

# Surgical Patients Readmitted to Hospital

Name	Surgical Patients Readmitted to Hospital
Short/Other Names	30-Day Surgical Readmission
Description	This indicator measures the risk-adjusted rate of urgent readmission for the surgical patient group. For further details, please see the <a href="#">General Methodology Notes (PDF)</a> .
Interpretation	Lower rates are desirable.
HSP Framework Dimension	Health System Outputs: Appropriate and effective
Areas of Need	Getting Better
Geographic Coverage	All provinces/territories
Reporting Level/Disaggregation	National, Province/Territory, Region, Facility, Neighbourhood Income Quintile
Indicator Results	<a href="#">Accessing Indicator Results on Your Health System: In Depth (PDF)</a>
Identifying Information	
Name	Surgical Patients Readmitted to Hospital
Short/Other Names	30-Day Surgical Readmission
Indicator Description and Calculation	
Description	This indicator measures the risk-adjusted rate of urgent readmission for the surgical patient group. For further details, please see the <a href="#">General Methodology Notes (PDF)</a> . $\text{Risk-adjusted rate} = \text{Observed number of readmissions} \div \text{Expected number of readmissions} \times \text{Canadian average readmission rate}$ Unit of analysis: Episode of care An episode of care refers to all contiguous inpatient hospitalizations and same-day surgery visits. For episodes with transfers within or between facilities, transactions were linked regardless of diagnoses. To construct an episode of care, a transfer is assumed to have occurred if either of the following conditions is met: <ol style="list-style-type: none"><li>1. An acute care hospitalization or a same-day surgery visit occurs less than seven hours after discharge from the previous acute care hospitalization or same-day surgery visit, regardless of whether the transfer is coded;</li><li>2. An acute care hospitalization or same-day surgery visit occurs between 7 and 12 hours after discharge from the previous acute care hospitalization or same-day surgery visit, and at least one of the hospitalizations or visits has coded the transfer.</li></ol>
Calculation: Description	
Notes	<ul style="list-style-type: none"><li>• For public reporting: Regional and provincial/territorial results are calculated by place of residence; facility results are calculated by place of service.</li><li>• For facility-level reporting: For episodes of care that involved transfers, readmissions were attributed to the last hospital from which the patient was discharged before readmission.</li></ul>
Calculation: Geographic Assignment	Place of residence or service
Calculation: Type of Measurement	Rate - per 100
Calculation: Adjustment Applied	The following covariates are used in risk adjustment: For a detailed list of covariates used in the model, please refer to the <a href="#">Model Specification (PDF)</a> document.
Calculation: Method of Adjustment	Logistic regression

**Description:**

Number of surgical episodes of care discharged between April 1 and March 1 of the fiscal year

**Inclusions:**

1. Episodes involving inpatient care (Facility Type Code = 1). An episode may start or end in a day surgery setting. Episodes that both start and end in day surgery settings are not included.
2. Episodes involving surgical inpatient care (major clinical category [MCC] partition code = I [Intervention])
3. Discharge between April 1 and March 1 of the following year (period of case selection ends on March 1 of the following year to allow for 30 days of follow-up)
4. Age at admission 18 years and older
5. Sex recorded as male or female

**Exclusions:**

- Denominator
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 or time
  4. Records with an invalid discharge date or time
  5. Records with admission category of cadaveric donor or stillbirth (Admission Category Code = R or S)
  6. Episodes with discharge as death (DAD Discharge Disposition Code = 07, 72\*, 73\*, 74\*; NACRS Visit Disposition Code = 10, 11, 71\*, 72\*, 73\*, 74\*)
  7. Presence of at least one record in the episode with MCC of Mental Diseases and Disorders (MCC = 17)
  8. Presence of at least one record in the episode with MCC of Pregnancy and Childbirth (MCC = 13)
  9. Presence of at least one record in the episode with palliative care (ICD-10-CA: Z51.5) coded as most responsible diagnosis (MRDx); for Quebec data: Z51.5 coded as MRDx, or cancer (C00–C97) coded as MRDx and Z51.5 coded in any secondary diagnosis field

**Note**

\*2018–2019 data onward

For an illustration of denominator selection, please refer to the flowchart in the [General Methodology Notes](#) document.

