

At A Glance

March 2012

Monthly highlights of ICES research findings for stakeholders

Patients prescribed painkillers after minor surgery may become chronic users

Alam A, Gomes T, Zheng H, Mamdani MM, Juurlink DN, Bell CM. Long-term analgesic use after low-risk surgery: a retrospective cohort study. *Arch Intern Med.* 2012; 172(5):425–30.

Issue	Patients are often prescribed analgesics for short-term use in anticipation of post-operative pain. Older patients have a greater risk of adverse reactions to these drugs. What is the risk of long-term analgesic use after low-risk surgery in older patients not previously prescribed the drugs?
Study	Identified Ontario residents aged 66 and older who were dispensed an opioid within seven days of a short-stay surgery (e.g., cataract surgery) between April 1997 and December 2008. Determined if the drug was being used within 60 days of the one-year anniversary of the surgery.
Key Findings	Among 391,139 opioid-naïve patients undergoing minor surgery, opioids were newly prescribed to 27,636 patients (7.1%) within seven days of hospital discharge and were prescribed to 30,145 patients (7.7%) at one year after surgery. Patients receiving an opioid prescription within seven days of surgery were 44% more likely to be chronic opioid users within one year.
Implications	Long-term opioid use may best be addressed by preventing its initiation. Interventions such as the development of electronic records and models of care that facilitate communication between peri-operative and family physicians may help reduce the risk of progress from short-term to long-term use.

Antibiotic and dementia drug combination not linked to increased cardiac events in seniors

Hutson JR, Fischer HD, Wang X, Gruneir A, Daneman N, Gill SS, Rochon PA, Anderson GM. Use of clarithromycin and adverse cardiovascular events among older patients receiving donepezil: a population-based, nested case-control study. *Drugs Aging.* 2012; 29(3):205–11.

Issue	Donepezil, a drug used to treat mild to moderate Alzheimer's disease, can provoke adverse cardiac events. The antibiotic clarithromycin may increase this risk. What is the association between the use of clarithromycin and adverse cardiovascular events in elderly patients receiving donepezil?
Study	Of Ontarians aged 66 and older who were prescribed donepezil and one of six antibiotics including clarithromycin between July 2002 and March 2010, identified those hospitalized for a cardiovascular event and matched each with five controls by age, sex and residence.
Key Findings	Identified 83,563 patients who were continuous donepezil users. Of these, 17,712 patients received a study antibiotic and 59 of them were hospitalized for bradycardia, syncope or complete AV block within 30 days. In comparison to the other antibiotics, there was no significant association between the use of clarithromycin and a subsequent cardiovascular event.
Implications	Given the benefit of antibacterial therapy, it may not make clinical sense to stop using clarithromycin in older people receiving donepezil. If other antibacterials that do not affect donepezil metabolism are equally effective in the specific clinical setting, then it may be wise to use the alternative rather than clarithromycin.

Kidney donors at no greater risk of heart disease than non-donors

Garg AX, Meirambayeva A, Huang A, Kim J, Ramesh Prasad GV, Knoll G, et al. for the Donor Nephrectomy Outcomes Research Network. Cardiovascular disease in kidney donors: matched cohort study. *BMJ.* 2012; 344:e1203.

Issue	In the general population, there is an established association between reduced kidney function and an increased risk of cardiovascular disease. Do kidney donors experience the same cardiovascular risk?
Study	Matched 2,028 people selected to become kidney donors in Ontario between 1992 and 2009 with 20,280 healthy non-donors and followed them until March 31, 2010, death or emigration from the province. The primary outcome was time to death or first major cardiovascular event. The secondary outcome was time to first major cardiovascular event, censored for death.
Key Findings	Donors and non-donors were followed for a median of 6.5 years (maximum 17.7 years). The risk of the primary outcome of death or major cardiovascular event was lower in donors than in non-donors (2.8 vs. 4.1 events per 1,000 person-years). The risk of major cardiovascular events censored for death was similar in the two groups (1.7 vs. 2.0 events per 1,000 person-years).
Implications	These results add to the evidence base supporting the safety of the practice of kidney donation among carefully selected donors.

Primary care models vary in their care for Ontario's poor and sick

Glazier RH, Zagorski BM, Rayner J. *Comparison of Primary Care Models in Ontario by Demographics, Case Mix and Emergency Department Use, 2008/09 to 2009/10*. Toronto: Institute for Clinical Evaluative Sciences; 2012.

