Department of Neonatology
Updated September 2018
Pain Guidelines
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Neonatology Program
Guidelines for Pain Assessment and Management

Pain Assessment
All neonates in the NICU will have standard assessments of pain, which include PIPP scores for preterm and term infants less than 2 months of age, and FLACC scores for preterm and term infants who are more than 2 months of age corrected.
PIPP or FLACC scores should be documented on each patient once a shift as per HSC guidelines. In addition, PIPP or FLACC scores should be done more frequently:
1) To assess pain in infants with known medical conditions or interventions that may cause pain (e.g. NEC, chest tubes, etc.)
2) To evaluate weaning of pharmacological treatments if infants have been on short term opioids

For patients treated with opioid analgesics or sedatives greater than 5 days, utilize routine WAT-1 scoring to assess withdrawal from opioids/sedatives (see SickKids opioid weaning CPG)

All postoperative NICU infants should have pain scores recorded **q1h for the first 12 hours** post operatively and then **q2h for the next 12 hours**. After 24 hours, pain scores should be recorded at least q4h, and then as required (for painful procedures, if any changes are made in pharmacological treatments).
Refer to Pain Assessment policy on lotus notes database.

Pain Management
Pain management strategies will be focused on managing pain during procedures and managing surgical and sub acute pain or disease related pain.
Refer to Analgesia guidelines on lotus notes database for general principles of pain management.

All infants should receive physical/psychological developmentally appropriate strategies during all painful procedures. Such 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. Breast feeding dependent on infants' condition and if mother is breastfeeding and available during procedure.

In addition, pharmacological strategies should be considered 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) but EMLA can only be used in term infants or premature infants **who are greater than one month of age** (see HSC Fomulary).

Guidelines for Sucrose Administration
Refer to e-formulary for dosing of sucrose in neonates
Dose may be administered in increments for prolonged procedures
Recommended sucrose doses are a guide for maximum volumes per whole procedure. Administer in increments over procedure in very small volumes. Document use and effectiveness using appropriate pain scores.

All patients should have sucrose ordered on a PRN basis to allow utilization of sucrose for bloodwork, IV starts, eye exams, drain removal, echocardiography, NG insertion, etc. within the daily maximum. Sucrose may be ordered by the MD/NP or RN (under Nursing Order Policy)

Contraindications for Sucrose:
CHO intolerance; absent gag reflex and unresponsive (unable to tolerate oral medications)

Guidelines for adjunct management for Procedural Pain
The following chart recommends appropriate options for pain management for the most common NICU 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.**

Procedural Pain
Procedure Recommended Pain Management

Procedure	**Interventions**
Chest Tubes: Insertion	• 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 procedure (see guidelines for sucrose administration) • 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
Removal	• Use pacifier with 24% Sucrose 2 minutes prior to procedure (see guidelines for sucrose administration)
Eye Exams	• Use pacifier with 24% Sucrose 2 minutes prior to procedure (see guidelines for sucrose administration).
Laser Eye Surgery	• See Laser Eye Guidelines.

Intravitreal Avastin	• Administer Fentanyl 0.5-1mcg/kg/dose IV 3-5 minutes prior to the procedure. Administer fentanyl by slow IV push over 2 minutes. • Consider using midazolam prn for sedation • Use pacifier with 24% Sucrose 2 minutes prior to procedure (see sucrose guidelines). • Use developmental strategies such a bundling for containment during the procedure
Heel Lance	• Use pacifier with 24% Sucrose 2 minutes prior to procedure (see sucrose guidelines).
Immunization/Intramuscular Injections	• Use pacifier with 24% Sucrose 2 minutes prior to procedure (see sucrose guidelines). • Apply local topical anesthetic cream- EMLA 45-60 minutes prior to procedure ****DO NOT USE TOPICAL ANESTHETIC CREAM UNTIL INFANT IS GREATER THAN 14 DAYS OF AGE** • Acetaminophen 10-15mg/kg/dose po prn prior to procedure and then Q4-6Hprn x 24 hrs if required for fever or local inflammation to maximum daily dose 65mg/kg/day. • Follow hospital wide IM Injection Policy recommendations
Subcutaneous Injection	• Use pacifier with 24% Sucrose 2 minutes prior to procedure (see sucrose guidelines). • Apply local topical anesthetic cream- EMLA 45-60 minutes prior to procedure ****DO NOT USE TOPICAL ANESTHETIC CREAM UNTIL INFANT IS GREATER THAN 14 DAYS OF AGE**
Intubation	See intubation guidelines
Lumbar Puncture	• Use pacifier with 24% Sucrose 2 minutes prior to procedure (see sucrose guidelines). • 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

Nasogastric Tubes	• Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines.
Palliative Care	• Physical and psychological strategies for pain management • Oral morphine or lorazepam may be utilized as recommended by the palliative care team
PICC Insertion	• Refer to PICC Pain Management Guidelines (Appendix A)
PICC Removal (IGT lines only)	• As per VAS guidelines - Cuffed IGT lines must be removed by IGT staff and will be organized by VAS staff to occur in the NICU or in IGT - EMLA patch is often used as per IGT but infant must be greater than 14 days of age. • Uncuffed lines may be removed by NICU staff at the discretion of IGT
Umbilical Lines	• Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines
Urinary catheters/Suprapubic bladder tap	• Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines
Venipuncture/Intravenous Catheter Insertion	• Use pacifier with 24% sucrose 2 minutes prior to procedure (see sucrose guidelines) • Ametop may be chosen if non urgent
Peripheral arterial puncture/Peripheral arterial lines	• Use pacifier with 24% sucrose 2 minutes prior to the procedure
Echocardiogram	• Use pacifier with 24% sucrose 2 minutes prior to the procedure

Post-operative Pain Management
See NICU Post-Operative Pain guidelines for assessment/intervention

Consult with physician or NNP for discussion of pain management for each individual patient.
Utilize both pharmacological and non-pharmacological strategies to enhance effectiveness of pain management.
Continuous opioid infusions are most often utilized in the immediate post operative period and should be initiated on patient's arrival back to NICU as intraopertive analgesia has a short half-life*.
*See analgesic policy

References

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Appendix A

Neonatology Program
Recommendations for PICC Line Pain Management for NICU Patients

***Prior to using opioids, assess patients for risk of side effects such as apnea and hypotension**

If patient already receiving opioid infusion, they still require bolus of opioid prior to PICC for acute procedure

NICU PICC LINES	IGT PICC LINES
Premature Infants • Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines • **NON-INTUBATED:** Fentanyl 0.5 mcg/kg/dose 5 minutes prior to procedure • **INTUBATED:** Fentanyl 1 mcg/kg/dose 5 minutes prior to procedure **Term Infants** • Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines • **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	**Premature Infants** • Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines • **NON-INTUBATED:** Fentanyl 0.5 mcg/kg/dose 5 minutes prior to procedure • **INTUBATED:** Fentanyl 1 mcg/kg/dose 5 minutes prior to procedure • Apply local topical anesthetic cream- EMLA 45-60 minutes prior to procedure ****DO NOT USE TOPICAL ANESTHETIC CREAM UNTIL INFANT IS GREATER THAN 14 DAYS OF AGE** **Term Infants** • Use pacifier with 24% sucrose 2 minutes prior to procedure as per sucrose guidelines • **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 • Apply local topical anesthetic cream- EMLA 45-60 minutes prior to procedure ****DO NOT USE TOPICAL ANESTHETIC CREAM UNTIL INFANT IS GREATER THAN 14 DAYS OF AGE**