# SESLHD GUIDELINE COVER SHEET

Health
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| KEY TERMS | Process of preparing and administration of intramuscular injections for psychiatric medications |
| SUMMARY | This guideline offers a framework for mental nurses to practice in line with current research into the process of preparing and administration of intramuscular injections. Applicable to both inpatient and community mental health settings. |

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# Intramuscular Injection in Mental Health

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# Section 1 – Background

Intramuscular (IM) injections have been an integral part of drug administration in nursing practice for almost half a century. Many medications used in mental health settings require IM route of administration and IM injections are often given in circumstances in which there are be risks to both consumers and staff. Involuntary administration of medications is also a coercive practice that can be experienced by consumers as traumatic.

The purpose of this guideline is to ensure consistent best practice for administration of medications by this route in SESLHD mental health services. Areas addressed within this guide include appropriate circumstances in which to utilise IM medications, injection sites, appropriate needle selection and volume administered through IM injections, and injection techniques.

An appropriate injection technique reduces discomfort and complications for consumers. Necessary skills for good injection technique include: knowledge of anatomy and physiology, pharmacology, suitable injection sites and injection techniques, effective communication skills and implementation of Trauma Informed Practice.

**This document is for the intramuscular administration of psychiatric medications only. The guidelines detailed within this document do not apply to other non-psychiatric intramuscular injections such as vaccinations.**


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# Section 2 – Principles

The correct injection site and volume for the intramuscular injection outlined in this guideline should be followed. Decisions regarding the preferred site to use for Intramuscular injections may be based on clinical judgement of the nurse, aligning to contemporary practices. Consumer's body make up and body mass index, needle length available, and types of medication must be considered during clinical care. The IMI administration site may vary for rapid tranquilization and depot medications. See Table 1.

The following guideline aligns with SESLHDBR/052 - Administration of Ventrogluteal Intramuscular Injection.


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## Section 3 – Responsibilities

**Medical staff are responsible for:**

- Intramuscular injections will be prescribed under the direction of the Consultant Psychiatrist.

**Nursing staff are responsible for ensuring:**

- Nursing staff members are trained in the correct administration of Intramuscular injections.
- The correct safety precautions, preparation and procedure are followed.
- The Z tracking technique must be used in the administration of the IMI.
- The 5 Rights: *right patient, right drug, right dose, right route* and *right time* are followed at each administration.

**Site and Service Managers are responsible for:**

- The Community and Inpatient Unit Service Managers are to ensure adherence to two person checking requirements as set out by the NSW Health Policy Directive PD2013_043 - Medication Handling in NSW Public Health Facilities.
- Clinical Line Managers are responsible for ensuring this guideline is available to all MHS staff member in their work area.
- Clinical staff member involved in the administration of intramuscular will follow these guidelines.
- Site and Service Managers are responsible for ensuring this guideline is circulated and implemented locally.


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# Section 4 – Injection site

**Table 1. Injection site and volume for effective muscle absorption**

| Injection Site | Background Information | Volume of medication | Muscle |
|---|---|---|---|
| **Deltoid –**<br>Suggested indications<br>• Test dose Paliperidone – Manufacturers recommendations<br>• When amount is less than 2 mL<br>• Personal preference<br>• Excessive subcutaneous fat thickness is present in other sites | • Injections into the mid deltoid muscle produce a quick uptake of the medicine. The maximum which can be safely injected is 2 mL and based on clinical opinion.<br>• Common practice is to use this site for small volume injections such as vaccinations and manufacturers recommending site for the small test dose of Paliperidone. | **0.5 to 2 mL** | Deltoid |
| **Dorsogluteal –**<br>Suggested indications<br>• For rapid tranquilisation in prone position<br>• When amount is up to 3 mL<br>• Repeated injections<br>• Z tracking works effectively with this site to trap fluid in the correct layer<br>• Personal preference | • The dorsogluteal site, colloquially called the 'upper outer quadrant', targets the gluteus maximus muscle.<br>• When this site is used, there is a risk that the medicine will not reach the target muscle, but instead will be injected into subcutaneous fat. As a result, delayed uptake of the medicine will occur and tissue irritation or the development of granulomas may result. The 38 mm green and blue needles are unlikely to reach the gluteal muscles in a considerable number of consumers and may result in damage to the sciatic nerve or gluteal artery, both of which lie for those who are very thin a few centimetres distal to the dorsogluteal injection site, causing pain, paralysis or haemorrhage. There may also be modesty issues and consideration for trauma history of consumers associated with the use of this site.<br>• Consider injection depth. | **1 to 3 mL** | Gluteus maximus |


