

## **Appendix 2:**

### **Methods**

Chest Wall Rigidity (secondary to opiates)- Chest wall rigidity and difficulty with bag-mask ventilation that occurred after an infant received any type of opiate medication and was thought by the intubating clinician to be secondary to the opiate medication.

Difficulty with Bag-Mask Ventilation- Any difficulty with bag-mask ventilation during the intubation encounter. This includes laryngospasm, bronchospasm or upper airway obstruction after medication administration.

Emesis- Reflux of any stomach contents into the posterior pharynx during the intubation encounter.

Esophageal intubation with immediate recognition- Placement of an endotracheal tube with subsequent bag-mask ventilation in a location that was not thought by the intubating clinician to be within the trachea and removal prior to securing the malpositioned tube.

Mainstem Bronchial Intubation- An endotracheal tube that is found to terminate within either the right mainstem or left mainstem bronchus on the first chest x-ray taken after intubation. This outcome is based upon chest x-ray readings performed by an attending pediatric radiologist. Any endotracheal tube that was purposefully placed in a mainstem bronchus is not classified as a positive outcome (i.e. selective mainstem intubation due to air leak syndrome)

Oral bleeding secondary to intubation- Any bleeding in the mouth or oropharynx due to trauma during the intubation or advanced airway procedure. Bleeding must not be present prior to airway management.

Chest Compressions- Outcome is positive if chest compressions are performed on the infant at any time between the beginning of the intubation encounter and securing the endotracheal tube.

CPR: Code Medications- Outcome is positive if an infant receives either epinephrine or atropine used during a period of bradycardia (heart rate < 60 bpm) as part of resuscitation at any time between the beginning of the intubation encounter and securing the endotracheal tube.

Death- Cessation of life that occurred either during an intubation encounter or as the result of bradycardia/asystole/pulseless electrical activity (PEA) that began during an intubation encounter. This outcome is not positive if the bradycardia/asystole/PEA began prior to the intubation encounter and airway management was performed as part of the resuscitation.

Direct Esophageal/Airway Trauma- Any airway or esophageal trauma that occurs during the placement of an endotracheal tube or other advanced airway device. This includes tracheal perforation, esophageal perforation, confirmed tracheal bleeding or confirmed tracheal tissue dislodgement.

Esophageal intubation with delayed recognition- Placement of an endotracheal tube, subsequent bag-mask ventilation and securing of the tube in a location that was thought by the intubating clinician to be within the trachea but is determined after securing the tube to be in a location other than the trachea.

Hypotension receiving treatment- Any blood pressure value taken either during the intubation encounter or within thirty minutes of securing the airway for which the infant

receives either volume expansion (normal saline bolus, albumin, etc.) or initiation/increase of vasopressor medications (e.g. dopamine, epinephrine, dobutamine).

Pneumothorax- Any air within the pleural space that was not present on chest x-ray taken prior to intubation but is present in any quantity after intubation or advanced airway management. This outcome is based upon chest x-ray readings performed by an attending pediatric radiologist.

Transition from non-emergent intubation to emergent intubation- An intubation encounter that begins as non-emergent but due to physiologic instability and inability to oxygenate the infant effectively, the proceduralist thinks placement of an advanced airway is warranted on an emergent basis without stabilization and bag-mask ventilation between attempts.



Post-Intubation Provider Survey

Patient Name \_\_\_\_\_

If you attempted intubation, please fill out corresponding fields for each attempt.

