

4-1-2019

2014 Ontario Child Health Study Findings: Policy Implications for Canada

Charlotte Waddell
Simon Fraser University

Katholiki Georgiades
McMaster University

Laura Duncan
McMaster University

Laura Duncan
McMaster University

Jinette Comeau
King's University College at Western University Canada

See next page for additional authors

Follow this and additional works at: <https://ir.lib.uwo.ca/paedpub>

Citation of this paper:

Waddell, Charlotte; Georgiades, Katholiki; Duncan, Laura; Duncan, Laura; Comeau, Jinette; Comeau, Jinette; Reid, Graham J.; O'Briain, Warren; Lampard, Robert; Boyle, Michael H.; Boyle, Michael H.; Bennett, Kathryn; Bennett, Terry; Boylan, Khrista; Butt, Michelle; Cunningham, Charles; Duku, Eric; Dunn, Jim; Georgiades, Katholiki; Georgiades, Stelios; Gonzalez, Andrea; Hall, Geoffrey; Janus, Magdalena; Kimber, Melissa; Lipman, Ellen; and MacMillan, Harriet, "2014 Ontario Child Health Study Findings: Policy Implications for Canada" (2019). *Paediatrics Publications*. 1437.
<https://ir.lib.uwo.ca/paedpub/1437>

Authors

Charlotte Waddell, Katholiki Georgiades, Laura Duncan, Laura Duncan, Jinette Comeau, Jinette Comeau, Graham J. Reid, Warren O'Briain, Robert Lampard, Michael H. Boyle, Michael H. Boyle, Kathryn Bennett, Terry Bennett, Khrista Boylan, Michelle Butt, Charles Cunningham, Eric Duku, Jim Dunn, Katholiki Georgiades, Stelios Georgiades, Andrea Gonzalez, Geoffrey Hall, Magdalena Janus, Melissa Kimber, Ellen Lipman, and Harriet MacMillan

2014 Ontario Child Health Study Findings: Policy Implications for Canada

The Canadian Journal of Psychiatry /
La Revue Canadienne de Psychiatrie
2019, Vol. 64(4) 227-231
© The Author(s) 2019



Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0706743719830033
TheCJP.ca | LaRCP.ca



**Charlotte Waddell, MSc, MD, FRCPC¹, Katholiki Georgiades, PhD²,
Laura Duncan, MA^{2,3}, Jinette Comeau, PhD^{4,5}, Graham J. Reid, PhD^{6,7},
Warren O'Briain, MA⁸, Robert Lampard, PhD⁹, and Michael H. Boyle, PhD²;
2014 Ontario Child Health Study Team¹⁰**

Keywords

children's mental health, prevalence, policy and services, social determinants

Mental disorders typically start in childhood and cause substantial individual and collective burdens across the life span.¹ These disorders are also now the leading cause of childhood disability worldwide.² Exacerbating the burdens, high childhood disorder prevalence has been coupled with low children's mental health service reach.³ Service shortfalls have persisted despite growing research evidence on effective interventions and despite widespread recognition that timely access to adequate health, social, and educational

services is a fundamental right for all children.⁴⁻⁶ Yet Canada has lacked recent high-quality data to inform policy-making to address these issues. The 2014 Ontario Child Health Study (OCHS) now provides these data. This study has broad national applicability given its robust design, including the use of rigorous diagnostic measures in a large representative sample in the general population.⁷ The study also has high policy relevance⁸ in providing new data on population burden and service reach for emotional and

¹ Children's Health Policy Centre, Faculty of Health Sciences, Simon Fraser University, Vancouver, British Columbia

² Offord Centre for Child Studies & Department of Psychiatry & Behavioural Neurosciences, McMaster University, Hamilton, Ontario

³ Department of Health Research Methods, Evidence & Impact, McMaster University, Hamilton, Ontario

⁴ Department of Sociology, King's University College at Western University, London, Ontario

⁵ Children's Health Research Institute, Children's Health and Therapeutics, Western University, London, Ontario

⁶ Departments of Psychology, Family Medicine, and Paediatrics, Western University, London, Ontario

⁷ Children's Health Research Institute, Children's Health and Therapeutics, London, Ontario

