

# Health Horizon

Planning, Research and Analysis Branch, Health System Strategy and Policy Division, MOHLTC

Examples of policy-relevant research evidence and trends  
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## Primary Health Care

### Family Physician Access and Decreased Emergency Department use

[Primary Care Access Survey](#) results were used by [Centre for Rural and Northern Health Research](#) (CRaNHR) researchers to determine whether better access to Family Physician (FP) services decreased the likelihood of emergency department (ED) use across the 14 Local Health Integration Networks in Ontario. [The CRaNHR study](#) indicated that people with chronic diseases who had a regular FP were less likely to use an ED; however, there was no association for the general population, i.e. people with FPs but without chronic diseases.

## Chronic Disease Prevention and Management

### Evaluating Heart Failure Clinics in Ontario

The [Toronto Health Economics and Technology Assessment](#) Collaborative released [A Population-Based Study to Evaluate the Effectiveness of Multi-disciplinary Heart Failure Clinics and Identify Important Service Components](#) to address uncertainties surrounding the existing model of Ontario Heart Failure (HF) clinics. The study found that these clinics improved outcomes, with a statistically significant absolute difference in mortality of 2.6% over four years. However, HF clinic patients had increased re-admissions (absolute difference of 0.8% for all-cause and 11.4% for HF-related). There was no difference in mortality or readmission outcomes between high, medium or low intensity clinics.

## Mental Health and Addictions

### Prevalence of Problem Gambling in Canada and the World

A [recent study](#) funded by the [Ontario Problem Gambling Research Centre](#) examined problem gambling prevalence rates and trends in 26 countries from 1975-2012. Canada's rate of 1.8% was below the international standardized past year prevalence rate (2.3%). Within Canada, Ontario's rate of 2.4% was average. Changes in Canadian prevalence rates were attributable to gambling availability in the last three decades.

## Public Health and Health Promotion

### Middle-aged Adults: Obesity, Risk Factors and Costs

Obesity as an isolated risk-factor is not associated with significantly higher healthcare costs as compared with normal weight according to a [recent study](#), suggesting the cost difference is less than \$1000 per person over eleven years. However, costs increase significantly when obesity is combined with other lifestyle risk factors such as smoking, stress and sedentary behavior, doubling for those with three risk factors. This reinforces the need for comprehensive risk stratification and therapeutic lifestyle interventions.

## Institutional Care/Sectors

### Longitudinal Transitions of Performance Status in Cancer Outpatients

A [novel study](#) investigated changes in performance status among cancer patients using the [Palliative Performance Scale](#) (PPS). At every PPS assessment, patients were assigned to one of four states: stable (PPS: 70-100); transitional (PPS: 40-60); end-of-life (PPS: 10-30); or dead (PPS: 0), allowing probabilities for moving between states to be determined for different cancers. For example: lung-cancer patients in the transitional state have a [27.7% chance of death](#) at the end of one month. This suggests that entry into the transitional state may serve as an indicator for referral to palliative care support.

Note: Health Horizon newsletter draws on current research from peer-reviewed journals. You may need to obtain some of the articles referenced in Health Horizon through the MOHLTC Journal Access Centre or by purchasing them. If you need help to obtain articles, please contact the Health Horizon Staff Lead, Jeffrey Sharom at [Jeffrey.Sharom@ontario.ca](mailto:Jeffrey.Sharom@ontario.ca) tel. (416) 327-3864. Please note that Health Horizon is a summary of information from other sources, not a representation of the policy position or goals of the Ministry of Health and Long-Term Care. If material in the newsletter is to be referenced, please cite the original, primary source, rather than the newsletter itself.

