

Australian acute coronary syndromes capability framework

To support the national delivery of evidence-based care for those experiencing acute coronary syndromes irrespective of where they live in Australia.



Foreword



The *Australian acute coronary syndromes capability framework* (the Framework) articulates the health service capacity required to deliver evidence-based acute coronary syndromes (ACS) care at a national level. It is the first health services capability framework to encompass pre-hospital care, acknowledging the integral role ambulance and retrieval services have in providing timely care to patients with ACS.

In Australia, there are evidence-based guidelines to inform clinical practice in the management of patients with ACS, however national clinical audits continue to demonstrate that many people do not receive evidence-based care.¹ The capability of health services is an essential element in the provision of high-quality patient care. This Framework identifies the types of services, workforce, processes and service linkages needed to deliver evidence-based care across the pre-hospital, sub acute and acute areas of the Australian health system.

It addresses pre-hospital care, as well as public and private health services capability required to deliver best practice ACS care. It is designed to work in synergy with the Heart Foundation and the Cardiac Society of Australia and New Zealand (CSANZ) *Guidelines for the management of acute coronary syndromes*²⁻⁴ and the inaugural Australian Commission on Safety and Quality in Health Care (ACSQHC) *Acute coronary syndromes clinical care standard*.⁵

The Framework describes the recommended health system requirements that would support delivery of best practice, while remaining practical and realistic. This will assist and facilitate policy makers, health networks and health services to map existing services, identify gaps in their health systems, plan improvements and develop new services where required.

We are calling on health service planners, policy makers, politicians and clinicians to address the recommended capabilities outlined in this Framework to ensure every individual has timely access to evidence-based care no matter where they live in Australia.

Mary Barry

Chief Executive Officer – National
National Heart Foundation of Australia

Contents

Preface	2
Part 1 – Fundamentals of the Framework	3
1. Introduction	3
1.1 Background.....	3
1.2 The Framework model	3
1.3 The Framework development.....	5
1.4 Principles	5
1.5 Assumptions.....	6
1.6 Service category descriptions	6
Part 2 – Description of the service capabilities.....	7
2. Pre-hospital emergency care	7
2.1 Services.....	7
2.2 System linkages and communication.....	8
2.3 Workforce	8
2.4 Support services	9
2.5 Clinical governance	9
3. Category A service – Hospital with an emergency service	10
3.1 Services.....	10
3.2 System linkages and communication.....	11
3.3 Workforce	11
3.4 Support services	11
3.5 Clinical governance	12
4. Category B service – Hospital with an emergency department	13
4.1 Services.....	13
4.2 System linkages and communication.....	14
4.3 Workforce	14
4.4 Support services	15
4.5 Clinical governance	15
5. Category C service – Tertiary cardiac centre	16
5.1 Services.....	16
5.2 System linkages and communication.....	16
5.3 Workforce	16
5.4 Support services	18
5.5 Clinical governance	18
6. Acknowledgements	19
7. Glossary	20
Appendix A. Health professionals scope of practice documents.....	22
References.....	23
Notes.....	25

Preface

The Heart Foundation's core business is to develop evidence-based guidelines and to advocate for health services that are based on such evidence to improve patient care and outcomes. The *Australian acute coronary syndromes capability framework* (the Framework) supports distilling evidence-based practice to health facilities.

The objectives of the Framework are to:

- support implementation of the national *Acute coronary syndromes clinical care standard*⁵, and provision of evidence-based practice outlined in the *Guidelines for the management of acute coronary syndromes*²⁻⁴
- assist health services to make informed decisions, by defining system requirements
- improve coordination of existing services to align the level of patient risk to the level of care
- guide health service providers, health organisations and governments to map and plan existing and new services.

The Framework will act as an invaluable advocacy tool in facilitating uptake of the *Guidelines for the management of acute coronary syndromes*²⁻⁴ and the *Acute coronary syndromes clinical care standard*.⁵ Terms highlighted in bold, italic font are defined in the Glossary.

It seeks to present national consensus on the system requirements for the delivery of quality acute coronary syndromes (ACS) care. The Framework identifies the types of services, workforce, processes and service linkages needed to deliver an ideal, evidence-based health service. It identifies four service categories:

- Pre-hospital emergency care
- Category A service – Hospital with an emergency service
- Category B service – Hospital with an emergency department
- Category C service – Tertiary cardiac centre.

These service categories are based on the stages of patient care and closely aligned to the *Acute coronary syndromes clinical care standard*⁵ quality statements, which describe what a health service provider could be reasonably expected to address within an integrated care system.

This Framework facilitates the time-critical care, communication and seamless transfers necessary to meet the *Acute coronary syndromes clinical care standard*.⁵ When implemented fully, this framework will help prevent avoidable ACS deaths and disability regardless of where a patient lives in Australia.

Part 1 – Fundamentals of the Framework

1. Introduction

This Framework is the first document of its kind in Australia to describe the health system capabilities required to deliver evidence-based care for patients experiencing an acute coronary syndrome (ACS) event, irrespective of where they live in Australia.

The Framework intends to provide a set of minimum clinical service recommendations. It is inclusive of ambulance and retrieval services, and recognises their integral role in the provision of timely ACS care.

The Framework and the resulting capability recommendations were developed following extensive consultation with key health professionals, government policy makers, professional bodies and consumers.

1.1 Background

In Australia, ACS is a major cause of death and long-term disability. It accounts for more than 120,000 hospitalisations and costs the healthcare system more than \$1.8 billion annually.⁶ ACS represents a broad spectrum of clinical presentations, from

ST-segment elevation myocardial infarction (STEMI) through to an accelerated pattern of angina without evidence of tissue death. These diverse clinical syndromes are known to share the common underlying pathophysiology of atherosclerosis.⁵

Optimal patient outcomes depend on rapid diagnosis, accurate risk stratification and the effective implementation of proven therapies and treatment strategies. Clinical trial and registry data inform the practice guidelines for the management of ACS.²⁻⁴

There has been considerable effort across the country to improve the quality of ACS care. However, national clinical audits continue to demonstrate that many people do not receive evidence-based care.¹

1.2 The Framework model

The Framework model articulates four levels of health service (Figure 1). Each service is categorised according to the expected level of clinical service provision.

