Toward Quality Mental Health Services in Canada



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We dedicate this work to the memory of Dr. Elliot Goldner. Dr. Goldner's legacy as a leader and champion for the improvement of mental health services, and ultimately the quality of life of those with mental health challenges and their families, is legendary. His legacy as a teacher, mentor, and friend to researchers and students in the mental health and addictions services and policy research field, including all of us on this project, will live on. He is deeply missed.



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Executive Summary

In 2015, the Graham Boeckh Foundation (GBF), in collaboration with the Canadian Alliance on Mental Illness and Mental Health (CAMIMH), initiated a project to test the feasibility of creating and reporting on a small number of mental health and addictions services performance indicators that could be compared across provinces. A team of mental health and addictions scientists from five provinces (British Columbia, Alberta, Manitoba, Ontario and Québec) developed and generated the measures, where possible for ages 10 years and up, using data already available from the healthcare systems.

Consensus definitions and analytic approaches were developed, and results for six performance indicators (of seven tested) are presented in a comparative format. These measures were chosen in part because of availability of reasonably comparable cross-province data and are not intended to be representative of the mental health system in its entirety. This project demonstrates that the process is feasible. Future work could include: generating these on a regular basis to track system improvement over time both across and within provinces; development of other measures of importance to stakeholders; analysis of more representative sources of data; and the expansion of the process to other provinces and territories. The six performance indicators are:

- Access to the same family physician for people diagnosed with a mental disorder or addiction.¹
- First treatment contact for a mental disorder or addiction is in an emergency department.
- Physician follow-up after hospital discharge for a mental disorder or addiction.
- Rates of suicide attempts among people diagnosed with a mental disorder or addiction.

- Suicide rates among people diagnosed with a mental disorder or addiction.
- Mortality of people diagnosed with a mental disorder or addiction.

Overall, we found similar patterns in the measures across the age range by province, but there was much variation in the absolute rates of performance indicators by province, and no province was consistently best across indicators. Across most indicators, adolescents and young adults were age categories with the poorest performance compared to older age groups, although variations among other age categories and by gender were observed.

This report presents comparative results for the six indicators by province, as well as key findings on the feasibility questions of the project.

Section 1 provides Background for the initiative.

Section 2 provides a brief summary of methods (with greater details provided in Appendix C).

Section 3 presents the Rationale, Definition, Results, preliminary Interpretation, and Limitations for each indicator.

In **Section 4**, Key Learnings of the project are summarized along with suggestions for future work. A full Technical Report is also available.

¹ There is little agreement among stakeholders on the best terms to use for people who live with mental disorders and addictions; here we have chosen to use terms that indicate that an individual has received a formal medical diagnosis of a mental disorder or addiction for greatest consistency with the methods used in the study. It is important to note that there are many people living with mental health issues and symptoms who have not accessed the formal healthcare system and/or have not received a formal diagnosis. These individuals will not be reflected in the indicator findings presented; in most cases this will result in the findings being conservative in representing the actual circumstances reflected by the indicator. We also wish to note that mental disorders frequently occur together with addictions – in this report the phrase 'mental disorder or addiction' stands for one or any combination of disorders.

Introduction and Background

Stakeholders have been calling for national reporting on the quality of mental health and addictions services for nearly two decades in Canada. For example, the Canadian Alliance for Mental Illness and Mental Health (CAMIMH) listed better data as one of four goals for action in meeting the needs of people with mental illness and promoting mental health for all Canadians in their inaugural meeting in 1998 (CAMIMH 2003). For a thorough review of the history and progress of mental health data in Canada, see the *Overview of Mental Health Data in Canada*, published by the Mental Health Commission of Canada (MHCC) in 2014.¹

It has been recognized for many years that routine measurement of care is needed to improve/ transform the healthcare system.² The use of healthcare performance indicators is advancing in acute care and specific patient care areas such as diabetes and cancer, but performance measurement for mental health services has lagged behind.³ Much work has been done around the world to conceptualize performance indicators for mental health services: however, barriers continue to limit progress in generating and reporting indicators, and even greater limitations on taking action on the findings to improve service delivery. One major challenge is the complexity of mental health care delivery. Many services are provided across health care settings, as well as outside the formal boundaries of health care (e.g., community housing, private addictions residential treatment, most psychological services, social supports, criminal justice sector, and education). Ideally mental health and addiction (MHA) measurement needs to reflect care delivered across these settings and sectors which is technically demanding. In fact, there is often no available data reflecting some aspects of the mental health sector, or the data are not linked in a way that facilitates measurement or evaluation. Another important challenge is that although much is known about the science of performance measurement, there is insufficient technical capacity for the work.² Despite these common challenges, most developed countries are taking active steps toward measuring the performance of their mental health systems.³

Strengthening data collection, expanding research capacity, and doing more to share knowledge about what works to foster recovery and wellbeing across the population would all contribute to progress. Measuring this progress across the country is essential and will require common indicators and measures.

- Changing Directions, Changing Lives, Mental Health Strategy for Canada, Mental Health Commission of Canada, 2012 (Strategic Direction 6)

In Canada, some progress has been made by key national organizations. The Canadian Institute for Health Information (CIHI) has developed a framework for health measures, and in the area of mental health has produced a set of hospitalbased mental health indicators.⁴ In their report, CIHI concluded "...from this exercise, it is clear that national, regional-level health information is limited to hospital-based services, and that information is limited to utilization data" (p. 11). While there have been improvements in the area of data collection and reporting within provinces, comparable measures across provinces are often confined to hospitalization data. CIHI identified mental health and addictions as a priority in the CIHI Strategic Plan 2016-2021 and it has recognized the importance of facilitating the development and adoption of health information standards for community mental health data.

