



Expanding Partnerships... Expanding Opportunities

Annual Report 2009

Evidence Guiding Health Care

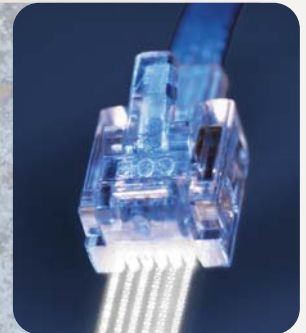
Population-based health research that makes a difference

ICES research provides insight on a broad range of over 50 topics and issues including population health, health system performance, primary care, drug safety and effectiveness, diagnostic services and chronic diseases, such as cancer, cardiovascular disease and diabetes. The Institute conducts well over 200 studies a year, many in collaboration with other organizations.

Scientists and clinicians lead world-class research teams

ICES scientists are internationally recognized leaders; many are practicing clinicians who understand the everyday challenges of health care delivery. They lead multidisciplinary teams consisting of statisticians and epidemiologists, as well as specialists in knowledge translation, information security, privacy and technology. The diverse expertise represented within these specialized teams is the foundation of ICES' innovative approach to research.

Who we are



Institute for Clinical Evaluative Sciences (ICES)

An independent, non-profit organization that produces knowledge to enhance the effectiveness of health care for Ontarians.

Evidence-based research informs decisions

ICES researchers take a unique approach to studying the continuum of care. They link data from many sources, including population-based health surveys, anonymous patient records and major clinical and administrative databases, to obtain a comprehensive picture of current health care issues.

Their unbiased, evidence-based knowledge and recommendations, profiled in atlases, investigative reports and peer-reviewed journals, are used to guide decision-making and inform changes in health care delivery. Highly regarded in Canada and abroad, ICES research can be applied by governments, planners and health care providers.

Growing partnerships with Canada's leading research institutions

ICES is located at Sunnybrook Health Sciences Centre in Toronto and at Queen's University in Kingston. ICES-Queen's, the first of several planned satellite partnerships, was established in 2007. Initial areas of focus for the ICES-Queen's facility include cancer, pharmacoepidemiology studies and dementia. ICES-uOttawa, a satellite site at the Ottawa Hospital Research Institute is expected to be up and running in early 2010. In addition, partnerships with the University of Toronto and other sites across Ontario are in process.



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Dr. Jan Hux,
Chief Operating
Officer and
Senior Scientist

ICES is funded by the Ontario Ministry of Health and Long-Term Care and receives peer-reviewed grants and project-specific funds from provincial and national organizations, including the Canadian Institutes of Health Research.

Message from the President and Chief Executive Officer

As I write this message, I am entering my third year as CEO of one of the world's premier health services research organizations. Since 1992, ICES has worked with the Ontario Ministry of Health and Long-Term Care (MOHLTC) to provide high quality information, interpretation and advice, on which to formulate policy, assess health system performance and develop clinical guidance. Through our growing relationship with the MOHLTC we are becoming involved in evaluation of policy initiatives that will help shape the nature of health care planning and delivery in Ontario in the next decade. Directing the activities of such an organization has been a privilege and a challenge.

Over the past year, we made great progress in the expansion of ICES across Ontario. This provincial network will foster **expanding partnerships**, and thus **expanding opportunities**. Following the successful launch of the first satellite site of ICES at [Queen's University](#) in 2007 (see page 4), we have collaborated with staff at the Ottawa Hospital Research Institute (University of Ottawa) and the University of Toronto in planning new ICES satellites. These sites will open their doors in 2010 and will broaden the reach of our science programs, particularly in non-clinical areas, and enable more mentoring of research fellows and students. The next phase of our expansion will involve the building and commissioning of new ICES sites at the University of Western Ontario, the University of Waterloo and McMaster University.

ICES acts as steward for most of the Ontario health datasets, which are held in a linked anonymous form and are made available securely to analysts and researchers. Enabling excellence in research, while safeguarding data privacy and security has remained central to our vision and our success (see page 13).

This past year also saw substantial scientific achievement at ICES. To showcase the diversity and relevance of our work and our capacity for collaboration, this report presents several examples of current independent research covering an impressive array of topics (see pages 5-11).

With over 200 faculty and staff, and more than 150 projects underway at any given time, ICES has vast amounts of data to sift through, including 17 years of data on every hospitalization, physician appointment and publicly funded drug claim in the province. Each month, an additional 20 million physician claims for patient services are added to the system.