Figure 1. The Framework model service categories

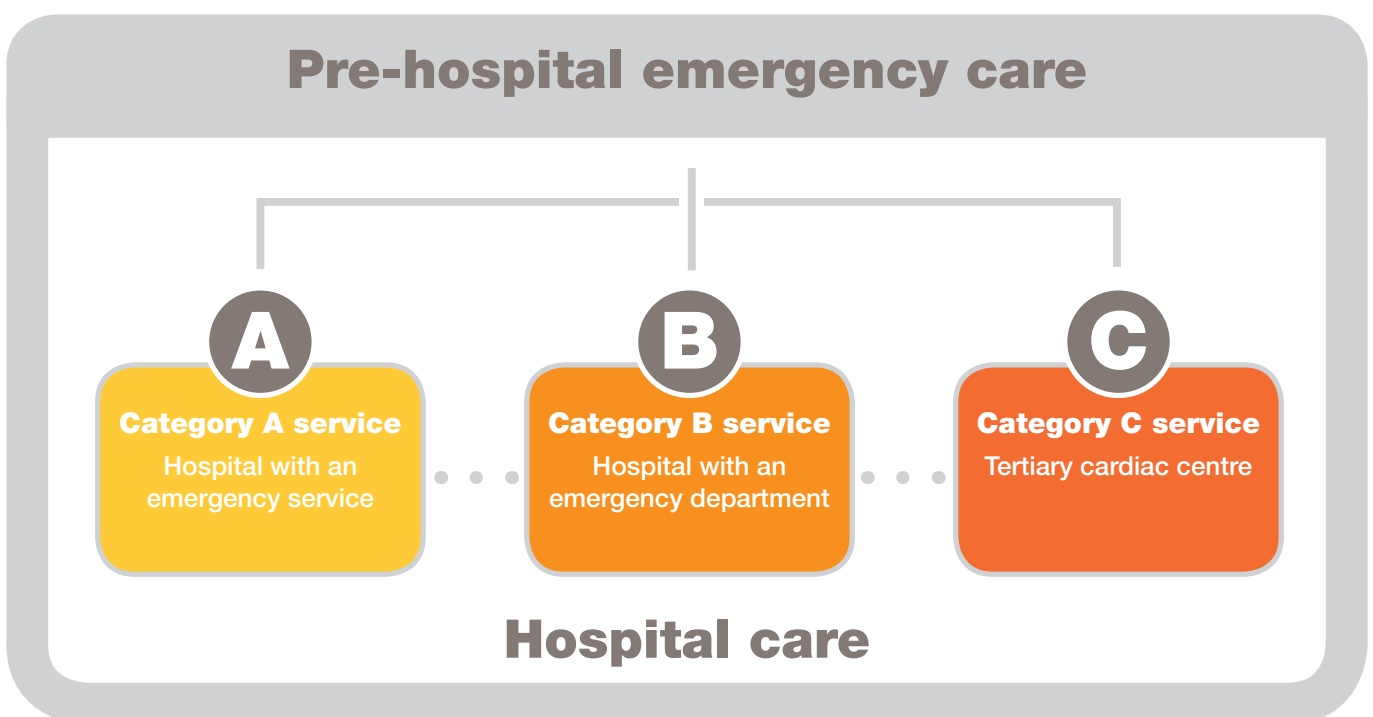


Table 1. ACS Clinical Care Standard⁵ quality statements addressed by each Framework service category

Quality statement (QS)	Pre-hospital emergency care	Category A service	Category B service	Category C service
<p>QS 1 – Immediate management A patient presenting with acute chest pain or other symptoms suggestive of ACS receives care guided by a documented chest pain assessment pathway.</p>	✓	✓	✓	✓
<p>QS 2 – Early assessment A patient with acute chest pain or other symptoms suggestive of ACS receives a 12-lead electrocardiogram (ECG) and the results are analysed by a clinician experienced in interpreting an ECG within 10 minutes of the <i>first emergency clinical contact</i>.</p>	✓	✓	✓	✓
<p>QS 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 <i>Guidelines for the management of acute coronary syndromes</i>. 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.</p>	✓	✓	✓	✓
<p>QS 4 – Risk stratification A patient with a non-ST-segment elevation acute coronary syndrome (NSTEMI) is managed based on a documented, evidence-based assessment of their risk of an adverse event.</p>			✓	✓
<p>QS 5 – Coronary angiography The role of coronary angiography, with a view to timely and appropriate coronary revascularisation, is discussed with a patient with a NSTEMI who is assessed to be at intermediate or high risk of an adverse cardiac event.</p>			✓	✓
<p>QS 6 – Individualised care plan Before a patient with ACS 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.</p>		✓	✓	✓

The *Acute coronary syndromes clinical care standard*⁵ informed the process for categorising hospital services that a health service could be reasonably expected to address within an integrated care system. Table 1 identifies the *Acute coronary syndromes clinical care standard*⁵ quality statement addressed by each service category. Service capacity increases as a patient moves from pre-hospital care to hospital care.

The Framework requires the establishment of formal links between lower level capability services and higher level capability services including escalation policies to manage ACS care outside a service's capability. These formal links should be underpinned by documented processes that articulate the roles and responsibilities of each service. In addition, effective clinical handover between services is essential. Health services need clearly identified and documented processes to implement effective clinical handover systems. Formalised and fully integrated links between and across services will support the safe and timely provision of quality ACS care to patients irrespective of where they live in Australia.

1.3 The Framework development

Consumers and experts were engaged to help identify the service categories, their associated clinical services, system linkages, workforce requirements and clinical governance. Once the service categories were agreed, expert groups were established for each category. The expert groups included specialist clinicians and health professionals in that field. They were responsible for reviewing and/or developing service descriptions, refining the requirements for the minimum capability criteria at each service level, identifying relevant reference documents and providing other advice about the provision of a clinical service.

There were three rounds of consultation, comprising two reviews by each expert group and a consensus forum during which all groups came together to reach agreement on the service categories and their associated capabilities.

This document will function as a companion document to the *Guidelines for the management of acute coronary syndromes*,²⁻⁴ and the *Acute coronary syndrome clinical care standard*⁵ and *Indicator specification: Acute coronary syndromes*

clinical care standard.⁷ The Framework takes into account Commonwealth, state and territory policy decisions, and legislative frameworks drawing on similar documents from other **jurisdictions**, including the Northern Territory Health *Hospital services capability framework*⁸, Western Australia *Health clinical services framework 2010–2020*⁹ and the Queensland *Clinical services capability framework for public and licensed private health facilities (Version 3.1)*.¹⁰

The Framework has been informed by a set of key principles and assumptions that are described below.

1.4 Principles

The Framework is underpinned by the following principles.

- All Australians should have access to evidence-based ACS care.
- The Framework is informed by the best available evidence.
- The Framework recognises that to deliver **patient-centred care**, services need formalised system linkages to enable effective clinical handover¹¹ and the appropriate transport and management of patients.
- The Framework in no way supersedes relevant legislation, regulations or standards. There should be alignment with Commonwealth and state/territory legislation, regulations, legislative and non-legislative standards, guidelines, benchmarks, policies and frameworks, and relevant college standards where applicable.
- The Framework is not intended to replace clinical judgment or service-specific patient safety policies and procedures. It is intended to complement and support the planning and/or provision of pre-hospital, sub-acute and acute health services (private and public).

1.5 Assumptions

The Framework is underpinned by assumptions that health services are a part of an integrated network with formalised system linkages and comply with:

- relevant legislation, regulation and legislative standards, and non-legislative standards, guidelines and benchmarks
- health professional workforce requirements such as professional registration, codes of conduct, and the health and safety of employees, contractors and visitors
- relevant health professional credentialling and scope of clinical practice
- culturally appropriate and capable service provision guidelines and standards, as appropriate¹²
- criteria detailed in the Australian Commission on Safety and Quality in Health Care's (ACSQHC's) *Safety and quality improvement guide standard 6: Clinical handover*¹¹
- processes and prerequisites detailed in the ACSQHC's *National consensus statement: Essential elements for recognising and responding to clinical deterioration*.¹³

1.6 Service category descriptions

Figure 1 outlines the four service categories of the Framework:

- Pre-hospital emergency care
- Category A service – Hospital with an emergency service
- Category B service – Hospital with an emergency department
- Category C service – Tertiary cardiac centre.

It is acknowledged that some hospitals may not align with these categories, e.g. a private hospital without an emergency department may offer interventional cardiac services. Each hospital should identify its scope of practice and use the Framework to determine the appropriate capabilities required of their service.

To maintain appropriate and effective patient flow within and across the service categories, services must embed clearly identified and understood system linkages and ensure linkages are underpinned by effective clinical handover.¹¹

Pre-hospital emergency care

This category applies to services outside of the hospital system that identify within their scope of practice the provision of acute emergency clinical care to a patient experiencing acute chest pain or other symptoms suggestive of ACS.

Service providers include rural or remote general practice clinics, remote nurse-led clinics, paramedics and retrieval practitioners.

Category A service – Hospital with an emergency service

This category applies to hospitals that identify within their scope of practice the provision of acute emergency clinical care to a patient experiencing acute chest pain or other symptoms suggestive of ACS.

Service providers in this category include rural hospitals with a 24-hour emergency service that provides assessment and management of patients presenting with acute chest pain or ACS symptoms. The service has a designated area where on-call medical staff and nursing staff can provide emergency care.¹⁴

Category B service – Hospital with an emergency department

This category applies to hospitals that identify within their scope of practice the provision of acute emergency ACS care and risk stratification of patients with suspected NSTEMI/ACS.

These service providers have an emergency department¹⁵ with designated cardiac monitored bed(s) and may have a chest pain assessment unit or equivalent. They have capacity to provide high-dependency care for patients on a short-term basis.

Category C service – Tertiary cardiac centre

This category applies to hospitals that identify within their scope of practice the provision of acute emergency ACS care, risk stratification of patients with suspected NSTEMI/ACS and interventional cardiac services. Some hospitals may have cardiac surgery on site.

These service providers have an emergency department¹⁵ with designated cardiac monitored bed(s) and are likely to have a chest pain assessment unit or equivalent. They have capacity to provide comprehensive emergency care and the highest level of ACS management.

