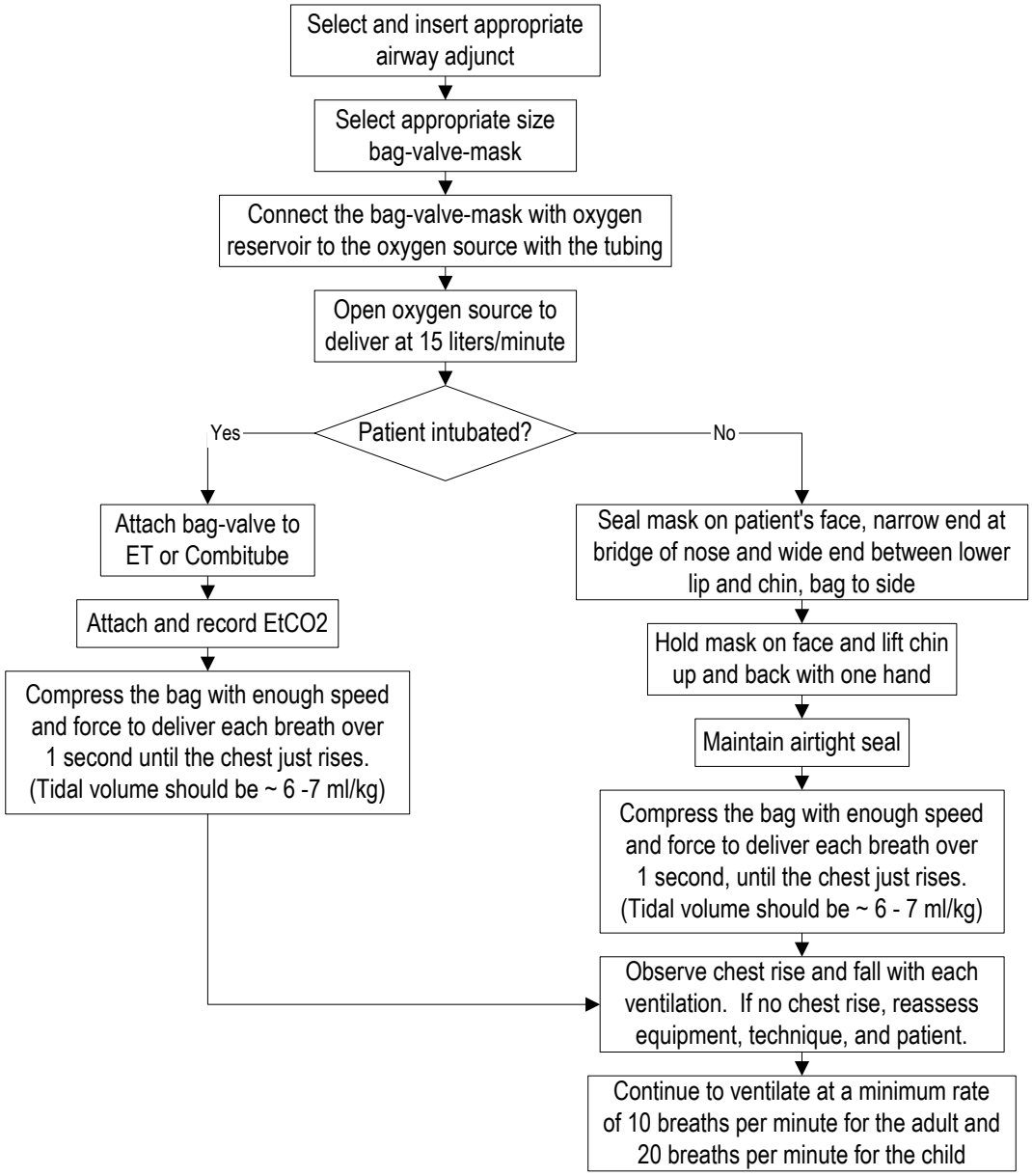
Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 6/1/06	**PRACTICAL SKILL**	Signature:
Revision: 4	**BAG-VALVE VENTILATION**	Page 1 of 1