The Public Health Agency of Canada (PHAC), with its mandate for disease surveillance, completed interprovincial estimates of any diagnosed mental illness or addiction, and diagnosed mood and anxiety disorder based on data obtained from provincial health care administrative records." Mental health and addiction measures have also been generated from Statistics Canada survey work including the Canadian Community Health Surveys.⁵

Initiatives to conceptualize measures dates back to 2001, when McEwan and Goldner produced a resource entitled *Accountability and Performance Indicators for Mental Health Services and Supports*; a resource kit with an inventory of potential measures in CIHI's health system performance domains.⁶ The toolkit is highly useful for indicator development but does not address the host of issues involved in generating, reporting and acting on comparable data across provinces.

In their Mental Health Strategy for Canada, Changing Directions, Changing Lives, the MHCC⁷ identified the improvement of mental health data collection, research and knowledge exchange as key priorities. To help accomplish the goal of achieving "agreement on a comprehensive set of indicators", the MHCC launched Informing the Future: Mental Health Indicators for Canada, which developed a set of 55 national-level mental health measures on topics including access and treatment, diversity, homelessness, recovery, stigma and discrimination, and suicide. They were released in April 2015. It was recognized that in addition to national-level indicators, provincial-level measures are critical for understanding and improving system performance because healthcare delivery is a provincial/territorial responsibility. The production and reporting of indicators *across provinces* has been stymied by limitations in data access, a lack of common definitions and analytic processes, technical capacity, and agreement on approaches to reporting.

In 2015, the Graham Boeckh Foundation initiated a project to test the feasibility of creating and reporting on a small number of mental health and addictions service indicators that could be compared across provinces. A team of mental health and addictions scientists from five provinces (British Columbia, Alberta, Manitoba. Ontario and Québec) was formed to develop and generate the measures using data already available from the healthcare system in each province. The project was built on the preliminary work done by individual researchers in the team who had experience with datasets (including hospital discharges, physician billings, emergency department, and vital statistics data) in their respective provinces. The exercise was an example of the art of the possible rather than a measurement exercise based on a conceptual framework. We were interested in determining whether it was possible to develop standardized performance indicators that were comparable using existing data in multiple provinces. Research ethics approval for access to and use of the data was received in each province. The team worked together to identify measures that, within the limitations of availability and scientific soundness of data were considered to be a meaningful start to building the process. We developed consensus definitions and analytic processes, and generated estimates that could be combined and compared across provinces.

In this report, the initial cross-province findings on these measures^{III} are reported:

- 1. Access to the same family physician for people diagnosed with a mental disorder or addiction.
- 2. First treatment contact for a mental disorder or addiction is in an emergency department.
- 3. Physician follow-up after hospital discharge for a mental disorder or addiction.
- 4. Rates of suicide attempts among people diagnosed with a mental disorder or addiction.
- 5. Suicide rates among people diagnosed with a mental disorder or addiction.
- 6. Mortality of people diagnosed with a mental disorder or addiction.

Ideally, performance measures would be chosen based on their importance to stakeholders, such as policy-makers and service system decisionmakers (who are in a position to implement needed system improvements), and people living with the illnesses and their families who experience mental healthcare regularly. However, at this time it was necessary to test our collaborative project with measures that were possible to generate across the

Data are available from

http://data.gc.ca/data/en/dataset/9525c8c0-554a-461b-a763-f1657acb9c9d

A seventh measure 'treatment commensurate with treatment guidelines' was considered but found to be not feasible at this time. five jurisdictions *currently*. A secondary outcome of this project was to identify disparities in data availability and advocate for a minimum data set to facilitate performance improvement in all provinces and territories in Canada, starting with the provinces involved in this project.

The project represents a "proof of concept" for the development of comparable provincial mental health services measures. We have identified where further refinement of the measures is needed. We also hope, in future work, that additional Canadian provinces and territories will be engaged, and new indicators important to a broad set of stakeholders will be added, as the capacity for data collection and reporting is strengthened across provinces. There is enormous potential for both the scope and utility of cross-provincial mental health measures to be improved as priorities are assessed. new data are collected, knowledge is shared, and benchmarks are established. Ultimately, we believe there is much to be gained by developing the capacity to measure, and therefore compare, mental health system performance interprovincially as a foundation for broader initiatives to improve the performance of mental health systems across Canada.

As it currently stands, there is no clear vision for mental health information as a whole and no single organization dedicated to gathering and reporting on mental health services and policies.¹ Having measures that help illuminate how mental health and addictions services are currently working across jurisdictions is the first essential step in monitoring improvements due to innovation in mental health services. Innovation is critical to achieving a mental health and addictions service system that optimizes quality of life for Canadians with mental health issues and their families.

Central to the project were questions of feasibility for this type of work. Key questions were:

- Can five provinces generate and report mental health indicators in a standardized way?
- Are the differences in the measures across provinces important and meaningful?
- What are some of the major gaps in data?
- How can this type of work inform policy decisions?

This report presents answers to these questions, and provides suggestions for future work, including expansion. The ultimate vision is to have a comprehensive set of measures that are reported regularly to help system managers and policymakers maximize the benefits of care to those with mental health or addictions issues and their families.

