Indicator Specification
Acute Coronary Syndromes
Clinical Care Standard
Suggested citation


Acknowledgments

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Disclaimer

The Australian Commission on Safety and Quality in Health Care has produced this Clinical Care Standard to support the delivery of appropriate care for a defined condition and is based on the best evidence available at the time of development. Health care professionals are advised to use clinical discretion and consideration of the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian when applying information contained within the Clinical Care Standard. Consumers should use the information in the Clinical Care Standard as a guide to inform discussions with their health care professional about the applicability of the Clinical Care Standard to their individual condition.
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Acute Coronary Syndromes Clinical Care Standard

1. A patient presenting with acute chest pain or other symptoms suggestive of an acute coronary syndrome receives care guided by a documented chest pain assessment pathway.

2. A patient with acute chest pain or other symptoms suggestive of an acute coronary syndrome receives a 12-lead electrocardiogram (ECG) and the results are analysed by a clinician experienced in interpreting an ECG within 10 minutes of the first emergency clinical contact.

3. A patient with an acute ST-segment-elevation myocardial infarction (STEMI), for whom emergency reperfusion is clinically appropriate, is offered timely percutaneous coronary intervention (PCI) or fibrinolysis in accordance with the time frames recommended in the current National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand Guidelines for the Management of Acute Coronary Syndromes.¹

   In general, primary PCI is recommended if the time from first medical contact to balloon inflation is anticipated to be less than 90 minutes, otherwise the patient is offered fibrinolysis.

4. A patient with a non-ST-segment-elevation acute coronary syndrome (NSTEACS) is managed based on a documented, evidence-based assessment of their risk of an adverse event.

5. The role of coronary angiography, with a view to timely and appropriate coronary revascularisation, is discussed with a patient with a non-ST-segment-elevation acute coronary syndrome (NSTEACS) who is assessed to be at intermediate or high risk of an adverse cardiac event.

6. Before a patient with an acute coronary syndrome leaves the hospital, they are involved in the development of an individualised care plan. This plan identifies the lifestyle modifications and medicines needed to manage their risk factors, addresses their psychosocial needs and includes a referral to an appropriate cardiac rehabilitation or another secondary prevention program. This plan is provided to the patient and their general practitioner or ongoing clinical provider within 48 hours of discharge.

Introduction

An acute coronary syndrome results from a sudden blockage of a blood vessel in the heart, typically by a blood clot (thrombosis) that reduces blood supply to a portion of heart muscle. Where the blockage is severe enough to lead to injury or death of the heart muscle, the event is called an acute myocardial infarction (or ‘heart attack’). Acute coronary syndromes also include unstable angina (chest pain usually due to restricted blood flow to the heart muscles), which can lead to a heart attack. The most common cause of an acute coronary syndrome is atherosclerosis (or ‘coronary heart disease’) where an artery wall thickens due to a build-up of fatty materials such as cholesterol.

Acute coronary syndromes affect thousands of Australians. It is estimated that 69,900 people aged 25 and over had a heart attack in 2011, which equates to around 190 heart attacks a day. Further, coronary heart disease contributed to 15% of all deaths in Australia in 2011.a

Despite well-developed guidelines for managing acute coronary syndromes, recent research found that not all patients receive appropriate treatments, particularly for invasive management of this condition.b The logistical challenges regarding the provision of timely invasive management to patients in regional, remote and outer metropolitan areas were also highlighted.b

The Acute Coronary Syndromes Clinical Care Standard aims to ensure that a patient with an acute coronary syndrome receives optimal treatment from the onset of symptoms through to discharge from hospital. This includes recognition of an acute coronary syndrome, rapid assessment, early management and early initiation of a tailored rehabilitation plan.

A set of suggested indicators have been developed to assist with local implementation of this Clinical Care Standard. They can be used by health services to monitor the implementation of the quality statements, and support improvement as needed.

The process to develop these indicators comprised:

- an environmental scan of existing local and international indicators
- a prioritisation review and refinement of the indicators with a dedicated sub-committee of the Topic Working Group, and review by the Topic Working Group and Clinical Care Standards Advisory Committee.

Where no indicator was identified for a given quality statement, the sub-committee drafted new indicators based on their experience with audits in relevant sectors.

The specification of the indicators aims to support the consistent local collection of data related to the implementation of this Clinical Care Standard. It sets out the name for each indicator along with the rationale, computation, numerator, denominator, relevant inclusion and exclusions criteria, and associated references.

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Role of the Commission in developing indicators

Responsibilities of the Australian Commission on Safety and Quality in Health Care (the Commission) are specified in the National Health Reform Act 2011 and the National Health Reform Agreement 2011.

The National Health Reform Act requires the Commission to ‘formulate, in writing, indicators relating to health care safety and quality matters’ (9)(1)(g), and to ‘promote, support and encourage the use of indicators formulated …’(9)(1)(i).

The National Health Reform Agreement specifies the Commission’s responsibility to ‘recommend national datasets for safety and quality…’ (clause B80d).