Part 2 – Description of the service capabilities

This section of the Framework describes the five core capabilities of care under the following headings:

- services
- system linkages and communications
- workforce
- support services
- clinical governance.

2. Pre-hospital emergency care

Pre-hospital emergency care services are those that identify within their scope of practice the provision of acute emergency clinical care.

Pre-hospital emergency care is aligned to Levels 1 and 2 of the Independent Hospital Pricing Authority's emergency department and emergency service role levels.¹⁶

The key roles of pre-hospital emergency care in ACS management are to:

- identify patients likely to be experiencing ACS
- initiate immediate management and early assessment
- activate a reperfusion pathway for patients with STEMI
- activate safe and timely transport for patients with STEMI or suspected NSTEMI/ACS
- undertake safe and timely transport of patients with STEMI or suspected NSTEMI/ACS by ambulance and retrieval service.

2.1 Services

Immediate management and early assessment

Initiate a chest pain assessment pathway as per quality statement 1 and 2 (refer to Table 1). The pathway should be a formalised document that defines the roles and responsibilities of team members. It should be able to be implemented 24 hours a day and clearly articulate the process to:

- perform a 12-lead ECG
- undertake secondary consultation with a **designated specialist**, who is accessible

24 hours a day to analyse ECG, to confirm assessment and management prior to initiation of medical therapy*

- implement appropriate care for patients with advanced care directives or on a palliative pathway
- discuss with the patient and family or support network the proposed treatment and the importance of associated referrals.¹⁷ For Aboriginal and Torres Strait Islander patients, this should involve an Aboriginal and Torres Strait Islander Health Practitioner or Health Worker.

Progressive management

Activate reperfusion pathway as per quality statement 3 (refer to Table 1). The pathway should be a formalised document that defines the roles and responsibilities of team members and adheres to an effective clinical handover standard.¹¹ It should be able to be implemented 24 hours a day and clearly articulate the process to:

- thrombolysed patients with STEMI where access to PCI within guideline recommended times is not achievable, including:
 - transport to a Category C service following thrombolysis for angiography within 24 hours
 - escalation of transport following unsuccessful reperfusion to a Category C service for rescue PCI
- transport patients with STEMI immediately to a Category C service, where access to primary PCI within guideline recommended times is achievable

*Paramedics, in accordance with their jurisdictional ACS protocol, may not be required to conduct secondary consultation to confirm assessment of ECG.

- transport patients with suspected NSTEMACS to a Category B or C service.

2.2 System linkages and communication

- Formalised protocol to activate emergency transport, which may include calling Triple Zero (000) or the local emergency retrieval service.
- Appropriate technology is available on site, 24 hours a day, to enable secure transmission of relevant clinical information to a **designated specialist** for secondary consultation.
- Formalised documented protocol, which can be implemented 24 hours a day, to rapidly transport patients to a Category B or C service. The protocol defines the roles and responsibilities of team members and clearly articulates the process to:
 - rapidly identify the availability of beds and interventional cardiac services at a Category B or C service through a centralised decision-making support tool
 - immediately notify the receiving emergency department and/or **cardiac catheterisation laboratory (Cath lab)** of an incoming patient
 - transmit 12-lead ECG to the receiving health service for the patient's medical records.
- Appropriate interpreter services are available for patients who do not speak English as their primary language to support communication and informed decision making by patients and their families. For Aboriginal and Torres Strait Islander patients, this may also involve an Aboriginal and Torres Strait Islander Health Practitioner or Health Worker.

2.3 Workforce

This section describes the recommended staffing requirements to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a pre-hospital emergency care setting. Refer to Appendix A for health professionals' scope of practice documents.

Medical staff

A **designated specialist**, who is part of a local health services network, is accessible 24 hours a day for secondary consultation.

Rural general practitioners (GPs) are to be accredited in advanced life support (ALS)[†] if further than 1 hour

away from a paramedic/retrieval practitioner.

In accordance with jurisdictional ACS protocol, rural or remote GPs are to be appropriately accredited and authorised to administer pre-hospital thrombolysis.

If in a rural area, the medical practitioner is trained to the standards of the Australian College of Rural and Remote Medicine (ACRRM), or Diploma in Emergency Medicine or equivalent.

Registered nurses including nurse practitioners

Nurse practitioners and registered nurses who are more than 1 hour away from a paramedic/retrieval practitioner are accredited in ALS.[†]

Nurse practitioners and registered nurses, including remote area nurses (RAN) or rural and isolated practice registered nurses (RIPRN) are capable of providing emergency care services within their scope of practice.

In accordance with jurisdictional ACS protocol, rural or remote based nurse practitioners and registered nurses are accredited and authorised to administer pre-hospital thrombolysis (inclusive of antiplatelet and anti-coagulation therapies).



[†]To the Australian Resuscitation Council internationally accredited ALS Level 1 standard.

Aboriginal and Torres Strait Islander Health Practitioners and Health Workers

Aboriginal and Torres Strait Islander Health Practitioners and Health Workers, who work independently in remote areas, are competent in basic life support and automated external defibrillation.

Paramedics and retrieval practitioners

Paramedics and retrieval practitioners are accredited and authorised to administer pre-hospital thrombolysis (inclusive of antiplatelet and anti-coagulation therapies) in accordance with jurisdictional ACS and STEMI protocols.

2.4 Support services

This section identifies the minimum service requirements to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a pre-hospital emergency care setting.

Pathology

Not on site.

Pharmacy

Ambulance stock and drug administration is determined by jurisdictional ambulance service protocol and dependent on the paramedic's qualifications.

Pharmacy stock includes nitrates, anti-platelet treatments, anti-coagulants, anti-arrhythmics, anti-emetics, analgesics, intravenous fluids and resuscitation drugs.¹⁸

Thrombolytic drugs are available and accompanied by a centralised stock rotation and management protocol in regional, rural and remote areas.

2.5 Clinical governance

This section identifies overarching requirements that underpin the operation of the service provider to safely and competently deliver the *Acute coronary syndromes clinical care standard*.⁵ It also specifies the mechanisms for monitoring performance.

Clinical guidelines

Ensure jurisdictional ALS protocol is based on the Australian Resuscitation Council's guidelines.^{18,19}

Ensure jurisdictional ALS protocol reflects that registered nurses accredited in ALS[‡] are permitted to initiate and administer resuscitation drugs autonomously, while waiting for the retrieval service to arrive, in accordance with jurisdictional drugs and poisons legislation.[§]

Ensure clinical pathways and protocols are aligned with the current *Guidelines for the management of acute coronary syndromes*.²⁻⁴

Education and reaccreditation

Ensure there are documented protocols and capacity to support staff to attend professional development and reaccreditation updates to maintain their competency in delivering quality ACS care.

Nurse practitioners and registered nurses are accredited and authorised to administer pre-hospital thrombolysis (inclusive of antiplatelet and anti-coagulation therapies).

Provide health professional training on the warning signs and symptoms of ACS.

Provide health professional training on interpretation of 12-lead ECGs and supporting clinical protocols.

Provide training to GPs, nurse practitioners, registered nurses (RANs and RIPRNs), paramedics and retrieval practitioners on time-critical administration of thrombolysis and supporting clinical protocols.

Provide training and education on effective clinical handover.¹¹

Data collection and monitoring

Enact quality assurance activities to ensure health service protocols, pathways and the care delivery is aligned with the current *Guidelines for the management of acute coronary syndromes*.²⁻⁴

Collect specific *Acute coronary syndromes clinical care standard*⁵ indicator data⁷ to support monitoring and reporting against the standard.

Undertake regular clinical audits with formalised feedback to the relevant care teams and health service executives.

[‡]To the Australian Resuscitation Council internationally accredited ALS Level 1 standard.

[§]This may vary across jurisdictions. Refer to the relevant state or territory drugs and poisons Act.

3. Category A service – Hospital with an emergency service

Category A services are those that identify within their scope of practice the provision of acute emergency clinical care.

These hospitals have a 24-hour emergency service and can receive patients who are transferred for ongoing care from higher level capability services.

This category is aligned to Level 3A of the Independent Hospital Pricing Authority's emergency department and emergency service role levels.¹⁶

The key roles of a hospital with a 24-hour emergency service in ACS management are to:

- identify patients likely to be experiencing ACS
- initiate immediate management and early assessment
- activate a reperfusion pathway for patients with STEMI
- activate safe and timely transfer for patients with STEMI or suspected NSTEMI
- ensure patients have an individualised care plan when transferred back to this service from a higher level capability service.