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| **Ventrogluteal –**<br>Suggested indications:<br>• Clinically indicated for consumers consenting for deep IMI<br>• Personal preference<br>• Elderly consumers with reduced muscle tissues in the dorsogluteal site<br>• When the administering nurses is trained in locating the correct Ventrogluteal site. Refer to SESLHDBR*/052 Administration of Ventrogluteal Intramuscular Injection.* | • There are few disadvantages to using this site. It is relatively free of major nerves and blood vessels, the muscles are large and well defined, and the landmarks for administration are easy to locate. This site is **not** preferred in a rapid tranquilisation situation. There may be modesty issues and consideration needed for trauma history of consumers associated with the use of this site.<br>• Excessive subcutaneous fat in this area can lead to the risk of a subcutaneous injection, rather than the injection reaching the muscle layer. As a result, delayed uptake of the medicine will occur and tissue irritation or the development of granulomas may result. The 38mm green and blue needles are unlikely to reach gluteal muscles in a considerable number of overweight or obese consumers.<br>• Consider injection depth for those who are very thin.<br>• Clinicians need to be trained in the process of administrating and locating the landmarks before ventrogluteal IMI injection can be given. | **1 to 3 mL** | Gluteus medius and Minimus |


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**Please note: Nurses must use the recommended needles sizes for each injection supplied inside the packs used for Aripiprazole, Olanzapine, Paliperidone and Risperidone.**

Only needles supplied in the dose pack should be used. The 22 gauge 38.1mm needle should be used for dorsogluteal/ventrogluteal injection and for deltoid injections in patients over 90 kg. The 23 gauge 25.4 mm needle should be used only for deltoid below 90 kg.

**Table 2. Injection site and Needle size guide**

| Bodyweight | Injection site | Needle size |
|---|---|---|
| Non-obese (BMI < 30) | Deltoid<br>Gluteal | 25mm + 23gauge<br>38mm + 21gauge |
| Obese (BMI > 30) | Deltoid<br>Gluteal | 38mm + 21gauge<br>50mm + 21gauge |

- To ensure an injection reaches the muscle layer a clinician needs to consider the persons BMI, weight and subcutaneous fat thickness when choosing needle length selection.
- Somatype is one method to assist the clinician to estimate the potential subcutaneous fat thickness. Somatype refers to three categories: the ectomorph (narrow shoulders, torso and hips); mesomorph (broad shoulders & muscle limbs) and endomorph (round body with predomiance of fat)[1]. Consideration of these body shapes has most relevance to the dorso gluteal and ventro gluteal sites.
- Older females are more likely to receive a subcutaneous injection when comparing genders and subcutaneous fat thickness. Consideration of a 38mm needle length is a viable option in the ventrogluteal site but still has limitations.[1] In these cases consideration of a 50mm needle would increase the success of an injection reaching the muscle layer in the either gluteal site or choosing a different injection site.
- Other factors to consider is consumers receptivity to intramuscular injections, preferred administration site and response to treatment, potential hisotry of trauma, and the nurses clinical judgement.

[1] Larkin, Ashcroft, Hickey & Elgellaie (2018). Influence of gender, BMI and body shape on theoretical injection outcome at the ventrogluteal and dorsogluteal sites. *Journal of Clinical Nursing, 27*, 242-250.


