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CAPE

*Canadian Academy of Psychiatric Epidemiology
Académie Canadienne de l'épidémiologie psychiatrique*

2014 Annual Scientific Symposium

**From associations to outcomes:
Taking the longitudinal view**

ABSTRACTS



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Abstracts CAPE 2014 (Alphabetical by last name of presenter)

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Child Abuse and Mental and Physical Health in Canada

Nationally representative Canadian data on the prevalence of child abuse and its relation with mental disorders and physical health conditions are lacking. Data was drawn from the 2012 Canadian Community Health Survey: Mental Health (CCHS-2012), which consisted of a sample size of 23,395 respondents over the age of 18 and a response rate of 79.8% and 68.9% at the provincial household- and individual-level respectively. The research objectives include: (1) determining the prevalence of 3 types of child abuse (physical abuse, sexual abuse and exposure to intimate partner violence) in Canada; (2) examining the association between different types of child abuse and mental disorders, suicidal ideation and suicide attempts in Canada; and (3) exploring the relationship between different types of child abuse and chronic physical conditions in Canada. All child abuse types were associated with all mental health conditions, suicidal ideation, suicide attempts and having any physical health condition. Health care providers, especially those assessing patients with mental health problems, need to be aware of the relation between specific types of child abuse and certain mental and physical health conditions. Success in preventing child abuse could lead to reductions in the prevalence of mental disorders, physical health conditions, suicidal ideation and suicide attempts.

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The First-Contact Incidence of Schizophrenia among Immigrants to Ontario

Background: Evidence from international studies suggests that immigrant groups have an increased risk of psychotic disorder, and the level of risk varies by country of origin and host country. However, current epidemiological information on the incidence of psychotic disorders among Canadian immigrants is lacking. We sought to compare the first-contact incidence of schizophrenia over a ten-year period between immigrants and non-immigrants in Ontario. *Methods:* We constructed a retrospective cohort that included all individuals between the ages of 14 and 40 years who were residents of Ontario as of April 1, 1999. Population-based administrative data from physician billings and hospitalizations were linked to data from Citizenship and Immigration Canada. We used age- and sex-standardized incidence rates for immigrant and non-immigrant groups to calculate incidence rate ratios (IRR) and 95% confidence intervals (CI). *Results:* The incidence rate of schizophrenia in

Ontario was 64.3 per 100,000 person-years (95%CI=63.6-65.1), and the rates did not differ significantly for the immigrant group as a whole compared with non-immigrants. However, we did find significantly higher rates among immigrants from the Caribbean and Bermuda (IRR=1.54, 95%CI=1.38-1.71), West Africa (IRR=1.81, 95%CI=1.35-2.42), East Africa (IRR=1.61, 95%CI=1.41-1.84), and South Asia (IRR=1.24, 95%CI=1.11-1.39). We found lower rates of schizophrenia among immigrants from North America, Europe, and East Asia. *Conclusions:* Immigrant status needs to be considered as an important risk factor for schizophrenia in Ontario. The differential pattern of risk across ethnic subgroups suggests that psychosocial factors associated with the migratory experience may contribute to the underlying etiology.

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C-reactive protein, depressive symptoms, and risk of diabetes: results from the English Longitudinal Study of Ageing (ELSA)

Objectives: Raised levels of C-reactive protein (CRP), an inflammatory biomarker, and depressive symptoms are both independently linked to risk of diabetes. The purpose of this study was to assess the joint association of CRP and depressive symptomatology with diabetes incidence in a representative sample of English people ≥ 50 years old. *Method:* Data were from the English Longitudinal Study of Ageing, a prospective study of community-dwelling older adults. The sample was comprised of 4955 participants without self-reported doctor-diagnosed diabetes at baseline. High CRP level was dichotomized as > 3 mg/L. Elevated depressive symptomatology was defined as ≥ 4 using the 8-item Center for Epidemiologic Studies Depression Scale. Incident diabetes was determined based on newly self-reported doctor-diagnosed diabetes. Cox proportional hazard regressions were used to examine the association between CRP and depressive symptoms with incidence of type 2 diabetes. *Results:* During approximately 63.2 months of follow-up, 194 participants reported diabetes diagnosis. After adjustment for socio-demographics, lifestyle behaviours, clinical factors, and BMI, the hazard ratio for diabetes was 1.63 (95% CI 0.88-3.01) for people with elevated depressive symptoms only, 1.43 (95% CI 0.99-2.07) for people with high CRP only, and 2.03 (95% CI 1.14-3.61) for people with both high CRP and elevated depressive symptoms. *Conclusion:* The presence of both high CRP levels and elevated depressive symptoms was associated with risk of diabetes. Further investigation into this relationship could aid in understanding the mechanisms underlying inflammation, depression, and diabetes.