The Commission’s work program is driven by the Australian Safety and Quality Framework for Health Care principles, which state that health care delivery should be consumer centred, driven by information, and organised for safety.

Notes

METeOR is the national metadata registrya. Where a data element is part of the National Health Data Dictionary, the METeOR identifier is referenced.

International Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM, 8th edition) codes, applied to admitted patient records, do not always align with the most current clinical classifications of a condition, in this case acute coronary syndromes. The intent of appending ICD-10-AM codes for pertinent cardiac conditions and procedures is to assist hospitals in generating ‘first pass’ lists of eligible patients for inclusion in the cohort for whom to generate the indicators.

The indicators are intended for local use by ambulance services, hospitals and local hospital networks (LHNs) where relevant.

For more information about this Clinical Care Standard, visit www.safetyandquality.gov.au/ccs.

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a See www.meteor.aihw.gov.au/content/index.phtml/itemId/181162.
Quality statement 1 – Immediate management

A patient presenting with acute chest pain or other symptoms suggestive of an acute coronary syndrome receives care guided by a documented chest pain assessment pathway.

**Indicator 1a: Patients whose care is guided by a documented chest pain assessment pathway**

**Definitional attributes**

**Name:** Proportion of patients presenting with acute chest pain, or other symptoms suggestive of an acute coronary syndrome (ACS), whose care is guided by a documented chest pain assessment pathway.

**Rationale:** Adherence to using and documenting the chest pain assessment pathway optimises patient outcomes in the management of ACS.

**Collection and usage attributes**

**Computation:** \((\text{Numerator} ÷ \text{denominator}) \times 100\)

**Numerator:** Total number of patients presenting to hospital with acute chest pain, or other symptoms suggestive of ACS, whose care is guided by a documented chest pain assessment pathway.

**Numerator criteria:**

- **Inclusions:** Patients with a final diagnosis of unstable angina (UA) (I20.x) or acute myocardial infarction (I21.x).\(^a\)
  - Care type = ‘1’ (acute care).\(^b\)
- **Exclusions:** N/A.

**Denominator:** Total number of patients presenting to hospital with acute chest pain or other symptoms suggestive of ACS.

**Denominator criteria:**

- **Inclusions:** Patients with a final diagnosis of UA (I20.x) or acute myocardial infarction (I21.x).\(^a\)
  - Care type = ‘1’ (acute care).\(^b\)
- **Exclusions:** N/A.

**Setting:** Acute/hospital.

**Comments:** Assessment is still indicated for patients with advanced care directives, on a palliative care pathway, subject to discussion with patients, family and carers.

**Reference**

**Supplementary source:**

\(^{a}\) ICD-10AM (8th edition).

\(^{b}\) METeOR identifier: 491557.
Quality statement 2 – Early assessment

A patient with acute chest pain or other symptoms suggestive of an acute coronary syndrome receives a 12-lead electrocardiogram (ECG) and the results are analysed by a clinician experienced in interpreting an ECG within 10 minutes of the first emergency clinical contact.

Indicators 2a: Ambulances equipped with 12-lead ECG

Definitional attributes

Name: Proportion of ambulances that respond to acute chest pain calls that are equipped with a 12-lead ECG in the reference ambulance service.

Rationale: Early diagnosis allows the ambulance to initiate treatment and alert the emergency department (ED) with the diagnostic information to optimise door-to-needle time and time to other interventions. The Guidelines for the management of acute coronary syndromes (The Guidelines) recommend that ‘a 12-lead ECG should be taken en route and transmitted to a medical facility.’1

Collection and usage attributes

Computation: \((\text{Numerator} \div \text{denominator}) \times 100\)

Numerator: Total number of eligible ambulances (those that respond to acute chest pain calls) equipped with 12-lead ECG.

Denominator: Total number of eligible ambulances in the reference service or LHN.

Numerator criteria: Inclusions
Eligible ambulances equipped with 12-lead ECG in the reference ambulance service or Local Hospital Network (LHN).

Denominator criteria: Inclusions
Eligible ambulances (those attending to chest pain calls) in the reference ambulance service or LHN.

Exclusions
Ambulances not eligible to attend chest pain calls.

Setting: Ambulance.

Comments: This indicator has not previously been used in Australia. It was developed through clinical consensus by the Acute Coronary Syndromes Clinical Care Standard Topic Working Group to support this quality statement.1

Reference

Quality statement 2 – Early assessment

Indicator 2b: ECG performed within 10 minutes of arrival of ambulance

Definitional attributes

Name: Proportion of patients with chest pain with ECG performed within 10 minutes of first clinical contact, after arrival of ambulance.

Rationale: Early diagnosis optimises door-to-needle time and time to other interventions. The time taken to record the first ECG is a good index of quality care. The European Society of Cardiology guidelines identify that ECG should be performed within ten minutes or less after the first medical contact (either on arrival of the patient in ED or at first contact with emergency medical services in the pre-hospital setting) and immediately interpreted by a qualified physician.1,2

Collection and usage attributes

Computation: \((\frac{\text{Numerator}}{\text{denominator}}) \times 100\)

Numerator: Total number of patients with chest pain who receive an ECG within 10 minutes of an ambulance arrival.

