

Knee Replacement Rate

Name	Knee Replacement Rate
Short/Other Names	Age-Standardized Rate for Knee Replacements
Description	<p>This indicator measures the age-standardized hospitalization rate for all knee replacement procedures performed in acute care hospitals or same-day surgery facilities per 100,000 population age 18 and older.</p> <p>The indicator includes all knee replacement types: total knee replacement, unicompartmental knee replacement (medial, lateral or patellofemoral) and patella-only procedures.</p> <p>For further details, please see the General Methodology Notes.</p>
Interpretation	Does not apply to this measure (that is, there is no predefined preference for the measure score)
HSP Framework Dimension	Health System Inputs and Characteristics: Health system resources
Areas of Need	Not applicable
Geographic Coverage	All provinces/territories
Reporting Level/Disaggregation	National, Province/Territory, Region
Indicator Results	http://www.cihi.ca/hirpt/?language=en

Identifying Information

Name	Knee Replacement Rate
Short/Other Names	Age-Standardized Rate for Knee Replacements
Indicator Description and Calculation	

This indicator measures the age-standardized hospitalization rate for all knee replacement procedures performed in acute care hospitals or same-day surgery facilities per 100,000 population age 18 and older.

Description The indicator includes all knee replacement types: total knee replacement, unicompartmental knee replacement (medial, lateral or patellofemoral) and patella-only procedures.

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

Calculation: Description (Total number of discharges for all knee replacements for patients age 18 and older ÷ Total mid-year population age 18 and older) × 100,000 (age-adjusted)

Calculation: Geographic Assignment Place of residence

Calculation: Type of Measurement Rate - Per 100,000

Calculation: Adjustment Applied Age-adjusted

Calculation: Method of Adjustment Direct Standardization
Standard Population: Canada 2011

Denominator
Description: Total mid-year population age 18 and older
Description: Total number of discharges for all knee replacement procedures for patients age 18 and older

Unit of analysis: Single admission

Inclusions:
1. Knee replacement procedures

CCI: 1.VG.53^^ and 1.VP.53^^

Note: Rates are based on the total number of discharges for knee replacement procedures in a given year. Therefore, a patient who received a simultaneous bilateral knee replacement or underwent multiple knee replacement procedures within a single hospital admission would be counted only once.

Numerator
2. Age at admission: 18 and older

3. Sex recorded as male or female

4. Admission to an acute care institution or day surgery facility (Facility Type Code = 1 or A)

Exclusions:

1. Records with cement spacers not coded as revision (intervention code 1VG53LASLN and Intervention Status Attribute does not equal R)

2. Knee replacement procedures that were abandoned after onset or performed out of hospital (Intervention Status Attribute = A or OOH Indicator Flag = Y)

3. Newborn, stillbirth or cadaveric donor records (Admission Category Code = N, R or S)

Background, Interpretation and Benchmarks

Rationale Knee replacement surgery has the potential to improve functional status, reduce pain and contribute to other gains in health-related quality of life. Over the past two decades, rates of knee replacement procedures have increased substantially. Wide inter-regional variation in joint replacement rates may be attributable to numerous factors, including the availability of services, provider practice patterns and patient preferences.

Interpretation Does not apply to this measure (that is, there is no predefined preference for the measure score)

HSP Framework Dimension Health System Inputs and Characteristics: Health system resources

Areas of Need Not applicable

Targets/Benchmarks Not applicable

References Not applicable

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:

2017

Geographic Coverage All provinces/territories

Reporting Level/Disaggregation National, Province/Territory, Region

Result Updates

Update Frequency Every year

Web Tool:

Indicator Results Health Indicators e-Publication

URL: <http://www.cihi.ca/hirpt/?language=en>

Updates Not applicable

Quality Statement

Caveats and Limitations Rates are based on the total number of discharges for knee replacement procedures in a given year. However, it is possible for a patient to undergo more than one knee replacement procedure in a single hospitalization or day surgery visit.

Trending Issues Prior to 2013–2014, the Canadian Joint Replacement Registry (CJRR) annual report (<https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC2625&lang=en&media=0>) included results for knee replacements performed in acute care hospitals only. Beginning in 2013–2014, the results for knee replacement include both acute and day surgery cases.

As of 2013–2014, the knee replacement rates published in the Health Indicators E-Publication include additional patella-only replacement procedures. Comparability with previous years might be affected.

1. Regional results are available in the Health Indicators e-Publication.

2. Provincial results are also available in [Quick Stats](#). Please note the following:

–Prior to 2013–2014, results for Yukon, the Northwest Territories and Nunavut were suppressed in the CJRR annual report (<https://www.cihi.ca/sites/default/files/document/cjrr-annual-report-2018-en.pdf>). However, their numbers are included in Canadian calculations.

Comments –As of 2013–2014, knee replacements from day surgery settings are included in the CJRR annual report (<https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC2625&lang=en&media=0>).

–Calculation of a patient's geography in the Health Indicators e-Publication is based on the Postal Code Conversion File (PCCF), whereas in the CJRR annual report (<https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC2625&lang=en&media=0>) it is based on the forward sortation area (FSA).

–Beginning with 2015–2016 data, procedures involving implantation of a cement spacer are excluded from knee replacement cases when it is not part of a revision surgery; comparability with previous years should not be affected.