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Childhood Adversity and Cognitive Style in Mood Disorders

The incidence of mood disorders has long been associated with childhood adversity (CA) yet a model that fully explains the association is lacking. One possible pathway is that childhood adversity may lead to maladaptive cognitive styles (CS) which in turn predisposes individuals to mood disorders. We studied a sample of 162 adult patients with diagnoses of major depression or bipolar disorder confirmed using the Structured Clinical Interview for DSM-IV Disorders to test the association between CA and CS. CA was assessed using the Childhood Experience of Care and Abuse Questionnaire (CECA-Q3) questionnaire which measured parental neglect, antipathy, role reversal, and sexual, physical and psychological abuse. CS was assessed using the Cognitive Style Questionnaire which yields four dimensions (globality, stability, internality, and low self-worth) of depressive cognitive vulnerability. The dimensions were also summed to generate a total CS score. Linear regressions were conducted using each dimension of CS as well as the total score as outcomes and the different types of CA as the exposures. Associations were found between paternal physical abuse and globality; paternal physical abuse and decreased self-worth; psychological abuse and stability; antipathy and stability; psychological abuse and total CS score; and sexual abuse and total CS score. Specific types of CA are associated with various dimensions of cognitive vulnerability. In the talk therapy treatment of mood disorders (e.g. CBT), an assessment of CA should be completed as it may predispose to specific faulty patterns of thinking that may difficult to modify and lead to perpetuation of mood symptoms.

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The longitudinal effects of neighbourhood social and material deprivation change on psychological distress in urban, community-dwelling Canadian adults

This is the first Canadian study to assess how longitudinal changes in neighbourhood material and social deprivation affect distress outcomes in urban-, community-dwelling adult Canadians. We paired data from 2745 urban participants of Canada's National Population Health Survey—who completed the Kessler 6-Item psychological distress screening tool at baseline and follow-up—with neighbourhood social and material deprivation data from the census-based Pampalon Deprivation Index. Data were paired using participants' postal code. We conducted multiple linear regression models, which were stratified by baseline deprivation level and controlled for key confounders. We found that both an improvement of social settings and a worsening of material settings were associated with worsening distress scores at follow-up. These seemingly opposing findings are discussed in the context of existing literature on social renewal and neighbourhood deterioration, and

are made relevant for urban health research and policy. Future research would benefit from continued investigation of neighbourhood change, especially with regards to social and economic vulnerability.

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Are depression and sleep disturbance independent risk factors for heart disease? Results from the English Longitudinal Study of Ageing

Prospective studies have demonstrated that depression is associated with an increased likelihood of developing heart disease. Similarly, disturbed sleep, including short and long sleep duration, is a risk factor for the development of heart disease. Because depression and sleep disturbances are often co-morbid, it is difficult to untangle the relationships between depression, sleep disturbances, and heart disease. The purpose of this analysis was to determine if depression and sleep duration are independent or overlapping risk factors for heart disease. Data come from waves 4 and 5 of the English Longitudinal Study of Ageing. Wave 4 was treated as baseline. Depression was assessed using the eight-item Centre of Epidemiological Studies –Depression scale. Participants without heart disease ($N=3668$) were categorized into six groups based on depression status and sleep duration at baseline (no depression and short sleep duration; depression and short sleep duration; no depression and average sleep duration; etc.). Logistic regression analyses were conducted to evaluate the associations between the six groups and heart disease incidence 2 years after baseline; the group without depression and with average sleep duration was the referent. People with both depressive symptoms and short ($OR=2.11$, 95% CI[1.13-3.93]) or long ($OR=2.82$, 95% CI[1.35-5.88]) sleep duration were at higher risk for heart disease than those with depression and average sleep duration ($OR=1.28$, 95% CI[.44-3.76]). Short or long sleep duration without depression did not increase the risk of developing heart disease. These results suggest that short or long sleep duration might amplify the effect of depression on heart disease incidence.

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Costs of Mental Health Care Services among High Cost Users in Ontario

Background: A small proportion of health care users account for a disproportionately large share of health care costs. The objective of this analysis was to estimate and examine health care costs among mental health (MH) high-cost users (HCUs). *Methods:* We conducted a descriptive costing study evaluating all direct health care costs among MH HCUs (i.e., patients in the 90th percentile of

the cost distribution) from 2008 to 2012. MH HCUs were defined as all patients with 50% or more of total health care costs attributable to MH-related costs. We used administrative health care databases capturing all health care costs under universal coverage in Ontario, Canada. We estimated costs for each year and determined “persistence” of high cost utilization by measuring presence in the 90th percentile for all 5 years of our study. *Results:* In 2012, there were 38,739 MH HCUs in Ontario that accounted for a total cost of \$1.4 billion to the health care system (average cost of \$36,502 vs. \$24,579 for all HCUs). We found that MH HCUs were generally young, low income individuals with long hospital stays. In addition, we found that 1 in 12 of these patients remained in the high cost category over our analysis period. *Conclusions:* MH HCUs incur 50% greater health care costs per capita and are significantly younger than non-MH HCUs. The large proportion of young patients with long psychiatric hospitalizations represents an opportunity to devote resources that will both improve quality of care and create cost savings.

