

At A Glance

February 2010

Monthly highlights of ICES research findings for stakeholders

Ultrasound use soars for pregnant women, even in low-risk pregnancies

You J, Alter D, Stukel T, McDonald S, Laupacis A, Liu Y, Ray J. Proliferation of prenatal ultrasonography. *CMAJ*. 2010; 182(2):143–51.

Issue	Current guidelines recommend two ultrasounds in an uncomplicated pregnancy – one in the first trimester and another in the second to screen for abnormalities. What is the association between ultrasound use and maternal risk in Ontario?
Study	Identified approximately 1.4 million singleton deliveries in Ontario hospitals to women aged 16 to 54 between April 1996 and March 2007, and linked these births to health insurance claims to determine the number of ultrasounds per pregnancy on a year-by-year basis.
Key Findings	The proportion of pregnancies with four or more second or third trimester ultrasounds increased nearly threefold over the study period, from 6.4% in 1996 to 18.7% in 2006. The increase was more pronounced among low-risk pregnancies than high-risk ones (those involving maternal comorbidity, a need for genetic counseling or a prior complicated pregnancy).
Implications	More judicious use of prenatal ultrasounds in low-risk women is required, but there should be careful discussion over the best approach to balance frequency and medical need.

Older patients with refractory depression may not be getting the treatment they need

Shulman K., Fischer H, Herrmann N, Huo C, Anderson G, Rochon P. Current prescription patterns and safety profile of irreversible monoamine oxidase inhibitors: a population-based cohort study of older adults. *J Clin Psychiatry*. 2009;70(12):1681–6.

Issue	Irreversible monoamine oxidase inhibitors (MAOIs) are a class of antidepressants that have fallen out of favour due to concerns about potentially serious food and drug interactions, although they are a preferred treatment option for refractory, atypical and bipolar depression. What is the prescription pattern and safety profile of MAOIs in Ontario?
Study	Identified all Ontario residents aged 66 or older who were dispensed an MAOI between January 1997 and December 2006. Rates of MAOI use, the frequency of co-prescribing of MAOIs with contraindicated medications, and serious adverse events related to MAOI use were assessed.
Key Findings	Over the 10 years, there were 348 new users of MAOIs, the majority of whom had been treated for a recurrent major depressive disorder. The yearly incidence of MAOI prescriptions remained low and decreased from a rate of 3.1/100,000 in 1997 to 1.4/100,000 in 2006. Concomitant exposure to at least one contraindicated drug occurred in 18% of patients treated with an MAOI. No emergency department visits or hospital admissions for MAOI-related adverse events were identified.
Implications	The low prescription rate of MAOIs is not consistent with the continued recommendation of MAOIs by experts and consensus guidelines. The availability of updated dietary guidelines and attention to potential drug interactions create safe conditions for use of these drugs.

Low-risk patients do not benefit from cardiac stress testing before major surgery

Wijeyesundera D, Beattie W, Austin P, Hux J, Laupacis A. Non-invasive cardiac stress testing before elective major non-cardiac surgery: a population-based cohort study. *BMJ*. 2010 Jan 28; 340:b5526.

Issue	Is cardiac stress testing before major surgery associated with better post-operative clinical outcomes?
Study	Analyzed 271,082 patients aged 40 or older who had major elective non-cardiac surgery in Ontario between April 1994 and March 2004. Compared length of hospital stay and survival one year after surgery in patients who had non-invasive cardiac stress testing with those who did not.
Key Findings	Nearly 9% of patients underwent stress testing within 180 days before surgery. Patients with risk factors for heart complications after surgery had a lower chance of dying within one year and shorter hospital stays if they underwent stress testing before major surgery. For patients with one or two risk factors, one death could have been prevented for every 156 tests performed. For patients with three or more risk factors, one death could have been prevented for every 38 tests performed. Patients who had stress testing despite having no risk factors had a slightly higher chance of dying within one year after surgery. For these patients, one extra death may have resulted for every 179 tests performed.
Implications	These results are consistent with current U.S. treatment guidelines that suggest that only patients with clinical risk factors for cardiac complications should undergo stress testing before surgery.

