



Hospitalizations for conditions entirely caused by alcohol

SECTION 1: HEADER

Indicator Type: Core Indicator

Description

- **Hospitalizations for conditions entirely caused by alcohol (DAD + OMHRS):** The number of hospitalizations for conditions entirely caused by alcohol.
- **Crude rate of Hospitalizations for conditions entirely caused by alcohol:** the number of Hospitalizations for conditions entirely caused by alcohol per 100,000 population
- **Age-specific rate for Hospitalizations for conditions entirely caused by alcohol:** the number of Hospitalizations for conditions entirely caused by alcohol in a given age group per 100,000 population in that age group.
- **Age-standardized Hospitalization rate (SRATE) for Hospitalizations for conditions entirely caused by alcohol:** the number of Hospitalizations for conditions entirely caused by alcohol that would occur if the population had the same age distribution as the Standard Canadian population, per 100,000 population (please see the currently recommended standard population).

Related Health Indicator(s) from Other Sources

Canadian Institute for Health Information (CIHI) Health Indicators Interactive Tool:
Hospitalizations entirely caused by alcohol (100% Alcohol-Attributable Hospitalizations (AAHs)) available from Canadian Institute of Health Information (1).

Description: Age-standardized rate of hospitalizations with conditions that are wholly (100%) attributable to alcohol per 100,000 population age 10 and older. The indicator uses a blended average methodology to calculate the overall Canada rate and Quebec's rate.

Related OPHS Topics

This section cross-links the indicator to related Core Indicators products, by referencing the OPHS Alignment tables. List all OPHS topics where this indicator would be used; these will be linked to the appropriate OPHS Standard pages.

Population Health Assessment

Substance Use and Injury
Prevention

SECTION 2: METHOD OF CALCULATION

Method of Calculation

Crude Rate for Hospitalizations for conditions entirely caused by alcohol hospitalizations

$$\frac{\text{Number of Hospitalizations visits for conditions entirely caused by alcohol}}{\text{Total population}} \times 100,000$$

Age-specific rate

$$\frac{\text{Number of Hospitalizations for conditions entirely caused by alcohol in an age group}}{\text{Total population in that age group}} \times 100,000$$

Age-standardized Rate (SRATE)

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

Recommended Subset Analysis Categories

Basic Categories

- Suggested Age Groups:
 - 0-14, 15-24, 25-44, 45-64, 65+ *Note: Health units may choose to merge age categories due to small numbers, or change age categories depending on the specific analysis questions.
- Sex: male, female and total
- Geographic areas of residence: Ontario, public health unit, Ontario excluding your public health unit, municipality, county and smaller areas of geography based on aggregated postal code
- Temporal: year, quarter, month

SECTION 3: DATA SOURCES

Data Sources Table

Numerator	Denominator
<div style="background-color: #00AEEF; color: white; padding: 10px; display: inline-block;">Inpatient Hospitalizations</div>	<div style="background-color: #00AEEF; color: white; padding: 10px; display: inline-block;">Population Estimates</div>
<p>Original Source: Discharge Abstract Database (DAD), Canadian Institute for Health Information (CIHI) Ontario Mental Health Reporting System (OMHRS), Canadian Institute for Health Information (CIHI)</p>	<p>Original Source: Statistics Canada</p>
<p>Distributed by: Ontario Ministry of Health and Long-Term Care (MOHLTC): IntelliHEALTH ONTARIO (IntelliHEALTH)</p>	<p>Distributed by: Ontario Ministry of Health and Long-Term Care (MOHLTC): IntelliHEALTH ONTARIO (IntelliHEALTH)</p>
<p>Suggested Citation (see Data Citation Notes) Inpatient Discharges for conditions entirely caused by alcohol [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>Suggested Citation: Population Estimates [years], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [date].</p>

ICD Codes

Consider using a three digit code as opposed to pulling four digit codes for individual conditions for codes included as 3 digit codes* in the table (i.e., F10 versus include F10.1, F10.2, etc) unless otherwise specified.