⁸ British Columbia Centre on Substance Use, Vancouver, British Columbia

⁹ Child and Youth Mental Health Policy Branch, British Columbia Ministry of Children and Family Development, Victoria, British Columbia

¹⁰ (In alphabetical order) Tracie O. Afifi (University of Manitoba), William R. Avison (Western University), Kathryn Bennett (McMaster University), Terry Bennett (McMaster University), Khrista Boylan (McMaster University), Michael H. Boyle (McMaster University), Michelle Butt (McMaster University), John Cairney (University of Toronto), Corine Carlisle (University of Toronto), Kristin Cleverley (Centre for Addiction and Mental Health, University of Toronto), Ian Colman (University of Ottawa), Jinette Comeau (King's University College at Western University), Charles Cunningham (McMaster University), Scott Davies (University of Toronto), Claire de Oliveira (Centre for Addiction and Mental Health, University of Toronto), Melanie Dirks (McGill University), Eric Duku (McMaster University), Laura Duncan (McMaster University), Jim Dunn (McMaster University), Mark A. Ferro (University of Waterloo), Katholiki Georgiades (McMaster University), Stelios Georgiades (McMaster University), Andrea Gonzalez (McMaster University), Geoffrey Hall (McMaster University), Joanna Henderson (Centre for Addiction and Mental Health, University of Toronto), Magdalena Janus (McMaster University), Jennifer Jenkins (University of Toronto), Melissa Kimber (McMaster University), Ellen Lipman (McMaster University), Harriet MacMillan (McMaster University), Ian Manion (Royal's Institute of Mental Health Research), John McLennan (University of Ottawa), Amelie Petitclerc (Northwestern University), Anne Rhodes (University of Toronto), Graham Reid (Western University), Peter Rosenbaum (McMaster University), Roberto Sassi (McMaster University), Louis Schmidt (McMaster University), Cody Shepherd (Simon Fraser University), Noam Soreni (McMaster University), Peter Szatmari (Centre for Addiction and Mental Health, Hospital for Sick Children, University of Toronto), Brian Timmons (McMaster University), Juliana Tobon (McMaster University), Ryan Van Lieshout (McMaster University), Charlotte Waddell (Simon Fraser University), Li Wang (McMaster University), Christine Wekerle (McMaster University).

Corresponding Author:

Charlotte Waddell, MSc, MD, FRCPC, Children's Health Policy Centre, Faculty of Health Sciences, Simon Fraser University, 2435-515 West Hastings Street, Vancouver, British Columbia V6B 5K3, Canada.

Email: charlotte_waddell@sfu.ca

behavioural disorders (including anxiety disorders, depression, attention-deficit/hyperactivity disorder or ADHD, and conduct disorder), changes in prevalence over time, and social influences on children's mental health.⁹⁻¹² To inform policymaking intended to improve children's mental health outcomes in Canada, we 1) summarize 4 of the 2014 OCHS findings with particular policy salience; 2) describe the policy context for children's mental health services, which influences how these findings may be used; and 3) propose 6 next steps given this policy context.

2014 OCHS Findings with Policy Salience

1. Prevalence of Childhood Mental Disorders Is High

The 2014 OCHS found that 18% to 22% of children aged 4 to 17 years had 1 or more mental disorders involving both symptoms and impairment⁹—exceeding recent global prevalence estimates of 13%.¹³ These 2014 rates may also underestimate the burden because children younger than 4 and older than 17 years were excluded, as were some disorders (such as substance use) and some populations (such as Indigenous children). Applying recent Canadian population figures, the 2014 OCHS findings nevertheless mean that more than a million children—or 1 in 5—are affected at any given time.¹⁴

2. Service Reach for Children with Mental Disorders Is Low

According to the 2014 OCHS, only 26% to 34% of children with parent-identified mental disorders had contact with mental health care providers regarding mental health concerns.⁹ However, 60% had contact with service providers in general, most often through schools.⁹ (The quality and effectiveness of services were not assessed.)