Denominator: Total number of patients with chest pain attended to by ambulances.

Denominator criteria: Inclusions
All patients with chest pain attended by ambulance, where a 12-lead ECG was performed by ambulance officers.
All patients with chest pain attended by ambulance, where a 12-lead ECG was not performed by ambulance officers.

Exclusions
Patients where an ECG is performed in the absence of chest pain.

Setting: Ambulance.

Comments: ‘First clinical contact’ is defined as the time that emergency medical services personnel arrive at the patient.3

References
Quality statement 2 – Early assessment

Indicator 2c: ECG performed and interpreted within 10 minutes of arrival to ED

Definitional attributes

Name: Proportion of patients, including patients presenting to ED via ambulance, with acute chest pain or other symptoms suggestive of ACS, with ECG performed and analysed before or within 10 minutes of arrival to ED.

Rationale: Early diagnosis optimises door-to-needle time and time to other interventions. The time taken to record the first ECG is a good index of quality care. The European Society of Cardiology guidelines identify that the ECG should be performed within 10 minutes or less after the first medical contact (either on arrival of the patient in ED or at first contact with emergency medical services in the pre-hospital setting) and immediately interpreted by a qualified physician.1,2

Collection and usage attributes

Computation: \((\text{Numerator} \div \text{denominator}) \times 100\)

Numerator: Total number of patients, including patients presenting to ED via ambulance, with acute chest pain or other symptoms suggestive of ACS, with ECG performed and analysed before or within 10 minutes of arrival to ED.

Numerator criteria: Inclusions
All patients, including patients presenting to ED via ambulance with acute chest pain or other symptoms suggestive of ACS, where a 12-lead ECG was performed and analysed before or within 10 minutes of arrival to ED.

Denominator: Total number of patients, including patients presenting to ED via ambulance, with acute chest pain or other symptoms suggestive of ACS.

Denominator criteria: Inclusions
All patients with acute chest pain or other symptoms suggestive of ACS presenting to ED.

Setting: Acute/hospital.

Comments: It is common practice for doctors and senior nursing staff to sign ECGs on review, with date and time of review.

References
Quality statement 3 – Timely reperfusion

A patient with an acute ST-segment-elevation myocardial infarction (STEMI), for whom emergency reperfusion is clinically appropriate, is offered timely percutaneous coronary intervention (PCI) or fibrinolysis in accordance with the time frames recommended in the current National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand Guidelines for the Management of Acute Coronary Syndromes.

In general, primary PCI is recommended if the time from first medical contact to balloon inflation is anticipated to be less than 90 minutes, otherwise the patient is offered fibrinolysis.

Indicator 3a: STEMI patients receiving fibrinolysis or PCI

Definitional attributes

Name: Proportion of patients with STEMI at first emergency contact presenting within 12 hours of symptom onset and receiving fibrinolysis or percutaneous coronary intervention (PCI).

Rationale: The Guidelines recommend that ‘patients with STEMI who present within 12 hours of the onset of ischaemic symptoms should have a reperfusion strategy implemented promptly.’

Collection and usage attributes

Computation: \(\frac{\text{Numerator}}{\text{denominator}} \times 100\)

Numerator: Total number of patients with STEMI presenting to hospital within 12 hours of symptom onset, who receive fibrinolysis or PCI.

Inclusions

STEMI patients. That is, patients with a diagnosis of one of the following:

- acute transmural myocardial infarction of anterior wall (I21.0)
- acute transmural myocardial infarction of inferior wall (I21.1)
- acute transmural myocardial infarction of other sites (I21.2)
- acute transmural myocardial infarction of unspecified site (I21.3).

Care type = ‘1’ (acute care)

AND

Patients undergoing percutaneous coronary intervention. That is, patients undergoing one of the following procedures:

- percutaneous transluminal balloon angioplasty of 1 coronary artery (38300-00, [block 670])
- percutaneous transluminal balloon angioplasty of >=2 coronary arteries (38303-00, [block 670])
- percutaneous insertion of 1 transluminal stent into single coronary artery (38306-00 [block 671])

a ICD-10-AM (8th edition).
b METeOR identifier: 491557.
Quality statement 3 – Timely reperfusion

- percutaneous insertion of >= 2 transluminal stents into single coronary artery (38306-01 [block 671])
- percutaneous insertion of >= 2 transluminal stents into multiple coronary arteries (38306-02 [block 671])
- open insertion of 1 transluminal stent into single coronary artery (38306-03 [block 671])

OR
administration of fibrinolytic drugs.

Exclusions
Patients with STEMI who receive fibrinolysis or PCI, where presentation is more than 12 hours after symptom onset.
Patients with left bundle branch block (LBBB)(144.x).

Exclusions
Patients with STEMI who present more than 12 hours after symptom onset.
Patients with LBBB (144.x).a
Patients for whom PCI and fibrinolysis are contraindicated, and for whom the contraindication is documented.

