The Mental Health of Children and Youth in Ontario

2017 Scorecard

June 2017

ICES

The Mental Health of Children and Youth in Ontario: 2017 Scorecard

MHASEF Research Team

Abigail Amartey
Maria Chiu
Evgenia (Jenny) Gatov
Astrid Guttmann
Michael Lebenbaum
Paul Kurdyak
Natasha Saunders
Simone Vigod
Julie Yang

With a contribution by the Ministry of Children and Youth Services

June 2017

Publication Information

Published by the Institute for Clinical Evaluative Sciences (ICES).

INSTITUTE FOR CLINICAL EVALUATIVE SCIENCES
G1 06, 2075 Bayview Avenue
Toronto, Ontario M4N 3M5
Telephone: 416-480-4055
Email: **communications@ices.on.ca**

How to cite this publication

MHASEF Research Team. *The Mental Health of Children and Youth in Ontario: 2017 Scorecard.* Toronto, ON: Institute for Clinical Evaluative Sciences; 2017.

ISBN: 978-1-926850-72-6 (Online)

Authors' Affiliations

The MHASEF (Mental Health and Addictions Scorecard and Evaluation Framework) Research Team includes the following individuals (in alphabetical order):

Abigail Amartey, MPH
Epidemiologist, Institute for Clinical Evaluative Sciences

Maria Chiu, MSc, PhD
Staff Scientist, Institute for Clinical Evaluative Sciences / Assistant Professor, Dalla Lana School of Public Health and Institute of Health Policy, Management and Evaluation, University of Toronto

Evgenia (Jenny) Gatov, MPH
Epidemiologist, Institute for Clinical Evaluative Sciences

Astrid Guttmann, MDCM, MSc, FRCPC
Chief Science Officer and Senior Core Scientist, Institute for Clinical Evaluative Sciences / Staff Paediatrician, Division of Paediatric Medicine, Hospital for Sick Children / Associate Senior Scientist, Child Health Evaluative Sciences, SickKids Research Institute / Associate Professor, Department of Paediatrics and Institute of Health Policy, Management and Evaluation, University of Toronto

Michael Lebenbaum, MSc
Epidemiologist, Institute for Clinical Evaluative Sciences

Paul Kurdyak, MD, PhD, FRCPC
Program Lead, Mental Health and Addictions and Senior Core Scientist, Institute for Clinical Evaluative Sciences / Director, Health Outcomes and Performance Evaluation Research Unit, Institute for Mental Health Policy Research, Centre for Addiction and Mental Health / Associate Professor, Department of Psychiatry and Institute for Health Policy, Management and Evaluation, University of Toronto

Natasha Saunders, MD, MSc, FRCPC
Adjunct Scientist, Institute for Clinical Evaluative Sciences / Staff Paediatrician, Division of Paediatric Medicine, Hospital for Sick Children / Assistant Professor, Department of Paediatrics, University of Toronto / Associate Scientist, Child Health Evaluative Sciences, SickKids Research Institute

Simone Vigod, MD, MSc, FPCPC
Adjunct Scientist, Institute for Clinical Evaluative Sciences / Scientist, Women's College Research Institute / Assistant Professor, Department of Psychiatry and Institute of Health Policy, Management and Evaluation, University of Toronto / Staff Psychiatrist, Women's College Hospital

Julie Yang, MA
Senior Research Project Manager, Institute for Clinical Evaluative Sciences

Acknowledgements

Institute for Clinical Evaluative Sciences

Research Analysts
Ruth Croxford, MSc
Christina Diong, MSc
Sumei Gu, MSc
Laura Holder, MSc
Ying Liu, MSc
Prosanta Mondal, MSc
Priscila Pequeno, MSc
Zhan Yao, MSc

Medical Geographer
Peter Gozdyra, MA

Ministry of Children and Youth Services

Child and Youth Mental Health Program
Email: **mcsinfo.mcys@ontario.ca**

Reviewers

Melanie Barwick, PhD, CPsych
Head, Child and Youth Mental Health Research Unit, The Hospital for Sick Children / Senior Scientist, Child Health Evaluative Sciences, SickKids Research Institute / Associate Professor, Department of Psychiatry and Dalla Lana School of Public Health, University of Toronto

Mariette J. Chartier, RN, PhD
Research Scientist, Manitoba Centre for Health Policy / Assistant Professor, Department of Community Health Sciences, University of Manitoba

Aryeh Gitterman, MEd, EdD
Affiliate Scientist, Institute for Clinical Evaluative Science / Distinguished Visiting Professor, School of Child and Youth Care, Ryerson University

Data

Data were provided by the Drug and Alcohol Treatment Information System; Immigration, Refugees and Citizenship Canada (IRCC); the Institute for Clinical Evaluative Sciences (ICES); Kinark Child and Family Services; and the Ontario Ministry of Children and Youth Services. Datasets from IRCC, ICES and Kinark were linked using unique, encoded identifiers and analyzed at ICES. Parts of this report are based on data and information compiled and provided by the Canadian Institute for Health Information (CIHI). However, the analyses, conclusions, opinions and statements expressed herein are those of the authors, and not necessarily those of CIHI.

Funding

This study was supported by ICES, which is funded by an annual grant from the Ontario Ministry of Health and Long-Term Care (MOHLTC). The opinions, results and conclusions reported in this paper are those of the authors and are independent from the funding sources. No endorsement by ICES or the MOHLTC is intended or should be inferred.

Contents

About the Institute for Clinical Evaluative Sciences

Established in 1992, the Institute for Clinical Evaluative Sciences (ICES) is an independent not-for-profit corporation with an international reputation as a trusted source of high-quality health and health services research and evidence.

ICES researchers have access to a vast and secure array of Ontario's health-related data, including population-based health surveys, anonymous patient records, and clinical and administrative databases. ICES' unbiased evidence provides measures of health system performance, a clearer understanding of the shifting health care needs of Ontarians, and a stimulus for discussion of practical solutions to optimize scarce resources. ICES research and reports influence the development, implementation and evaluation of health policy and the delivery of health care.

Key to ICES' work is its ability to link population-based health information, at the patient level, in a way that ensures the privacy and confidentiality of personal health information. Linked databases reflecting 13 million of 34 million Canadians allow researchers to follow patient populations through diagnosis and treatment, and to evaluate outcomes. ICES goes to great lengths to protect privacy and is recognized as an international leader in maintaining the security of health information.

ICES receives core funding from the Ontario Ministry of Health and Long-Term Care. In addition, ICES scientists and staff have highly successful track records competing for peer-reviewed grants from federal agencies, such as the Canadian Institutes of Health Research, and from provincial and international funding bodies.

Statement on Indigenous Mental Health Data

For over 15 years, mental health has been established as a key priority by First Nations in Ontario. Today, First Nations leaders across Ontario are still calling for action to address the mental health of their children and youth. In February 2016, First Nations leaders from Nishnawbe Aski Nation in Northern Ontario declared a State of Emergency related to the mental health crisis in their communities. In a parallel gathering, the Chiefs of Ontario, the Ontario SPOR Support Unit, the Centre for Rural and Northern Health Research, and ICES hosted a First Nations Health Research Symposium where First Nations community members set priorities for health research in Ontario. Mental health and addictions was the top priority.

In this provincial scorecard, we do not present Indigenous-specific mental health data. ICES has relationships and data governance agreements with Indigenous organizations that acknowledge the inherent rights of First Nations, Métis and Inuit peoples to determine how data are used to tell their stories and to heal their communities. As a result, ICES works directly with Indigenous partners and communities to ensure that indicators are contextualized in a way that supports the substantial work that Indigenous people are undertaking. This involves working in close partnership, respecting the diversity of Indigenous communities, integrating Indigenous perspectives and acknowledging the impacts of ongoing colonialism.

Currently, ICES is working directly with the Métis Nation of Ontario to provide Métis-specific mental health indicators. In addition, we are working with First Nations communities and the Chiefs of Ontario to respond to the research priorities set in February 2016 for the analysis of First Nations mental health and addictions data.

List of Exhibits

Introduction

When the Ontario government launched *Open Minds, Healthy Minds: Ontario's Comprehensive Mental Health and Addictions Strategy* in 2011,[1] the need to develop common performance measures for the child and youth mental health system was identified as a priority. In response, the Ministry of Health and Long-Term Care tasked the Mental Health and Addictions Scorecard and Evaluation Framework (MHASEF) Research Team at the Institute for Clinical Evaluative Sciences with developing a baseline scorecard for child and youth mental health in Ontario. In 2015, *The Mental Health of Children and Youth in Ontario: A Baseline Scorecard* was released.[2] This scorecard, which reported on data that were available up to fiscal year 2011/12, described the context of the population at risk, the delivery processes for child and youth mental health care in Ontario, and the outcomes relevant to child and youth mental health.

This updated scorecard has a similar purpose to the 2015 scorecard, namely, to describe child and youth mental health care and related outcomes in Ontario. This is achieved using two classes of indicators: *contextual indicators* that describe mental health and addictions services provided to children and youth and relevant outcomes, and *performance indicators* that describe how well the system meets the needs of children and youth seeking help for mental health and addictions issues. This report's primary focus is children and youth identified with mental illnesses and addictions; as such, it does not address activities related to mental health promotion.

Based on data availability, this updated scorecard mainly reports on care provided in outpatient physician and acute care settings; it does not consider care provided by community-based child and youth mental health agencies, schools and correctional centres. However, the scorecard does report on pilot work in which service data from Kinark Child and Family Services (a lead agency for child and youth mental health in Ontario) was linked to health administrative data at the Institute for Clinical Evaluative Sciences. Additionally, the Ministry of Children and Youth Services has contributed a

section to this report detailing activities undertaken as part of the *Moving on Mental Health*[3] action plan to develop performance indicators for the community-based child and youth mental health sector; preliminary results from this work are reported here.

There are some notable differences between this update and the baseline scorecard. Only indicators for which there were new years of data since 2011/12 are included, and these have been updated to calendar year 2014. As well, new indicators have been added to improve and expand on measurement of the performance of the child and youth mental health care system. While all indicators were calculated over multiple years and stratified in a number of ways to generate various equity lenses, only key findings are included in this main report.

Since the release of the baseline scorecard in 2015, the MHASEF Research Team has engaged in a continuous quality improvement process and produced detailed analyses that have resulted in an enhanced understanding of the data and the development of more refined indicators based on new sources of data. This report is a culmination of two years of work to better understand child and youth mental health in Ontario and to improve our ability to capture it with the data available.

Child and Youth Mental Health Care in Ontario

Mental illness affects 10–20% of children and youth worldwide and is the leading cause of disability among young people.[4] In Ontario, about 20% of children and youth experience a mental illness at any given time, and about 70% have an onset during childhood or adolescence.[5,6] If not identified and treated, mental illness can lead to major challenges. It can contribute to poor academic outcomes, including increased absenteeism and lower rates of high school completion.[7] It can also have a negative impact on social outcomes and relationships and on work force participation later in life.[8] Mental illness can affect physical health and lead to premature death, particularly with severe mental illnesses.[4,9,10] In this chapter, rates of mental health and addictions–related service use among children and youth are described in three health care settings: outpatient physician care, emergency departments, and hospital inpatient wards.

Outpatient physician care

Outpatient mental health and addictions care for children and youth

Rising demand for care in the community

Outpatient Care Snapshots 2014

MORE CARE SOUGHT

Children and youth had more than **1.35 million outpatient doctor visits** for mental health and addictions care, a **25% increase** from 2006

2006: 26.4 visits / 100 children and youth
2014: 33.5 visits / 100 children and youth

MORE CHILDREN AND YOUTH SEEING PSYCHIATRISTS

Rates **increased by 40%**

2006: 15.4 children and youth / 1,000 population
2014: 22.0 children and youth / 1,000 population

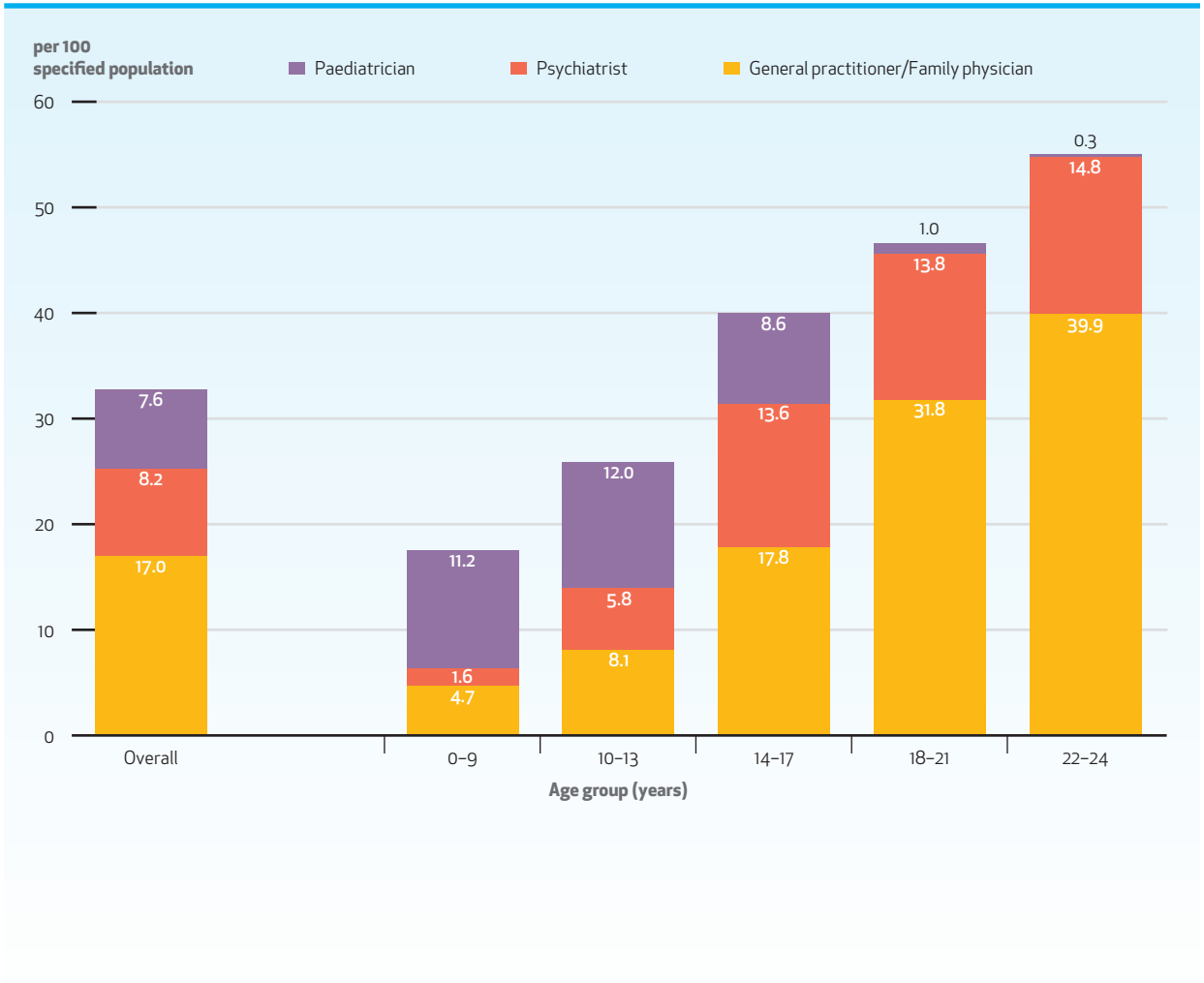
MORE NEED IN OLDER YOUTH

Youth aged 22–24 had the **highest rates** of mental health and addictions visits (2012–2014)

Primary care physicians: 39.9 visits / 100 youth
Psychiatrists: 14.8 visits / 100 youth

