Canadians through research that changes clinical practice, health policy & patient outcomes

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## Restricted use of ARBs could save Million\$ without any adverse effects

Guertin JR, Jackevicius CA, Cox JL, et al. CMAJ 2011 Jan 24 [Epub ahead of print]

Despite staggering increases in the use of angiotensin-receptor blockers (ARB), their benefit over less expensive angiotensin-converting enzyme inhibitors (ACEI) have not been proven, apart from a reduction in dry cough. ARBs and ACEI are typically prescribed for hypertension, heart failure and related cardiovascular health issues.

In this recently published study, CCORT investigators conducted a cost minimization economic analysis, led by Jason Guertin, using a decision-tree model with province-level drug cost data to estimate potential cost savings that might have been gained if access to ARBs had been restricted. The investigators conducted the economic analyses over a one year period from a societal perspective,

using data for 2006 from IMS Health Canada's Canadian CompuScript Audit Database. Monte Carlo simulations with 10,000 iterations were used to test the impact of different model parameters including drug prices, administrative costs and the frequency of dry cough.

The study revealed that if access to ARBs had been restricted to those with a demonstrated need, a potential cost savings of more than \$77 million may have been achieved in 2006, with no ill effects on cardiovascular health. Only British Columbia has instituted a restrictive access policy for ARBs.

As the cost of cardiovascular drugs increased over 200% between 1996-2006, strategies favouring lower cost medications with comparable effectiveness, over higher cost ones, are one option to help reign in rising drug costs.

## Environmental scan of cardiac quality indicators conducted for the Canadian Cardiovascular Society

The Canadian Heart Health Strategy and Action Plan (2009), proposed a six-point plan to reduce risk factors, health care costs and to help Canadians live healthier and longer lives. It noted the need to *build the knowledge infrastructure to enhance prevention and care*, and the need for measurable quality indicators to enable provision of optimal clinical care. Furthermore, it states "... *the cardiac care system has yet to agree on common clinical quality indicators, how to measure them or how to report the results to providers, funders and the public.*"<sup>(1)</sup>

In order to provide common quality indicators for Canada's cardiac care system, CCS established an initiative (with financial support from the Public Health Agency of Canada [PHAC]) with the following objectives:

- To determine what sets of quality indicators (QI) exist/have been proposed for Canada and internationally, as well as stakeholder perspectives on the strengths, weaknesses, opportunities and threats (SWOT) associated with developing indicators in Canada (including stakeholder receptivity to taking action).
- To develop a pan-Canadian work plan and recommendations for developing/achieving these common definitions.

As part of this work, the CCS Quality Indicators Steering Committee requested that Dr. Jack Tu,

Team Leader, CCORT, lead an environmental scan of existing Canadian and international cardiac quality indicator initiatives.

The environmental scan identified many initiatives focused on developing quality indicators for cardiovascular care. It also revealed considerable heterogeneity in the quality of the QI development initiatives identified. This led the study team to look for a method to enable a consistent approach to evaluate and critically appraise the various QI initiatives. The Appraisal of Guidelines for Research and Evaluation (AGREE) II tool<sup>(2)</sup>, a validated instrument that provides a framework to evaluate the quality of clinical practice guidelines was identified as a possible fit. After further study and pilot testing, the study team concluded that the AGREE II tool, with appropriate modifications, could be a suitable instrument for evaluating the quality of QI development initiatives. Following modifications to reflect a focus on quality indicators as opposed to practice guidelines, AGREE II QI was launched.

Jack Tu presented an overview of the findings from the environmental scan and the AGREE II QI tool at the Canadian Cardiovascular Congress in October. The team is preparing a report describing a proposed quality indicator development methodology incorporating AGREE II QI and an article on the environmental scan for publication. (*References Pg 3*)



## CCORT PROFILE—Lusine Abrahamyan, MD PhD

Lusine Abrahamyan obtained her medical degree in her home town of Yerevan, Armenia. She then completed a 3-year residency program in Anesthesia & Intensive Care, followed by a 3 year term in ICU in a large regional hospital. Lusine developed an interest in health care systems, and completed a Master of Public Health degree at the American University of Armenia in 2003. She served as a project coordinator in Quality Assurance at Armenia's first cardiovascular hospital. For one of her projects she evaluated existing risk-adjustment models used to predict operative cardiac mortality. Her keen interest in clinical epidemiology and health services research, led her to pursue a PhD. Accepted at leading schools in both Canada and the US, she chose the University of Toronto, and began a PhD in Health Policy, Management and Evaluation. This past May, Lusine successfully defended her thesis, a four-paper project that addressed various methodological aspects of designing randomized clinical trials to study rare diseases, with limited sample size. Two articles from her thesis project were published in the *Journal of Clinical Epidemiology* in 2010.



