At A Glance

February 2011

Monthly highlights of ICES research findings for stakeholders

Low-income Ontarians being prescribed opioids in contravention of guidelines

Gomes T, Juurlink D, Dhalla I, Mailis-Gagnon A, Paterson M, Mamdani M. Trends in opioid use and dosing among socioeconomically disadvantaged patients. *Open Med*. 2011; 5(1):13-22.

Issue Opioids include strong, potentially addictive painkillers like morphine, codeine and oxycodone. What are current trends in opioid utilization in Ontario among recipients of social assistance?

Study Examined prescriptions paid by Ontario's public drug plan for patients aged 15 to 64 from 2003 to 2008 and investigated the relation between opioid dose and opioid-related mortality. Daily opioid use was defined as moderate (up to 200 mg of oral morphine or equivalent), high (201 to 400 mg) or very high (more than 400 mg).

Key Findings Opioid prescribing rates rose 16.2% over the period. By 2008, 180,974 individuals were receiving nearly 1.5 million opioid prescriptions annually. The use of sustained-release opioids, such as OxyContin, increased by 52% over the period. In 2008, 32.6% of people treated with OxyContin received daily doses equivalent to more than 200 mg of oral morphine per day. Among patients receiving high daily doses of opioids (more than 200 mg morphine per day), all-cause mortality rates were up to 10 times higher than that of the general population.

Implications Programs to educate physicians and pharmacists about opioid safety and prescribing guidelines, as well as initiatives that allow real-time monitoring of medication use, may help in addressing these risks.

Universal access to health care not enough to ensure Canadians get and stay healthy

Alter D, Stukel T, Chong A, Henry D. Lesson from Canada's universal care: socially disadvantaged patients use more health services, still have poorer health. *Health Aff*. 2011; 30(2):274–83.

Issue Does universal access to health care reverse the worse health status associated with low socioeconomic status?

Study Analyzed health service use, disease progression patterns and survival rates among 14,800 Canadians who took part in the National Population Health Survey in 1996 and 1997. Participants were stratified by income and education groups and followed for at least 10 years and 7 months.

Key Findings Compared to those of higher socioeconomic status, individuals with lower incomes: were more likely to die of cardiovascular diseases; used more health care resources; were more likely to have cancer, high blood pressure or diabetes, smoke daily for more years and live inactive lifestyles; and had more visits to primary care physicians. Patients earning at least $50,000 annually had only 35% of the mortality risk as those earning less than $30,000. Patients with a university degree had only 26% of the mortality risk as those who had not finished high school.

Implications Increased use of health care did not translate into better outcomes for disadvantaged Canadians. Health care planners need to consider investing in preventive strategies that can be introduced early in patients' lives to help change unhealthy behaviours.

Understanding future risk of diabetes mellitus for women with gestational diabetes mellitus

Retnakaran R, Austin P, Shah B. Effect of subsequent pregnancies on the risk of developing diabetes following a first pregnancy complicated by gestational diabetes: a population-based study. *Diabet Med*. 2011; 28(3):287–92.

Issue Women with gestational diabetes mellitus (GDM) have a high risk of developing type 2 diabetes (DM). What is the effect of subsequent pregnancies on their risk of developing DM following GDM?

Study Identified 26,817 Ontario women whose first pregnancy was between April 2000 and March 2007 and was complicated by GDM, and followed them for a median 4.5 years for subsequent pregnancies and DM.

Key Findings During follow-up, 16.2% of women developed DM. GDM recurred in 41.5% of subsequent pregnancies. GDM status in subsequent pregnancies was associated with future diabetic risk. Specifically, whereas each subsequent GDM pregnancy was associated with a modest additional increase in the risk of diabetes, each non-GDM pregnancy was associated with a 66% reduction in future diabetic risk.

Implications In women with a history of GDM, the glucose tolerance status in a subsequent pregnancy may provide an updated assessment of future diabetic risk potential.

New online tool predicts probability of death from stroke

Saposnik G, Kapral M, Liu Y, Hall R, O'Donnell M, Raptis S, Tu J, Mamdani M, Austin P, for the Registry of the Canadian Stroke Network and the Stroke Outcomes Research Canada Working Group. IScore: a risk score to predict death early after hospitalization for an acute ischemic stroke. *Circulation*. 2011; 123 (7):739–49.

Issue The ability to estimate the prognosis for acute stroke would be useful for clinicians in making treatment decisions and providing reliable information when counselling patients and their families. Few risk scores are available that include simple and relevant clinical variables easily obtained in the hours after hospital admission and that are independent of specialized laboratory tests and imaging evaluations.

Study Developed a risk score model (IScore) by generating a list of predictors of mortality from the scientific literature, selecting data sources, developing criteria for the creation of derivation and validation cohorts, and conceptualizing the model. Identified 12,262 patients aged 18 and older admitted to 12 Ontario hospitals for acute ischemic stroke from July 2003 to June 2008 and used IScore to determine patient mortality rates 30 days and one year after an ischemic stroke. The findings were compared to data from the Ontario Stroke Audit to validate the results.

Key Findings Predictors of mortality included older age, male sex, severe stroke, nonlacunar stroke subtype, glucose level of 7.5mmol/L or higher, history of atrial fibrillation, coronary artery disease, congestive heart failure, cancer, kidney disease on dialysis and preadmission disability. IScore showed an excellent predictive value for 30-day and one-year mortality across the spectrum of the scores, stratifying patients into very low to very high risk for death. For example, patients with scores of less than 105 have a 30-day mortality risk of 1–3%, and those with scores of more than 175 have a 30-day mortality risk of 40%.

Implications This predictive tool (available online at www.sorcan.ca/iscore/) may help doctors estimate mortality risk in stroke patients, help families make more informed decisions and assist policymakers to more accurately compare hospital performance in stroke care.

More than one in four Ontario babies delivered by caesarean section: POWER Study

Dunn S, Wise M, Johnson L, Ferris LE, Anderson G, Yeritsyan N, Degani N, Bierman AS. Reproductive and gynaecological health. In: Bierman AS, editor. Project for an Ontario Women's Health Evidence-Based Report (POWER) Study, Volume 2. Toronto: Institute for Clinical Evaluative Sciences; 2011.

Issue Research suggests that caesarean delivery may pose a higher risk than vaginal delivery and result in higher rates of morbidity for mothers and babies, higher rates of postpartum readmission and an increased risk of complications in subsequent deliveries. What is the rate of delivery by caesarean section in Ontario?

Study Calculated the caesarean section rate among women who gave birth in an Ontario hospital in 2007 using the Niday Perinatal Database.

Key Findings

- Overall, 28% of all hospital deliveries were done by caesarean section.
- Among women who had a previous caesarean section, 84% of deliveries were done by caesarean section.
- Among women who had full-term, singleton, vertex presentations, most of which are likely to be low risk, 23% of deliveries were done by caesarean section.
- Nearly three-quarters of women who had a vaginal delivery were discharged home within 48 hours of delivery. Almost 90% of women who had a caesarean section were discharged within 96 hours of delivery.
- Women who delivered by caesarean section were more likely to be readmitted to hospital than women who delivered vaginally (2.1% and 1.2% of deliveries, respectively).
- Provincially, caesarean section rates varied by Local Health Integration Network, ranging from 24% of deliveries in the South West LHIN to 31% of deliveries in the North Simcoe Muskoka LHIN.

Implications More needs to be done to improve care across the province by reducing regional variation in rates of caesarean sections and reducing the use of higher risk procedures when lower risk options are available.

For more information, contact:
Susan Shiller, Director, Communications, ICES
(416) 480-6700 or susan.shiller@ices.on.ca