This project involved focused coordination; multiple working groups; iterative correspondence with data analysts, data stewards, and policymakers across provinces, as well as an enormous amount of effort in each province to access and analyze data and to engage local stakeholders. As noted by the *Performance Indicator Drafting Group* in Australia, "Long lead times are involved in the development work... there are few quick solutions and long term investment is required."³

Our project represents a crucial step toward the gathering and reporting of meaningful information that will, in the future, help to guide sound policy decisions for mental health services in Canada. To our knowledge, this is the first project to have reported extensive and comparable data on the performance of mental health services in multiple provinces in Canada.

The Cross-Province Process

Research teams were formed in each of the five provinces and work to access the necessary health services data, develop common definitions, and produce findings for the initial set of measures began in September 2015. The five provinces were selected and invited to participate because they have worked together in this area in the past, and all have comparable province-level data on mental health services.

We used data sources from health administrative databases which are routinely collected during care provision, such as hospitalization, vital statistics, physician billing and emergency department data. Data were accessed in each province by the respective provincial lead using the appropriate provincial processes. Details are provided in Appendix C. Overlapping project steps were:

- Ethics submissions and data access requests
- Data specification and definitions
- Engagement of people with lived experience
- Provincial-level data analysis
- Cross-provincial-level data analysis
- Findings review and interpretation
- Presentation to Advisory Committee
- Draft final report, embargo and provincial stakeholder review
- Final report and public release

Not all the provinces were able to produce estimates using the agreed upon indicator definition in the time frame for the project. The green shading in Table 1 indicates where data were available. Details about reasons why the estimates could not be produced for some indicators can be found in the Technical Report.

Table 1: Summary of provincial data available for each indicator

Indicators	Provinces					
	вс	АВ	MB	ON	QC	
Regular access to a family physician*						
First contact is in the emergency department						
Physician follow-up after hospital						
Suicide rates**						
Suicide attempts						
Mortality***						

*Québec could not produce data for this indicator for administrative reasons. The indicator can be produced in the future.

**Alberta did not produce the data because of the time needed for linkage to Vital Statistics data. This is possible in the future.

***Québec produces standardized mortality rates (not ratios). These rates, and more information, can be found in the detailed Technical Report.

Ontario produced mortality rates and SMRs but the results are in the process of being validated and were not ready at time of publication.

Patient Engagement

Our vision is for a future where people with lived experience are fully involved with setting priorities for measures. As an initial approach to engagement, national team members conducted a focus group consultation with the Hallway Group of the Mental Health Commission of Canada. This group is made up of people with lived experience with mental illness from across the country. The members of the group spoke openly about their personal experiences with the system of care represented by each of the measures. With permission, we have included quotes in the report to represent their perspectives and input.

Findings

Access to the same family physician for people diagnosed with a mental disorder or addiction

Rationale

It is recognized that individuals with mental disorders and addictions have difficulty accessing high-quality primary care.8 For example, the CCHS showed that in 2015, only 60% of females and 50% of males diagnosed with MHA aged 15 years and up had talked to any health care professional in the prior year.⁹ Further, approximately 600,000 Canadians reported that their need for mental health care was unmet.⁹ Having a family physician is a key to comprehensive and continuous care for those with MHA. The family physician, ideally: attends to all initial health care needs of the person; coordinates care across the continuum from community to hospital; screens for both physical and mental health issues; monitors medication for adverse events; and promotes healthy behaviors that contribute to recovery. Family physician care is available to the whole population, and it is also a type of care where a range of interventions have been shown to improve outcomes for those with mental illness and addictions.10 As such it is an important source for improving the health of individuals with mental illness and addictions broadly, once they have accessed care, and especially if they are seen regularly for follow-up. This measure addresses the issue of a minimal level of consistent follow-up care among those diagnosed and seen by a family doctor in a one-year period.

"Even having a serious mental illness like schizophrenia (which I have managed well), I had difficulty getting a psychiatrist in the first place. Even getting a GP [General Practitioner i.e. Family Physician] was very difficult. My addiction issues were alcohol and I did not want to bring that to my doctor immediately. The fragmentation of the maze of the [city] mental health system was too much. I tried to just take care of things without anyone's help."

(Person with lived experience)

Definition -

This measure is the percent of individuals who were diagnosed with a mental disorder or addiction and had **at least two visits** in a one-year period with the same physician, out of all the individuals diagnosed with a mental disorder or addiction in that year.

Data selection was done for the 2014/15 fiscal year.^{IV}

^{IV} Findings are not attributable to visits by out-of-province residents (for this and any other measure) because only residents were included in the

Graphs









analysis.

Figure 3: Access to same physician - Total



Results

- Between 75 and 98% of those aged 20 and up who have had a diagnosis of MHA have had at least two visits with the same doctor in the 2014/2015 fiscal year.
- Females and older individuals with MHA have higher percentages of at least two visits to their family physician.
- Manitoba demonstrates high rates of physician access for young adults, relative to the other provinces.
- People aged 20 to 29 years in Alberta have the lowest percentage of two or more visits to the same family physician.
- The overall pattern was stable over the three years of data included (see Technical Report for details of patterns over time).

Interpretation

- Across provinces, the majority of individuals diagnosed with MHA have two or more visits to a family physician, with the proportion increasing with age. This proportion also increases with age in people without MHA diagnosis.
- Lower percentages among younger ages in Alberta may reflect the high prevalence of transient workers in the province.

 Lower proportions among males mirror the lower use of primary care among males in the general population.

