

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

NICE indicator validity assessment

Indicator IND73

The proportion of patients with ST-segment elevation myocardial infarction (STEMI) who had balloon inflation for primary percutaneous coronary intervention (PCI) in less than 60 minutes from time of admission at a centre with primary PCI facilities.

Importance

Considerations	Assessment
The NHS Long Term Plan identifies cardiovascular disease as a clinical priority, and the single biggest condition where lives can be saved by the NHS over the next 10 years.	The indicator reflects a specific priority area identified by NHS England.
Analysis of MINAP data by Bebb, Hall et al. (2017) found that 75% of patients with STEMI receive primary PCI within 60 minutes; hospital variation showed a median achievement of 69.9% (IQR 54.6 – 80.8%). Primary PCI within 60 minutes has an inverse relationship with 30-day mortality OR 0.52 (0.46, 0.59) p<0.001. The MINAP summary report 2020 reports that 73% of patients have primary PCI within 60 mins of arrival at a primary PCI hospital. In the best performing hospital, 92% of patients achieve this. In 7 hospitals fewer than 60% of patients achieve this.	The indicator relates to an area where there is known variation in practice. The indicator addresses under-treatment.
The Acute Cardiovascular Care Association's (ACCA) position paper on quality indicators for myocardial infarction (2017) writes that in patients with STEMI admitted during the first few hours after symptom onset, the choice of reperfusion strategy and the speed with which it is implemented have an impact on preserving myocardial function and improving long-term survival.	The indicator will lead to a meaningful improvement in patient outcomes.

Evidence base

Considerations	Assessment
Acute coronary syndromes. NICE guideline NG185 (2020), recommendations 1.1.3 and 1.1.6. 1.1.3 Deliver coronary reperfusion therapy (either primary PCI or fibrinolysis) as quickly as possible for eligible people with acute STEMI.	The indicator is derived from a high-quality evidence base. The indicator aligns with the evidence base.

<p>1.1.6 Offer coronary angiography, with follow-on primary PCI if indicated, as the preferred reperfusion strategy for people with acute STEMI if:</p> <ul style="list-style-type: none"> • Presentation is within 12 hours of onset of symptoms and • Primary PCI can be delivered within 120 minutes of the time when fibrinolysis could have been given. <p>European Society of Cardiology. ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation (2017) This guideline summarises important time targets in acute STEMI. This recommends a target of 60 minutes or less for patients admitted to an interventional centre.</p>	<p>The indicator aligns with the evidence base although NICE guidance does not specify a measurable timepoint for reperfusion. Recommendation 1.1.6 does specify that primary PCI be the method of choice if it can be given within 120 minutes of the time that fibrinolysis could have been given.</p>
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Specification

Considerations	Assessment
<p>Numerator: The number of patients in the denominator who had balloon inflation for primary PCI in less than 60 minutes from admission at a centre with primary PCI facilities.</p> <p>Denominator: The number of patients with STEMI treated with primary PCI.</p> <p>Exclusions: Patients presenting in cardiogenic shock. Patients requiring pre-PCI ventilation. Patients who do not proceed to balloon inflation.</p>	<p>The indicator has defined components necessary to construct the indicator, including numerator, denominator and exclusions.</p> <p>The construction proposed by the ESC ACCA has been adapted for publication on the NICE menu of indicators.</p>
<p>Audit data is presented at hospital trust level. This is proposed to be a CCG level NICE menu indicator.</p> <p>NICE CCG level indicators are intended for use where there is an average of 50 patients or more per CCG. Data presented as part of the study by Bebb et al (2017) based on the MINAP database for the period 2012 to 2013 shows 33,151 eligible patients and this indicates an average number of 245 patients per CCG (135 CCGs April 2020).</p>	<p>The indicator does outline minimum numbers of patients needed to be confident in the assessment of variation.</p>

Feasibility

Considerations	Assessment
<p>Data is collected annually as part of the National Audit of PCI (NAPCI).</p>	<p>The indicator is repeatable.</p>

<p>Details of the NAPCI dataset, including definitions of the variables and guidance on applying options are also published by National Institute for Cardiovascular Outcomes Research (NICOR).</p> <p>Data fields collected include:</p> <ul style="list-style-type: none"> • Presenting ECG (2.10) • Date/time arrival at PCI hospital (4.04) • Date/time of first balloon inflation (3.26) • Cardiogenic shock (2.04) • Ventilated pre-op (5.07) 	<p>The indicator is measuring what it is designed to measure.</p> <p>The indicator uses existing data fields.</p>
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Acceptability

Considerations	Assessment
This is an assessment of hospital response only as it measures the time from admission to intervention.	The indicator assesses performance that is attributable to or within the control of the audience.
Data tables are published on the NICOR website in order to compare practice and assist in quality improvement cycles.	The results of the indicator can be used to improve practice

Risk

Considerations	Assessment
NAPCI is a domain with the National Cardiac Audit Programme and under the governance of the Healthcare Quality Improvement Partnership (HQIP). Robust governance structures are in place to ensure data quality and monitor appropriateness of audit measures. There is a minimum dataset against which each participating hospital is assessed for data completeness.	The indicator has an acceptable risk of unintended consequences.

NICE indicator advisory committee recommendation

The NICE indicator advisory committee approved this indicator for publication on the menu.