3. Needs Have Increased over Time

The 2014 OCHS was structured to allow comparisons with the 1983 OCHS. Overall disorder prevalence increased by approximately 2% over the past 30 years—with increases in ADHD for younger boys and in anxiety and depression for older girls and boys, but with decreases in conduct disorder for older boys.¹¹ *Need* may also be defined as the perception by young people or parents/caregivers that professional mental health help is required. Using this definition, need more than doubled over the past 30 years.¹¹

4. Social Determinants Influence Children's Mental Health

The 2014 OCHS also assessed the influence of income disparities and exposure to neighbourhood adversities including incivility and criminality. Children from low-income families had fewer mental health problems when living in poor compared to wealthy neighbourhoods but far more problems when exposed to neighbourhood

adversity.¹² These findings suggest that relative socioeconomic disadvantage likely influences children's mental health, and that children from low-income families are disproportionately harmed by exposure to adversities such as unsafe neighbourhoods.¹²

Children's Mental Health Services in Canada

What is the policy context in which these 2014 OCHS findings may be used? In keeping with Canada's constitutional arrangements, provinces and territories are responsible—and accountable—for designing and delivering their own health, social and educational programs, including for children's mental health.¹⁵ The federal government's role, in comparison, is mainly that of funder, although it can exert influence, for example, requiring adherence to core principles such as universal access to "medically necessary services" in the case of the Canada Health Act.¹⁶ Provincial/territorial autonomy has led to differing children's mental health service arrangements across the country.¹⁷ Yet common governance challenges remain and must be addressed if the 2014 OCHS findings are to be used to improve child outcomes.

For children's mental health, the main governance challenge is the diffusion of responsibility and authority across multiple sectors and groups, with insufficient central expert leadership and planning at the provincial/territorial level. Sectors typically span public health and health care, early childhood education and schools, and children's services including not only mental health but also child protection and youth justice.¹⁸ Meanwhile, provider organizations typically span health, children's and education ministries, as well as regional health authorities, school districts, and contracted community agencies.¹⁸ For example, in Ontario, when the 2014 OCHS was conducted, the Ministry of Children and Youth Services (MCYS) funded community-based children's mental health programs, provided through contracted agencies but with limited central oversight.¹⁹ Related physician and hospital services were also provided through the Ministry of Health and Long-Term Care (MOHLTC) but with limited coordination with MCYS.¹⁹ Meanwhile, schools provided additional programs but with little coordination with MCYS or MOHLTC.¹⁹ Services in many other provinces/territories have been similarly fragmented, although not in all.²⁰

This governance challenge causes several children's mental health service problems. Without central expert policy leadership, it is difficult to ensure the provision of effective interventions as the standard of care, across all services being provided. For example, cognitive-behavioural therapy (CBT) is effective with childhood anxiety and depressive disorders, and parenting programs are effective with childhood behaviour disorders.^{4,5} Yet these approaches are still not widely available while unproven or ineffective approaches persist.^{21,22} Without coherent policy leadership, it is also difficult to sustain adequately comprehensive

children's mental health service planning. For example, public advocacy can be singularly focused on one age group (such as adolescence) or one disorder (such as autism). Yet this singularity can give rise to unbalanced and uncoordinated policy responses.²³ Addressing social determinants of children's mental health also requires coordinated "whole-of-government" responses—difficult to achieve in the face of fragmentation.²⁴

A related challenge is public resourcing. Without effective governance and accountability mechanisms, underfunding of children's mental health services persists—evidenced by gaps in crucial services and by unacceptable wait times for community-based services, in turn contributing to increasing emergency room use.^{25,26} Children's mental health services are also not tied to legislated mandates or required funding, in turn resulting in a continuous erosion of budgets, wherever these are housed.

Our consideration of next steps takes this policy context into account. We propose 6 initiatives that provinces/territories could undertake.

Proposed Next Steps

1. Ensure Coherent Policy Leadership

Creating central expert leadership mechanisms is crucial to ensuring continuing and coordinated children's mental health commitments across all essential sectors and groups at the provincial/territorial level. Some province/territories have taken such steps governing child health more generally, using legislation to mandate long-term coordination and "evidence-based" planning.²⁰ Legislation could similarly mandate continuing coherent central leadership—and accountability—for children's mental health.

