

# Mental Health-Related Hospitalizations

## Description

- This indicator measures health service utilization - specifically hospitalizations - related to mental health conditions and is not a measure of the prevalence of mental health conditions in the population, as individuals may experience mental health conditions who do not seek care or who seek care in other medical establishments, such as family physician and/or private clinics.
- Frequent hospitalizations may be an indication that people are not getting access to the services or the support they need in the community or in non-acute care settings for help with mental health conditions.
- This indicator could suggest that people had mental health conditions that were inadequately managed in the community or that they were unaware of services in their communities, had difficulty accessing them or had negative experiences or outcomes with community care.
- A high rate of mental health-related hospitalizations may strain our already overburdened healthcare system.
- A high rate may indicate challenges with access to community-based care or unmet needs.
- A lower rate is desired.

## Related OPHS Topics

Population Health Assessment

Substance Use and Injury  
Prevention

## Method of Calculation

**Crude hospitalization rate:**

$$\frac{\text{Total number of hospitalizations related to mental health}}{\text{Total population}} \times 100,000$$

- *Selected Mental Health Conditions defined based on ICD codes in the ICD Codes section below*

### Age-specific hospitalization rate:

$$\frac{\text{Total number of hospitalizations related to mental health in an age group}}{\text{Total population in that age group}} \times 100,000$$

- Selected Mental Health Conditions defined based on ICD codes in the ICD Codes section below
- Suggested age groups outlined in Recommended Subset Analysis Categories section below

### Age-standardized hospitalization rates:

$$\frac{\text{Sum of (age-specific rate x standard population in that age group), for all age groups}}{\text{Total standard population}} \times 100,000$$

- See [Standardization of Rates Resource](#) for more information on direct standardization
- Standardized to the 2011 Canadian Population

## Recommended Subset Analysis Categories

### Suggested Age Groups

- IntelliHEALTH Age Group: 0-14, 15-24, 25-44, 45-64, 65+
- Statistics Canada Modified Age Group: 0-11, 12-17, 18-34, 35-49, 50-64, 65+

### Potential Age Groups for Specific Analysis Questions:

- Working population focus: 18-64
- Women of reproductive age: 15-49
- Seniors/older adults: 65-74, 75+

**Sex:** Male, Female

**Geography:** Ontario, Public Health Unit, Census Division, Municipality/Census Subdivision, Smaller areas of geography, based on aggregated postal code (such as census dissemination area)

**Temporal:** year, quarter, month, day

## Data Sources

Numerator	Denominator
Inpatient Hospitalizations	Population Estimates
<b>Original Source:</b> Discharge Abstract Database (DAD), Canadian Institute for Health Information (CIHI) Ontario Mental Health Reporting System (OMHRS), Canadian Institute for Health Information (CIHI)	<b>Original Source:</b> Statistics Canada
<b>Distributed by:</b> Ontario Ministry of Health and Long-Term Care (MOHLTC): IntelliHEALTH ONTARIO (IntelliHEALTH)	<b>Distributed by:</b> Ontario Ministry of Health and Long-Term Care (MOHLTC): IntelliHEALTH ONTARIO (IntelliHEALTH)

<p><b>Suggested Citation</b> (see Data Citation Notes)          Inpatient Discharges [years], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [date].          Ontario Mental Health Reporting System [years], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [date]</p>	<p><b>Suggested Citation</b> (see Data Citation Notes)          Population Estimates [years], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [date].</p>
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## ICD Codes

Classification	Sub-category	ICD-10-CA (DAD)	DSM-IV Diagnosis Category (OMHRS) up to 2015-16	DSM-5 Diagnosis Category (OMHRS) 2016-17 onwards
Any mental health and substance-related disorder	Any mental health and substance-related disorder	Primary diagnosis at discharge F06.x–F99.x	Any diagnosis excluding provisional code = DELIRIUM, DEMENTIA, AND AMNESTIC AND OTHER COGNITIVE DISORDERS	Any diagnosis excluding provisional code = (17)NEUROCOGNITIVE DISORDERS
Substance use and related disorders	Alcohol Opioid Cannabis Sedative Cocaine Stimulant Hallucinogen Phencyclidine (or phencyclidine-like (related)) Tobacco Inhalant Other, unknown and multiple substances Gambling	F10.0–F10.9 F11.0–F11.9 F12.0–F12.9 F13.0–F13.9 F14.0–F14.9 F15.0–F15.9 F16.0–F16.9 F19.0–F19.9 F17.0–F17.9 F18.0–F18.9 F19–F19.9, F55 F63.0	SUBSTANCE-RELATED DISORDERS	(16)SUBSTANCE RELATED AND ADDICTIVE DISORDERS
Schizophrenia spectrum and other psychotic disorders	Schizophrenia spectrum and other psychotic disorders	F06.0, F06.1, F06.2, F20.x, F22.x–F25.x, F28.x–29.x, F53.1	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS	(02)SCHIZOPHRENIA SPECTRUM AND OTHER PSYCHOTIC DISORDERS
Mood disorders	Mood (bipolar) disorders Mood (depressive) disorders Mood (other) disorders	F06.3, F30.x, F31.x, F34.0 F32.x–F33.x, F34.1, F53.0 F34.8, F34.9, F38.x, F39	MOOD DISORDERS MOOD DISORDERS MOOD DISORDERS	(03)BIPOLAR AND RELATED DISORDERS (04)DEPRESSIVE DISORDERS Not applicable: No equivalent provisional diagnosis category
Anxiety disorders	Anxiety disorders	F06.4, F40.x–F41.x, F93.0–F93.2, F94.0	ANXIETY DISORDERS	(05)ANXIETY DISORDERS
Personality disorders	Personality disorders	F07.0, F21, F60.x–F62.x, F68.0, F68.8, F69	PERSONALITY DISORDERS	(18)PERSONALITY DISORDERS
Other mental health disorders	Trauma- and stressor-related	F43.x, F94.1, F94.2	ADJUSTMENT DISORDERS	(07)TRAUMA AND STRESSOR RELATED DISORDERS

