Clinical Practice Guidelines:
Cardiac/Acute coronary syndrome

Policy code	CPG_CA_ACS_1224
Date	December, 2024
Purpose	To ensure consistent management of patients with acute coronary syndrome.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
Source of funding	Internal – 100%
Author	Clinical Quality & Patient Safety Unit, QAS
Review date	December, 2027
Information security	UNCLASSIFIED – Queensland Government Information Security Classification Framework.
URL	https://ambulance.qld.gov.au/clinical.html

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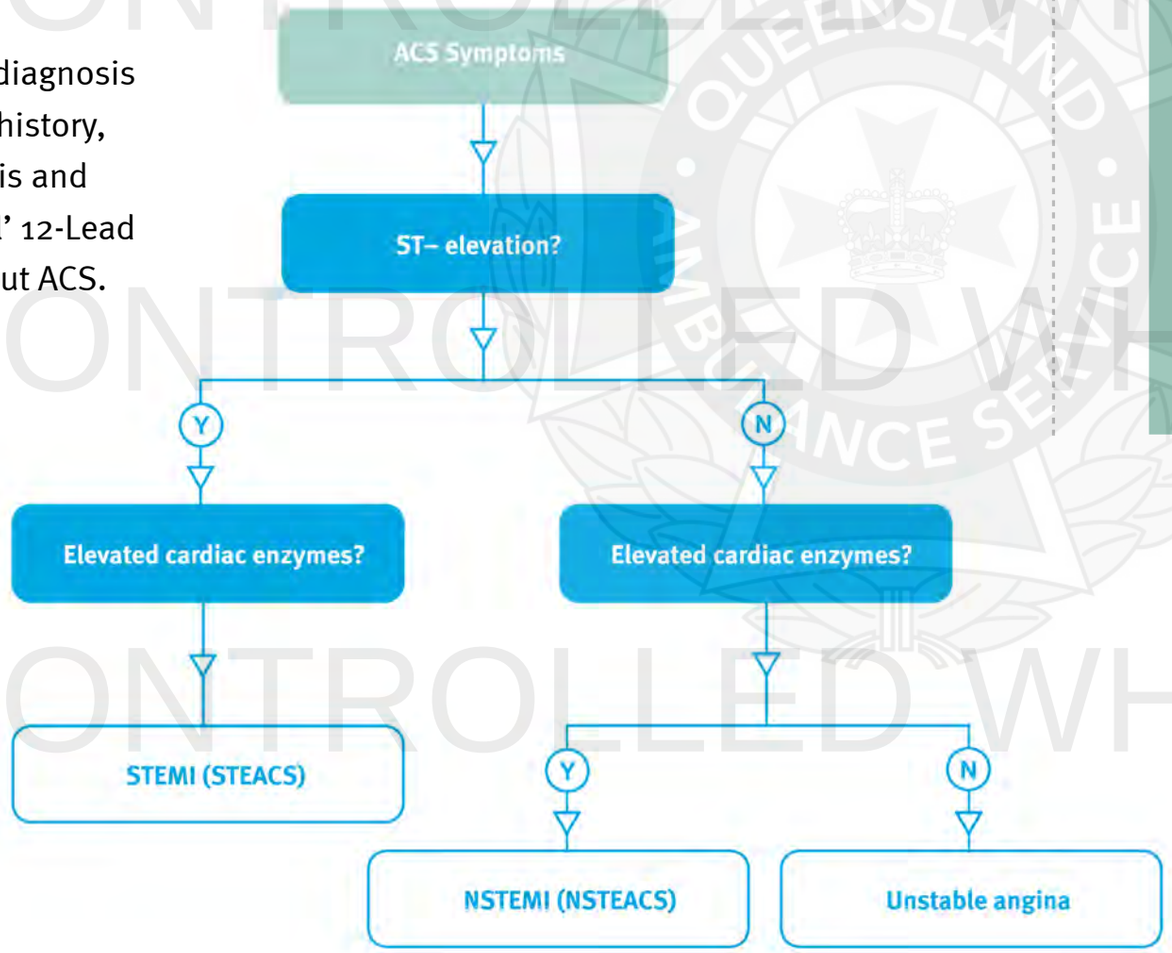
Acute coronary syndrome