**Attempt 1**

Method:  Oral  Nasal  Surgical/Tracheostomy ET Tube Size:  2.0  2.5  3.0  3.5  4.0 Cuffed/Uncuffed

Equipment Used:  Direct Laryngoscope  Video laryngoscope  Bronchoscopy  Other \_\_\_\_\_

Blade Size:  00  0  1 Stylet Used:  Yes  No

Current Clinical Role:  PGY-1  PGY-2  PGY-3  1<sup>st</sup> yr Neo Fellow  2<sup>nd</sup> yr Neo Fellow  3<sup>rd</sup> yr Neo Fellow  
 NNP  NICU Hospitalist  Neo Attending  Other \_\_\_\_\_

Prior neonatal intubation experience:  <10 attempts at intubation  10-40 attempts  >40 attempts

Was the attempt successful?  Yes  No

If attempt was unsuccessful, what was reason? (Check all that apply)

- Cords not visualized
- Patient decompensation prior to intubation
- Cords visualized but ETT not able to be passed
- Suctioning needed
- Esophageal Intubation
- Equipment failure
- Other \_\_\_\_\_

Circle your view if able:



Grade1- Full Cords seen



Grade2- Partial Cords seen



Grade 3- Epiglottis seen only



Grade 4- Epiglottis not visible

Comments:

**Attempt 2**

Method:  Oral  Nasal  Surgical/Tracheostomy ET Tube Size:  2.0  2.5  3.0  3.5  4.0 Cuffed/Uncuffed

Equipment Used:  Direct Laryngoscope  Video laryngoscope  Bronchoscopy  Other \_\_\_\_\_

Blade Size:  00  0  1 Stylet Used:  Yes  No

Current Clinical Role:  PGY-1  PGY-2  PGY-3  1<sup>st</sup> yr Neo Fellow  2<sup>nd</sup> yr Neo Fellow  3<sup>rd</sup> yr Neo Fellow  
 NNP  NICU Hospitalist  Neo Attending  Other \_\_\_\_\_

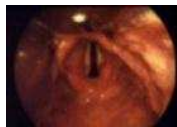
Prior neonatal intubation experience:  <10 attempts at intubation  10-40 attempts  >40 attempts

Was the attempt successful?  Yes  No

If attempt was unsuccessful, what was reason? (Check all that apply)

- Cords not visualized
- Patient decompensation prior to intubation
- Cords visualized but ETT not able to be passed
- Suctioning needed
- Esophageal Intubation
- Equipment failure
- Other \_\_\_\_\_

Circle your view if able:



Grade1- Full Cords seen



Grade2- Partial Cords seen



Grade 3- Epiglottis seen only



Grade 4- Epiglottis not visible

Comments:

\*Definitions:

**Attempt**- Laryngoscope blade into and out of the mouth.

Place in box in charge nurse area after use.

Post-Intubation Provider Survey

Patient Name

If you attempted intubation, please fill out corresponding fields for each attempt.

Attempt 3

Method:  Oral  Nasal  Surgical/Tracheostomy ET Tube Size:  2.0  2.5  3.0  3.5  4.0 Cuffed/Uncuffed

Equipment Used:  Direct Laryngoscope  Video laryngoscope  Bronchoscopy  Other \_\_\_\_\_

Blade Size:  00  0  1 Stylet Used:  Yes  No

Current Clinical Role:  PGY-1  PGY-2  PGY-3  1st yr Neo Fellow  2nd yr Neo Fellow  3rd yr Neo Fellow  NNP  NICU Hospitalist  Neo Attending  Other \_\_\_\_\_

Prior neonatal intubation experience:  <10 attempts at intubation  10-40 attempts  >40 attempts

Was the attempt successful?  Yes  No

If attempt was unsuccessful, what was reason? (Check all that apply)

- Cords not visualized  Patient decompensation prior to intubation  Cords visualized but ETT not able to be passed  Suctioning needed  Esophageal Intubation  Equipment failure  Other \_\_\_\_\_

Circle your view if able:



Grade1- Full Cords seen



Grade2- Partial Cords seen



Grade 3- Epiglottis seen only



Grade 4- Epiglottis not visible

Comments:

Attempt 4

Method:  Oral  Nasal  Surgical/Tracheostomy ET Tube Size:  2.0  2.5  3.0  3.5  4.0 Cuffed/Uncuffed

Equipment Used:  Direct Laryngoscope  Video laryngoscope  Bronchoscopy  Other \_\_\_\_\_

