

Pediatric 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 $\geq 90\%$
Preferably $\geq 94\%$


Continue BVM
Supplemental Oxygen

Exit to Appropriate Protocol(s)

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

Exit to Post-intubation / BIAD Management Protocol AR 8


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.

Supplemental oxygen
BVM with Airway Adjuncts
Maintain Oxygen Saturation $\geq 90\%$
Preferably $\geq 94\%$

 **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 8 - 10 per minute.
Maintain a EtCO₂ between 35 and 45 and avoid hyperventilation.
- **Ketamine:**
May be used during airway management of patients who FIT within a Pediatric Medication/Skill Resuscitation System product with a DIRECT, ONLINE MEDICAL ORDER, by the system MEDICAL DIRECTOR OR ASSISTANT MEDICAL DIRECTOR ONLY.
Systems using Ketamine in the pediatric population must also be using in their adult population.
- **Agencies utilizing Ketamine must submit a local systems plan to State Medical Director detailing how the drug is used in your program.**
Ketamine may be used within this protocol only WITHOUT a paralytic agent in conjunction with either a OP, NP, BIAD or endotracheal tube.
Ketamine may be used during the resuscitation of hypoxia or hypotension in conjunction with airway management.
Ketamine may be used in the dangerously combative patient requiring airway management IM. IV / IO should be established as soon as possible.
Ketamine may NOT be used for purposes of sedation only – it must be used only during airway management procedures.
- **Capnography Monitoring (EtCO₂):**
Continuous Waveform or Quantitative Capnography and Pulse Oximetry are required for intubation verification and ongoing patient monitoring (Not validated and may prove impossible in the neonatal population- verification by two (2) other means is recommended in this population.)
Capnography verification and monitoring is required for BIAD verification and monitoring once available on scene.
- Intubation attempt defined as laryngoscope blade passing the teeth or endotracheal tube passed into the nostril.
- If First intubation attempt fails, make an adjustment and try again: (Consider change of provider in addition to equipment)
- AEMT and Paramedics should consider using a BIAD if oral-tracheal intubation is unsuccessful.
- During intubation attempts use External Laryngeal Manipulation to improve view of glottis.
- It is important to secure the endotracheal tube well and consider c-collar (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 Needle Procedure:**
Indicated as a lifesaving / last resort procedure in pediatric patients ≤ 11 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.
- **DOPE:** Displaced tracheostomy tube / ETT, Obstructed tracheostomy tube / ETT, Pneumothorax and Equipment failure.