# World at a Glance



## Canada

### Acute Care Hospital Days and Mental Diagnoses

A recent [analysis](#) by researchers at [Statistics Canada](#) found that although people hospitalized with a mental diagnosis represented less than 1% of the population in 2009/2010, they used 25% of acute care hospital days. The average length of stay for patients with a comorbid mental diagnosis was more than two-and-a-half times the average for patients without one. In addition, about one quarter of all mental health days were designated as alternate levels of care, indicating possible ongoing care needs or unavailability of support in the community.



## United States

### Mixed Messages on BMI and Health

A recent [systematic review](#) found that being overweight (body mass index [BMI] of 25- <30) was associated with significantly lower all-cause mortality. However, the same study also found that [relative to normal weight, obesity \[BMI of >30\] \(all grades\) and grades 2 and 3 obesity \[BMI of >35\] were both associated with significantly higher all-cause mortality](#). Moreover, the study did not address morbidity or other risks such as fat distribution. The [Edmonton Obesity Staging System](#) is a tool that distinguishes between obesity that has significant negative health impacts from obesity that does not.



## United Kingdom

### The Benefits and Harms of Breast Cancer Screening

An [independent review](#) recently found that in the UK where women aged 50-70 years are routinely screened for breast cancer every three years, screening [prevents 43 deaths from breast cancer for every 10,000 women](#); however, just over 1% of the women aged 50-52 who are invited to begin screening each year, would have an over-diagnosed cancer (i.e., a tumour that would not lead to clinical symptoms) in the next 20 years, leading to unnecessary treatments. In proportionate terms, this would mean that one breast cancer death would be prevented per every three over-diagnosed cases identified and treated.



## European Union

### Health at a Glance in Europe

The [Organization for Economic Co-operation and Development](#) released its new [Health at a Glance: Europe](#), presenting the most recent key indicators of health and health systems across 35 countries. The report notes that [average life expectancy at birth in European Union member states has increased by more than six years since 1980](#), reaching 75.3 years for men, and 81.7 years for women in 2010. It also notes, however, that from 2000 to 2009, health spending in European countries increased at a faster rate than the rest of the economy (4.6% per capita, per year in real terms).



## Other

### An International Survey of Primary Care Physicians

A [new study](#) from the [Commonwealth Fund](#) surveyed international primary care doctors in ten jurisdictions. Out of 12 indicators relating to health information technology and patient access to care, Canada ranked in the lowest 2-3 countries in all but one (patient difficulty paying out-of-pocket costs). For example, Canadian physicians ranked bottom in perceptions of patient access to next day appointments and electronic communications with physician practices, and second to bottom in perceptions of access to after-hours care and long waits for specialist care. Canada fared somewhat better in other categories such as financial incentives and support for quality improvement, perceptions of quality care and physician satisfaction.

# Focus on Brain Research in Ontario

## Highlight

### The Ontario Brain Institute

The [Ontario Brain Institute](#) (OBI) is an independent, not-for-profit corporation funded in part by the [Government of Ontario](#) in the wake of a 2010 [report](#) concluding that Ontario could be a global leader in neuroscience. OBI is a [research institute dedicated to improving brain health](#). By catalyzing an integrated, pan-Ontario innovation system to translate research into care and embed commercialization into research, OBI is maximizing Ontario's excellence in brain science and clinical care.

### Translational research that benefits patients

OBI's scientific [strategy](#) is focused on closing the translational gap between research and care. By advancing research projects predicated on the detailed characterization of patients with brain disorders and the factors that influence patient outcomes, OBI enables clinically-informed, "bedside-to-bench" research that generates a richer understanding of brain disorders and drives discoveries in prevention, detection and treatment.

### Centralized patient information systems

Data and information coming out of OBI's Integrated Discovery Programs will be stored in [Brain-CODE](#), a centralized database that will enable researchers to examine multiple types of research data (imaging, genetic, clinical) from multiple brain disorders. Streamlined access to this rich source of information will facilitate unprecedented levels of discovery and attract clinical trials to Ontario. Brain-CODE is among the first databases of this kind in the world and adheres to the [highest privacy standards](#).