Classification	ICD-10-CA
<p>Conditions entirely caused by alcohol</p>	<p>DAD ICD-10-CA *3-digit All Dx ICD code = F10, K70, T51, X45, X65, Y15 4-digit All Dx ICD code = E24.4, G31.2, G62.1, G72.1, I42.6, K29.2, K85.2, K86.0, O35.4, Q86.0, R78.0</p> <p>E24.4 Alcohol-induced pseudo-Cushing's syndrome F10 Mental and behavioural disorders due to use of alcohol F10.0 Mental and behavioural disorders due to use of alcohol, acute intoxication F10.1 Mental and behavioural disorders due to use of alcohol, harmful use F10.2 Mental and behavioural disorders due to use of alcohol, dependence syndrome F10.3 Mental and behavioural disorders due to use of alcohol, withdrawal state F10.4 Mental and behavioural disorders due to use of alcohol, withdrawal state with delirium F10.5 Mental and behavioural disorders due to use of alcohol, psychotic disorder F10.6 Mental and behavioural disorders due to use of alcohol, amnesic syndrome F10.7 Mental and behavioural disorders due to use of alcohol, residual and late-onset psychotic disorder F10.8 Mental and behavioural disorders due to use of alcohol, other mental and behavioural disorders F10.9 Mental and behavioural disorders due to use of alcohol, unspecified mental and behavioural disorder</p> <p>G31.2 Degeneration of nervous system due to alcohol G62.1 Alcoholic polyneuropathy G72.1 Alcoholic myopathy I42.6 Alcoholic cardiomyopathy K29.2 Alcoholic gastritis</p> <p>K70 Alcoholic liver disease K70.0 Alcoholic fatty liver K70.1 Alcoholic hepatitis K70.2 Alcoholic fibrosis and sclerosis of liver K70.3 Alcoholic cirrhosis of liver K70.4 Alcoholic hepatic failure K70.9 Alcoholic liver disease, unspecified</p> <p>K85.2 Alcohol-induced acute pancreatitis K86.0 Alcohol-induced chronic pancreatitis O35.4 Maternal care for (suspected) damage to fetus from alcohol Q86.0 Fetal alcohol syndrome (dysmorphic) R78.0 Finding of alcohol in blood</p>

T51 Toxic effect of alcohol

- T51.0 Toxic effect of ethanol
- T51.1 Toxic effect of methanol
- T51.2 Toxic effect of 2-Propanol
- T51.3 Toxic effect of fusel oil
- T51.8 Toxic effect of other alcohols
- T51.9 Toxic effect of alcohol, unspecified

X45 Accidental poisoning by and exposure to alcohol

X65 Intentional self-poisoning by and exposure to alcohol

Y15 Poisoning by and exposure to alcohol, undetermined intent

OMHRS:

DSM-IV Axis I Primary or DSM-IV Axis I Sec Dx or DSM-IV Axis I Tert Dx or DSM-IV Axis I

Quat Dx or DSM-IV Axis II Other Primary Dx or DSM-IV Axis II Other Sec Dx = 291.0, 291.1,

291.2, 291.3, 291.5, 291.81, 291.82, 291.89, 291.9, 303.00, 303.90, 305.00

DSM-5 Psychiatric Dx A or DSM-5 Psychiatric Dx B or DSM-5 Psychiatric Dx C or DSM-5

Psychiatric Dx D or DSM-5 Psychiatric Dx E or DSM-5 Psychiatric Dx F = 291.0, 291.1, 291.2, 291.81, 291.82, 291.89, 291.9, 303.00, 303.90, 305.00, F10.0, F10.1, F10.2,

F10.3, F10.4, F10.5, F10.6, F10.7, F10.8, F10.9

Includes those in designated acute adult mental health bed

291 Alcohol-induced mental disorders

- 291.0 Alcohol withdrawal delirium
- 291.1 Alcohol-induced persisting amnestic disorder
- 291.2 Alcohol-induced persisting dementia
- 291.3 Alcohol-induced psychotic disorder with hallucinations
- 291.4 Idiosyncratic alcohol intoxication
- 291.5 Alcohol-induced psychotic disorder with delusions
- 291.81 Alcohol withdrawal
- 291.82 Alcohol induced sleep disorders
- 291.89 Other alcohol-induced mental disorders
- 291.9 Unspecified alcohol-induced mental disorders

303 Acute alcoholic intoxication

- 303.00 Acute alcoholic intoxication in alcoholism, unspecified
- 303.01 Acute alcoholic intoxication in alcoholism, continuous
- 303.02 Acute alcoholic intoxication in alcoholism, episodic
- 303.03 Acute alcoholic intoxication in alcoholism, in remission
- 303.90 Other and unspecified alcohol dependence, unspecified
- 303.91 Other and unspecified alcohol dependence, continuous
- 303.92 Other and unspecified alcohol dependence, episodic
- 303.93 Other and unspecified alcohol dependence, in remission

305 Alcohol abuse

	305.00 Alcohol abuse, unspecified 305.01 Alcohol abuse, continuous 305.02 Alcohol abuse, episodic 305.03 Alcohol abuse, in remission
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SECTION 4: NOTATIONS

Analysis Checklist

General

- The IntelliHEALTH (2) licensing agreement does not require suppression of small cells, but caution should be used when reporting at a level that could identify individuals, (e.g. reporting at the postal code level by age and sex). Please note that privacy policies may vary by organization. Prior to releasing data, ensure adherence to the privacy policy of your organization.
- Aggregation (e.g. combining years, age groups, categories) should also be considered when small numbers result in unstable rates.
- An 'Inpatient Discharge User Guide' is available within IntelliHEALTH.
- Comparisons over time within a community or between communities/geographies need to consider the effect than an underlying demography may have. Please refer to the **Standardization of Rates** methodology resource page for analytic recommendations and sample calculations.
- Individuals whose sex is categorized as “other” in Intellihealth are included in the total number of alcohol-related hospitalizations, but are excluded in data presented by sex.
- Individuals whose age is categorized as “999” are included in the total number of alcohol-related hospitalizations, but are excluded in data presented by age group.