Issue	Are there differences between Ontario's primary care models in whom they serve and how often their patients/clients go to the emergency department (ED)?
Study	Examined primary care models in Ontario from April 2008 to March 2010, including: Community Health Centres (CHCs, a salaried model); Family Health Groups (FHGs, a blended fee-for-service model); Family Health Networks (FHNs, a blended capitation model); Family Health Organizations (FHOs, a blended capitation model); Family Health Teams (FHTs, an inter-professional team model composed of FHNs and FHOs); 'Other' smaller models combined; and those who did not belong to a model.
Key Findings	<ul style="list-style-type: none"> • Compared with the Ontario population, populations served by CHCs were from lower income neighborhoods, had higher proportions of newcomers and recipients of social assistance, had more severe mental illness and chronic health conditions, and had higher rates of morbidity and co-morbidity. In both urban and rural areas, populations served by CHCs had much lower than expected ED visit rates. • FHGs and 'Other' models had sociodemographic and morbidity profiles that were very similar to Ontario as a whole, but FHGs had a higher proportion of newcomers, likely reflecting their more urban locations. Both urban and rural FHGs and 'Other' models had lower than expected ED visits. • FHNs and FHTs had a large rural profile, while FHOs were similar to Ontario overall. Compared with the Ontario population, patients in these three models were from higher income neighbourhoods, were much less likely to be newcomers, and were less likely to use the health system or have high rates of co-morbidity. ED visits were higher than expected in all three models. • Those who did not belong to any of the models of care studied were more likely to be male, younger, make less use of the health system and have lower rates of morbidity and co-morbidity than those enrolled in a model of care. They had more ED visits than expected.
Implications	Ontario's primary care models serve different populations and are associated with different outcomes. The payment and incentive structures underlying these models require re-examination. The CHC model offers an attractive alternative in many respects, but CHCs serve a different role than the other primary care models and are resourced and governed quite differently. Where they fit within primary care in Ontario should be the subject of further policy consideration.

Higher-spending hospitals in Ontario have better patient outcomes

Stukel TA, Fisher ES, Alter DS, Guttman A, Ko DT, Fung K, Wodchis WP, Baxter NN, Earle CC, Lee DS. *Association of hospital spending intensity with mortality and readmission rates in Ontario hospitals*. *JAMA*. 2012; 307(10):1037-45.

Issue	To what extent does higher hospital spending produce higher-quality care and better patient outcomes in a universal health care system with selective access to medical technology?
Study	Identified 387,757 Ontario adults aged 18 and older with a first hospitalization for acute myocardial infarction (AMI), congestive heart failure (CHF), hip fracture or colon cancer from 1998 to 2008. Determined mortality and readmission rates at 30 days and one year. For the 129 hospitals included, calculated the average adjusted spending on hospital, emergency department and physician services provided to patients.
Key Findings	<ul style="list-style-type: none"> • Spending varied about two-fold across hospitals. Higher-spending hospitals tended to be larger, teaching or community hospitals; were located in urban areas; were associated with regional cancer centres; had specialized onsite services such as cardiac catheterization, cardiac surgery and diagnostic imaging; had higher nursing staff ratios; and had attending physicians who were more likely to be specialists or to care for a higher volume of patients with that condition. • Patients admitted to higher-spending hospitals had longer lengths of stay; were less likely to be admitted to an intensive care unit; had more medical specialist visits during their stay; and were more likely to receive cardiac interventions and evidence-based discharge medications (cardiac patients). • In highest- vs. lowest-spending hospitals: (i) 30-day mortality rates were 12.7% vs. 12.8% for AMI, 10.2% vs. 12.4% for CHF, 7.7% vs. 9.7% for hip fracture, and 3.3% vs. 3.9% for colon cancer; (ii) 30-day rates of major cardiac events were 17.4% vs. 18.7% for AMI, and 15.0% vs. 17.6% for CHF; and (iii) 30-day readmission rates were 23.1% vs. 25.8% for hip fracture, and 10.3% vs. 13.1% for colon cancer. Results were similar after one year of follow-up.
Implications	These results suggest that it is critical to understand not simply how health care funding is spent but whether it is spent on effective procedures and services.

ICES is an independent, non-profit organization that conducts research on a broad range of topical issues to enhance the effectiveness of health care for Ontarians. Internationally recognized for its innovative use of population-based health information, ICES research provides evidence to support health policy development and changes to the organization and delivery of health care services