Purpose:		**Indications:**	
To assist respirations in a patient whose respiratory effort is absent or inadequate		Any patient with inadequate or absent respiratory effort	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Provides for ventilation with supplemental oxygen Reduces exposure to upper airway secretions	Can be difficult to maintain face seal Does not prevent aspiration	Gastric inflation	Facial trauma with disruption of the bone framework of the face and jaw

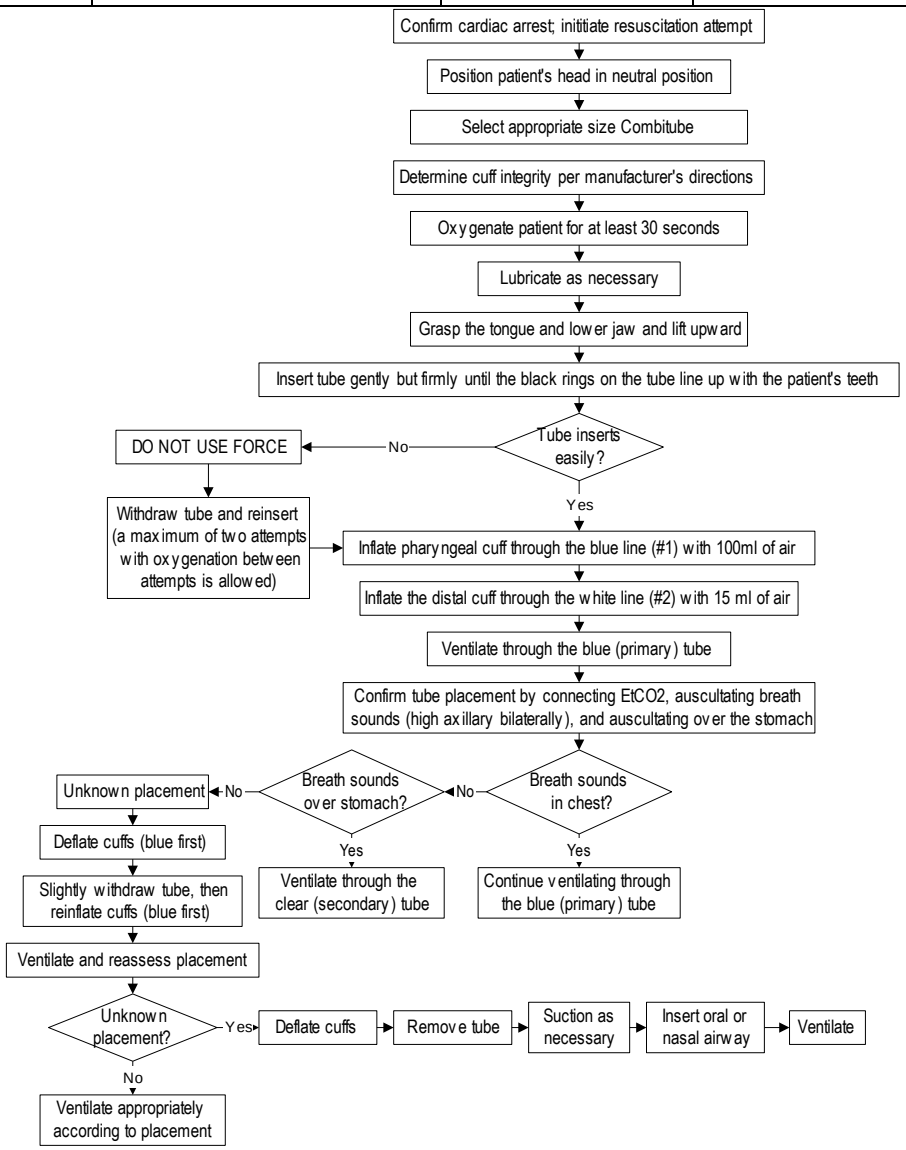


NOTES:

- For patients with a suspected cervical spine injury, use the jaw thrust maneuver to open the airway.
- For patients not intubated, the 2-person method for bag-valve-mask ventilation is preferred.