Extracting from the Discharge Abstract Database (DAD):

- Add a filter on “All Dx Code” to **equal** the ICD-10 codes for the indicator of interest (available in the ICD-10 Code Table).
- Add a filter on “All Dx 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.
- ❑ **NOTE:** In order to gather details about the visit as close to the event as possible, use "Admit" categories. For example, depending on how long a patient's stay is, there may be a discrepancy between their "Admit CYear" and "CYear" (the year they were discharged).

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

- ❑ Add a filter to include all records that contain "ALCOHOL" in all "DSM-IV Axis" and "DSM-5 Psychiatric Dx (Retired 2019)" fields within the Section Q - Psychiatric Diagnostic Information folder.
- ❑ Add an additional filter on all "DSM-5 Psychiatric Dx (Retired 2019)" A-F fields to include all records that start with "291", "303", "305" and on "DSM-5 Psychiatric Dx" A-F fields to include all records that start with "F10".
- ❑ **NOTE:** Adding in the filters above can be a time consuming process. In order to simplify this process, please access a completed filter statement [here](#). You may add in this code by adding in a Static Filter to the query (accessed from the Static Filter folder in the Insertable Objects pane) and replacing the filter text added with the provided filter statement above.
- ❑ DSM-IV codes based on ICD-9-CM were replaced with the DSM-5 codes also based on ICD-9-CM starting approximately on April 1, 2016 although the changeover was not precise – when extracting data you may find both codes before and after that date. Similarly, DSM-5 codes based on ICD-10-CA replaced those approximately on April 1, 2019 but you may find both types before and after that date.
- ❑ Additionally, a completed query is available in Team Content (Team content > IH Reports > Standard Reports > APHEO Public Health Indicators > Alcohol) for reference.
- ❑ If you are extracting data for Ontario, ensure that the 'Ontario Patients' filter is applied from the 'Static Filters' folder under the 'Insertable objects' tab. Otherwise, you can add a filter specific to your geography of interest.
- ❑ 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.

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.

- The term 'Hospitalization' as used in this indicator uses 'Admit Date' rather than 'Discharge Date'. As hospital stays can vary in length, this ensures the details of the hospital stay are gathered closest to the event itself.
- The OMHRS database is admission based where a patient record is created at admission vs. the DAD where a patient record is created upon patient discharge. Patients admitted into mental health beds captured in OMHRS will have re-assessments every quarter. Diagnostic codes may change for unique visits during this reevaluation and so past counts may change over time.
- The indicator measures hospitalizations due to conditions wholly attributable to alcohol. Conditions partially attributable to alcohol (e.g., cancers, strokes, respiratory diseases) are not directly captured. This should be taken into consideration while interpreting the indicator results. It is estimated that out of all hospitalizations attributable to alcohol, 30% are due to wholly attributable conditions and 70% are due to partially attributable conditions (2)

SECTION 5: REFERENCES

Glossary

Hospitalization for conditions entirely caused by alcohol — Hospitalization resulting from conditions entirely (100%) caused by alcohol.

Hospitalization - The event in which a patient is admitted to the hospital. Admission details are gathered to identify details closest to the event (e.g. Admit Age, Admit Date).

Hospital Discharge - 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. Dischg Age, Discharge Date).

General References

1. Hospitalizations entirely caused by alcohol available from Canadian Institute of Health Information [Hospitalizations Entirely Caused by Alcohol | CIHI](#), extracted on 2024-10-10
2. IntelliHealth Ontario: Inpatient Discharge User Guide [2017], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [October 25, 2019]

SECTION 6: CREDITS

Acknowledgements

Use the following table structure to lists all individuals (with their permission) that have contributed to the indicator as authors or reviewers:


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Revision History *previously known as “Changes Made”

Complete the standard text, and link it to the subgroup webpage:

This Core Indicator Product webpage is maintained by the [Subgroup Name] Subgroup.

Use the following table structure to document changes made to the indicator over time, and by whom:

Date	Review Type	Author	Changes	PDF
[Month DD, YYYY]	[Type of Indicator Review, as listed below*]	[Author Name] OR [Author Name], on behalf of the [Workgroup Name or Acronym]	> [List all substantive changes made to the indicator]	[Insert PDF Symbol]
<i>Most recent changes added to bottom of table.</i>				
EXAMPLE: April 23, 2019	Website Update: No Review of Content	James Lane, on behalf of the CIWG	No changes made to indicator definitions or documentation. Migrated to new website structure and format, including: <ul style="list-style-type: none"> > Reorganized content to provide high-level information at a glance, and move in-depth analytic information into dedicated sections. > Reworded formulas for plain language. > Added descriptive sub-headings to the Analysis Checklist and Indicator Comments sections. > Added Revision History table with PDF copy of previous version for reference. 	

***Review Type Options:**

New Indicator

New Indicator Gap

Ad hoc Review

etc.

Full Review