

## At A Glance

February 2007

### Monthly highlights of ICES research findings for stakeholders

#### More university-educated RNs and improved staff satisfaction could reduce hospital death rates

Tourangeau A, Doran D, McGillis Hall L, O'Brien Pallas L, Pringle D, Cranley L, Tu J. Impact of hospital nursing care on 30-day mortality for acute medical patients. *J Adv Nurs*. 2007; 57 (1): 32-44.

<b>Issue</b>	Although increasing attention has been focused on the impact of nursing care on mortality rates in hospitals, there is inconsistent and incomplete knowledge regarding the impact of hospital structures and processes on mortality rates.
<b>Study</b>	Surveyed nurses working in medical and combined medical-surgical units in 75 Ontario teaching and community hospitals between February and May 2003. Linked these data with information on 47,000 patients admitted to hospital with heart attacks, stroke, pneumonia, and blood poisoning between April 2002 and March 2003 to determine nursing-related factors that may impact 30-day mortality.
<b>Key Findings</b>	On average, the 30-day hospital mortality rate was 17%. A ten per cent increase in each of: the number of registered nurses (RNs); the number of university-educated nurses; nurse-reported adequate staffing and resources; and, nurse-reported use of care maps and protocols to guide patient care, were all associated with fewer deaths per 1,000 discharged patients.
<b>Implications</b>	These findings indicate that mortality rates in hospitals can be reduced by maximizing the proportion of RNs providing direct patient care; recruiting and retaining university-educated nurses; and, making a significant investment in the development, use and systematic updating of care maps or protocols to guide patient care throughout hospitalization.

#### Study examines health and life outcomes of youth and young adults with disabilities

Young N, McCormick A, Mills W, Barden W, Boydell K, Law M, Wedge J, Fehlings D, Mukherjee S, Rumney P, Williams J. The transition study: a look at youth and adults with cerebral palsy, spina bifida, and acquired brain injury. *Phys Occup Ther Pediatr*. 2006; 26 (4): 25-45.

<b>Issue</b>	There is little systematic information on the living situations and health status of youth and adults who have cerebral palsy (CP), spina bifida (SB), and acquired brain injury in childhood (ABIC).
<b>Study</b>	Conducted a health services analysis, a life and health outcomes survey, and a qualitative examination of the experience of transition to adult health care among 100 Ontario adults and 190 youth with CP, SB, and ABIC.
<b>Key Findings</b>	Ninety-five per cent of youth and 61% of adults were living with their parents. Twenty-three per cent of youth and 55% of adults were employed. And 60% of youth and 42% of adults reported "excellent" or "very good" health. The lowest health scores were reported by adults with SB.
<b>Implications</b>	These findings provide a starting point for examining health issues specific to youth and young adults with CP, SB and ABIC, and how their lives and health outcomes may change over time.

#### Care to Ontario heart attack patients is similar to certain regions of the U.S.

Ko D, Krumholz H, Wang Y, Foody J, Masoudi F, Havranek E, You J, Alter D, Stukel T, Newman A, Tu J. Regional differences in process of care and outcomes for older acute myocardial infarction patients in the United States and Ontario, Canada. *Circulation*. 2007; 115 (2): 196-203.

<b>Issue</b>	Previous comparisons of acute myocardial infarction (AMI) treatment between the United States and Canada are limited.
<b>Study</b>	Compared medication use, invasive cardiac procedure use, and 30-day mortality among 38,886 Medicare patients hospitalized with AMI in the U.S., and 5,634 similarly-aged patients in Ontario between 1998 and 2001.
<b>Key Findings</b>	Baseline characteristics and illness severity across the U.S. regions and Ontario were not substantially different. Cardiac catheterization use was significantly higher in the U.S. than in Ontario, except for in the northeastern U.S. Beta-blocker use among ideal candidates was highest in the northeastern U.S., and angiotensin-converting enzyme inhibitor use was highest in Ontario. Mortality rates at 30 days were not substantially different across the regions.
<b>Implications</b>	Similar treatment patterns in the northeastern U.S. and Ontario suggest that regional practices may have a greater impact on treatment patterns than the respective national health care delivery systems.

## Guns and knives responsible for over 40,000 trauma visits to Ontario emergency departments

Macpherson A, Schull M. Penetrating trauma in Ontario emergency departments: a population-based study. *Can J Emerg Med.* 2007; 9 (1): 16-20.

<b>Issue</b>	There has been little research regarding emergency department (ED) visits for guns and knives, despite the costs to victims, their families and the health care system, as well as the fact that many of these injuries can be prevented.
<b>Study</b>	Tracked all patients seen in an Ontario ED for an injury related to a gun, knife, or sharp object between April 2002 and March 2003. Compared gun-related injuries to injuries associated with knives and sharp objects, as well as presented population-based rates by gender, age, urgency, intent, and admission rates.
<b>Key Findings</b>	<p>Among the 1.2 million ED visits for trauma between 2002 and 2003, 40,240, or 3.4%, were related to guns and knives/sharp objects. Of the 40,240 ED trauma cases:</p> <ul style="list-style-type: none"><li>• 98% were due to knives/sharp objects, compared to just 1.5% for guns.</li><li>• Males accounted for 65% of visits for guns and knives/sharp objects.</li><li>• The highest rates for gun and for knife/sharp object injuries were found in 15-24 year olds.</li><li>• Only 10% of gun and knife/sharp object visits were classified as intentional (assault or self-harm).</li><li>• For knife/sharp object-related injuries, 3.1% of cases were triaged as very urgent and of these, 3.7% required hospital admission.</li><li>• For gun-related injuries, 40% of cases were triaged as very urgent and of these, 26% required hospital admission.</li></ul>
<b>Implications</b>	These findings provide an estimate of the impact of such injuries at a population level, and on the health care system, and provide data upon which to design prevention program strategies.

## Certain factors predict whether colorectal cancer may be missed

Bressler B, Paszat L, Chen Z, Rothwell D, Vinden C, Rabeneck L. Rates of new or missed colorectal cancers after colonoscopy and their risk factors: a population-based analysis. *Gastroenterology.* 2007; 132 (1): 96-102.

<b>Issue</b>	The rate of new or missed colorectal cancer (CRC) after colonoscopy screening and the associated risk factors for these cancers are unknown.
<b>Study</b>	Tracked 12,487 CRC patients in Ontario between 1997 and 2002 that had a colonoscopy to detect their CRC in the three years before their diagnosis. Examined characteristics that might be risk factors for new or missed CRC (defined as individuals whose most recent colonoscopy was six to 36 months before diagnosis).
<b>Key Findings</b>	The rate of new or missed CRC after colonoscopy in usual clinical practice was two to six per cent, depending on the site of the cancer. Women, older individuals, people with a right-sided CRC, those who had a colonoscopy done by an internist or family physician, or those who had a colonoscopy done in an office or clinic, were independently associated with a higher risk of new or missed CRC. As well, individuals with diverticular disease (where small sacs or pockets develop in the wall of the colon) were also found to have an increased risk.
<b>Implications</b>	Patients should be made aware of the two to six per cent risk that a cancer may be missed or may not be detected because some cancers are rapidly progressing and may not be present or evident at the time of screening. Physicians doing colonoscopies in men and women who are older or who have a history of diverticular disease need to be especially careful so as not to miss a cancer. The influence of type of physician, and the setting in which the colonoscopy is done, on the accuracy of this procedure for diagnosing CRC should be further studied because these are important, potentially modifiable, risk factors.

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