For the past year, Lusine has been involved in a two-part environmental scan, identifying and critically appraising cardiac quality indicator development initiatives in Canada and worldwide for the Canadian Cardiovascular Society. "We used a modified version of the AGREE II tool that was developed to evaluate the quality of clinical practice guidelines, to evaluate the quality of these initiatives." In addition she completed a study on the impact of standard orders on patient outcomes, involving hospitals participating in the EFFECT study. She presented a poster on her findings at the CCC in October, and a peer-reviewed paper is in process.

Lusine describes her work with CCORT as "a very enriching experience – I have met excellent scientists and excellent people here, all very devoted to a shared goal of improving quality of care and patient outcomes. CCORT has helped me be more global in my thinking, about health care, research and the impact we can have." She hopes to work as a research scientist in academia or in an independent research organization, following completion of her research fellowship with CCORT.



Lusine started a postdoctoral fellowship with CCORT in October 2009. A conversation with a professor at the UofT led her to the CCORT website. Intrigued, and quite impressed by the significance and potential impact of the projects undertaken by CCORT, she set about applying for a fellowship. "Ultimately, I wanted to become part of the group. My research focuses on health services outcomes including quality of care, health technology assessment and use of various methodological approaches in research. "

Until recently, Lusine's schedule was fully consumed with her studies, her family, her work. When she does manage to find some free time, however, and when the weather is nice, she likes outdoor activities such as swimming and jogging. And, she notes that "Irrespective of weather, I like reading novels, as well as cooking and baking. One of my specialties is Napoleon cake—its crunchy and very tasty."

## CCORT Makes the Rounds: Publications 2010/2011

Austin PC, Laupacis A. A tutorial on methods to estimating clinically and policy-meaningful measures of treatment effects in prospective observational studies: A review. *International Journal of Biostatistics* [In Press]

Cantor WJ, Strauss BH, Graham MM et al. Time of day and outcomes of nonurgent percutaneous coronary intervention performed during working hours. *Am Heart J* 2010; 159(6):1133-1138.

Guertin JR, Jackevicius CA, Cox JL, Humphries K, Pilote L, So DY, Tu JV, Wijeyesundera H, Rinfret S. for the CCORT. The potential economic impact of restricted access to angiotensin-receptor blockers. *CMAJ* 2011 Jan 24 [Epub ahead of print]

Hassan A, Newman A, Ko DT et al. Increasing rates of angioplasty versus bypass surgery in Canada, 1994-2005. *Am Heart J* 2010; 160(5):958-965.

Johansen H, Brien SE, Fines P et al. Thirty-day in-hospital revas-

cularization and mortality rates after acute myocardial infarction in seven Canadian provinces. *Can J Cardiol* 2010; 26(7):e243-e248.

Ko DT, Atzema CL, Donovan LR, Graham MM, Huynh T, So DY, Wang J, Wijeyesundera H, Tu JV, for the Canadian Cardiovascular Outcomes Research Team (CCORT). Rescue Percutaneous Coronary Interventions for Failed Fibrinolytic Therapy in ST-segment Elevation Myocardial Infarction: A Population-Based Study. *American Heart Journal* [In Press]

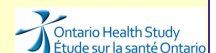
Tu K, Mitiku T, Lee DS, Guo H, Tu JV. Validation of physician billing and hospitalization data to identify patients with ischemic heart disease using data from the Electronic Medical Record Administrative data Linked Database (EMRALD). *Can J Cardiol* 2010; 26(7):e225-e228.

Udell JA, Wang JT, Gladstone DJ, Tu JV. Anticoagulation after anterior myocardial infarction and the risk of stroke. *PLoS One* 2010; 5(8):e12150.



