	Document Scope: Hospital-wide Patient Care	
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	Guidelines for Pain Assessment and Management for Neonates	Version: 3

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1.0 Introduction

All neonates in the NICU will have standard assessments of pain, which include PIPP-R scores for preterm and term infants less than 2 months of age (corrected for preterm infants), and FLACC-R scores for preterm and term infants who are more than 2 months of age (corrected age for preterm infants).

2.0 Definitions

PIPP-R: Premature Infant Pain Profile is a bio-behavioural observational tool for acute and procedural pain.


FLACC-R: Face, Legs, Activity, Cry, Consolability is a behavioural observational tool for acute pain.


3.0 Clinical Practice Recommendations


The grading system in Table 1 serves as a guideline for the user about the hierarchy of evidence available to support each recommendation.

Table 1. Grades of Recommendation	
A	Recommendation supported by at least one randomized controlled trial, systematic review or meta-analysis.
B	Recommendation supported by at least one cohort comparison, case study or other experimental study.
C	Recommendation supported by expert opinion or experience of a consensus panel.


3.1 Pain Assessment

PIPP or FLACC scores should be documented on each patient once a shift, on admission, and before, during and after an invasive procedure as per hospital policy. See [Pain Assessment](#) ==>  In addition, PIPP-R⁵ or FLACC-R⁴ scores should be done more frequently:

1. Following post-operative procedures. See [Pain Management Guidelines for Post-Operative Patients in the NICU](#) ==> 
2. To assess pain in infants with known medical conditions or interventions that may cause pain (e.g. NEC, chest tubes etc)
3. Following changes to continuous analgesia.
4. To evaluate weaning of pharmacological treatments for infants who have been on short term opioids. For patients with treatment lengths greater than 5 days utilize routine Neonatal Abstinence Scoring for withdrawal of opioids. See [Prevention and Treatment of Opioid and Benzodiazepine Withdrawal](#).

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3.2 Pain Management

For general principles of pain management, see [Pain Management Guideline](#) ==>  Some additional strategies for neonatal procedural pain management are outlined below.

3.2.1 All infants should receive physical/psychological developmentally appropriate strategies during all painful procedures² (**Grade B**). Developmental strategies include:


1. Non-nutritive sucking
2. Positioning and containment
3. Swaddling
4. Reduction of light and sound levels
5. Minimal handling
6. Auditory and visual distraction
7. Skin to skin contact
8. Breastfeeding dependent on infants' condition and if mother is breastfeeding and available during procedure.


3.2.2 In addition to developmental strategies, pharmacological strategies should be used based on the type of procedure. Local topical analgesics may be used with some procedures but may be limited if vasoconstriction would inhibit the success of the procedure (eg. IV starts). EMLA is the standard topical analgesia for the NICU and can be used for premature infants and full term infants, however they must be greater than 14 days of age (see [SickKids e-formulary](#)).⁸ (**Grade C**).






3.2.3 Sucrose Administration [See Pain Management Guideline](#) ==> 


3.3 Adjunct Management for Procedural Pain






The following chart recommends appropriate options for pain management for the most common neonatal procedures. In addition to recommended management below, administration of appropriate developmental strategies for pain management (see non pharmacological guidelines for pain management) should always be utilized.


Procedure	Recommended Pain Management
Lumbar Puncture	<ul style="list-style-type: none"> • Use pacifier with 24% Sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose • Ventilated patients may be given Morphine or Fentanyl prior to procedure if patient is difficult to position for lumbar puncture. • Cautious physical handling is advised





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Procedure	Recommended Pain Management
Chest Tube Insertion	<ul style="list-style-type: none"> Morphine 0.1 mg/kg/dose IV 20 minutes prior to procedure or Fentanyl 1mcg/kg/dose IV 3-5 minutes prior to procedure. Administer fentanyl by slow IV push over 2 minutes Use pacifier with 24% Sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose Buffered lidocaine 1% SQ as local anesthetic Start morphine infusion of 5-10mcg/kg/hr following bolus and assess infant as per guidelines for sub acute pain management
Chest Tube Removal	<ul style="list-style-type: none"> Use pacifier with 24% Sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose
Immunization/ Intramuscular Injection	<ul style="list-style-type: none"> Use pacifier with 24% Sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose Apply local topical anesthetic cream (EMLA) 45-60 minutes prior to procedure (must be greater than 14 days of age) Acetaminophen can be used PRN as needed for fever or local inflammation. Follow hospital wide IM Injection Policy recommendations.
Subcutaneous Injection	<ul style="list-style-type: none"> Use pacifier with 24% Sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose Apply local topical anesthetic cream (EMLA) 45-60 minutes prior to procedure (must be greater than 14 days of age)
Eye Exams	<ul style="list-style-type: none"> Use pacifier with 24% Sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose
Intubation	<ul style="list-style-type: none"> See Neonatal Endotracheal Intubation guidelines