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Factors associated with consistency in adult reporting of childhood traumatic events

Background: Many researchers use retrospective reports to assess the long-term consequences of early life stress. However, individual characteristics and experiences may impact retrospective reporting consistency. Particularly, poor current mental health state may bias individuals toward reporting of negative events. *Aims:* To assess whether specific factors are associated with the consistency of reporting of childhood traumatic events. *Methods:* 3,434 adults from Canada's National Population Health Survey (NPHS) who had reported on seven childhood traumas in 2006/07 were included. Logistic regression was used to explore differences between those who had previously reported the same traumatic events as adults in 1994/95 and those who had not in terms of demographic factors, mental health characteristics, health risk behaviours, and physical health characteristics in adulthood. *Results:* Increasing levels of psychological distress, as well as increasing work and chronic stress, were associated with an increasing likelihood of reporting childhood trauma in 2006/07 that had not been previously reported. Increases in mastery and physical health were associated with reduced likelihood of a new reporting childhood trauma event in 2006/07. *Conclusions:* Concurrent mental health factors may influence the reporting of traumatic childhood events. These findings have important implications for studies conducted to date which rely on the recall of childhood traumatic events without considering factors associated with current mental state in adulthood.

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High Frequency Users of emergency departments for the treatment of primary mental health complaints: A thematic chart analysis

Introduction: Analysis of administrative data reveal 34 patients in the Saskatoon Health Region visited regional emergency departments more than 10 times in 2012 for the treatment of primary mental complaints. *Objectives:* To investigate in detail reasons for frequent visits to emergency departments (EDs) for the treatment of primary mental health complaints by these 'high frequency use' patients, and identify the major themes related to these patients and their frequent visits. *Methods:* This is a retrospective thematic chart analysis of 'high frequency users' of emergency departments in the Saskatoon Health Region for the treatment of primary mental health complaints. Charts for 2011 to 2013 of these patients at all three hospital sites in the Region were reviewed. *Results:* 'High frequency users' were generally users of EDs in multiple years, young, unemployed, transient or homeless, with a diagnosis of a substance abuse, especially alcohol abuse, and self-referral to the ED for symptoms control and /or solution of unmet needs (e.g. accommodations). They could be categorized into four groups: 1) those suffering from severe alcohol abuse/withdrawal or illicit drug use; 2) those with chronic mood and anxiety disorders; 3) those experiencing a lot of personal and social stressors; and 4) those with a complex combination of psychiatric disease(s) and cognitive impairment. *Conclusions:* Emergency services should be transformed to better serve this chronic population. Early identification of these individual and their unique risk factors and appropriate interventions with emphasis on the unique and diverse needs of these patients should be implemented.

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Associations between Diabetes, Generalized anxiety disorder, and Comorbid Depression: Findings from the Canadian Community Health Survey

Research on the associations between diabetes and generalized anxiety disorder (GAD), a condition often comorbid with depression, is mixed. Disentangling the role of comorbidity with depression can help clarify the link between GAD and diabetes. This study examined the associations between GAD, depression, GAD-depression comorbidity, and diabetes with data from the Canadian Community Health Survey (total of 24 655 participants). Past-year GAD and depression were assessed with the Composite International Diagnostic Interview. A diagnosis of diabetes by a health care professional was the outcome. Covariates included age, sex, income, province, and ethnicity. Logistic regression models demonstrated that GAD (with or without comorbidity) was associated with increased odds of diabetes (odds ratio [OR] = 2.01; $p < 0.001$; 95% CI [1.58-2.57]). The association between GAD and diabetes was maintained when controlling for depression (OR = 1.68; $p = 0.001$; 95% CI [1.28-2.20]), and was similar in effect to the association between depression and diabetes (OR = 1.44; $p = .002$; 95% CI [1.15-1.81]). Comorbidity increased the likelihood of concurrent diabetes. Compared to those

without GAD or depression, the odds of diabetes was 1.71 ($p = .004$; 95% CI [1.19-2.45]) for the GAD only group, 1.45 ($p = .005$; 95% CI [1.12-1.88]) for the depression only group, and was 2.39 ($p < .001$; 95% CI [1.73-3.29]) for the comorbidity group. These findings suggest that GAD is a condition that is likely to co-occur with diabetes, and that individuals with comorbid GAD and depression may be at a particularly increased risk of diabetes.