3.1 Services

Immediate management and early assessment

Initiate a chest pain assessment pathway as per quality statement 1 and 2 (refer to Table 1). The pathway should be a formalised document that defines the roles and responsibilities of team members in the inter- and intra-hospital environments. It should be able to be implemented 24 hours a day and clearly articulates the process to:

- perform a 12-lead ECG
- undertake secondary consultation with a **designated specialist**, who is accessible 24 hours a day to analyse ECG, confirm assessment and management prior to initiation of medical therapy
- implement appropriate care for patients with advanced care directives or on a palliative pathway
- discuss with the patient and family or support network the proposed treatment and the importance of associated referrals.¹⁷ For Aboriginal and Torres Strait Islander patients, this should involve an Aboriginal and Torres Strait Islander health liaison officer.

Progressive management

Activate reperfusion pathway as per quality statement 3 (refer to Table 1). The pathway should be a formalised document that defines the roles and responsibilities of team members in the inter- and intra-hospital environments, and adheres to the effective clinical handover standard.¹¹ It should be able to be implemented 24 hours a day and clearly articulates the process to:

- thrombolysate patients experiencing a STEMI where access to PCI within guideline recommended times is not achievable, including:
 - transferring the patient to a Category C service following thrombolysis for angiography within 24 hours
 - escalating patient transfer following unsuccessful reperfusion to a Category C service for rescue PCI
- transport patients experiencing a STEMI immediately to Category C service, where access to primary PCI within guideline recommended times is achievable
- transport patients with suspected NSTEMI to a Category B or C service as per jurisdictional ACS protocol.

Secondary prevention

For patients transferred from higher level capability services following treatment for ACS, a formalised documented secondary prevention protocol clearly articulates the process:

- to confirm the patient has an individualised care plan and referral to cardiac rehabilitation or another secondary prevention program as per quality statement 6 (refer to Table 1)
- for a registered nurse or a suitably qualified allied health professional to discuss lifestyle modifications and medicines the patient needs to manage their risk factors associated with ACS.

Secondary prevention care is informed by the Australian Cardiovascular Health and Rehabilitation Association's (ACRA's) *Core components of cardiovascular disease secondary prevention and cardiac rehabilitation 2014*²⁰ and the current *Guidelines for the management of acute coronary syndromes*.²⁻⁴

3.2 System linkages and communication

- Formalised protocol to activate emergency transport, which may include calling Triple Zero (000) or the local emergency retrieval service.
- Appropriate technology is available on site 24 hours a day to enable secure transmission of relevant clinical information to a **designated specialist** for secondary consultation.
- Appropriate technology is available to receive data or correspondence from ambulance services regarding incoming ACS patients requiring emergency care.
- Formalised documented protocol that can be implemented 24 hours a day to rapidly transport patients to a Category B or C service. The protocol defines the roles and responsibilities of team members and clearly articulates the process to:
 - rapidly identify the availability of beds and interventional cardiac services at a Category B or C service through a centralised decision-making support tool
 - immediately notify receiving emergency department and or **Cath lab** of incoming patient
 - transmit 12-lead ECG to the receiving health service for the patient's medical records.
- Inform GP of the patient's individualised care plan, including referral to cardiac rehabilitation or another secondary prevention program within 48 hours of the patient's discharge as per quality statement 6 (refer to Table 1).
- Formalised documented protocol for transferring the responsibility of care for patients who move from a higher level capability service to a lower level capability service.
- Appropriate interpreter services are available for patients who do not speak English as their primary language to support communication and informed decision making by patients and their families. For Aboriginal and Torres Strait Islander patients, this may also involve an Aboriginal and Torres Strait Islander Health Practitioner or Health Worker.

3.3 Workforce

This section describes the recommended staffing requirements to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a hospital with a 24-hour emergency service. Refer to Appendix A for health professionals' scope of practice documents.

24-hour emergency service

Workforce requirements include:

- medical practitioner available for recall to the hospital within 20 minutes 24 hours a day¹⁶
- medical practitioner accredited in ALS[‡]
- medical practitioner is trained to the standards of ACRRM, or equivalent, if in a rural area
- in accordance with jurisdictional ACS protocol, rural or remote medical practitioners and/or nurse practitioners and registered nurses are appropriately accredited and authorised to administer pre-hospital thrombolysis (inclusive of antiplatelet and anti-coagulation therapies)
- a local senior medical practitioner supports junior medical staff
- registered nurse accredited in ALS[‡] available 24 hours a day.

3.4 Support services

This section identifies the minimum support services necessary to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a hospital with a 24-hour emergency service.

Pathology

Point-of-care testing is available if cardiac bio-marker results are not accessible from a pathology service within 1 hour.^{2-4, 21-23}

Protocols are in place for the quality control of point-of-care testing.

Pharmacy

Pharmacy stock available on site includes nitrates, anti-platelet drugs, anti-coagulants, beta-blockers, anti-arrhythmics, anti-emetics, analgesics, intravenous fluid and resuscitation drugs.

Thrombolytic drugs are available and accompanied by a centralised stock rotation and management protocol.

Radiology

24-hour on-call availability.

[‡]To the Australian Resuscitation Council internationally accredited ALS Level 1 standard.

3.5 Clinical governance

This section identifies overarching requirements that underpin the operation of the service provider to safely and competently deliver the *Acute coronary syndromes clinical care standard*.⁵ It also specifies the mechanisms for monitoring performance.

Clinical guidelines

Ensure jurisdictional ALS protocol is based on the Australian Resuscitation Council's guidelines.^{18, 19}

Ensure jurisdictional ALS protocol reflects that registered nurses accredited in ALS[†] are permitted to initiate and administer resuscitation drugs autonomously, while waiting for the retrieval service to arrive, in accordance with drugs and poisons legislation.**

Ensure clinical pathways and protocols are aligned with the current *Guidelines for the management of acute coronary syndromes*.²⁻⁴

Education and reaccreditation

Ensure there are documented protocols and capacity to support staff to attend professional development and reaccreditation updates to maintain their competency in delivering quality ACS care.

Ensure nurse practitioners and registered nurses are accredited and authorised to administer pre-hospital thrombolysis (inclusive of antiplatelet and anti-coagulation therapies).

Provide health professional training on the warning signs and symptoms of ACS.

Provide health professional training on interpretation of 12-lead ECGs, supported by secondary consultation and clinical governance protocols.

Provide health professional training on time-critical administration of thrombolysis and supporting clinical protocols.

Provide training and education on effective clinical handover.⁹

Data collection and monitoring

Enact quality assurance activities to ensure health service protocols, pathways and the care delivery is aligned with the current *Guidelines for the management of acute coronary syndromes*.²⁻⁴

Use data to track patient flows through the system to identify delays and monitor guideline adherence.

Collect specific *Acute coronary syndromes clinical care standard*⁵ indicator data⁷ to support monitoring and reporting against the standard.

Undertake regular clinical audits and provide formalised feedback to the relevant care teams and health service executives.



[†]To the Australian Resuscitation Council internationally accredited ALS Level 1 standard.

**This may vary across jurisdictions. Refer to your relevant state or territory drugs and poisons Act.

4. Category B service – Hospital with an emergency department

Category B services are those that identify within their scope of practice the provision of acute emergency ACS care and risk stratification of patients with suspected NSTEMI.

These services have an emergency department and can receive patients who are transferred for ongoing care from higher capability services.

This category meets the minimum standards for emergency departments in the Australasian College for Emergency Medicine's 'Statement on the delineation of emergency departments'.¹⁵ It is also aligned with Level 3B of the Independent Hospital Pricing Authority's emergency department and emergency service role levels.¹⁶

The role of a hospital with an emergency department in ACS management is to:

- identify patients likely to be experiencing ACS
- initiate immediate management and early assessment
- activate a reperfusion pathway for patients with STEMI
- risk stratify patients with suspected NSTEMI using a recognised risk assessment tool (in conjunction with a cardiologist)
- discuss the benefits and risks of coronary angiography with patients with NSTEMI assessed as intermediate or high risk of an adverse cardiac event (discussed by a cardiologist)
- activate a safe and timely transfer for patients with STEMI and NSTEMI assessed as intermediate or high risk
- provide patients who are recovering from treatment for ACS with an individualised care plan upon discharge or ensure patients transferred back to this service from higher capability services have an individualised care plan.

