Specialised Medication Guideline – Tenecteplase for Cardiac Thrombolysis Guideline

1. Purpose

This document provides guidance for the prescription and administration of tenecteplase for cardiac thrombolysis. It should be used in conjunction with the MR172A WACHS Tenecteplase Checklist for Cardiac Thrombolysis and with appropriate references, including:

- WACHS High Risk Medication Procedure
- Australian Medicines Handbook (AMH)
- Therapeutic Guidelines
- Statewide Medicines Formulary
- AusDI
- ACSQHC National Standard for User-applied Labelling of Injectable Medicines Fluids and Lines.

For the use of tenecteplase in acute ischaemic stroke – refer to Department of Health (DoH) Protocol for Intravenous Thrombolysis in Acute Ischaemic Stroke.

2. Guideline

Once a patient on the MR1B WACHS Chest Pain Pathway has been confirmed as an acute coronary occlusion myocardial infarction (ACOMI) [formerly STEMI or STEMI equivalent] on the electrocardiograph (ECG) (with no alternate causes identified), they exit the chest pain pathway and commence the thrombolysis pathway using the MR172A WACHS Tenecteplase Checklist for Cardiac Thrombolysis.

ATTENTION

For people ≥ 70 years of age:

- Dose reduction to **half the standard dose for tenecteplase** is recommended due to the increased risk of intracranial haemorrhage.
- Where **enoxaparin** is used post tenecteplase administration, **no IV bolus dose** is recommended.

Refer to the Australian Clinical Guideline for Diagnosing and Managing Acute Coronary Syndromes 2025 for further information.

It is highly recommended that sites keep a cardiac thrombolysis pack (also known as a kit or box at some sites) ideally located in the emergency department (ED) with easy access for inpatient areas. A contents list is provided as a resource to keep in the pack, and content also includes a copy of this guideline and the checklist form.

2.1 Product[2]

The product is available in 50 mg (10,000 units) vial with pre-filled syringe containing 10 mL water for injections.

2.2 Indications[2,3]

In people with ACOMI within 12 hours of symptom onset, the Australian clinical guideline for diagnosing and managing acute coronary syndromes 2025 recommends primary percutaneous coronary intervention (PCI) is the preferred reperfusion strategy over fibrinolysis, if it can be performed within 120 minutes of first medical contact.[1] Where primary PCI cannot be delivered within that timeframe, perform fibrinolysis.

Tenecteplase is used when timely access to PCI is not available. It must be given within 12 hours of the onset of chest pain. Maximum benefit is achieved when it is given within 30 minutes of arrival to the ED.

2.3 Contraindications

Refer to MR172A WACHS Tenecteplase Checklist for Cardiac Thrombolysis for contraindications.

Administration is dependent on the outcome of the contraindications checklist on page 1 of the form:

- If **YES** to any question/s on the checklist – involve FACEM/ETS +/- cardiologist to decide risk/benefit of thrombolysis vs transfer for angiography.
- If **NO** to all questions on the checklist – proceed with administration.

2.4 Storage

Store below 30°C. Before use, keep in the outer carton to protect from light.

2.5 Dosage

The Australian clinical guideline for diagnosing and managing acute coronary syndromes 2025 recommends for **people aged ≥ 70 years, half the standard dose of tenecteplase** is used.[1]

Dosage is prescribed on the MR170A WA Hospital Medication Chart – Adult Short Stay.

For inpatients who are using the MR171 WA Hospital Medication Chart – Adult Long Stay, continue to use the MR171.

Weight	Tenecteplase	Tenecteplase	Volume
< 60 kgs	6,000 units	30 mg	6 mL
60 – 69 kgs	7,000 units	35 mg	7 mL
70 – 79 kgs	8,000 units	40 mg	8 mL
80 – 89 kgs	9,000 units	45 mg	9 mL
>90 kgs	10,000 units	50 mg	10 mL

Table 1: Dosage of tenecteplase by weight.

2.6 Administration

General considerations

The prescribing medical officer (MO) or a suitable proxy (e.g., ETS FACEM) is to be contactable during the administration of tenecteplase and in the post administration phase.

ATTENTION

Caution is advised where a decision to proceed with invasive lines is made. A careful risk vs benefit must be undertaken in a patient at risk of a catastrophic bleed because of lysis. An administration site should be chosen which is compressible in the case of haemorrhage.

Consumer information

The WACHS Cardiac Thrombolysis - Tenecteplase Patient Information Sheet is given to, and discussed with the patient and their family and/or carer prior to administration. They are to be given the opportunity to ask any questions relating to the medication prior to administration.

If appropriate and available, language services should be utilised for support with linguistic barriers of non-English speaking and Aboriginal patients. The use of visual resources and information to support cross-cultural communication is recommended.

For culturally and linguistically diverse patients refer to the MP0051/17 Language Services Policy and Aboriginal Interpreting WA.

