



NEONATAL CARE

MEDICATION ADMINISTRATION TO THE NEONATE

INTRAMUSCULAR ADMINISTRATION TO THE NEONATE

Key words: intramuscular injection, IMI, injection neonate, neonatal immunisation, neonatal medication administration, vastus lateralis, hepatitis B injection, vitamin K injection, preterm injection, neonatal drug calculation, neonatal medication formula

AIM

- To administer the correct medication and dose, into the correct site, at the prescribed time, to the correct neonate in an aseptic manner.

KEY POINTS

1. Over penetration of intramuscular injection (IMI) can cause pain/and damage to the bone or periosteum, and also lead to needle detachment.¹
2. Using an alcohol swab is not necessary if the site is visibly clean, however if used, allow alcohol disinfectant to evaporate before injection of the medication.²
3. The volume of the IMI should not exceed 1 mL.²
4. When two intramuscular injections are given, one injection should be given in the right thigh and the other injection should be given in the left thigh.²
5. For all neonatal IMI administrations only use a 25 gauge and 16mm length needle. It should be injected over 5 seconds to avoid pain and muscle trauma.^{2, 3} The angle of needle insertion should be 90⁰ to skin plane.^{2, 3}
6. The injection site for a **pre-term** neonate should be given in the rectus femoris muscle.
7. The preferred injection site for all other neonates should be given in the vastus lateralis muscle.^{2, 3}
8. The nappy can be undone to ensure the injection site is completely exposed and to allow clear identification of anatomical sites.³
9. Midwifery Students:
 - All midwifery students may administer a range of medications including neonatal medications, depending on their stage of education and level of competency, under direct supervision of a Registered Midwife (RM) / Registered Nurse (RN).
 - All midwifery students must have completed a relevant neonatal drug calculations assessment prior to checking any neonatal medications with a RM /RN.
 - See also KEMH Clinical Guideline, Pharmacy: Medication Safety: [Administration and Checking Procedure by Nursing / Midwifery / Medical Staff and Students](#).

EQUIPMENT²

- Alcohol swab
- Cotton wool swab
- IM medication
- Gloves
- Needles e.g. 19 gauge (drawing up needle), 25 gauge
- Syringe 1ml syringe = 100units/parts for a paediatric dose; or 2mL syringe
- Documentation e.g. Neonatal medication chart ([MR811](#)) / parental consent form ([MR216](#): Information & consent for newborn care: Vit K & Hep B) / immunisation card / Neonatal history ([MR410](#))

NEONATAL DRUG FORMULA

$$\text{FORMULA} = \frac{\text{AMOUNT REQUIRED}}{\text{AMOUNT AVAILABLE}} \times \frac{\text{VOLUME}}{1}$$

PROCEDURE

IMI should be given according to the principles of standard precautions, aseptic technique and correct drug/dose/time/route/patient/documentation⁴ practices.²

Pre-procedure checks

1. Check the written medication order on the [MR811](#) Neonatal Inpatient Medication Chart and check correct drug / dose / date & time / route / patient.²
2. Follow Pharmacy: Medication Safety: [Administration and Checking Procedure by Nursing / Midwifery / Medical Staff and Students](#).
 - Two neonatal medication-competent Registered Nurses / Midwives (or one neonatal medication-competent Midwife or Registered Nurse and one neonatal medication competent student) must check the neonatal identification bands with the medication order, calculation and dilution (if required). Note: Neonatal intravenous medications require additional staff / student competency prior to checking/administration.
 - A Registered Nurse who is doing his/ her midwifery training must have successfully completed the neonatal drug calculations competency prior to checking paediatric medications.
 - 'Direct Entry' student midwives must have successfully completed a competency in medications and neonatal medication drug calculations prior to checking any medications with a Registered Nurse or Midwife.
3. Check the medication label and date of expiry.

4. Ensure parental consent is obtained – this may be verbal or written according to KEMH requirements. For Vit K /Hep B, see [MR216](#): Information/consent for newborn care.
5. Check the neonatal identification bands at the cot side prior to administration.
6. The Midwife / Registered Nurse who prepares and checks the medication is responsible for the administration. The medication should be administered immediately after checking.