Blade Size:  00  0  1 Stylet Used:  Yes  No

Current Clinical Role:  PGY-1  PGY-2  PGY-3  1st yr Neo Fellow  2nd yr Neo Fellow  3rd yr Neo Fellow  NNP  NICU Hospitalist  Neo Attending  Other \_\_\_\_\_

Prior neonatal intubation experience:  <10 attempts at intubation  10-40 attempts  >40 attempts

Was the attempt successful?  Yes  No

If attempt was unsuccessful, what was reason? (Check all that apply)

- Cords not visualized  Patient decompensation prior to intubation  Cords visualized but ETT not able to be passed  Suctioning needed  Esophageal Intubation  Equipment failure  Other \_\_\_\_\_

Circle your view if able:



Grade1- Full Cords seen



Grade2- Partial Cords seen



Grade 3- Epiglottis seen only



Grade 4- Epiglottis not visible

Comments:

\*Definitions:

Attempt- Laryngoscope blade into and out of the mouth.

Place in box in charge nurse area after use.

Post-Intubation Provider Survey

Patient Name \_\_\_\_\_

If you attempted intubation, please fill out corresponding fields for each attempt.

**Attempt 5**

Method:  Oral  Nasal  Surgical/Tracheostomy ET Tube Size:  2.0  2.5  3.0  3.5  4.0 Cuffed/Uncuffed

Equipment Used:  Direct Laryngoscope  Video laryngoscope  Bronchoscopy  Other \_\_\_\_\_

Blade Size:  00  0  1 Stylet Used:  Yes  No

Current Clinical Role:  PGY-1  PGY-2  PGY-3  1<sup>st</sup> yr Neo Fellow  2<sup>nd</sup> yr Neo Fellow  3<sup>rd</sup> yr Neo Fellow  
 NNP  NICU Hospitalist  Neo Attending  Other \_\_\_\_\_

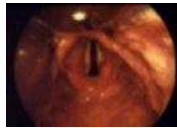
Prior neonatal intubation experience:  <10 attempts at intubation  10-40 attempts  >40 attempts

Was the attempt successful?  Yes  No

If attempt was unsuccessful, what was reason? (Check all that apply)

- Cords not visualized
- Patient decompensation prior to intubation
- Cords visualized but ETT not able to be passed
- Suctioning needed
- Esophageal Intubation
- Equipment failure
- Other \_\_\_\_\_

Circle your view if able:



Grade1- Full Cords seen



Grade2- Partial Cords seen



Grade 3- Epiglottis seen only



Grade 4- Epiglottis not visible

Comments:

**Attempt 6**

Method:  Oral  Nasal  Surgical/Tracheostomy ET Tube Size:  2.0  2.5  3.0  3.5  4.0 Cuffed/Uncuffed

Equipment Used:  Direct Laryngoscope  Video laryngoscope  Bronchoscopy  Other \_\_\_\_\_

Blade Size:  00  0  1 Stylet Used:  Yes  No

Current Clinical Role:  PGY-1  PGY-2  PGY-3  1<sup>st</sup> yr Neo Fellow  2<sup>nd</sup> yr Neo Fellow  3<sup>rd</sup> yr Neo Fellow  
 NNP  NICU Hospitalist  Neo Attending  Other \_\_\_\_\_

Prior neonatal intubation experience:  <10 attempts at intubation  10-40 attempts  >40 attempts

Was the attempt successful?  Yes  No

If attempt was unsuccessful, what was reason? (Check all that apply)

- Cords not visualized
- Patient decompensation prior to intubation
- Cords visualized but ETT not able to be passed
- Suctioning needed
- Esophageal Intubation
- Equipment failure
- Other \_\_\_\_\_

Circle your view if able:



Grade1- Full Cords seen



Grade2- Partial Cords seen



Grade 3- Epiglottis seen only



Grade 4- Epiglottis not visible

Comments:

\*Definitions:

**Attempt**- Laryngoscope blade into and out of the mouth.

Place in box in charge nurse area after use.