Dr. David Henry, President and CEO

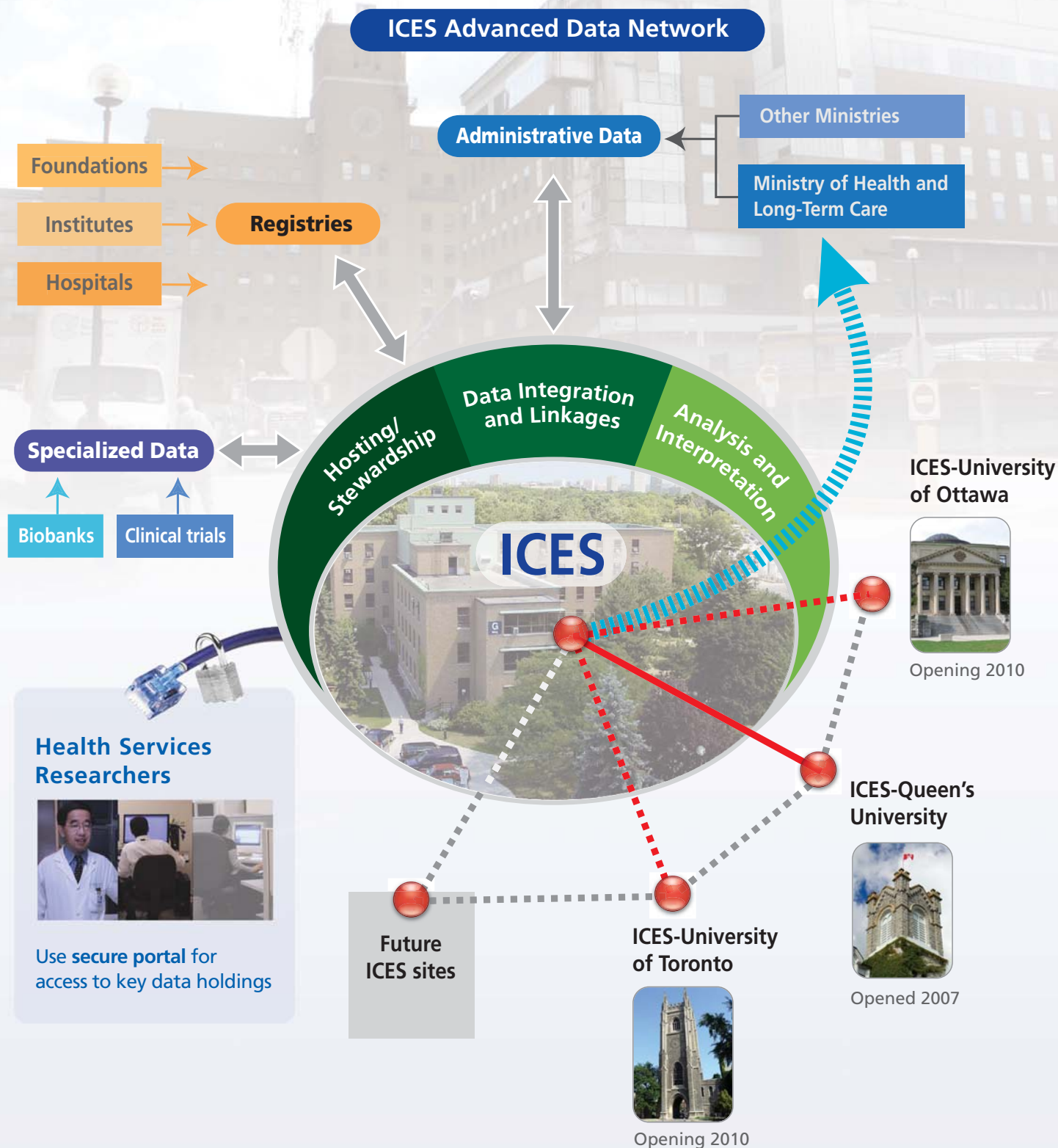
I would like to thank our Board of Directors, chaired by Dr. Brian Golden, for their ongoing commitment to the ICES vision. I also gratefully acknowledge the MOHLTC for their continuing support of health services research. Most of all, I thank the remarkable team of ICES scientists and staff who work tirelessly to ensure our success. It is their ideas, energy, expertise and hard work that make ICES unique.

Much has changed at ICES since our establishment in 1992, but our mission remains the same: to generate high quality research evidence that stimulates improvements in health and health care for all Ontarians. I look forward to another year of working closely with our partners, both old and new, in the achievement of this goal.

David Henry, MBChB, FRCP (Edin)
President and CEO



Expanding Partnerships with Ontario's Leading Research Institutions



The ICES Advanced Data Network will provide increased access to a broad variety of data to support health services research in Ontario

“ICES is governed by a voluntary Board of Directors whose collective range of experience and expertise guides our strategic direction and priorities.”

Message from the Chair, Board of Directors



Dr. Brian Golden, Chair

In 2007, the Board of Directors initiated a strategic planning process which continued through 2008. With much-valued input from ICES staff and key stakeholders, we identified four strategic goals which are key to ICES achieving its mission. The goals and their related priorities include:

- **Increase scientific capacity and expertise to conduct cutting edge research, analysis and evaluations**—Build a health services network by providing researchers at other sites with high quality research data and the infrastructure and capacity to use them; create more comprehensive research resources by actively seeking out new datasets; and expand existing science programs and services to reflect burden of disease and health services priorities.
- **Enhance sustainability and growth**—Develop a stable multiyear agreement with the Ontario Ministry of Health and Long-Term Care that is aligned with important health priorities and provides sufficient funds for growth; demonstrate the return on the Ministry's investment in ICES; and enhance our operational efficiency.
- **Enhance relevance and impact of research**—Align external communications with important stakeholder needs and key ICES outputs; work with agencies that have large knowledge transfer capacity to promote ICES research findings; and improve ongoing engagement with the Ministry and Ontario's 14 Local Health Integration Networks.
- **Ensure accountability to government and stakeholders**—Continue the Board's efforts to enhance its skills mix and governance practices; ensure the highest level of transparency and accountability and act responsibly on behalf of Ontarians.

June 2010 will mark the end of my three two-year terms on the Board, including five years as Board Chair. The next year will most certainly be the most exciting since ICES' inception in 1992, and I am confident that as I step down, ICES will stay on its trajectory for significant local and international impact. I would like to thank the many individuals and partner organizations who generously support the mission and activities of one of the world's premier health services research institutes.