Initial: 5/96	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 12/11/02	**PRACTICAL SKILL**	Signature:
Revision: 3	**COMBITUBE AIRWAY**	Page 1 of 1

Purpose:		**Indications:**	
To prevent regurgitation of stomach contents into the airway To facilitate ventilation with a bag-valve mask To provide a secure airway		Cardiac arrest, medical or traumatic	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Cannot be misplaced Minimal training required Minimal spinal manipulation Facilitates suctioning	Gag reflex must be absent Patient must be unconscious Placement must be identified (trachea or esophagus) May need removal before endotracheal intubation	Possible trauma to airway or esophagus	Patients <5 feet in height for Combitube Patients < 4 feet in height for Combi SA Known esophageal disease or trauma Intact gag reflex Caustic ingestion



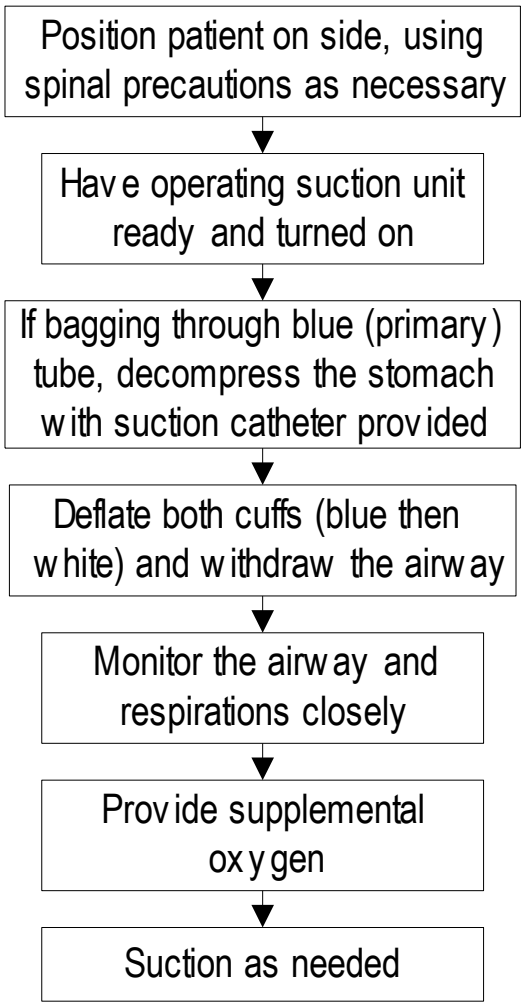
NOTES:

When ventilating through the blue (primary) tube:

- The Combitube is placed in the esophagus when breath sounds are present bilaterally and epigastric sounds are absent.
  - The clear tube may be used for removal of gastric fluid or gas with the catheter provided in the airway kit.
- The Combitube is placed in the trachea when breath sounds are absent and epigastric sounds are present.
- The Combitube placement is unknown when both breath and epigastric sounds are absent.

Initial: 5/96	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 12/11/02	**PRACTICAL SKILL**	Signature:
Revision: 2	**COMBITUBE REMOVAL**	Page 1 of 1

Purpose:		**Indications:**	
To safely remove a Combitube from the patient's airway		Patient regains consciousness Protective gag reflex returns Ventilation is inadequate	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Removes focus of discomfort and agitation from a patient with an intact gag reflex who is adequately ventilating on their own	Loss of positive airway control	Aspiration	Any patient unable to adequately ventilate or protect own airway