Setting: Acute/hospital.

Comments: Contraindications for PCI and fibrinolysis may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

References

Denominator: Total number of patients with STEMI presenting to hospital within 12 hours of symptom onset.

Denominator criteria:

Inclusions
STEMI patients. That is, patients with a diagnosis of one of the following:
- acute transmural myocardial infarction of anterior wall (I21.0)
- acute transmural myocardial infarction of inferior wall (I21.1)
- acute transmural myocardial infarction of other sites (I21.2)
- acute transmural myocardial infarction of unspecified site (I21.3).a

Care type = ‘1’ (acute care).b

Exclusions
Patients with STEMI who present more than 12 hours after symptom onset.

Exclusions
Patients with LBBB (144.x).a

Patients for whom PCI and fibrinolysis are contraindicated, and for whom the contraindication is documented.

Setting: Acute/hospital.

Comments: Contraindications for PCI and fibrinolysis may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

References

Denominator: Total number of patients with STEMI presenting to hospital within 12 hours of symptom onset.

Denominator criteria:

Inclusions
STEMI patients. That is, patients with a diagnosis of one of the following:
- acute transmural myocardial infarction of anterior wall (I21.0)
- acute transmural myocardial infarction of inferior wall (I21.1)
- acute transmural myocardial infarction of other sites (I21.2)
- acute transmural myocardial infarction of unspecified site (I21.3).a

Care type = ‘1’ (acute care).b

Exclusions
Patients with STEMI who present more than 12 hours after symptom onset.

Exclusions
Patients with LBBB (144.x).a

Patients for whom PCI and fibrinolysis are contraindicated, and for whom the contraindication is documented.

Setting: Acute/hospital.

Comments: Contraindictions for PCI and fibrinolysis may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

References

Denominator: Total number of patients with STEMI presenting to hospital within 12 hours of symptom onset.

Denominator criteria:

Inclusions
STEMI patients. That is, patients with a diagnosis of one of the following:
- acute transmural myocardial infarction of anterior wall (I21.0)
- acute transmural myocardial infarction of inferior wall (I21.1)
- acute transmural myocardial infarction of other sites (I21.2)
- acute transmural myocardial infarction of unspecified site (I21.3).a

Care type = ‘1’ (acute care).b

Exclusions
Patients with STEMI who present more than 12 hours after symptom onset.

Exclusions
Patients with LBBB (144.x).a

Patients for whom PCI and fibrinolysis are contraindicated, and for whom the contraindication is documented.

Setting: Acute/hospital.

Comments: Contraindications for PCI and fibrinolysis may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

References
Quality statement 3 – Timely reperfusion

Indicator 3b: STEMI patients receiving fibrinolysis within 30 minutes of hospital arrival

Definitional attributes

Name: Proportion of patients with STEMI, whose first emergency clinical contact is within 12 hours of symptom onset, treated with fibrinolysis before or within 30 minutes of hospital arrival.

Rationale: Early administration of fibrinolytic therapy given soon after symptom onset has been shown to reduce mortality by up to 50 per cent.¹ The American Heart Association Task Force recommends fibrinolysis within 30 minutes of arrival where a door-to-device time is anticipated to exceed 120 minutes.²

Collection and usage attributes

Computation: \( \frac{\text{Numerator}}{\text{denominator}} \times 100 \)

Numerator: Total number of patients with STEMI presenting at first emergency clinical contact within 12 hours of symptom onset, receiving fibrinolysis before or within 30 minutes of hospital arrival.

Denominator: Total number of patients with STEMI presenting at first emergency clinical contact within 12 hours of symptom onset.

Numerator criteria:

- Inclusions: STEMI patients. That is, patients with a diagnosis of one of the following:
  - acute transmural myocardial infarction of anterior wall (I21.0)
  - acute transmural myocardial infarction of inferior wall (I21.1)
  - acute transmural myocardial infarction of other sites (I21.2)
  - acute transmural myocardial infarction of unspecified site (I21.3).²
- Care type = ‘1’ (acute care).²

Exclusions: Nil.

Denominator criteria:

- Inclusions: STEMI patients. That is, patients with a diagnosis of one of the following:
  - acute transmural myocardial infarction of anterior wall (I21.0)
  - acute transmural myocardial infarction of inferior wall (I21.1)
  - acute transmural myocardial infarction of other sites (I21.2)
  - acute transmural myocardial infarction of unspecified site (I21.3).²
- Care type = ‘1’ (acute care).²

Exclusions: Patients for whom fibrinolysis is contraindicated and for whom the contraindication is documented.

¹ ICD-10-AM (8th edition).
² METeOR identifier: 491557.
Quality statement 3 – Timely reperfusion

Setting: Acute/hospital.

Comments: Contraindications for fibrinolysis may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

The Guidelines reference both absolute and relative contraindications to the administration of fibrinolysis.3

References

Supplementary source:
Quality statement 3 – Timely reperfusion

Indicator 3c: PCI patients with STEMI with door-to-device within 90 minutes

Definitional attributes

Name: Proportion of patients with STEMI, treated with PCI, who have a door-to-device time of 90 minutes or less, after arrival at a PCI-capable hospital, or 120 minutes or less if transferred from a non PCI-capable hospital.

