



Drug Therapy Protocols: Enoxaparin

Policy code	DTP_ENO_0924
Date	September, 2024
Purpose	To ensure a consistent procedural approach to enoxaparin administration.
Scope	Applies to all Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless specifically mentioned.
Source of funding	Internal – 100%
Author	Clinical Quality & Patient Safety Unit, QAS
Review date	September, 2026
Information security	UNCLASSIFIED – Queensland Government Information Security Classification Framework.
URL	https://ambulance.qld.gov.au/clinical.html

While the QAS has attempted to contact all copyright owners, this has not always been possible. The QAS would welcome notification from any copyright holder who has been omitted or incorrectly acknowledged.

All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

Disclaimer

The Digital Clinical Practice Manual is expressly intended for use by appropriately qualified QAS clinicians when performing duties and delivering ambulance services for, and on behalf of, the QAS.

The QAS disclaims, to the maximum extent permitted by law, all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs incurred for any reason associated with the use of this manual, including the materials within or referred to throughout this document being in any way inaccurate, out of context, incomplete or unavailable.

© State of Queensland (Queensland Ambulance Service) 2024.



This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives V4.0 International License

You are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute the State of Queensland, Queensland Ambulance Service and comply with the licence terms. If you alter the work, you may not share or distribute the modified work. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>

For copyright permissions beyond the scope of this license please contact: Clinical.Guidelines@ambulance.qld.gov.au

Enoxaparin

September, 2024

Drug class^[1]

Anticoagulant

Pharmacology

Enoxaparin has several actions on the coagulation pathway through its binding to antithrombin III. The antithrombotic activity is related to inhibition of thrombin generation and inhibition of two key coagulation factors: factor Xa and thrombin.^[1]

Metabolism

Hepatic but mostly eliminated unchanged.^[1]

Indications

- **Patients with STEMI** (as defined by the relevant QAS CPP) **who have received QAS tenecteplase** (as an adjunct medication to aspirin and clopidogrel)^[2-3]

Contraindications

- Allergy AND/OR Adverse Drug Reaction
- Patients aged less than 18 years
- Modified Rankin Scale equal to or greater than 4
- Ischaemic chest pain greater than 6 hours
- History of terminal illness, or under the care of a palliative care service
- Symptoms suggestive of an acute aortic dissection

Precautions^[1]

- Renal/hepatic impairment
- Low bodyweight (women < 45 kg and men < 57 kg)
- Older people

Side effects^[1]

- Haemorrhage
- Thrombocytopenia

Presentation

- Injection (pre-filled syringe with graduated markings), 60 mg/0.6 mL *enoxaparin sodium*
- Injection (pre-filled syringe with graduated markings), 100 mg/1 mL *enoxaparin sodium*

Onset (IV)

Immediate
(peak 3 hours)

Duration (IV)

12–24 hours

Half-life

4.4 hours for 40 mg dose

Schedule

- S₄ (Restricted drugs).

Routes of administration

Subcutaneous injection (SUBCUT)



Intravenous injection (IV)



Special notes

- Ambulance officers must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval via the *QAS Clinical Consultation and Advice Line*.
- For all IV administrations an enoxaparin 60 mg/0.6 mL graduated pre-filled syringe must be used. The volume to be injected (30 mg/0.3 mL) should be measured precisely using the markings on the syringe. The air bubble **MUST NOT** be administered with the medication.
- For all SUBCUT administrations an enoxaparin 100 mg/1 mL graduated pre-filled syringe must be used. The volume to be injected (1 mg/kg) should be measured precisely using the markings on the syringe. When adjusting to the correct dose, hold the syringe with the needle tip pointing down. Depress the plunger so the bottom of the air bubble is level with the marking on the syringe that corresponds to the dose required. The air bubble is required to be administered with the medication.