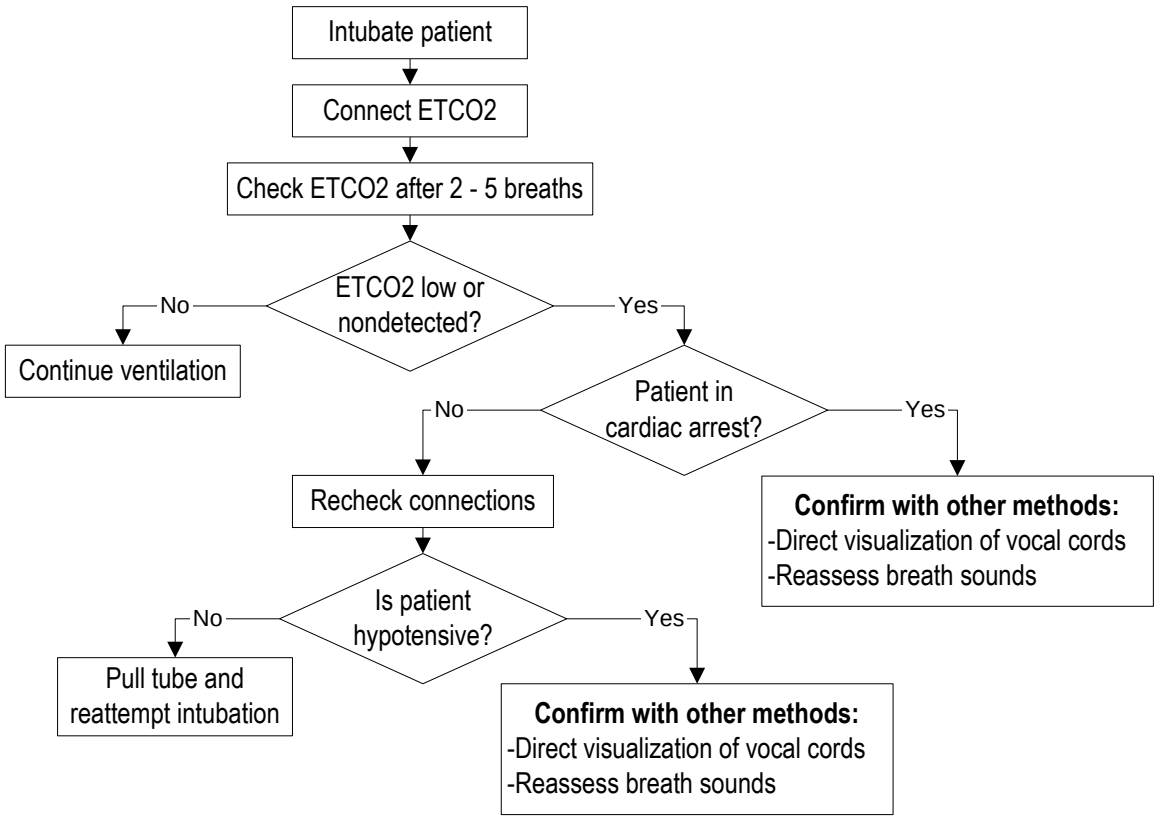


NOTES:

- If considering Extubation due to patient agitation, contact medical control for possible sedation order.
- Remove the tube in a smooth, steady motion, suctioning as needed.

Initial: 9/12/01	**MILWAUKEE COUNTY EMS PRACTICAL SKILL CONFIRMATION OF INTUBATION**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 9/24/03		Signature:
Revision: 1		Page 1 of 1

Purpose:		**Indications:**	
To confirm that an endotracheal tube has been correctly placed in the patient's trachea; to confirm that a patient is being ventilated through the correct port of the Combitube.		Critically ill patient who is intubated with an endotracheal tube or Combitube.	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Confirms that supplemental oxygen is being delivered to the patient's lungs	None	Inaccurate reading due to misplacement of ETT or ventilation through wrong port of Combitube.	None