Brian Golden

Board Membership for 2008/09

Chair

Brian Golden, PhD
The Sandra Rotman Chaired Professor of Health Sector Strategy
The Rotman School of Management,
The University of Toronto

Vice-Chair

Mr. John Wright,
Senior Vice-President, Canadian
Public Affairs Division, Ipsos Reid

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Henderson LLP

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Mr. Mark Rochon,
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Officer, Toronto Rehabilitation
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Mr. Gabriel F. Sékaly,
Executive Director, Institute
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Canada

Professor Carolyn Tuohy,
Senior Fellow, School of
Public Policy and Governance,
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Restructuring Commission of
Ontario

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Action Group on Primary
Care Reform

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Principal, Atticus Interim
Management

The Hon. Hugh Segal,
Senator,
Kingston-Frontenac-Leeds,
Senate of Canada

Dr. Robyn Tamblyn,
Scientific Director, Integrated
Health Care and Research
Network of Quebec

EXPANDING PARTNERSHIPS... EXPANDING OPPORTUNITIES

An Update from ICES-Queen's

I have been part of ICES' first satellite site at [Queen's University](#) since its inception in October 2007 under the helm of Director Patti Groome. I was thrilled and excited when asked to take over as Interim Director in July 2009.

The combination of ICES' expertise (with the access to the health data of millions of Ontario citizens) and new scientists from ICES-Queen's (with interest in linkages to additional data sets from various fields, including HIV, cancer, primary care and public health), results in a powerful mix producing relevant and breakthrough science. We have recently added three new scientists to our program!

I want to recognize the incredible ongoing support of Queen's University, whose commitment to health services research, in conjunction with the award from the Canada Foundation for Innovation, has helped us to build the necessary infrastructure.

Soon we will have the opportunity to be part of an expanded ICES family through planned partnerships with the Ottawa Hospital Research Institute of the University of Ottawa and the University of Toronto, as well as other potential partners across the province. I feel privileged to be in a position to contribute towards the further expansion of ICES-Queen's and growing partnerships across Ontario and look forward with great excitement to the road ahead.

Our facility:

- A dedicated workspace of 1,250 square feet
- 16 workstations with 10 data terminals linked directly to the ICES network server in Toronto
- Access to all ICES data and research-related knowledge infrastructure
- Rigorous technical, physical and administrative security
- 8 scientists, 3 dedicated biostatisticians, local Privacy Officer and administrative support

"The combination of ICES' expertise and new scientists from ICES-Queen's results in a powerful mix."



Dr. Ana Johnson,
Interim Director, ICES-Queen's



Wait Times for MRI Have Improved but for Whom?

Ontario wait times for magnetic resonance imaging (MRI) have improved since the provincial government's Wait Times Strategy began in 2004. But a recent ICES study led by Dr. John You found wealthy Ontarians are more likely to receive MRI scans than their poorer counterparts.



- At the beginning of the study, before Ontario's Wait Times Strategy began, a **gap in access** to MRI scans based on income existed. Patients living in the richest one-fifth of Ontario neighbourhoods were **25% more likely to receive MRI scans** than those living in the poorest one-fifth of neighbourhoods.
- However, the **increase** in MRI use over the five-year period was largest for those in the wealthiest Ontario neighbourhoods, so that **the gap in access to MRI between rich and poor widened**. Patients living in the richest neighbourhoods were **38% more likely to receive MRI scans** than those in the poorest neighbourhoods.

"While access has improved, it has not been shared equally. It's well known that, on average, **poor people have more health problems** than the rich, so the trends go against what we would have expected. Although many of us pride ourselves on Ontario's universal hospital and physician services, the study highlights the need for simultaneous strategies that **aim to improve the appropriateness of MRI scanning**, so that access is based on medical need," said Dr. You.

You JJ, Venkatesh V, Laupacis A. Better access to outpatient magnetic resonance imaging in Ontario, but for whom? *Open Med* 2009; 3(1):22-25.

You JJ, Purdy I, Rothwell DM, Przybysz R, Fang J, Laupacis A. Indications for and results of outpatient computed tomography and magnetic resonance imaging in Ontario. *Can Assoc Radiol J* 2008; 59(3):135-143.



Ontario's primary health care system does not have systematic ways of reminding parents and physicians when children are missing their vaccinations.

The Importance of Vaccinating Your Child

ICES data tells us that more Ontario children are at **risk of contracting and spreading vaccine-preventable diseases** because fewer are getting immunized.

Nearly a third of two-year-old children in Ontario did not receive the immunizations they needed.

An ICES study led by **Dr. Astrid Guttman** found that even with Canada's universal access to primary care services and high visit rates by children, **less than 67% of two-year-olds** in Ontario had **complete** immunization coverage. Surprisingly, research also showed **children of immigrant mothers were more likely to be immunized (69.0%) than children born to non-immigrant mothers (65.9%).**

"This is a good news, bad news story," says Guttman, "on one hand immigrant mothers are accessing immunizations for their children better than non-immigrant mothers. This is very important since immigrant families may have increased risk of exposure to vaccine-preventable diseases from travel to, or visitors from, endemic regions of the world. On the other side, overall rates of **up-to-date coverage are too low.**"

Most Ontario children with chronic medical conditions are not getting vaccinated against the flu.