Rationale: Timely PCI has been shown to improve short-term and long-term outcomes such as a reduction in mortality, myocardial infarctions and strokes in patients with STEMI who present to hospital within 12 hours of symptom onset. The Guidelines state that ‘a time delay of 90 minutes from first medical contact to balloon inflation is the maximum desirable.

Collection and usage attributes

Computation: \( \text{Numerator} \div \text{denominator} \times 100 \)

Numerator: Total number of patients with STEMI, treated with PCI, who have a door-to-device time of 90 minutes or less, after arrival at a PCI-capable hospital, or 120 minutes or less if transferred from a non PCI-capable hospital.

Inclusions

- STEMI patients. That is, patients with a diagnosis of one of the following:
  - acute transmural myocardial infarction of anterior wall (I21.0)
  - acute transmural myocardial infarction of inferior wall (I21.1)
  - acute transmural myocardial infarction of other sites (I21.2)
  - acute transmural myocardial infarction of unspecified site (I21.3).

Care type = ‘1’ (acute care).

Patients undergoing PCI. That is, patients undergoing one of the following procedures:

- percutaneous transluminal balloon angioplasty of 1 coronary artery (38300-00, [block 670])
- percutaneous transluminal balloon angioplasty of >=2 coronary arteries (38303-00, [block 670])
- percutaneous insertion of 1 transluminal stent into single coronary artery (38306-00 [block 671])
- percutaneous insertion of >= 2 transluminal stents into single coronary artery (38306-01 [block 671])
- percutaneous insertion of >= 2 transluminal stents into multiple coronary arteries (38306-02 [block 671])
- open insertion of 1 transluminal stent into single coronary artery (38306-03 [block 671]).

References:

METeOR identifier: 491557.
Quality statement 3 – Timely reperfusion

**Exclusions**
Nil.

**Denominator:** Total number of patients with STEMI who arrive at a PCI-capable hospital or are transferred from a non PCI-capable hospital.

**Denominator criteria:**

**Inclusions**
STEMI patients. That is, patients with a diagnosis of one of the following:

- acute transmural myocardial infarction of anterior wall (I21.0)
- acute transmural myocardial infarction of inferior wall (I21.1)
- acute transmural myocardial infarction of other sites (I21.2)
- acute transmural myocardial infarction of unspecified site (I21.3). \(^a\)

Care type = ‘1’ (acute care). \(^b\)

**Exclusions**
Patients for whom PCI is contraindicated, and for whom the contraindication is documented.

**Setting:** Acute/hospital.

**Comments:**
Contraindications for PCI may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

It is recognised that this target of 90 minutes is difficult to achieve in the management of patients with STEMI who suffer a cardiac arrest, and for whom advanced resuscitation is effected prior to PCI.

**References**


**Supplementary sources:**


\(^a\) ICD-10-AM (8th edition).

\(^b\) METeOR identifier: 491557.
Quality statement 4 – Risk stratification

A patient with a non-ST-segment-elevation acute coronary syndrome (NSTEACS) is managed based on a documented, evidence-based assessment of their risk of an adverse event.

Indicator 4a: NSTEACS patients with documented assessment and risk stratification

Definitional attributes

Name: Proportion of patients hospitalised with NSTEACS who have a documented assessment and risk stratification, using a guideline-recommended tool.

Rationale: Appropriate assessment is needed to determine the likelihood of a cardiac adverse event among NSTEACS patients. Risk stratification of NSTEACS patients is used to determine the likelihood of short-term adverse outcomes, which will direct the treatment management strategy.1

Collection and usage attributes

Computation: \[(\text{Numerator} ÷ \text{denominator}) \times 100\]

Numerator: Total number of patients hospitalised with NSTEACS who have a documented assessment and risk stratification, using a guideline-recommended tool.

Denominator: Total number of patients hospitalised with NSTEACS.

Numerator criteria:

- Inclusions
  - Patients with a final diagnosis of acute subendocardial myocardial infarction (NSTEMI) (I21.4)
  - OR
  - patients with a final diagnosis of unstable angina (UA) (I20.0).a
  - Care type = ‘1’ (acute care).b

- Exclusions
  - Nil.

Denominator criteria:

- Inclusions
  - Patients with a final diagnosis of acute subendocardial myocardial infarction (NSTEMI) (I21.4)
  - OR
  - patients with a final diagnosis of unstable angina (UA) (I20.0).a
  - Care type = ‘1’ (acute care).b

- Exclusions
  - Nil.

Setting: Acute/hospital.

Comments: Assessment and risk stratification is indicated for patients with advanced care directives, on a palliative care pathway, subject to discussion with patients, family and carers.

