Enhancing the effectiveness of health care for Ontarians through research

ICES Institute for Clinical Evaluative Sciences

At A Glance

November 2007

Monthly highlights of ICES research findings for stakeholders

Study examines the effects of age, gender and disease on defibrillator recipients

Lee D, Tu J, Austin P, Dorian P, Yee R, Chong A, Alter D, Laupacis A. Effect of cardiac and noncardiac conditions on survival after defibrillator implantation. *J Am Coll Cardiol*. 2007; 49 (25): 2408–2415.

Issue The effect of age, gender and co-existing noncardiac diseases on outcomes in implantable cardioverter-defibrillator (ICD) recipients has not been previously assessed.

Study Identified 2,467 patients who underwent ICD implantation in Ontario from April 1997 to March 2003, and examined their diagnosis codes in the three years before implant to retrospectively determine factors associated with mortality.

Key Findings Older age at implant increased the risk of death; those 65 to 74 years of age were twice as likely to die as those less than 65 years of age. Recipients aged 75 years and older were three times as likely to die. Noncardiac conditions associated with increased risk of death included peripheral vascular disease, pulmonary disease and renal disease. Gender was not a predictor of death.

Implications Age and noncardiac comorbidities significantly influence survival in ICD recipients and should be considered when identifying patients likely to benefit from ICD implantation.

Recent immigrant mothers experience higher risk of low birthweight infants

Urquia M, Frank J, Glazier R, Moineddin R. Birth outcomes by neighbourhood income and recent immigration in Toronto. *Health Rep*. 2007; 8 (4): 21-30.

Issue Birth outcomes for recent immigrants compared with those of longer-term residents warrants investigation, particularly in areas that receive a large influx of immigrants each year.

Study Examined hospital discharge records of 143,030 singleton live births to mothers residing in Toronto from April 1996 to March 2001 for three adverse birth outcomes: preterm birth, low birthweight (less than 2,500 grams and premature), and full-term low birthweight. These outcomes were correlated with neighbourhood income level and recent immigration status of the mother.

Key Findings Recent immigration was associated with a lower risk of preterm birth, but a higher risk of low birthweight and full-term low birthweight. Neighbourhood income had less effect on recent immigrants' birth outcomes compared to longer-term residents. Longer-term residents in low-income neighbourhoods experienced the highest risk of adverse birth outcomes.

Implications The relatively good outcomes for recent immigrants appear to partially mask the negative effects of low neighbourhood income on preterm birth among longer-term residents, who could be seen as the main target population for fetal growth interventions and the prevention of preterm births.

Parents of asthmatic children are reliable reporters of emergency department visits

Ungar W, Davidson-Grimwood S, Cousins M. Parents were accurate proxy reporters of urgent pediatric asthma health services: a retrospective agreement analysis. *J Clin Epidemiol*. 2007; 60 (11): 1176–1183.

Issue Although parents are routinely relied upon to report their children's health service use, there has been little investigation of the validity of their reports for children with a chronic disease.

Study Identified 545 asthmatic children aged one to 18 years in Toronto between December 2000 and March 2003, and compared parent reports of health care use to clinical and claims data.

Key Findings Agreement between parent reports of emergency department (ED) visits and claims data was significantly higher for parents whose child had one or more asthma attack in the previous six months. Physician outpatient visits were reported with substantially less accuracy than ED visits and inpatient hospitalizations.

Implications The use of parent reports of urgent health services use could be considered for epidemiologic studies and economic evaluations for children with asthma.

ICES Atlas investigates the diabetes epidemic and Toronto neighbourhoods

Glazier R, Booth G. *Neighbourhood Environments and Resources for Healthy Living—A Focus on Diabetes in Toronto: ICES Atlas*. Toronto: Institute for Clinical Evaluative Sciences; 2007.

Issue

No previous Canadian studies have investigated the complex interactions between urban populations and their environment, and how these relationships affect the health and well-being of local residents.

Study

Examined factors related to diabetes at the neighbourhood level in the City of Toronto, including population density, service density and dispersion, immigration, socioeconomic status, ethnic composition, crime rate, car ownership, access to healthy and unhealthy food, opportunities for physical activity and access to health care.

Key Findings

- Diabetes rates were highest in areas that had lower income levels, higher unemployment rates, higher proportions of visible minorities and higher immigration rates.
- Areas with high rates of diabetes tended to be found outside of Toronto's downtown core, in suburban areas where there was reduced access to healthy resources such as fruit and vegetable stores and where "activity friendliness" was lower (for example, fewer amenities within walking distance, poorer access to public transit and greater car dependency).
- High-income neighbourhoods had low diabetes rates, even in parts of Toronto that scored low on activity friendliness or had poor access to healthy resources.
- Downtown high-risk areas had lower diabetes rates than expected, most likely because of the ability to walk to services and better access to healthy foods, recreational centres and public transit.

Implications

- Strategies which create more opportunities for Torontonians to become more physically active and to consume a healthier diet should be implemented. These include: making changes in planning, development and zoning practices to reduce urban sprawl, increase residential density and promote mixed land use; providing incentives for stores selling fresh produce and other services to move into high-need areas; and, increasing access to public transit.
- Given the popularity of fast-food outlets, policies that promote healthier food choices by consumers and healthier menu offerings by retailers should be pursued.
- Neighbourhoods with a greater prevalence of diabetes or diabetes-related risk factors should be targeted for community-based interventions aimed at diabetes prevention and management.

Elderly patients becoming chronic sleeping pill users following hospitalization

Bell C, Fischer H, Gill S, Zagorski B, Sykora K, Wodchis W, Herrmann N, Bronskill S, Lee P, Anderson G, Rochon P. Initiation of benzodiazepines in the elderly after hospitalization. *J Gen Intern Med.* 2007; 22 (7): 1024–1029.

Issue

The prescribing of benzodiazepine drugs (a type of sleeping pill) to the elderly after hospital discharge is a concern due to their potential to cause serious adverse events, such as cognitive impairment, fall-related injuries and motor vehicle collisions. Long-term use may also lead to dependence.

Study

Tracked community-dwelling Ontarians 66 years of age and older who had not been prescribed benzodiazepines in the year before hospitalization, for the period from April 1992 to March 2005. Assessed whether benzodiazepines were initiated after hospital discharge and if there was a subsequent renewal of prescription.

Key Findings

Of the 405,000 hospitalizations during the study period, benzodiazepines were prescribed to 12,484 (3.1%) patients within seven days of being discharged. Of these, almost half (1.5%) were defined as new chronic users. Women, patients admitted to intensive care units or non-surgical wards, those with longer hospital stays, more additional illnesses, or a prior diagnosis of alcoholism, and those prescribed more medications had significantly greater odds of becoming new chronic users.

Implications

Effective alternatives to treat insomnia should be considered first and strategies such as the development of electronic medical records and more formal medication lists, or models of care that facilitate communication and coordination between hospital and community-based physicians are needed to reduce unnecessary benzodiazepine use in older adults.