Medication Administration – Intramuscular Injection

There are many reasons infants and children may require an intramuscular injection, including routine vaccinations and intramuscular antibiotics. Paediatric intramuscular injections must be administered into muscles large enough to accommodate the medication and avoid major nerves or blood vessels (Please see table provided).

1. **Gather Equipment**
   - Gather equipment pictured below

2. **Prepare**
   - Carry out mandatory medication safety checks. Explain procedure and gain verbal consent.

3. **Attend to Hand Hygiene and Don PPE as Required.**

4. **Procedure**
   - Position the infant/child to access the appropriate muscle site (See Table below).

5. **Clean the skin with an alcohol wipe. Wait for the skin to dry.**

6. **Pierce the skin at an angle of 90 degrees to the skin. Use a quick darting action and inject the medication quickly to reduce pain.**

7. **Remove syringe and needle intact and discard into a sharp's container.**

8. **Apply dressing to injection site.**

Guidelines for Maximal Amounts of Solutions to be Injected into Muscle Tissue:

<table>
<thead>
<tr>
<th>Muscle Group</th>
<th>Birth to 18 months</th>
<th>18 months to 3yrs</th>
<th>3 - 6 years</th>
<th>6 - 15 years</th>
<th>&gt; 15 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vastus Lateralis</td>
<td>0.5 mL</td>
<td>1 mL</td>
<td>1.5 mL</td>
<td>1.5 mL</td>
<td>2-2.5 mL</td>
</tr>
<tr>
<td>Deltoid</td>
<td>Not Recommended</td>
<td>0.5 mL Not Recommended unless Vastus Lateralis sites are unavailable</td>
<td>0.5 mL</td>
<td>0.5 mL</td>
<td>1 mL</td>
</tr>
</tbody>
</table>
For information on anatomical markers used to identify the Vastus Lateralis and Deltoid injection sites:
Australian Immunisation Handbook: Vastus Lateralis Injection Site on the Anterolateral Thigh
Australian Immunisation Handbook: Deltoid Injection Site

NOTE: A 23 to 25 gauge needle is recommended for infants and children.

Some Key Points

- A separate needle should be used for drawing up and administration.
- The use of filter needles with glass vials is recommended.
- Lidocaine (tetracaine) may be used as the diluent for some medications if compatible. It must be ordered by the medical officer.
- Aspiration upon needle insertion, to check presence of blood for intramuscular injections, is not recommended.
- The online version of the RCH Paediatric Injectable Guideline provides directions for the preparation of intramuscular medication. The hard copy does not.

Tips in Children

- Topical anaesthetics can be used in advance to minimize procedural discomfort.
- If permitted, use sucrose in infants, to minimise procedural discomfort. A medical order is required, and parental consent is required prior to use. Please note at selected sites sucrose may be classified as a nurse initiated medication. Check your local policy or procedure for more information.
- You may need to split your dosage into 2 intramuscular injections, if the solution amount is greater than that recommended for the age/muscle.

ALERT

Always check for allergies prior to medication administration.
Seek prompt senior nursing/medical advice for any child suffering any adverse effects suggestive of anaphylaxis. These include but are not limited to: facial swelling, vomiting and rash.

For further information:
Information on Intramuscular Medication Preparation:
RCH: Paediatric Injectable Guidelines 2019 (QH only)

Checking your paediatric medication dosage is correct:
Australian Medicines Handbook: Children’s Dosing Companion (QH only)

Information on Medication Administration:
CHQ Procedure: Medication Administration (QH only)

Video:
Paediatric Intramuscular Injection
References:
This Queensland Paediatric Emergency Nursing Skill Sheet was developed by the Emergency Care of Children working group (funded by the Queensland Emergency Department Strategic Advisory Panel) with the help of the following resources:


Nursing Skill Sheet Legal Disclaimer

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- Providing care within the context of locally available resources, expertise, and scope of practice.
- Supporting consumer rights and informed decision making in partnership with healthcare practitioners including the right to decline intervention or ongoing management.
- Advising consumers of their choices in an environment that is culturally appropriate and which enables comfortable and confidential discussion.
- This includes the use of interpreter services where necessary.
- Ensuring informed consent is obtained prior to delivering care.
- Meeting all legislative requirements and professional standards.
- Applying standard precautions, and additional precautions as necessary, when delivering care.
- Documenting all care in accordance with mandatory and local requirements.

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