Adult dosages^[1-3]

Patients with STEMI (as defined by the relevant QAS CPP) **who have received QAS tenecteplase** (as an adjunct medication to aspirin and clopidogrel)

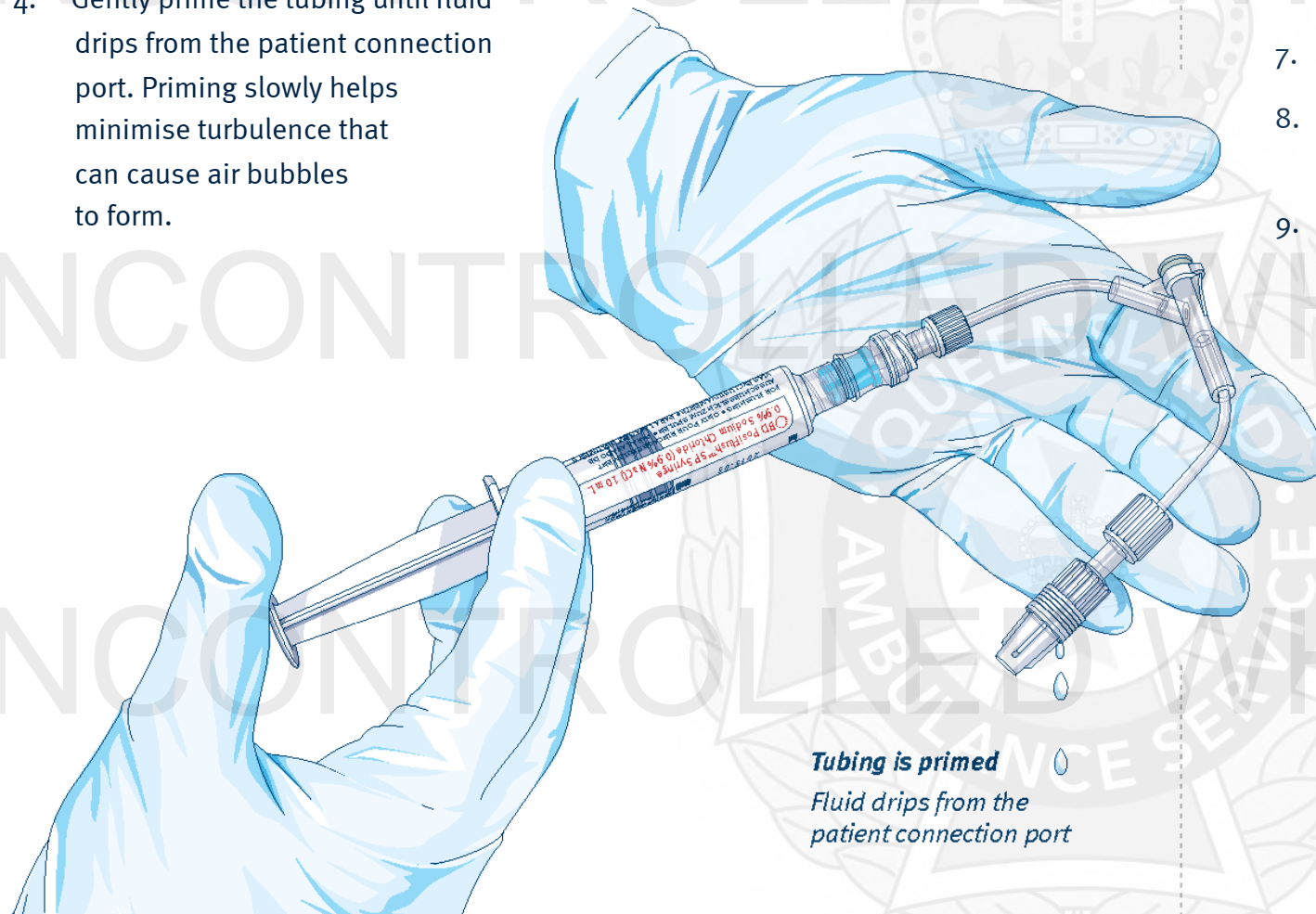
ACP2 CCP	IV	Loading dose – 30 mg To be administered 15 minutes prior to SUBCUT maintenance dose (listed below).
ACP2 CCP	SUBCUT	Maintenance dose – 1 mg/kg Single dose only, not to exceed 100 mg. To be administered 15 minutes following IV enoxaparin loading dose (listed above).

