



Clinical Practice Policy:	Premedication for Non-emergent Endotracheal Intubations in the Neonate
Effective Date:	02/17/2015

I. Purpose

To provide a standard protocol and premedication options for non-emergent endotracheal intubations in neonates.

II. Exclusions

Intubation without premedication may be acceptable during the following situations: resuscitation in the delivery room, an intubation that is required following an acute deterioration or critical illness that is defined as emergent by the physician, and/or infants with upper airway anomalies

III. Recommendations provided by American Academy of Pediatrics (Pediatrics 2010; 125: 608-15.)

- Premedication should be used for all non-emergent endotracheal intubation in newborns
- Every health care facility caring for neonates implement a pain-prevention program utilizing pharmacologic and nonpharmacologic therapies
- Recommended approach
 - Nonpharmacologic interventions (swaddling and positioning)
 - **Analgesia ± sedative medications should be used for all non-emergent intubations**
 - Vagolytic agent should be considered
 - Muscle relaxant should be considered
- Agents
 - Analgesia – reduce pain of intubation, first-line therapy, often adequate as monotherapy
 - **Fentanyl**
 - **More rapid onset than morphine (immediate vs. 5 minutes)**
 - **Morphine not effective in placebo controlled clinical trials**
 - **Morphine inferior to short acting agents in clinical trials**
 - Sedation – reduce discomfort of intubation
 - Midazolam
 - Recommended for term or older infants only
 - Avoid in any infant with hypotension, depressed myocardial function, and/or severe pulmonary hypertension
 - Vagolytic agents – prevent bradycardia during intubations and decrease bronchial and salivary secretions, infrequently used because of the concern for masking hypoxia-induced bradycardia during intubation; however, most episodes of bradycardia during intubation are due to vagal stimulation, not hypoxia
 - Atropine
 - More experience in newborns than glycopyrrolate
- Muscle relaxants - eliminate or minimize the increase in intracranial pressure that occurs during awake intubation



- Rocuronium
 - Preferred agent due to more benign adverse effect profile compared to depolarizing neuromuscular blockers
 - Preferred over vecuronium due to faster onset and shorter duration of action
- Succinylcholine
 - For patients without IV access only
 - Rare, serious adverse effects include hyperkalemia, myoglobinemia, and cardiac arrhythmias

Medication Class	Medication	Route	Dose	Conc	Vol	Onset	Duration
Analgesia	Fentanyl	IV	1 mcg/kg Give on pump over 3-5 min to avoid chest wall rigidity ¹	5 mcg/mL	0.2 mL/kg	1-2 min	30-60 min
		Intranasal	2 mcg/kg	50 mcg/mL	0.04 mL/kg	10 min	60-120 min
Sedation	Midazolam For infants ≥ 34 wks corrected GA	IV	0.1 mg/kg Give on pump over 5 min	1 mg/mL	0.1 mL/kg	5 min	20-30 min
		Intranasal	0.2 mg/kg May burn on administration	5 mg/mL	0.04 mL/kg	10 min	30-60 min
Vagolytic	Atropine	IV, IM	0.02 mg/kg Rapid IV push	0.05 mg/mL ²	0.4 mL/kg	2 min	30-120 min
Muscle relaxants ³	Rocuronium	IV	0.6 mg/kg	10 mg/mL	0.06 mL/kg	1-2 min	20-30 min
	Succinylcholine	IM	2 mg/kg	20 mg/mL	0.1 mL/kg	2-3 min	10-30 min

1. Chest wall rigidity may be treated with naloxone 0.1 mg/kg IV or rocuronium 0.6 mg/kg IV. Naloxone is available in the neonatal code cart and on override in the omnicell; rocuronium is available on override in the omnicell. Both are administered undiluted IV push.
2. To prepare 0.05 mg/mL dilution, combine 1 mL (0.4 mg) atropine + 7 mL sterile water for injection = 8 mL
3. Only to be ordered by NICU attending or fellow; patient must be supportable with bag mask ventilation before paralytic administration