Another ICES study found only **1 in 3 children** with medical conditions placing them at **higher risk for complications from influenza**, get flu shots according to the recommended dosing schedule. Children under 2 years of age—hospitalized due to influenza at a similar rate to the elderly—are considered to be a high risk group. Yet only **1 in 10 infants** aged 6 months to 2 years old received the right number of flu shots.

Since 2000, every Ontario resident has been entitled to **free influenza vaccination** under the provincial government's universal influenza immunization program (UIIP).

Parents need to understand how important it is to vaccinate a child for both the health of the public and the toddler.

"This study shows that just making flu shots freely and easily available to the entire population **may not be enough for reaching certain high risk groups,**" says **Dr. Jeff Kwong**, a study author. "Educating the public and vaccine providers about vaccinating young children and those with medical conditions against influenza is important in order to reach those who are most vulnerable."

Dr. Astrid Guttman



Guttman A, Manuel D, Stukel TA, Desmeules M, Cernat G, Glazier RH. Immunization coverage among young children of urban immigrant mothers: findings from a universal health care system. *Ambul Pediatr* 2008; 8(3):205–209.

Kwong JC, Stukel TA, Lim J, McGeer AJ, Upshur RE, Johansen H, Sambell C, Thompson WW, Thiruchelvam D, Marra F, Svenson LW, Manuel DG. The effect of universal immunization on mortality and health care use. *PLoS Med* 2008; 5(10):1440–1452.



Dr. Jeff Kwong

Time to Change

While the capitation model provides an alternative to fee-for-service practice, its incentives may need to be altered so that its benefits are available to all Ontarians.

Do Ontario's primary health care reforms serve the province's sick and poor?

Ontario has invested millions of dollars in its health care system in response to a serious doctor shortage.

But a recent ICES study led by Dr. Rick Glazier found Ontario's chronically sick and poor are the least likely to benefit from the investments.

Ontario's Ministry of Health and Long-Term Care has made a significant investment in **new models of care** provided by family doctors and other health workers. The first two models that were widely available to Ontario's doctors, the **Family Health Network (FHN)** and the **Family Health Group (FHG)**, both have after-hours care requirements and incentives for a host of services including prevention, smoking cessation and enhanced management of chronic diseases.

FHN doctors are paid mostly through an annual payment per registered patient, based on a person's age and sex, called a **capitation payment**. Under this system, the doctor gets paid regardless of how many visits the patient makes.

FHG doctors continue to be paid mostly through **enhanced fee-for-service**, a system that **pays only when patients visit a doctor's office**.



Dr. Rick Glazier

Compared with doctors who are paid per visit, doctors who are paid **standard annual fees** (the capitation group):

- Enrolled healthier patients
- Enrolled 30% fewer new patients who didn't previously have family doctors
- Provided 32% less after-hours care
- Had a 20% higher rate of emergency department visits

Dr. Glazier noted, "As far as we could tell, this situation was present before the doctors joined their groups and didn't change as a result of capitation. This means that the capitation model attracted doctors with these kinds of practices. **Both of the new models enrolled patients who were wealthier than average in their communities.** While the capitation model provides an alternative to fee-for-service practice, **its incentives may need to be altered so that its benefits can be made available to all Ontarians.**"

Glazier RH, Klein-Geltink J, Kopp A, Sibley LM. Capitation and enhanced fee-for-service models for primary care reform: a population-based evaluation. *CMAJ* 2009; 180(11):E72-81.

A routine 25-km patient transfer in an ambulance costs \$704 in Ontario.

What are our local ambulances being used for?

Fully-equipped ambulances staffed by highly-trained paramedics—the same ambulances that respond to emergency 911 calls—are being used for routine and non-urgent patient transfers more than 80% of the time.

This is one finding from a study conducted jointly by researchers at ICES, the University of Toronto, Ornge Transport Medicine and Sunnybrook Health Sciences Centre. The study, which gives an interesting glimpse into some of the hidden costs of health care, also found that:

- Each year nearly **400,000 patient transfers**—about **1,000 trips per day**—take place in Ontario.
- **Total cost for patient transfers: \$283 million** in the period from June 2004 to May 2005. **Average one-way cost: \$704** for inter-facility patient transfer.
- There was a **high rate of “lateral transfers”**—the movement of patients between similarly classified hospitals. More than **16,000 patients** (4.7% of all transfers) were moved from one large, tertiary care teaching hospital to another and sometimes back again, most often for cardiac care.

“Primarily, these are for physician appointments, dialysis or returning to the facility they came from or home,” said lead author **Dr. Victoria Robinson**.

As a result of hospital restructuring in the 1990s, patients no longer experience “one-stop shopping” when they’re hospitalized. That has translated into **1 in 3 patients** admitted to hospital being transferred to another facility for treatment.

“An emergency transfer is going to take priority over a non-urgent transfer, which could be, for example, a dialysis appointment. Even though the appointment is not urgent, the patient has to receive that care, and its delay will have a negative impact on their health,” Dr. Robinson said.

Robinson V, Goel V, MacDonald RD, Manuel D. Inter-facility patient transfers in Ontario: Do you know what your local ambulance is being used for? *Healthc Policy* 2009; 4(3):53–66.

Myth Buster:

Ambulances are used to transport patients solely for emergencies



Good news for stroke care across Ontario, but more can be done for stroke prevention

Ontario has been a national and international leader in organized stroke care delivery.

With its implementation of the **Ontario Stroke System**, Ontario has become a national and international leader in organized stroke care delivery, and it is gratifying to see the marked improvements in stroke care across the province," says lead researcher **Dr. Moira Kapral**.