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# Section 5 – Preparation

## 5.1 Equipment

The nurse will need:

- 2 – 5 mL syringe
- 21 gauge 38mm (or 50mm needle if BMI indicates obese > 30)
- 21/ 23 gauge 38mm (or 50mm needle if BMI indicates obese > 30) retractable needle; in the instance of high aggression or during a situation in which a restraint is necessary due to significant risk for consumers and staff
- Needle for drawing up injection – 18 gauge 40mm needle
- Aripiprazole, Olanzapine, Paliperidone or Risperdone injection kit (syringes, needles +/- diluent provided)
- Gloves
- Alcohol swab
- Non-woven gauze swab
- Small plaster (optional)
- Prescribed medication
- Prescription chart /electronic medication order
- Dish for equipment
- Sharps container

## 5.2 Procedure

1. Confirm that the injection is due for the identified consumer or has not already been administered before assembling the equipment by checking the prescription, the administration record and whenever possible with the consumer.
2. Explain to the consumer the procedure and which site you will be using. Seek confirmation of consumer's consent. If there are problems with communication offer information in another format or consider advocacy or interpreter services documenting what action has been taken in the consumer's notes. Staff should also be mindful of trauma histories when explaining procedures. If the consumer does not consent to this site, consider another site, being aware of potential licensing implications. Maintain communication with your consumer throughout the procedure, offering reassurance and explaining as you proceed with the procedure (If in restraint, one person talking).
3. Prior to preparation of medication, it is vital to identify an area where the qualified nurse will not be disturbed, that provides confidentiality and dignity for the consumer and where there is appropriate facility for the disposal of sharps - either a sharps box within a clinical area or a portable sharps container.
4. The nurse should wash their hands and don gloves before preparing the medication and touching the consumer, adhering to the 5 points of hand hygiene.
5. Check medication expiry date.


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6. Draw up the prescribed dose of medication immediately prior to the injection, using a wide bore needle. Allow refrigerated medications to return to room temperature before administration.
7. Change needle and use the relevant gauge and length needle to administer. (For guidance, see Table 1).
8. If the consumer has a history of aggression and violence, or if the plan for the administration is during a restraint the use of a retractable needle should be considered. The needle should be changed using the relevant retractable needle gauge and length for administration. (For guidance, see Table 1).
9. For Aripiprazole, Olanzapine, Risperidone or Paliperidone Long Acting Injections (LAI) the components (needles, syringes diluents etc) provided in the injection kits must be used with the exception of the needles. Consideration of subcutaneous fat thickness may warrant a review of the pre-packaged needles and substituting needle lengths where necessary. This is to ensure the product reaches the intended site and therefore the consumer is effectively treated.
10. The injection must be prepared by a Registered Nurse or Enrolled Nurse without notation and checked by a second person (one of whom must be a registered nurse). An exception to this is in the community health setting if a second person is not available. The injection must be administered by one of the two nurses, who have drawn up and checked the medication.
11. Check the consumers known allergies against the medication order and with the patient. If an allergy to the medication being administered is identified, do not administer the medication and contact the consumer's medical officer.
12. Choose a site for the injection. In general, not more than 3 mL of oily injection should be administered at any one time in a gluteal site, and no more than 2 mL at the deltoid site (always refer to MIMS to ensure you are following the latest guidelines).
13. Ask the consumer to expose hip, buttock or arm for injection, using the opposite side to that of the one injected previously.
14. Examine site for evidence of lesions and establish that the site is pain free. Implement trauma informed practice by ensuring that an attempt is made to clarify that the consumer is happy to have medication given at this site. If the consumer is not happy with clinically indicated site, further discussion with the multi-disciplinary team should be initiated. Avoid using restraints to enforce medication administration unless in an emergency situation.
15. Wipe the injection site with an alcohol swab and wait 30 seconds until it dries (to avoid the possibility of alcohol entering the site).
16. Administer the injection using the Z-track technique as shown below.


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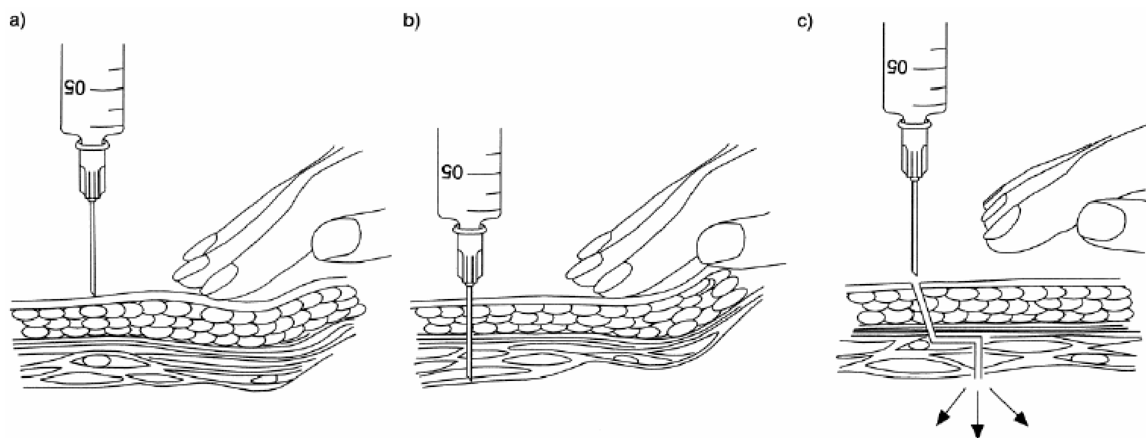
## Z-Tracking Technique