2. Make and Sustain Comprehensive Children's Mental Health Plans

Children's mental health plans are also needed in each province/territory, covering the full age range from birth through early adulthood.²⁷ Given the limited reach of treatment services at present, to substantially reduce prevalence, such plans must have comprehensive public health goals: 1) addressing social determinants and promoting healthy development for all children, 2) preventing disorders, 3) intervening with all children with disorders, and 4) evaluating intervention efforts by monitoring population outcomes.¹ Several provinces/territories have implemented comprehensive children's mental health plans—showing that this approach is feasible.¹⁷ Some provinces/territories have also made significant new prevention investments—for example, implementing targeted parenting programs for very young children and universal CBT-based programs for school-age children—showing that prevention capacity can be built.^{28,29} Yet plans must also be sustained to ensure enduring commitments to children, something few provinces/territories have achieved.^{17,28,29}

3. Ensure the Use of Effective Interventions

To fully address the needs depicted by the 2014 OCHS, effective interventions should be used for both prevention and treatment. This includes ensuring appropriate dosing and fidelity with psychosocial interventions. It also includes tracking and curtailing the use of unproven or ineffective approaches, such as unevaluated therapies or inappropriate prescribing.²² Abundant research evidence on effective children's mental health interventions gives policymakers an array of options.^{4,5} Requirements for the use of effective interventions have been embedded in previous provincial children's mental health plans showing that this approach is feasible.²⁸ Some jurisdictions have enacted legislation explicitly encouraging effective interventions for children's mental health, which Canadian provinces/territories could also consider.³⁰ Beyond improving child outcomes, tying funding to effective interventions could also reduce wasteful spending.³⁰

4. Reach All Children with Mental Disorders Using Innovative Service Approaches

The 2014 OCHS provides the basis for estimating the number of children with mental disorders in each province/territory. The goal must be providing all these children with appropriate care for their mental health needs—as is typical for physical conditions such as childhood diabetes or cancer. Yet in keeping with the principle of "proportionate universalism," treatment need not always involve specialized providers or teams.²⁴ Rather, provincial/territorial plans could focus on developing tiers of service that allow the efficient allocation of resources aligned with type and intensity of need—across the continuum from promotion and prevention through to specialized treatment. Access to care could also be enhanced by adopting (and evaluating) innovative service models that extend the reach of specialist providers/teams. Examples of such innovations include having primary care and other nonspecialist providers support children with less complex challenges, including in schools; implementing collaborative care models with specialist teams supporting primary care and other nonspecialist providers³¹; and exploring the use of effective digital or "e-health" modalities.³²

5. Address Avoidable Childhood Adversity

The main social influences identified by the 2014 OCHS—relative socioeconomic disadvantage and exposure to neighbourhood adversity—have also long been described in the research literature.³³ Addressing social determinants should therefore be included in children's mental health planning, recognizing that initiatives will vary in scope and often require collaboration at the federal, provincial/territorial, and regional/local/municipal levels. Initiatives to reduce family income disparities are already under way in Canada, for example, providing proportionately greater child benefits to disadvantaged

families and beginning to address extremes of social disadvantage affecting Indigenous children.^{34,35} Beyond this, exposure to unsafe neighbourhoods is both a violation of children's rights and an avoidable form of childhood adversity. As an urgent policy priority, addressing this issue requires broadening children's mental health planning to include, for example, the housing, recreation, and justice sectors.

6. Ensure Adequate and Dedicated Children's Mental Health Budgets

Given Canada's health expenditures—now \$254 billion annually and exceeding those of most other wealthy countries on a per capita basis—resources are not lacking.³⁶ Yet the service shortfalls documented by the 2014 OCHS suggest that children's mental health has yet to be established as a public funding priority. To fully address the service shortfalls, governments will need to allocate dedicated new funding for children's mental health—funding that is tied to ensuring adequate governance mechanisms, increased service reach, effective interventions, and improved child outcomes. Allocating dedicated new prevention funding will also help reduce the incidence of mental disorders over time. As well, legislative mechanisms could be considered for protecting children's mental health budgets, as happens currently with child protection and youth justice.

The case of autism in Canada shows that substantial increases in public funding are possible.²³ Experience from other high-income countries also shows that services can be substantially increased. Australia, for example, doubled the proportion of children receiving mental health services between 1998 and 2014.³⁷ Most mental health problems start in childhood then continue throughout adulthood.³⁸ Beyond the high human costs, mental disorders in aggregate cost Canadians an estimated \$64 billion annually (2018 equivalent).³⁹ New investments in children's mental health services could greatly reduce these long-term human and fiscal costs.