Paediatric dosages

Note: QAS officers are **NOT** authorised to administer enoxaparin to paediatric patients.

Priming of the Microbore Extension Set

1. Remove the Microbore Extension Set from the packaging.
2. Clean the blue male luer-lock valve with an appropriate antimicrobial swab.
3. Insert a 10 mL Luer-Lok™ syringe containing 10 mL sodium chloride 0.9% into the needleless valve and rotate clockwise to secure the connection.
4. Gently prime the tubing until fluid drips from the patient connection port. Priming slowly helps minimise turbulence that can cause air bubbles to form.
5. Disconnect the syringe's luer by securely holding the valve while turning the syringe counter-clockwise.
6. Inspect the Microbore Extension Set, including valves and Y-injection port, to ensure no air bubbles are visible. If air bubbles are present, repeat the priming procedure until all air bubbles are dislodged and have been released from the tubing.
7. Remove the Microbore Extension Set's patient connection port cap.
8. Connect the Microbore Extension Set to the SmartSite™ valve on the patient's cannula.
9. Administer medications AND/OR fluids as required.



Clexane® Pre-filled Safety Lock Syringe Instructions For Use

Clexane® (enoxaparin) pre-filled syringes are now supplied with safety lock. Clexane® Safety Lock is a safety syringe with an inbuilt safety device that completely shields the needle after use. This page provides instructions on the use of the Clexane® Safety Lock Syringe for intravenous (IV) loading dose and subcutaneous (SUBCUT) maintenance dose injections.

Instructions of IV injection (loading dose)

1. Apply required infection control measures (refer to the *QAS Infection Control Framework*).

2. Remove the safety cap from a 60 mg/0.6 mL graduated pre-filled safety lock syringe.

3. While holding upright, expel the air bubble and the unrequired enoxaparin, leaving only the required loading dose in the syringe (0.3 mL).