4.1 Services

Immediate management and early assessment

As per Category A services.

Progressive management

In addition to the formalised documented reperfusion pathway defined for a Category A service, Category B services should:

- undertake risk stratification of patients with suspected NSTEMI, informed by clinical practice guidelines in conjunction with a cardiologist, using a recognised risk assessment tool as per quality statement 4 (refer to Table 1) informed by clinical practice guidelines²⁻⁴
- discuss the risks and benefits of coronary angiography with patients assessed as intermediate or high risk NSTEMI as per quality statement 5 (refer to Table 1)
- transfer patients assessed as intermediate or high risk NSTEMI to a Category C service for coronary angiography within guideline recommended times
- identify appropriate personnel to undertake above discussions.

Secondary prevention

A formalised documented secondary protocol clearly articulates the process to:

- develop an individualised care plan with the patient as per quality statement 6 (refer to Table 1)
- ensure a registered nurse or a suitably qualified allied health professional discusses lifestyle modifications and medicines the patient needs to manage their risk factors associated with ACS
- ensure the patient receives at discharge:
 - a chest pain action plan
 - an individualised care plan
 - referral to cardiac rehabilitation or another secondary prevention program
 - education on discharge prescribed medications
 - follow-up cardiology appointment as appropriate.

For patients transferred from higher level capability services following treatment for ACS, refer to the secondary prevention requirements defined in 2. Category A service, 2.1 Services.

4.2 System linkages and communication

- Appropriate technology is available on site, 24 hours a day to enable secure transmission of relevant clinical information to a **designated specialist** for secondary consultation.
- Appropriate technology is available to receive data or correspondence from ambulance services regarding incoming ACS patients requiring emergency care.
- Formalised documented protocol to admit ACS patients transferred from lower level capability services requiring emergency care.
- Formalised documented protocol, which should be able to be implemented 24 hours a day, to rapidly transport patients to a Category C service. The protocol defines the roles and responsibilities of team members and clearly articulates the process to:
 - rapidly identify the availability of beds and interventional cardiac services at a Category C service through a centralised decision-making support tool
 - immediately notify the receiving **Cath lab** of an incoming patient
 - transmit 12-lead ECG to the receiving health service for patient's medical records.
- Formalised documented protocol for transferring the responsibility of care for patients, who move from a higher level capability service to a lower level capability service or vice versa.
- Inform GP of the patient's individualised care plan, including referral to cardiac rehabilitation or another secondary prevention program within 48 hours of the patient's discharge, as per quality statement 6 (refer to Table 1).
- Appropriate technology is available on site 24 hours a day to enable secure transmission of relevant clinical information to a **designated specialist** for secondary consultation.
- Formalised documented protocol to provide consultation in emergency situations to lower level capability services by telephone or other technology.
- Appropriate interpreter services are available for patients who do not speak English as their primary language to support communication and informed decision making by patients and their families. For

Aboriginal and Torres Strait Islander patients, this may also involve an Aboriginal and Torres Strait Islander Health Practitioner or Health Worker.

4.3 Workforce

This section describes the recommended staffing requirements to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a hospital with an emergency department but without interventional cardiac services. Refer to Appendix A for health professionals' scope of practice documents.

Emergency department

Workforce requirements include:

- medical practitioner trained in emergency medicine available on site 24 hours a day
- access to a medical specialist with qualifications or specialist interest in cardiology
- dedicated registered nurses accredited in ALS^{††} with a postgraduate critical care qualification specialising in emergency nursing or equivalent
- access to nursing staff with recognised competencies in acute cardiac care and/or postgraduate critical care qualification specialising in emergency nursing, e.g. risk stratification, ECG interpretation etc.

High dependency unit

Workforce requirements include:

- dedicated medical director
- access to intensive care specialist
- medical practitioner with appropriate experience in intensive care
- registered nurse accredited in ALS^{††} on site 24 hours a day
- senior nurses with postgraduate qualifications in critical care²⁴
- administration support.

^{††}To the Australian Resuscitation Council internationally accredited ALS Level 1 standard.

4.4 Support services

This section identifies the minimum support services necessary to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a hospital with an emergency department but without interventional cardiac services.

Pathology

Accessible 24 hours a day.

Pharmacy

Pharmacy stock is on site and available 24 hours a day.

Radiology

Accessible 24 hours a day.

Cardiac catheterisation laboratory

Accessible by transfer to a Category C service.

High dependency unit

On site or accessible by transfer to a Category C service.

Intensive care unit

On site or accessible by transfer to a Category C service.

Cardiac surgery

Accessible by transfer to a Category C service.

4.5 Clinical governance

This section identifies overarching requirements that underpin the operation of the service provider to safely and competently deliver the *Acute coronary syndromes clinical care standard*.⁵ It also specifies the mechanisms for monitoring performance.

Clinical guidelines

As per Category A services.

Education and reaccreditation

As per Category A services.

Data collection and monitoring

As per Category A services.



5. Category C service – Tertiary cardiac centre

Category C services are those that identify within their scope of practice the provision of acute emergency ACS care, risk stratification of patients with suspected NSTEMI and cardiac intervention services. Cardiac surgery is accessible through a documented patient transfer process.

The emergency department is aligned to a minimum Level 4 of the Independent Hospital Pricing Authority's emergency department and emergency service role levels.¹⁶

The role of a tertiary cardiac centre in ACS management is to:

- identify patients likely to be experiencing ACS
- initiate immediate management and early assessment
- activate a reperfusion pathway for patients with STEMI
- risk stratify patients with suspected NSTEMI using a recognised risk assessment tool (in conjunction with a cardiologist)
- discuss the benefits and risks of coronary angiography with NSTEMI patients assessed as intermediate or high risk of an adverse cardiac event (discussed by a cardiologist)
- provide interventional cardiac services
- ensure timely access to emergency cardiac surgery
- provide patients who are recovering from treatment for ACS with an individualised care plan upon discharge.

5.1 Services

Immediate management and early assessment

As per Category B services.

Progressive management

In addition to the formalised documented reperfusion pathway defined for a Category B service, Category C services should:

- undertake coronary angiography within guideline recommended times
- undertake rescue PCI within guideline recommended times
- provide urgent cardiac surgery and post-operative recovery care.

Secondary prevention

As per Category B services.

5.2 System linkages and communication

In addition to the system linkages and communications defined for a Category B service, Category C services should:

- have a formalised documented protocol for rapidly transferring ACS patients to cardiac surgery,²⁵ including clearly defined roles and responsibilities of team members in the inter- and intra-hospital environments
- have a formalised documented protocol for rapidly transferring patients from the **Cath lab** to cardiac surgery, including clearly defined roles and responsibilities of team members in the inter- and intra-hospital environments
- inform GP of the patient's individualised care plan, including referral to cardiac rehabilitation or another secondary prevention program within 48 hours of the patient's discharge.

5.3 Workforce

This section describes the recommended staffing requirements to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a tertiary cardiac centre. Refer to Appendix A for health professionals' scope of practice documents.

Emergency department

As per Category B services.

Cardiac catheterisation laboratory

Workforce requirements include:

- medical director (permanent)
- cardiologists (specialist with procedural expertise on call 24 hours a day)
- cardiology trainees (or unaccredited registrars)
- radiographers
- cardiac technicians, scientists or equivalent
- nursing unit or service manager
- cardiac clinical nurse consultant or advanced practice nurse with a postgraduate critical care qualification specialising in coronary care/ interventional cardiology

- nursing staff with a postgraduate critical care qualification specialising in coronary care/ interventional cardiology
- administrative support.²⁶

Cardiac care unit

Workforce requirements include:

- dedicated medical director
- registrars and junior medical officers
- nurse unit manager
- majority of nursing staff with a postgraduate critical care qualification specialising in coronary care/interventional cardiology
- advanced practice nurse
- cardiac rehabilitation coordinator
- nurse educator
- physiotherapist
- social worker
- dietician
- occupational therapist
- case manager
- administration support.²⁷

Cardiac surgery unit

Workforce requirements include:

- cardiothoracic surgeons
- cardiac anaesthetists
- cardiac perfusionist
- registrars/fellows/trainees
- operating theatre nursing staff
- administration support.²⁸

Intensive care unit

Workforce requirements include:

- dedicated medical director
- intensive care specialists
- registrars/fellows/trainees
- nursing unit or service manager
- senior nurses with postgraduate qualifications in critical care²⁴
- registered nurses accredited in ALS^{##}
- physiotherapists
- radiographers
- dieticians
- social worker
- occupational therapist
- administration support.²⁹



^{##}To the Australian Resuscitation Council internationally accredited ALS Level 1 standard.