Limitations and Suggestions

- The data for those below age 20 were dropped because we did not include pediatricians in the definition of follow-up visits, which resulted in a likely underestimation for the younger age groups. This limitation can be easily addressed in the future.
- Two visits in a one-year period is a minimal degree of follow-up and may not be adequate for optimal care for individuals with more serious mental illnesses; a higher threshold may be more informative for this group.
- It was only possible to calculate repeat visits with the same primary care *physician*; not repeat visits with the same primary care *practice or network*. Given the trend toward group/team care models, it will be important to develop indicators that reflect care models with greater precision.
- Performance measurement (and interventions) related to primary care of individuals with MHA should also focus on care quality (in addition to access to regular follow-up).
- Performance measures for access to *secondary care and/or specialist care* may be a valuable next step for indicator development.

First treatment contact for a mental disorder or addiction is in an emergency department

"I had very little care for a lot of difficult symptoms (only a few walk-in clinic visits) until I was in crisis. My family took me to the ER, where I waited for many hours to see someone. After that wait I saw the ER doctor, but not a mental health professional. I was discharged in the early morning with no follow-up of any kind. My parents were told that I was just behaving badly. I later learned that there was a mental health team working at that ER, but was not referred to them. I had two more similar experiences in the ER over a couple of years, before I was referred to the appropriate type of care."

(Person with lived experience)

Rationale

Emergency departments (EDs) are sometimes an important point of first detection of an illness. Most often, however, a crisis presentation indicates a failure of early symptom identification and treatment, which is best for longer term positive outcomes and to minimize overall impact of mental illness. While many EDs are making changes to improve ED care for those with MHA, the research literature provides many reasons why EDs, for the most part, are not an optimal setting for most mental health care. The reasons include long stressful waits, crowding, stigma, lack of availability of beds for admissions, low referral rates for mental health assessments, low detection rates of MHA issues, and lack of connection to follow-up care.¹¹⁻¹⁶ A reduction in the proportion of people with a MHA diagnosis having their first contact in the ED may reflect improved identification and access to care in more appropriate settings in the community.

Definition

This measure is the number of individuals treated in a hospital emergency department for a MHArelated reason who have not been seen by any other provider (hospital, family doctor or psychiatrist) for a MHA reason in the previous two years, out of the total number of individuals treated in the same period in a hospital emergency department for a MHA reason.

Data selection was for the 2011/12, 2012/13 and 2013/14 fiscal years. The median results of the three years are presented here.

Graphs



Figure 4: First treatment contact is ED - 3-year medians

Results

- Similar patterns across the age range were found in the five provinces.
- Quebec is particularly high in comparison with other provinces, especially for ages 30 years and up.
- Manitoba has the lowest percentage of first contact in the ED.
- The highest percentage of people experiencing first contact in ED are aged 10 to 19 years in all provinces.
- Proportions increase again after age 50 years with additional peaks around age 70 and ages 85 to 90.
- The overall pattern was stable over the three years examined (see Technical Report for patterns over time).

Interpretation

 Higher percentages in younger ages are partly expected since youth have the highest rates of incidence of mental illness, and a shorter time period for symptom detection; however, these findings indicate that there is most certainly room for improvement in early identification (including by parents/guardians, in schools and in primary care).

- Sub-analysis showed that the higher percentages in older age groups were not solely attributable to dementia.
- Higher percentages in older ages may reflect other aging-related mental health issues (e.g. depression due to cognitive or physical decline) among people that have had no previous symptoms
- ED data were not complete for the entire province for Manitoba and BC. Efforts are being made to improve coverage in both provinces.
- These results may reflect need for prevention and early intervention initiatives for children and youth in the community, and vigilance for risk in the elderly by primary care and other community providers.

Limitations and Suggestions

- Visits to pediatricians were not included as part of the definition of "other" providers and have likely contributed to overestimates of first contact in ED for those below 20; this limitation can be easily addressed in the future.
- Information about prior visits to providers other than physicians such as psychologists and other community-based therapists was not available for this indicator.

Physician follow-up after hospital discharge for a mental disorder or addiction

"When I left hospital, before I left I insisted that they have something in place for me. I requested an outpatient program and so I got that. So that was a positive thing because the transition from hospital back to community after being in hospital for a month or longer for me, was quite traumatic. And that's when peer support would have been extremely important, but did not really exist yet."

(Person with lived experience).

Rationale -

Discharge from hospital has been shown to be a very difficult transition time for people admitted with MHA, using both observed outcomes and reports from people with lived experience¹⁷¹⁸. Lack of follow-up has been associated with readmissions^{19 20}, substance use relapse²¹, self-harm¹⁷, exacerbation of psychosocial stressors²² and suicide (with risk peaking in the first week after discharge) ²³⁻²⁷. Lack of timely aftercare is increased for those with co-occurring disorders, those discharged against medical advice and for minorities.²⁸ In a systematic review of interventions, Vigod et al. found that while psychiatric readmissions to hospital within 90 days are high, there is a paucity of evidence to inform best-practices.²⁹ Evidence does however suggest that transitional care interventions with pre-discharge, post-discharge, and bridging components may indeed reduce the frequency of psychiatric readmissions.²⁹ Follow-up is considered an important indicator of the quality of mental healthcare by many organizations.³⁰⁻³²

Definition –

The number of individuals discharged from a hospital stay where the primary reason for the admission was a MHA who are seen by a physician (family doctor or psychiatrist) within 7 and 30 days of discharge, out of the total number of individuals who had a hospital stay where the primary reason was a MHA, over one year.