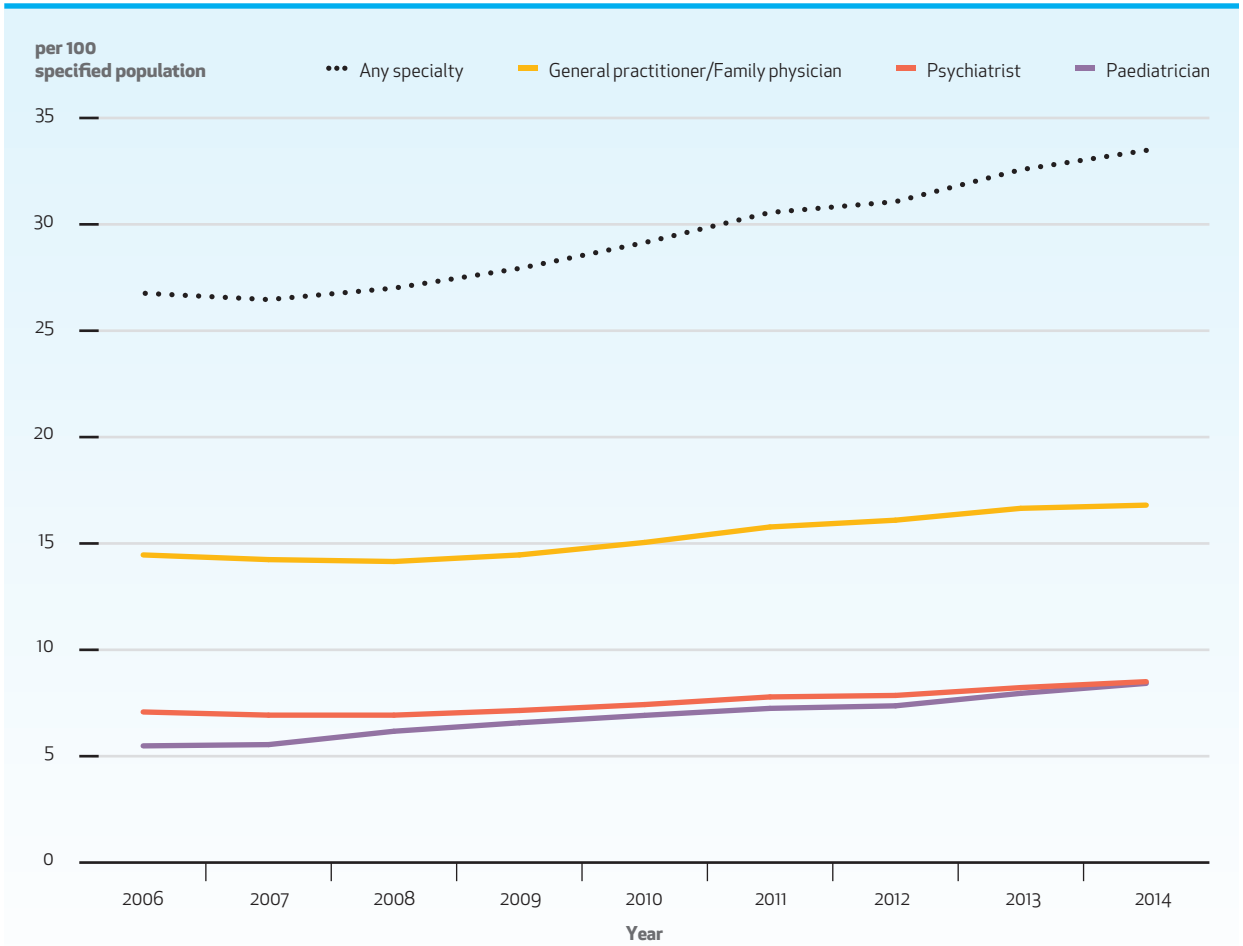
The majority of outpatient physician care related to mental health and addictions is provided by primary care physicians (general practitioners and family physicians), but psychiatrists and paediatricians are also important providers of outpatient care. Between 2012 and 2014, the average rates of visits to primary care physicians and psychiatrists for mental health and addictions were highest among youth aged 22 to 24 years (39.9 and 14.8 visits per 100 population, respectively); the average rate of visits to paediatricians was highest among children aged 10 to 13 years (12.0 visits per 100 population).

EXHIBIT 1 Number of outpatient physician visits related to mental health and addictions per 100 crude population aged 0 to 24 years, by age group and physician specialty, in Ontario, three-year average for 2012 to 2014



Rates of outpatient visits for mental health and addictions care increased over time across all physician specialties. The greatest increase was in care provided by paediatricians, such that by 2014, there were almost as many visits to paediatricians as to psychiatrists for mental health and addictions–related reasons. Specifically, from 2006 to 2014, there was a 25% increase in the rate of mental health and addictions–related outpatient physician visits for children and youth; this included a 55% increase in visits to paediatricians, a 21% increase in visits to psychiatrists and a 16% increase in visits to primary care physicians. It is important to note that the data are limited to services billed to the Ontario Health Insurance Plan and do not capture other community-level services, such as mental health services offered by psychologists and social workers, or the Tele-Mental Health Service funded by the Ministry of Children and Youth Services.

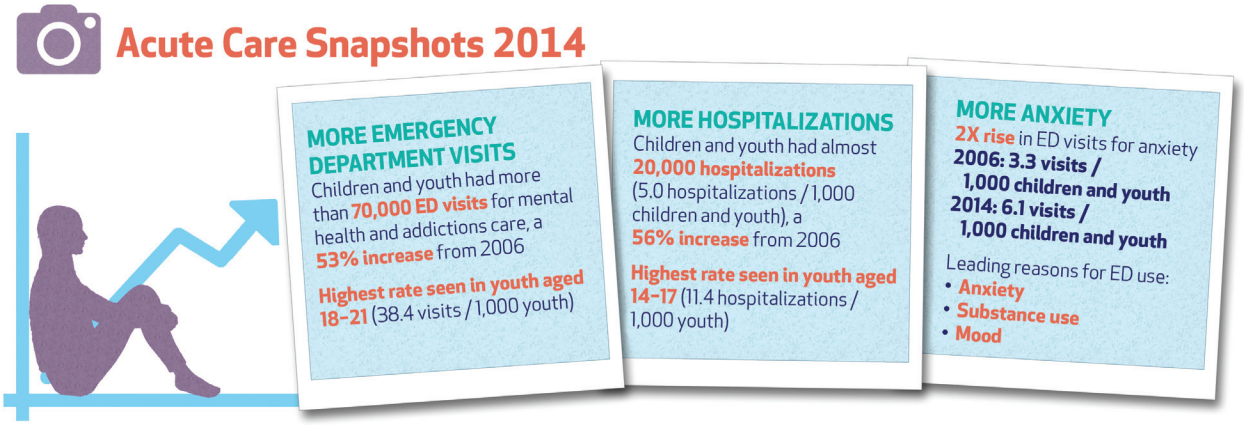
EXHIBIT 2 Number of outpatient physician visits related to mental health and addictions per 100 standard population aged 0 to 24 years, by physician specialty, in Ontario, 2006 to 2014



Acute care provided in emergency departments and hospital inpatient wards

Acute care use for children and youth with mental illnesses and addictions

More kids are showing up in emergency departments and hospitals, often with anxiety

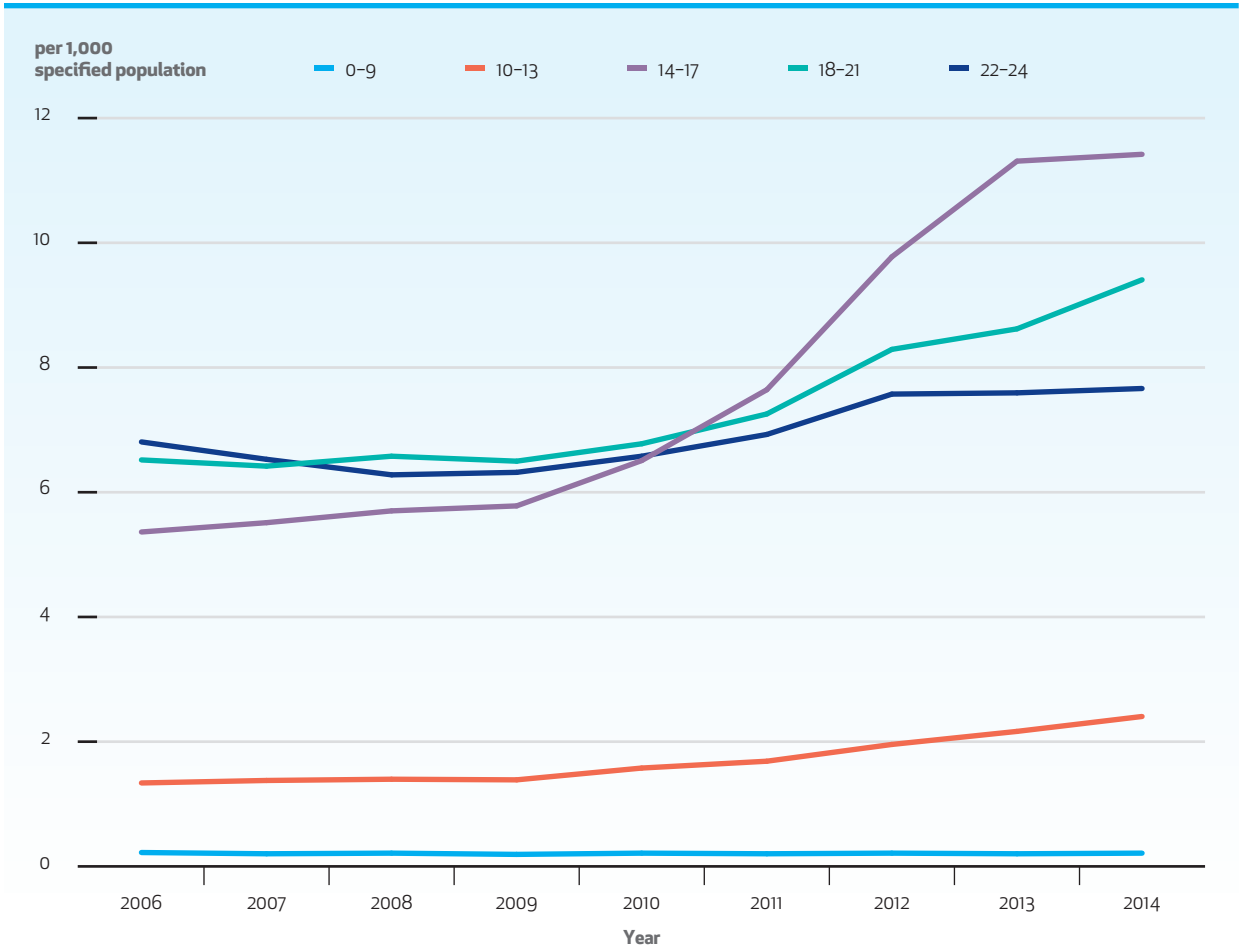


In 2014, there were 17.7 emergency department visits and 5.0 hospitalizations related to mental health and addictions per 1,000 children and youth in Ontario. Among those who were hospitalized, the median length of stay was 6 days. In Ontario, youth aged 18 to 21 years had the highest rate of emergency department visits (38.4 per 1,000 population), while those aged 14 to 17 years had the highest rate of hospitalizations (11.4 per 1,000 population). Rates for both emergency department visits and hospitalizations were higher among females than males. Anxiety disorders were the most common diagnoses for mental health and addictions–related emergency department visits (5.4 per 1,000 population), followed by substance-related disorders (3.3 per 1,000 population) and mood disorders (3.3 per 1,000 population). Mood disorders accounted for the largest proportion of hospitalizations related to mental health and addictions (1.6 per 1,000 population), followed by anxiety disorders (0.9 per 1,000 population) and schizophrenia (0.7 per 1,000). Because many mental illnesses present more often in youth and young adulthood, measuring age-specific rates is important, although the inclusion of young children in overall population estimates may understate the extent of the problem.

From 2006 to 2014, the rates of both mental health and addictions–related emergency department visits and hospitalizations increased – from 11.6 to 17.7 per 1,000 population for emergency department visits and from 3.2 to 5.0 per 1,000 population for hospitalizations; these represent increases of 53% and 56%, respectively. These increases were driven mostly by youth aged 14 to 17 years for whom emergency department visits increased by 63% and hospitalizations by 114% from 2006 to 2014. Anxiety disorders, the most common reason for emergency department visits, almost doubled from 3.3 visits per 1,000 population in 2006 to 6.1 visits per 1,000 population in 2014. In this same time frame, hospital admissions for anxiety, the second most common reason for hospitalization, tripled from 0.31 to 0.95 per 1,000 population.

EXHIBIT 3 Number of emergency department visits related to mental health and addictions per 1,000 crude population aged 0 to 24 years, by age group, 2006 to 2014

EXHIBIT 4 Number of hospitalizations related to mental health and addictions per 1,000 crude population aged 0 to 24 years, by age group, in Ontario, 2006 to 2014



Several reasons may explain the observed increases in rates of emergency department visits and hospitalizations:

- The prevalence and burden of mental illnesses may have increased during this time period.
- The surveillance and identification of children and youth with mental illnesses may have improved.
- The stigma around mental illnesses and addictions may have declined, allowing children and youth to openly seek help in the hospital setting when access to services in the community were limited or exhausted.[11]

Although the provision of mental health and addictions–related care in an acute care setting can indicate missed opportunities for prevention and early intervention, it does not imply that these admissions are inappropriate. The emergency department can often be the first point of care for those suffering from significant mental illness, and hospitalizations may also be necessary depending on the severity of the disorder.[11] The increased rates of acute care use highlight a need for enhanced planning, strategies and interventions targeted at children and youth with mental illnesses and for better coordination between primary care providers and other care providers.[11,12]

Neonatal abstinence syndrome is a growing problem in Ontario

Substance use and substance use disorders during pregnancy are becoming more common and can lead to multiple social and health problems for both mother and child.[13] Neonatal abstinence syndrome can occur in infants who have been exposed to opiates in the womb.[14] This condition can result in tremors and convulsions, malfunctions of the autonomic nervous system, and poor gastrointestinal health in the newborn. However, long-term effects are not well characterized.[15] Mothers of infants with neonatal abstinence syndrome are less likely to receive care during their pregnancy and are more likely to be socioeconomically deprived.[16] An earlier cross-country comparison found that the prevalence of neonatal abstinence syndrome increased in England, Western Australia, the United States, and Ontario, Canada, between 1997 and 2011, with Ontario's rates being the highest among these jurisdictions.[17] Although rates seem to have stabilized in England and Western Australia, they continue to rise sharply in the United States and Ontario.[17] While the growing incidence of neonatal abstinence syndrome creates a short-term burden on neonatal hospital resources, the long-term consequences of addictions on mothers and the potential effects on children are even more important.

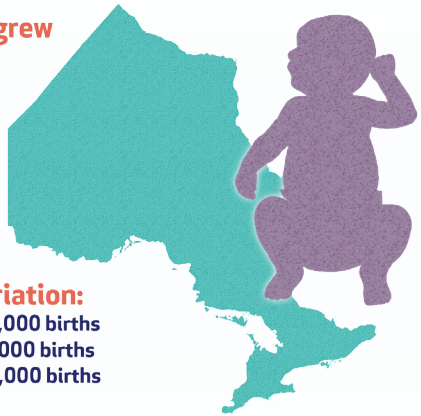
While some of the documented dramatic rise in neonatal abstinence syndrome in Ontario may relate to better detection over time, it is likely also a consequence of Ontario having one of the highest rates of prescription narcotic use in the world.[14,18] In 2016, the Government of Ontario launched a comprehensive strategy to prevent opioid addiction and overdose.[19] The strategy includes enhancing surveillance and reporting of opioid overdoses, changing the way drugs are prescribed and dispensed, and increasing access to addictions treatment services.

Fetal alcohol spectrum disorder is often mentioned alongside neonatal abstinence syndrome. This disorder is defined by a range of neurodevelopmental signs and symptoms that can arise in children whose mothers consumed alcohol while pregnant. It is estimated that 1% of live births in Canada are affected,[20] and the disorder is a source of significant burden and economic cost in Canada.[21] While closer examination of the prevalence and effects of fetal alcohol spectrum disorder is important, good-quality data on this condition are not available in Ontario.

Neonatal abstinence syndrome: a growing concern

Poverty and geography drive inequities in risk of infants born with exposure to opiate drugs

Ontario prevalence grew 6-fold in 12 years:
2002: **1.0 per 1,000 births**
2014: **6.2 per 1,000 births**



Wide geographic variation:
North West LHIN: **48.1 per 1,000 births**
North East LHIN: **15.0 per 1,000 births**
Central West LHIN: **1.0 per 1,000 births**

When mother is a teen:
5+ times the risk
Mothers ≤19 years old: **11.5 per 1,000 births**
Mothers 20 years old+: **2.0 per 1,000 births**

When mother is low-income:
3+ times the risk
Mothers in lowest income group: **9.4 per 1,000 births**
Mothers in top 3 income groups: **3.0 per 1,000 births**

When mother is a non-immigrant:
6+ times the risk
Non-immigrant mothers: **6.1 per 1,000 births**
Immigrant mothers: **<1 per 1,000 births**

The Health System's Response to the Mental Health Needs of Children and Youth

We report on a measure of the transition period to home following discharge from hospital for a mental illness. We also explore how frequently children and youth use the emergency department as a first point of contact for a mental health and addictions–related diagnosis or service. The emergency department crisis environment is not an ideal place to engage in care for the first time for most mental illnesses. This indicator could signal that timely access to community-based or outpatient physician mental health and addictions assessment and treatment is insufficient or that awareness of community-based services is low. Finally, we measure how common it is for children and youth to revisit the emergency department or be readmitted to hospital following an emergency room visit or hospital admission for a mental illness, respectively. These latter measures may signal inadequate support and poor integration and continuity with community-based mental health services.