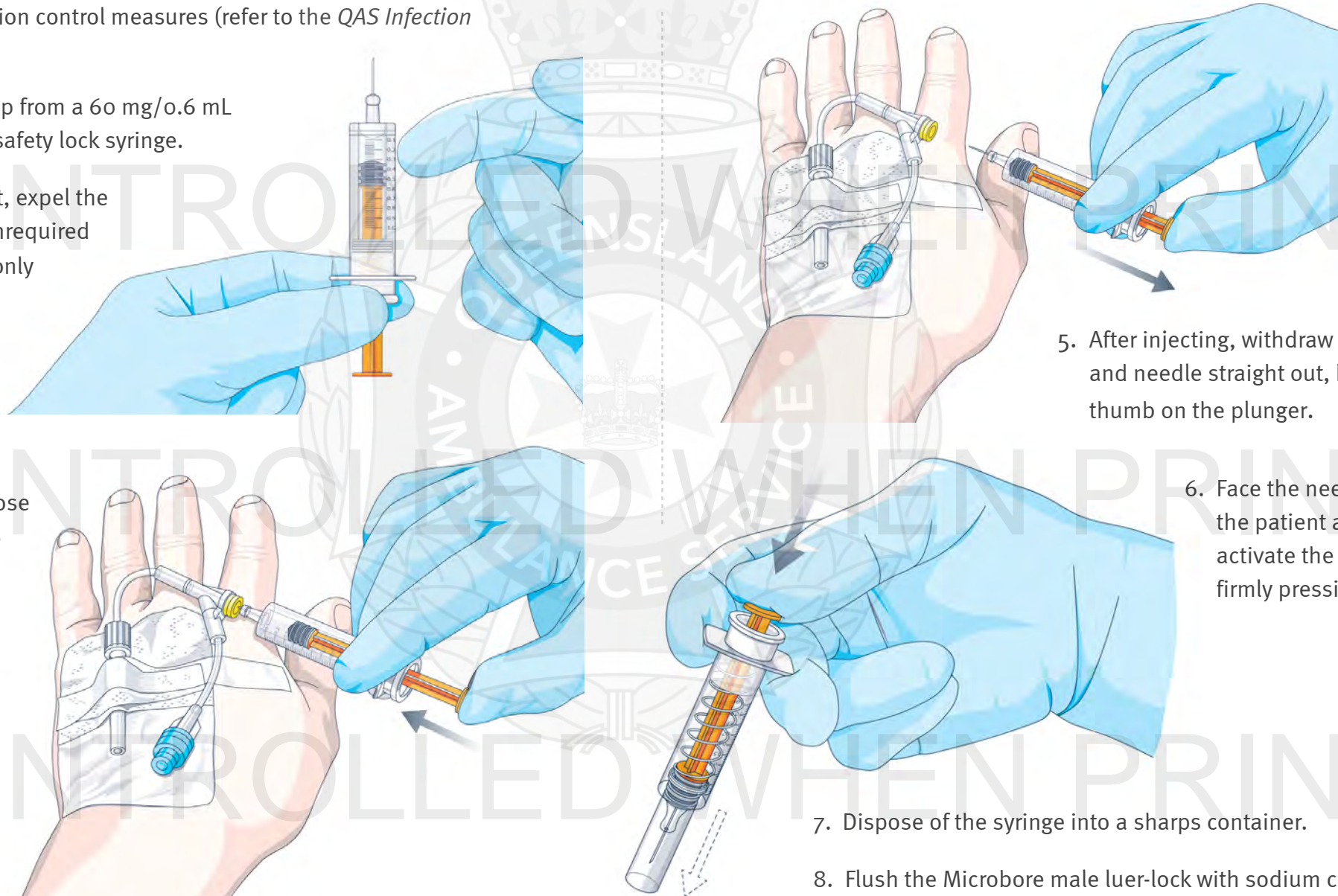
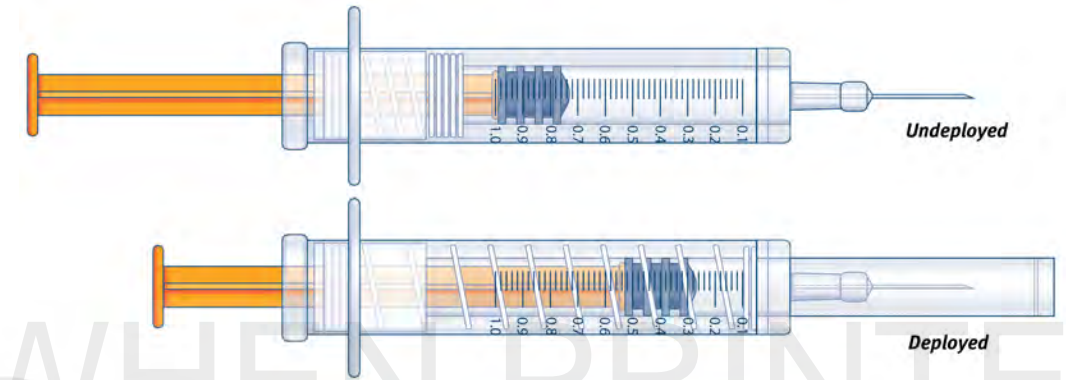
4. Inject the required dose of enoxaparin via the cleaned Y-injection port on the patient's Microbore Extension Set.

