

# 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 <a href="#">General Methodology Notes</a>.</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	<a href="http://www.cihi.ca/hirpt/?language=en">http://www.cihi.ca/hirpt/?language=en</a>
Identifying Information	
Name	Knee Replacement Rate
Short/Other Names	Age-Standardized Rate for Knee Replacements
Indicator Description and Calculation	<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 <a href="#">General Methodology Notes</a>.</p> <p>(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)</p> <p>Place of residence Rate - Per 100,000 Age-adjusted Direct Standardization <b>Standard Population:</b> Canada 2011 <b>Description:</b> Total mid-year population age 18 and older <b>Description:</b> Total number of discharges for all knee replacement procedures for patients age 18 and older</p> <p>Unit of analysis: Single admission</p> <p><b>Inclusions:</b></p> <ol style="list-style-type: none"><li>1. Knee replacement procedures</li></ol> <p>CCI: 1.VG.53<sup>^^</sup> and 1.VP.53<sup>^^</sup></p> <p>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.</p>
Description	
Calculation: Description	
Calculation: Geographic Assignment	
Calculation: Type of Measurement	
Calculation: Adjustment Applied	
Calculation: Method of Adjustment	
Denominator	
Numerator	<ol style="list-style-type: none"><li>2. Age at admission: 18 and older</li><li>3. Sex recorded as male or female</li></ol>

	<p>4. Admission to an acute care institution or day surgery facility (Facility Type Code = 1 or A)</p> <p><b>Exclusions:</b></p> <p>1. Records with cement spacers not coded as revision (intervention code 1VG53LASLN and Intervention Status Attribute does not equal R)</p> <p>2. Knee replacement procedures that were abandoned after onset or performed out of hospital (Intervention Status Attribute = A or OOH Indicator Flag = Y)</p> <p>3. Newborn, stillbirth or cadaveric donor records (Admission Category Code = N, R or S)</p>
Background, Interpretation and Benchmarks	
Rationale	<p>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.</p>
Interpretation	<p>Does not apply to this measure (that is, there is no predefined preference for the measure score)</p>
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	<p>DAD, HMDB, NACRS</p> <p><b>Type of Year:</b> Fiscal</p> <p><b>First Available Year:</b> 2010</p> <p><b>Last Available Year:</b> 2017</p>
Available Data Years	
Geographic Coverage	All provinces/territories
Reporting Level/Disaggregation	National, Province/Territory, Region
Result Updates	
Update Frequency	Every year
Indicator Results	<p><b>Web Tool:</b> Health Indicators e-Publication</p> <p><b>URL:</b> <a href="http://www.cihi.ca/hirpt/?language=en">http://www.cihi.ca/hirpt/?language=en</a></p>
Updates	Not applicable
Quality Statement	
Caveats and Limitations	<p>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.</p> <p>Prior to 2013–2014, the Canadian Joint Replacement Registry (CJRR) annual report (<a href="https://secure.cihi.ca/estore/productFamily.htm?locale=en&amp;pf=PFC2625&amp;lang=en&amp;media=0">https://secure.cihi.ca/estore/productFamily.htm?locale=en&amp;pf=PFC2625&amp;lang=en&amp;media=0</a>) 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.</p>
Trending Issues	<p>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.</p> <p>1. Regional results are available in the Health Indicators e-Publication.</p> <p>2. Provincial results are also available in <a href="#">Quick Stats</a>. Please note the following:</p> <p>–Prior to 2013–2014, results for Yukon, the Northwest Territories and Nunavut were suppressed in the CJRR annual report (<a href="https://www.cihi.ca/sites/default/files/document/cjrr-annual-report-2018-en.pdf">https://www.cihi.ca/sites/default/files/document/cjrr-annual-report-2018-en.pdf</a>). However, their numbers are included in Canadian calculations.</p> <p>–As of 2013–2014, knee replacements from day surgery settings are included in the CJRR annual report (<a href="https://secure.cihi.ca/estore/productFamily.htm?locale=en&amp;pf=PFC2625&amp;lang=en&amp;media=0">https://secure.cihi.ca/estore/productFamily.htm?locale=en&amp;pf=PFC2625&amp;lang=en&amp;media=0</a>).</p>
Comments	

–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.