

## At A Glance

July/August 2010

### Monthly highlights of ICES research findings for stakeholders

#### Asthma sufferers at higher risk for other diseases that require medical care

Gershon A, Wang C, Guan J, To T. Burden of comorbidity in individuals with asthma. *Thorax* 2010; 65(7):612–8.

<b>Issue</b>	Asthma comorbidity is relatively under-recognized and understudied, perhaps because most asthma occurs in young people who are relatively free of other diseases. How much comorbidity is associated with asthma?
<b>Study</b>	Identified individuals with asthma from the Ontario Asthma Surveillance Information System and analyzed all health services used by them in 2005 in comparison to individuals without asthma.
<b>Key Findings</b>	In 2005, 12.8% of Ontario's population (1.7 million people) were diagnosed with asthma. Compared to those without asthma, asthma sufferers saw their physician 72% more often, went to the emergency department (ED) more than twice as often and required hospitalization 66% more often, for diseases other than asthma. Together, asthma and asthma comorbidity were associated with 6% of hospitalizations, 9% of ED visits and 6% of ambulatory care visits. The number of ED visits among people with asthma for non-asthma related medical claims was 68 per 100 individuals compared with nearly 33 per 100 for those without asthma. The most common comorbidities were other respiratory, psychiatric and musculoskeletal disease.
<b>Implications</b>	Asthma comorbidity places a significant burden on individuals and the health care system and should be considered in the management of asthma. Further research should focus on which types of asthma comorbidity are responsible for the greatest burden, and how they should be prevented and managed.

#### Two-thirds of radiology patients in Ontario not receiving follow-up CT or MRI scans

You J, Laupacis A, Newman A, Bell C. Non-adherence to recommendations for further testing after outpatient CT and MRI. *Am J Med* 2010; 123(6):557.e1–8.

<b>Issue</b>	Computed tomography (CT) and magnetic resonance imaging (MRI) reports often recommend further diagnostic testing. To what extent are these recommendations followed in Ontario?
<b>Study</b>	Analyzed physician requisitions and radiologists' reports for 23,691 outpatient CT and MRI scans performed in Ontario in 2005 and tracked adherence to recommendations for further testing within 180 days of the scan, the type of test recommended and the recommended timing of the follow-up test.
<b>Key Findings</b>	Further testing was recommended in 12.7% of scans, most often after CT scans of the chest (26.1%). However, only 37.6% of all recommendations were followed at 180 days. Adherence was lower (32.3%) when patients had a visit to the referring physician within 180 days, compared with when they had no such visit.
<b>Implications</b>	Substantial opportunities exist to improve information exchange between clinicians and radiologists and to advance the quality of outpatient care. The creation of standardized requisition forms that would require doctors to provide key information would help radiologists to diagnose disease.

#### Adults with newly diagnosed diabetes at increased risk for serious liver disease

Porepa L, Ray J, Sanchez-Romeu P, Booth G. Newly diagnosed diabetes mellitus as a risk factor for serious liver disease. *CMAJ* 2010; 182(11):e526–31.

<b>Issue</b>	The negative impact of diabetes on the retinal, renal, nervous and cardiovascular systems is well recognized. What is its effect on the liver, an organ susceptible to nonalcoholic fatty liver disease related to insulin resistance?
<b>Study</b>	Compared 438,069 Ontarians aged 30 to 75 with diabetes newly diagnosed between April 1994 and March 2006 to an age-, sex- and regionally-matched control group of 2,059,708 individuals without diabetes. Those with preexisting liver or alcohol-related disease were excluded. The study endpoint was development of a serious liver disease defined as cirrhosis, liver failure or receipt of a liver transplant.
<b>Key Findings</b>	The incidence rate of serious liver disease was 8.19 per 10,000 person-years with diabetes vs. 4.17 per 10,000 person-years without diabetes (92% increased risk). Persons with diabetes combined with obesity or hypertension had the highest risk of liver disease. After adjustment for age, income, urban residence, health care utilization, pre-existing hypertension, dyslipidemia, obesity and cardiovascular disease, those with diabetes still had a 77% increased risk of liver disease.
<b>Implications</b>	Existing guidelines for diabetes care do not recommend screening for liver-related complications. Before annual screening can be considered, the efficacy of primary and secondary preventive measures, such as weight loss and glycemic and lipid control, need to be better understood.

