

Schizophrenia

Care for Adults in Hospitals

Measurement Guide

2023 Update

Table of Contents

1. How to Use the Measurement Guide	3
1.1 Important Resources for Quality Implementation.....	3
2. Quality Indicators in Quality Standards	4
2.1 Measurement Principles.....	4
2.2 Process Indicators.....	4
2.3 Structural Indicators	5
2.4 Outcome Indicators.....	5
2.5 Balancing Measures.....	6
3. Local Measurement.....	7
3.1 Local Data Collection.....	7
3.2 Measurement Principles for Local Data Collection.....	7
3.3 Benchmarks and Targets	9
4. Provincial Measurement	10
4.1 Accessing Provincially Measurable Data	10
5. Measurement to Support Improvement.....	11
5.1 Quality Standard Scope	12
5.2 Cohort Identification.....	12
5.3 Indicators That Can Be Measured Using Provincial Data	13
5.4 Indicators That Can Be Measured Using Only Local Data.....	22
6. Resources and Questions.....	27
6.1 Resources	27
6.2 Questions?.....	27
7. Appendix: Data Sources Referenced in This Quality Standard.....	28

1. How to Use the Measurement Guide

This document is meant to serve as a measurement guide to support implementation of the *Schizophrenia Care for Adults in Hospitals* quality standard. Care in hospital for people with schizophrenia is a critical issue, and there are significant gaps and variations in the quality of care that people with schizophrenia receive in Ontario. Recognizing this, Ontario Health released this quality standard to identify opportunities that have a high potential for quality improvement.

This guide is intended for use by those looking to implement the *Schizophrenia: Care for Adults in Hospitals* quality standard, including health care providers working in regional or local roles.

This guide has dedicated sections for each of the two types of measurement within the quality standard:

- Local measurement: what you can do to assess the quality of care that you provide locally
- Provincial measurement: how we can monitor the progress being made to improve care on a provincial level using existing provincial data sources

1.1 Important Resources for Quality Implementation

Ontario Health has created resources to assist with implementation of quality standards:are

- Our placemat, which summarizes the quality standard and includes links to helpful resources and tools
- Our *Getting Started Guide*, which includes links to templates and tools to help you put quality standards into practice. This guide shows you how to plan for, implement, and sustain changes in your practice
- Quorum, which is an online community dedicated to improving the quality of care across Ontario. This is a place where health care providers can share information and support each other, and it includes tools and resources to help you implement the quality statements within each quality standard
- The Health Equity Impact Assessment tool, which can help your organization consider how programs and policies impact population groups differently. This tool can help maximize positive impacts and reduce negative impacts, with an aim of reducing health inequities between population groups

2. Quality Indicators in Quality Standards

Quality standards inform providers and patients about what high-quality health care looks like for aspects of care that have been deemed a priority for quality improvement in the province. They are intended to guide quality improvement, monitoring, and evaluation.

Measurability is a key element in developing and describing the quality statements; each statement is accompanied by one or more indicators. This section describes the measurement principles behind the quality indicators, the process for developing these indicators, and the technical definitions of the indicators.

An effective quality statement must be measurable. Measurement is necessary to demonstrate if a quality statement has been properly implemented, and if it is improving care for patients. This is a key part of the [Plan-Do-Study-Act](#) improvement cycle. If measurement shows there has been no improvement, you need to consider a change or try something different.

2.1 Measurement Principles

The process, structure, and outcome indicator framework was developed by [Avedis Donabedian](#) in 1966. The three indicator types play essential and interrelated roles in measuring the quality of health care and the impact of introducing and using quality standards.

The indicators provided are suggestions. It is not expected that every provider, team, or organization will be able to measure all of them (or even want to measure all of them), but they can identify which indicators best capture areas of improvement for their care and what can be measured given existing local data sources.

2.2 Process Indicators

Process indicators assess the activities involved in providing care. They measure the percentage of individuals, episodes, or encounters for which an activity (process) is performed. In most cases, the numerator should specify a time frame in which the action is to be performed, established through evidence or expert consensus. When a quality statement applies to a subset of individuals rather than the total population, the denominator should reflect the population of the appropriate subgroup, rather than the entire Ontario population. If exclusions are required or stratifications are suggested, they are reflected in the indicator specifications.

Process indicators are central to assessing whether or not the quality statement has been achieved; nearly all quality statements are associated with one or more process indicators. In most cases, the numerator and denominator for process indicators can be derived from the language of the quality statement itself; additional parameters (such as a time frame) can also appear in the background and definitions sections. In some cases, a proxy indicator is provided that indirectly measures the process. Proxy indicators are used only when the actual indicator cannot be measured with currently available data.

While most quality statements focus on a single concept and are linked with a single process indicator, some statements include two or more closely related concepts. In these cases, multiple process indicators can be considered to capture all aspects of the quality statement. For example, a quality statement might suggest the need for a comprehensive assessment with several components, and each of those components might have a process indicator.

Examples of process indicators include the percentage of patients with hip fracture who receive surgery within 48 hours, or the percentage of patients with schizophrenia who are offered clozapine. Please refer to the published [quality standards](#) for more examples.