- In 2004/05, 17% of patients were referred to a **secondary prevention clinic** after discharge from hospital—an increase from 8% of patients in 2002/03. This coincides with an increase in the number of **operational stroke prevention clinics**, from 11 in 2002/03 to 28 in 2004/05.
- Clinical trials have shown that being cared for in a **dedicated stroke unit** can reduce patients' risk of death and disability after stroke. In 2004/05, 32 of 152 acute institutions had dedicated stroke units, and 10.9% of all stroke patients were cared for on these units—an improvement from 2.7% of all stroke patients in 2002/03.

But better stroke care doesn't mean there isn't more to be done for stroke prevention. Another recent ICES study found that only 40% of **ischemic stroke patients** who had atrial fibrillation (a heart disorder putting them at high risk of clots) received the effective anti-clotting drug warfarin before their stroke.

The study also found that 75% of those taking warfarin weren't taking adequate doses of the drug to prevent a stroke. The remainder were taking other, less effective medication or no medication for preventing blood clots and stroke. Overall, 90% of ischemic stroke patients with atrial fibrillation who were at **high risk for stroke** were not taking sufficient anti-coagulant therapy at the time of their stroke.

"These are **missed opportunities** for stroke prevention," says lead ICES investigator **Dr. David Gladstone**. "It's a tragedy. On one hand, we have an extremely effective and cheap medication for stroke prevention—**warfarin**—and on the other hand, it remains underused in people who would benefit most from it."



Photo: SexyLady

Providing patient education tools, reminders to physicians and system-wide changes, such as more widespread establishment of specialized anticoagulation management clinics, may be some ways to help improve the situation.

Stroke is the fourth leading cause of death and a leading cause of adult disability in Canada



Dr. Moira Kapral



Dr. David Gladstone

Kapral M, Hall R, Silver F, Lindsay M, Richards J, Robertson A, Fang J. *Registry of the Canadian Stroke Network. Report of the 2004/05 Ontario Stroke Audit.* Toronto: Institute for Clinical Evaluative Sciences; 2009.

Gladstone DJ, Bui E, Fang J, Laupacis A, Tu J, Lindsay MP, Silver FL, Kapral MK. Potentially preventable strokes in high-risk patients with atrial fibrillation who are not adequately anticoagulated. *Stroke* 2009; 40(1):235–240.



Dr. David Urbach

Cancer surgery atlas maps variations in patterns of care

In 2006, ICES was commissioned by Cancer Care Ontario to produce an atlas of cancer surgery in Ontario.

The atlas provides a baseline indication of the state of cancer surgery services in Ontario before the creation of the province's 14 Local Health Integration Networks (LHINs) in 2006.

The atlas's research team, led by **Dr. David Urbach**, focused on the four most common types of cancer affecting Canadians—**breast, prostate, colorectal and lung cancer**—as well as on cancers of the **female genital tract**, and found that:

- Many Ontarians who were **newly diagnosed** with cancer underwent some kind of surgery in the 12 months prior to and following their diagnoses and the proportion who had surgery varied according to the LHIN where they resided. For example, the percentage of breast cancer patients treated with breast-conserving surgery ranged from a low of 46% to a high of 75% across the LHINs.
- It is possible that **some cancer patients did not receive the highest-quality surgical procedures**. For example, 46% of the women who underwent major surgery for vulvar cancer did not receive groin lymph node dissection.
- **Surgeons provided a substantial amount of care** to people newly diagnosed with cancer, regardless of whether these patients underwent surgical procedures for their disease.

- **Some patients did not receive surgical procedures** that might have cured their disease. Only 19% of patients with lung cancer had surgery to remove their tumours. The most common reason that people are not offered potentially curative surgery is that their cancers have progressed to a point where tumour removal is no longer beneficial.

Researchers can begin to focus on parts of the province where there is lower-than-optimal use of cancer surgery, where wide variations exist in the use of diagnostic tools, and where there may be significant variation in approaches to cancer treatment.

The **Cancer Surgery Atlas** is available online at <http://www.ices.on.ca>.

Urbach D, Simunovic M, Schultz S (editors). *Cancer Surgery in Ontario: ICES Atlas*. Toronto: Institute for Clinical Evaluative Sciences; 2008.

Men aged 70 or older with prostate cancer tended to have more same-day procedures than younger men, suggesting that younger men were more likely to have more radical surgery.

Check driving ability of seniors with dementia

More dementia patients on psychotropic medications are involved in car crashes—compared to drivers not on these medications.

A recent ICES study shed light on the dangers of older drivers with dementia getting behind the wheel if they are being prescribed psychotropic medications.

“Patients on psychotropic medications—antipsychotics, benzodiazepines or antidepressants—were at a significantly **greater risk of a motor vehicle collision by approximately 50%,”** said Dr. Mark Rapoport, lead investigator of the study. “Although behavioural disturbances sometimes predict driving cessation in dementia, **there are many patients who do not cease driving** and may be at a distinctly higher risk.”

In Canada, only 7 of the 10 provinces require doctors to “pull” a license when a patient appears incapable of driving a vehicle.

“The collaborative and **confidential sharing of data** by the Ontario Ministries of Health and Transportation with ICES was an **important innovation** implemented for this study, paving the way for potential future research on road risks associated with health conditions,” said Dr. Rapoport.