### Did You Know...

...all Ontarians,  $\geq 18$  years of age, can participate in the Ontario Health Study, one of the largest community-based health studies in Ontario, and one of the biggest in the world? <https://ontariohealthstudy.ca/>





## CCORT Makes the Rounds: Presentations 2010/2011

Abrahamyan L, Austin P, Donovan L, Tu JV. Admission orders can improve the management of acute myocardial infarction. Canadian Cardiovascular Congress, Montreal, Quebec. Oct 2010

Tu J, Abrahamyan L, Boom N, Donovan L. An international Environmental Scan of Cardiac Quality Indicators Canadian Cardiovascular Congress, Montreal, Quebec. Oct 2010

Tu JV, Boom NK, Ko DT, Donovan LR, Lee DS. Public report cards associated with reduced heart failure readmissions American Heart Association Scientific Sessions, Chicago, Ill. Nov 2010

## CCORT & ICES host delegation 北京 from Beijing, China

On September 24, 2010 Jack Tu and colleagues from CCORT and the Institute for Clinical Evaluative Sciences' (ICES) Cardiac & Diagnostic Imaging Program hosted a group of seven physicians from the Beijing Institute of Heart, Lung and Blood Vessel Diseases, the Beijing Center for Disease Control and Prevention and the Beijing Public Health Information Center.

This opportunity emerged at the World Heart Congress, held in Beijing this past summer, where members of CCORT including Jack Tu, Dennis Ko, and Maria Chiu presented papers on cardiovascular disease.

The Toronto visit included presentations on CCORT, ICES, as well as presentations on Cardiovascular Disease in China by Dr. Jin Liu, Capital Medical University Beijing Anzhen Hospital, Beijing Institute of Heart, Lung and Blood Vessel Diseases. Presentations were also given by Julie Wang on the topic of data holdings, and on Ethnic Differences in Cardiovascular Risk Factors by Jack Tu.

The visit was a great success, with discussion facilitated by the bilingual capabilities of CCORT and ICES staff who were able to translate and converse fluently in Mandarin as needed.

## CCORT scientist publishes first book

**Dr. Mark Eisenberg**, CCORT co-investigator, published his first book, **The Physician Scientist's Career Guide**, in December, 2010. He described the book as being "...based on what I have learned over the past few decades as a physician scientist." To find out more about it or read a sample chapter, please visit <http://www.springer.com/978-1-60327-907-9>. Dr. Eisenberg is a professor of medicine at McGill University and a staff cardiologist at Montreal's Jewish General Hospital.



(Photo, McGill University)

*Environmental scan of cardiac quality indicators conducted for the Canadian Cardiovascular Society—References*

1. Canadian Heart Health Strategy and Action Plan. Building the knowledge infrastructure to enhance prevention and care. Available online at: <http://www.chhs.ca/> Last Accessed March 4, 2011.
2. Brouwers MC, Kho ME, Browman GP, Burgers JS, Cluzeau F, Feder G, et al. AGREE II: Advancing guideline development, reporting and evaluation in health care. CMAJ 2010;182(18):E839-42.

## 2011 CALENDAR OF EVENTS



### March 22-25, 2011

EPI/NPAM Nutrition, Physical Activity, Metabolism / Cardiovascular Disease Epidemiology and Prevention 2011 Scientific Sessions, Atlanta, GA  
<http://www.americanheart.org/presenter.jhtml?identifier=3074015>

### May 12-14, 2011

QCOR Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke Scientific Sessions 2011, Washington, DC  
<http://www.americanheart.org/presenter.jhtml?identifier=3057695>

### June 6-7, 2011

Annual APPROACH meeting  
Calgary, AB

### October 22-26, 2011

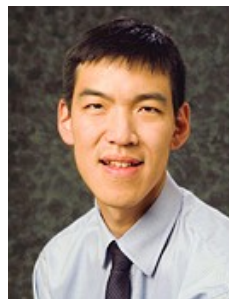
Canadian Cardiovascular Congress  
Vancouver, BC  
Abstract & Workshop call: March 7-May 1  
[http://www.cardiocongress.org/english/home\\_EN.html](http://www.cardiocongress.org/english/home_EN.html)

## NOTEWORTHY

### Congratulations to

**Dr. John You**, former CCORT Student, who received the 2010 New Investigator Award from the Canadian Society of Internal Medicine.

**Dr. Jack Tu**, CCORT Team Leader, winner of the 2010 Dr. David Sackett Senior Investigator Award from the Canadian Society of Internal Medicine.



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