Pre-administration

Pre preparation actions are listed on the MR172A WACHS Tenecteplase Checklist for Cardiac Thrombolysis. Note: If patient confirms that the onset of symptoms of chest pain >12 hours ago, MO to **urgently** discuss with cardiologist regarding optimal management.

Additionally, ensure:

- If moving the patient to a resuscitation area, once situated, apply the defibrillator pads (if not already insitu).
- The nurse caring for patient must be competent in Basic Life Support, and where possible Advanced Life Support (ALS).
- Medicines used in advanced life support or reperfusion arrhythmias are readily available nearby. **Only** to be given as per MO order or as part of ALS algorithm. Medications include:
  - adrenaline 1 mg intravenous (IV) during cardiac arrest
  - atropine 600 micrograms IV for symptomatic bradycardia
  - amiodarone 300 mg IV (dilute in glucose 5%) for ventricular tachyarrhythmias.

  For further information on the emergency medications above refer to the Australian and New Zealand Committee on Resuscitation (ANZCOR) Guidelines: 11.2 Protocols for Adult Advanced Life Support; 11.5 Medications in Adult Cardiac Arrest; and Bradycardia and Tachycardia Algorithm.

Administration[2,4]

When administrating tenecteplase:
- reconstitute vial by swirling gently, **do not shake**
- flush IV cannula with 10 mL sodium chloride 0.9% before and after administration
- administer weight-based dose of tenecteplase as IV bolus over 10 seconds
- do not administer into a line containing glucose 5%
- document on the MR170A WA Hospital Medication Chart – Short Stay.

Post administration adjunct medicines

Timing of adjunct medicines is important and includes:
- **15 – 30 minutes** after tenecteplase administration, administer clopidogrel 300 mg PO as ordered by MO (use clopidogrel post thrombolysis, not ticagrelor). Dose is prescribed on the MR170A WA Hospital Medication Chart – Short Stay.
- **within 30 minutes** of tenecteplase administration, administer heparin **OR** enoxaparin. **Only one or the other is used**. Dosing and prescription are on MR170C Anticoagulation Medication Chart.

  Note: if expected time to functioning cardiac catheterisation laboratory is less than 6 hours **AND** activated partial thromboplastin time (APTT) monitoring is available**,** use heparin.

Heparin	Enoxaparin

• Modify rate according to nomogram on the MR170C Anticoagulation Medication Chart
• Re-measure APTT within 6 hours of commencing infusion and repeat within 6 hours of each rate change.
	Omit IV bolus for patients > 70 years[1]
	• Dosing information is available from AMH – enoxaparin – STEMI with thrombolysis or via Therapeutic Guidelines – Parenteral anticoagulation for thrombolytic therapy for STEMI
	• IV administration and preparation with another nurse/MO
	  ○ using an enoxaparin pre-filled syringe expel air bubble and then decant the 30 mg dose into a Luer lock syringe for administration via a needleless port
	  ○ label as per National Standard for User-applied Labelling of Injectable Medicines Fluids and Lines
	  ○ flush line before and after injection.

Table 2: Practice points for heparin and enoxaparin

Post administration monitoring

Monitoring requirements include:
- Continuous cardiac monitoring
- Documentation of vital signs on the MR140A WACHS Adult Observation and Response Chart (A-ORC) (frequency outlined on MR172A)
- Reporting any ongoing chest pain post thrombolysis to MO.
- Commencement of neurological monitoring on MR147 WACHS Adult Neurological Observation Chart if consciousness level (AVPU) deteriorates. Notify MO promptly if this occurs.
- Observing for complications as per MR172A WACHS Tenecteplase Checklist for Cardiac Thrombolysis. Escalate via local processes if observed/indicated.

Post administration investigations

Frequency of post administration ECGs and troponin testing is outlined on the MR172A WACHS Tenecteplase Checklist for Cardiac Thrombolysis.

2.7 Transfer

Most patients will need to be transferred to higher care. Transfer details are documented on the MR184 WACHS Inter-hospital Clinical Handover Form.

The Acute Patient Transfer Coordination (APTC) service provides frontline country clinicians with advice and support in transferring their patients, in a coordinated, efficient, safe and timely manner to an appropriate level of care. Contact the APTC on Ph: 1800 951 211 (available 24 hours 7 days a week).

3. Roles and Responsibilities

Medical officers and nurses are responsible for working within their scope of practice, level of training and education and job role.

All staff are required to comply with the directions in WACHS policies and procedures as per their roles and responsibilities. Guidelines are the recommended course of action for WACHS, and staff are expected to use this information to guide practice. If staff are unsure which policies procedures and guidelines apply to their role or scope of practice, and/or are unsure of the application of directions they should consult their manager in the first instance.

4. Monitoring and Evaluation

Adverse events and clinical incidents relating to the prescribing and administration of medicines for cardiac thrombolysis are to be reported and managed as per the WACHS Medication Prescribing and Administration Policy. The WACHS Medication Safety Committee and regional Medicines and Therapeutics Committees reviews clinical incident data relevant to medication prescribing and administration.