With more than four million Canadians now over the age of 65, more seniors are getting into motor vehicle collisions.

WHAT IS HAPPENING NOW?

Candrive is launching a five-year, eight-city study involving 1,000 drivers aged 70 and older—the most comprehensive study of elderly driving ever undertaken. This will result in a screening tool that will help physicians make objective decisions about older peoples' fitness to drive.

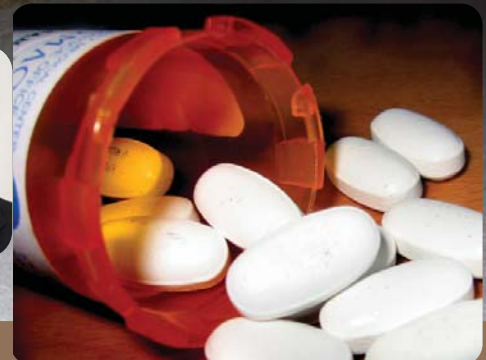
For more information: <http://www.candrive.ca/>

Fit to Drive?

Symptoms or prescription of medications should prompt physicians to evaluate effect on road safety



Dr. Mark Rapoport



Rapoport M, Molnar F, Rochon P, Juurlink D, Zagorski B, Seitz D, Morris J, Redelmeier D. Psychotropic medications and motor vehicle collisions in patients with dementia. *J Amer Geriatr Soc* 2008; 56(10):1968–70.

We're in the news—television, radio, print and online

ICES studies show... And tell so much.

✓ Surgeon's specialty a factor in repeat surgeries for women with ovarian cancer

Elit L, Bondy S, Paszat L, Holowaty E, Thomas G, Stukel T, Levine M. Surgical outcomes in women with ovarian cancer. *Can J Surg* 2008; 51(5):346–54.

✓ Infection rates low with new cataract surgery techniques

Hatch W, Cernat G, Wong D, Devenyi R, Bell C. Risk factors for acute endophthalmitis after cataract surgery: a population-based study. *Ophthalmology* 2009; 116(3):425–30.

✓ Women with gestational diabetes at increased risk for cardiovascular disease after pregnancy

Shah B, Retnakaran R, Booth G. Increased risk of cardiovascular disease in young women following gestational diabetes. *Diabetes Care* 2008; 31(8):1668–9.

✓ Increasing access to antiplatelet drug clopidogrel improves cardiovascular outcomes

Jackevicius C, Tu J, Demers V, Melo M, Cox J, Rinfret S, Kalavrouziotis D, Johansen H, Behloul H, Newman A, Pilote L. Cardiovascular outcomes after a change in prescription policy for clopidogrel. *N Engl J Med* 2008; 359(17):1802–10.

✓ Hernia surgery wait times increase risk for infants and young children

Zamakhsary M, To T, Guan J, Langer J. Risk of incarceration of inguinal hernia among infants and young children awaiting elective surgery. *CMAJ* 2008; 179(10):1001–5.

✓ Ethnic minorities with diabetes less likely to receive eye exams

Shah B. Utilization of physician services for diabetic patients from ethnic minorities. *J Pub Health* 2008; 30(3):327–31.

✓ Wealthier heart attack survivors more likely to make needed lifestyle changes

Chan R, Gordon N, Chong A, Alter D. Influence of socioeconomic status on lifestyle behavior modifications among survivors of acute myocardial infarction. *Am J Cardiol* 2008; 102(12):1583–8.

More telling evidence

- **Risk of serious assault spikes with liquor sales:** The overall risk of being hospitalized in Ontario for assault increased by 13% for every extra 1,000 litres of alcohol sold per liquor store on the previous day. At times of peak sales, the risk of assault was 41% higher than at times when alcohol sales were lowest.

Ray J, Moineddin R, Bell C, Thiruchelvam D, Creatore M, Gozdyra P, Cusimano M, Redelmeier D. Alcohol sales and risk of serious assault. *PLoS Med* 2008; 5 (5):e104.

- **Cardiac rehabilitation save lives:** People participating in a program of exercise, education and lifestyle modification after a heart attack cut their risk of dying from a subsequent attack by 51%.

Alter D, Oh P, Chong A. Relationship between cardiac rehabilitation and survival after acute cardiac hospitalization within a universal health care system. *Eur J Cardiovasc Prev Rehabil* 2009; 16(1): 102–13.

- **Pre-operative anesthesia consultation reduces hospital stay:**

Patients evaluated by an anesthesiologist in the days before surgery had their hospital stay reduced by one-third of a day on average. This corresponds to more than 11,000 days of hospitalization that might be prevented in Ontario every year. Wijeyesundera D, Austin P, Beattie S, Hux J, Laupacis A. A population-based study of anesthesia consultation before major noncardiac study. *Arch Intern Med* 2009; 169(6):595–602.

- **Antacids diminish the effectiveness of a popular cardiac drug:**

Patients given the blood thinner clopidogrel in combination with certain acid suppressants were 40% more likely to have another heart attack in the first 3 months after leaving hospital.

Juurlink D, Gomes T, Ko D, Szmitko P, Austin P, Tu J, Henry D, Kopp A, Mamdani M. A population-based study of the drug interaction between proton pump inhibitors and clopidogrel. *CMAJ* 2009; 180(7):713–8.

- **Diabetes testing on the rise in Ontario:**

Despite its absence in Canada's diabetes screening recommendations, hemoglobin A1C testing in those without diabetes is increasing rapidly, while oral glucose tolerance tests, which are recommended, are rarely performed.