Access to and quality of mental health and addictions services

Indicators of quality for child and youth mental health and addictions care

Increases seen in return ED visits and readmissions; lack of timely follow-up

UNSCHEDULED RETURN VISIT TO ED

Increased 18%

2014: 8.1% children and youth discharged from ED after mental health and addictions care revisited the ED within 30 days

2006: Rate was 6.9%

30-DAY READMISSION

Increased 33%

2014: 8.9% children and youth discharged from hospital after mental health and addictions care were readmitted within 30 days

2006: Rate was 6.7%

PHYSICIAN VISIT ≤ 7 DAYS OF DISCHARGE

No significant change

2014: 38.3% children and youth discharged from acute care visited a physician of any specialty for follow-up within one week

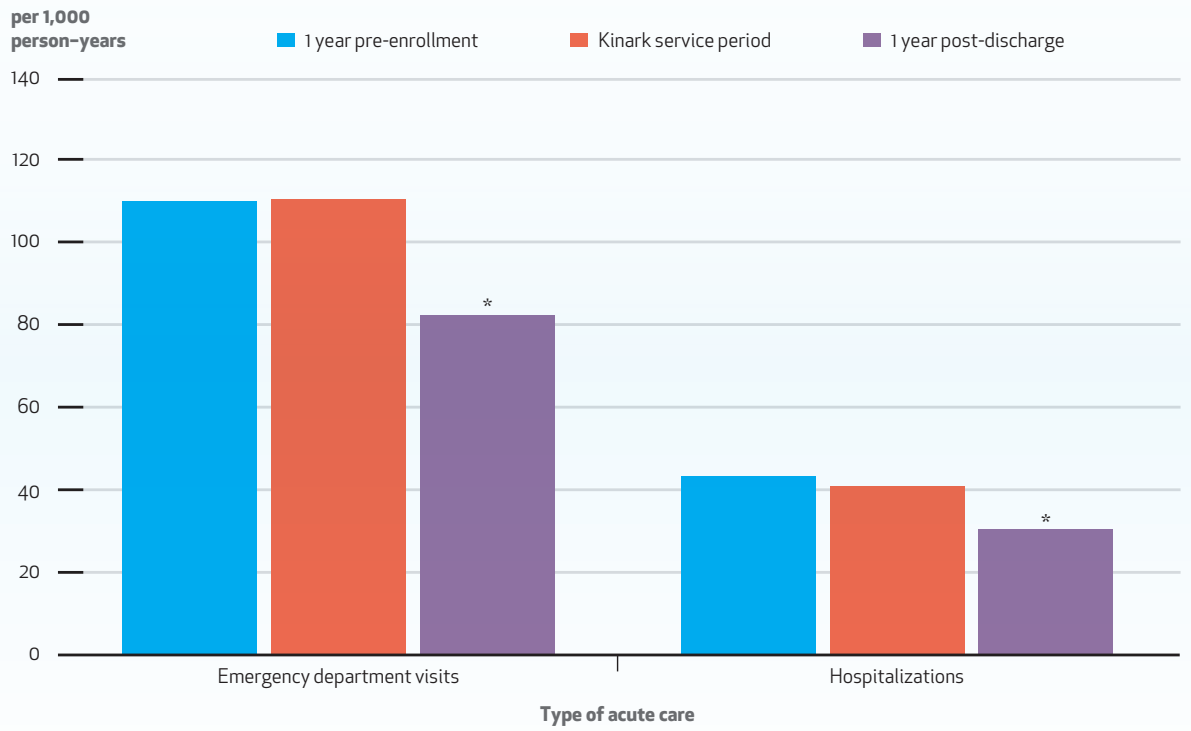
2006: Rate was 35.6%

Tracing mental health and addictions care across sectors

Children and youth can access mental health and addictions care in multiple settings, including hospitals, doctor's offices, schools and the community. How children and youth access care across these settings in Ontario is not well understood. Linking data from community-based children's mental health agencies to health administrative data allows for more comprehensive performance reporting for mental health and addictions in Ontario. These data linkages can help answer important questions related to the trajectory of care across sectors, mental and physical health outcomes, the determinants of mental health and addictions, and equity of access to care.

Kinark Child and Family Services, henceforth Kinark, is a large, community-based children's service organization and the lead agency for the York, Durham, and Haliburton/Kawartha Lakes/Peterborough Child and Youth Mental Health Service Areas. Kinark serves approximately 10,000 children and youth each year in three program streams: community-based child and youth mental health, autism and forensic mental health/youth justice. Data collected by Kinark between April 1, 2007, and March 31, 2012, were linked to health administrative data held at the Institute for Clinical Evaluative Sciences to examine the mental health services that children and youth received before, during and after their access to Kinark's community-based mental health services. In the year following discharge from Kinark, former clients had significantly lower rates of emergency department visits and hospitalizations compared to when they were receiving Kinark services.

EXHIBIT 5 Number of emergency department visits and hospitalizations related to mental health and addictions per 1,000 person-years for clients aged 0 to 18 of Kinark Child and Family Services, before, during and after service period, in Ontario, 2007/08 to 2011/12

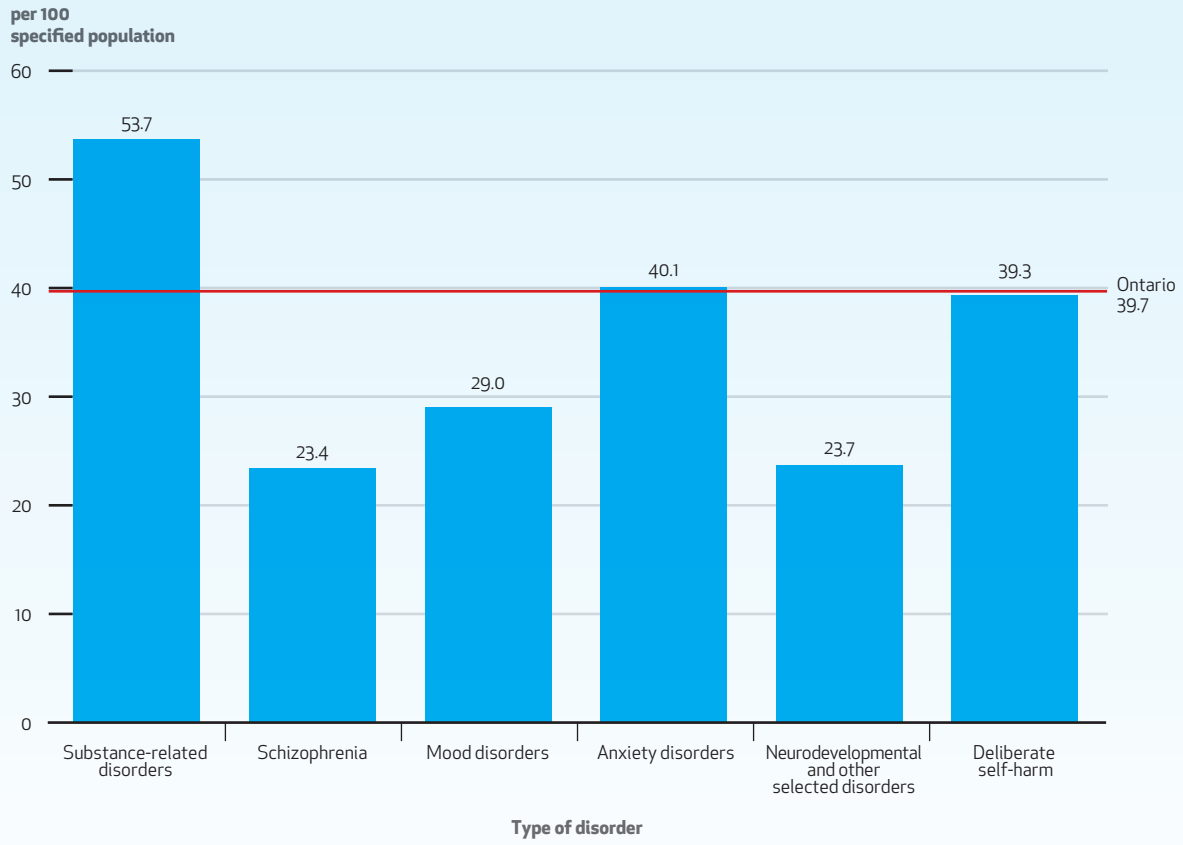


*Rate significantly different from Kinark service period ($p<0.05$)

The emergency department as first point of contact for mental illness and addictions

In 2014, 44.6% of children and youth who went to the emergency department for a mental illness had no prior contact with a physician for reasons related to mental health or addictions. This indicator does not include children and youth previously assessed or treated by non-physician providers including, among others, psychologists, social workers, and child and youth counsellors. Between 2006 and 2010, this proportion hovered around 50%, suggesting some improvement in accessibility of mental health and addictions assessment and treatment by physicians in more recent years. A large proportion of children and youth who presented to the emergency department with substance use disorders (53.7%), anxiety disorders (40.1%) or deliberate self-harm (39.3%) had their first contact with the health care system for mental health and addictions–related reasons in the emergency department.

EXHIBIT 6 Number of children and youth for whom the emergency department (ED) was the first point of contact for mental health and addictions (MHA) care per 100 crude population aged 0 to 24 years with an MHA-related ED visit, by type of disorder, in Ontario, three-year average for 2012 to 2014



Unscheduled return visits to the emergency department

Unscheduled return visits to the emergency department following an initial visit or readmissions to hospital following an admission for a mental illness may be related to a number of factors, including:

- inadequate access to primary care,
- insufficient linkages to outpatient or community-based mental health and addictions services following the initial emergency department visit or hospitalization,
- unmet needs related to the previous discharge education, or
- illness progression.

In 2014, 8.1% of children and youth made an unscheduled return visit to the emergency room within 30 days of an initial visit for a mental illness, an 18% increase since 2006. In absolute terms, in 2014, there were 1,542 more patients than in 2006 who revisited an emergency department within 30 days of an initial visit. There was no important difference in the rate of revisits for males and females. By age group, youth aged 22 to 24 years had the highest revisit rate. From 2012 to 2014, those with schizophrenia had the highest revisit rate (averaging 27.6% over the three years), followed by those with mood disorders (11.9%).

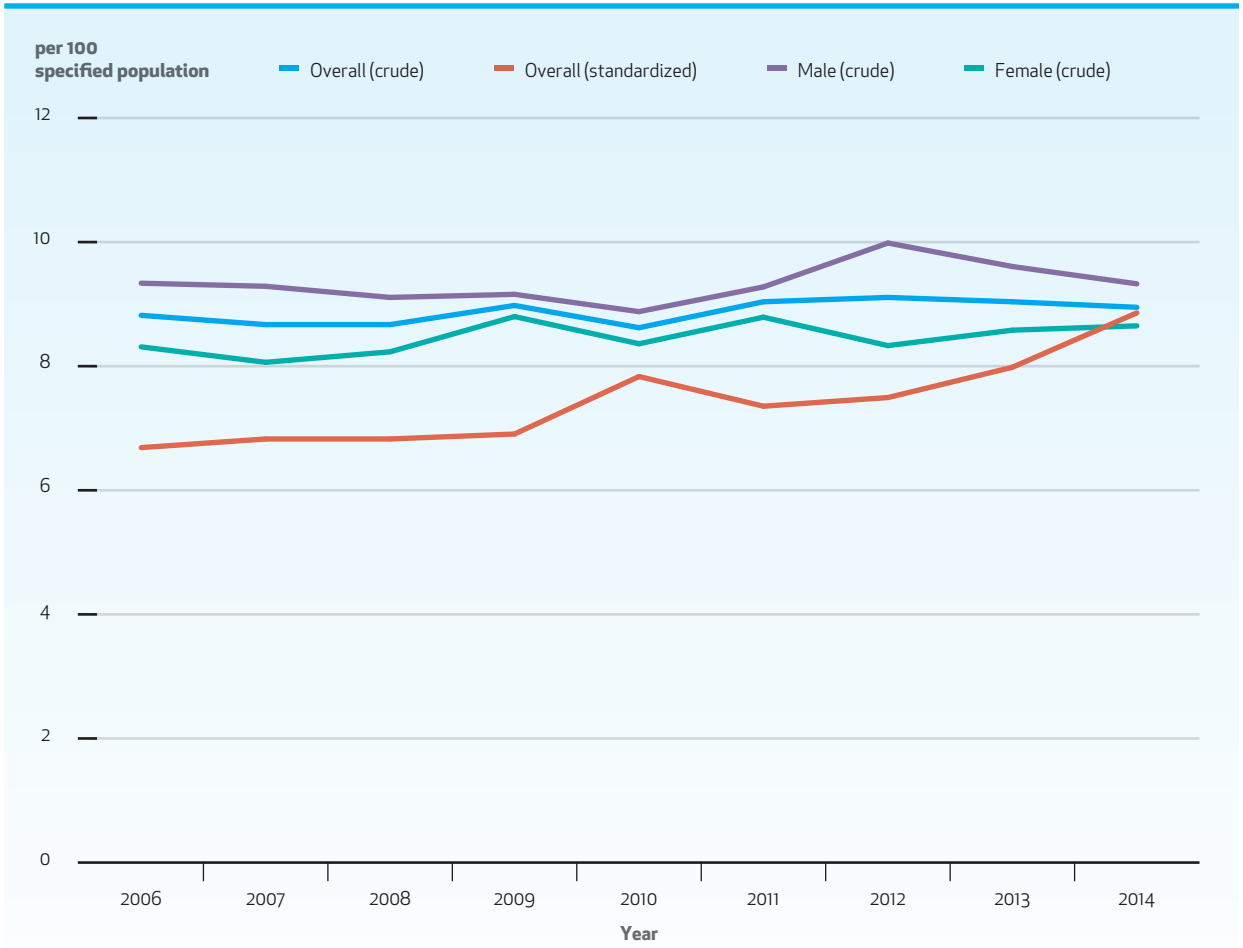
EXHIBIT 7 Number of emergency department (ED) revisits within 30 days of an incident ED visit related to mental health and addictions (MHA) per 100 population aged 0 to 24 years with an incident MHA-related ED visit, overall and by sex, in Ontario, 2006 to 2014

Hospital readmissions within 30 days of an incident hospitalization

Overall in 2014, 8.9% of children and youth admitted to hospital for a mental illness were readmitted within 30 days of discharge – a relative increase of 32.7% from 2006. Between 2012 and 2014, youth were more likely than younger children to be readmitted. Readmission was most common among those with schizophrenia (14.1%) and substance use disorders (9.8%).

The upward trend in both emergency department revisits and hospital readmissions suggests opportunities for improvement in how children and youth are connected to appropriate outpatient mental health services prior to being discharged home.