Conclusions

The 2014 OCHS depicts high levels of need: with 20% of children, or more than a million, having 1 or more mental disorders at any given time; with fewer than a third of these children having contact with mental health care providers; and with perceptions of need doubling over the past 30 years. In essence, the 2014 OCHS provides a 30-year "report card" on children's mental health, suggesting that for far too long, Canadians have tolerated an inadequate patchwork of services—which the public may be unaware of until children develop problems and families try to get help. Yet provincial/territorial policymakers have a significant opportunity to realize better outcomes over the next 30 years—potentially improving social and emotional well-being for many thousands of children. These steps include 1) ensuring coherent policy leadership, 2) making and sustaining comprehensive children's mental health plans, 3) ensuring the use of

effective interventions, 4) reaching all children with mental disorders by using innovative service approaches, 5) addressing avoidable childhood social adversities, and 6) ensuring adequate and dedicated children's mental health budgets. Meeting mental health needs is a fundamental child rights issue—one that all Canadians, and policymakers on their behalf, can be invited to embrace. The 2014 OCHS findings are the clarion call to do this now.


Declaration of Conflicting Interests

The primary authors (CW, KG, LD, JC, GR, WOB, RL, MB) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: During the preparation of this manuscript, Dr. Waddell was supported by the Canada Research Chairs program, Dr. Georgiades was supported by the David R. (Dan) Offord Chair in Child Studies, and Dr. Reid was supported by the Children's Health Research Institute, London, Ontario.

ORCID iD

Laura Duncan, MA  <https://orcid.org/0000-0001-7120-6629>

References

1. Waddell C, Schwartz C, Andres C. Making children's mental health a public policy priority: for the one and the many. *Public Health Eth.* 2018;11(2):191-200.
2. Erskine HE, Moffitt TE, Copeland WE, et al. A heavy burden on young minds: the global burden of mental health and substance use disorder in children and youth. *Psychol Med.* 2015; 45(7):1551-1563.
3. Waddell C, Shepherd C, Schwartz C, et al. *Child and youth mental disorders: prevalence and evidence-based interventions.* Vancouver (BC): Children's Health Policy Centre, Simon Fraser University; 2014.
4. Crowe K, McKay D. Efficacy of cognitive-behavioral therapy for childhood anxiety and depression. *J Anxiety Disord.* 2017; 49:76-87.
5. Waddell A, Schwartz C, Andres C, et al. Fifty years of preventing and treating childhood behaviour disorders: a systematic review to inform policy and practice. *Evid Based Ment Health.* 2018;21(2):45-52.
6. United Nations. *Convention on the Rights of the Child.* Geneva (Switzerland): United Nations; 1989.
7. Boyle MH, Georgiades K, Duncan L, et al. 2014 Ontario Child Health Study—methodology. *Can J Psychiatry.* In press.
8. Costello EJ, Burns BJ, Angold A, et al. How can epidemiology improve mental health services for children and adolescents? *J Am Acad Child Psychiatry.* 1993;32(6):1106-1114.
9. Georgiades K, Duncan L, Wang L, et al. Six-month prevalence of mental disorders and service contacts among children and youth in Ontario: evidence from the 2014 Ontario Child Health Study. *Can J Psychiatry.* In press.