2.3 Structural Indicators

Structural indicators assess the structures and resources that influence and enable delivery of care. These can include equipment; systems of care; availability of resources; and teams, programs, policies, protocols, licences, or certifications. Structural indicators assess whether factors that are in place are known to help in achieving the quality statement.

Some quality statements have structural indicators associated with them. Structural indicators are binary or categorical and do not require the definition of a numerator and denominator. However, in some cases it could be useful to specify a denominator defining an organizational unit, such as a hospital, a primary care practice, or a local region. In many cases data to measure structural indicators are not readily available using existing administrative data, so local data collection might be required. This local data collection might require regional or provincial level data collection systems to be developed.

Structural indicators should be defined for a quality statement or for the quality standard as a whole when there is strong evidence that a particular resource, capacity, or characteristic is important for enabling the effective delivery of a process of care. It should be theoretically feasible for these structural elements to be implemented across Ontario, even if adoption is aspirational in some cases. In rare instances, a quality statement might have two or more associated structural indicators, if the quality standard advisory committee decides that multiple factors are crucial to the delivery of the quality statement.

Examples of structural indicators include the local availability of cognitive behavioural therapy (CBT) programs, the existence of discharge planning protocols, or access to a specialized behavioural support team. Please refer to the published [quality standards](#) for more examples.

2.4 Outcome Indicators

Outcome indicators assess the end results of the care provided. They are crucial and are arguably the most meaningful measures to collect, but many health outcomes—such as mortality or unplanned hospital readmissions—are often the product of a variety of related factors and cannot be reliably attributed to a single process of care. For this reason, although relatively few quality statements are directly linked to an outcome indicator, a set of overall measures—including key outcome indicators—is defined for the quality standard as a whole, reflecting the combined intended effect of all of the quality statements in the standard. Similar to process indicators, outcome indicators should be specified using a

defined denominator and a numerator that, in most cases, should include a clear time frame.

Examples of outcome indicators include mortality rates, improvement (or decline) in function, and patients' experience of care. Please refer to the published [quality standards](#) for more examples.

2.5 Balancing Measures

Balancing measures indicate if there are important unintended adverse consequences in other parts of the system. Examples include staff satisfaction and workload. Although they are not the focus of the standard and generally not included in the standard, the intention of these types of measures is to monitor the unintended consequences.

3. Local Measurement

As part of the *Schizophrenia Care for Adults in Hospitals* quality standard, *specific* indicators were identified for each of the statements to support measurement for quality improvement.

As an early step in your project, we suggest that your team complete an *initial assessment* of the relevant indicators in the standard and come up with a draft measurement plan.

Here are some concrete next steps:

- Review the list of identified indicators for each quality statement (see Appendix 2 in the quality standard), and determine which ones you will use as part of your implementation planning, given your knowledge of current gaps in care
- Determine the availability of data related to the indicators you have chosen
- Identify a way to collect local data related to your chosen indicators. This may be through clinical chart extraction or administration of local surveys for example
- Develop a draft measurement plan

The earlier you complete the above steps, the more successful your quality improvement project is likely to be.

3.1 Local Data Collection

Local data collection refers to data collection at the health provider or team level for indicators that cannot be assessed using provincial administrative or survey databases (such as databases held by the Institute for Clinical Evaluative Sciences [ICES] or the Canadian Institute for Health Information). Examples of local data include data from electronic medical records, clinical patient records, regional data collection systems, and locally administered patient surveys. Indicators that require local data collection can signal an opportunity for local measurement, data advocacy, or improvement of data quality.

Local data collection has many strengths: it is timely, can be tailored to quality improvement initiatives, and is modifiable on the basis of currently available data. However, caution is required when comparing indicators using local data collection between providers and over time to ensure consistency in definitions, consistency in calculation, and validity across patient groups.

3.2 Measurement Principles for Local Data Collection

Three types of data can be used to construct measures in quality improvement: continuous, classification, and count data. For all three types of data, it is important to consider clinical relevance when analyzing results (i.e., not every change is a clinically relevant change).

3.2.1 Continuous Data

Continuous data can take any numerical value in a range of possible values. These values can refer to a dimension, a physical attribute, or a calculated number. Examples include patient weight, number of calendar days, and temperature.

3.2.2 Classification Data

Classification (or categorical) data are recorded in two or more categories or classes. Examples include sex, race, or ethnicity, and number of patients with depression versus number of patients without depression. In some cases, you might choose to convert continuous data into categories. For example, you could classify patient weight as underweight, normal weight, overweight, or obese.

Classification data are often presented as percentages. To calculate a percentage from classification data, you need a numerator and a denominator (a percentage is calculated by dividing the numerator by the denominator and multiplying by 100). The numerator includes the number of observations meeting the criteria (e.g., number of patients with depression), and the denominator includes the total number of observations measured (e.g., total number of patients in clinic). Note that the observations in the numerator must also be included in the denominator (source population).

Examples of measures that use classification data include percentage of patients with a family physician and percentage of patients who receive therapy.

