

## **'What's the best treatment?'**

### **Public health reporter ANDRÉ PICARD talks with Dr. Jack Tu about how heart disease is treated in Canada**

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In July of this year, the first-ever Canadian Cardiovascular Atlas was published. The ambitious research project, which looks at how heart disease is distributed around 129 regions of Canada, was headed by Dr. Jack Tu, a senior scientist at the Institute for Clinical Evaluative Sciences in Toronto.

Dr. Tu heads the Canadian Cardiovascular Outcomes Research Team, a team of three dozen of the country's top scientists. Formed in 2001 with a \$4.7-million, five-year grant from the Canadian Institutes for Health Research, CCORT has helped redefine how heart disease is treated in Canada by examining what works, and what doesn't, in the real world.

In a rare interview, Dr. Tu spoke recently about CCORT's work and the hot new field of outcomes research.

#### **Q: What's the most important finding from CCORT to date?**

**Dr. Tu:** Our most important contribution is the development and publication of the Canadian Cardiovascular Atlas -- a series of 24 articles initially published in the

Canadian Journal of Cardiology and then in a book. For the first time, we took a detailed and academic look at the issues related to delivery of cardiovascular care and, I think, opened up people's eyes about how much variation there is in cardiovascular care in Canada.

**Q: Traditionally, an atlas is a book of maps. What does that have to do with the heart?**

**Dr. Tu:** It's an atlas of Canada that looks at how geography affects the likelihood of heart disease, the type of treatment patients receive, the likelihood of surviving. We have a saying, "Geography is destiny," and there is controversy about whether geography truly is truly an independent risk factor. . . . But I believe, based on the type of data we have seen, that geography is very important in terms of the type of care patients receive. There are really big geographical variations in how patients are treated . . .

**Q: Can you give me an example of a surprising disparity?**

**Dr. Tu:** One big surprise is our work on angioplasty. We found the rates of angioplasty in Ontario, at least in the late '90s, were the lowest, which is surprising for a wealthy province. Ontario has worked to correct this issue.

**Q: That answer suggests the data has a powerful influence, that your research is changing how care is delivered.**

**Dr. Tu:** We believe people are using the data for health-care planning. The Atlas has been very popular, from ministries right down to the local hospital level. We know it's being used, but we don't know exactly to what extent.

**Q: What's next for CCORT?**

**Dr. Tu:** We recently received funding to launch a second phase, where we're going to tackle a number of controversial issues in cardiovascular care. For example, one big controversy is, what's the best treatment for someone with a heart attack? Is it best to give them clot-busting drugs or primary angioplasty? That's a really important issue for a lot of patients.

**Q: People get clot-busting drugs and angioplasty every day -- are doctors just guessing what's best?**

**Dr. Tu:** We do know, from the ideal world of clinical trials, that there are benefits from clot-busting drugs over angioplasty. But we also know that in the real world, we can't deliver these therapies as well as in clinical trials. Also, in the real world, patients are very different from those in clinical trials. So what may be effective in a clinical trial may not necessarily be effective in the real world.

**Q: So "real world" research is important?**

**Dr. Tu:** That's what we're known for at CCORT. The field of outcomes research looks at what works and what doesn't in the real world, as opposed to clinical trials research, which looks at what works in an ideal setting. We know that a lot of things that work in clinical trials don't work in the real world.

**Q: Is your research going to change clinical trials?**

**Dr. Tu:** I think some of our findings raise real doubts among practitioners about the efficacy of clinical-trial findings. We're not going to change the practice of clinical trials, but we may ultimately change how practitioners use these findings. The whole field of outcomes research has made people realize that clinical trials are not necessarily the gold standard any more. We need to think about the real-world setting. In the last couple of years, this type of research has become really popular.

**Q: Do we scrutinize new drugs and treatments enough?**

**Dr. Tu:** Absolutely not. We really under-scrutinize new drugs and new treatments, but that's changing. With the Vioxx scandal [the popular painkiller was withdrawn after research showed it increased the risk of heart attacks], people are realizing we need to do a lot more post-market surveillance of devices as well as drugs.

Ten years ago, there was none of this going on. It amazes me that we will spend millions, if not billions, of dollars getting certain medications to market and we spend virtually nothing evaluating whether those medications actually work in the real world.

**Q: How does cardiac care in Canada compare to other countries?**

**Dr. Tu:** Overall, we do reasonably well given the resources we have. According to most studies we've done, Canadians do reasonably well by international standards, but there is still a lot of room for improvement. We don't have access to all the latest treatments that are available south of the border. . . . On the other hand, I'm not convinced that embracing new technologies without careful evaluation -- as is often done in the U.S. -- is the best use of public money.

**Q: Cardiovascular disease kills almost 75,000 Canadians a year. Are we spending enough to treat Canada's No. 1 killer?**

**Dr. Tu:** That's a good question. In some areas we're certainly spending enough. In other areas, there is room for more spending. But before we spend that money, it's important that we set up evaluative mechanisms to ensure we get bang for the buck and that they actually work in the real-world setting.

**Q: You're very dependent on data collected by others. Is the data good enough in Canada to produce good outcomes results?**

**Dr. Tu:** We have better data than we had a decade ago but there is still room for a lot of improvement . . . We use databases by organizations such as CIHI [the Canadian Institute for Health Information] and various provincial governments. . . . We also do primary data collection by doing anonymous review of patient charts. The challenge is that high-quality data is very labour-intensive and very expensive to collect, and there are also privacy barriers that prevent us from collecting all the data we need to evaluate things properly.

**Q: Should heart patients worry that you know too much about them or do you protect privacy?**

**Dr. Tu:** We collect anonymous data so we don't know the identity of any of the individuals in our data sets. I think, in general, patients should not worry that we know too much about them. It's also very important for the public to realize that by using anonymous health information about them, we can really gain better insights into the health-care system, and get important information to physicians on how

care can be improved. Without this kind of research, there won't really be any quality improvement.

**Q: Money is a big issue in our health system. Does outcomes research save money?**

**Dr. Tu:** In some cases, it can save money by pointing out health-care policies that are costing us a lot but not achieving much benefit. In other cases, we may recommend spending money on something governments are not too keen to fund. So it works both ways.

**Q: Would electronic medical records make outcomes research easier?**

**Dr. Tu:** Absolutely. If they're structured in the right way, we could do wonderful and amazing things. It would not only benefit researchers, it would improve patient care.

Most people don't realize it but a lot of patients get duplicate tests just because one part of the system doesn't have access to information from another part of the system. There is unnecessary exposure to radiation, unnecessary blood work, medication errors -- all kinds of bad things happening because of the lack of a common electronic medical record. Above all, it would be great for patients.

### **Atlas facts**

Here are some highlights from the Canadian Cardiovascular Atlas, which looks at regional disparities among the 1.2 million Canadians currently living with heart disease:

After a heart attack, 50 per cent of patients in Alberta are treated by a cardiologist, compared with only 4 per cent in Prince Edward Island, and those treated by specialists have sharply higher survival rates.

Quebec does about 80 per cent more angioplasty procedures per capita than neighbouring Ontario.

Per capita, there are 40 per cent more cardiovascular deaths in Newfoundland and Labrador than in British Columbia.

Nova Scotia surgeons perform 45 per cent more bypass operations per capita than their counterparts in British Columbia.

Doctors in Quebec prescribe almost six times as many angiotensin receptor blockers (an expensive new form of blood pressure medication) per capita as doctors in British Columbia.



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