Physicians in non-fee-for-service practice models benefit most from primary care reforms

Green M, Hogg W, Gray D, Manuel D, Koller M, Maaten S, Zhang Y, Shortt S. Financial and work satisfaction: impacts of participation in primary care reform on physicians in Ontario. *Healthc Policy*. 2009; 5(2):e161–e176.

Issue	Ontario has introduced a number of alternatives to fee-for-service (FFS) payment of family physicians (FPs) with predictions of higher incomes and greater work satisfaction used as incentives to convert to these new models. Have these predicted benefits materialized?
Study	Compared incomes, practice patterns and work satisfaction of Ontario FPs remaining in FFS with those who switched to one of two new models—family health networks (FHNs), a blended capitation payment model, and family health groups (FHGs), a blended fee-for-service model; or who practiced in one of two established alternatives to FFS—health service organizations (HSOs) and community health centres (CHCs). Tax records and health insurance claims were analyzed to establish physician income and workload, respectively, and physician self-reported survey results were examined to determine work satisfaction.
Key Findings	<ul style="list-style-type: none"> • In total, 332 FPs agreed to participate in the study; due to absences from practice, only 220 FPs were included in the income analysis. • Non-FFS physicians (those in FHNs, HSOs, CHCs) were more satisfied overall with their payment model and in almost all measured dimensions of work satisfaction than physicians in the FFS models (FHGs and FFS). • Incomes were similar across groups prior to the introduction of primary care reform. FPs in FHNs and FHGs saw their incomes rise by 30% and 10%, respectively, and those in FFS experienced minimal changes or decreases. • FHN physicians (who were more likely to be located in rural regions) were more active in the provision of emergency department services, hospital and nursing home visits, and obstetrics than physicians in the FFS or FHG models. • Patient populations for each practice model were quite similar in terms of age, sex and prevalence of common chronic diseases.
Implications	The availability of a menu of payment models may help to attract new physicians and retain those currently in practice – both significant challenges for Ontario’s health care system. Evaluation of the impact of the various practice models on a range of process and outcome measures, including access and quality of care, is required as primary care reform continues to evolve.

One in three Ontarians at risk of being diagnosed with asthma

To T, Wang C, Guan J, McLimont S, Gershon A. What is the lifetime risk of physician-diagnosed asthma in Ontario, Canada? *Am J Respir Crit Care Med*. 2010; 181(4):337-43.

Issue	Lifetime risk is a measure of the cumulative risk of developing a disease during an individual’s lifespan. Although asthma affects a significant proportion of the population, its lifetime risk has not been reported.
Study	Identified over 9 million individuals aged 0–79 living in Ontario on April 1, 1996, who had not been diagnosed with asthma, and tracked them to March 31, 2007. They were censored when they were diagnosed with asthma, turned 80 or died. Lifetime risk was calculated and the result stratified by sex, rurality and neighbourhood income.
Key Findings	<ul style="list-style-type: none"> • Overall, the lifetime risk of developing asthma was 33.9%. • A person who had not been diagnosed with asthma by age 10 still had a 20% risk of being diagnosed with asthma over the rest of his or her lifetime; a person who had not been diagnosed by age 30 had a 13% risk of being diagnosed over the rest of his or her lifetime. • Individuals of all ages were at risk of being diagnosed with asthma; however, the risk was highest in children. • The lifetime risk of being diagnosed with asthma was higher in females than males (35.0% vs. 32.9%) and in individuals living in urban areas than in rural areas (34.5 % vs. 30.1%). Individuals living in low-income neighbourhoods had significantly higher risk than those living in the highest income neighbourhoods (35.0% vs. 32.2%).
Implications	These findings will help researchers and health planners identify required research, predict the burden of asthma on society, and target the at-risk population for asthma prevention, management and control.