This guideline will be reviewed as required to determine effectiveness, relevance and currency. At a minimum it will be reviewed every five years by the WACHS Medication Safety Committee.

5. References

1. Australian Heart Foundation and Cardiac Society of Australia and New Zealand [Internet]. Melbourne, Vic: Heart Foundation: 2025. Australian clinical guideline for diagnosing and managing acute coronary syndromes 2025. [cited 2025 September 08]

2. AusDI [Internet]. Health Communication Network Ltd [Accessed 08 September 2025]

3. Government of Western Australia, South Metropolitan Health Service [Intranet]. Perth: Fiona Stanley Fremantle Hospitals Group; February 2025. Tenecteplase Specialised Drug Guideline [Accessed 08 September 2025]

4. Australian Injectable Drugs Handbook, 9th Edition [Internet]. SHPA. Tenecteplase. AIDH - TENECTEPLASE (cited: 27 March 2023) [Accessed 08 September 2025]

5. ANZCOR 2025 [Internet]. Guidelines [Accessed 21 August 2025]

6. Australian Commission on Safety and Quality in Health Care [Internet]. Sydney: ACSQHC; 2019. Acute Coronary Syndromes Clinical Care Standard [Accessed 26 June 2025]

7. Australian Medicines Handbook; January 2025 [Internet]. Enoxaparin [Accessed 26 June 2025]

8. ST elevation myocardial infarction (STEMI) [Published 2023 June] Therapeutic Guidelines [Internet]. Melbourne: Therapeutic Guidelines Limited. [Accessed 26 June 2025]

6. Definitions

Term	Definition
Acute coronary occlusion myocardial infarction	Acute coronary occlusion myocardial infarction (ACOMI) [formerly STEMI or STEMI equivalent] has been adopted by the Australian Heart Foundation to acknowledge ECG patterns that have been found to reflect acute coronary occlusion without ST-segment elevation (STE). It also includes STE patterns often under-recognised. For more information refer to 'What's new in the new Australian clinical guideline for diagnosing and managing acute coronary syndromes 2025" – new terminology and definitions section or use QR code.
Fibrinolysis	The enzymatic breakdown of the fibrin in blood clots
Tenecteplase	A thrombolytic drug that converts plasminogen to plasmin, which catalyses the breakdown of fibrin.
Thrombolysis	The dissolution of a blood clot, especially as induced artificially by infusion of an enzyme into the blood

7. Document Summary

Coverage	WACHS wide
Audience	All medical, nursing and pharmacy staff working in emergency departments, nursing posts, remote clinics and adult inpatient areas.
Records Management	Health Record Management Policy
Related Legislation	*Medicines and Poisons Act 2014* Medicines and Poisons Regulations 2016
Related Mandatory Policies / Frameworks	• MP 0131/20 High Risk Medication Policy • MP 0051/17 Language Services Policy • MP 0077/18 Statewide Medicines Formulary Policy • Clinical Governance, Safety and Quality Policy Framework • Public Health Policy Framework
Related WACHS Policy Documents	• Clinical Documentation Policy • High Risk Medication Procedure • Medication Prescribing and Administration Policy
Other Related Documents	• ACSQHC National Standard for User-applied Labelling of Injectable Medicines Fluids and Lines • WACHS Cardiac Thrombolysis Pack Contents List • WACHS Cardiac Thrombolysis - Tenecteplase Patient Information Sheet
Related Forms	• MR1B WACHS Chest Pain Pathway • MR140A WACHS Adult Observation and Response Chart (A-ORC) • MR147 WACHS Adult Neurological Observation Chart • MR170A WA Hospital Medication Chart – Adult Short Stay • MR170C Anticoagulant Medication Chart • MR171 WA Hospital Medication Chart – Adult Long Stay • MR172A WACHS Tenecteplase Checklist for Cardiac Thrombolysis • MR184 WACHS Inter-hospital Clinical Handover Form
Related Training	Nil
Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 2685
National Safety and Quality Health Service (NSQHS) Standards	1.10, 1.27, 2.10, 4.03, 4.04, 4.11, 4.14, 4.15, 5.10, 5.11, 6.05, 8.04, 8.05, 8.06
Aged Care Quality Standards	Nil
Chief Psychiatrist's Standards for Clinical Care	Nil

Other Standards (please specify and include link)	Nil

8. Document Control

Version	Published date	Current from	Summary of changes
1.00	2 December 2025	2 December 2025	New guideline

9. Approval

Policy Owner	Executive Director Clinical Excellence
Co-approver	Executive Director Nursing and Midwifery Services
Contact	WACHS Chief Pharmacist
Business Unit	Clinical Excellence and Medical Services
EDRMS #	ED-CO-25-286929

This document can be made available in alternative formats on request.