Data selection was done for the 2014/15 fiscal year.

Graphs









Results

- Percentages seen by a physician within 7 days after discharge range from around 20 to 55% with minor variation by province and age group.
- Percentages seen by a physician within 30 days after discharge range from around 45 to 85% with greatest variation in older ages.
- Alberta and BC have the highest percentages of post-discharge follow-up which improve over the age range, whereas Québec and Ontario have lower percentages which decline over the age range; Manitoba falls in between.
- Alberta performs particularly well in 7-day follow-up for individuals 75 years and older.

Interpretation

 There is room for improvement in follow-up in all provinces but particularly in Ontario, Québec and Manitoba.

Limitations and Suggestions

- The data for those below age 20 were dropped because we did not include pediatricians in the definition of follow-up visits, which resulted in a likely underestimation for the younger age groups. This limitation can be easily addressed in the future.
- This measure does not include data on admissions and discharges for private residential addictions care.
- The measure provides no information about the adequacy/quality of follow-up care, which is a promising area for further indicator development.
- Variation by province and hospitals within provinces in the threshold for admission (i.e. how acutely ill a person is before they are admitted) may contribute to some of the variation in the timeliness of follow-up.
- Including follow-up by community mental health teams in the future, when such data are available, will benefit this indicator.

Rates of suicide attempts among people diagnosed with a mental disorder or addiction

"In [city], it's been an issue of when people are ill and in a suicidal state and go to the ER they get sent home, their family won't be notified, and they'll end up in the river. It's a big weakness that the ones that are supposed to help are sending people away."

(Person with lived experience)

Rationale

A suicide attempt is an important risk factor for a person eventually dying by suicide. Studies have shown that individuals with previous suicide attempts and those with a history of receiving psychiatric hospitalization are more likely to die by suicide.²⁴ Many people who have attempted suicide report feelings of extreme psychological distress and helplessness.³³ For every person who commits suicide, there are an estimated 15 to 20 people who attempted suicide.³⁴

While most people who have ideas about suicide do not die by suicide, they are at greater risk.³⁵ In a study of individuals who attempted suicide presenting in the ED, the ultimate death rate by suicide was 82 times higher than for those admitted to hospital and 54 times higher for those not admitted.³⁶ In one US study, individuals who presented with ideas of suicide were six times more likely to attempt suicide in the following 13 years.³⁷

According to CCHS data, youth are the most likely age group to report seriously considering suicide in the last year, and this finding has remained stable over time.³⁸ In a follow-up study of adolescents, participants with ideas of suicide were twice as likely to have symptoms consistent with a mental disorder, and almost 12 times more likely to have attempted suicide by age 30.³⁹

Definition

The number of individuals who received services for a MHA in one year who attempted (but did not die) due to suicide out of the number of people who received services for mental disorders. In the project Technical Report, we compare the results presented here with the number of individuals who did not receive services for a mental disorder in one year who attempted (but did not die) due to suicide out of all people who received services but not for a MHA.

Graphs presented here reflect only the results for those people who received services for MHA who attempted suicide. Data selection was done for the 2014/15 fiscal year.

Graphs













Results

- The pattern across age and gender groups is strikingly similar among all provinces except Manitoba.
- In all provinces, females are far more likely to attempt suicide in the younger age categories.
- Except for children and youth, rates of suicide attempts follow the same pattern for males and females in every province except Manitoba.
- Ontario has the lowest rates across the age span.
- BC and Alberta have almost identical patterns across age and sex categories.

Interpretation

- Manitoba rates of suicide attempts may be affected by having the highest proportion of Indigenous peoples in their population among the participating provinces. Suicide rates in this population are known to be higher.
- Suicide attempt rates are particularly high in youth and young adults.
- Further investigation is required to understand the reasons for the lower rate in Ontario, and to determine if there are specific interventions or policies that may be useful for other provinces.

Limitations and Suggestions

- These rates reflect hospital data only (not ED). Not all provinces can provide province-wide ED data.
- ED visits for suicide attempts are far more common than hospitalizations. Analyses by Ontario and Alberta where ED data were available produced much higher rates which indicate that ED data should be included in this measure in the future once it is available.
- Additional analyses by Alberta have demonstrated the possibility of incorrectly assigning an individual as MHA in some rare cases. A refinement to the methodology is recommended in the Technical Report.

Suicide rates among people diagnosed with a mental disorder or addiction

"In terms of the suicidal question, it's sad that a lot of physicians cannot bring themselves to ask the question: "Is this so bad that you are thinking of killing yourself – not hurting – but killing yourself?" And if it's not asked, it's unlikely that someone will volunteer it."

(Person with lived experience)

Rationale -

Suicide presents a major public health problem worldwide, especially for individuals diagnosed with mental illness. International data from the World Health Organization indicate that suicide is the 14th leading cause of death worldwide.⁴⁰ Suicide and mental health have a complex relationship and people with mental illness have higher rates of suicidal thoughts and suicide mortality than the general population. In 2012, the overall suicide rate in Canada was 10.8 per 100,000³⁸; this figure has remained relatively stable over time. Males are more likely to die by suicide, at a rate three times higher than females.^{38 41}

Multiple research studies have determined that individuals face an increased risk of suicide after recent psychiatric hospitalization.^{27 42} Hunt et al. found that in a sample of 238 cases, 43% of suicides occurred within a month of discharge, and they identified the first week and the first day after being discharged as a high risk period.²⁷ In a UK study of 16,411 individuals who had died by suicide in a 15-year time period, 24% of deaths occurred within the first three months of being discharged from hospital (58% of these were from a general hospital rather than a psychiatric hospital).⁴³

Well-documented risk factors for suicide include a history of self-harm, a history of suicide attempts, being diagnosed with a mental disorder, and harmful use of drugs and/or alcohol.^{27 44 45}

Definition -

The number of individuals who received services for a mental disorder in one year who died due to suicide, out of the number of people who received services for a MHA; compared with the number of individuals who did not receive services for a MHA in one year who died due to suicide out of the number of people who received health care services but not for a MHA.