December, 2024

Acute Coronary Syndrome (ACS) refers to the spectrum of conditions resulting from myocardial ischaemia. It encompasses ST-elevation myocardial infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI) and unstable angina (UA). ACS should be clearly distinguished from stable angina that is typically aggravated by exertion or emotional stress and is relieved quickly with rest and/or sublingual glyceryl trinitrate (GTN) administration.[1]

ACS will usually present with chest pain and/or discomfort however, certain groups of patients may present with atypical symptoms, for example, women, older people and patients with diabetes mellitus, congestive cardiac disease or renal failure.[2,3]

Definitive hospital diagnosis of ACS is based on history, 12-Lead ECG analysis and enzymes. A 'normal' 12-Lead ECG does not rule out ACS.



Complications of ACS include arrhythmia, cardiac failure, acute valvular or septal rupture, cardiogenic shock and death. Early diagnosis and aggressive care is vital, including time-critical reperfusion therapy for patients with STEMI.[4,5]

Clinical features

- Chest pain and/or discomfort (described as burning, pressure or tightness)
- Referred pain (e.g. arms or jaw/teeth)
- Dyspnoea
- Diaphoresis
- Nausea and/or vomiting
- Feeling of impending doom

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Risk assessment

High risk features on assessment include:[4]

- Repetitive or prolonged (> 10 minutes) ongoing chest pain and/or discomfort
- Persistent or dynamic ST-depression (≥ 0.5 mm) or new T-wave inversion (≥ 2 mm)
- Transient ST-segment elevation (≥ 0.5 mm) in 2 or more contiguous leads
- Hypotension (< 90 mmHg systolic)
- Sustained VT
- Syncope
- Left ventricular dysfunction
- Prior PCI (within 6 months) or history of coronary artery bypass graft
- Presence of known diabetes mellitus or renal impairment.

Risk factors for ACS include:

- Male
- Advancing age
- Smoking
- Hypertension
- Hyperlipidaemia
- History of prior ischaemic heart disease
- Family history of ACS

Right ventricular myocardial infarction (RVMI)

Approximately one third of patients with inferior STEMI will have a concurrent RVMI.[6,7] Patients with haemodynamically significant RVMI will typically present with hypotension, jugular vein distension and clear lung fields. ST-elevation in V4R, is indicative of RVMI and correlates closely with occlusion of the proximal right coronary artery.

In RVMI the maintenance of preload is vital and appropriate volume loading to maintain cerebral perfusion is indicated if haemodynamic compromise occurs. Similarly, pharmacological agents which reduce preload (e.g. GTN) should be used with extreme caution to prevent detrimental side effects.

Additional information

- The terminology used to describe ACS continues to evolve with STEMI also being known as 'ST-segment-elevation acute coronary syndrome' (STEACS) and NSTEMI also being known as 'non-ST-elevation acute coronary syndrome' (NSTEACS).
- All STEMI cases mandate CCP or ACP2 involvement where available and facilitation of early reperfusion therapy.

A normal 12-Lead ECG, clinical assessment and vital signs, does not rule out ACS.

All patients with chest discomfort or pain (typical or atypical) MUST be transported to hospital for further assessment.