3.2.3 Count Data

Count data often focus on attributes that are unusual or undesirable. Examples include number of falls in a long-term care home and number of medication errors.

Count data are often presented as a rate, such as the number of events per 100 patient-days or per 1,000 doses. The numerator of a rate counts the number of events/nonconformities, and the denominator counts the number of opportunities for an event. It is possible for the event to occur more than once per opportunity (e.g., a long-term care resident could fall more than once).

Rate of 30-day hospital readmission =

$$\frac{\text{Number of hospital readmissions within 30 days of discharge [numerator]}}{\text{Number of discharges from hospital [denominator]}}$$

3.2.4 Benefits of Continuous Data

It is common practice in health care to measure toward a target instead of reporting continuous measures in their original form. An example would be measuring the number of patients who saw their primary care physician within 7 days of hospital discharge instead of measuring the number of days between hospital discharge and an appointment with a primary care physician. Targets should be evidence-based or based on a high degree of consensus across clinicians.

When a choice exists, continuous data sometimes are more useful than count or classification data for learning about the impact of changes tested. Measures based on

continuous data are more responsive and can capture smaller changes than measures based on count data; therefore, it is easier and faster to see improvement with measures based on continuous data. This is especially true when the average value for the continuous measure is far from the target. Continuous data are also more sensitive to change. For example, while you might not increase the number of people who are seen within 7 days, you might reduce how long people wait.

3.3 Benchmarks and Targets

Benchmarks are markers of excellence to which organizations can aspire. Benchmarks should be evidence-based or based on a high degree of consensus across clinicians. At this time, Ontario Health does not develop benchmarks for the quality standards indicators. Users of these standards have variable practices, resources, and patient populations, so one benchmark might not be practical for the entire province.

Targets are goals for care that are often developed in the context of the local care environment. Providers, teams, and organizations are encouraged to develop their own targets appropriate to their patient populations, their current performance, and their quality improvement work. Organizations that include a quality standard indicator in their quality improvement plans are asked to use a target that reflects improvement. Time frame targets, like the number of people seen within 7 days, are typically provided with process indicators intended to guide quality improvement.

In many cases, achieving 100% on an indicator is not possible. For example, someone might not receive care in a wait time benchmark due to patient unavailability. This is why it is important to track these indicators over time, to compare results against those of colleagues, to track progress, and to aim for the successful implementation of the standard.

For guidance on setting benchmarks and targets at a local level, refer to:

- [Approaches to Setting Targets for Quality Improvement Plans](#)
- [Long-Term Care Benchmarking Resource Guide](#)

4. Provincial Measurement

In its quality standards, Ontario Health strives to incorporate measurement that is standardized, reliable, and comparable across providers to assess the impact of the standards provincially. Where possible, indicators should be measurable using province-wide data sources. However, in many instances data are unavailable for indicator measurement. In these cases, the source is described as local data collection.

For more information on the data sources referenced in this standard, please see the **appendix**.

4.1 Accessing Provincially Measurable Data

Provincial platforms are available for users to create custom analyses to help you calculate results for identified measures to monitor the progress being made to improve care. Examples of these platforms include IntelliHealth and eReports. Please refer to the links below to determine if you have access to the platforms listed.

4.1.1 IntelliHealth—Ministry of Health

[IntelliHealth](#) is a knowledge repository that contains clinical and administrative data collected from various sectors of the Ontario healthcare system. IntelliHealth enables users to create queries and run reports through easy web-based access to high quality, well organized, integrated data.

4.1.2 eReports—Canadian Institute for Health Information

[Quick Reports](#) offer at-a-glance comparisons for the organizations you choose. The tool also provides some ways to manipulate the pre-formatted look and feel of the reports. [Flexible or Organization Reports](#) offer you many choices to compare your organization's data with those of other organizations. With these customizable reports, you can view data by different attributes and for multiple organizations.

4.1.3 Applied Health Research Questions (AHRQ) – Institute for Clinical Evaluative Sciences

ICES receives funds from the Ministry of Health to provide research evidence to organizations from across the Ontario health care system (Knowledge Users). This knowledge is used to inform planning, policy and program development. Knowledge Users can submit an [Applied Health Research Question](#) (AHRQ) to ICES. As a health services research institute that holds Ontario's administrative data, ICES is well positioned to respond to AHRQs that directly involve the use of ICES data holdings.

5. Measurement to Support Improvement

This measurement guide accompanies Ontario Health's *Schizophrenia: Care for Adults in Hospitals* quality standard. Early in the development of each quality standard, several performance indicators are chosen to monitor the progress being made to improve care for people with schizophrenia. These indicators guide the development of the quality standard so that every statement within the standard aids in achieving the standard's overall goals.