Tables

OVERALL	# MHA			# non MHA		
Province	Individuals	Suicides	Rate/1000	Individuals	Suicides	Rate/1000
Quebec	849,795	505	0.594	4,651,195	610	O.131
Ontario	3,064,615	808	0.264	7,930,046	577	0.073
Manitoba	203,178	99	0.487	736,165	90	0.122
Alberta						
British Columbia	759,904	419	0.551	2,440,533	130	0.053

*Alberta could not provide the necessary linkage to Vital Statistics data within the short time frame of the project; but this is possible in the future. The fiscal year for selection varied by data availability in each province from 2009/10 - 2013/14.

MALES	# MHA			# non MHA		
Province	Individuals	Suicides	Rate/1000	Individuals	Suicides	Rate/1000
Quebec	347,645	345	0.992	2,100,795	500	0.238
Ontario	1,312,678	534	0.407	3,881,135	443	0.114
Manitoba	81,598	49	0.601	350,780	65	0.185
Alberta						
British Columbia	301,224	282	0.936	1,198,160	107	0.089

FEMALES	# MHA			# non MHA		
Province	Individuals	Suicides	Rate/1000	Individuals	Suicides	Rate/1000
Quebec	502,145	160	0.319	2,550,400	105	0.041
Ontario	1,751,937	274	0.156	4,048,911	134	0.033
Manitoba	121,580	50	0.411	385,385	25	0.065
Alberta						
British Columbia	458,680	137	0.299	1,242,373	23	0.019

Results -

- People diagnosed with a MHA have a three to ten times higher suicide rate compared with those not diagnosed with a MHA.
- Males die by suicide at a higher rate than females.
- Although the rate of non-MHA suicide is much lower, the number of suicides among people who are not known to the system is substantial, and in fact comparable to the number of suicides among MHA. The rates are disparate because the total number of people in the non-MHA population (denominator) is much larger. Accordingly, 44% of suicides are completed by people who are unknown to the mental health services system (as defined by the available administrative data).

Interpretation -

- There is room to improve prevention overall and specifically for people at risk of suicide who have not accessed services for a mental disorder or addiction.
- The variation in suicide rates among those with and without MHA vary by both the number of suicides in the population and/or by the proportion of the population accessing services for MHA.

Limitations and Suggestions

- The criteria for determination of death as a suicide and the timing of the determination varies across provinces; there is room for improvement in standardizing these processes.
- There are services for MHA which are not included here due to data availability. The measure does not include community mental health data so the people in the non-MHA group may have received services not captured in the health administrative data.

Mortality of people diagnosed with a mental disorder or addiction

"Even getting medical attention for something like addiction, you do not always want to take the advice. The other thing was medications... A lot of these psych meds cause extreme physical illness and lead to early death. Like that's a trend: heart disease, diabetes, etc. I am fortunate that I was able to land in the system at a young age with early intervention, but it still took two years."

(Person with lived experience)

Rationale –

Studies have shown that individuals with mental illness die at an earlier age compared to the general population.^{46 47} A recent meta-analysis showed that the relative mortality risk among individuals with mental disorders was 2.²² times higher than the general population.⁴⁸ A UK study of 150,000 mental health service users in London found that the standardized mortality ratio for individuals with mental illness was 2.¹⁵ for all types of serious mental illness in individuals with schizophrenia, affective disorders, and substance use disorders, relative to other mental disorders.⁴⁹

The link between mental health disorders and mortality is complex because most people do not die of their mental health condition – they die of other chronic diseases.⁴⁸ Emerging research has begun to identify risk factors associated with excess deaths including: diabetes and related metabolic syndromes; high blood pressure; and obesity.⁵⁰ People with mental disorders are also more likely to have poorer nutrition, insufficient exercise, and are much more likely to smoke cigarettes, all of which can result in chronic physical conditions and adverse outcomes, particularly death from heart disase.^{51 52} Compounding these greater physical health problems, people with mental disorders, on average, have poorer quality medical care.⁵³

Definition

The number of individuals identified as being treated for a MHA problem in the previous two years who died in the year being analyzed out of the number of individuals expected to die in the year given the age-sex specific death rates of the population of the province.

The graphs present the median results for three fiscal years: 2010/11, 2011/12, and 2012/13. Hospital discharges are seen as a proxy measure for severe mental illness.

Graphs





Figure 11: Standardized mortality for people hospitalized for MHA



Results

- Manitoba, Alberta and BC have very similar patterns.
- Across all age categories (except 85+), those with MHA have 1.5 2.5 times higher mortality in every province.
- For people with MHA who have been in hospital with MHA, the SMR is much higher.
- Analyses by gender indicated that there are no important differences between men and women on this measure (see Technical Report for details).
- The graphs present the median results for three fiscal years: 2010/11, 2011/12, and 2012/13. Very little difference was found across each year.