	disorders			
	Obsessive-compulsive disorder and related disorders	F06.8, F42.x, F45.2, F63.3	Not applicable: No equivalent provisional diagnosis category	(06)OBSESSIVE-COMPULSIVE AND RELATED DISORDERS
	Somatic symptoms and related disorders	F44.4, F44.5, F44.6, F44.7; F45.0, F45.1, F45.3, F45.4, F45.8, F45.9, F54, F68.1	SOMATOFORM DISORDERS	(09)SOMATIC SYMPTOMS AND RELATED DISORDERS
	Dissociative disorders	F44.0, F44.1, F44.2, F44.3, F44.8, F44.9, F48.1	DISSOCIATIVE DISORDERS	(08)DISSOCIATIVE DISORDERS
	Sexual dysfunction	F52.x	SEXUAL AND GENDER IDENTITY DISORDERS	(13)SEXUAL DYSFUNCTIONS
	Gender dysphoria	F64.x, F66.x	SEXUAL AND GENDER IDENTITY DISORDERS	(14)GENDER DYSPHORIA
	Paraphilic disorders	F65.x	SEXUAL AND GENDER IDENTITY DISORDERS	(19)PARAPHILIC DISORDERS
	Feeding and eating disorders	F50.x, F98.2, F98.3	EATING DISORDERS	(10)FEEDING AND EATING DISORDERS
	Sleep-wake disorders	F51.x, G47.x, G47.xx, G25.8	SLEEP DISORDERS	(12)SLEEP DISORDERS
	Disruptive, impulse-control and conduct disorders	F63.1, F63.2, F63.8, F63.9, F91.x, F92.x	IMPULSE-CONTROL DISORDERS NOT ELSEWHERE CLASSIFIED	(15)DISRUPTIVE, IMPULSE-CONTROL AND CONDUCT DISORDERS
	Other mental disorders	F06.9, F09, F48.0, F48.8, F48.9, F53.8, F53.9, F59, F99, O99.3xx	MENTAL DISORDERS DUE TO GENERAL MEDICAL CONDITIONS	(20)OTHER MENTAL DISORDERS
	Elimination disorders	F98.0, F98.1	DISORDERS OF CHILDHOOD/ADOLESCENCE	(11)ELIMINATION DISORDERS
	Neurodevelopmental disorders	F70.x–F73.x, F78.x–F79.x, F80.x, F81.x, F82, F83, F84.x, F88, F89, F90.x, F93.3, F93.8, F93.9, F94.8, F94.9, F95.x, F98.4, F98.5, F98.6, F98.8, F98.9	DISORDERS OF CHILDHOOD/ADOLESCENCE	(01)NEURODEVELOPMENTAL DISORDERS
Neurocognitive disorders	Neurocognitive disorders	F00.x, F01.x, F02.x, F03.x, F04.x, F05.x, F06.5, F06.6, F06.7, F07.1–F07.9, G20.x, G30.x, G30.8x, G31.0x, G31.x, G35	DELIRIUM, DEMENTIA, AND AMNESTIC AND OTHER COGNITIVE DISORDERS	(17)NEUROCOGNITIVE DISORDERS
Intentional self-injury	Intentional self-injury	Secondary diagnosis fields = X60.x–X84.x, Y10.x–Y19.x, Y28.x when primary diagnosis is not F06.x–F99.x	Not applicable (DAD/NACRS only)	