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Heel Lance	<ul style="list-style-type: none"> Use pacifier with 24% Sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose
Venipuncture/Intravenous Catheter Insertion	<ul style="list-style-type: none"> Use pacifier with 24% sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose EMLA may be chosen if non urgent and patient is greater than one month of age
Peripheral arterial puncture/Peripheral arterial line	<ul style="list-style-type: none"> Use pacifier with 24% sucrose 2 minutes prior to the procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose
PICC Line Note: if patient already receiving opioid infusion, they still require bolus pre PICC for acute pain management.	<p>NICU PICCs</p> <p>Premature Patients</p> <ul style="list-style-type: none"> Use pacifier with 24% sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose NON-INTUBATED: Fentanyl 0.5 mcg/kg/dose 5 minutes prior to procedure INTUBATED: Fentanyl 1 mcg/kg/dose 5 minutes prior to procedure <p>Term Patients</p> <ul style="list-style-type: none"> Use pacifier with 24% sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose NON-INTUBATED & INTUBATED: Fentanyl 1 mcg/kg/dose 5 minutes prior to procedure OR morphine 0.1 mg/kg/dose 20 minutes prior to procedure Midazolam may be utilized if needed after review with medical care provider

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Procedure	Recommended Pain Management
	<p>IGT PICCs</p> <p>Premature Patients</p> <ul style="list-style-type: none"> • Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines. See Pain Management Guideline ==>  or E-formulary: Sucrose • Apply local topical anesthetic cream (EMLA 45-60 minutes prior to procedure) if infant is greater than 14 days of age • NON-INTUBATED: Fentanyl 0.5 mcg/kg/dose 5 minutes prior to procedure • INTUBATED: Fentanyl 1 mcg/kg/dose 5 minutes prior to procedure <p>Term Patients</p> <ul style="list-style-type: none"> • Use pacifier with 24% sucrose 2 minutes prior to procedure⁶(Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose • Apply local topical anesthetic cream (EMLA) 45-60 minutes prior to procedure if infant is greater than 14 days of age • NON-INTUBATED & INTUBATED: Fentanyl 1 mcg/kg/dose 5 minutes prior to procedure OR morphine 0.1 mg/kg/dose 20 minutes prior to procedure • Midazolam 50 mcg/kg/dose (0.05mg/kg/dose) 5 minutes prior to procedure • May repeat midazolam 50 mcg/kg x1, 30 minutes after first dose if inadequate sedation
<p>PICC Removal (IGT lines only)-</p> <p>See Removal of a PICC ==> </p>	<ul style="list-style-type: none"> • Cuffed IGT lines must be removed by IGT staff and will be organized by VAS staff to occur in the NICU or in IGT • Use pacifier with 24% sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose • EMLA patch⁸ (Grade B) is often used as per IGT See E-formulary: EMLA • Uncuffed lines may be removed by NICU staff at the

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Procedure	Recommended Pain Management
	discretion of IGT
Umbilical Lines	<ul style="list-style-type: none"> Use pacifier with 24% sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose
Nasogastric Tubes	<ul style="list-style-type: none"> Use pacifier with 24% sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose
Urinary catheters/Suprapubic bladder tap	<ul style="list-style-type: none"> Use pacifier with 24% sucrose 2 minutes prior to procedure⁶ (Grade B). See Pain Management Guideline ==>  or E-formulary: Sucrose
Palliative Care	<ul style="list-style-type: none"> Physical and psychological strategies for pain management Oral morphine or lorazepam may be utilized as recommended by the palliative care team

3.3.1 Post-operative Pain Management

See [Pain Management Guidelines for Post-Operative Patients in the NICU](#) ==> 

4.0 Related Documents

[Pain Assessment Policy](#) ==> 

[Pain Management Clinical Practice Guideline](#) ==> 


[Pain Management Guidelines for Post Operative Patients in the NICU](#) ==> 

[Prevention and Treatment of Opioid and Benzodiazepine Withdrawal.](#)

[Removal of a Peripherally Inserted Central Catheter \(PICC\)](#) ==> 

[E-formulary: EMLA](#)

[E-formulary: Sucrose](#)

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