Interpretation -

- People with a MHA have much higher mortality rates than those without a MHA. This is particularly the case for those recently discharged from hospital.
- Mortality ratios are greater in young adults and adults with MHA.
- While the mortality ratio decreases over the age range, higher risk of death for those with MHA persists into later life.
- Even though all of the causes of elevated mortality are not fully understood, there is clearly room for better monitoring and clinical management of physical health issues as well as health promotion initiatives to decrease these health disparities.
- Given the persistence of excess mortality, particularly in younger age groups, there is an imperative for further research and action in this area.

Limitations and Suggestions

- The number of deaths in the 10 to 14-year age group were too few to generate reliable estimates for that age group.
- It is possible to do further break-downs of this and other measures by type of MHA diagnosis to inform specific groups of concern to be targeted for intervention (ex. schizophrenia).

Key Learnings and Recommendations

In this section, we return to the learnings in relation to the original project questions, and provide some suggestions for future work.

Key Learnings

Can 5 provinces generate and report mental health indicators in a standardized way?

- The collaborative cross-province process worked well in this 'proof-of-concept' project. We were able to agree on consensus definitions that, for the most part, worked for the generation of comparable data for all five provinces for two measures and for four provinces for the other four measures within in a reasonable timeframe.
- Access processes differed by province and data were available in some provinces much sooner than others.
- It was also shown that it was possible to generate within-province estimates for the measures that can be used for planning mental health system improvements.
- To our knowledge this is the first time that provincial comparisons have been made for measures of the mental health service system.

Are the differences in the measures across provinces important and meaningful?

- For most indicators, the values across provinces and distributions by age and gender presented plausible patterns.
- There appear to be important and meaningful differences across provinces in the measures, which represent opportunities for system improvement through investigation into best practices.
- Indicators are inherently crude estimates of performance and are better suited to generate more refined questions and areas of focus. The indicators developed for this report can be replicated over time which may demonstrate impact by changes in health service delivery or policy that are implemented. The results from these indicators can also help frame more detailed research questions to better understand the variations highlighted.

What are some of the major gaps in data?

- Some measures were not complete in younger ages due to the exclusion of pediatrician care in the definitions. This is an easily corrected gap.
- The access to the same family physician measure could be revised to reflect more levels of care according to need (e.g. for more serious illnesses) and to reflect changing models of care (e.g. repeat visits to multi-disciplinary teams/ practices, not only single physicians).
- The First Contact ED and Hospital Follow-up measures would benefit from a more complete picture of care, such as visits to other providers including those in community-based clinics and private psychologists.
- Services are delivered in many more settings than are represented by the indicators developed for this report. Data availability precluded the inclusion of community-based mental health services and other forms of non-acute care. Some provinces are pursuing data linkages to increase the capacity to measure mental health system performance to better represent the entire mental health sector.
- Future indicators should be developed to reflect more patient/client-focused outcomes such as functional outcomes or quality of life.

How can this work evolve so that it may help inform policy decisions?

- These measures could be generated on a regular basis to track improvements in the healthcare system within and across provinces. Some provinces were able to do further analyses by sub-region and hospital to potentially inform more specific actions.
- New measures of importance to stakeholders can be developed and generated including: access to and quality of community care; secondary and specialist care; prevention and early intervention; and recovery-oriented measures.
- Work to develop a conceptual framework for these and other measures could be undertaken in consultation with stakeholders.

- Other provinces and territories could be included in the process for a more comprehensive, national picture of mental health system performance.
- Other sources of data to complement health system administrative data could be added.

Recommendations

This work represents an important first step in our vision for comprehensive, regular, mental health and addiction system performance measurement. The work needs a 'home', that is, a mechanism for oversight, a sustainable infrastructure and technical capacity, as well as capacity for engagement of stakeholders, including health system decisionmakers and persons with lived experience of MHA and their families. We have demonstrated that collaborative cross-province processes for the generation of performance measures for mental health services is possible. There is enormous potential now to sustain and expand these successes for the ultimate benefit and quality of life for Canadians with mental health and addictions issues and their families.

Appendix A

Research Team Members

The project was completed by a pan-Canada team of provincial partners and researchers noted below:

British Columbia

Dr. Elliot Goldner, Professor, Faculty of Health Sciences, Simon Fraser University and Director, Centre for Applied Research in Mental Health & Addiction (CARMHA)

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Dr. Jeff Bakal, Lead, Health Research Methods and Analytics, Alberta Health Services; Alberta SPOR SUPPORT Unit Data Platform; Patient Health Outcomes Research and Clinical Effectiveness Unit, University of Alberta

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Manitoba

Mark Smith, Associate Director, Repository, Manitoba Centre for Health Policy

Dr. James Bolton, Director of Research, Dept. of Psychiatry, University of Manitoba; Adjunct Scientist, Manitoba Centre for Health Policy

Dr. Jitender Sareen, Professor and Head, Dept. of Psychiatry, University of Manitoba; Group Leader, Manitoba Population Mental Health Research Group

Dr. Murray Enns, Professor, Dept. of Psychiatry, University of Manitoba; Adjunct Scientist, Manitoba Centre for Health Policy

Ontario

Dr. Paul Kurdyak, Senior Scientist and Lead, Mental Health and Addictions Research Program, Institute for Clinical Evaluative Sciences (ICES); Assistant Professor, Dept. of Psychiatry, University of Toronto; Center for Addictions and Mental Health (CAMH)

Dr. Simone Vigod, Scientist, Women's College Research Institute; Adjunct Scientist, ICES and Associate Professor, Dept. of Psychiatry, University of Toronto

