



Clinical Practice Procedures: Drug administration/Intramuscular injection

Policy code	CPP_DFA_INMI_1122
Date	November, 2022
Purpose	To ensure a consistent procedural approach to intramuscular injection (IM) drug administration.
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	Clinician Quality & Patient Safety Unit, QAS
Review date	November, 2025
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) 2022.



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

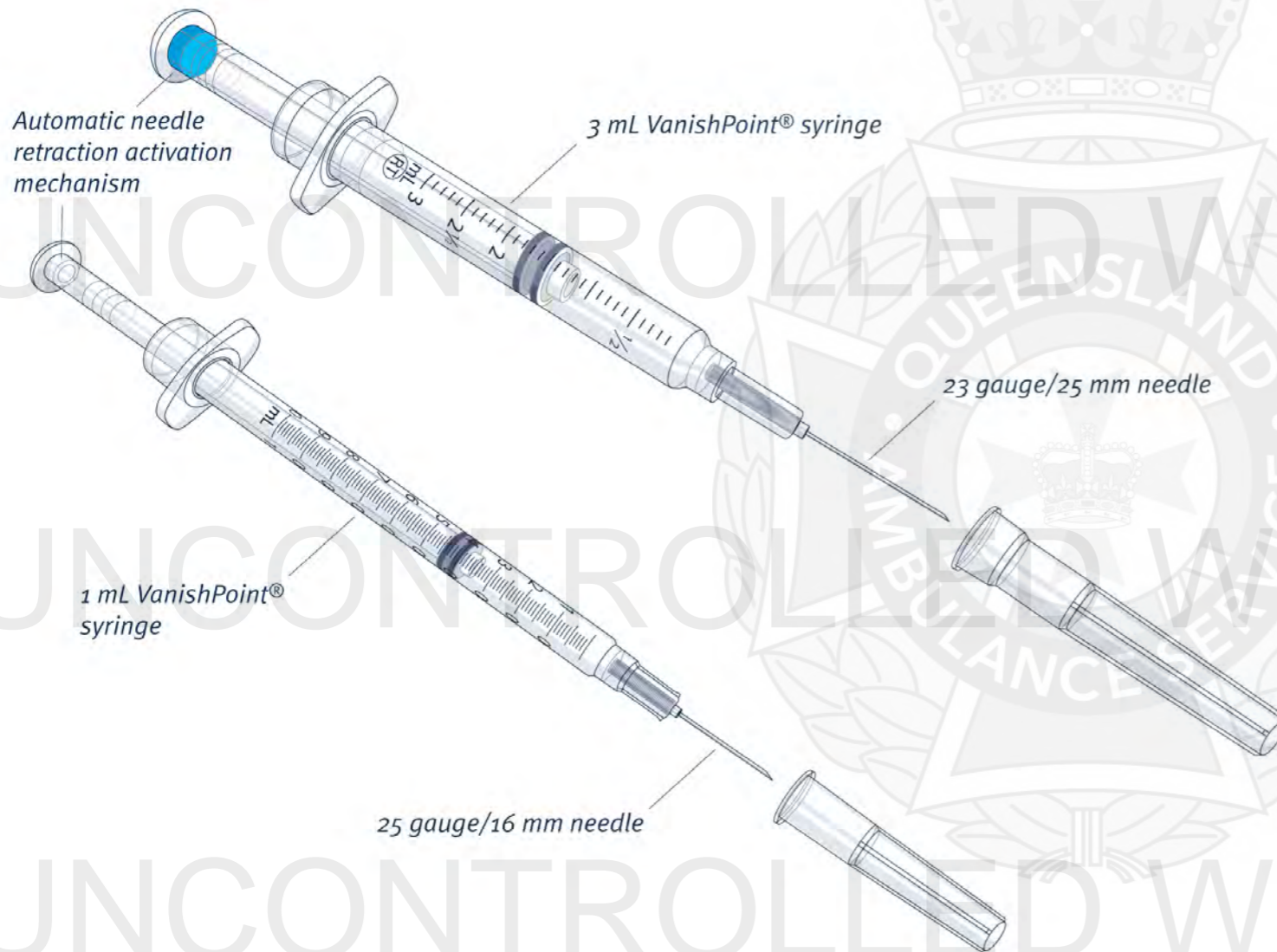
You are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute the State of Queensland, Queensland Ambulance Service and comply with the licence terms. If you alter the work, you may not share or distribute the modified work. To view a copy of 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

Intramuscular injection

November, 2022

An **intramuscular (IM) injection** involves the insertion of a sterile needle into the patient's muscle for the purpose of administering a liquid medication. IM injections are a common route of administration, due to the muscle's rich blood supply allowing for rapid absorption and distribution into the patient's circulation.^[1]



Indications

- Required intramuscular drug administration

Contraindications^[1]

- Inadequate muscle mass at the selected injection site
- Patients in cardiac arrest
- Ability to administer the medication by an equally effective and less invasive route (e.g. oral, intranasal)