This measurement guide includes information on the definitions and technical details of the indicators listed below:

- Number of deaths by inpatient suicide among adults with a primary diagnosis of schizophrenia
- Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who die by suicide within 30 days of discharge
- Rates of readmission to any facility within 7 days and 30 days of discharge, stratified by the reason for readmission:
 - Any reason
 - A reason related to mental health and addictions
 - Schizophrenia
- Rates of unscheduled emergency department visits after hospital inpatient discharge within 7 days and 30 days, stratified by the reason for the visit:
 - Any reason
 - A reason related to mental health and addictions
 - Schizophrenia
 - Self-harm
- Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in behavioural symptoms between admission and discharge, stratified by their length of stay
- Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in positive symptoms between admission and discharge, stratified by their length of stay

This guide includes data sources for indicators that can be consistently measured across providers, across the sectors of health care, and across the province.

Indicators are categorized as:

- Provincially measurable (there are well defined or validated data sources available)
or
- Locally measurable (the indicator is not well defined, and data sources do not currently exist to measure it consistently across providers and at the system level)

For more information on statement-specific indicators, please refer to the quality standard (Appendix 2).

5.1 Quality Standard Scope

This quality standard addresses **care for adults aged 18 years and older with a primary diagnosis of schizophrenia** (including related disorders such as schizoaffective disorder) who are seen in an emergency department or admitted to an inpatient setting. This quality standard also includes guidance for the care of people who are transitioning from the inpatient setting to the community. Although this quality standard is focused on hospital care, some of the interventions described are likely to take place outside of the hospital following their initiation or a referral in hospital. All patients should have a follow-up visit after initiating any new treatment.

For a quality standard that addresses care for adults with schizophrenia in the community, please refer to [Schizophrenia: Care in the Community for Adults](#).

This quality standard includes 11 quality statements and 1 emerging practice statement. They address areas identified by Ontario Health's Schizophrenia Care in the Hospital Quality Standard Advisory Committee as having high potential for improving the quality of care in Ontario for people with schizophrenia.

5.2 Cohort Identification

Individuals age 18 years and older who are hospitalized with schizophrenia or schizoaffective disorder can be identified through the Discharge Abstract Database (DAD) and the Ontario Mental Health Reporting System (OMHRS).

The following codes can be used to identify hospitalizations with schizophrenia or schizoaffective disorder, as of fiscal year 2019/20:

- DAD (ICD-10-CA): F20 (excluding F20.4), F25
- OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1
 - For short stays where the ICD-10-CM code is missing, Provisional code = 2

Emergency department visits for people with a diagnosis of schizophrenia or schizoaffective disorder can be identified using the following ICD-10-CA codes:

- F20 (excluding F20.4), F25.

5.2.1 Equity Considerations

Consider collecting data and measuring indicators by various equity stratifications that are relevant and appropriate for your population, such as patient socioeconomic and demographic characteristics. These may include age, education, gender, income, language, race/ethnicity, and sex. Please refer to Appendix 4, Values and Guiding Principles, in the quality standard for additional equity considerations.

5.3 Indicators That Can Be Measured Using Provincial Data

The Schizophrenia Care in the Hospital Quality Standard Advisory Committee identified a number of overarching goals **for this quality standard**. These have been mapped to indicators that may be used to assess the quality of care provincially. The following indicators are currently potentially measurable in Ontario's health care system using clinical administrative databases:

- Number of deaths by inpatient suicide among adults with a primary diagnosis of schizophrenia
- Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who die by suicide within 30 days of discharge
- Rates of readmission to any facility within 7 days and 30 days of discharge, stratified by the reason for readmission:
 - Any reason
 - A reason related to mental health and addictions
 - Schizophrenia
- Rates of unscheduled emergency department visits after hospital inpatient discharge within 7 days and 30 days, stratified by the reason for the visit:
 - Any reason
 - A reason related to mental health and addictions
 - Schizophrenia
 - Self-harm

Methodologic details are described in the tables below.

Table 1: Number of deaths by inpatient suicide among adults with a primary diagnosis of schizophrenia

General Description	
Indicator description	<p>This indicator measures the number of deaths by inpatient suicide among people with a primary diagnosis of schizophrenia</p> <p>Directionality: A lower number is better.</p>
Measurability	Measurable at the provincial level
Dimensions of quality	Effectiveness, safety
Quality statement alignment	All quality standard statements align
Definition and Source Information	
Calculation: General	<p>Count: Number of inpatient suicides</p> <p>DAD as of Fiscal Year 2018-2019: Discharge Disposition= 74, Suicide in Facility OMHRS: Discharge Reason (Data Element X90) = 2 (died as a result of suicide)</p> <p><i>Inclusions</i> Among acute care discharges from episodes of care in which schizophrenia was coded as most responsible diagnosis</p> <p>Age ≥ 18 y</p> <p>Diagnosis codes</p> <ul style="list-style-type: none"> • DAD (ICD-10-CA): F20 (excluding F20.4), F25, (as the most responsible diagnosis) • OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1 (as the primary diagnosis), or, for short stays where the ICD-10-CM primary diagnosis code is missing, Provisional code = 2 <p><i>Exclusions</i> n/a</p> <p>Method Count of volumes.</p> <p>Data sources DAD, OMHRS</p>

Additional Information

Limitations N/A

Comments N/A

Abbreviations: DAD, Discharge Abstract Database (Canadian Institute for Health Information); ICD-10-CA, *International Statistical Classification of Diseases and Related Health Problems*, 10th revision, Canada; ICD-10-CM, *International Classification of Diseases*, 10th Revision, Clinical Modification; OMHRS, Ontario Mental Health Reporting System.

