

Clinical Practice Policy:	Intramuscular and Subcutaneous Injections in Neonates and Infants
Effective Date:	TBD

1. Purpose

To recommend best practices for intramuscular and subcutaneous injections in the neonatal intensive care unit (NICU) and Well Baby Nurseries. Please note, these are recommended guidelines and are not intended to take the place of individualized patient care. The specific medication, the size of the baby and the weight of the baby should be considered.

2. Intramuscular and Subcutaneous Injection Parameters

Age	Needle Type	Injection Site	Injection Angle	Maximum Volume per Injection	Notes
Intramuscular					
Preterm (<37 weeks GA) (up to 2 months PNA and/or very small infants)	5/8 inch (16 mm); 22-25 gauge	Vastus lateralis/ anterolateral thigh	90°	0.5 mL	-Aspiration for blood return is not necessary. -Rapid injection is preferred.
Term (≥37 weeks GA)	5/8 inch (16 mm) - 1 inch (25 mm); 22-25 gauge			1 mL	
Subcutaneous					
Birth to 12 months	5/8 inch; 23-25 gauge	Fatty tissue over anterolateral thigh	45°	0.2 mL	-Rotate injection sites by minimum of 1". -Aspiration is not necessary. -Pinch up SC tissue to prevent injection into muscle.

-Please note: If the dose volume exceeds the maximum recommended volume per injection, the dose will be delivered in multiple syringes.

-Please see the 'BWH NICU IVP, SC, IM, IN & Miscellaneous Dilution Guideline,' located on the NICU DAG page, for a list of IM and SC medications on the NICU formulary.

3. Recommendations:

- Combined analgesic interventions are recommended to reduce pain:

- Preferred: Breastfeeding (involves holding, skin-to-skin contact, sweet-tasting milk, and act of sucking.)
- Sucrose.
- Skin-to-skin holding combined with sucrose.
- Being held, if possible, and if the landmark can safely be identified for the injection in this position, may decrease distress as compared to lying in supine position during injection.

4. References

Advisory Committee on Immunization. General Best Practice Guidelines for Immunization: Best Practices Guidance of the Advisory Committee on Immunization Practices.

<https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/administration.html> Accessed December 2018.

Bowden, V. R., & Greenberg, C. S. (2016). Medication administration: Intramuscular. In Pediatric nursing procedures (4th ed., pp. 451-455). Philadelphia, PA: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Hensel D, Morson GL, Preuss EA. Best practices in newborn injections. *MCN Am J Matern Child Nurs.* 2013;38(3):163-7.

James, S. R., Nelson, K. A., & Ashwill, J. W. (2013). Medication administration and safety for infants and children. In Nursing care of children: Principles & practice (4th ed., pp. 304-306). St. Louis, MO: Elsevier Saunders.

Victoria State Government. Intramuscular injections for neonates.

<https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/perinatal-reproductive/neonatal-ebook/procedures/intramuscular-injections> Accessed December 2018.

World Health Organization. Immunization in practice.

https://www.who.int/immunization/documents/IIP2014Mod5_5june.pdf Accessed December 2018.