**Description:**

Cases within the denominator with a non-elective readmission within 30 days of discharge after the index episode of care

**Inclusions:**

1. Emergent or urgent (non-elective) readmission to an acute care hospital (Admission Category Code = U and Facility Type Code = 1)
2. (Admission date on readmission record) (Discharge date on the last record of the index episode of care) less than or equal to 30 days

Numerator

**Exclusions:**

Presence of at least one record in the episode with one of the following:

1. Delivery (ICD-10-CA: O10–O16, O21–O29, O30–O37, O40–O46, O48, O60–O69, O70–O75, O85–O89, O90–O92, O95, O98, O99 with a sixth digit of 1 or 2; or Z37 recorded in any diagnosis field)
2. Chemotherapy for neoplasm (ICD-10-CA: Z51.1) as type (M), (1), (C), (W), (X) or (Y)
3. Admission for mental illness (MCC = 17)
4. Admission for palliative care (ICD-10-CA: Z51.5) coded as MRDx; for Quebec data: Z51.5 coded as MRDx, or cancer (C00–C97) coded as MRDx and Z51.5 coded in any secondary diagnosis field
5. 2018–2019 data onward: Medical assistance in dying (MAID) (Discharge Disposition Code = 73)
6. Records with an invalid admission date

**Background, Interpretation and Benchmarks**

Readmissions to acute care facilities are increasingly being used to measure institutional or regional quality of care and care coordination.

**Rationale** Readmission rates can be influenced by a variety of factors, including the quality of inpatient and outpatient care, effectiveness of the care transition and coordination, and the availability and use of effective community-based disease management programs. While not all urgent readmissions are avoidable, interventions during and after a hospitalization can be effective in reducing readmission rates.

**Interpretation** Lower rates are desirable.

**HSP**

**Framework** Health System Outputs: Appropriate and effective

**Dimension**

**Areas of Need** Getting Better

**Targets**

**/Benchmark** Not applicable

**arks**

Ashton CM, Wray NP. A Conceptual Framework for the Study of Early Readmission as an Indicator of Quality of Care. *Soc Sci Med* 1996;(43): 1533-1541.

Feudtner C. State-Level Child Health System Performance and the Likelihood of Readmission to Children's Hospitals. *The Journal of Pediatrics*. 2010;(157):98-102.

Referenc  
es Jencks SF, et al. Rehospitalizations Among Patients in the Medicare Fee-for-Service Program. *N Engl J Med* 2009;(360):1418-1428.

Jiang HJ, Wier LM. All-Cause Hospital Readmissions Among Non-Elderly Medicaid Patients, 2007. HCUP Statistical Brief #89. Rockville, MD: AHRQ; 2010.

Liu S, Heaman M, Joesph KS, et al. Risk of Maternal Postpartum Readmission Associated With Mode of Delivery. *Obstet Gynecol Int* 2005; (105):836-842.

Stone J, Hoffman G J. Medicare Hospital Readmissions: Issues, Policy Options and PPACA. Washington, DC: CRS; 2010.

Availability of Data Sources and Results

Data Sources DAD, HMDB, NACRS

**Type of Year:**

Fiscal

Available Data Years **First Available Year:**

2010

**Last Available Year:**

2019

Geographic Coverage All provinces/territories

Reporting Level/Disaggregation National, Province/Territory, Region, Facility, Neighbourhood Income Quintile

Result Updates

Update Frequency Every year

**Web Tool:**

Your Health System: In Depth

Indicator Results

**URL:**

[Accessing Indicator Results on Your Health System: In Depth](#)

(PDF)

Updates

Not applicable

Quality Statement

Caveats and

Limitations

Not applicable

Trending Issues

Not applicable

Indicator results are also available in

Comments

- The [Health Indicators e-Publication](#) (at regional, provincial/territorial and national levels, calculated by place of residence), starting from 2010–2011
- [Your Health System: Insight](#), updated monthly (results are available by both place of residence and place of service)