10. Duncan L, Georgiades K, Birch S, et al. Children's mental health need and expenditures in Ontario: findings from the 2014 Ontario Child Health Study. *Can J Psychiatry*. In press.
11. Comeau J, Georgiades K, Wang L, et al. Changes in the prevalence of child mental disorders and perceived need for professional help between 1983 and 2014: evidence from the Ontario Child Health Study. *Can J Psychiatry*. In press.
12. Boyle MH, Georgiades K, Duncan L, et al. Poverty, neighbourhood antisocial behaviour and child mental health problems: findings from the 2014 Ontario Child Health Study. *Can J Psychiatry*. In press.
13. Polanczyk GV, Salum GA, Sugaya LS, et al. Annual research review: a meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *J Child Psychol Psychiatry*. 2015;56(3):345-365.
14. Statistics Canada. Table 17-10-0005-01: population estimates on July 1st, by age and sex. Ottawa (ON): Statistics Canada; 2018 [cited 2018 Nov 25]. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501>.
15. Lithwick D. A pas de deux: the division of federal and provincial legislative powers in Sections 91 and 92 of the Constitution Act, 1867. Ottawa (ON): Canada Library of Parliament; 2015.
16. Government of Canada. Canada Health Act. Ottawa (ON): Government of Canada; 1985, amended 2017.
17. Kutcher S, Hampton MJ, Wilson J. Child and adolescent mental health policy and plans in Canada: an analytic review. *Can J Psychiatry*. 2010;55(2):100-107.
18. Waddell C, Lavis JN, Ableson J, et al. Research use in children's mental health policy in Canada: maintaining vigilance amid ambiguity. *Soc Sci Med*. 2005;61(8):1649-1657.
19. Duncan L, Boyle MH, Abelson J, et al. Measuring children's mental health in Ontario: policy issues and prospects for change. *J Can Acad Child Adolesc Psychiatry*. 2018;27(2):88-98.
20. Government of Manitoba. The Healthy Child Manitoba Act, C. C.S.M. c. H37. Winnipeg (MB): Government of Manitoba; 2007.
21. Chodos H. Options for improving access to counseling, psychotherapy and psychological services for mental health problems and illnesses. Ottawa (ON): Health Canada; 2017.
22. Ronsley R, Scott D, Warburton WP, et al. A population-based study of anti-psychotic prescription trends in children and adolescents in British Columbia, from 1996 to 2011. *Can J Psychiatry*. 2013;58(6):361-369.
23. Shepherd CA, Waddell C. A qualitative study of autism policy in Canada: seeking consensus on children's services. *J Autism Dev Disord*. 2015;45(11):3550-3564.
24. Marmot M, Allen J, Goldblatt P, et al. Fair society, healthy lives: strategic review of health inequalities in England post-2010. London: United Kingdom Department of Health; 2010.
25. Canadian Institute for Health Information. Care for children and youth with mental disorders. Ottawa (ON): Canadian Institute for Health Information; 2015.
26. Reid GJ, Brown J. Money, case complexity, and wait lists: perspectives on problems and solutions at children's mental health centers in Ontario. *J Behav Health Serv Res*. 2008;35(3):334-346.
27. World Health Organization. 2014 Mental health atlas. Geneva (Switzerland): World Health Organization; 2015.
28. Government of British Columbia. Child and youth mental health plan for British Columbia. Victoria (BC): Government of British Columbia; 2003.
29. Government of British Columbia. Healthy minds, healthy people: a ten-year plan to address mental health and substance use in British Columbia. Victoria (BC): Government of British Columbia; 2010.
30. Washington State Institute for Public Policy. Updated inventory of evidence-based, research-based and promising practices for prevention and intervention services for children and juveniles in the child welfare, juvenile justice, and mental health systems. Olympia (WA): Washington State Institute for Public Policy; 2014.
31. Kates N, Mazowita G, Lemire F, et al. The evolution of collaborative mental care in Canada: a shared vision for the future. *Can J Psychiatry*. 2011;56(5):1-10.
32. Hollis C, Falconer CJ, Martin JL, et al. Annual research review: digital health interventions for children and young people with mental health problems—a systematic and meta-review. *J Child Psychol Psychiatry*. 2017;58(4):474-503.
33. Reiss F. Socioeconomic inequalities and mental health problems in children and adolescents: a systematic review. *Soc Sci Med*. 2013;90:24-31.
34. Government of Canada. Fiscal analysis of children's benefits. Ottawa (ON): Office of the Parliamentary Budget Officer; 2016.
35. Truth and Reconciliation Commission of Canada. Truth and Reconciliation Commission of Canada: calls to action. Winnipeg (MB): Truth and Reconciliation Commission of Canada; 2015.
36. Canadian Institute for Health Information. National health expenditures trends, 1975 to 2018. Ottawa (ON): Canadian Institute for Health Information; 2018.
37. Lawrence D, Johnson S, Hafekost J, et al. The Mental health of children and adolescents: report on the Second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Canberra (Australia): Department of Health; 2015.
38. Kessler RC, Berglund P, Demler O, et al. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(7):593-602.
39. Lim KL, Jacobs P, Ohinmaa A, et al. A new population-based measure of the economic burden of mental illness in Canada. *Chronic Dis Can*. 2008;28(3):92-98.