Table 2: Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who die by suicide within 30 days of discharge

General Description

Indicator description This indicator measures the percentage of people admitted to hospital with a primary diagnosis of schizophrenia who die by suicide within 30 days of discharge

Directionality: A lower percentage is better.

Measurability Measurable at the provincial level

Dimensions of quality Effectiveness, safety

Quality statement alignment All quality standard statements align

Definition and Source Information

Calculation: General

Denominator

Acute care discharges in which schizophrenia is coded as most responsible diagnosis. The index cases are identified from both the DAD and OMHRS databases

Inclusions

Age ≥ 18 y

Discharged alive: In DAD, discharge disposition not equal to: 07, 08, 09, 66, 67, 72, 73, 74. In OMHRS, discharge reason not equal to: 2, 3

Diagnosis codes

- DAD (ICD-10-CA): F20 (excluding F20.4), F25, (as the most responsible diagnosis)
- OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1 (as the primary diagnosis), or, for short stays where the ICD-10-CM primary diagnosis code is missing, Provisional code = 2

Exclusions

Records without a valid health insurance number
Records without an Ontario residence
Gender not recorded as male or female
Invalid date of birth, admission date/time, discharge date/time

Numerator

The number in the denominator who die within 30 days of discharge with the leading cause of death identified as suicide

ICD-10 codes for leading cause of death: X60-X84, Y87.0

Method

Numerator ÷ Denominator × 100

Data sources:

DAD, OMHRS, Vital Statistics (Statistic Canada)

Additional Information

Limitations

Probabilistic linkage may be required to link between Vital Statistics death data and DAD/OMHRS data. Due to the delay in accessing Vital Statistics data, data for this indicator will not be available in a timely manner

Comments

N/A

Abbreviations: DAD, Discharge Abstract Database (Canadian Institute for Health Information); ICD-10-CA, *International Statistical Classification of Diseases and Related Health Problems*, 10th revision, Canada; ICD-10-CM, *International Classification of Diseases*, 10th Revision, Clinical Modification. OMHRS, Ontario Mental Health Reporting System

Table 3: Rates of readmission to any facility within 7 days and 30 days of discharge, stratified by the reason for readmission:

- Any reason
- A reason related to mental health and addictions
- Schizophrenia

General Description

Indicator description

This indicator measures percentage of schizophrenia discharges that are followed within 7 and 30 days by another admission for one of the following:

- a. Any reason
- b. A reason related to mental health or addictions
- c. Schizophrenia

Directionality: Lower is generally better.

Measurability	Measurable at the provincial level
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Dimension of quality	Effectiveness
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Quality statement alignment	All quality standard statements align
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Definition and Source Information

Calculation: General

Denominator

Acute care discharges from episode of care in which schizophrenia was coded as most responsible diagnosis. The index cases are identified from both the DAD and OMHRS databases.

Inclusions

Age ≥ 18 y

Diagnosis codes

- DAD (ICD-10-CA): F20 (excluding F20.4), F25, (as the most responsible diagnosis)
- OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1 (as the primary diagnosis), or, for short stays where the ICD-10-CM primary diagnosis code is missing, Provisional code = 2

Discharge disposition:

- Discharged alive. In DAD, discharge disposition not equal to: 07, 08, 09, 66, 67, 72, 73, 74. In OMHRS, discharge reason not equal to: 2, 3

Exclusions

Records without a valid health insurance number

Invalid age, age > 105 y

Records without an Ontario residence

Gender not recorded as male or female

Invalid date of birth, admission date/time, discharge date/time

Note: Admission to another institution within 24 hours of discharge from an institution should be considered part of the same episode of care

Numerator

- a. Any reason

Subsequent readmission to an acute care hospital within 7 and 30 days of index hospitalization discharge for any reason

b. Mental health or addictions–related condition
Subsequent readmission to an acute care hospital within 7 and 30 days of index hospitalization discharge for a primary diagnosis of a mental health or addictions–related condition

c. Schizophrenia
Subsequent readmission to an acute care hospital within 7 and 30 days of index hospitalization discharge for schizophrenia:
• DAD (ICD-10-CA): F20 (excluding F20.4), F25, (as the most responsible diagnosis)
• OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1 (as the primary diagnosis), or, for short stays where the ICD-10-CM primary diagnosis code is missing, Provisional code = 2

Method

Numerator ÷ Denominator × 100

Data sources:

DAD, OMHRS

Additional Information

Limitations

It is not possible to differentiate between elective and non-elective admissions in the OMHRS database. Both planned and unplanned readmissions are counted in OMHRS and DAD cases

Comments

N/A

Alignment

Similar indicator: Ontario Mental Health Scorecard.

