# Hospitalized Strokes

<table>
<thead>
<tr>
<th>Name</th>
<th>Hospitalized Strokes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short/Other Names</td>
<td>Hospitalized Stroke Event</td>
</tr>
</tbody>
</table>

**Description**

This indicator measures the age-standardized rate of new stroke events admitted to an acute care hospital for the Canadian population age 18 and older.

A new event is defined as a first-ever hospitalization for stroke or a recurrent hospitalized stroke occurring more than 28 days after the admission for the previous event in the reference period.

For further details, please see the [General Methodology Notes](#).

**Interpretation**

Lower rates are desirable.

**HSP Framework Dimension**

Health System Outcomes: Improve health status of Canadians

**Areas of Need**

Not applicable

**Geographic Coverage**

All provinces/territories except Quebec

**Reporting Level/Disaggregation**

National, Province/Territory, Region

**Indicator Results**

Accessing Indicator Results on Your Health System: In Depth

---

### Identifying Information

- **Name**: Hospitalized Strokes
- **Short/Other Names**: Hospitalized Stroke Event

### Indicator Description and Calculation

This indicator measures the age-standardized rate of new stroke events admitted to an acute care hospital for the Canadian population age 18 and older.

A new event is defined as a first-ever hospitalization for stroke or a recurrent hospitalized stroke occurring more than 28 days after the admission for the previous event in the reference period.

For further details, please see the [General Methodology Notes](#).

### Calculation: Description

(Total number of new stroke events for persons age 18 and older ÷ Total mid-year population age 18 and older) × 100,000 (Age-adjusted)

**Unit of Analysis**: Single admission

**Place of residence**: Rate - per 100,000

**Age-adjusted**: Direct Standardization

**Standard Population**: Canada 2011

**Description**: Total mid-year population age 18 and older
Description:
Cases that are new stroke events admitted to an acute care hospital, age 18 and older

A new event is defined as a first-ever hospitalization for stroke or a recurrent hospitalized stroke occurring more than 28 days after the admission for the previous event in the reference period.

Inclusions:
1. Stroke present on admission (per codes specified below — coded as diagnosis type (1) or [type (M), (W), (X) or (Y), but not also as diagnosis type (2)])

Stroke diagnosis codes:

--Subarachnoid hemorrhage (ICD-10-CA: I60)
--Intracerebral hemorrhage (ICD-10-CA: I61, I62.9 [for data years prior to 2015–2016*])
--Ischemic stroke (ICD-10-CA: I63.0–I63.5, I63.8, I63.9, H34.1)
--Stroke, not specified as hemorrhage or infarction (ICD-10-CA: I64)
--Venous sinus/cortical vein thrombosis (ICD-10-CA: I63.6, I67.6, G08)

Notes

*I62.9 was used for coding hemorrhagic stroke not otherwise specified in fiscal years prior to 2015–2016. As of 2015–2016, this condition is coded to I61.9 Intracerebral haemorrhage, unspecified.

Transient ischemic attacks are not included in this indicator.

2. Age at admission 18 years and older
3. Sex recorded as male or female
4. Admission to an acute care institution (Facility Type Code = 1)

Exclusions:
1. Records with an invalid health card number
2. Records with an invalid code for province issuing health card number
3. Records with an invalid admission date
4. Cadaveric donor or stillbirth records (Admission Category Code = R or S)
5. Stroke admissions within 28 days after the admission date of the previous stroke hospitalization

Background, Interpretation and Benchmarks

Stroke is one of the leading causes of long-term disability and death. Measuring its occurrence in the population is important for planning and evaluating preventive strategies, allocating health resources and estimating costs. From a disease surveillance perspective, there are three groups of strokes: fatal events occurring out of the hospital, non-fatal strokes managed outside acute care hospitals and non-fatal strokes admitted to an acute care facility. Although strokes admitted to a hospital do not reflect all stroke events in the community, this information provides a useful and timely estimate of the disease occurrence in the population.

Interpretation

Lower rates are desirable.

Health System Outcomes: Improve health status of Canadians

Areas of Need

Not applicable

Targets

Not applicable


References


Availability of Data Sources and Results

Data Sources DAD
Available Data Years

**Type of Year:**
Fiscal

**First Available Year:**
2010

**Last Available Year:**
2017

**Geographic Coverage**
All provinces/territories except Quebec

**Reporting Level/Disaggregation**
National, Province/Territory, Region

**Result Updates**

<table>
<thead>
<tr>
<th>Update Frequency</th>
<th>Indicators</th>
<th>Web Tool:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every year</td>
<td>Your Health System: In Depth</td>
<td></td>
</tr>
</tbody>
</table>

**Indicator Results**

Beginning with rates based on 2015–2016 data, ICD-10-CA codes used to identify stroke cases have been updated as a result of consultation and close collaboration with the Heart and Stroke Foundation and the Public Health Agency of Canada. Specifically, ICD-10-CA code I62 was excluded from stroke case selection, and H34.1, I67.6 and G08 were added under their respective subcategories. These changes have no substantial impact on comparisons with previously reported results.

**Quality Statement**

**Caveats and Limitations**
Not applicable

**Trending Issues**
Not applicable

This indicator includes all new hospitalized stroke events in the reference period, encompassing first-ever and recurrent strokes. A person may have more than one stroke event in the reference period. Stroke events not admitted to an acute care hospital and in-hospital strokes are not included in this indicator.

Note that it is not possible to identify strokes resulting from occlusion of pre-cerebral arteries in the ICD-9 coding system; these strokes are included in this indicator.

**Comments**

Rates for Quebec are not available due to differences in data collection.

Indicator results are also available on

* The Health Indicators e-Publication ([http://yourhealthsystem.cihi.ca/epub/?language=en](http://yourhealthsystem.cihi.ca/epub/?language=en))