Complications^[1,2]

- Pain (minor discomfort immediately following the injection is normal)
- Minor haemorrhage
- Abscess formation
- Cellulitis
- Nerve and blood vessel damage

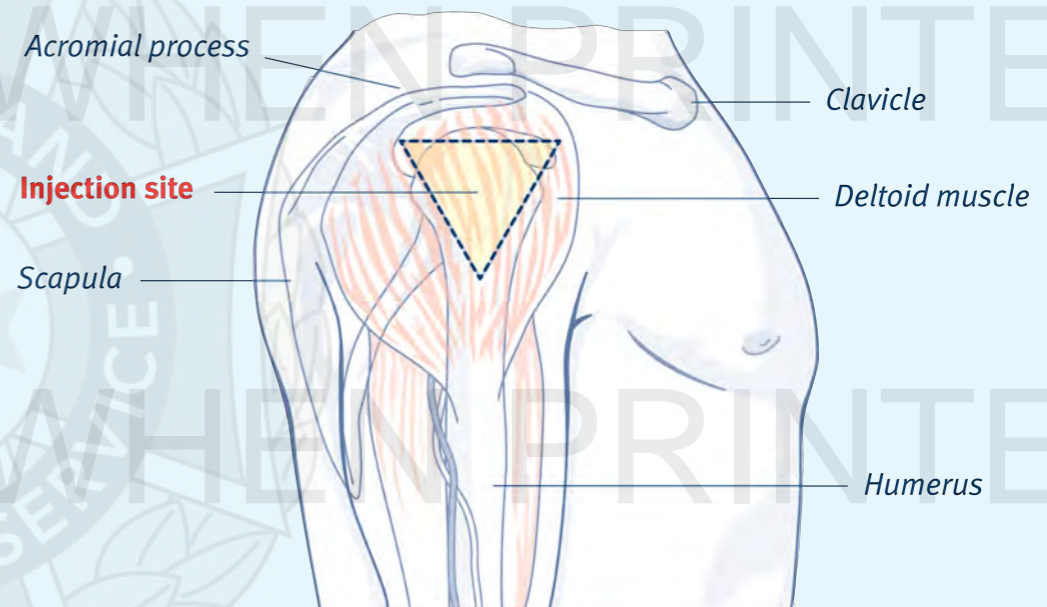
Procedure – Intramuscular injection

1. Apply required infection control measures (refer to *QAS Infection Control Framework*).
2. Assess the patient's history of allergies and confirm suitability for medication administration.
3. Prepare the required dose of medication in an appropriately sized VanishPoint® syringe:
 - a. **Large adult** – VanishPoint® syringe 22 gauge/25 mm needle
 - b. **Adult, child or moderate to large Infant** – VanishPoint® syringe 23 gauge/25 mm needle; and
 - c. **Small infant** – VanishPoint® syringe 25 gauge/16 mm needle.
4. Ensure the syringe is appropriately labelled (refer to the *QAS Drug Management Code of Practice*).
5. Ensure all air bubbles are expelled from the prepared syringe.
6. Consider strategies to reduce patient discomfort:
 - a. Distraction;
 - b. Explaining the benefits of the injection to the patient; **and/or**
 - c. Oral glucose administration in infants (refer to *DTP: Sucrose 24%*)
7. Identify the appropriate injection site based on patient's age, muscle mass and medication volume.

Deltoid

- Often easier to access in the pre-hospital environment
- Not suitable for patients less than 2 years of age
- Only recommended for small volumes (0.5 mL – 1 mL)

The deltoid is identified by imagining an inverted triangle 1–3 finger depths below the acromial process with the midpoint of the lateral aspect of the upper third of the arm.