5.4 Support services

This section identifies the minimum support services necessary to safely and competently deliver the *Acute coronary syndromes clinical care standard*⁵ in a hospital with a tertiary cardiac centre.

Pathology

Accessible 24 hours a day.

Pharmacy

Pharmacy stock on site and available 24 hours a day.

Radiology

Accessible 24 hours a day.

High dependency unit or equivalent

Accessible 24 hours a day.

Intensive care unit

Accessible 24 hours a day.

Cardiac surgery

Accessible 24 hours a day.

5.5 Clinical governance

This section identifies overarching requirements that underpin the operation of the service provider to safely and competently deliver the *Acute coronary syndromes clinical care standard*.⁵ It also specifies the mechanisms for monitoring performance.

Clinical guidelines

As per Category A services.

Education and reaccreditation

As per Category A services.

Data collection and monitoring

As per Category A services.



6. Acknowledgements

The Heart Foundation would like to thank the following contributors to the development of the Framework.

- Professor Walter Abhayaratna , Canberra Hospital, ACT
- Dr Carolyn Astley,* Flinders Medical Centre, SA
- Associate Professor Tim Baker, Centre for Rural Emergency Medicine – Deakin University, VIC
- Associate Professor Steve Bernard, Alfred Health, VIC
- Stephen Bloomer, Sir Charles Gairdner Hospital, WA
- Dr Anne-Marie Boxall, National Rural Health Alliance, ACT
- Maree Branagan, National Heart Foundation Australia
- Professor David Brieger,* Concord Repatriation Hospital, NSW
- Professor Alex Brown,* South Australia Health and Medical Research Institute
- Sue Caroll, Swifts Creek Bush Nursing Centre, VIC
- Professor Derek Chew,* Flinders Medical Centre, SA
- Rosio Cordova,* Australian Commission on Safety and Quality in Health Care, NSW
- Hugh Coulter, Consumer representative
- Bianca Crosling,* National Heart Foundation Australia
- Dr Simon Crouch, National Heart Foundation Australia
- Associate Professor Louise Cullen, Royal Brisbane and Women’s Hospital, QLD
- Associate Professor Andrea Driscoll, Deakin University, VIC
- Cate Ferry, National Heart Foundation Australia
- Rachelle Foreman,* National Heart Foundation Australia
- Professor Hugh Grantham, Flinders University, SA
- Dr Rob Grenfell, Bupa Australia and New Zealand, VIC
- Associate Professor Chris Hammett, Royal Brisbane and Women’s Hospital, QLD
- Bill Hoffman, Consumer representative
- Dr Joseph Hung,* Sir Charles Gairdner Hospital, WA
- Dr Marcus Ilton,* Royal Darwin Hospital, NT
- Tina Ivanov, Tasmanian Ambulance Service
- Prof Ian Jacobs,* Prehospital, Resuscitation, Emergency Care Research Unit – Curtin University, WA
- Wendy Keech, South Australia Health and Medical Research Institute
- Dr Jeffrey Lefkovits, Cabrini Medical Clinic, VIC
- Karen Lintern, Liverpool Hospital, NSW
- Geri Malone , CRANAPlus, SA
- Dr Paul McIntyre, Royal Hobart Hospital, TAS
- Professor Yusuf Nagree,* Geraldton Hospital, WA
- Dr Tony Nocera, CareFlight Group Queensland
- Professor Karen Page,* National Heart Foundation Australia
- Ross Proctor, Royal North Shore Hospital, NSW
- Professor Steven Rashford, Queensland Ambulance Service
- Associate Professor Julie Redfern,* The George Institute for Global Health, NSW
- Professor Christopher Reid,* Centre of Cardiovascular Research and Education in Therapeutics – Monash University, VIC
- Melinda Rose, Royal Hobart Hospital, TAS
- Associate Professor Ian Scott, Princess Alexandra Hospital, QLD
- Michelle Stewart,* National Heart Foundation Australia
- Paul Stewart, Ambulance Service of NSW
- Associate Professor David Sullivan, Royal Prince Alfred Hospital, NSW
- Professor Jim Tatoulis, National Heart Foundation Australia
- Sheila Thompson, St Vincents Private Hospital, VIC
- Dr Phil Tideman, Integrated Cardiovascular Clinical Network CHSA, SA
- Dr Julian Vaile, Flinders Cardiac Clinic, SA
- Dr Ross White, Ryde Hospital, NSW
- Jinty Wilson,* National Heart Foundation Australia

The Heart Foundation also consulted with the following organisations during the development process:

- the Australian Commission on Safety and Quality in Health Care
- the National Rural Health Association
- the Council of Ambulance Authorities
- the National Consumer Health Forum

*Denotes past and present members of the National Heart Foundation Australia’s ACS Care Implementation and Advocacy Working Group who oversaw the development of the ACS Capability Framework. This working group has representatives from the Cardiac Society of Australia and New Zealand, the Australasian College of Emergency Medicine, the Australian Resuscitation Council, the Australian Commission on Safety and Quality in Health Care, the rural health sector and the Indigenous health sector.

7. Glossary

Australian Health Practitioner Regulation Agency (AHPRA)

An agency that oversees the implementation and regulation of the National Registration and Accreditation Scheme for 14 types of health professionals including medical practitioners, nurses, and Aboriginal and Torres Strait Islander Health Practitioner and Workers.³⁰

Cardiac care unit

A specially staffed and equipped section of a hospital that supports, monitors and treats highly dependent patients with medical or surgical cardiac conditions that are life threatening or potentially life threatening.²⁷

Cardiac catheterisation laboratory (Cath lab)

A well-equipped and maintained room in a hospital or clinic with high-resolution digital imaging capacity and an appropriately diverse inventory of interventional equipment including intra-aortic balloon pump capability and resuscitative equipment.³¹

Cardiac rehabilitation program

Describes all measures used to help people with heart disease return to an active and satisfying life and to prevent recurrence of cardiac events.³² Cardiac rehabilitation programs are an important part of secondary prevention.

Chest pain action plan

A written action plan a patient should follow in the event chest pain recurs.³³

Designated specialist

A specialist consultant as stipulated by a local health services network.

First emergency clinical contact

The time when a patient first encounters a clinician.⁵

Health services

Health services are responsible for the clinical governance, administration and financial management of services dealing with the diagnosis and treatment of disease and/or the promotion of health. Service provision or capacity refers to the way inputs, such as money, staff, equipment and drugs are combined to allow the delivery of health interventions in a systematic way.^{34,35}

High dependency unit (HDU)

A specially staffed and equipped section of an intensive care complex that provides a level of care between intensive care and general ward care. Typically patients in HDU will have single organ failure and are at a high risk of developing complications.²⁴

Intensive care unit (ICU)

A specially staffed and equipped, separate and self-contained area of a hospital dedicated to the management of patients with life-threatening illnesses, injuries and complications, and monitoring of potentially life-threatening conditions. It provides special expertise and facilities for support of vital functions and uses the skills of medical, nursing and other personnel experienced in the management of these problems.³⁶

Jurisdiction

The area in which a health system operates under a set of policies specific to that area and which may be different from other health services.

Non-ST-segment elevation acute coronary syndrome (NSTEMACS)

A condition in which patients have acute chest pain but do not have persistent ST-segment elevation in their ECG. NSTEMACS is further divided into unstable angina and non-ST elevation myocardial infarction. It can be assessed as low, intermediate or high risk.²

Patient-centred care

The delivery of healthcare that is responsive to the needs and preferences of patients.³⁴

Percutaneous coronary intervention (PCI)

A procedure that involves a cardiologist feeding a catheter with a deflated balloon via the femoral artery or radial artery to a narrowing or occlusion in the coronary vessels. At the narrowing, the balloon is inflated to open the artery, allowing blood to flow. A stent may be placed at the site of the blockage to permanently open the artery. X-ray imaging is used to guide the catheter threading.³⁷

Primary PCI

A PCI procedure performed, without the previous administration of thrombolysis, to open a blocked coronary artery during an acute myocardial infarction with ST-segment elevation.