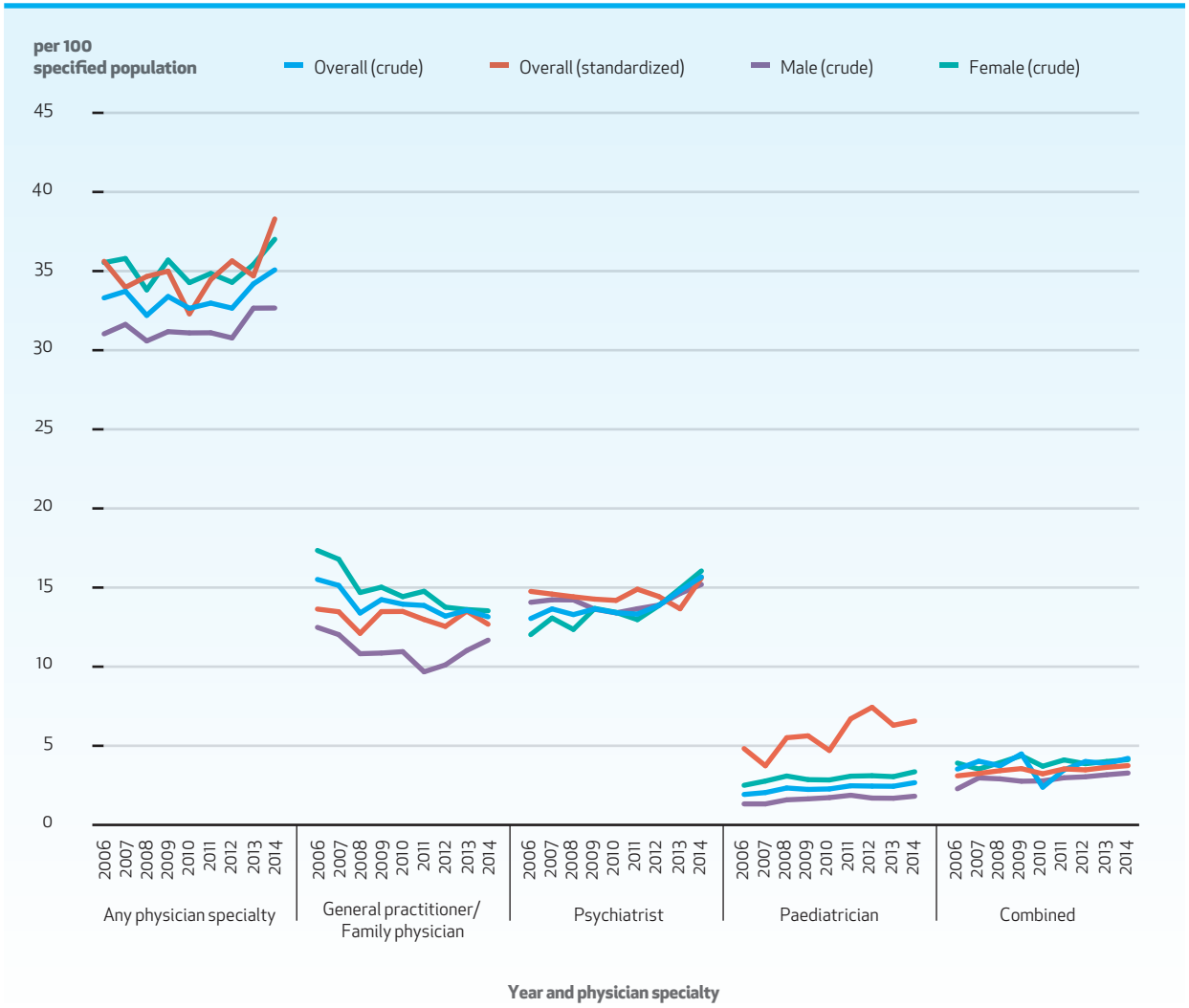
EXHIBIT 8 Number of readmissions within 30 days of an incident hospital admission related to mental health and addictions (MHA) per 100 population aged 0 to 24 years with an incident MHA-related hospital admission, overall and by sex, in Ontario, 2006 to 2014



Physician follow-up within 7 days of hospital discharge

To assess the quality of mental health and addictions care, we explored the transition between inpatient and outpatient care for children and youth admitted to hospital for mental illnesses. This was measured by determining the rate of physician follow-up within 7 days of discharge following a hospitalization for a mental illness. Seamless care between inpatient and outpatient settings may improve adherence to treatment, enhance communication between a care provider and patient, and prevent return to hospital.[22] In 2014, only 38.3% of children and youth in Ontario visited a physician of any specialty for their mental illness following discharge from hospital, with only 15.5% seeing a psychiatrist during this same time frame. These rates have not significantly changed over time. Females had a slightly higher rate of 7-day follow-up with a care provider compared to males (35.6% vs. 32.0%). An important caveat is that, as with other indicators, it is possible to assess only physician-based mental health and addictions services that were billed or shadow billed to the Ontario Health Insurance Plan.

EXHIBIT 9 Number of outpatient visits within 7 days of an incident hospital discharge related to mental health and addictions (MHA) per 100 population aged 0 to 24 years with an incident MHA-related hospital discharge, by physician specialty and sex, in Ontario, 2006 to 2014

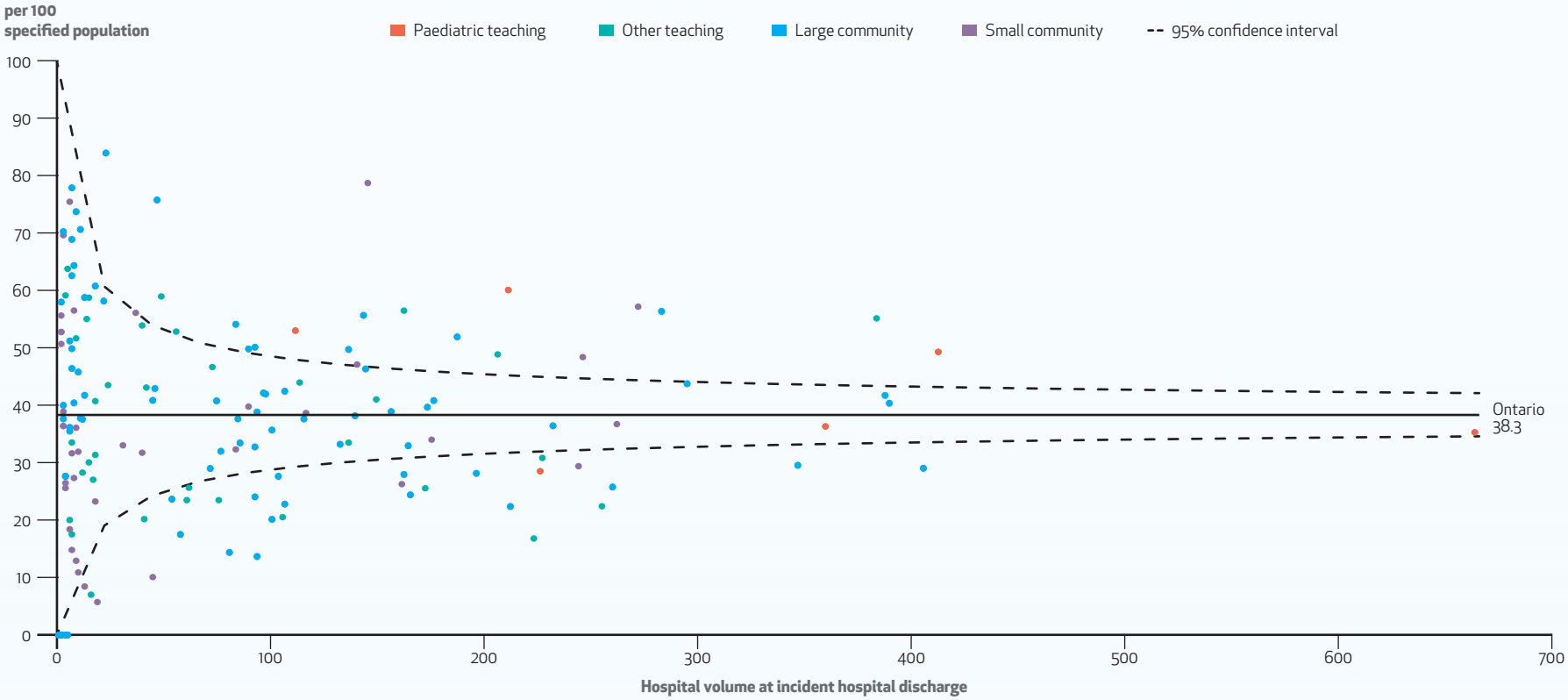


Access to care varies by hospital and type of hospital

Some of the indicators reported on in this chapter may reflect, in part, processes of care within hospitals. For instance, the likelihood that children and youth who are seen in an emergency department or admitted to hospital will require additional acute care within 30 days is, to some extent, a reflection of the discharge plan, including follow-up community-based care. Although receiving timely follow-up care may relate to the local availability of mental health and addictions–related resources, and while some patients may not comply with their care plans, hospitals have some responsibility to ensure adequate follow-up as a part of ongoing care. Reporting on the performance of these indicators at the hospital level may encourage benchmarking and quality improvement.

Funnel plots are used to show rates of indicators by individual hospital and how these relate to the volume of patients seen at every hospital.[23] Patient volumes are important because indicators that are based on small numbers of patients may produce unstable estimates and affect the ability to draw sound conclusions. The coloured dots within the dashed lines of the funnel are not statistically different from each other. It is important to note that the hospital readmission and emergency department revisit rates reported do not account for potential differences in the underlying mental illnesses, which may vary across hospitals. Overall, children and youth seen in paediatric teaching hospitals had the highest rate of physician follow-up within 7 days of hospital discharge, and most of this follow-up was by paediatricians or a combination of providers. Whereas the rate of hospital readmissions within 30 days of an incident hospitalization was highest in small hospitals and lowest in large community hospitals, the rate of unscheduled return visits to the emergency department was highest among large community hospitals and lowest at paediatric teaching hospitals. However, as the wide scatter of dots in each funnel plots indicates, there is significant variation across hospitals for all three indicators, even within hospital types. Addressing these variations will be important in improving overall rates of follow-up care and decreasing the need for revisits and readmissions.

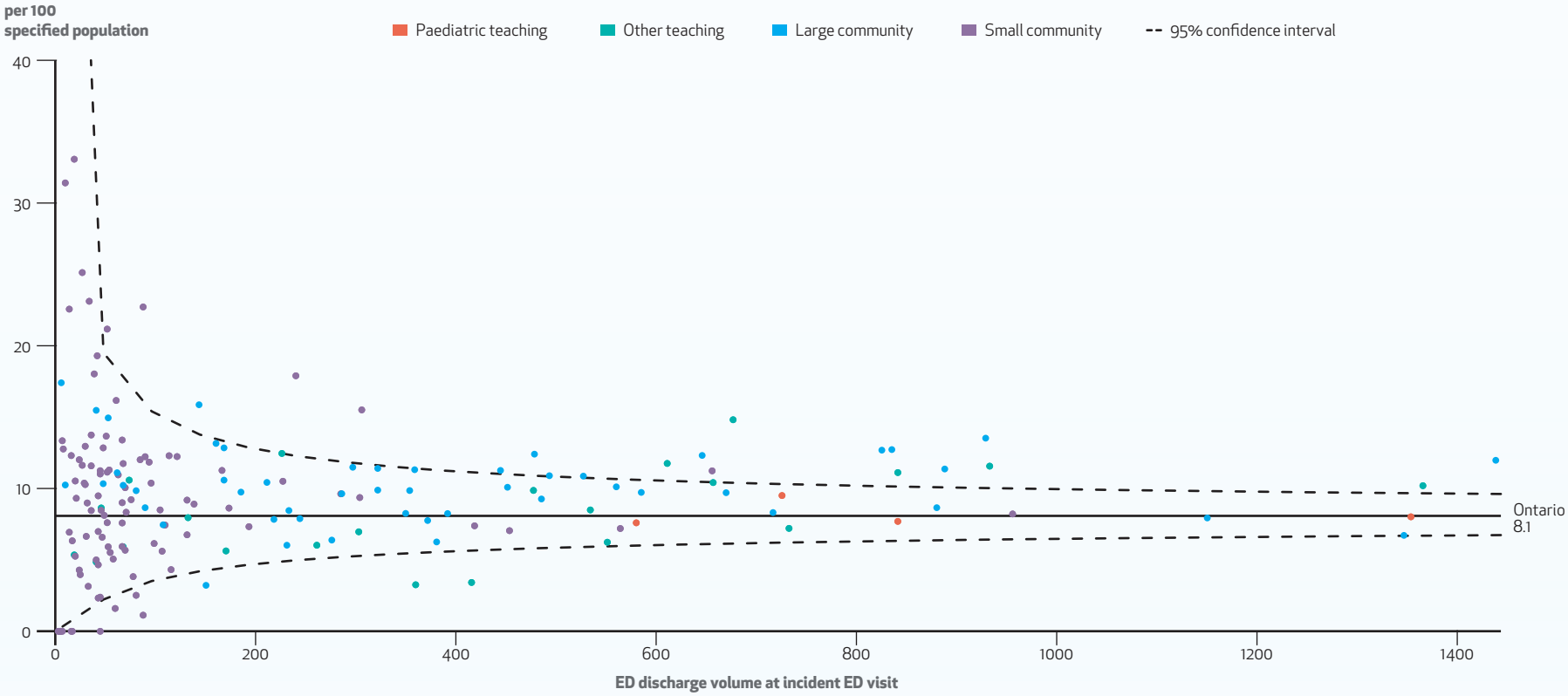
EXHIBIT 10 Number of outpatient visits within 7 days of an incident hospital discharge related to mental health and addictions (MHA) per 100 standard population aged 0 to 24 years* with an incident MHA-related hospital discharge, by hospital type and weighted by hospital discharge volume, in Ontario, 2014



*Rate adjusted for age and sex.

Note: Results are reported by hospital type, namely paediatric teaching, other teaching, large community and small community, and are available upon request to any hospital or Local Health Integration Network that wishes to see their own result.

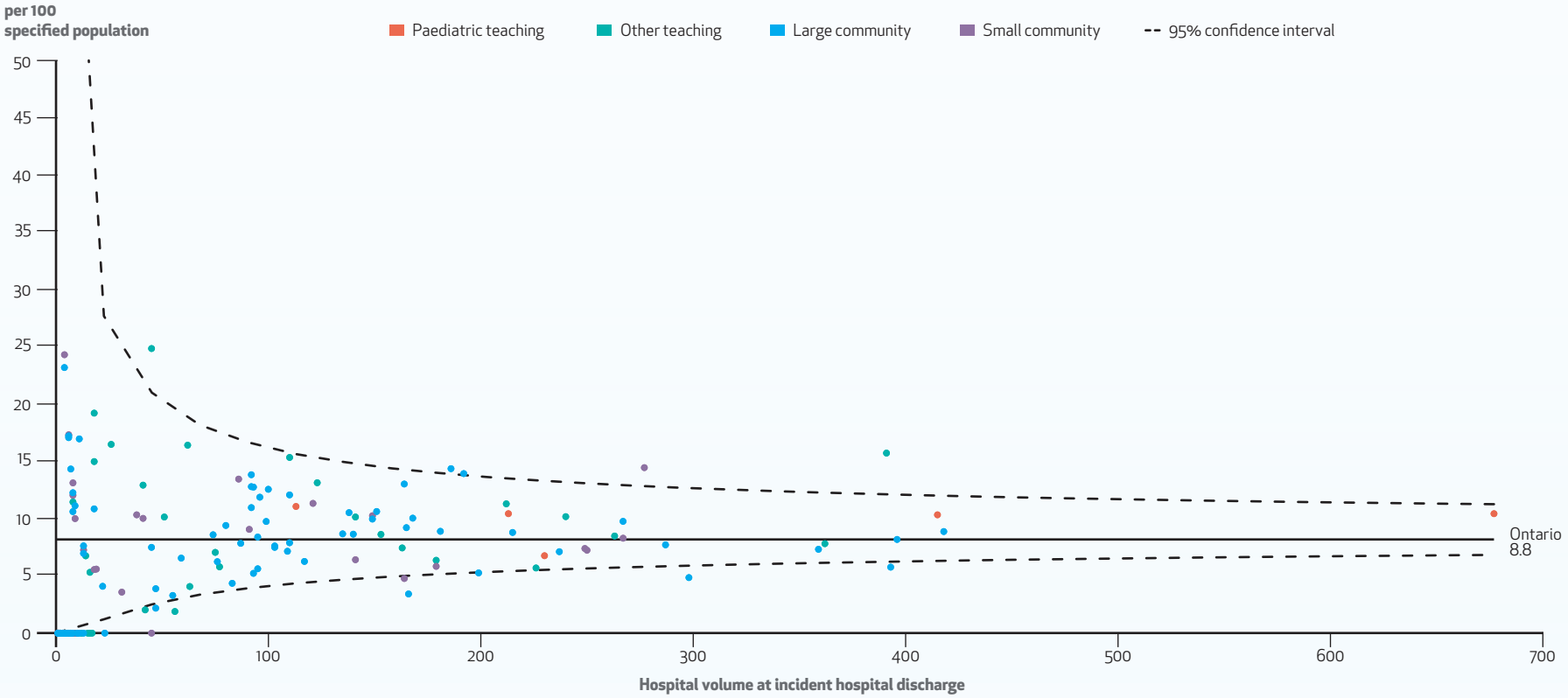
EXHIBIT 11 Number of emergency department (ED) revisits within 30 days of an incident ED visit related to mental health and addictions (MHA), per 100 population aged 0 to 24 years* with an incident MHA-related ED visit, by hospital type and weighted by ED discharge volume, in Ontario, 2014



*Rate adjusted for age and sex.

Note: Results are reported by hospital type, namely paediatric teaching, other teaching, large community and small community, and are available upon request to any hospital or Local Health Integration Network that wishes to see their own result.

EXHIBIT 12 Number of readmissions within 30 days of an incident hospital admission related to mental health and addictions (MHA) per 100 population aged 0 to 24 years* with an incident MHA-related hospital admission, by hospital type and weighted by hospital discharge volume, in Ontario, 2014



*Rate adjusted for age and sex.

Note: Results are reported by hospital type, namely paediatric teaching, other teaching, large community and small community, and are available upon request to any hospital or Local Health Integration Network that wishes to see their own result.

Progress in mental health and addictions care

During the first three years of Ontario's Comprehensive Mental Health and Addictions Strategy, investments were made for a number of initiatives that supported the goals of fast access to services, early identification of mental illness and targeted services for vulnerable populations. The breadth of the initiatives were wide-ranging and included, among other things, hiring additional workers in schools and the community, developing a directory of community-based mental health and addictions services, and expanding telepsychiatry services.[24]

This report focuses on many aspects of outpatient physician and acute health care for mental illness, but drawing a direct causal pathway from investments made as part of the provincial strategy to the outcomes identified in this report is complex. For instance, much of the strategy was focused on the earlier identification of mental illnesses,[1] which might result in the use of more, rather than less, acute care. Furthermore, one of the strategy's major investments involved the reorganization of the community-based sector. Reporting on the results of the reorganization will require both the integration of data from the child and youth mental health lead agencies and the passage of sufficient time for the impact of these changes to be observed.