5. After injecting, withdraw the syringe and needle straight out, keeping your thumb on the plunger.

6. Face the needle away from the patient and others and activate the safety lock by firmly pressing the plunger.

7. Dispose of the syringe into a sharps container.

8. Flush the Microbore male luer-lock with sodium chloride 0.9%.

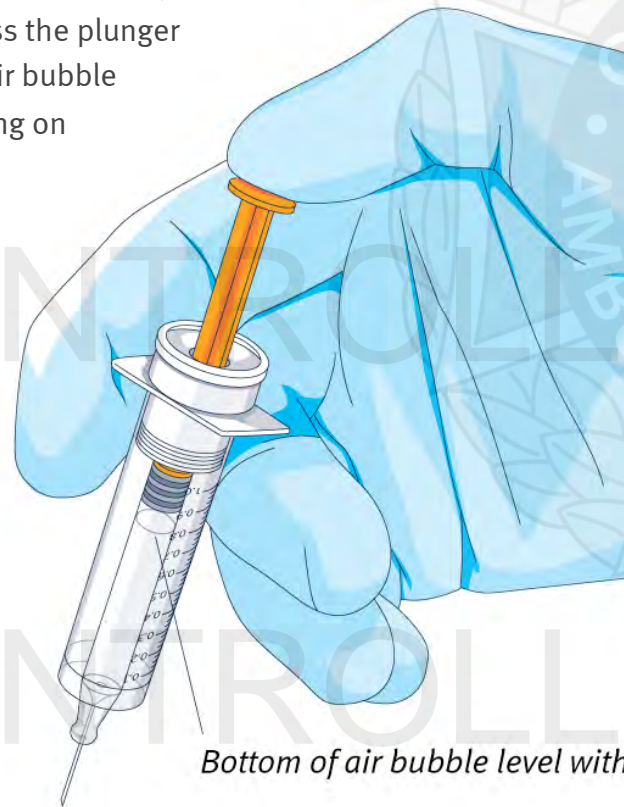


Instructions for SUBCUT injection (maintenance dose)

1. Apply required infection control measures (refer to the *QAS Infection Control Framework*).
2. Posture the patient in a comfortable position (supine or semi-reclined).
3. Identify and clean a suitable insertion site with a 2% Chlorhexidine/70% Isopropyl Alcohol antiseptic swab.
4. Calculate the required maintenance dose of enoxaparin for the patient (1 mg/kg not to exceed 100 mg).
5. Remove the safety cap from a 100 mg/1 mL graduated pre-filled safety lock syringe.

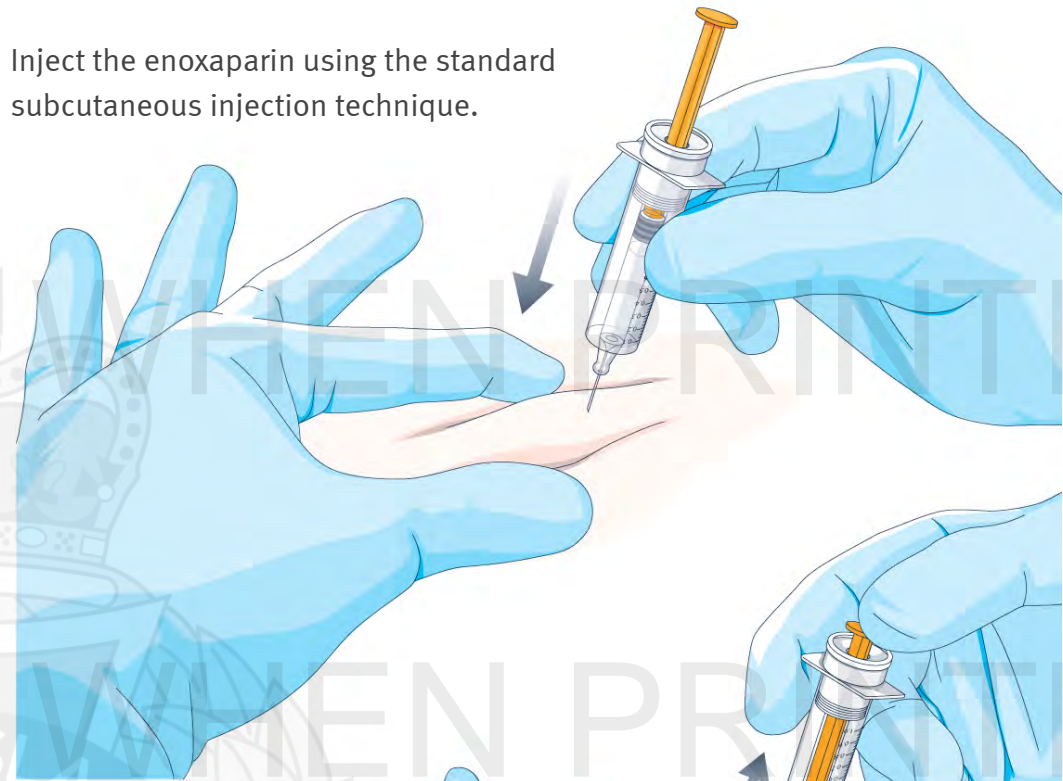
6. Hold the syringe with the needle tip pointing down. Depress the plunger so the bottom of the air bubble is level with the marking on the syringe that corresponds to the dose required.

