



Pediatric Failed Airway

Definition of Failed Airway:


- Unable to Ventilate and Oxygenate $\geq 90\%$ during or after one (1) or more unsuccessful intubation attempts.
and/ or
- Anatomy inconsistent with continued attempts.
and/ or
- Three (3) unsuccessful attempts by most experienced Paramedic/AEMT.
Each attempt should include change in approach or equipment

NO MORE THAN THREE (3) ATTEMPTS TOTAL

Call for additional resources if available

Failed Airway

BVM
Adjunctive Airway NP/ OP
Maintains
Oxygen Saturation $\geq 92\%$

Continue BVM
Supplemental Oxygen

Exit to
Appropriate
Protocol(s)

NO


A Airway Video Laryngoscopy
Device Procedure
if available
Optional

B Attempt
Airway Blind Insertion Airway
Device Procedure

P Airway Cricothyrotomy
Needle Procedure
See Pearls Section

BIAD / Cricothyrotomy
Successful
Or
Oxygenation / Ventilation
Adequate

YES

Exit to
Post-intubation/
BIAD Management
Protocol AR 8




NO

Capnography Monitoring

- End-tidal (EtCO₂) monitoring is mandatory following placement of an endotracheal tube.
- EtCO₂ monitoring is mandatory following placement of a BIAD once available on scene.

Protocols AR 3, 5, and 6 should be utilized together (even if agency is not using Drug Assisted Airway Protocol) as they contain useful information for airway management.

Supplemental oxygen
BVM with Airway Adjuncts
Maintain Oxygen Saturation $\geq 92\%$

 **Notify Destination or Contact Medical Control** 



Pediatric Failed Airway

Pearls

This protocol is for use in patients who FIT within a Pediatric Medication/ Skill Resuscitation System Product.

- For the purposes of this protocol, a secure airway is when the patient is receiving appropriate oxygenation and ventilation.
- If an effective airway is being maintained by BVM with continuous pulse oximetry values of $\geq 90\%$, it is acceptable to continue with basic airway measures.
- Ventilation rate:
30 for Neonates, 25 for Toddlers, 20 for School Age, and for Adolescents the normal Adult rate of 10 - 12 per minute. Maintain EtCO₂ between 35 - 45 and avoid hyperventilation.

Capnography Monitoring (EtCO₂)

Continuous waveform or Quantitative Capnography and Pulse Oximetry are required for intubation verification and ongoing patient monitoring.

- Intubation:
Attempt defined as laryngoscope blade passing the teeth or endotracheal tube passed into the nostril.
Use of a stylet is recommended in all pediatric intubations.
Endotracheal tube: Depth = 3 x the diameter of the ETT. Estimated Size = 16 + age (years) / 4. Term newborn = 3.5 mm.
If First intubation attempt fails, make an adjustment and try again: (Consider change of provider in addition to equipment)
- NC EMS Airway Evaluation Form:
Fully complete and have receiving healthcare provider sign confirming BIAD or endotracheal tube placement.
Complete online in region specific *ReadyOp* and upload completed form.
Complete when Ketamine, Etomidate, Succinylcholine and/ or Rocuronium or used to facilitate use of a BIAD and/ or endotracheal intubation. Paramedics/ AEMT should consider using a BIAD if endotracheal intubation is unsuccessful.
- Secure the endotracheal tube well and consider c-collar in pediatric patients (even in absence of trauma) to better maintain ETT placement.
Manual stabilization of endotracheal tube should be used during all patient moves / transfers.
- Airway Cricothyrotomy Percutaneous Needle Procedure:
Indicated as a lifesaving / last resort procedure in pediatric patients < 10 years of age.
Very little evidence to support it's use and safety.
A variety of alternative pediatric airway devices now available make the use of this procedure rare.
Agencies who utilize this procedure must develop a written procedure, establish a training program, maintain equipment and submit procedure and training plan to the State Medical Director/ Regional EMS Office.
 ≥ 10 years: Surgical cricothyrotomy or commercial kits based on agency preference recommended.
- DOPE: Displaced tracheostomy tube/ ETT, Obstructed tracheostomy tube/ ETT, Pneumothorax and Equipment failure.