However, improvement in the performance of some of the measured indicators can be directly linked to strategy investments. For example, the rate of hospitalizations for eating disorders per 10,000 children and youth steadily increased from 1.3 in 2010 to 2.4 in 2014. This coincides with the period when additional resources were made available for inpatient treatment of eating disorders. The rate of children and youth seen by a psychiatrist increased by 42.8% from 2006 to 2014, and yet, this is likely an underestimate as it does not include the Tele-Mental Health Service funded by the Ministry of Children and Youth Services. Future linkage of Tele-Mental Health Service data to other data at the Institute for Clinical Evaluative Sciences will improve the reporting of this indicator. Other documented improvements in health care use for mental illnesses between 2006 and 2014 include a 25.0% increase in the rate of outpatient physician visits and a 10.5% decrease in the rate of children and youth who were seen in an emergency department with no prior physician care for a mental illness. These trends signal that more children and youth are seeking help for mental illnesses in a primary care setting.

EXHIBIT 13 Number of hospitalizations for eating disorders per 10,000 population aged 7 to 24 years, overall and by sex, in Ontario, 2003 to 2014

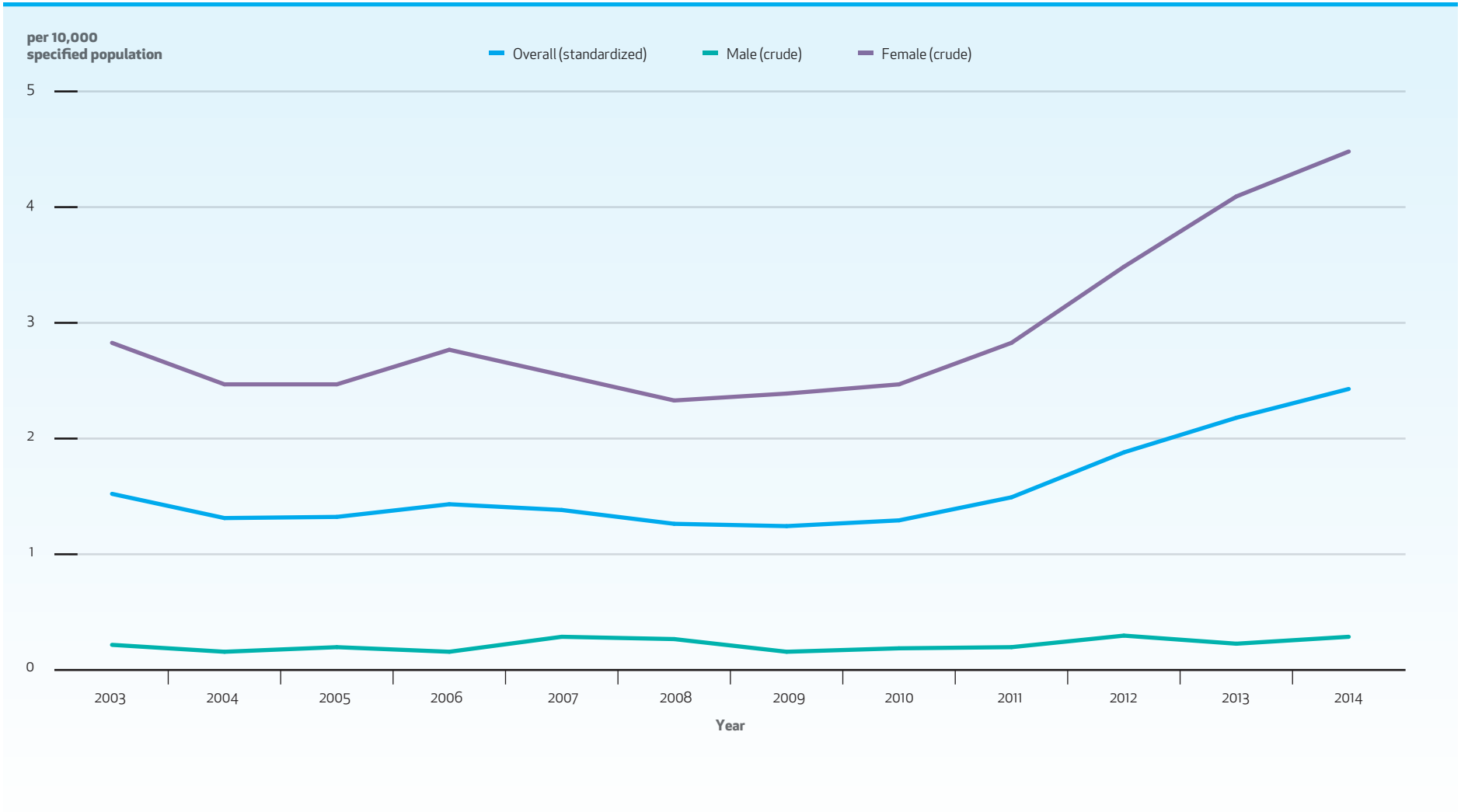


EXHIBIT 14 Number of children and youth seen by a psychiatrist per 1,000 population aged 0 to 24 years, overall and by sex, in Ontario, 2006 to 2014

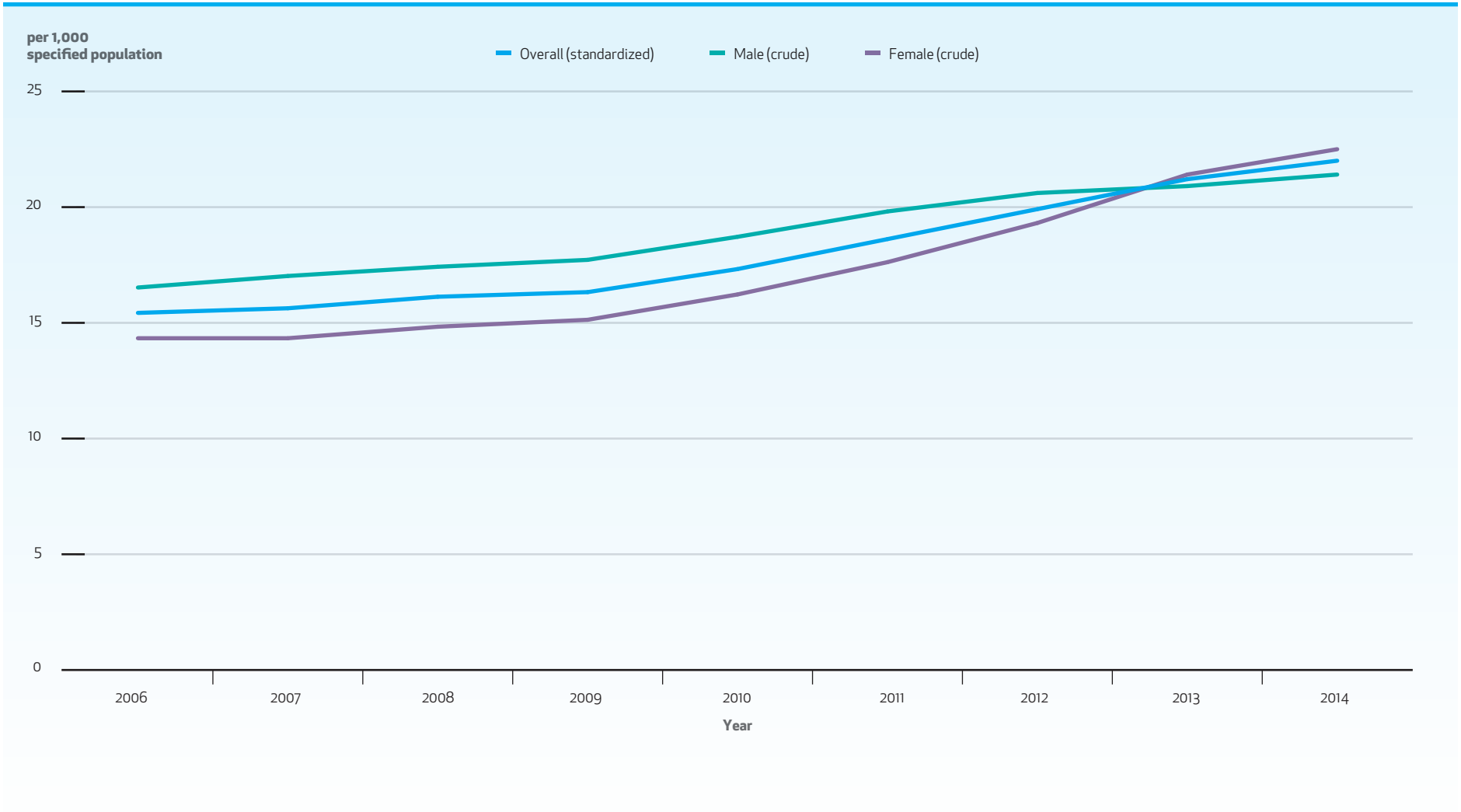
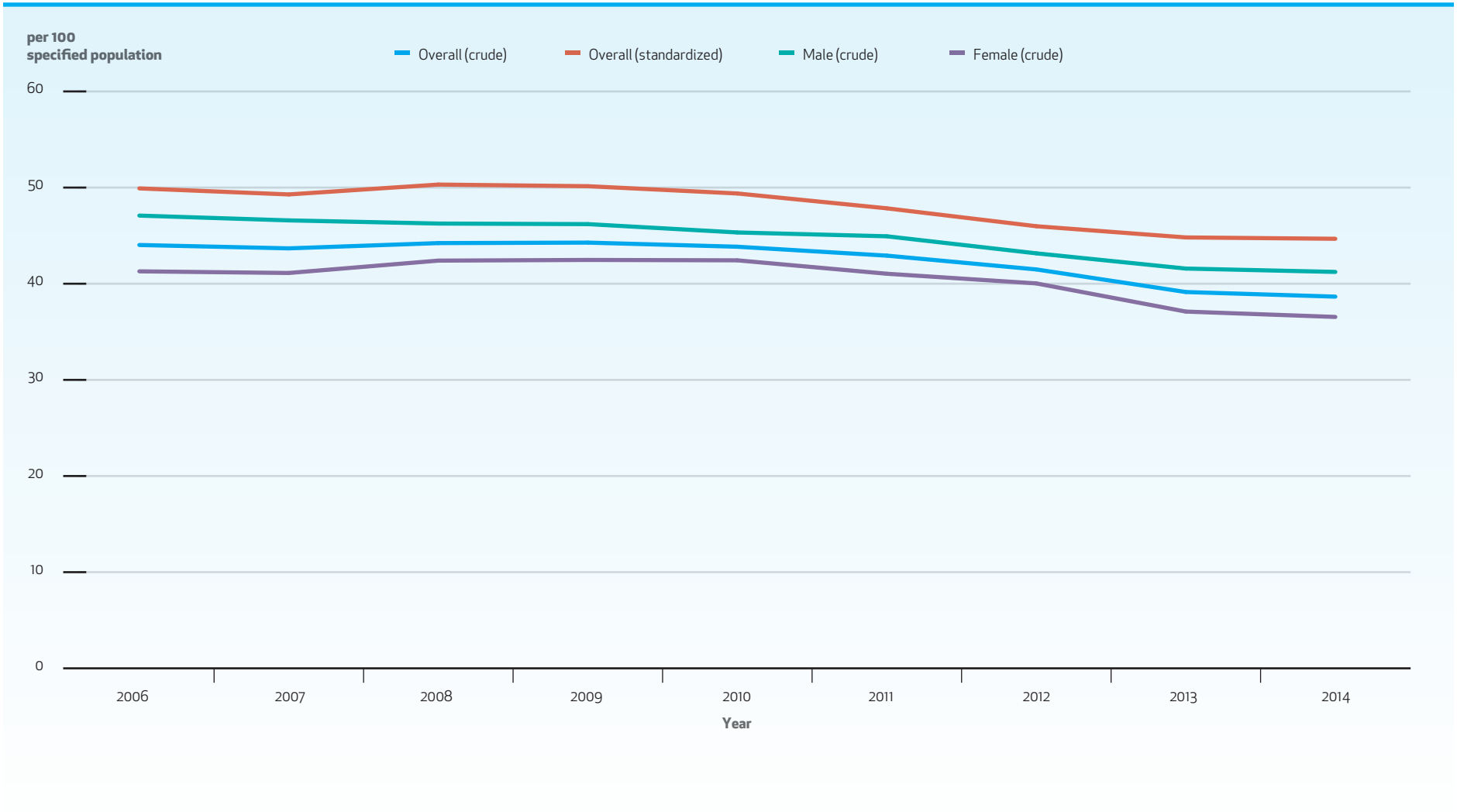


EXHIBIT 15 Number of children and youth for whom the emergency department (ED) was the first point of contact for mental health and addictions (MHA) care per 100 population aged 0 to 24 years with an MHA-related ED visit, overall and by sex, in Ontario, 2006 to 2014



Exploring Mental Health Outcomes Through a Social Lens: Beyond Population Averages

One of the principles guiding Ontario's mental health and addictions strategy is equity.[1] A mounting body of evidence suggests that in addition to describing population averages, it is important to explore how the social determinants of health affect variations in mental health outcomes for particular subpopulations.[25] Children and youth should be able to access high-quality mental health and addictions services in a timely fashion, independent of where they live, where they have come from, their age, and the type and severity of their illness. In this chapter, visits to the emergency department and hospitalizations for mental health and addictions–related care are described in more detail in terms of how they vary by patients' neighbourhood income level, region of residence, and immigrant category. While a number of sociodemographic characteristics can influence how mental illnesses are experienced by particular subpopulations, these three equity lenses were selected for further examination in this chapter based on their importance and the availability of data. The two indicators highlighted (rates of emergency department visits and hospitalizations) are ones that may signal greater mental health care needs, a lack of early identification of these needs, and gaps in services provided in the primary care and community settings.

Additionally, four system performance indicators are described through the three social lenses:

- the emergency department as the first point of contact for mental health and addictions care,
- unscheduled return visits to the emergency department,
- hospital readmissions within 30 days of an incident hospitalization, and
- physician follow-up within 7 days of discharge from hospital.

Just as there are sociodemographic disparities in mental illnesses and outcomes, so too are there disparities in access to mental health services.

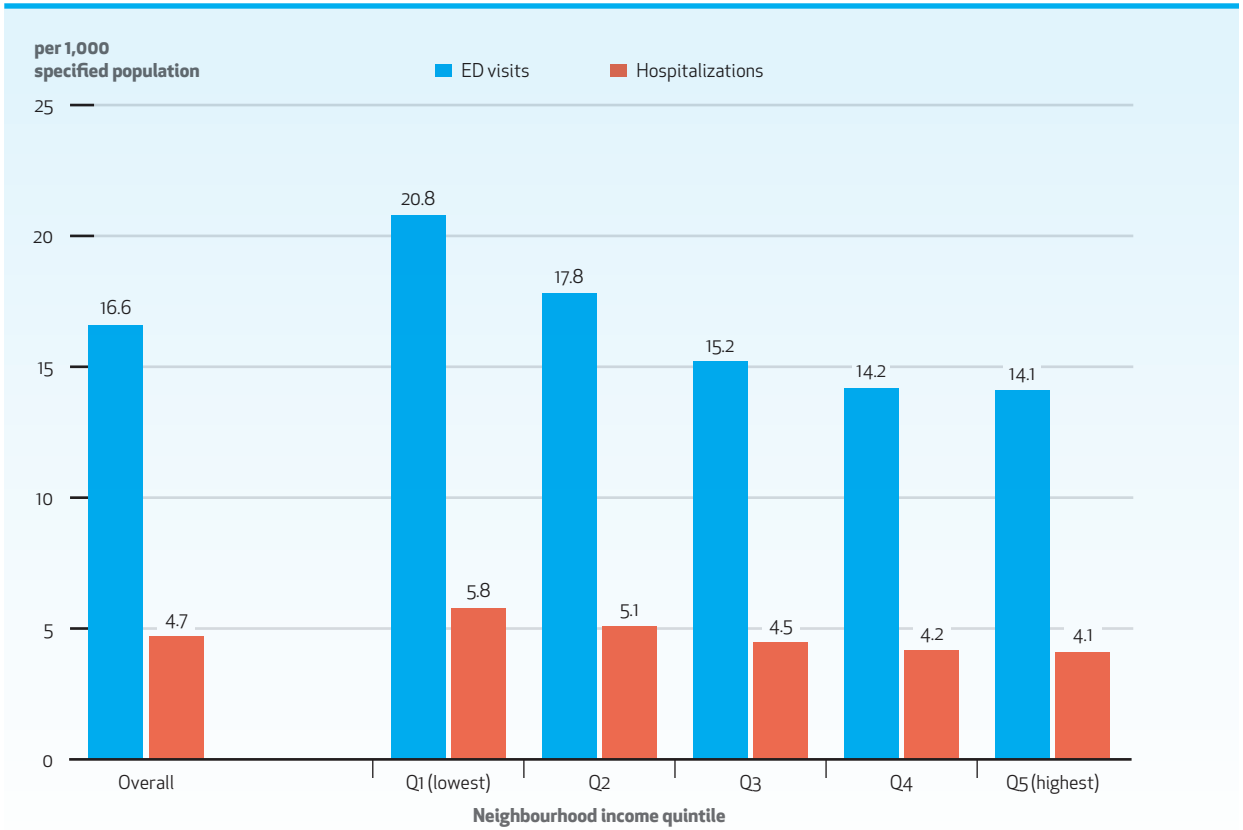
In a perfect system, every child and youth in need would be able to access mental health care. Unfortunately, this is not the case. Looking beyond population averages to unearth where inequities exist is important to address barriers to care and to identify opportunities for targeted service delivery.

