

Newborn Critical Care Center (NCCC) Clinical Guidelines

Premedication for Non-Emergent Neonatal Intubation

INTRODUCTION

Endotracheal intubation should be performed in a controlled environment with appropriate preparation whenever the patient's status permits to prevent traumatic injury to the airway. Intubation *without* premedication has been associated with significant side effects including pain, hypoxia and hemodynamic changes.

Benefits of premedication for non-emergent intubation include:

- Decreased pain
- Fewer number of attempts to complete the intubation, resulting in decreased airway trauma
- Higher success rates for inexperienced personnel
- Decreased hypoxia and hemodynamic effects (bradycardia, increased intracranial pressure, risk of IVH, systemic and pulmonary hypertension)

The effects of premedication are maximized when the full complement of drugs are used together.

An intubation may be considered non-emergent when the following criteria are met:

- The intubation is not occurring in the delivery room
- The infant has intravenous access, or is stable enough to delay intubation until intravenous access is obtained
- The infant is stable enough to delay intubation until medications can be obtained and administered

PROCEDURE

1. **Order medications:** In EPIC choose the "Neonatal Procedure Focused" order set, then choose "Neonatal Intubation Premedications." (Note: At the time of revising this guideline, there is also a 'Neonatal Induction for Intubation' choice in this order set. This option does not reflect the recommendations in this guideline.)
2. Medication doses should be calculated and checked by two nurses.
3. Perform timeout prior to administration of medications.
4. Medications given by IV push **should be given in the presence of a medical provider.**

DRUGS <i>(GIVE IN THE ORDER LISTED)</i>	DOSE	ROUTE	ONSET (MINUTES)	DURATION
Atropine	0.02 mg/kg	IV push	1-2 minutes	2-4 hours
Fentanyl	2 mcg/kg	IV over 5 min	1-2 minutes	30-60 minutes
Rocuronium <i>* Paralytics should never be administered alone</i>	0.5 mg/kg	IV push	0.2 - 2 minutes <i>* May be repeated if not effective in 1.5 – 2 minutes</i>	30-40 minutes

5. Intubation should be attempted when cessation of spontaneous movement is noted and laxity of the jaw is determined. (Refer to [NCCC Intubation Guidelines](#))
6. Respiratory therapy is expected to be present for the entire procedure as well as additional providers to attempt intubation if necessary.

POST-PROCEDURE

After the ETT has been secured, the patient should continue to be closely monitored and vital signs recorded. The provider should insure that there is sufficient support immediately after intubation to achieve the desired level of minute ventilation. As the effects of medication diminish, it may be appropriate to reduce this level of support.

References:

1. Foglia E, Ades A, Sawyer T et al. Neonatal intubation practice and outcomes: An international registry study. *Pediatrics*. 2019 Jan; 143(1): e20180902.
2. Hatch, L.D., Grubb, P. H., Lea, A.S., Walsh, W.F., Markham, M.H., Maynard, P. O. Whitney, G.M. Stark, A.R., & Ely, W. Interventions to Improve Patient Safety During Intubation in the Neonatal Intensive Care Unit. *Pediatrics* (2016) Oct 138(4):
3. Muniraman, HK., Yaari J., Hand, I. [Premedication Use Before Nonemergent Intubation in the Newborn Infant](#). *Am J Perinatol* 2015; 32:821–824.
4. Le, CN, Garey DM, Leone, TA, Goodmar, JK, Rich, W. and Finer, N. [Impact of premedication on neonatal intubations by pediatric and neonatal trainees](#). *Journal of Perinatology* (2014) 34, 458–460
5. Allen, KA. Premedication for Neonatal Intubation: Which Medications are recommended and why? *Advances in Neonatal Care* (2012) 12(2):107-111.