

At A Glance

July/August 2012

Monthly highlights of ICES research findings for stakeholders

Provinces, hospitals could save millions by harmonizing drug buying: study

Lapointe-Shaw L, Fischer HD, Newman A, John-Baptiste A, Anderson GM, Rochon PA, Bell CM. Potential savings of harmonising hospital and community formularies for chronic disease medications initiated in hospital. *PLoS One*. 2012; 7(6):e39737

Issue	Canadian hospitals manage their formularies independently, yet many patients are discharged on medications that will be purchased through public programs. How much public money could be saved on chronic medications if hospitals promoted the initiation of drugs with the lowest outpatient formulary prices?
Study	Identified Ontario patients prescribed a proton pump inhibitor (PPI), angiotensin-converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) following hospital admission from April 2008 to March 2009. Assessed the cost to the Ontario Drug Benefit Program over the following year and determined the cost savings if prescriptions were substituted with the least expensive drug in each class.
Key Findings	The cost for filling all PPI, ACEI and ARB prescriptions was \$2.48 million, \$968 thousand and \$325 thousand, respectively. Substituting the least expensive version of each drug could have saved \$1.16 million (47%) for PPIs, \$162 thousand (17%) for ACEIs and \$14 thousand (4%) for ARBs.
Implications	In-hospital selection of drugs with the lowest outpatient prices is one way to limit the long-term costs of chronic drug therapy. In an era of rising healthcare costs, a harmonized approach makes economic sense.

Physician incentive payments have limited impact on care provided to diabetes patients

Kiran T, Victor JC, Kopp A, Shah BR, Glazier RH. The relationship between financial incentives and quality of diabetes care in Ontario. *Diabetes Care*. 2012; 35(5):1038–46.

Issue	In 2002, the Ontario government introduced a new fee code for primary care physicians to encourage comprehensive management of patients with diabetes. This incentive code, introduced at a value of \$37, may be billed three times a year per patient. Its use requires the maintenance of a flow sheet that tracks various parameters relevant to diabetes management. Has the code had any impact on the quality of care provided?
Study	Analyzed health data for 757,928 Ontarians with diabetes to determine the use of the code and receipt of three evidence-based monitoring tests (blood glucose, blood cholesterol and eye exams) from April 2006 to March 2008. Assessed testing rates before and after billing of the code and identified patient and physician characteristics associated with higher quality care.
Key Findings	One-quarter of Ontarians with diabetes had an incentive code billed by their physician. The proportion receiving all three tests rose from 16% in 2000 to 27% in 2008. Patients who were younger, lived in rural areas, had mental illness or were not enrolled in a primary care model were less likely to receive the recommended testing. Patients with higher numbers of incentive code billings were more likely to have received the highest level of testing prior to introduction of the code.
Implications	These findings suggest that physicians who were already providing the highest quality care prior to the introduction of incentives were more likely to claim incentive payments. Additional research is needed to understand whether and how financial incentives influence physician behaviour.

Fewer than half of severely injured car crash occupants triaged to a trauma centre

Haas B, Stukel TA, Gomez D, Zagorski B, De Mestral C, Sharma SV, Rubenfeld GD, Nathens AB. The mortality benefit of direct trauma center transport in a regional trauma system: a population-based analysis. *J Trauma Acute Care Surg*. 2012; 72(6):1510–7.

Issue	Care at a trauma centre (TC) is associated with a significant reduction in mortality compared to care at a non-trauma centre (NTC). What is the impact of undertriage to an NTC in Ontario's regional trauma system?
Study	Studied all severely injured motor vehicle collision occupants presenting to an Ontario ED from July 2002 to January 2010 and compared the mortality of patients triaged to TCs versus NTCs.
Key Findings	Among 6,341 motor vehicle collision occupants, 45% were triaged directly to a TC. Of the 3,484 patients triaged to an NTC, 57% were transferred to a TC within 24 hours of evaluation. Compared with patients triaged to an NTC, mortality was lower among patients triaged to a TC, both at 24 and 48 hours. Initial triage to an NTC was associated with at least a 30% increase in mortality in the first 48 hours after injury.
Implications	These findings suggest that current rates of undertriage in Ontario result in a high rate of preventable deaths among patients who are seriously injured in motor vehicle collisions. Strategies to reduce undertriage should be implemented and evaluated.

Demand for dialysis increases three-fold following cardiac and vascular surgeries

Siddiqui NF, Coca SG, Devereaux PJ, Jain AK, Li L, Luo J, Parikh CR, Paterson M, Philbrook HT, Wald R, Walsh M, Whitlock R, Garg AX. Secular trends in acute dialysis after elective major surgery – 1995 to 2009. *CMAJ*. 2012; 184(11):1237–45.

Issue	Acute kidney injury, represented by a sudden, unexpected loss of kidney function, is a serious complication of major elective surgery. In the most severe cases, acute dialysis is required to support life. Have outcomes and rates of acute dialysis after major surgery changed over time?
Study	Analyzed consecutive patients who had major elective surgery at 118 Ontario hospitals between January 1995 and December 2009. The outcomes studied included acute dialysis within 14 days of surgery, death within 90 days of surgery, and chronic dialysis for patients who did not recover kidney function.
Key Findings	Overall, 552,672 patients underwent major elective surgery, 2,231 of whom received acute dialysis within 14 days of surgery. The incidence of acute dialysis increased from 0.2% in 1995 to 0.6% in 2009; this increase was primarily seen following cardiac and vascular surgeries. Among patients who received acute dialysis, 937 died within 90 days of surgery. Among the 1,294 patients who received acute dialysis and survived, 352 required chronic dialysis.
Implications	These results should prompt renewed efforts to develop and test interventions to prevent severe acute kidney injury, and to lessen the burden of death and end-stage renal disease after acute kidney injury has occurred.

Two drugs used to treat eye disease don't increase risk of stroke or heart attack

Campbell RJ, Gill SS, Bronskill SE, Paterson JM, Whitehead M, Bell CM. Adverse events with intravitreal injection of vascular endothelial growth factor inhibitors: nested case-control study. *BMJ*. 2012; 345:e4203.

Issue	Age-related macular degeneration (AMD), a progressive condition that damages the retina, is a leading cause of blindness. Bevacizumab (trade name Avastin) is approved for the treatment of AMD, and ranibizumab (Lucentis) is used for this purpose off-label. Both drugs have been found to increase the risk of vascular side effects when taken intravenously. Do these drugs pose a similar risk when injected into the eye for treatment of AMD?
Study	Identified 91,378 Ontario adults aged 66 or older with physician-diagnosed retinal disease identified between April 2006 and March 2011. Examined the association between intravitreal injection of bevacizumab or ranibizumab and four outcomes, including ischemic stroke, acute myocardial infarction, venous thromboembolism and congestive heart failure, in 1,477 case patients and 7,349 matched control patients.
Key Findings	Patients who had ischemic stroke, acute myocardial infarction, venous thromboembolism or congestive heart failure were not more likely than control patients to have been exposed to either bevacizumab or ranibizumab. Further, the risks of ischemic stroke, venous thromboembolism and congestive heart failure did not differ significantly between bevacizumab and ranibizumab injections.
Implications	There remains a need for ongoing surveillance and further research into the drugs' effects in specific groups of patients who may be at particularly high risk, such as those with diabetes.

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