

# 30-Day In-Hospital Mortality After Percutaneous Coronary Intervention (PCI)

Name	30-Day In-Hospital Mortality After Percutaneous Coronary Intervention (PCI)
Short/Other Names	PCI Mortality
Description	Risk-adjusted rate of all-cause in-hospital deaths occurring within 30 days for patients undergoing a percutaneous coronary intervention (PCI). For further details, please see the <a href="#">Cardiac Care Quality Indicators (CCQI) General Methodology Notes</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 except Quebec
Reporting Level /Disaggregation	National, Province/Territory, Facility
Indicator Results	<a href="https://www.cihi.ca/en/cardiac-care">https://www.cihi.ca/en/cardiac-care</a>
<b>Identifying Information</b>	
Name	30-Day In-Hospital Mortality After Percutaneous Coronary Intervention (PCI)
Short/Other Names	PCI Mortality
<b>Indicator Description and Calculation</b>	
Description	Risk-adjusted rate of all-cause in-hospital deaths occurring within 30 days for patients undergoing a percutaneous coronary intervention (PCI). For further details, please see the <a href="#">Cardiac Care Quality Indicators (CCQI) General Methodology Notes</a> . The risk-adjusted rate for a facility is calculated by dividing the observed number of in-hospital deaths for each facility by the expected number of in-hospital deaths for the facility and multiplying by the Canadian average in-hospital death rate.
Calculation: Description	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. For further details, please see the <a href="#">CCQI General Methodology Notes</a> .
Calculation: Geographic Assignment	Place of service
Calculation: Type of Measurement	Rate - Rate, per 100  The following covariates are used in risk adjustment:
Calculation: Adjustment Applied	Age, sex, cerebrovascular disease, peripheral vascular disease, coronary syndrome status, shock, cardiac dysrhythmias, multiple cardiac interventions, pneumonia, previous acute myocardial infarction, previous cardiac interventions, multivessel PCI, acute renal failure, Charlson Index, acute care transfer  For detailed definitions of covariates and the risk-adjustment method, please refer to the <a href="#">CCQI General Methodology Notes</a> .
Calculation: Method of Adjustment	Logistic regression
<b>Description:</b> Number of hospitalization episodes for patients age 18 and older who underwent a PCI	
<b>Inclusions:</b>	
Denominator	1. Episodes that had a PCI (CCI code: 1.IJ.50.^ or 1.IJ.57.GQ^), where the intervention was not coded as out of hospital or abandoned (Out-of-Hospital Indicator not equal to Y and Intervention Status Attribute not equal to A)
	2. Discharge date at the end of the episode between April 1 and March 31 of the fiscal year
	3. PCI date on or before March 1 of the fiscal year (to allow for a 30-day follow-up to capture deaths occurring in the same fiscal year). PCIs performed prior to the fiscal year may be included if the discharge date at the end of the episode of care was in the following fiscal year.
	4. First PCI within 30 days (i.e., repeat PCIs within 30 days are excluded)
<b>Exclusions:</b> None	
<b>Description:</b> Number of hospitalization episodes within the denominator that result in an in-hospital death within 30 days of PCI procedure	
Numerator	<b>Inclusions:</b>
	1. In-hospital death (Discharge Disposition = 07)
<b>Exclusions:</b> None	
Background, Interpretation and Benchmarks	

Considering that about 2.4 million Canadians are living with heart disease and that Canada's population is increasingly at risk,<sup>1</sup> it's important to examine the quality of cardiac care in order to support improvements in care and ultimately in the health of Canadians.

Rationale Percutaneous coronary intervention (PCI) is a well-established procedure to treat coronary artery stenosis. As the number of PCIs has increased in recent years, there is a high potential for variation in quality of care.<sup>2</sup> Short-term mortality after PCI has been identified as a key quality indicator for PCI care by the Canadian Cardiovascular Society.<sup>3</sup> PCI can be performed as a day procedure or as part of an inpatient hospitalization to treat many different types of patients.

The indicator can provide direction for quality improvement and can help hospitals identify peers to facilitate knowledge sharing around best practices of care.

Interpretation Lower rates are desirable.

HSP

Framework

Health System Outputs: Appropriate and effective

Dimension

on

Areas of Need

Getting Better

Targets

/Benchmarks

Not applicable

1. Government of Canada. [Heart Disease in Canada](#). Accessed February 22, 2019.

2. Quraishi A, et al. [Quality of care for percutaneous coronary intervention: Development of Canadian Cardiovascular Society quality indicators](#). *Canadian Journal of Cardiology*. December 2016.

References

3. Canadian Cardiovascular Society. [The Canadian Cardiovascular Society Quality Indicators E-Catalogue: Quality Indicators for Percutaneous Coronary Intervention](#). 2015.

4. Donabedian A. *The Criteria and Standards of Quality*. 1982.

Availability of Data Sources and Results

Data Sources

DAD, NACRS

**Type of Year:**

Fiscal

Available Data Years

**First Available Year:**

2013

**Last Available Year:**

2017

Geographic Coverage

All provinces/territories except Quebec

Reporting Level/Disaggregation National, Province/Territory, Facility

Result Updates

Update Frequency Every year

**Web Tool:**

Indicator Results

[Cardiac Care Quality Indicators Report](#)

**URL:** <https://www.cihi.ca/en/cardiac-care>

Updates

Please refer to the [CCQI General Methodology Notes](#).

Quality Statement

– Cardiac care is delivered by many different health care professionals, and the resulting outcomes are a reflection of the whole system of care, rather than being attributable to a particular physician in a centre. Quality outcomes depend not only on a physician's technical skills, but also on the structure and care processes that are found in the environment in which health care is delivered.<sup>4</sup>

– Some cardiac care centres are more specialized, perform interventions on more complex patients or accept higher-risk patients than average. CIHI is able to adjust for some of these differences across patient populations; however, the administrative data submitted is limited in its ability to capture and adjust for all differences associated with patient populations. Centres with more complex patients may have increased mortality and/or readmission rates because not all aspects of complexity can be adjusted for in the administrative data.

Caveats

– Transferring patients to a different hospital following a cardiac intervention is normal practice for many cardiac care centres. As such, there are potential learning opportunities beyond the centres included in this indicator.

and

Limitations

– Rates with wide confidence intervals should be interpreted with caution as they reflect a less-precise estimate.

– Direct comparisons between cardiac care centres or provinces are discouraged. Comparisons with the Canadian average provide more meaningful information.

– Indicator results do not provide a final conclusion about cardiac care performance and can be used as a first step in an improvement process to identify areas for follow-up and potential improvements.

– There is no comprehensive capture of PCI data in Quebec, so data from Quebec cannot be included in analyses.

– Out-of-hospital deaths are not captured in CIHI's administrative databases.

Trending

Not applicable

Issues

This indicator belongs to a suite of Cardiac Care quality indicators (CCQI) that provide pan-Canadian comparable information on outcomes related to selected cardiac interventions. The goal is to support monitoring and quality improvement in cardiac care.

More information on the CCQI Report is available on our [Cardiac Care web page](#).

Comments Publicly available indicator results are based on 3 years of pooled data.

Indicator results based on 1 year of data are also available

- In the Data Preview for Indicators Tool (<https://www.cihi.ca/en/secure/health-system-performance/your-health-system-tools/data-preview-for-indicators>)
- By request.