Source: Ontario Health, ICES. Mental Health and Addictions System Performance in Ontario: 2021 Scorecard [Internet]. Toronto: ICES; 2021. Available from: [Mental Health and Addictions System Performance in Ontario: 2021 Scorecard \(ices.on.ca\)](https://www.ices.on.ca/Scorecard)

Abbreviations: DAD, Discharge Abstract Database (Canadian Institute for Health Information); ICD-10-CA, *International Statistical Classification of Diseases and Related Health Problems*, 10th revision, Canada; ICD-10-CM, *International Classification of Diseases*, 10th Revision, Clinical Modification; OMHRS, Ontario Mental Health Reporting System.

Table 4: Rates of unscheduled emergency department visits after hospital inpatient discharge within 7 days and 30 days, stratified by the reason for the visit:

- Any reason
- A reason related to mental health and addictions
- Schizophrenia
- Self-harm

General Description	
Indicator description	<p>This indicator measures the percentage of schizophrenia discharges that are followed within 7 and 30 days by an unscheduled ED visit for one of the following:</p> <ol style="list-style-type: none"> a. Any reason b. A reason related to mental health or addictions c. Schizophrenia d. Self-harm <p>Directionality: Lower is generally better.</p>
Measurability	Measurable at the provincial level
Dimension of quality	Effectiveness
Quality statement alignment	All quality standard statements align
Definition and Source Information	
Calculation: General	<p>Denominator Acute care discharges from episode of care in which schizophrenia was coded as most responsible diagnosis. The index cases are identified from both the DAD and OMHRS databases.</p> <p><i>Inclusions</i> Age ≥ 18 y Diagnosis codes</p> <ul style="list-style-type: none"> • DAD (ICD-10-CA): F20 (excluding F20.4), F25, (as the most responsible diagnosis) • OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1 (as the primary diagnosis), or, for short stays where the ICD-10-CM primary diagnosis code is missing, Provisional code = 2 <p>Discharge disposition:</p>

- Discharged alive. In DAD, discharge disposition not equal to: 07, 08, 09, 66, 67, 72, 73, 74. In OMHRS, discharge reason not equal to: 2, 3.

Exclusions

Records without a valid health insurance number
Records without an Ontario residence
Gender not recorded as male or female
Invalid date of birth, admission date/time, discharge date/time

Numerator

a. Any reason

Subsequent unscheduled ED visit within 7 and 30 days of index hospitalization discharge for any reason

Exclusion: ED visits that result in admission are excluded from the calculation of this indicator as this subset is captured in the readmission indicator

b. Mental health or addictions–related condition

Subsequent unscheduled ED visit within 7 and 30 days of index hospitalization discharge for main problem of a mental health or addictions–related condition:

- Substance-related disorders—ICD-10-CA: F55, F10 to F19, or
- Schizophrenia, delusional, and nonorganic psychotic disorders— ICD-10-CA: F20 (excluding F20.4), F22, F23, F24, F25, F28, F29, F53.1, or
- Mood/affective disorders—ICD-10-CA: F30, F31, F32, F33, F34, F38, F39, F53.0, or
- Anxiety disorders—ICD-10-CA: F40, F41, F42, F43, F48.8, F48.9, or
- Selected disorders of adult personality and behaviour—ICD-10-CA: F60, F61, F62, F69, F21

Exclusion: ED visits that result in admission are excluded from the calculation of this indicator as this subset is captured in the readmission indicator.

c. Schizophrenia

Subsequent unscheduled ED visit within 7 and 30 days of index hospitalization discharge for a main problem of schizophrenia:

- F20 (excluding F20.4), F25 (as the main problem).

Exclusion: ED visits that result in admission are excluded from the calculation of this indicator as this subset is captured in the readmission indicator.

d. Self-harm

Subsequent unscheduled ED visit within 7 and 30 days of index hospitalization discharge for a main problem or other problem of self-harm:

- ICD-10-CA: X60 to X84 (Intentional Self-Harm)

Exclusion: ED visits that result in admission are excluded from the calculation of this indicator as this subset is captured in the readmission indicator.

Method

Numerator ÷ Denominator × 100

Data sources:

DAD, NACRS, OMHRS

Additional Information

Limitations

Capturing intention of self-harm with available data sources is difficult. Unintentional or undetermined injuries are excluded from this indicator, despite the fact that, in some cases, the injuries may have been intentional

Comments

N/A

Abbreviations: DAD, Discharge Abstract Database (Canadian Institute for Health Information); ED, emergency department; ICD-10-CA, *International Statistical Classification of Diseases and Related Health Problems*, 10th revision, Canada; ICD-10-CM, *International Classification of Diseases*, 10th Revision, Clinical Modification.; NACRS, National Ambulatory Care Reporting System; OMHRS, Ontario Mental Health Reporting System.

5.4 Indicators That Can Be Measured Using Local Data

You might want to assess the quality of care you provide to your patients with schizophrenia. You might also want to monitor your own quality improvement efforts. It can be possible to do this using your own clinical records, or you might need to collect additional data. We recommend the following list of potential indicators.

- Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in behavioural symptoms between admission and discharge, stratified by their length of stay
- Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in positive symptoms between admission and discharge, stratified by their length of stay

Methodologic details are described in the tables below.

