Pediatric Failed Airway

Unable to Ventilate and Oxygenate ≥ 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 Aiway

BVM
Adjunctive Airway NP / OP
Maintains
Oxygen Saturation
≥ 90 %
Preferably ≥ 94 %

YES → 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.**

Supplemental oxygen
BVM with Airway Adjunts
Maintain Oxygen Saturation ≥ 90
%Preferably ≥ 94 %

Notify Destination or
Contact Medical Control

Airway Respiratory Protocol Section

Pediatric Failed Airway

Pearls

- <u>This protocol is for use in patients who FIT within a Pediatric Medication/Skill Resuscitation System Product.</u>
- 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 ≥ 90%, it is acceptable to continue with basic airway measures.
- <u>Ventilation rate:</u>
  - 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.
- <u>Ketamine:</u>
  - 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.
- <u>Agencies utilizing Ketamine must submit a local systems plan to State Medical Director detailing how the drug is used in your program.</u>
  - 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.
- <u>Capnography Monitoring (EtCO2):</u>
  - **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.
- <u>Airway Cricothyrotomy Needle Procedure:</u>
  - **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: D**isplaced tracheostomy tube / ETT, **O**bstructed tracheostomy tube / ETT, **P**neumothorax and **E**quipment failure.