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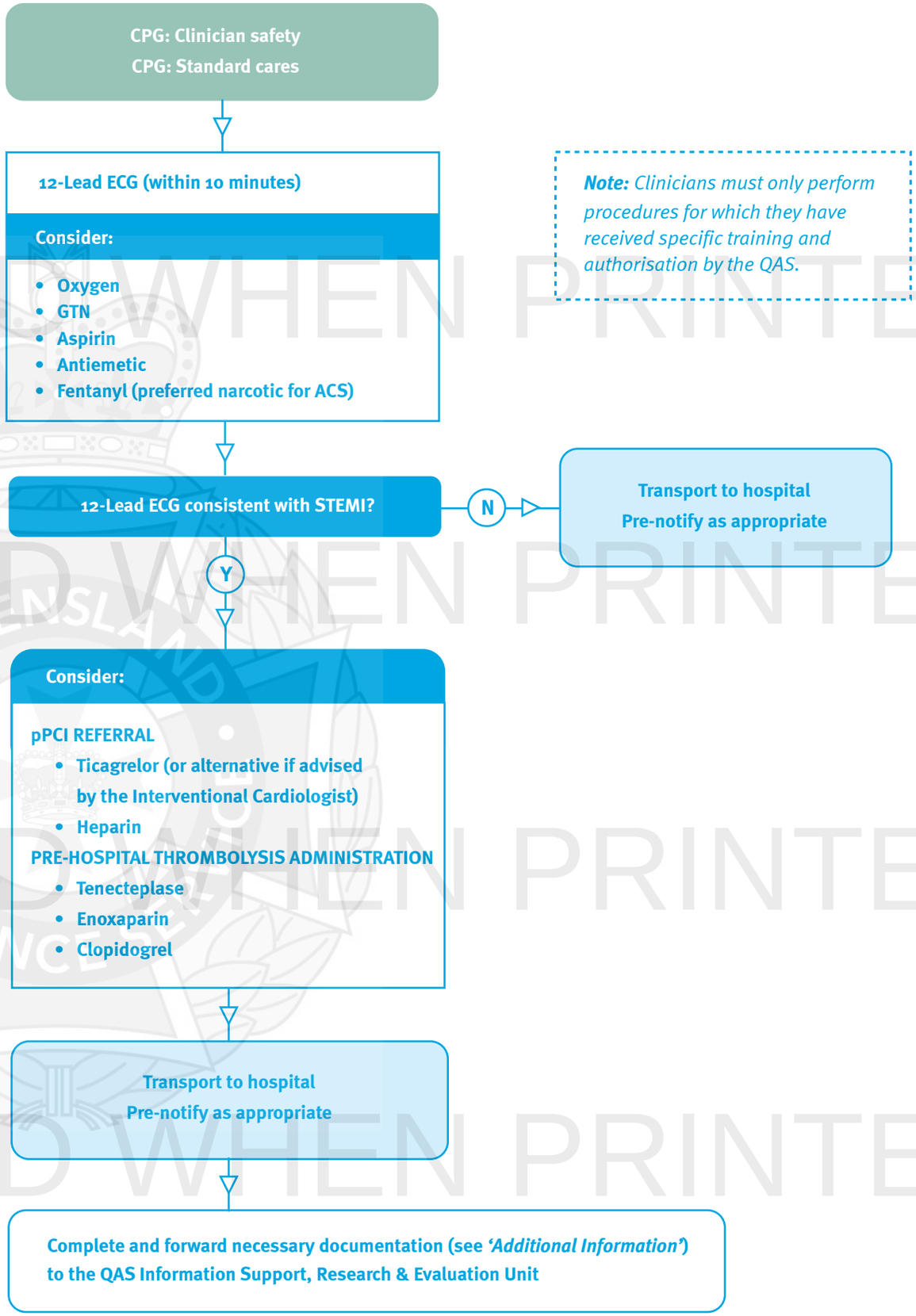
Additional information *(cont.)*

- Very high risk NSTEMI (NSTEACS) patients can benefit from early pPCI[8]. Where possible, patients presenting with **recurrent dynamic or widespread ST-segment and/or T-wave changes** associated with any of the following high risk criteria should be transported to an Emergency Department of a hospital with pPCI capabilities:
  - ongoing ischaemia;
  - haemodynamic compromise;
  - arrhythmias; and/or
  - acute heart failure.

Data collection and research

- All incidents where a STEMI has been identified by an ambulance clinician are subject to mandatory digital data collection. The submission of this data is the responsibility of the primary patient care officer.
- When completing the patients eARF, ambulance clinicians must do the following:
  - Record the primary diagnosis as 'AMI – STEMI'.
  - Complete all fields within the 'STEMI' tab which is contained within the 'Care' tab in the eARF application.
  - Capture as a clinical image the first 12-lead ECG that was performed. If this doesn't not show a STEMI pattern, an additional image of the first 12-lead ECG where a STEMI pattern is present must also be captured.



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