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The Mental Health Commission of Canada's Data Project and the Mental Health and Addictions Information Collaborative: an introduction

Mental health is a key public health priority in Canada. The most recently available evidence suggests that one in three Canadians ages 15 and over (about 9.1 million people) meet the criteria for at least one of six selected mental or substance use disorders at some point in their life. Although current efforts provide an important foundation for evidence-informed policy making and programming, a number of gaps remain including the need for a coordinated approach to provide a more robust picture of not only of the state of positive mental health, mental illness and addictions in Canada by improving data collection and reporting. In response to the need for coordination in the development, analyses, and dissemination of relevant data in the aforementioned areas, in December 2013, the Mental Health Commission of Canada led the establishment of a National Mental Health and Addictions Collaborative comprised of data and policy analysts from the Public Health Agency of Canada, Health Canada, Statistics Canada, the Canadian Institutes for Health Research, the Canadian Institute for Health Information, and the Canadian Centre for Substance Abuse. Operating at a technical level, the goals of the Mental Health Information and Addictions Data Collaborative are to:

1. Support executive level decision making by facilitating executive level awareness and cross-organisational engagement on positive mental health, mental illness, and addictions issues based on available evidence.
2. Provide a forum to align initiatives aimed at enhancing mental health, mental illness and addictions data in Canada. The Collaborative will coordinate and facilitate efforts aimed at furthering this purpose through integration and quality improvement of existing data resources and the development of new resources that fill positive mental health, mental illness and addictions information gaps;
3. Allow individual members to represent and exchange information on the interests, initiatives, and objectives of their respective organizations as regards positive mental health, mental illness, and addictions information

The work of the Collaborative has already resulted in a cross organizational collaboration, reduction in duplication of activities, and improved stakeholder relations between the participating organizations. We anticipate that through this Collaborative, Canada will continue to be at the

forefront of mental health, mental illness, and addictions data, surveillance and reporting on the international stage.

In June 2014, the Mental Health Commission began an ambitious project to create national-level mental health and illness indicators. The goal of the data project is to serve as a foundation for evidence-informed mental health policy and practice in Canada. The indicators will be integrated into an accessible framework to contribute to Canada's capacity to monitor and improve the mental health system for people living with a mental health problem or illness. To inform these indicators, the data project has undertaken extensive collaboration and consultation with key agencies across Canada. The research team used the 'Strategic Directions' outlined in the Mental Health Commission's Mental Health Strategy for Canada as an indicator framework. For each indicator, the team consulted with various data and content experts and carefully considered feasibility, validity, replicability, actionability and meaningfulness. The review process has resulted in a list of approximately 60 indicators. The culmination of the project will result in an online dashboard which operates on an accessible interface to allow a variety of stakeholders to gauge and monitor progress and to be accompanied by in-depth technical report. An extensive review of indicators has been completed and work is now progressing to populate the dashboard and the accompanying technical report. The presentation will include the current list of indicators, information about the dashboard development, and a discussion of the project's innovation.

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Early life predictors of adolescent suicidal thoughts

Objective: As a major cause of preventable death, suicide is an important public health issue. Research has identified risk factors for suicidality, however, much of the literature considers factors independently, or focuses on those present near the time of suicidality. The objective of this research was to study the interactions between multiple factors present in early childhood that may increase risk of suicidal thoughts in adolescence. *Methods:* Early childhood factors measured in the National Longitudinal Survey of Children and Youth were used to predict adolescent suicidal thoughts. These factors included prenatal, individual, family, and neighbourhood characteristics for which there was prior research showing associations with suicidality. Suicidal thoughts were assessed from ages 12-17 in self-completed questionnaires. Classification and Regression Tree models were developed to identify sub-groups with high or low probability of later suicidal thoughts based on higher-level interactions between multiple early childhood factors. *Results:* The CART models identified diverse variation in suicidal thoughts between sub-groups. In some sub-groups defined only by factors present in pre-school years, adolescent suicidal thoughts was above 25%, more than twice the base prevalence in the overall population. Important predictive factors included gender, early childhood traumatic experiences, and family structure. Notably, models predicting suicidal thoughts also predicted adolescent substance abuse, poor self-rated health, with high sensitivity and specificity. *Conclusions:* There are important factors present during early childhood that predict suicidal thoughts in adolescence. Understanding the interactions of risk factors may inform future early-intervention

suicide prevention strategies; implementation of such strategies may have ancillary public health benefits.

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Impact of the neighbourhood environment on trajectories of major depression in Canadian adults

Objective: To investigate the effect of the neighbourhood environment on trajectories of depression in adults from the general population. *Research Design and Methods:* We used 10 years of data collection (2000/01-2010/11) from the Canadian National Population Health Study (n= 13,618). Major depression episode was identified using the Composite International Diagnostic Interview Short-Form. We assessed the presence of local parks, healthy food stores, health services and cultural services using geospatial data. We used latent class growth modelling (LCGM) to identify different trajectories of major depression in the sample and tested for the effect of neighbourhood variables on the trajectories over time. *Results:* LCGM uncovered three distinct trajectories of major depression: no depression, low intermittent depression and high persistent depression. The presence of local parks and cultural services significantly shifted the trajectory associated with high persistent depression towards lower probability of depression. *Conclusions:* Living in a neighbourhood that offers parks and cultural services was associated with lower probability of major depression in people that followed a trajectory of high persistent depression during the 10 years of the study.