Risk assessment tools for consideration include:

- i. GRACE ACS Risk Calculator2
- ii. TIMI Risk Score for UA/NSTEMI3
- iii. Acute Coronary Syndromes Treatment Algorithm.4

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a ICD-10-AM (8th edition).
b METeOR identifier: 491557.
References


2. GRACE. Centre for Outcomes Research, University of Massachusetts Medical School: [cited May 2014]; Available from: www.outcomes-umassmed.org/grace.


Quality statement 4 – Risk stratification

Indicator 4b: NSTEACS transfer to hospital with angiography facilities

### Definitional attributes

**Name:** Proportion of patients with NSTEACS in a hospital without angiography facilities, assessed as being at high-risk for a recurrent adverse cardiac event and transferred for angiography elsewhere.

**Rationale:** The Guidelines recommend that arrangements should be made for coronary angiography and revascularisation for high-risk patients, except for those with severe comorbidities, including general frailty.¹

### Collection and usage attributes

**Computation:** \((\text{Numerator} \div \text{denominator}) \times 100\)

**Numerator:** Total number of patients with NSTEACS in a hospital without angiography facilities, assessed as being at high-risk for a recurrent adverse cardiac event who are transferred for angiography elsewhere.

**Numerator criteria:**

- **Inclusions**
  - Patients with a final diagnosis of acute subendocardial myocardial infarction (NSTEMI) (I21.4)
  - OR patients with a final diagnosis of unstable angina (UA) (I20.0).ᵃ
  - Care type = ‘1’ (acute care).ᵇ

- **Exclusions**
  - Nil.

**Denominator:** Total number of patients with NSTEACS in a hospital without angiography facilities.

**Denominator criteria:**

- **Inclusions**
  - Patients with a final diagnosis of acute subendocardial myocardial infarction (NSTEMI) (I21.4)
  - OR patients with a final diagnosis of unstable angina (UA) (I20.0).ᵃ
  - Care type = ‘1’ (acute care).ᵇ

- **Exclusions**
  - Patients for whom angiography is contraindicated, and for whom the contraindication is documented.

**Setting:** Acute/hospital.

**Comments:** Contraindications for angiography may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

Refer to the Guidelines for features associated with high-risk, intermediate-risk and low-risk NSTEACS.¹

### Reference


ᵃ ICD-10-AM (8th edition).
ᵇ METeOR identifier: 491557.
Quality statement 5 – Coronary angiography

The role of coronary angiography, with a view to timely and appropriate coronary revascularisation, is discussed with a patient with a non-ST-segment-elevation acute coronary syndrome (NSTEACS) who is assessed to be at intermediate or high risk of an adverse cardiac event.

Indicator 5a: NSTEACS patients informed of the risks and benefits of coronary angiography

Definitional attributes

**Name:** Proportion of patients with NSTEACS who, having been assessed as intermediate or high-risk using a guideline-recommended tool, are informed of the risks and benefits of coronary angiography.

**Rationale:** High-risk patients should be treated aggressively with medical management and arrangements should be made for coronary angiography and revascularisation where appropriate, except in those with severe comorbidities, including general frailty.1,2 Informing patients of the risks and benefits of a procedure ensures that the delivery of care is consumer-centred and aligns with the Australian Safety and Quality Framework for Health Care.3

Collection and usage attributes

**Computation:** \((\text{Numerator} \div \text{denominator}) \times 100\)

**Numerator:** Total number of NSTEACS patients, who, having been assessed as intermediate or high-risk using a guideline-recommended tool, whose records have documented evidence that they were informed of the risks and benefits of coronary angiography, based upon their clinical situation.

**Numerator criteria:**

- **Inclusions**
  - Patients with a final diagnosis of acute subendocardial myocardial infarction (NSTEMI) (I21.4)
  - OR
  - Patients with a final diagnosis of unstable angina (UA) (I20.0).a
  - Care type = ‘1’ (acute care).b

- **Exclusions**
  - Nil.

**Denominator:** Total number of NSTEACS patients assessed as intermediate or high risk using a guideline-recommended tool.

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a  ICD-10-AM (8th edition).
b  METeOR identifier: 491557.
Quality statement 5 – Coronary angiography

Denominator criteria:

Inclusions
Patients with a final diagnosis of acute subendocardial myocardial infarction (NSTEMI) (I21.4)
OR
patients with a final diagnosis of unstable angina (UA) (I20.0).a
Care type = ‘1’ (acute care).b

Exclusions
Patients for whom angiography is contraindicated, and for whom the contraindication is documented.

Setting: Acute/hospital.

Comments: Refer to the Guidelines for features associated with high-risk, intermediate-risk and low-risk NSTEACS.1
Contraindications for angiography may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

References


a ICD-10-AM (8th edition).
b METeOR identifier: 491557.
Quality statement 6 – Individualised care plan

Before a patient with an acute coronary syndrome leaves the hospital, they are involved in the development of an individualised care plan. This plan identifies the lifestyle modifications and medicines needed to manage their risk factors, addresses their psychosocial needs and includes a referral to an appropriate cardiac rehabilitation or another secondary prevention program. This plan is provided to the patient and their general practitioner or ongoing clinical provider within 48 hours of discharge.