The air bubble is required to be administered with the medication.

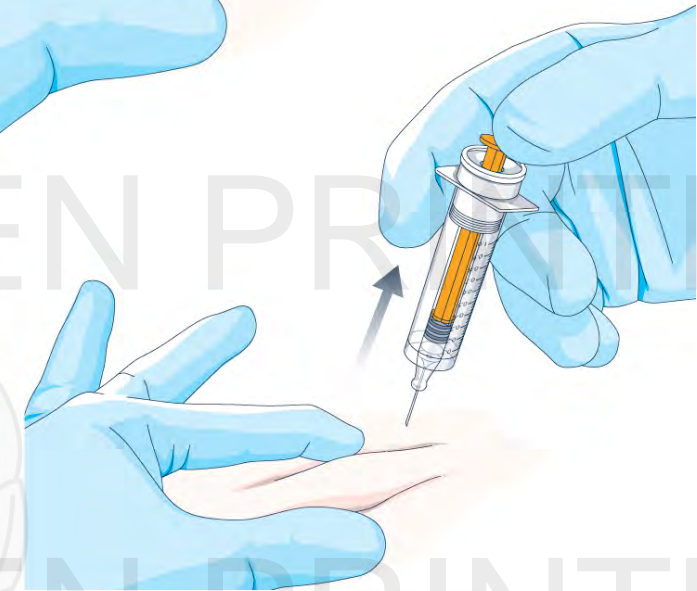


Bottom of air bubble level with required dosage marking

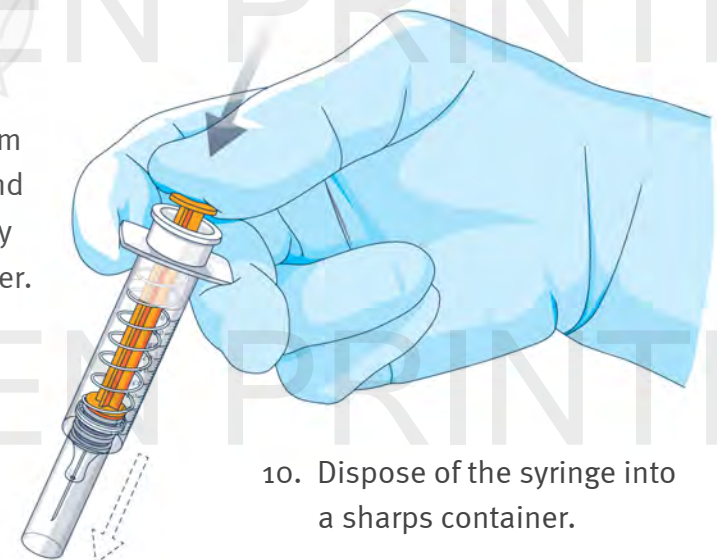
7. Inject the enoxaparin using the standard subcutaneous injection technique.



8. After injecting, withdraw the syringe and needle straight out, keeping your thumb on the plunger.



9. Face the needle away from the patient and others and activate the safety lock by firmly pressing the plunger.



10. Dispose of the syringe into a sharps container.