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The Association between Childhood and Adolescent Stressors and Mood Disorders in Adulthood

Objectives: Evidence suggests that stressful events that occur in childhood and adolescence can affect mental health many years later. The purpose of this project was to estimate the individual and combined effects of three childhood and adolescent stressors on mood disorders in adulthood. *Method:* Data were analysed from 4992 participants in the 2012 Canadian Community Health survey (CCHS), a nationally representative cross-sectional survey. Mood disorders in adulthood included depression, bipolar disorder, mania, and dysthymia. Stressors of interest during childhood or adolescence were parental divorce, family problems due to parents abusing drugs or alcohol, and physical abuse. Potential confounders included other stressful childhood experiences and socioeconomic factors. Simple and multiple logistic regressions were used to examine the association between these stressors and adult mood disorders. *Results:* While all three childhood stressors were significant in simple models (ORs [95% CI]: divorce: 1.72 [1.37-2.13], parental drug/alcohol abuse

2.74 [2.24-3.38], physical abuse 3.65 [2.92-4.56]), only parental drug/alcohol abuse and physical abuse were significant in the fully adjusted model (ORs [95% CI]: divorce: 1.46 [0.99-2.18], drugs/alcohol 2.27 [1.74-2.99], physical abuse 2.92 [2.12-4.02]). There was a negative interaction between parental drug/alcohol abuse and physical abuse, suggesting that the combined effects of these stressors are less than would be expected under additive or multiplicative interaction models. *Conclusion:* Parental drug/alcohol abuse and physical abuse during childhood or adolescence were associated with having mood disorders in adulthood. Further research is needed to examine the underlying biological and social mechanisms in the relationship between childhood stressors and mood disorders in adulthood.

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Attachment Styles in Bipolar Disorder and Unipolar Depression

Mood disorders affect about 10% of the Canadians and are conditions that cause people to feel persistently elevated or depressed mood that negatively affect their mental well-being and physical health. Maladaptive attachment styles have been established as a vulnerability factor for depression, but less is known about their association with bipolar disorder. Attachment styles can be categorized into four types: secure, anxious, preoccupied and dismissive. Our objective was to examine differences between patients with unipolar depression versus bipolar disorder on measures of attachment style. Data on attachment patterns were collected by administering two self-report questionnaires (RQ-CV and ECR) to patients diagnosed with unipolar depression and bipolar disorder (using the SCID) from the Mood Disorders Program of the McGill University Health Centre. The association between mood disorder type (depression versus bipolar) and attachment style was examined using linear regression models. 145 subjects met the eligibility criteria for the study where 57 of them had unipolar depression and 88 had bipolar disorder. We found that in comparison to patients with bipolar disorder, individuals who have unipolar depression reported a higher level of fearful attachment ($p=.051$) and a lower level of secure ($p=.031$) attachment in adult relationships. It is important to recognize that depressed patients may be at risk to have fragile social support networks including feeling secure in their relationship with their treating team. This population may need additional reassurance and positive feedback in their interactions with healthcare professionals and informal social support networks.

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Sans teeth, sans eyes, sans taste, sans everything: a meta-analysis of community & clinical surveys of the prevalence of dental disease in people with psychosis and dementia and ways to improve outcome

Background: Psychiatric patients have increased comorbid physical illness. There are less data on dental disease, especially tooth decay, in spite of risk factors in this population of lifestyle or psychotropic-induced dry mouth. Importantly, poor oral health can predispose to chronic physical disease leading to avoidable admissions to hospital for medical causes. *Method:* A systematic search for studies from the last 25 years of the oral health of people with severe mental illness (SMI) using MEDLINE, PsycInfo, EMBASE and article bibliographies. Results were compared with the general population. The primary outcome was total tooth-loss (edentulism), the end-stage of both untreated caries and periodontal disease. Another outcome was dental decay measured through the following standardized measures: the mean number of decayed, missing and filled teeth (DMFT) or surfaces (DMFS). *Results:* Twenty-five studies contributed data for a random-effects meta-analysis. These covered 5076 psychiatric patients and 39545 controls, the latter from either the same study or community surveys. People with SMI had 2.7 the odds of having lost all their teeth compared with the general community (95%CI=1.7-4.3). They also had significantly higher DMFT (mean difference=5.0; 95%CI=2.5-7.4) and DMFS scores (mean difference=14.6; 95%CI=4.1-25.1). *Conclusions:* An increased focus on oral health could improve medical and psychosocial outcomes in people with SMI. It could also save costs given that dental conditions are the commonest reason for acute avoidable admissions for medical causes. Interventions include oral health assessment using standard checklists completable by non-dental personnel, help with oral hygiene, management of iatrogenic dry mouth, and early dental referral.