Indicator 6a: ACS patients with an individualised care plan

Definitional attributes

Name: Proportion of ACS patients provided with a written, individualised care plan (addressing factors such as gradual physical activity, smoking cessation and therapies addressing psychosocial needs).

Rationale: ACS patients can successfully contribute to managing their own condition. As such, all patients should be provided with a written care plan for chest pain which includes quitting smoking, good nutrition, moderating alcohol intake, regular physical activity and weight management, as appropriate.

Additionally the care plan should include:

- rest and self-administration of short-acting nitrates
- self-administration of aspirin unless contraindicated (most patients should already be taking aspirin)
- calling an ambulance (e.g. dialing 000) if chest pain or discomfort is not completely relieved within 10 minutes
- individualised clinician notification and care plan for those living in areas where an ambulance is not readily available.

Collection and usage attributes

Computation: \((\text{Numerator} \div \text{denominator}) \times 100\)

Numerator: Total number of ACS patients provided with a written, individualised care plan (addressing factors such as gradual physical activity, smoking cessation and therapies addressing psychosocial needs).

Numerator criteria:

- Inclusions
  - Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).b
  - Care type = ‘1’ (acute care).c

- Exclusions
  - Discharge on palliative care pathway, or where adherence to a secondary prevention plan is not indicated.

\[a\] Except for patients who are very debilitated.

\[b\] ICD-10-AM (8th edition).

\[c\] METeOR identifier: 491557.
Quality statement 6 – Individualised care plan

Denominator: Total number of ACS patients discharged from hospital.

Denominator criteria:  
- Inclusions
  Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).\(^a\)
  Care type = ‘1’ (acute care).\(^b\)
- Exclusions
  Discharge on palliative care pathway, or where adherence to a secondary prevention plan is not indicated.

Setting: Acute/hospital.

Comments: Resources provided to patients who do not speak English may require translation into other languages.

Reference

\(^{a}\) ICD-10-AM (8th edition).
\(^{b}\) METeOR identifier: 491557.
Quality statement 6 – Individualised care plan

Indicator 6b: Patients discharged on aspirin or dual antiplatelet therapy

Definitional attributes

Name: Proportion of patients with a final diagnosis of an ACS who are prescribed aspirin or dual antiplatelet therapy at hospital discharge.

Rationale: ACS patients on aspirin and dual antiplatelet therapies have a reduced risk of secondary cardiac events. The Guidelines recommend that, before discharge, patients with an ACS should be initiated on a medication regimen, including antiplatelet agent(s), beta-blocker, angiotensin-converting enzyme inhibitor, statin and other therapies as appropriate.¹

Collection and usage attributes

Computation: \( \frac{(Numerator ÷ denominator)}{x} \times 100 \)

Numerator: Total number of patients with a final diagnosis of ACS who are prescribed aspirin or other dual antiplatelet therapy at hospital discharge.

Numerator criteria: Inclusions
- Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).ᵃ
- Care type = ‘1’ (acute care).ᵇ

Exclusions
- Nil.

Denominator: Total number of patients with a final diagnosis of ACS who are discharged from hospital.

Denominator criteria: Inclusions
- Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).ᵃ
- Care type = ‘1’ (acute care).ᵇ

Exclusions
- ACS patients for whom aspirin and other antiplatelet therapies are contraindicated, and for whom the contraindication is documented.

Setting: Acute/hospital.

Comments: Contraindications for aspirin and other antiplatelet therapies may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

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ᵃ ICD-10-AM (8th edition).
b METeOR identifier: 491557.
Quality statement 6 – Individualised care plan

References


Supplementary sources:


Quality statement 6 – Individualised care plan

Indicator 6c: Patients discharged on lipid lowering therapy

Definitional attributes

Name: Proportion of patients with a final diagnosis of an ACS who are prescribed lipid lowering therapy at hospital discharge.

Rationale: Lowering lipid levels (using statin) is an effective primary and secondary prevention treatment for vascular events, including stroke.1

Collection and usage attributes

Computation: \((\text{Numerator} \div \text{denominator}) \times 100\)

Numerator: Total number of patients with a final diagnosis of ACS who are prescribed a statin or other lipid lowering therapy at hospital discharge.

Numerator criteria:

- **Inclusions**
  - Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).a
  - Care type = ‘1’ (acute care).b

- **Exclusions**
  - Statin-intolerant ACS patients, and other ACS patients for whom statins or other lipid-lowering therapies are contraindicated and for whom the contraindication is documented.

Denominator: Total number of patients with a final diagnosis of ACS who are discharged from hospital.

Denominator criteria:

- **Inclusions**
  - Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).a
  - Care type = ‘1’ (acute care).b

- **Exclusions**
  - Nil.

Setting: Acute/hospital.

Comments: Contraindications for statins may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

References


Supplementary sources:


a ICD-10-AM (8th edition).

b METeOR identifier: 491557.
Quality statement 6 – Individualised care plan

Indicator 6d: Patients referred to cardiac rehabilitation or other secondary prevention program

Definitional attributes

Name: Proportion of patients with documented referral prior to discharge to a cardiac rehabilitation or an alternative secondary prevention program.