Neighbourhood-level income

For this report, income is based on the neighbourhood rather than the household. Using methods developed by Statistics Canada,[26] individuals living in a geographic area were ranked and assigned to five groups, or quintiles, of equal size based on income.

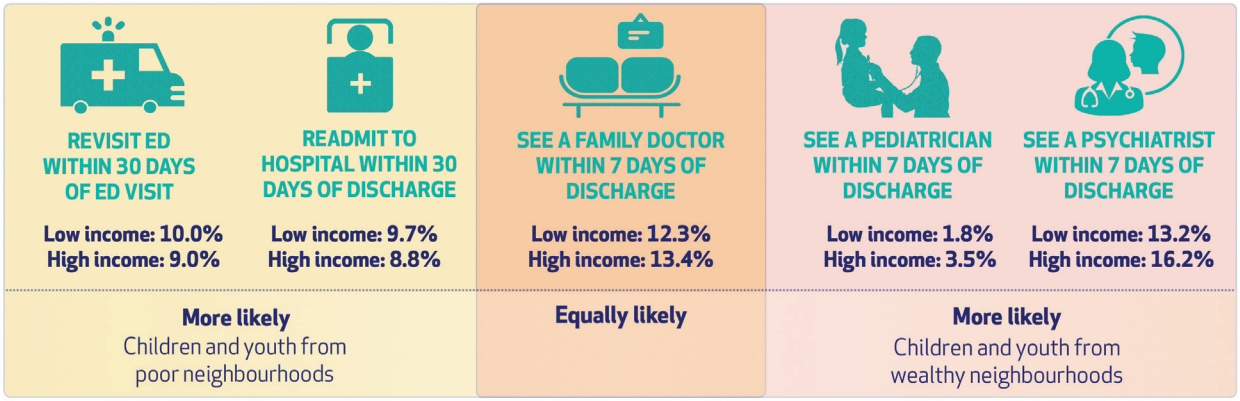
Children and youth living in the lowest-income neighbourhoods had higher rates of emergency department visits and hospitalizations (20.8 and 5.8 per 1,000, respectively) than their counterparts in the highest-income neighbourhoods (14.1 and 4.1 per 1,000, respectively). Children and youth in the northern LHINs (the North East and North West LHINs) had the highest rates of mental health-related emergency department visits, and those in the central LHINs (the Central and Central West LHINs) had the lowest rates. This is important in planning for mental health and addictions service delivery so as to direct resources where they are needed most: in low-income neighbourhoods and in northern Ontario.

EXHIBIT 16 Number of emergency department visits and hospitalizations related to mental health and addictions per 1,000 crude population aged 0 to 24 years, by neighbourhood income quintile, in Ontario, three-year average for 2012 to 2014



For many health-system indicators, people living in the poorest neighbourhoods often have less access to high-quality care and worse health outcomes than those in wealthier neighbourhoods. However, for youth using the emergency department as their first point of contact for mental illness or addictions, differences by income level disappeared: 39.6% of children and youth from the wealthiest neighbourhoods and 39.7% of those from the poorest used the emergency department as the first point of contact. This may be related to a generally good level of access to primary care in the province.[27] Further, there does not appear to be a significant difference based on income in who was seen by a general physician or family practitioner: 13.4% of individuals were from the wealthiest neighbourhoods and 12.3% were from the poorest. Unfortunately, that is where equity ends. Urgent access to specialist care after discharge from hospital varied by neighbourhood income level. Children and youth in the wealthiest neighbourhoods were more likely to be seen by a psychiatrist and almost twice as likely to be seen by a pediatrician within one week of discharge compared to those in the poorest neighbourhoods. Children and youth in the poorest neighbourhoods were more likely to revisit the emergency room following an initial visit or be readmitted to hospital within 30 days of discharge compared to those in the wealthiest neighbourhoods.

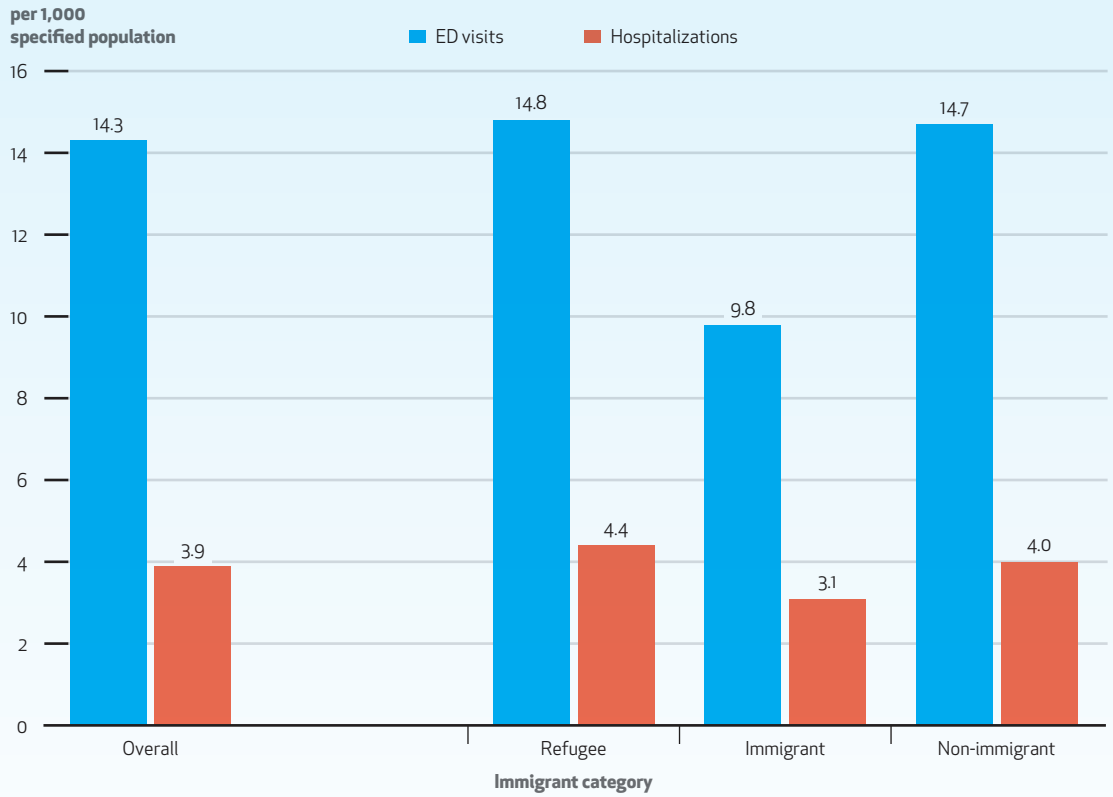
Child and youth mental health and addictions care by neighbourhood income level (2012-2014) — *Low income a barrier to specialist care*



Immigrant category

Among children and youth, refugees and non-immigrants had similar rates of emergency department visits and hospitalizations for mental illnesses and addictions; immigrants had lower rates. Low rates among immigrants support a healthy immigrant effect – immigrants to Canada are generally healthier than native-born Canadians for most health outcomes.[28] However, the lower rates of acute care visits may be related to a mental health stigma among certain immigrant groups for whom health care–seeking behavior may be lower. [29]

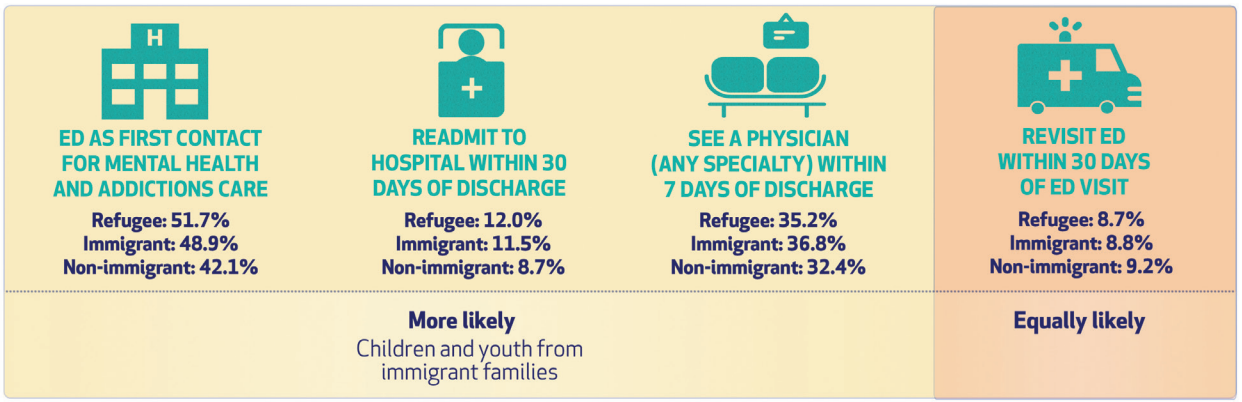
EXHIBIT 17 Number of emergency department visits and hospitalizations related to mental health and addictions per 1,000 crude population aged 0 to 24 years, by immigrant category, in Ontario, three-year average for 2010 to 2012



More than half (51.7%) of refugee children and youth who presented to the emergency department for a mental illness from 2012 to 2014 had never received physician care for their illness; this was the case for only 42.1% of non-immigrants. This may reflect the stigma associated with seeking care for mental illness, as well as barriers to accessing primary care among immigrants. However, follow-up with a physician within 7 days of discharge for a mental health and addictions–related hospitalization was higher among refugees and immigrants compared with non-immigrants, and this was driven by higher rates of follow-up with psychiatrists. Both refugees and immigrants were less likely than non-immigrants to revisit an emergency department within 30 days of an initial visit. Together, these findings suggest that immigrants and refugees are more likely than non-immigrants to face barriers in accessing outpatient care, but once connected to care, they have better outcome measures of accessibility and quality of care. Refugees, however, were almost 40% more likely than non-immigrants to be readmitted within 30 days following a mental health and addictions–related hospitalization. This finding may be in part explained by the higher prevalence of schizophrenia among refugees,[30] as this diagnosis is associated with higher readmission rates.

Child and youth mental health and addictions care by immigration category

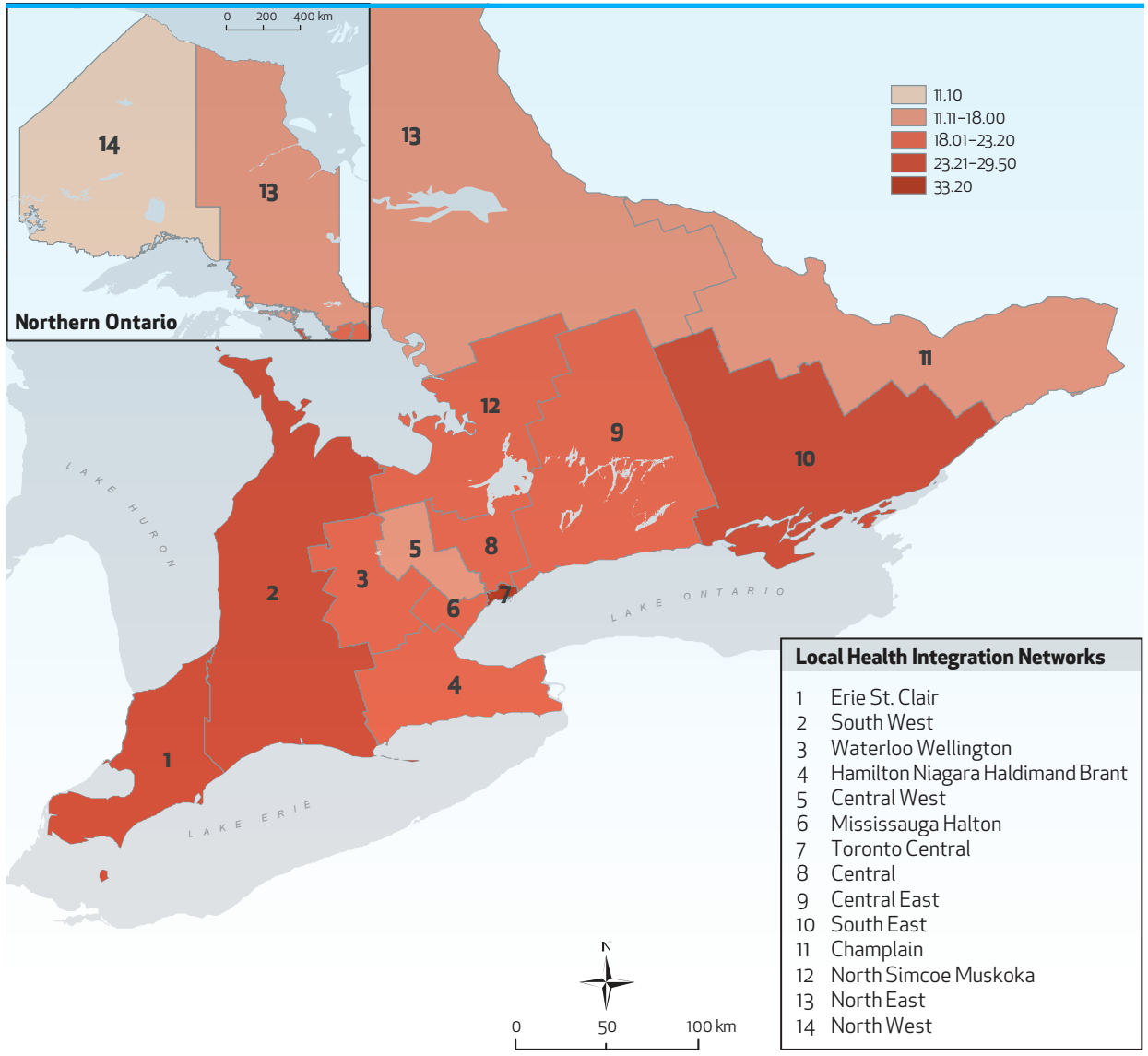
(2012-2014) — *Lower initial access to outpatient care in immigrants, but higher follow-up rates*



Geography

Despite having higher rates of mental health and addictions–related emergency department visits and hospitalizations, children and youth in the lowest-income neighbourhoods were seen by psychiatrists at a rate similar to those in the highest-income neighbourhoods. Among Local Health Integration Networks, there was a similar discordance; for example, the rate of psychiatrist visits for children and youth in the Toronto Central LHIN was almost three times that of their counterparts in the North West LHIN. These variations suggest a mismatch in the need for care and the availability of care, and they serve to reinforce the call for expanded telepsychiatry and other innovative models of care delivery to reach children and youth in rural and remote communities.