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The effect of childhood adversity on clinical severity in mood disorders

Mood disorders, specifically bipolar disorder and major depression, are common psychiatric disorders which have detrimental effects in the occupational, personal, and social domains of affected individuals. Child abuse and other childhood adverse events increase the risk for developing a mood disorder and have been reported to worsen the course of mood disorders. This cross-sectional study of 162 adult outpatients from a tertiary-care clinic used linear and logistic regressions to examine the association between childhood adversity (assessed using the Childhood Experience of Care and Abuse Questionnaire–CECA-Q) and clinical severity (assessed with the Structured Clinical Interview for the Diagnosis of DSM-IV Disorders–SCID). The types of childhood adversity measured were: parental loss, antipathy, neglect, psychological abuse, physical abuse, sexual abuse, and role reversal. Clinical severity indicators were: age of mood disorder onset, age of first psychiatric treatment, duration of untreated illness, number of comorbid psychiatric disorders, number of

psychiatric hospitalizations, and number of lifetime suicide attempts. We found every form of childhood adversity was associated with more severe mood disorders, as indicated by at least one clinical severity indicator. Paternal physical abuse had a 3.6-fold increased risk of psychiatric hospitalization. Sexual abuse had a 3-fold increased risk of psychiatric hospitalization and a 2-fold increased risk of suicide attempt. This study provides further evidence that childhood adversity has long-term consequences and is related to greater severity of mood disorders. Negative childhood experiences should be systematically collected and assessed during clinical assessments of mood disorder patients and should be considered during clinical treatment.

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A surveillance system to monitor of excess mortality of the mentally ill in Canada

Background. Excess mortality among psychiatric patients has been reported over the past two decades, with recent figures quoting a 20-year decrease in life expectancy. Even though national mental health strategies are being introduced to improve outcomes in people with mental disorders, regular and timely monitoring of excess mortality has yet to be implemented in Canada, and feasibility studies are required. *Methods.* We used longitudinal data from the Quebec Integrated Chronic Disease Surveillance System (QICDSS). This includes data from the health insurance registry, physician claims and hospital discharge abstract for all mental disorders diagnoses ICD-9 290-319. Cases were defined as one receiving a mental disorder diagnosis once during the year. Excess mortality was measured using Chang's method for abridged life tables complemented by Hsieh method for adjustment of the last age interval. *Results.* Mental disorders affected 12% of the population annually or 903,000 from 2009 to 2010. We found a reduced life expectancy in psychiatric patients of 8 for men and 5 years for women. In schizophrenia, life expectancy was lowered by 12 years for men and 8 years for women. In mood and anxiety disorders it was 4 years lower for men, with no significant differences for women. Cardiovascular disease and cancer were the commonest causes of premature death. Findings were consistent across time and regions of the province. *Interpretation.* This study demonstrates the utility of administrative data for the surveillance of chronic disorders in Canada, and the feasibility to also measure mental disorders and associated outcomes like mortality.

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Childhood Adversity and Attachment Styles in a Mood Disorder Population

Mood disorders affect 10% of the Canadian population, and may involve persistent states of depression or mania. Insecure attachment styles, which have been linked to decreased proactivity and adherence in doctor-patient encounters and relationships, are more prevalent in individuals with mood disorders compared to those without. Moreover, childhood adversity, such as sexual abuse, has been associated with insecure attachment styles in adulthood. This cross-sectional study used linear regression to examine the association between childhood adversity and adult attachment styles in 160 outpatients from a tertiary-care mood disorder clinic. Childhood adversity was assessed with the Childhood Experience of Care and Abuse Questionnaire, while attachment styles were assessed using the Experiences in Close Relationships Questionnaire. The types of childhood adversity measured were: antipathy, parental loss, neglect, role reversal, and physical, psychological, and sexual abuse. Anxious and avoidant attachment styles were examined. We found that specific types of childhood adversity are associated with insecure attachment. Antipathy was associated with anxious attachment style ($\beta = 0.228, p = .007$), as was role reversal ($\beta = 0.237, p = .011$). Antipathy, neglect, and psychological abuse were associated with avoidant attachment ($\beta = 0.356, p < .001, \beta = 0.239, p = .004, \beta = 0.237, p = .006$, respectively). This study provides further evidence that childhood adversity is linked to insecure attachment in a mood disorder population. Childhood adversity and attachment style should be assessed in mood disorder subjects when patient compliance and adherence emerge as barriers in the course of clinical care.

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Negative childhood experiences and progression along the suicide continuum

Background: Suicide is one of the leading causes of death worldwide. However, it is difficult to predict who will attempt suicide as factors that predict suicide ideation do not always predict who will act on those thoughts. Few risk factors have been identified to explain this progression from suicide ideation to an attempt. While various theories hypothesize that negative childhood events increase the risk of progressing to an attempt, this has not been empirically tested. *Methods:* We estimated the relative risk of suicide attempts among individuals with negative childhood experiences among participants in the Canadian Community Health Survey - Mental Health supplement who reported suicide ideation. We also sought to identify risk factors that may be confounders, mediators or effect modifiers of this association. *Results:* Individuals with a history of negative childhood experiences had an increased risk of progressing to a suicide attempt, as did those with poor mental health, financial difficulties, poor coping skills, and those reporting a suicide plan. While none of the additional risk factors for suicide attempts accounted for the association between childhood adversity and suicide attempts alone, after adjusting for all factors the association was significantly attenuated. *Conclusions:*

Increased risk of suicide among those with negative childhood experiences may be accounted for by an accumulation of more proximal health, coping and financial deficits. Clarifying the relationships among risk factors for suicide is needed to improve identification of individuals at risk of a suicide attempt and to inform effective interventions to prevent suicide.