Wilson S, Lipscombe L, Rosella L, Manuel D. Trends in laboratory testing for diabetes in Ontario, Canada 1995–2005: a population-based study. *BMC Health Serv Res* 2009; 9(1):41.

- **Colonoscopy not as effective in identifying some colon cancers:** While colonoscopy is strongly associated with fewer deaths from cancer in the left side of the colon, it has almost no benefit in preventing deaths from right-sided colon cancer; however, colonoscopy is still a useful cancer screening tool.

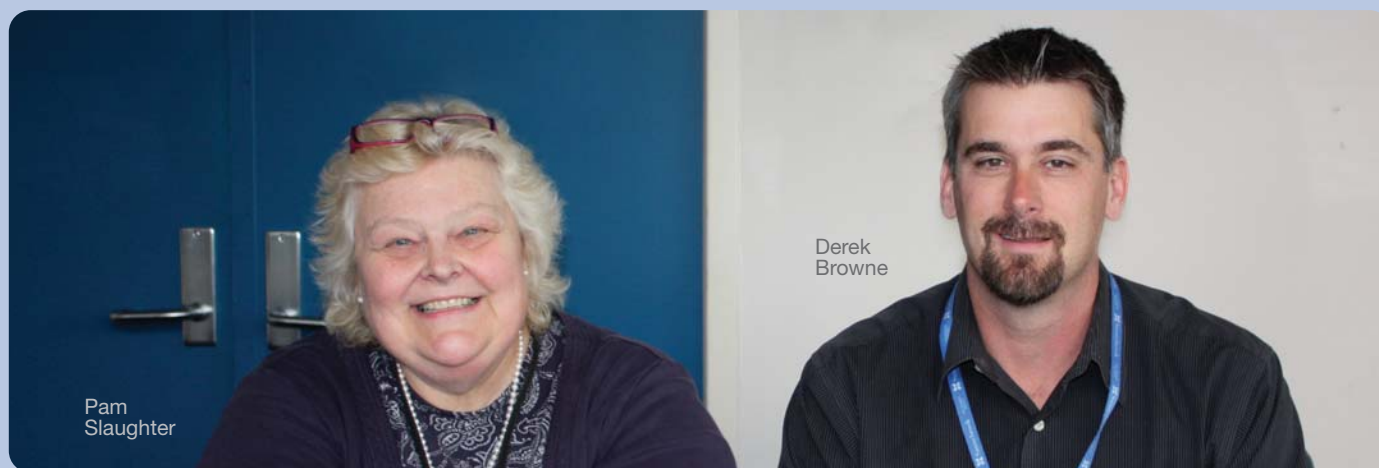
Baxter N, Goldwasser M, Paszat L, Saskin R, Urbach D, Rabeneck L. Association of colonoscopy and death from colorectal cancer. *Ann Intern Med* 2009; 150(1):1–8.

- **Earlier predictions seriously underestimate the prevalence of hypertension:** The number of Ontario adults with hypertension more than doubled from 1995 to 2005, far exceeding an earlier prediction of a 24% increase in developed countries by 2025.

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• CFTO NEWS • 680 NEWS • CFRB • GOOGLE NEWS • YAHOO NEWS • REUTERS • GLOBE & MAIL • TORONTO STAR • NATIONAL POST
• CANADIAN PRESS • MEDICAL NEWS TODAY • HEALTHCARE QUARTERLY • THE GUARDIAN (UK) • BLOOMBERG



Privacy and Security

Expanding partnerships means changes for privacy and security at ICES

There is no disagreement between **Pam Slaughter**, ICES Chief Privacy Officer, and **Derek Browne**, ICES Chief Information Security Officer, that “security is what gives privacy legs.”

Expansion is exciting, creates new capacity and brings new areas of scientific expertise to the ICES roster, but it also ups the ante from a risk perspective. ICES’ reputation as a leader in research privacy pivots on the prospective integration of privacy- and security-enhancing technology and methodologies in the planning of ICES research projects.

The Chief Information Security Officer has been deeply involved in both the technical rollout of the ICES expansion project, and the security risk management aspects—everything from requirements definition to architecture and design to partnership management. The ICES expansion has also led to upgrading local network capabilities. “We are confident we are prepared for the significant growth to come in the next few years,” says Browne.

Similar growth is underway on the privacy side where escalating demand from increasing numbers of scientists and staff from all ICES sites has led to the creation of a new multi-layered approach. A rich resource for general privacy information is the ICES-Central Privacy Office, staffed by **Jan Richards** and **Stella Desouza**.

The “virtual” side of the Privacy Office—teleconference collaboration of Privacy Officers across the ICES Network—is providing a networking and training opportunity for ICES. This collaborative team, including **Susan Rohland** of ICES-Queen’s and **Dr. Anne Lavigne** of ICES-uOttawa, can provide in-depth assistance to ICES scientists and collaborators.

Both Browne and Slaughter look forward to the opportunity for further expansion of ICES. Creating a **secure and privacy-protective environment** for the analysis and evaluation of Ontario’s anonymized health data is a big challenge for the privacy/security team, but the results—data-driven evidence for clinicians, decision-makers and other stakeholders—make it worthwhile.