1. Displace the skin by pulling it laterally away from the intended point of injection.
2. Insert the needle into the site at a 90˚ angle, aspirate and if safe continue to inject slowly 1 mL per 10 seconds.
3. Wait 10 seconds then withdraw the needle and release the skin allowing the displaced tissue to seal the needle track.





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# Section 6 – Retractable needles

1. Retractable Needles are needles that are used in situations where there is an identified risk of aggression or violence, or during a restraint situation.
2. As retractable needles are costly they do not need to be used in every instance of IMI, and should be limited to situations of significant risk eg high levels of aggression, or during restraint situation.
3. Prior to the use of the retractable needle all staff will need to have local onsite appropriate training.
4. Procedure - Draw up the medication as usual (please see 5.2 section 8) and follow the administration protocol.
5. After administration, the safety mechanism can be immediately activated by pressing the plunger rod until you feel a click. The needle will then retract into the syringe barrel.


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# Section 7 – Documentation

Document the procedure including the time, date and site of insertion in the eMR and in the appropriate medication form/eMEDs.


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# Section 8 – References

**SESLHD**

- SESLHDBR/052 - Administration of Ventrogluteal Intramuscular Injection
- SESLHDPR/607 - Olanzapine Pamoate Long-Acting Injection (LAI): Administration and Management

**Others**

- NSW Health Policy Directive PD2013_043 - Medication Handling in NSW Public Health Facilities
- National Safety and Quality Health Service Standards (second edition)
  - Standard 1: Clinical Governance, Safe Environment (1.30)
  - Standard 4: Medication Safety (4.01)
  - Standard 5: Comprehensive Care, Minimising Harm (5.33)
- MIMS Online


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# Section 9 – Revision and Approval History

| Date | Revision no: | Author and approval |
|---|---|---|
| August 2018 | 0 | Bronwyn Walker, Clinical Nurse Educator, Workplace Capabilities Team, SESLHD MHS; Benjamin Chidester, Workplace Capabilities Nurse A/Educator, SESLHD MHS. Editor: Trinh Huynh, Policy and Document Development Officer, SESLHD MHS. Initial consult: Kim Reid, CNC Mental Health, TSH. |
| September 2018 | 0 | Angela Karooz, Clinical Nurse Manager, SESLHD MHS |
| October 2018 | 0 | Reviewed by MHS Therapeutics & Drug Committee. Disseminated for wider consultation. |
| November 2018 | 1 | Endorsed by DDDCC. Endorsed by SESLHD Clinical Council. |
| December 2018 | 1 | Processed by Executive Services and progressed to Clinical and Council Committee for approval prior to publishing. |
| February 2019 | 1 | Approved by Clinical and Quality Council |
| October 2020 | v2.0 | Working group (K Reid, T Anderson, A O'Mara, J Masterson) convened to write process for use of retractable needle |
| January 2022 | v2.1 | Routine review commenced factoring in feedback from the October 2020 retractable needle working group. Updated document circulated for feedback. |
| February 2022 | v2.2 | Minor feedback received from DDCC. Reviewed by Dr S Kavanagh, Chair, MHS Standard 4 Committee. Appendix A and Appendix B removed to ensure staff are referring to MIMs for current guidance. Reference to consult MIMs added to guideline. Endorsed by Document Development and Control Committee. Endorsed by Executive Sponsor. |
| March 2022 | v2.3 | Endorsed by SESLHD Quality Use of Medicine Committee with minor amendments. |


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