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Estimating the Prevalence of Bipolar Disorder in the General Population: Challenges and New Directions

Introduction: In Canada, epidemiologic information about bipolar disorder is lacking. The 2012 Canadian Community Health Survey-Mental Health (CCHS-MH) provides an important opportunity to gain updated information and improve upon past studies. This presentation will describe a case definition approach used to define bipolar disorder in the CCHS-MH (as an alternative to the conventional algorithm approach) and provide epidemiologic information about persons with bipolar disorder through application of the approach. *Methods:* The CCHS-MH was a nationally representative survey of Canadian household residents ages 15 years and older (n=25,113). The survey response rate was 68.9%. Interviews were based on the Composite International Diagnostic Interview (CIDI). A case definition approach (using information from outside of the CIDI) was used as an alternative to standard CIDI algorithms to define bipolar disorder. A descriptive analysis of bipolar disorder according to the case definitions was conducted. *Results:* Using the preferred case definition, the crude prevalence of bipolar disorder in Canada in 2012 was 0.48 (95% CI: 0.37-0.59) per 100 persons. Compared to those without bipolar disorder, persons with bipolar disorder were more often single, unemployed, and had lower annual income. In the past year, approximately 12% had co-occurring substance or alcohol use disorder, 33% had suicide ideations and 9% were hospitalized for mental health reasons. *Conclusion:* Case definition approaches are commonly used in analyses of administrative data. Applying this approach to population survey data is innovative and allows a characterization of the epidemiology of this condition, which is not available using the CIDI algorithms.

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The prevalence of DSM-5 personality disorders in Australian women: data from the Geelong Osteoporosis Study

Background: The prevalence of personality disorder (PD) in the Australian population is not well understood. We aimed to report the prevalence and age distribution of Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) PDs in an age-stratified sample of Australian women aged ≥ 20 years as part of the 15-year follow-up of an on-going epidemiological cohort study. *Methods:* DSM-5 PDs (avoidant, dependent, obsessive-compulsive, paranoid, schizotypal, schizoid, histrionic, narcissistic, borderline, antisocial) were diagnosed utilizing a structured clinical interview (SCID-II). The prevalence of these disorders and Clusters were determined from the study population ($n=756$), and standardised to the 2011 census data for Australia. *Results:* Approximately one in five women (20.2%) were diagnosed with any personality disorder, with Cluster C PDs (15.7%) being more common than Cluster A (4.6%) and B PDs (3.0%). Of the individual PDs, obsessive-compulsive (9.3%), avoidant (8.4%), and paranoid (3.5%) were among the most prevalent. The prevalence of the other PDs was relatively low ($\leq 2.6\%$). The prevalence of any PD peaked in those aged between 30-39 years and subsequently declined in prevalence with increasing age. An acknowledged caveat is that personality likely influences adherence to long term studies and thus might be a source of variance. *Conclusions:* These data emphasise PDs are common among Australian women. A thorough understanding of the distribution of personality disorder and comorbidity in the community might assist future public health care planning for individuals living with these disorders.

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A Novel Issue for the Prevention of Suicide Death by Self-Poisoning: A Review of Policies and Procedures for the Disposal of Medications Found in the Possession of Deceased Individuals

Objectives: Suicide by self-poisoning accounted for 17.0% of all suicides in Toronto from 1998 to 2009. Understanding the means of accessing pharmaceuticals taken in self-poisoning is relevant to the development of targeted suicide prevention strategies. One source of medications used in suicide deaths by self-poisoning that we identified, and that may be underappreciated, is medication returned to at-risk individuals that belonged to family members or friends who have passed away. *Methods:* An investigation into Canadian federal and/or provincial policy around the confiscation of medications of deceased individuals in hospitals, funeral homes and/or the police services took place. A review of current drug control policies was completed. *Results:* Our investigation into Canadian federal, provincial and municipal policies around the confiscation of medications of deceased

individuals in hospitals, coroners, funeral homes and police services found no policies specifically addressing this issue. *Conclusions:* Consideration should be given to the development of policies and procedures that address the issue of access to medications of deceased individuals. It is unclear whether this is also an issue in other jurisdictions around the world but this should be investigated given potential suicide prevention and public health implications. *Impact:* Returning medications to family members or friends is not consistent with the current standard that people only receive prescription medications under the guidance of a treating physician. Guidelines requiring appropriate disposal of such substances may prevent suicides as well as accidental deaths and other serious morbidity.