A Sample of ICES Expertise



ICES-Central

AUDITORS' REPORT ON SUMMARIZED FINANCIAL STATEMENTS

We have audited the statement of financial position of the **Institute for Clinical Evaluative Sciences** as at **March 31, 2009** and the statements of operations and cash flows for the year then ended. These financial statements are the responsibility of the Institute's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are

free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Institute as at March 31, 2009 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

PricewaterhouseCoopers LLP

Chartered Accountants,
Licensed Public Accountants
Toronto, Canada—June 11, 2009

TWO-YEAR HISTORICAL SUMMARIZED FINANCIAL DATA

Statement of Financial Position

As at March 31, 2009

	Capital and Operating Fund		Restricted Fund		Total	
	2009	2008	2009	2008	2009	2008
	\$	\$	\$	\$	\$	\$
Assets						
Current assets						
Cash	688,634	48,607	11,059,242	7,551,811	11,747,876	7,600,418
Accounts receivable	434,147	705,696	235,874	877,919	670,021	1,583,615
Prepaid expenses	87,291	55,809	73,446	57,826	160,737	113,635
	1,210,072	810,112	11,368,562	8,487,556	12,578,634	9,297,668
Property, plant and equipment	1,101,628	598,123	-	-	1,101,628	598,123
	2,311,700	1,408,235	11,368,562	8,487,556	13,680,262	9,895,791
Liabilities and Deferred Amounts						
Current liabilities						
Accounts payable and accrued liabilities	657,852	505,309	-	-	657,852	505,309
Due to Ministry of Health and Long-Term Care	-	-	171,895	-	171,895	-
Due to Sunnybrook Health Sciences Centre	479,020	256,703	-	-	479,020	256,703
	1,136,872	762,012	171,895	-	1,308,767	762,012
Post-employment benefits other than pensions	73,200	48,100	-	-	73,200	48,100
Deferred capital grant	1,101,628	598,123	-	-	1,101,628	598,123
Deferred expense grants	-	-	11,196,667	8,487,556	11,196,667	8,487,556
	2,311,700	1,408,235	11,368,562	8,487,556	13,680,262	9,895,791

Statement of Operations

TWO-YEAR HISTORICAL SUMMARIZED FINANCIAL DATA

For the year ended March 31, 2009

	Capital and Operating Fund		Restricted Fund		Total	
	2009 \$	2008 \$	2009 \$	2008 \$	2009 \$	2008 \$
Revenue						
Grants-operating	6,710,027	5,562,591	-	-	6,710,027	5,562,591
Interest income	27,113	47,197	-	-	27,113	47,197
Other revenue	5,027,962	4,142,864	-	-	5,027,962	4,142,864
Amortization of deferred expense grants	-	-	10,602,956	6,168,836	10,602,956	6,168,836
	11,765,102	9,752,652	10,602,956	6,168,836	22,368,058	15,921,488
Expenditures						
Salaries and benefits	9,395,390	7,545,620	2,081,247	3,164,553	11,476,637	10,710,173
Consultative services	693,939	515,091	7,823,473	2,400,146	8,517,412	2,915,237
Computer supplies and software	225,946	218,036	269,608	149,712	495,554	367,748
Office and general	351,848	326,023	225,226	215,264	577,074	541,287
Travel	37,711	25,455	106,601	90,640	144,312	116,095
Amortization of property, plant and equipment	277,302	310,087	-	-	277,302	310,087
Professional	58,805	57,895	25,116	12,458	83,921	70,353
Administrative	420,500	406,293	815	81,435	421,315	487,728
Other	303,661	348,152	70,870	54,628	374,531	402,780
	11,765,102	9,752,652	10,602,956	6,168,836	22,368,058	15,921,488
Excess of revenue over expenditures for the year	-	-	-	-	-	-

Statement of Cash Flows

For the year ended March 31, 2009

	Capital and Operating Fund		Restricted Fund		Total	
	2009 \$	2008 \$	2009 \$	2008 \$	2009 \$	2008 \$
Cash provided by (used in)						
Operating activities						
Items not affecting cash						
Increase in post-employment benefits other than pensions	25,100	15,700	-	-	25,100	15,700
Decrease in deferred operating grant	-	(458,350)	-	-	-	(458,350)
Amortization of deferred capital grant	(277,302)	(132,587)	-	-	(277,302)	(132,587)
Amortization of deferred expense grants	-	-	(10,602,956)	(6,168,836)	(10,602,956)	(6,168,836)
Transfer from deferred expense grant	-	-	(624,340)	(138,366)	(624,340)	(138,366)
Amortization of property, plant and equipment	277,302	132,587	-	-	277,302	132,587
Change in non-cash working capital	614,927	16,931	798,320	(891,736)	1,413,247	(874,805)
	640,027	(425,719)	(10,428,976)	(7,198,938)	(9,788,949)	(7,624,657)
Investing activities						
Transfer from operating grant to deferred capital grant	215,793	177,500	-	-	215,793	177,500
Transfer from OICR grant to deferred capital grant	565,014	-	-	-	565,014	-
Purchase of property, plant and equipment	(780,807)	(177,500)	-	-	(780,807)	(177,500)
	-	-	-	-	-	-
Financing activities						
Deferred grants received plus interest income	-	-	13,936,407	10,496,932	13,936,407	10,496,932
Increase (decrease) in cash during the year	640,027	(425,719)	3,507,431	3,297,994	4,147,458	2,872,275
Cash—Beginning of year	48,607	474,326	7,551,811	4,253,817	7,600,418	4,728,143
Cash—End of year	688,634	48,607	11,059,242	7,551,811	11,747,876	7,600,418

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