Québec

Dr. Alain Lesage, Professor, Dept. of Psychiatry, University of Montreal; Researcher, Institute Universitaire en Santé Mentale de Montréal

Louis Rochette, Analyst, Institut national de santé publique de Québec (INSPQ)

Eric Pelletier, Head of Sector, Institut national de santé publique de Québec (INSPQ)

Appendix B

Advisory Committee Members

The research team wishes to express enormous gratitude to the Advisory Committee members noted below:

National Organizations

Ian Boeckh, President, Graham Boeckh Foundation

Glenn Brimacombe, CEO, Canadian Psychiatric Association

Christopher Canning, Manager, Policy & Research, MHCC

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William Murray, Mental Health Advisor, Mental Health Directorate, Ministry of Health & Social Services (Québec)

Appendix C

Details about each provincial data source and process

British Columbia

Data were accessed through Population Data BC (PopData) at the University of British Columbia. PopData provides research access to individuallevel de-identified longitudinal data on BC residents. PopData holds 19 data sets from 2 federal and 6 provincial sources covering health, population and vital statistics, demographics and life course, workplace, and childhood development. PopData facilitates access to one of the world's largest collections of health care, health services, and population health data as well as education and training services on use of the data.^v

Alberta

In Alberta, a collaboration was set up between the University of Calgary, Alberta Health Services (AHS) Mental Health and Addictions Strategic Clinical Network (SCN) and the Alberta Strategy for Patient-Oriented Research Unit (ABSPORU) Data and Methods Platforms. ABSPORU is funded by Alberta Innovates and the Canadian Institutes for Health Research (CIHR). The data platform allowed for research access to and analysis of hospital, ER and physician billing data while protecting the security and privacy of records. Linkage and analytic approach were directed by the research team, but the dataset remained in an Alberta Health Services secure setting. The process was governed by the University of Calgary Conjoint Health Research Ethics Board approval and data access agreements with AHS.

Manitoba

Data were accessed through the Manitoba Centre for Health Policy (MCHP) at the University of Manitoba. MCHP houses the Manitoba Population Research Data Repository, which is a comprehensive collection of administrative, registry, survey, and other data related to the residents of Manitoba. MCHP acts as a steward of the information in the repository for agencies and researchers.^{VI}

Ontario

Data were accessed through the Institute for Clinical Evaluative Sciences (ICES). ICES is an independent, non-profit organization that undertakes research that informs the health system on a wide range of issues using linked health administrative data in Ontario. ICES provides analytic support, advice, and access to linked health administrative data and analytic tools.^{VII}

Québec

Québec does not currently have infrastructure to systematically coordinate applications for access to linked health administrative data or provide analytic support to researchers who may wish to use the data. For this project, data were accessed through the Institut national de santé publique Québec (INSPQ).^{VIII} The INSPQ includes experts from health science, social sciences and humanities and they work with health and social service networks to develop public health knowledge and skills. INSPQ has a specific mandate to support the provincial Minister of Health and Social Services in carrying out public health responsibilities. CARMHA worked with INSPQ to develop a contract and data request specific to this project.

^{vi} MHCP website: http://umanitoba.ca/faculties/health_sciences/medicine/ units/chs/departmental_units/mchp/

- VII ICES website: http://www.ices.on.ca/DAS
- VIII INSPQ website: https://www.inspq.qc.ca/en

^v PopData website: https://www.popdata.bc.ca/home

Table 2: Project Phases & Timeline

Project Phase	Duration	Description
Data Specification & Definitions	Sept 2015 - Dec 2015	During this phase, CARMHA met separately with each of the provincial data teams to discuss administrative data access procedures and challenges specific to each province. The Data Specification Working Group (DSWG) was formed. The DSWG met weekly for several months to discuss and decide on the list of feasible indicators and their specifications. An indicators specifications document was drafted by CARMHA and updated after each DSWG meeting.
Data Access Requests and Research Ethics Submissions	Dec 2016 - July 2016	Upon completion of the indicator specifications and definitions, each provincial team worked to prepare and submit data access requests in their home province with the support of CARMHA. The length of time required to prepare data access requests varied across provinces. During this phase, CARMHA also worked with the Michael Smith Foundation for Health Research on a Formative Review of the project. The Formative Review was completed in July 2016.
Consultation with People with Lived Experience of MHA and MHA Services	Sept 2016	The project lead and manager conducted a focus group with the Hallway Group of the Mental Health Commission of Canada.
Data Analysis	June 2016 - Dec 2016	The first province to produce and submit data was Alberta, in June 2016. The last province was BC, in December 2016. During this phase, data were analyzed and sent to CARMHA for cross- provincial comparisons. Graphs, tables and technical content was developed by CARMHA using the data submitted by the provincial teams.
Data Interpretation	Jan 2017 - Mar 2017	 Upon completion of the data analysis, the research team worked together on the interpretation of the provincial patterns. The Data Interpretation Working Group (DIWG) was formed and met on several occasions to discuss the cross-provincial trends. Questions considered for each indicator included: Are there differences between the provinces? Are those differences meaningful?
Final Report	Jan 2017 - July 2017	Project background, processes, measures, and results are written up in a final report.
Draft Report Embargo Period	July 10 - 24, 2017	Two week embargo period to allow the Advisory Committee and provincial stakeholders to review the report prior to official release.
Production and release of the report	July 2017 - Aug 2017	Report is finalized and made publicly available.

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