Table 5: Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in behavioural symptoms between admission and discharge, stratified by their length of stay

General Description	
Indicator description	<p>This indicator calculates the percentage of people admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in behavioural symptoms between their admission and discharge, stratified by length of stay (LOS)</p> <p>Directionality: A higher percentage is better.</p>
Indicator status	Developmental
Dimension of quality	Effectiveness, person-centred
Quality statement alignment	All quality standard statements align
Definition and Source Information	
Calculation: General	<p>Denominator Acute care discharges in which schizophrenia was coded as most responsible diagnosis</p> <p><i>Inclusions</i> Age ≥ 18 y</p> <p>Diagnosis codes</p> <ul style="list-style-type: none"> • DAD (ICD-10-CA): F20 (excluding F20.4), F25, (as the most responsible diagnosis) • OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1 (as the primary diagnosis), or, for short stays where the ICD-10-CM primary diagnosis code is missing, Provisional code = 2 <p>OMHRS Aggressive Behaviour Scale score > 0</p> <ul style="list-style-type: none"> • Discharge disposition: Discharged alive. In DAD, discharge disposition not equal to: 07, 08, 09, 66, 67, 72, 73, 74. In OMHRS, discharge reason not equal to: 2, 3 <p><i>Exclusions</i> No behavioural symptoms at admission (Aggressive Behaviour Scale score = 0; violence items [D2a-c] < 4) Records without a valid health insurance number</p>

Records without an Ontario residence
Gender not recorded as male or female
Invalid date of birth, admission date/time, discharge date/time

Numerator

The number in the denominator who experienced an improvement in behavioural symptoms between admission and discharge

Method

$\text{Numerator} \div \text{Denominator} \times 100$, stratified by LOS group

Data source

Local data collection, OMHRS

Additional Information

Limitations

N/A

Comments

Local data collection is required for cases where multiple OMHRS assessments are not available to measure improvement in behavioural symptoms. This applies to patients with short stays or those in DAD beds (non-mental health beds).

Abbreviations: DAD, Discharge Abstract Database (Canadian Institute for Health Information); ICD-10-CA, *International Statistical Classification of Diseases and Related Health Problems*, 10th revision, Canada; LOS, length of stay; ICD-10-CM, *International Classification of Diseases*, 10th Revision, Clinical Modification; OMHRS, Ontario Mental Health Reporting System; RAI-MH, Resident Assessment Instrument–Mental Health.

Table 6: Percentage of adults admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in positive symptoms between admission and discharge, stratified by their length of stay

General Description	
Indicator description	<p>This indicator calculates the percentage of people admitted to hospital with a primary diagnosis of schizophrenia who experience an improvement in positive symptoms between admission and discharge, stratified by length of stay (LOS)</p> <p>Directionality: A higher percentage is better.</p>
Indicator status	Developmental
Dimension of quality	Effectiveness, person-centred
Quality statement alignment	All quality standard statements align
Definition and Source Information	
Calculation: General	<p>Denominator Acute care discharges in which schizophrenia was coded as most responsible diagnosis</p> <p><i>Inclusions</i> Age ≥ 18 years</p> <p>Diagnosis codes <ul style="list-style-type: none"> • DAD (ICD-10-CA): F20 (excluding F20.4), F25, (as the most responsible diagnosis) • OMHRS (ICD-10-CM): F20.81, F20.9, F25.0, and F25.1 (as the primary diagnosis), or, for short stays where the ICD-10-CM primary diagnosis code is missing, Provisional code = 2 </p> <p>Discharge disposition: <ul style="list-style-type: none"> • Discharged alive. In DAD, discharge disposition not equal to: 07, 08, 09, 66, 67, 72, 73, 74. In OMHRS, discharge reason not equal to: 2, 3 </p> <p><i>Exclusions</i> No positive symptoms at admission (Positive Symptom Scale—Short = 0) Records without a valid health insurance number Records without an Ontario residence</p>

Gender not recorded as male or female
Invalid date of birth, admission date/time, discharge date/time

Numerator

The number in the denominator who experienced an improvement in positive symptoms between admission and discharge:

- Positive Symptom Scale (PSS) score at discharge is less than at admission, measured as sum of indicators of psychosis (B1u Hallucinations, B1v Command Hallucinations, B1w Delusions, AND B1x Abnormal Thought Process/Form)

Method

Numerator ÷ Denominator × 100, stratified by LOS group

Data source

Local data collection, OMHRS

Additional Information

Limitations

N/A

Comments

Local data collection is required for cases where multiple OMHRS assessments are not available to measure improvement in positive symptoms. This applies to patients with short stays or those in DAD beds (non-mental health beds).

Abbreviations: DAD, Discharge Abstract Database (Canadian Institute for Health Information); ICD-10-CA, *International Statistical Classification of Diseases and Related Health Problems*, 10th revision, Canada; ICD-10-CM, *International Classification of Diseases*, 10th Revision, Clinical Modification; LOS, length of stay; OMHRS, Ontario Mental Health Reporting System.