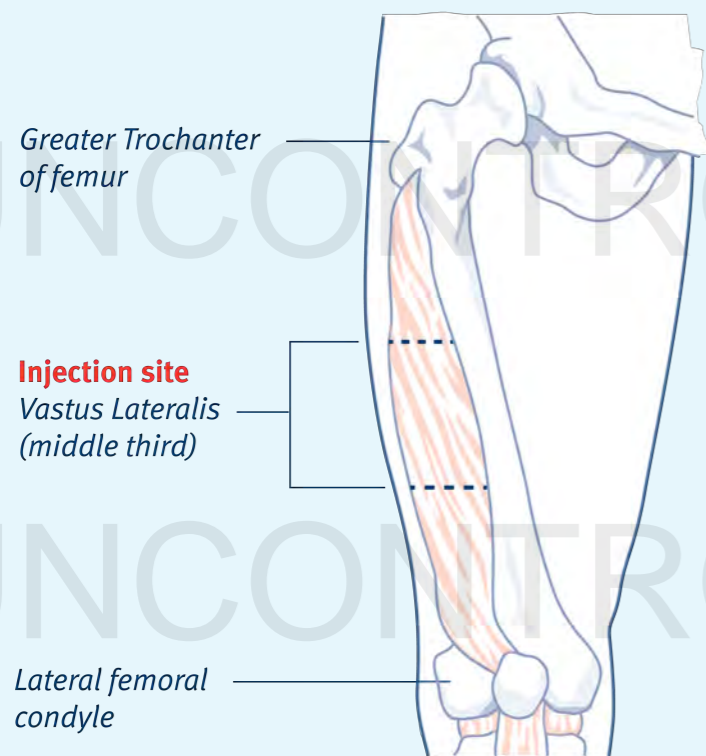


Procedure – Intramuscular injection

Vastus Lateralis

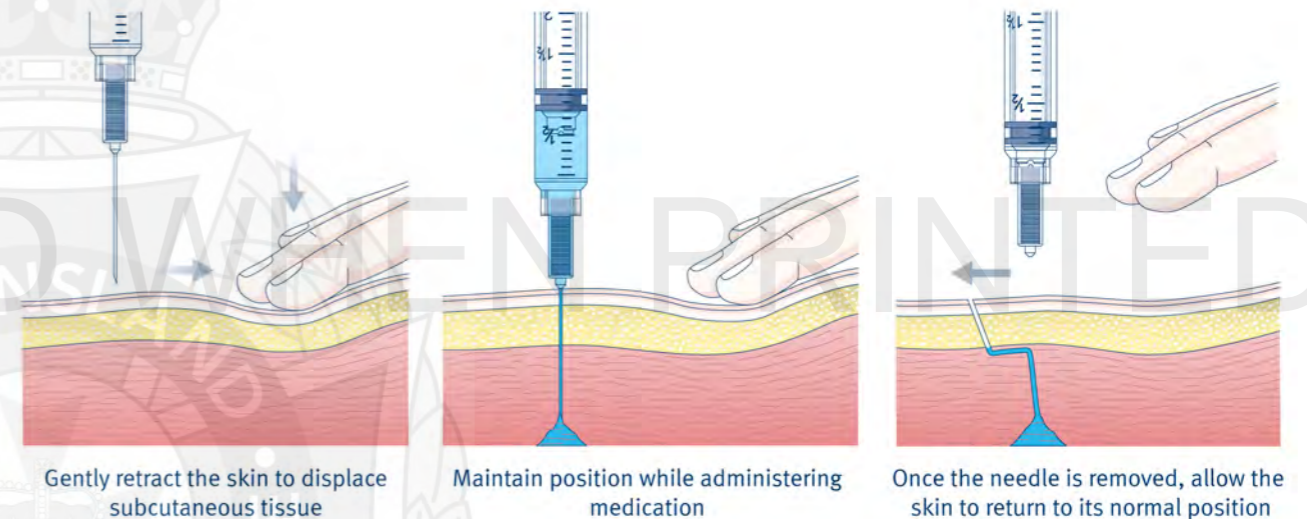
- Large muscle mass is suitable for larger volumes
- Preferred site for younger children and infants

Middle third of the muscle mass between the lateral Femoral Condyle of the knee and the Greater Trochanter.



8. If clinically appropriate, posture the patient's selected limb to encourage the muscle to relax.
9. Perform appropriate medication checks (refer to the *QAS Drug Management Code of Practice*).

10. If the patient is immunosuppressed or if the skin is visible dirty, clean it with an appropriate antimicrobial swab and allow the site to completely dry – if the skin is visibly clean, there is no requirement to use an antimicrobial swab.^[3]
11. Use your non-dominant hand to stabilise and stretch the skin around the injection site. A 'Z-track' injection technique may be considered to prevent backtracking and leakage from the injection site.^[1]



12. With your dominant hand, use a dart like technique to pierce the skin at a 90-degree angle.
13. With the needle inserted to the hub, slowly and smoothly inject the full contents from the syringe.
14. Continue to depress the plunger while the needle is still positioned in the patient's muscle to activate the VanishPoint® automatic needle retraction mechanism.
15. Immediately discard the needle in a sharps container.
16. After removing the needle, consider applying gentle pressure to the injection site with a sterile dressing – do NOT rub the injection site.
17. Consider using a dressing if leakage is identified.

Additional information

- The QAS mandates the use of VanishPoint® syringes for all non-vaccine IM injections.
- All parenteral medications must be prepared in an aseptic manner. All rubber stopper vials must be disinfected with an appropriate antimicrobial swab and allowed to dry prior to piecing.
- The Vastis Lateralis is the QAS preferred IM injection site, due to accessibility and lack of major blood vessels and nerves.
- For calculated IM volumes that exceed 2 mL, the volume must be split and administered at more than one IM site, to a maximum of 2 mL per site.
- It is no longer recommended to aspirate prior to injecting into the vastus lateralis or deltoid.^[1] However, if you have done this and a flash of blood appears in the needle hub, withdraw the needle and prepare a new syringe with a new required dose.

The QAS supplies two sizes of VanishPoint® syringes for IM injections:

Gauge	Needle length	Volume
25 G (0.5 mm)	16 mm	1 mL
23 G (0.6 mm)	25 mm	3 mL