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Examining the Relationship between Childhood Emotional Abuse and Neglect and Mental Disorders: Results from a Nationally Representative Adult Sample from the United States

Child maltreatment is recognized as a substantial public health concern. However, compared to research on physical and sexual abuse, far less is known about the long-term impact of emotional maltreatment on mental health. The purpose of this study was to examine the association of childhood emotional maltreatment and mental disorders using a nationally representative adult sample from the United States. Data were from the National Epidemiological Survey on Alcohol and Related Conditions collected in 2004 and 2005 (n=34,653). Logistic regression analyses were conducted to examine differences in the prevalence of Axis I and Axis II mental disorders based on childhood emotional maltreatment status. In models adjusting for sociodemographics, all categories of emotional maltreatment (emotional neglect only, emotional abuse only, and both emotional neglect and abuse) were associated with elevated odds of almost every mental disorder assessed in this study. Relationships were attenuated, but a substantial proportion remained significant after further adjustment for other forms of child maltreatment and a family history of dysfunction. The effects were greater for active (i.e., emotional abuse) relative to passive (i.e., emotional neglect) forms of emotional maltreatment. Childhood emotional maltreatment, particularly emotionally abusive acts, is associated with lifetime diagnoses of several Axis I and Axis II mental disorders. These findings can be used to better inform child maltreatment prevention and intervention efforts.

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Age-period-cohort (APC-IE) analysis of suicide mortality in Canada from 1926 to 2008

Suicide rates raise with age has remained consistent for more than 150 years but over the last 50 years major changes occurred. We examined Age-Period-Cohort (APC) effects on suicide mortality rate by gender in Canada, and compared the province of Quebec to the rest of Canada, from 1926 to 2008. Durkheim theoretical framework is used to interpret our findings. Descriptive analysis and APC models relating to the Intrinsic Estimator (IE) were used to assess these effects. IE model shows suicide net age effect for males in Canada and Quebec as death rate increased until 25 years old before reaching a plateau. For females it's an inverted "U" shape peaking at mid-adulthood. Specifically, estimates confirmed that suicide mortality in Canada is not at its highest level for the young and the elderly life stages over the 83 years analyzed but rather at mid-adult for both sexes (males 55-59 and 50-54, and females 45-49 and 50-54). While period effect differs between the province of Quebec and the rest of Canada, a significant net cohort effect is found for males born in 1941, and females in 1981 until most recent cohorts.

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Survey measures of presenteeism: selected psychometric attributes

Media reports about influences on worker productivity and well-being appear frequently, often pointing to health system losses of many millions of dollars. These estimates, however, are often based on suspect sources – self-report tests that are administered to individual workers. There are good reasons to be suspicious of these measures: (1) we tend to over-rate our own abilities, especially at work where performance has implications for continued employment, (2) mental disorder conveys additional bias, and (3) the psychometric properties of presenteeism instruments have not been adequately examined. We commenced a series of studies of the properties of the literature's leading presenteeism instruments. A systematic review indicated that the literature was dominated by one instrument, in spite of the absence of evidence of efficacy for it or for any other test. A survey of 137 health care workers, the focus here, found that among the eight leading presenteeism instruments, test-specific factors accounted for more variance than did the productivity constructs of amount and quality across tests. Further, those who rated their own productivity to be either low or very high showed a greater likelihood of depression. The findings do not bode well for this class of instruments. The dominance of method variance, coupled with the finding that construct validity values were moderate at best, militates against the possibility that one of these tests can show a high relationship with an "objective" measure of productivity. But this is an empirical question that will be examined in our next phase.

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Identifying a case definition for Major Depressive Disorder using The Health Improvement Network (THIN) database

The Health Improvement Network (THIN) database, is one of the largest medical databases in the world and represents a unique opportunity to conduct longitudinal research in psychiatric epidemiology. The aim of this methodological study was to create a case definition for Major Depressive Disorder (MDD) and to calibrate definitions that will be used for future survival analyses. Firstly, a team of experts in psychiatry screened medical codes (Read codes) and constructed 3 case definitions: i) inclusive (any symptom or diagnostic code); ii) intermediate (only diagnostic codes); iii) restrictive (only the most stringent diagnostic codes). To calibrate the data, case definitions were compared in terms of their cumulative incidence between the study period of January 1, 1980 to May 15, 2012 and the mean(SD) age at diagnosis. Upon comparing the content of the definitions and epidemiological parameters against existing literature, the restrictive definition was determined to be the most representative of MDD according to the DSM-5. At the end of the study period, there were 5,778,053 patients registered in THIN and the estimated cumulative incidence of MDD in THIN was 9.5% (6.7% for males and 12.1% for females) using the restrictive definition. Among only incident cases, the estimated mean (SD) age at depression diagnosis in THIN was estimated as 41.0(15.9) years, 40.6(16.1) years for males and 41.7(15.5) years for females. Both parameters were found to be consistent with previous literature. Future research will employ this case definition in order to study the longitudinal course of depression to mortality in primary care.