## Interaction of antibiotic and common heart drugs putting seniors in hospital

Antoniou T, Gomes T, Juurlink D, Loutfy M, Glazier R, Mamdani M. Trimethoprim-sulfamethoxazole-induced hyperkalemia in patients receiving inhibitors of the renin-angiotensin system: a population-based study. *Arch Intern Med* 2010; 170(12):1045–9.

<b>Issue</b>	The antibiotic trimethoprim-sulfamethoxazole (TMP-SMX) is commonly used to treat urinary tract infections in the elderly. It is often co-prescribed with angiotensin converting enzyme inhibitors (ACEIs) or angiotensin receptor blockers (ARBs), both therapies for patients with congestive heart failure, kidney disease or hypertension. What is the risk of patients developing hyperkalemia (an abnormally high potassium level that can lead to heart rhythm disturbances) requiring hospitalization when being treated with TMP-SMX and either an ACEI or an ARB?
<b>Study</b>	Identified Ontarians aged 66 and older who were hospitalized for hyperkalemia between April 1994 and March 2008 while undergoing continuous therapy with either an ACEI or an ARB, and tracked those who had received any of five antibiotics (TMP-SMX, ciprofloxacin, norfloxacin, nitrofurantoin or amoxicillin) in the 14 days prior to hospitalization.
<b>Key Findings</b>	<ul style="list-style-type: none"> <li>• Of 4,148 hospital admissions involving hyperkalemia, 371 occurred within 14 days of antibiotic exposure.</li> <li>• Patients hospitalized with hyperkalemia were 6.7 times more likely to have received a prescription for TMP-SMX in the preceding 14 days, compared to other antibiotics.</li> <li>• Overall, 11.6% of patients received at least one prescription for TMP-SMX during ACEI or ARB therapy.</li> </ul>
<b>Implications</b>	Close monitoring of older patients treated with ACEIs or ARBs combined with TMP-SMX is recommended. Alternative antibiotic therapy should be considered when clinically appropriate.

## Ontarians with rheumatoid arthritis not receiving timely specialist care: POWER Study

Hawker G, Badley E, Jaglal S, Dunn S, Croxford R, Ko B, Degani N, Bierman A. Musculoskeletal conditions. In: Bierman A (editor). *Project for an Ontario Women's Health Evidence-Based Report, Volume 2*. Toronto: St. Michael's Hospital and the Institute for Clinical Evaluative Sciences; 2010.

<b>Issue</b>	Rheumatoid arthritis (RA) is a chronic autoimmune disease that can lead to bone erosion and joint deformity. Diagnosis and treatment within the first few months of symptoms is critical to preventing long-term disability and improving quality of life. Do Ontarians with RA have access to timely specialized treatment to manage the disease?
<b>Study</b>	Examined provincial health data to determine how many Ontarians aged 25 and older had RA as of April 1, 2005, and saw a specialist (rheumatologist, orthopaedic surgeon, general internist or physical medicine specialist) at least once during 2005/06.
<b>Key Findings</b>	<ul style="list-style-type: none"> <li>• Approximately one percent of Ontarians were diagnosed with RA, and the rate among women was twice that of men (1.2% vs. 0.6%). The prevalence of RA varied across the province by Local Health Integration Network (LHIN), with the highest rates in the Northwest LHIN.</li> <li>• Only 40% of patients with RA (42% of women and 35% of men) saw a specialist within the year. Women of child-bearing age were less likely to have seen a specialist than women aged 45 and older. Low-income women were less likely to have seen a specialist than those with higher incomes (39% vs. 45%, respectively). Access to specialist care also varied across the province by LHIN.</li> </ul>
<b>Implications</b>	With only 350 arthritis specialists in Canada, access to care is limited. However, access can be improved through innovations in the organization and delivery of care for chronic disease.