### Why is brain research important?

Ontarians experience a high burden of illness related to brain disorders, including autism spectrum disorders, epilepsy, cerebral palsy, multiple forms of dementia and mental illness. It has been estimated that [one in three](#) Canadians will be affected by a neurological or psychiatric disease, disorder or injury at some point in their life. For instance, nearly [200,000 Ontarians over the age of 65 are now living with dementia](#) (an increase of 16% over the past four years), and this number is expected to increase by 30% between 2012 and 2020. In addition, in 2012 Ontarians caring for family members and friends with dementia contributed an estimated 100 million unpaid caregiving hours, and this number is expected to surpass 140 million hours by 2020.

The associated economic costs are high. For instance, a 2010 report by the Alzheimer Society of Canada, [Rising Tide: The Impact of Dementia on Canadian Society](#), noted that the total economic burden attributed to dementia in Canada was about \$15 billion in 2008 and projected to reach over \$36 billion by 2018. In Ontario, a 2009 paper by the Minister's Advisory Group on Mental Health and Addictions, [Every Door is the Right Door](#), noted that in 2007-08, Ontario's health care system spent more than \$2.5 billion on mental health and addiction services (including hospital care, community-based programs, medications and physician services), and that the total cost to Ontario society was about \$39 billion a year (including law enforcement services, lost productivity, and private-sector spending on drugs, disability claims and employee assistance programs).

In light of current pressures on the health care system, new approaches are needed to reduce costs to the system and improve the quality of patient care. This Health Horizon focuses on selected activities of the [Ontario Brain Institute](#) (OBI) (see sidebar) that have implications for Ontario's health system

### OBI's Integrated Discovery Programs

OBI's [Integrated Discovery Programs](#) aim to increase the understanding of brain disorders and identify new approaches to improve prevention, diagnosis and treatments. The programs bring together top researchers, clinicians, patient groups and industry representatives from across Ontario to form partnerships that leverage each other's strengths and break down silos across both institutions and disciplines (e.g., genetics, psychology, imaging and engineering). Three Integrated Discovery Programs (on neurodevelopmental disorders, cerebral palsy and epilepsy) are currently operational, with research platforms that enable clinicians to embed research into care and commercialization into research, to develop neurotherapeutics and neurodevices and bring new therapies to patients.

### Neurodevelopmental disorders

OBI's Integrated Discovery Program on [neurodevelopmental disorders](#) is named the [Province of Ontario Neurodevelopmental Disorders \(POND\) network](#). The network, which is led by [Dr. Evdokia Angnostou](#), includes 18 researchers and clinicians, 17 industry partners, 7 patient advocacy groups, 4 clinical sites and 10 satellite sites. The [goals](#) of the POND network are to improve the prevention, diagnosis and treatment of neurodevelopmental disorders including: [autism spectrum disorders](#), [attention deficit hyperactivity disorder](#) and [intellectual disability](#). Through standardized assessments and development of a registry of well-characterized patients, this group is building a clinical trial network that will allow them to offer targeted, personalized medicine and accelerate the development of new treatments. The POND clinical trials network is conducting [a randomized clinical trial with riluzole](#), which has been shown to normalize the unbalanced ratio of excitation and inhibition found in the brains of children with autism. This may allow sensory input to be relayed more reliably, and is predicted to improve the processing of environmental and social stimuli.

## Cerebral palsy

OBI's Integrated Discovery Program on [cerebral palsy](#), the [Cerebral Palsy Network](#) (CP-NET) is led by [Dr. Darcy Fehlings](#), and includes 21 clinicians and researchers at 9 clinical sites, 12 industry partners and 6 patient advocacy groups. CP-NET is working to improve the care of child [hemiplegic](#) cerebral palsy through research aimed at identifying risk factors and developing better rehabilitation programs and devices. By creating a patient registry to identify clinical and genetic risk factors and exploring novel rehabilitative technologies to enhance limb function, this group is accelerating the development of new mechanisms to improve outcomes in children with cerebral palsy. The group is currently conducting clinical trials to validate the use of technology (e.g., video games, robotics and virtual reality) in rehabilitation therapy.