6. Resources and Questions

6.1 Resources

Several resources are available for more information:

- The [quality standard](#) provides information on the background, definitions of terminology, numerators and denominators for all statement-specific indicators
- The [Getting Started Guide](#) includes quality improvement tools and resources for health care professionals, including an action plan template
- The [case for improvement deck](#) provides data on why a particular quality standard has been created and the data behind it
- The [data tables](#) provide data that can be used to examine variations in indicator results across the province

6.2 Questions?

Please contact QualityStandards@OntarioHealth.ca. We would be happy to provide advice on measuring quality standard indicators or put you in touch with other providers who have implemented the standards and might have faced similar questions.

Ontario Health offers an online community dedicated to improving the quality of health care across Ontario together called [Quorum](#). Quorum can support your quality improvement work by allowing you to:

- Find and connect with others working to improve health care quality
- Identify opportunities to collaborate
- Stay informed with the latest quality improvement news
- Give and receive support from the community
- Share what works and what doesn't
- See details of completed quality improvement projects
- Learn about training opportunities
- Join a community of practice

7. Appendix: Data Sources Referenced in This Quality Standard

Within this quality standard, there are several data sources that can be used for provincial measurement. The data source(s) for each indicator are listed within the individual indicator specifications. More details on the specific data sources that Ontario Health used to produce the indicators are noted below.

Discharge Abstract Database—Canadian Institute for Health Information

The Discharge Abstract Database (DAD) by the Canadian Institute for Health Information contains information abstracted from hospital records that capture administrative, clinical, and patient demographic data on all hospital in-patient separations, including discharges, deaths, sign-outs, and transfers. The institute receives Ontario data directly from participating facilities, from their respective regional health authorities, or from the Ministry of Health. The database includes patient-level data for acute care facilities in Ontario. Data are collected, maintained, and validated by the institute.

The main data elements of this database are patient identifiers (e.g., name, health card number), patient demographics (e.g., age, sex, geographic location), clinical information (e.g., diagnoses, procedures), and administrative information.

National Ambulatory Care Reporting System—Canadian Institute for Health Information

The National Ambulatory Care Reporting System (NACRS) by the Canadian Institute for Health Information contains data for all hospital- and community-based emergency and ambulatory care, including day surgeries, outpatient clinics, and emergency departments. Data are collected, maintained, and validated by the institute. The institute receives Ontario data directly from participating facilities, from their respective regional health authorities, or from the Ministry of Health. Data are collected, maintained, and validated by the institute.

Data elements of this reporting system include patient identifiers (e.g., name, health card number), patient demographics (e.g., age, sex, geographic location), clinical information (e.g., diagnoses, procedures), and administrative information.

Ontario Health Insurance Plan—Ministry of Health

The Ontario Health Insurance Plan (OHIP) claims database covers all reimbursement claims to the ministry made by fee-for-service physicians, community-based laboratories, and radiology facilities. The OHIP database at the Institute for Clinical Evaluative Sciences contains encrypted patient and physician identifiers, codes for services provided, dates of service, associated diagnoses, and fees paid. Services missing from OHIP data include some laboratory services, services received in provincial psychiatric hospitals, services provided by health service organizations and other alternative providers, diagnostic procedures performed on an in-patient basis, and laboratory services performed at hospitals (both in-patient and same day). Also excluded is remuneration to physicians through alternative funding plans; this could distort analyses because of their concentration in certain specialties or geographic areas.

Ontario Mental Health Reporting System

The Ontario Mental Health Reporting System (OMHRS), housed at the Canadian Institute for Health Information, collects information about individuals admitted to designated adult mental health beds in Ontario. OMHRS includes information on admissions and discharges as well as clinical information. Clinical data are collected using the Resident Assessment Instrument for Mental Health (RAI - MH), a standardized assessment instrument for inpatient mental health care. It includes information about mental and physical health, social support and service use. Data are collected on clients from participating hospitals in Ontario at admission, discharge and every three months for patients with extended stays. The number of active OMHRS sites has varied between 65 and 74 since the start of OMHRS in 2005–2006. In the early years of OMHRS, between 90% and 98% of active sites submitted at least some data every quarter. This rate has increased to 100% for all 4 quarters of 2014–2015. As of May 15, 2017, there were 84 participating facilities that have submitted data at least once to the OMHRS database since the implementation of OMHRS in October 2005.

Registered Persons Database — Ontario Ministry of Health

The Registered Persons Database (RPDB) is a registry of people covered under the Ontario Health Insurance Plan (OHIP), as well as those eligible for the Ontario Drug Program. The RPDB includes demographic variables such as age, sex, address, and postal code. This database can be connected to other patient-level databases via a patient's unique health card number to help supplement their information. It can also help identify the date from which someone is no longer eligible for OHIP and why, including the date of death, where applicable. The RPDB is maintained by the Ministry of Health, but an anonymized version with encrypted health card numbers is also housed at ICES.

QUALITY STANDARDS

Looking for more information?

Visit [HQOntario.ca](https://www.hqontario.ca) or contact us at QualityStandards@OntarioHealth.ca if you have any questions or feedback about this guide.

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