Rationale: Cardiac rehabilitation or other secondary prevention programs are recommended to reduce risk of subsequent cardiac events. All patients with cardiovascular disease should have access, and be actively referred, to comprehensive ongoing prevention and cardiac rehabilitation services. Specific guidelines are available for Indigenous populations.1

Collection and usage attributes

Computation: \( \frac{\text{Numerator}}{\text{denominator}} \times 100 \)

Numerator: Total number of patients with a final diagnosis of ACS with a documented referral prior to discharge to a cardiac rehabilitation or an alternative secondary prevention program.

Denominator: Total number of patients with a final diagnosis of ACS discharged from hospital.

Numerator criteria:

- Inclusions: Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).a
- Care type = ‘1’ (acute care).b

- Exclusions: Patients for whom cardiac rehabilitation or other secondary prevention program are contraindicated, and for whom the contraindication is documented.

Denominator criteria:

- Inclusions: Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x).a
- Care type = ‘1’ (acute care).b

- Exclusions: Patients for whom cardiac rehabilitation or other secondary prevention programs are contraindicated, and for whom the contraindication is documented.

Setting: Acute/hospital.

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a ICD-10-AM (8th edition).
b METeOR identifier: 491557.
Quality statement 6 – Individualised care plan

Comments: Contraindications for cardiac rehabilitation and other secondary prevention programs may include advanced care directives, being on a palliative care pathway, and clinical judgement, subject to discussion with patients, family and carers.

The World Health Organization has defined cardiac rehabilitation as:

‘the sum of activities required to influence favourably the underlying cause of the disease, as well as the best possible, physical, mental and social conditions, so that they (people) may, by their own efforts preserve or resume when lost, as normal a place as possible in the community. Rehabilitation cannot be regarded as an isolated form or stage of therapy but must be integrated within secondary prevention services of which it forms only one face.’

For additional information on cardiac rehabilitation, see the Recommended Framework for Cardiac Rehabilitation.

References
Quality statement 6 – Individualised care plan

Indicator 6e: Discharge summary provided to general practitioner or ongoing clinical provider within 48 hours of discharge

Definitional attributes

Name: Proportion of patients whose discharge summary is provided to their general practitioner (GP) or ongoing clinical provider within 48 hours of discharge.

Rationale: The provision of a discharge summary to a GP or ongoing clinical provider demonstrates appropriate clinical handover.1

Collection and usage attributes

Computation: \( \frac{\text{Numerator}}{\text{denominator}} \times 100 \)

Numerator: Total number of patients with a final diagnosis of ACS whose discharge summary has been provided to their GP or relevant health service within 48 hours of discharge.

Numerator criteria:

- Inclusions: Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x). a
- Care type = ‘1’ (acute care). b

Exclusions: Nil.

Denominator: Total number of patients with a final diagnosis of ACS discharged from hospital.

Denominator criteria:

- Inclusions: Patients with a final diagnosis of UA (120.x) or acute myocardial infarction (121.x). a
- Care type = ‘1’ (acute care). b

Exclusions: Nil.

Setting: Acute/hospital.

Comments: Nil.

Reference


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a ICD-10-AM (8th edition).
b METeOR identifier: 491557.
Indicators of effectiveness

Indicators of effectiveness, also known as outcome indicators, provide markers of how close care is to recommended care, allow healthcare services to monitor outcomes, and provide signals to patients and clinicians on quality of care.

In 2009, Australian health ministers endorsed the recommendation by the Commission that hospitals routinely review a set of core hospital-level outcome indicators. The indicator set includes:

- in-hospital mortality for acute myocardial infarction
- unplanned readmission within 30 days following management of acute myocardial infarction.

These indicators were subsequently included in the national health Performance and Accountability Framework (PAF).\(^a\) The PAF specifies indicators that are intended to be publicly reported by the National Health Performance Authority at hospital and Local Hospital Network level. The specification for these indicators is published on the Commission’s web site,\(^b\) and the public and private hospital sector have been provided with a toolkit which enables local generation of these indicators.

Ongoing monitoring and review of a set of outcome-based indicators can detect significant variance and highlight issues of data quality and consistency, or quality of care. High outlier rates should be seen as a prompt to further investigation. Several jurisdictions and private hospital ownership groups generate these indicators, and provide them to hospitals for routine review and investigation of high outlier rates.

Where routine access to linked data sets is available, or where individual patient follow-up is authorised for studies and registries, the following endpoints are sometimes used in monitoring acute myocardial infarction patient outcomes:

- 30-day mortality following acute myocardial infarction (the NSW Bureau of Health Information reports risk-adjusted, linked 30-day acute myocardial infarction mortality rates for NSW)\(^c\)
- One-year mortality following hospital management of patients with acute myocardial infarction.

By measuring one-year mortality for acute myocardial infarction patients, the Australian Acute Coronary Syndrome Prospective Audit (ACACIA) revealed a substantial burden of late morbidity and mortality among patients with ACS.\(^d\)

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