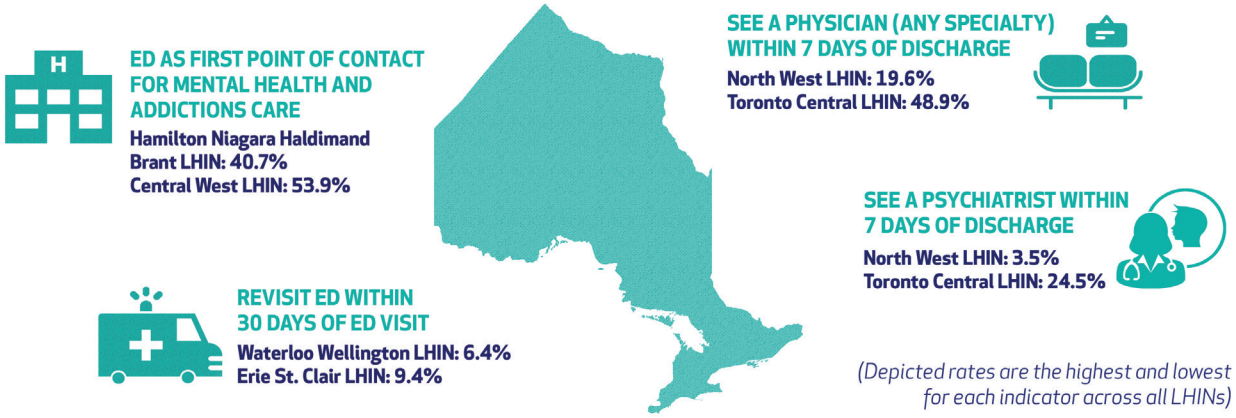
EXHIBIT 18 Number of children and youth seen by a psychiatrist per 1,000 standard population aged 0 to 24 years, by Local Health Integration Network, in Ontario, three-year average for 2012 to 2014



There is considerable geographic variation in both access to and quality of physician- and hospital-based mental health care for children and youth. For example, in the Hamilton Niagara Haldimand Brant LHIN, 40.7% of children and youth had no prior contact with physician- or hospital-based mental health and addictions services when they presented to the emergency department; in the Central West LHIN, 53.9% of children and youth had no prior contact. In the Toronto Central LHIN, 48.9% of children and youth had follow-up with a physician within 7 days of discharge from hospital, including 24.5% who were seen by a psychiatrist. This is in stark contrast to the North West LHIN where only 19.6% of children and youth were followed up within 7 days and only 3.5% were seen by a psychiatrist. Similarly, among Child and Youth Mental Health Service Areas, individuals in Toronto were most likely to have follow-up with a physician (49.5%), and those in Chatham-Kent were least likely (14.0%). Children and youth in the Erie St. Clair and North West LHINs had the highest rates of 30-day return visits to the emergency department, almost 1.5 times the rates in the Waterloo Wellington and Toronto Central LHINs. These geographic variations are undoubtedly related to better access to community resources and specialist services (psychiatrists) in LHINs that include major urban centres, compared to LHINs with more rural and remote populations. Among Child and Youth Mental Health Service Areas, the highest rate of 30-day return visits to the emergency department was observed in Grey/Bruce (11.3%) and the lowest rate was in Brant (5.0%).

Access to mental health and addictions care by geography (2012-2014)

Regional variation in how children and youth access care, and the quality of care they receive



(Depicted rates are the highest and lowest for each indicator across all LHINs)

Suicide and deliberate self-harm among children and youth in Ontario

Suicide and deliberate self-harm in Ontario children and youth

Some improvement in outcome but remains a major concern

PROVINCE-WIDE TRENDS

SUICIDE

No significant change

2003: 5.4 deaths / 100,000 children and youth
2012: 6.2 deaths / 100,000 children and youth

2.5X more common in **males** than females
(2010–2012: 8.6 vs. 3.4 / 100,000 children and youth)

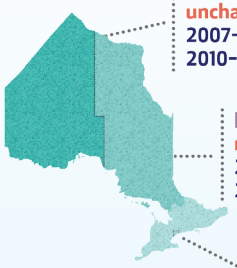
DELIBERATE SELF-HARM

Increased

2011: 23.0 visits to ED / 10,000 children and youth
2014: 32.6 visits to ED / 10,000 children and youth

2.6X more common in **females** than males
(2012–2014: 44.0 vs. 17.2 / 10,000 children and youth)

GEOGRAPHIC DIFFERENCES IN SUICIDE TRENDS



North West LHIN: suicide rate **unchanged at 5-6X the provincial average**
2007–2009: 32.8 deaths / 100,000 children and youth
2010–2012: 33.0 deaths / 100,000 children and youth

North East LHIN: suicide rate **nearly doubled** over time
2007–2009: 7.2 deaths / 100,000 children and youth
2010–2012: 13.6 deaths / 100,000 children and youth

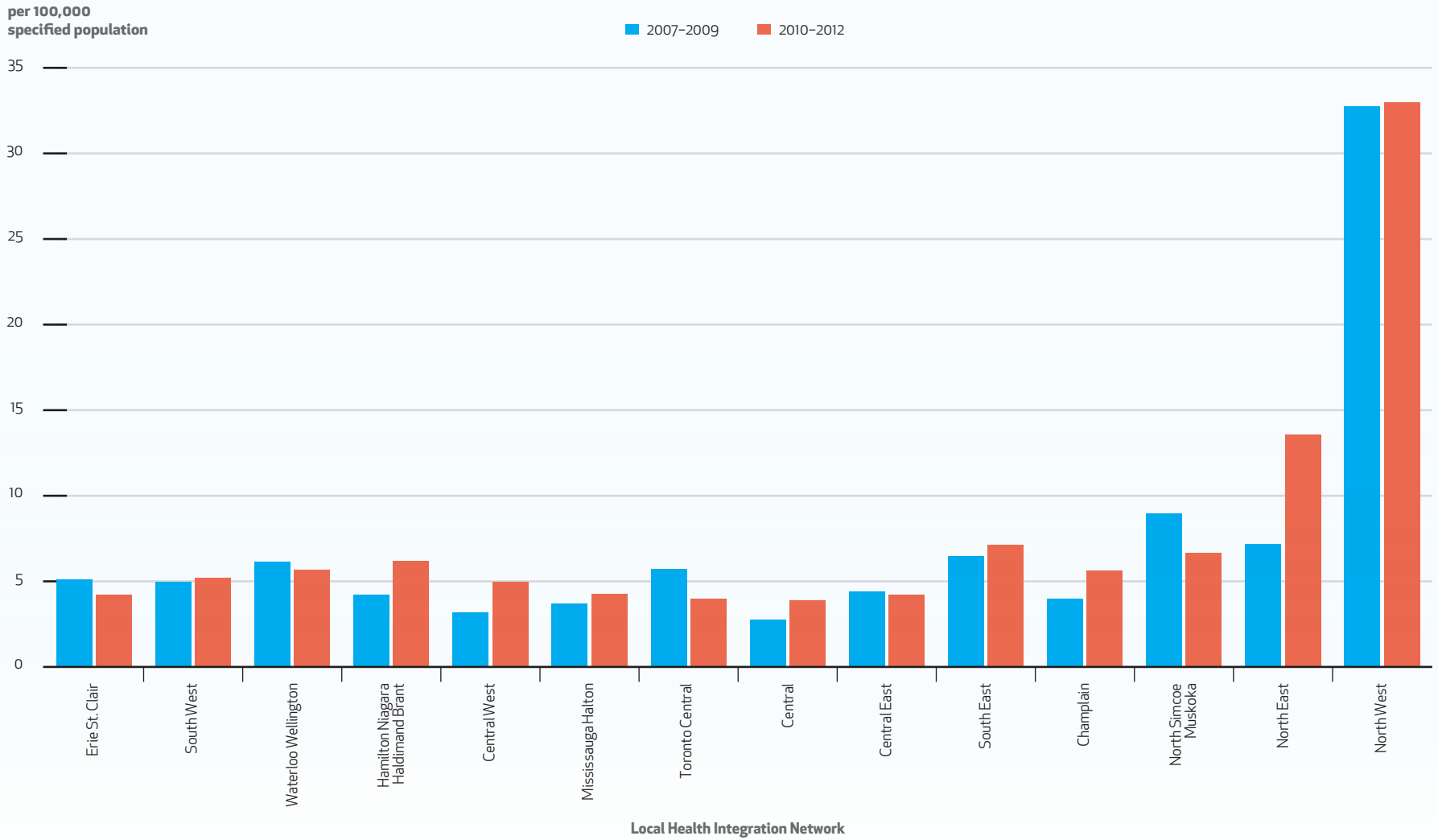
Toronto Central LHIN: suicide rate **dropped 1/3** over time
2007–2009: 5.7 deaths / 100,000 children and youth
2010–2012: 4.0 deaths / 100,000 children and youth

In 2012, the latest year for which data were available, there were 6.2 deaths by suicide per 100,000 children and youth. In 2014, there were 32.6 visits to the emergency department for deliberate self-harm per 10,000 children and youth. Note that deliberate self-harm as defined here includes both self-harm and attempted suicide. There was no significant change in the rate of suicide from 2006 to 2012; however, the rate of emergency department visits for deliberate self-harm was at its lowest point in 2011 and increased thereafter. For both sexes, the most common method of suicide was by hanging and the most common method of deliberate self-harm was by poisoning. Rates of emergency department visits for deliberate self-harm were higher among children and youth living in the lowest-income neighbourhoods and in northern Ontario, a pattern similar to that found for suicide. Higher rates of suicide and deliberate self-harm occurred among children and youth who were non-immigrants compared to those who were refugees or immigrants.

There are important geographic differences in the suicide rate. Between 2007–2009 and 2010–2012, the suicide rate in the Toronto Central LHIN dropped from 5.7 to 4.0 deaths per 100,000 children and youth. This improvement was not universal across LHINs; for example, the suicide rate in the North East LHIN almost doubled, while the rate in the North West LHIN remained unchanged and in 2012 was 6 times higher than the provincial average.

It is important to note that rates of suicide may be underestimated due to underreported or misclassified deaths,[31] and rates of deliberate self-harm may also be underestimated as they reflect only those who seek medical care.

EXHIBIT 19 Number of deaths by suicide per 100,000 standard population aged 10 to 24 years, by Local Health Integration Network, in Ontario, three-year average for 2007 to 2009 and 2010 to 2012



Child and Youth Mental Health Performance Indicators

Contributed by the Ontario Ministry of Children and Youth Services

Where we started

In 2005, Ontario launched *A Shared Responsibility: Ontario's Policy Framework for Child and Youth Mental Health*.[32] The framework is a product of extensive cross-sectoral consultation with community service providers and government partners. The vision of the framework is "an Ontario in which child and youth mental health is recognized as a key determinant of overall health and well-being, and where children and youth grow to reach their full potential." The framework sets out the long-term direction for the child and youth mental health system.

Ontario's Comprehensive Mental Health and Addictions Strategy, launched in June 2011 and led by the Ministry of Children and Youth Services (MCYS), was child- and youth-focused in the first three years (phase one).[1] Investments were shared between MCYS, the Ministry of Health and Long-Term Care (MOHLTC), the Ministry of Education, and the Ministry of Advanced Education and Skills Development. Goals for phase one included increasing and enhancing services and supports in three key areas: faster access to high-quality child and youth mental health services, early identification and support, and help for vulnerable children and youth with unique needs.

Phase two of the strategy began in November 2014. Led by MOHLTC, it has an expanded scope to include mental health and addictions across the lifespan and across multiple sectors, including a focus on better coordination of services and continuity of care for transitional-aged youth. MCYS and other partner ministries are actively engaged with MOHLTC to maximize opportunities for children and youth in phase two.

Building on the foundational work in the first three years of the strategy, *Moving on Mental Health: A System That Makes Sense for Children and Youth* was launched by MCYS in November 2012.[3] This action plan aims to provide a simplified and improved experience for children and youth with mental health

problems and their families so that, regardless of where they live in Ontario, they will know what mental health services are available in their communities and how to access the services and supports that meet their needs.

It was recognized from the outset of this transformation initiative that its success was dependent on the collection, analysis, reporting, communication and use of relevant, timely and high-quality data. In September 2013, MCYS began developing a business architecture and information technology blueprint for the child and youth mental health sector. The purpose of the business architecture was to identify the information needs of the child and youth mental health service system using a standard methodology that highlights proposed changes to the service system. This allowed MCYS to proactively address emerging issues and determine future data and information needs that will support the transformation.

At the same time that MCYS was carrying out its data-related activities, it released a service framework[33] and subsequent program guidelines [34] that describe a transparent set of guidelines, practices, standards, and expectations for the child and youth mental health service system in Ontario. These documents describe the minimum expectations of, and definitions for, child and youth mental health core services and key processes. These core services and key processes are provided to address the range of needs presented by children, youth and their families and include:

- Targeted Prevention Services
- Brief Services
- Counselling and Therapy Services
- Family/Caregiver Skills Building and Support
- Specialized Consultation and Assessment Services
- Crisis Support Services
- Intensive Treatment Services
- Access and Intake Processes
- Service Coordination Processes

Following extensive review and consultation with sector partners on the information needs of the child and youth mental health sector, and establishing a core set of child and youth mental health services, MCYS developed 13 performance indicators and associated data measures that would be used to provide information to support MCYS in determining how the system is performing and how well we are serving children and youth.

MCYS provides funding to more than 400 service providers across 33 local service areas for the delivery of community-based mental health services for children and youth. Approximately 190 of the service providers deliver core child and youth mental health services as identified in the service framework and program guidelines.

Beginning in the 2014/15 fiscal year, MCYS began capturing data consistently across the province for most of the key performance indicators that were identified through the business architecture exercise. As of 2017, MCYS' performance indicators for child and youth mental health are being calculated from aggregate level data elements derived from service contracting reporting requirements. The performance indicators provide information about who is being served, what is being provided, how well children and youth are being served, and how well the service system is performing.

EXHIBIT 20 Child and youth mental health performance indicator data collected by the Ministry of Children and Youth Services

Performance Indicator		Associated Data Collected via Service Contracts with Agencies
Who is being served?		
P1	Proportion of Child and Youth Population Served	Number of Unique Children/Youth Eligible for Service
		Total Children/Youth Population
P2	Profile of Children and Youth Served (Gender, Assessed Needs)	Number of Children/Youth by Gender – Female
		Number of Children/Youth by Gender – Male
		Number of Children/Youth by Gender – Other
		Number of Children/Youth with Behavioural Assessed Needs
		Number of Children/Youth with Emotional Assessed Needs
		Number of Children/Youth with Social Assessed Needs
		Number of Children/Youth with Substance Use Assessed Needs
		Number of Children/Youth with Trauma Assessed Needs
		Number of Children/Youth with Psychiatric Assessed Needs
P3	Ages of Children and Youth Served	Number of Children/Youth Aged 0–5 Years
		Number of Children/Youth Aged 6–10 Years
		Number of Children/Youth Aged 11–14 Years
		Number of Children/Youth Aged 15–18 Years
P4	Profile of Clients with Complex Mental Health Needs	Number Children/Youth with Complex Assessed Needs
What is being provided?		
P5	Service Utilization	Number of Individuals Served (by Core Service)
P6	Service Duration	Number Elapsed Days Service Received by Children/Youth (by Core Service)
		Number of Hours of Direct Service (by Core Service)
How well are children and youth being served?		
P7	Clients Receiving Brief Treatment Requiring No Other Services	Number of Children/Youth Requiring No Further Service Following Brief Service
P8	Clients with Positive Outcomes	Number of Children/Youth Reported Having Positive Outcomes
P9	Client and/or Parent/ Caregiver Perception of Positive Outcome	Number of Parents/Families/Youth Reporting Positive Outcomes
P10	Number of Incidents (Including Serious Occurrences and Client Complaints)	*Collected, not yet included in indicator calculations*
How well is the service system performing?		
P11	Average Wait Time for Clients Receiving Services	Number of Individuals Served (by Core Service)
		Number of Days Children/Youth Waited for Service (by Core Service)
P12	Client Perceptions of the Service System	Number of Clients with Positive Experience from Client-Completed Survey
P13	Value for Investment	*To be determined*

What we have found so far

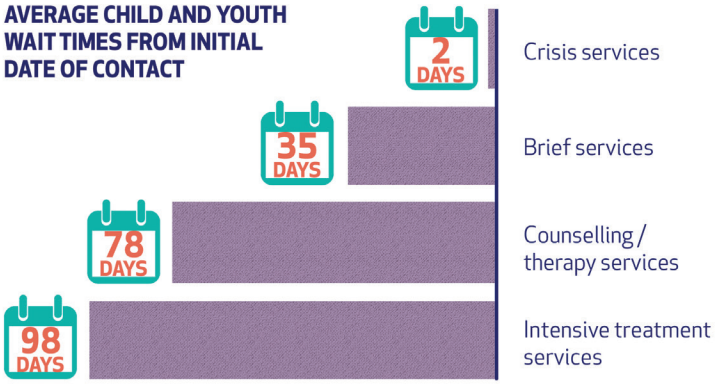
In 2015/16, more than 121,000 young people accessed services from community-based child and youth mental health agencies. Among registered clients, 47% identified as female, 52% as male and 1% as another gender. An analysis of 2015/16 wait-time data indicates that, on average, children and youth needing a crisis program received services within 2 days, and less critical services within 4 months.

Days waited is the number of days between the initial contact date and the start date for service provided to the child/youth in the reporting period. The initial contact date is the date the child/youth and/or family member contacted the agency for any service/treatment. The service start date is defined as the date of first contact between the worker/therapist delivering the service and the child/youth and/or family member to focus on the goals identified for treatment. To create the wait-time metric, total days waited are reported and divided by the total number of individuals served within each core treatment service to create an average for each core treatment service.

Community-based child and youth mental health care performance indicators

(2015-2016) — *Data provided by the Ministry of Children and Youth Services*

In 2015/16, more than 121,000 children and youth accessed services in community-based child and youth mental health agencies



Where we are going next

Child and youth mental health sector engagement has been a critically importa nt component for MCYS data planning. Engagement through consultation and training has occurred over the past several years providing valuable input into supporting a consistent understanding and reporting of, the performance indicators and data measures for community-based child and youth mental health services.