Rescue PCI

A PCI procedure performed as soon as possible after failed thrombolysis to establish reperfusion.

Rescue surgery

Coronary artery bypass graft (CABG) surgery performed as soon as possible after failed PCI to establish reperfusion.

Referral register

A list of all outward and inward referrals for one facility or service provider. The register should include the client referred; where, when and why referred; whether the case is closed or continuing; and whether the referral was appropriate or if there were any issues.¹⁷

Reperfusion

The restoration of blood flow (and therefore oxygen supply) to an area of heart muscle that has been deprived of circulation for a period of time (e.g. as a result of a heart attack).³⁷

Emergency service

A service that assesses, diagnoses and manages sick and injured patients whose condition may be unstable. An emergency service has a designated area where on-call medical staff and nursing staff can provide emergency care. Staffing is sufficient to provide 24-hour care. Emergency services have designated staffing based on minimum requirements to meet capability of service.¹⁴ These services generally operate in the rural setting.

Secondary prevention

Healthcare designed to prevent recurrence of cardiovascular events (e.g. heart attack) or complications of cardiovascular disease in patients with diagnosed cardiovascular disease. It involves medical care, modification of behavioural risk factors, psychosocial care, and education and support for self-management (including adherence to prescribed medicines). Secondary prevention can be delivered in various settings. An example of an evidence-based secondary prevention strategy is cardiac rehabilitation.³⁸

ST-segment elevation myocardial infarction (STEMI)

An acute heart attack diagnosed by a 12-lead ECG test. A heart attack occurs when an area of plaque within a coronary artery ruptures and forms a blood clot, suddenly blocking the supply of blood to a part of the heart muscle and depriving it of oxygen.³⁷

Thrombolysis

Specialised drug treatment used to dissolve a blood clot blocking a coronary artery during a heart attack. If given early enough, this treatment can reduce damage to the heart muscle.³⁷

Appendix A. Health professionals' scope of practice documents

General practitioners

- Royal Australian College of General Practitioners (RACGP), Standards for General Practitioners, 4th Edition³⁹
- Australian College for Rural and Remote Medicine, website for rural generalist training and clinical practice pathways for different jurisdictions⁴⁰

Registered nurses

- Nursing and Midwifery Board of Australia, Registered nurse competency standards⁴¹
- Nursing and Midwifery Board of Australia, Nurse practitioner standards for practice⁴²
- CRANaplus, Professional standards of remote practice: nursing and midwifery⁴³

Aboriginal and Torres Strait Islander Health Workers

- Community Services and Health Industry Skills Council, Learning Strategies Guide for Aboriginal and/or Torres Strait Islander Health Worker Qualifications – HLT Health Training Package Release 1.2⁴⁴

Paramedics and retrieval practitioners

- Paramedics Australasia, Paramedicine role descriptions⁴⁵
- Jurisdictional Ambulance Service ACS and STEMI protocols

Emergency department personnel

- Australasian College for Emergency Medicine, Guidelines on constructing an emergency medicine workforce⁴⁶
- Australasian College for Emergency Medicine, Statement on the delineation of emergency departments¹⁵

High dependency unit personnel

- College of Intensive Care Medicine of Australia and New Zealand, www.cicm.org.au

Interventional cardiologists

- Cardiac Society of Australia and New Zealand, Guidelines for competency in PCI⁴⁷
- Cardiac Society of Australia and New Zealand, Guidelines for competency in adult diagnostic cardiac catheterisation and coronary angiography⁴⁸

Coronary care unit personnel

- College of Intensive Care Medicine of Australia and New Zealand, Level II ICU staffing requirements in Minimum standards for intensive care units²⁹
- Australian Nursing Midwifery Federation (ANMF), 'Nurse titles, definitions and classifications by state and territory' in National framework for the development of decision-making tools for nursing and midwifery practice⁴⁹

Cardiac surgery personnel

- Royal Australasian College of Surgeons, Surgical competence and performance⁵⁰
- Royal Australian College of Surgeon, Position statement on credentialing and scope of practice for surgeons⁵¹
- Australian College of Operating Room Nurses, Operating theatre nursing competency standards⁵²
- Australian and New Zealand College of Perfusionists, Regulations and Guidelines for Perfusionists⁵³
- Australian and New Zealand College of Anaesthetists, Statement on staffing of accredited departments of anaesthesia⁵⁴

Post-cardiac surgery, high dependency care personnel

- College of Intensive Care Medicine of Australia and New Zealand, Level III ICU staffing requirements in Minimum standards for intensive care units²⁹

References

1. Chew D, French J, Briffa T, et al. Acute coronary syndrome care across Australia and New Zealand: the SNAPSHOT ACS study. *MJA* 2013;199(3):185–91.
2. Aroney CN, Aylward PE, Allan RM, et al. Guidelines for the management of acute coronary syndromes 2006. *MJA* 2006;184(8):S1–S30.
3. Aroney CN, Aylward PE, Chew DP. 2007 Addendum to the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand Guidelines for the Management of Acute Coronary Syndromes (ACS) 2006. *MJA* 2008;188:302–03.
4. Chew D, Aroney CN, Aylward P, et al. 2011 Addendum to the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand Guidelines for the Management of Acute Coronary Syndromes (ACS) 2006. *Heart Lung Circ* 2011;20:487–502.
5. Australian Commission on Safety and Quality in Health Care. Acute Coronary Syndrome Clinical Care Standard. Sydney: Australian Commission on Safety and Quality in Health Care; 2014.
6. Access Economics. The economic costs of heart attack and chest pain (Acute Coronary Syndrome). Canberra: Access Economics; 2009.
7. Australian Commission on Safety and Quality in Health Care. Indicator Specification: Acute Coronary Syndromes Clinical Care Standard. Sydney: Australian Commission on Safety and Quality in Health Care; 2014.
8. Northern Territory Government Department of Health. Hospital Services Capability Framework. Darwin: Northern Territory Government Department of Health; 2014.
9. Western Australian Government Department of Health. Western Australia Clinical Services Framework 2010–2020. Perth: Western Australian Government Department of Health; 2010.
10. Queensland Government Department of Health. Clinical Services Capability Framework for Public and Licensed Private Health Facilities version 3.1. Brisbane: Queensland Government Department of Health; 2012.
11. Australian Commission on Safety and Quality in Health Care. Safety and Quality Improvement Guide Standard 6: Clinical Handover (October 2012). Sydney: Australian Commission on Safety and Quality in Health Care; 2012.
12. Brown A, O’Shea R, McBride K, Lawson T, Jennings G. Essential Service Standards for Equitable National Cardiovascular Care for Aboriginal and Torres Strait Islander People. *Heart Lung Circ* 2014;24(2):126–41.
13. Australian Commission on Safety and Quality in Health Care. National Consensus Statement: Essential elements for recognising and responding to clinical deterioration. Sydney: Australian Commission on Safety and Quality in Health Care 2010.
14. College for Emergency Nursing Australasia. Position Statement Definition of an Emergency Service. Melbourne: College for Emergency Nursing Australasia; 2007.
15. Australasian College for Emergency Medicine. Statement on the delineation of Emergency Departments. West Melbourne: Australasian College for Emergency Medicine; 2012.
16. Independent Hospital Pricing Authority. Investigative review of classification systems for emergency care – Literature review. Sydney: Independent Hospital Pricing Authority; 2013. Appendix C – Emergency department and service role levels.
17. World Health Organization. Referral Systems – A summary of key processes to guide health services managers. Geneva: World Health Organization; 2013.
18. Australian Resuscitation Council. Section 11 – Adult Advanced Life Support. In: ARC Guidelines. Melbourne: Australian Resuscitation Council; 2014.
19. Australian Resuscitation Council. ARC Guidelines. Section 14 – Acute Coronary Syndromes (ACS). In: ARC Guidelines. Melbourne: Australian Resuscitation Council; 2011.
20. Woodruffe S, Neubeck L, Clark RA, et al. Australian Cardiovascular Health and Rehabilitation Association (ACRA) Core components of cardiovascular disease secondary prevention and rehabilitation 2014. *Heart Lung Circ* 2015;24:430–41.
21. Bassand JP, Hamm CW, Ardissino D, et al. Guidelines for the diagnosis and treatment of non-ST-segment elevation acute coronary syndromes. *Eur Heart J* 2007;28(13):1598–660.
22. Hamm C, Bassand J, Agewell S, et al. ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. *Eur Heart J* 2011;32:2999–3054.
23. Jneid H, Anderson JL, Wright RS, et al. 2012 ACCF/AHA focused update of the guideline for the management of patients with unstable angina/Non-ST-elevation myocardial infarction (updating the 2007 guideline and replacing the 2011 focused update): a report of the American College of Cardiology Foundation/American Heart Association Task Force on practice guideline. *Circulation* 2012;126(7):875–910.
24. College of Intensive Care Medicine of Australia and New Zealand. IC-13 Guidelines on Standards for High Dependence Units for Training in Intensive Care Medicine. Melbourne: College of Intensive Care Medicine of Australia and New Zealand; 2013.
25. Cardiac Society of Australia and New Zealand. Guidelines on Support Facilities for Coronary Angiography and Percutaneous Coronary Intervention (PCI) including Guidelines on the Performance of Procedures in Rural Sites. Sydney: Cardiac Society of Australia and New Zealand; 2011.
26. Australasian Health Facility Guidelines. Part B – Health Facility Briefing and Planning, 170 – Cardiac Investigations Unit. In: Australasian Health Facility Guidelines. North Sydney: Australasian Health Infrastructure Alliance; 2013.