## Epilepsy

OBI's [Epilepsy Integrated Discovery Program](#) (EpLINK) is led by [Dr. McIntyre Burnham](#) and [Dr. Jorge Burneo](#), and includes 25 clinicians and researchers at 8 clinical sites, 8 industry partners and 7 patient advocacy groups. EpLINK is focused on improving [epilepsy](#) care by ensuring that discoveries are translated into new diagnostics and treatments. The group has developed a comprehensive research program involving early diagnosis of epilepsy, lifestyle interventions and prevention, drug development and devices designed for seizure prediction and mitigation. [Dr. Peter Carlen](#) and [Dr. Milos Popovic](#), for example, are leading the development of a wireless pacemaker device which is implanted in the brain to detect seizures at the near-instant of onset, with the aim of eventually predicting and preventing seizures from occurring. The OBI has helped the company developing this technology to secure funds and find industrial partnerships to help bring this device into production.

## OBI's patient-centred research system

OBI has established a "patient advisory council" for each of its research programs. Members of each council include representatives from provincial and regional patient advocacy associations as well as the research leads for the respective research program. The role of these councils is to facilitate knowledge exchange between researchers and those that advocate for patients. Councils enable patient advocacy groups to be the brokers of research knowledge to their stakeholders and provide a mechanism for advocates to help shape the research agenda to ensure relevancy to those living with brain disorders.

OBI's research programs are also standardizing patient assessments both across research sites and in some cases, across diseases. This bottom-up approach towards improving the standards of care in the treatment of brain disorders is one way that the OBI is working to directly impact patients. Standardization will also enable researchers to have greater sample sizes and facilitate new discoveries by allowing cross-comparisons and interaction between disorders (e.g., depression and epilepsy or Parkinson's disease and addiction) to be studied in a novel manner. The programs are collecting multiple types of standardized data from their patients (e.g., imaging, genetics, proteomics, neuropsychological and behavioural data), which will allow researchers to make connections between genes, brain and behaviour.

## Looking ahead

In 2013, several reports will provide further actionable information on brain disorders and brain research in Ontario: (1) ICES will initiate work on an [Applied Health Research Question](#) focusing on the burden of brain disorders in Ontario; (2) the [Public Health Agency of Canada](#) and [Neurological Health Charities of Canada](#) will complete the [National Population Health Study of Neurological Conditions](#), a large, pan-Canadian research effort aimed at understanding the burden of brain disorders; and (3) the ministry is currently conducting an economic impact analysis of OBI's [patient-centred research programs](#). Also, in time for [Brain Awareness Week](#) in March 2013, the OBI will release a report assessing the impact of physical activity on the prevention and treatment of cognitive decline associated with Alzheimer's disease.

## Recent systematic reviews

[Collaborative care for depression and anxiety problems](#)

[Behavioural interventions as adjuncts to pharmacotherapy for smoking cessation](#)

[Anxiety, depression, and PTSD following cardiac arrest](#)

[The prevalence of mental health and pain symptoms in general population samples reporting nonmedical use of prescription opioids](#)

## Interesting links

*Ontario Health Technology Assessment Series: [Epilepsy care in Ontario: an economic analysis of increasing access to epilepsy surgery](#)*

*Media release from the Canadian Institutes of Health Research (CIHR): [Government of Canada and Graham Boeckh Foundation jointly support mental health research network](#)*

*Centre for Addiction and Mental Health (CAMH) Monitor eReport: [Addiction and mental health indicators among Ontario adults, 1977-2011](#)*

*Research study by ICES and CAMH: [Adults with developmental disabilities and psychiatric illness visit emergency departments more than the general population](#)*

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