MCYS is working in partnership with the community-based child and youth mental health service sector on the development and implementation of a Business Intelligence (BI) Solution for child and youth mental health. The BI Solution, once implemented, will receive individual level, anonymized data through secure and automated feeds from client information systems used by agencies funded by MCYS to provide child and youth mental health core services. The BI Solution will perform data quality, integration, aggregation functions and provide dashboards and ad hoc reporting capabilities for performance indicator monitoring.

Through the BI Solution, data will be provided to MCYS and core service agency staff to inform service delivery, service system planning, performance measurement and monitoring, and continuous improvement of the child and youth mental health service system for children, youth and families. As well, the design, development and implementation of the BI Solution have been informed by lead agencies, core service providers and MCYS. Work is underway to further clarify and refine the current child and youth mental health performance indicators.

MCYS continues to engage with and align its data work with ICES and the Canadian Institute for Health Information, the work of MOHLTC's Mental Health and Addictions Leadership Advisory Council, and phase two of the strategy to build an integrated data and performance measurement system.

Summary, Implications and Future Directions

As Ontario's Comprehensive Mental Health and Addictions Strategy matures, we report a number of important trends in hospital-based and outpatient physician service use for mental health and addictions by children and youth. Overall, the increasing use of these services suggests that demand for mental health care will continue to grow. While more outpatient physician care may reflect better access and reduced stigma, the increasing use of acute health care (emergency department visits and hospitalizations) may also reflect higher rates of mental illnesses such as anxiety. While we document a small decrease in children and youth presenting to the emergency department without a previous physician visit, rates of emergency department visits as first contact remain high and pose a challenge for hospitals, outpatient physician services and the community-based sector to ensure adequate follow up services. The ability to link hospital-based and outpatient physician data to data from community-based mental health agencies will be critical for a more robust understanding of child and youth mental health in Ontario. Questions that can be assessed with linked data include whether children and youth who are not seeking timely physician care are being served by mental health agencies, whether children and youth served in the community are receiving adequate physician care, and whether the increased demand for mental health care services in hospitals and outpatient physician settings is reflected in the community-based sector.

We document that a number of indicators related to follow-up and early outcomes after acute care vary significantly by hospital. Learning health care systems are systems in which data is used for service quality improvement.[35] While the indicators reported here are still crude, rely on somewhat older data and represent some factors outside of a hospital's control, continued work to use these benchmark data may support hospitals in their quality improvement initiatives. We also report for the first time on the Ministry of Children and Youth Services' 13 performance indicators for child and youth mental health, which were collected by the agencies funded to provide core mental health services. For the first time, Ontario has provincial data on wait

times for, and satisfaction with, community-based children's mental health services.

Finally, while we have documented similar inequities in both outcomes and access to services as in the baseline scorecard, it is worth reiterating that the starkest inequities in outcomes and access to care relate to socioeconomic status and geography. While our reporting will be enhanced with the addition of data from the Tele-Mental Health Service, our current data suggest that access to psychiatrists is still concentrated in areas where there is higher supply of these physicians whereas the greatest population needs are in rural and remote regions. While we report some progress in lower suicide rates in some urban settings, this remains a persistent and troubling phenomenon in northern Ontario reflecting, in part, specific mental health needs within First Nations communities. Continued attention to these important inequities and outcomes is critical , and progress will require partnership of the federal and provincial governments with local communities.

Future directions

Since 2012, the Ministry of Children and Youth Services has led the transformation of the community-based child and youth mental health system through the implementation of *Moving on Mental Health*.[3] A number of initiatives have been developed, including the identification of core services to be delivered by agencies, the identification of lead agencies in geographic service areas that will lead service planning and delivery, and the development of 13 performance indicators. Early findings from these performance indicators are presented in this report. As these indicators are refined and regularly reported, the MHASEF Research Team will continue to strive to make connections between MCYS performance indicators and future iterations of this scorecard.

The systematic measurement of performance is essential to ensure that policy and program planning and delivery is responsive to the mental health needs of children and youth. While there are discussions in the community-based child and youth mental health sector related to the use of a common assessment tool (or suite of tools) by all agencies, MCYS does not mandate the use of one tool across the province. Furthermore, there are multiple efforts underway led by a number of organizations to measure child and youth mental health care in Ontario. Standardizing data collection and aligning the measurement and development of indicators across all organizations reporting on child and youth mental health will lead to better and more consistent reporting across the province, which is a necessary step for system improvement. We will continue to explore interest in reporting performance indicators by hospital and hospital type and in conducting more sophisticated risk adjustment for factors such as diagnoses. The provision of individual hospital results and benchmark data of peer groups will support quality improvement.

Some new data sources have been identified that can fill major gaps in our understanding of child and youth mental health in Ontario. The 2014 Ontario Child Health Study is the first systematic survey of mental health and addictions among children and youth in the province since 1983, and it can provide new prevalence data and information about student mental health.[5,36] The Tele-Link Mental Health program will provide information on how children and youth access telepsychiatry services in the province and will complement the other psychiatry service data that are available. In addition, data collected by community-based child and youth mental health core service providers will allow reporting on the care provided in the community setting; if these data are linked to data from the health care system, as in the Kinark pilot, the ability to track integrated care trajectories will be enhanced. The use of a common identifier, such as a health card number, will ease the process of aligning services provided by the community-based and acute care sectors and aid in evaluating outcomes.

Monitoring the child and youth mental health system is an ongoing process. To generate a longitudinal perspective, this scorecard will be updated again in two years. Continuous quality improvement of indicators, which may entail activities to improve data quality and methods for indicator calculation, is an essential piece of work that the MHASEF Research Team will undertake to create a high standard of reporting. Additionally, targeted investigations will delve deeper into issues that are related to strategy initiatives or issues brought to light by the scorecard. Targeted investigations that the MHASEF Research Team has carried out include the benchmarking of rates of neonatal abstinence syndrome against other

jurisdictions,[17] further investigation into the increase in acute mental health and addictions services use among children and youth,[37] the phenomenon of youth with first contact emergency department visits[38] and analysis of mental health care for youth in the provincial correctional system.[39]

Since 2015, the Mental Health and Addictions Leadership Advisory Council, with support from a task group comprised of experts in healthy systems data and performance measurement, has worked to develop a data and performance measurement framework and to identify performance indicators for adult mental health and addictions.[40] A number of activities have been undertaken to ensure that performance reporting for children and youth and for adults are aligned. This includes having the Ministry of Children and Youth Services as an active member of the data and performance measure task group and reporting on many of the same indicators for both children and youth and for adults.[41] As the provincial mental health and addictions strategy continues, efforts will continue to further build alignment between performance reporting for children and youth and for adults across the continuum of care.

References

1. Government of Ontario. *Open Minds, Healthy Minds: Ontario's Comprehensive Mental Health and Addictions Strategy*. Toronto, ON: Queen's Printer for Ontario; 2011. Accessed April 26, 2017 at **http://www.health.gov.on.ca/en/common/ministry/publications/reports/mental_health2011/mentalhealth_rep2011.pdf**.
2. MHASEF Research Team. *The Mental Health of Children and Youth in Ontario: A Baseline Scorecard*. Toronto, ON: Institute for Clinical Evaluative Sciences; 2015. Accessed April 26, 2017 at **https://www.ices.on.ca/Publications/Atlases-and-Reports/2015/Mental-Health-of-Children-and-Youth**.
3. Ontario Ministry of Children and Youth Services. Moving On Mental Health: A system that makes sense for children and youth. Accessed November 1, 2016 at **http://www.children.gov.on.ca/htdocs/English/professionals/specialneeds/momh/momh.aspx**.
4. World Health Organization. Child and adolescent mental health. Accessed April 26, 2017 at **http://www.who.int/mental_health/maternal-child/child_adolescent/en/**.
5. Offord DR, Boyle MH, Szatmari P, et al. Ontario Child Health Study. II. Six-month prevalence of disorder and rates of service utilization. *Arch Gen Psychiatry*. 1987; 44(9):832–6.
6. Ontario Ministry of Children and Youth Services. Mental health services. Accessed April 26, 2017 at **http://www.children.gov.on.ca/htdocs/English/specialneeds/mentalhealth/index.aspx**.
7. Suhrcke M, de Paz Nieves C. *The Impact of Health and Health Behaviours on Educational Outcomes in High-Income Countries: A Review of the Evidence*. Copenhagen, DK: World Health Organization; 2011. Accessed April 26, 2017 at **http://www.euro.who.int/__data/assets/pdf_file/0004/134671/e94805.pdf**.

8. National Research Council and Institute of Medicine. *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*. Washington, DC: National Academies Press; 2009.

9. Walker ER, McGee RE, Druss BG. Mortality in mental disorders and global disease burden implications: a systematic review and meta-analysis. *JAMA Psychiatry*. 2015; 72(4):334–41.

10. Center for the Study of Social Policy. *Results-Based Public Policy Strategies for Promoting Children's Social, Emotional and Behavioral Health*. Washington, DC: CSSP; 2012. Accessed April 26, 2017 at **http://www.cssp.org/policy/papers/Promote-Childrens-Social-Emotional-and-Behavioral-Health.pdf**.

11. Canadian Institute For Health Information. *Care for Children and Youth with Mental Disorders*. Ottawa, ON: CIHI, 2015. Accessed April 26, 2017 at **https://secure.cihi.ca/free_products/CIHI%20CYMH%20Final%20for%20pubs_EN_web.pdf**.

12. Government of British Columbia. Anxiety and Depression in Children and Youth - Diagnosis and Treatment 2010. Available from: **http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/anxiety-and-depression-in-youth**.

13. World Health Organization. *Guidelines for the Identification and Management of Substance Use and Substance Use Disorders in Pregnancy*. Geneva, CH: WHO; 2014.

14. Dow K, Ordean A, Murphy-Oikonen J, et al. Neonatal abstinence syndrome clinical practice guidelines for Ontario. *J Popul Ther Clin Pharmacol*. 2012; 19(3):e488–506.

15. Logan BA, Brown MS, Hayes MJ. Neonatal abstinence syndrome: treatment and pediatric outcomes. *Clin Obstet Gynecol*. 2013; 56(1):186–92.

16. Uebel H, Wright IM, Burns L, et al. Reasons for rehospitalization in children who had neonatal abstinence syndrome. *Pediatrics*. 2015; 136(4):e811–20.

17. Davies H, Gilbert R, Johnson K, et al. Neonatal drug withdrawal syndrome: cross-country comparison using hospital administrative data in England, the USA, Western Australia and Ontario, Canada. *Arch Dis Child Fetal Neonatal Ed*. 2016; 101(1):F26–30.

18. Ontario Ministry of Health and Long-Term Care. Ontario moving to reduce abuse of prescription narcotics. [News release] Accessed April 26, 2017 at **https://news.ontario.ca/mohltc/en/2010/08/ontario-moving-to-reduce-abuse-of-prescription-narcotics.html**.

19. Ontario Ministry of Health and Long-Term Care. Ontario taking action to prevent opioid abuse. [News release] Accessed April 26, 2017 at **https://news.ontario.ca/mohltc/en/2016/10/ontario-taking-action-to-prevent-opioid-abuse.html**.

20. Public Health Agency of Canada. *Fetal Alcohol Spectrum Disorder (FASD)*. Ottawa, ON: Her Majesty the Queen in Right of Canada; 2006. Accessed April 26, 2017 at **http://www.phac-aspc.gc.ca/hp-ps/dca-dea/prog-ini/fasd-etcaf/faq/pdf/faq-eng.pdf**.

21. Popova S, Lange S, Burd L, Rehm J. *The Burden and Economic Impact of Fetal Alcohol Spectrum Disorder in Canada*. Toronto, ON: Centre for Addiction and Mental Health; 2015. Accessed April 26, 2017 at **https://www.camh.ca/en/research/news_and_publications/reports_and_books/Documents/Burden%20and%20Eco%20Costs%20FASD%20Feb%202015.pdf**.

22. Jackson C, Shahsahebi M, Wedlake T, DuBard CA. Timeliness of outpatient follow-up: an evidence-based approach for planning after hospital discharge. *Ann Fam Med*. 2015; 13(2):115–22.

23. Spiegelhalter DJ. Funnel plots for comparing institutional performance. *Stat Med*. 2005; 24(8):1185–202.

24. Ontario Ministry of Children and Youth Services. Improving mental health services for children and youth. [News release] Accessed April 26, 2017 at **https://news.ontario.ca/mcys/en/2011/06/improving-mental-health-services-for-children-and-youth.html**.

25. Canadian Mental Health Association Ontario. *Advancing Equity in Mental Health in Ontario: Understanding Key Concepts*. Toronto, ON: CMHA Ontario; 2014. Accessed April 26, 2017 at **http://ontario.cmha.ca/wp-content/files/2014/05/Advancing-Equity-In-Mental-Health-Final1.pdf**.

26. Wilkins R, Peters PA. *PCCF+ Version 5K User's Guide: Automated Geocoding Based on the Statistics Canada Postal Code Conversion Files*. Including Postal Codes Through May 2011. Ottawa, ON: Statistics Canada. 2012. Accessed April 21, 2017 at **http://data.library.utoronto.ca/datapub/codebooks/cstdli/pccf_health/pccf5k/MSWORD.PCCF5K.pdf**.

27. Health Quality Ontario. *Quality in Primary Care: Setting a Foundation for Monitoring and Reporting in Ontario*. Toronto, ON: HQO; 2016. Accessed April 26, 2017 at **http://www.hqontario.ca/Portals/0/Documents/pr/theme-report-quality-in-primary-care-en.pdf**.

28. McDonald JT, Kennedy S. Insights into the 'healthy immigrant effect': health status and health service use of immigrants to Canada. *Soc Sci Med*. 2004; 59(8):1613–27.

29. Thomson MS, Chaze F, George U, Guruge S. Improving immigrant populations' access to mental health services in Canada: a review of barriers and recommendations. *J Immigr Minor Health*. 2015; 17(6):1895–905.

30. Hollander AC, Dal H, Lewis G, Magnusson C, Kirkbride JB, Dalman C. Refugee migration and risk of schizophrenia and other non-affective psychoses: cohort study of 1.3 million people in Sweden. *BMJ*. 2016; 352:i1030.

31. Auger N, Burrows S, Gamache P, Hamel D. Suicide in Canada: impact of injuries with undetermined intent on regional rankings. *Inj Prev*. 2015; 22(1):76–8.

32. Ontario Ministry of Children and Youth Services. *A Shared Responsibility: Ontario's Policy Framework for Child and Youth Mental Health*. Toronto, ON: Queen's Printer for Ontario; 2006. Accessed April 26, 2017 at **http://www.children.gov.on.ca/htdocs/English/documents/specialneeds/mentalhealth/framework.pdf**.

33. Ontario Ministry of Children and Youth Services. Draft Child and Youth Mental Health Service Framework, September 2013. Accessed April 26, 2017 at **http://www.children.gov.on.ca/htdocs/English/documents/specialneeds/mentalhealth/ServiceFramework.pdf**.

34. Ontario Ministry of Children and Youth Services. Community-Based Child and Youth Mental Health Program Guidelines and Requirements. Accessed April 26, 2017 at **http://www.children.gov.on.ca/htdocs/English/professionals/specialneeds/momh/pgr.aspx**.

35. Institute of Medicine. *The Learning Healthcare System: Workshop Summary*. (IOM Roundtable on Evidence-Based Medicine.) Washington, DC: National Academies Press; 2007.

36. 2014 Ontario Child Health Study. Accessed April 26, 2017 at **http://ontariochildhealthstudy.ca/ochs/**.

37. Gandhi S, Chiu M, Lam K, Cairney JC, Guttmann A, Kurdyak P. Mental health service use among children and youth in Ontario: population-based trends over time. *Can J Psychiatry*. 2016; 61(2):119–24.

38. Gill PJ, Saunders N, Gandhi S, et al. Emergency department as a first contact for mental health problems in children and youth. *J Am Acad Child Adolesc Psychiatry*. 2017; 56(6):475-82.e4.

39. Khan S, Chiu M, Simpson AI, Guttmann A, Jembere N, Kurdyak P. Use of mental health services by youths and young adults before and during correctional custody: a population-based study. *Psychiatr Serv*. 2016; 67(7):790–3.

40. Canadian Mental Health Association. Data and performance measurement. Accessed April 20, 2017 at **https://ontario.cmha.ca/provincial-policy/health-systems-transformation/data-and-performance-measurement/**.

41. Ontario's Mental Health and Addictions Leadership Advisory Council. Data and performance measurement in Ontario's mental health and addictions sector. [Summary of meetings held from July 2015 to February 2016] Accessed April 20, 2017 at **http://ontario.cmha.ca/wp-content/uploads/2016/08/Data-Background-package-Feb-8-1.pdf**.

Data
Discovery
Better Health

Institute for Clinical Evaluative Sciences
G1 06, 2075 Bayview Avenue
Toronto, Ontario M4N 3M5
www.ices.on.ca