27. Australasian Health Facility Guidelines. Part B – Health Facility Briefing and Planning, 260 – Coronary Care Unit. In: Australasian Health Facility Guidelines. North Sydney: Australasian Health Infrastructure Alliance; 2012.
28. The Australian and New Zealand Society of Cardiac and Thoracic Surgeons. Guidelines for the establishment of an adult cardiac surgery unit. Sydney: The Australian and New Zealand Society of Cardiac and Thoracic Surgeons; 2013.
29. College of Intensive Care Medicine of Australia and New Zealand. IC-13 Recommendations on Standards for High Dependency Units for Training in Intensive Care Medicine. Melbourne: College of Intensive Care Medicine of Australia and New Zealand; 2010.
30. Australian Health Practitioner Regulation Agency. Who We Are [Internet]. 2014. Available at www.ahpra.gov.au/About-AHPRA/Who-We-Are.aspx [Accessed July 2015].
31. Cardiac Society of Australia and New Zealand. Guidelines on the Performance of and Support Facilities for a Primary Percutaneous Coronary Intervention (PCI) Service. Sydney: Cardiac Society of Australia and New Zealand; 2009.
32. National Heart Foundation Australia and Australian Cardiac Rehabilitation Association. Recommended framework for cardiac rehabilitation '04. Melbourne: National Heart Foundation Australia and Australian Cardiac Rehabilitation Association; 2004.
33. National Heart Foundation Australia. GP management plan for coronary heart disease (CHD). Melbourne: National Heart Foundation Australia; 2013.
34. Australian Commission on Safety and Quality in Health Care (ACSQHC). National Safety and Quality Health Service Standards. Sydney: ACSQHC; 2011.
35. World Health Organization. Health Services [Internet]. 2015. Available at www.who.int/topics/health_services/en/ [Accessed July 2015].
36. College of Intensive Care Medicine of Australia and New Zealand. IC-1 Minimum Standards for Intensive Care Units. Melbourne: College of Intensive Care Medicine of Australia and New Zealand; 2011.
37. National Heart Foundation of Australia. A system of care for STEMI – Reducing time to reperfusion for patients with ST-segment elevation myocardial infarction. Melbourne: National Heart Foundation of Australia; 2012.
38. National Heart Foundation Australia. Secondary prevention of cardiovascular disease. Melbourne: National Heart Foundation Australia; 2010.
39. Royal Australian College of General Practitioners. Standards for general practitioners, 4th edition. Melbourne: Royal Australian College of General Practitioners; 2010.
40. Australian College of Rural and Remote Medicine. Rural Generalist Medicine [Internet]. 2014. Available at www.acrrm.org.au/rural-generalist-medicine [Accessed July 2015].
41. Nursing and Midwifery Board of Australia. Codes and Guidelines [Internet]. 2014. Available at www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Codes-Guidelines.aspx [Accessed July 2015].
42. Nursing and Midwifery Board of Australia. Nurse practitioner standards for practice. Melbourne: Nursing and Midwifery Board of Australia; 2014.
43. CRANaplus. Professional standards of remote practice: nursing and midwifery. Cairns: CRANaplus; 2014.
44. Community Services and Health Industry Skills Council. Learning Strategies Guide for Aboriginal and/or Torres Strait Islander Health Worker Qualifications – HLT Health Training Package Release 1.2. Sydney: Community Services and Health Industry Skills Council; 2013.
45. Paramedics Australasia. Paramedicine Role Descriptions. Melbourne: Paramedics Australasia; 2012.
46. Australasian College for Emergency Medicine. G23 Guidelines on constructing an emergency medicine workforce. West Melbourne: Australasian College for Emergency Medicine; 2008.
47. Cardiac Society of Australia and New Zealand. Guidelines of competency in Percutaneous Coronary Intervention (PCI). Sydney: Cardiac Society of Australia and New Zealand; 2010.
48. Cardiac Society of Australia and New Zealand. Guidelines for competency in Adult Diagnostic Cardiac Catheterisation and Coronary Angiography. Sydney: Cardiac Society of Australia and New Zealand; 2011.
49. Australian Nursing and Midwifery Council. National framework for the development of decision-making tools for nursing and midwifery practice. Melbourne: Australian Nursing and Midwifery Council; 2007.
50. Royal Australasian College of Surgeons, The College of Surgeons of Australia and New Zealand. Surgical Competence and Performance. Melbourne: Royal Australasian College of Surgeons; 2011.
51. Royal Australasian College of Surgeons. Position Statement on Credentialing and Scope of Practice for Surgeons. Melbourne: Royal Australasian College of Surgeons; 2014.
52. Australian College of Operating Room Nurses. Australian College of Operating Room Nurses Standards Shop [Internet]. 2014. Available at www.acorn.org.au/standards/shop/ [Accessed July 2015].
53. Australian and New Zealand College of Perfusionists. Regulations and Guidelines for Perfusionists. Parkville: Australian and New Zealand College of Perfusionists; 2012.
54. Australian and New Zealand College of Anaesthetists. Statement on Staffing of Accredited Departments of Anaesthesia. Melbourne: Australian and New Zealand College of Anaesthetists; 2014.



For heart health information
1300 36 27 87
www.heartfoundation.org.au

© 2015 National Heart Foundation of Australia ABN 98 008 419 761

ISBN 978-1-74345-107-6

Suggested citation: National Heart Foundation of Australia. Australian acute coronary syndromes capability framework. Melbourne: National Heart Foundation of Australia, 2015.

This work is copyright. No part of this publication may be reproduced in any form or language without prior written permission from the National Heart Foundation of Australia (national office). Enquiries concerning permissions should be directed to copyright@heartfoundation.org.au.

Disclaimer

This document has been produced by the National Heart Foundation of Australia for the information of health professionals. The statements and recommendations it contains are, unless labelled as 'expert opinion', based on independent review of the available evidence. Interpretation of this document by those without appropriate medical and/or clinical training is not recommended, other than at the request of, or in consultation with, a relevant health professional.

While care has been taken in preparing the content of this material, the Heart Foundation and its employees cannot accept any liability, including for any loss or damage, resulting from the reliance on the content, or for its accuracy, currency and completeness. The information is obtained and developed from a variety of sources including, but not limited to, collaborations with third parties and information provided by third parties under licence. It is not an endorsement of any organisation, product or service.

This material may be found in third parties' programs or materials (including, but not limited to, show bags or advertising kits). This does not imply an endorsement or recommendation by the National Heart Foundation of Australia for such third parties' organisations, products or services, including their materials or information. Any use of National Heart Foundation of Australia materials or information by another person or organisation is at the user's own risk.