Note: OMHRS Diagnostic Categories written as they appear in IntelliHealth

## Analysis Checklist

### General Checklist

- ❑ An 'Inpatient Discharge User Guide' is available within IntelliHEALTH.
- ❑ Refer to the [Ontario Mental Health Resource System Data Source](#) for more information.
- ❑ Refer to the [Population Estimates Data Source](#) or [Population Projections Data Source](#) for information on extracting a population for your denominator.
- ❑ To best understand disease trends in a population, it is important to determine crude rates, age-specific rates and age-standardized rates (SRATES) and/or ratios (SMRs, SIRs).
  - ❑ Although the crude rate depicts the "true" picture of disease in a community, it is greatly influenced by the age structure of the population.
  - ❑ Age-specific rates can best describe the "true" disease pattern within particular age groups of a community, and allow for comparison of age groups across populations that have different age structures.
  - ❑ Since many age-specific rates are cumbersome to present, age standardized rates have the advantage of providing a single summary number that allows different populations to be compared; however, they present an "artificial" picture of the disease pattern in a community.
  - ❑ Refer to the [Standardization of Rates](#) methodology resource page for analytic recommendations and sample calculations.

### Extracting from the Discharge Abstract Database (DAD):

- ❑ Add a filter on "MRDx Code" to equal the ICD codes for the indicator of interest (available in the ICD Code Table).
- ❑ Add a filter on "MRDx Prefix Code" to exclude 'Q'. This will ensure query diagnoses are not included in the aggregation.
- ❑ Add a filter on "Hospital Type" to include 'ACUTE CARE TREATMENT HOSP W/O PSYCH UNIT' and 'ACUTE CARE TREATMENT HOSP WITH PSYCH UNIT'. Within the system, there are a few non-acute hospitals that report into the system. This ensures that only acute-care hospitals are included.
- ❑ If you are extracting data for Ontario, ensure that "Patient PHU" excludes '(YYYY) OUT OF PROVINCE'. Otherwise, you can add a filter specific to your geography of interest.
- ❑ When filtering data by municipality, the Patient Municipality field is recommended as it is a direct subset of the Patient PHU classification. The Patient CSD field is generated using different methodology and should be avoided if wanting to align with PHU designation.
- ❑ Select '# Dschg(D)' Measure. This will ensure that duplicate counts are removed from aggregated counts. NOTE: If extracting record level data into a spreadsheet, it is important to remove duplicates from the 'DAD Key' field before using the measure. This will ensure each visit will not be counted more than once..

### Extracting from the Ontario Mental Health Reporting System (OMHRS):

- ❑ Use the OMHRS Assessment, Treatment and Diagnosis package to identify hospitalizations from IntelliHealth (not OMHRS Main Package). Section Q can be found under the MH Assessments folder.

- ❑ Add a filter to include all records that contain the diagnosis category of interest in “DSM-IV Primary Dx Category” and “DSM-5 Primary Dx Category” fields within the Section Q - Psychiatric Diagnostic Information folder.
- ❑ When filtering data by municipality, the Patient Municipality field is recommended as it is a direct subset of the Patient PHU classification. The Patient CSD field is generated using different methodology and should be avoided if wanting to align with PHU designation.
- ❑ It’s important to ensure duplicate counts are removed from the ‘Episode Key’ field before using the measure. This will ensure each visit will not be counted more than once.

### Combining DAD and OMHRS

- ❑ In order to calculate rates, collapse each extract to counts for the time period of interest and age group (as needed for standardization purposes), then sum the counts and proceed with calculating rates as described above.

## Indicator Comments

### General Comments

- Data from IntelliHealth only captures those who visit the hospital and may not reflect the total burden in the population.
- Data for Ontario residents who visit a hospital outside of the province are not included.
- Individuals may have made more than one visit on different occasions, and therefore the number of visits should not be interpreted as the number of distinct individuals.
- This indicator uses provisional diagnosis categories from OMHRS rather than ICD codes for ease of analysis in calculating overall mental health-related hospitalizations. For analysis of certain specific disorders, there may not be an exact alignment of ICD codes and diagnostic categories.

## Definitions

- **Hospitalization** - The event in which a patient is discharged from the hospital. Admission details are gathered to identify details closest to discharge from hospital (e.g. Dschg Age, Discharge Date).

## General References

IntelliHealth Ontario: Inpatient Discharge User Guide [2017], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

IntelliHealth Ontario: Inpatient Mental Health User Guide, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Canadian Institute for Health Information. CIHI Mental Health and Substance Use Diagnosis Code Groupings for Selected Indicators. Ottawa, ON: CIHI; 2024. from <https://www.google.com/url?q=https://www.cihi.ca/sites/default/files/document/mental-health-substance-use-diagnosis-code-groupings-2024-data-tables-en.xlsx&sa=D&source=docs&ust=1746453582647353&u sg=AOvVaw18-2CX9LX-Lhmgf2uF3P4I>

## Acknowledgements

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## Revision History

This Core Indicator Product is maintained by the [Mental Health Subgroup](#).

Date	Review Type	Author	Changes	PDF
May 23, 2025	New Indicator	Mental Health Core Indicator subgroup	N/A	[Insert PDF Symbol]