Procedure

7. Draw the medication up into the syringe using a large bore drawing-up needle.²
8. Change to 25 gauge (16mm length) needle. The injection should be administered slowly over 5 seconds.^{2, 3}
9. Confirm that the dose drawn up is correct with the second neonatal medication competent checker (see point 2 above).
10. Administer sucrose (if required) with parental consent.^{2, 3} See NCCU Clinical Guideline, Pain Assessment & Management (Sec 3): [Oral Sucrose for Pain Relief](#).
11. Position the leg so the hip and knee are flexed and the vastus lateralis is relaxed.^{2, 3}
12. Skin Preparation: If the IMI is for therapeutic medication administration, then either alcohol swab for 30 seconds, or soap and water is acceptable.⁵
 - If the IMI site is cleaned using 60-70%alcohol /2%chlorhexidine swab, then swab for 30 seconds and allow to dry completely.^{2, 5}
 - Immunisations: It is not necessary to swab the injection site with an alcohol swab before IM immunisation if the site is visibly clean. If the site is soiled, the site can be cleaned with soap and water.^{2, 5}.
13. It is not necessary to draw back on the plunger, as there are no large blood vessels in the recommended injection area.²
14. Administer the injection at a 90⁰ angle to the skin. Provided the injection angle of >70⁰ is used the muscle layer should be reached.^{2, 3}
15. The injection to the term neonate is administered in the junction of the upper and middle thirds of the bulkiest part of the vastus lateralis thigh muscle.² Do not inject into the anterior aspect of the thigh in the term neonate as this is the location of neurovascular structures which may be damaged.³
16. Administer the IMI slowly for even distribution and to avoid neonatal discomfort.²
17. Apply a cotton wool ball over the site when required.²
18. Dispose of sharps and waste appropriately.²
19. Document the administration of the IMI. E.g. On the medication chart, child health record,² neonatal notes, Neonatal history (Vit K) ([MR410](#)), as applicable. Also document Hep B on the neonate's immunisation card.

SITE FOR IMI: PRE-TERM NEONATE

The middle third of the anterior aspect of the thigh, lateral from the midline (Rectus femoris muscle) is the **only** site to be employed for the **pre-term neonate**.

SITE FOR IMI: TERM NEONATE

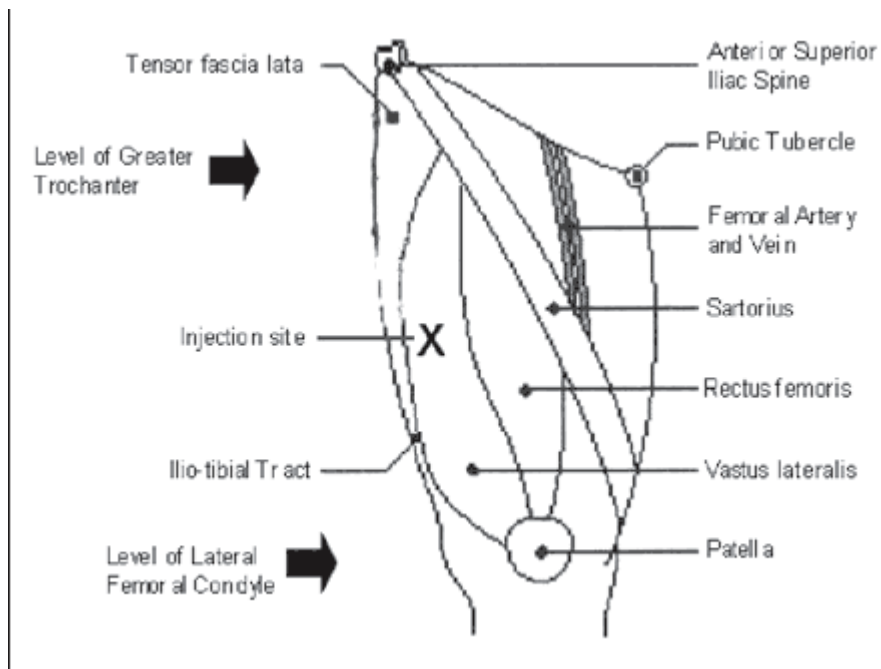


Photo taken from The Australian Immunisation Handbook, courtesy of Lloyd Elis, Royal Children's Hospital, Victoria³

REFERENCES / STANDARDS

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5. World Health Organization. WHO best practices for injections and related procedures toolkit. **WHO**. 2010. Available from: http://apps.who.int/iris/bitstream/10665/44298/1/9789241599252_eng.pdf.

National Standards – 1- Care Provided by the Clinical Workforce is Guided by Current Best Practice
4- Medication Safety
5- Patient Identification and Procedure Matching

Legislation - *Commonwealth Family Law Act 1975; Poisons Act 1964*

Related Policies – Operational Directive 0324/11: [Consent to Treatment Policy for the Western Australian Health System 2011 \(Parental Consent\)](#)

Other related documents – KEMH Clinical Guidelines:

- O&M: [Neonatal Care](#): Medication Administration to the Neonate: [Vitamin K Administration](#); [Hepatitis B Vaccine](#); [Hepatitis B Immunoglobulin](#); [Intravenous Medications on the Ward: Neonatal Administration of](#)
- [Pharmacy: Medication Safety: Administration and Checking Procedure by Nursing / Midwifery / Medical Staff and Students](#); [A-Z Medications](#)
- NCCU: [Aseptic Technique in the NICU](#); NCCU [Medication Protocols: Hepatitis B Vaccine](#)
- [Infection Control Manual](#): 2.1 [Standard Precautions](#); 2.2 [Hand Hygiene](#); 6.1 [Aseptic Technique](#)

DNAMER: [Aseptic Technique](#)

RESPONSIBILITY

Policy Sponsor	Nursing & Midwifery Director OGCCU
Initial Endorsement	August 1999
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Last Amended	
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