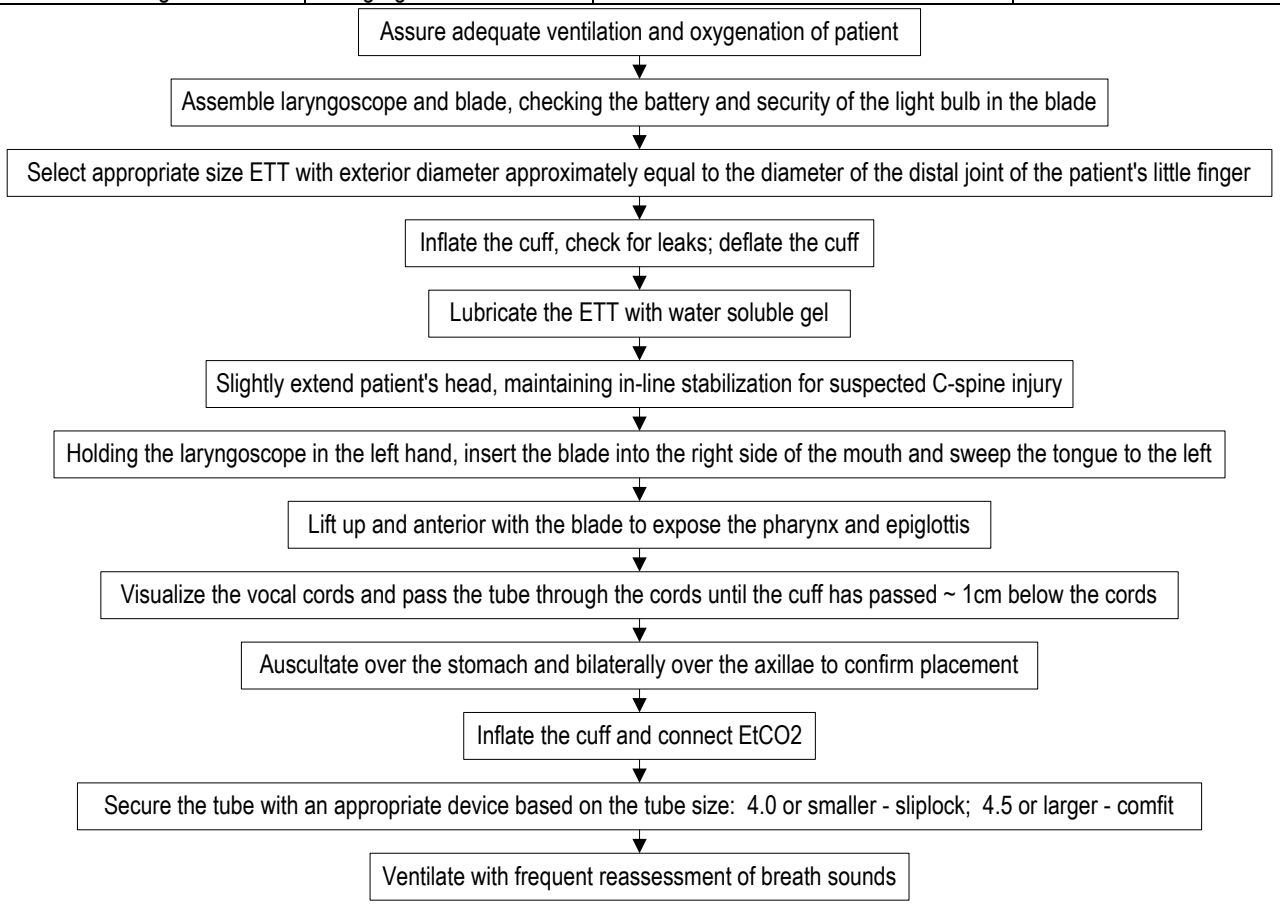
NOTES:

- ETCO2 can be used in addition to listening for breath sounds with the Combitube to confirm ventilation through the proper tube.
- A normal ETCO2 reading is between 33 and 43 mmHg.
- The ETCO2 waveform can be used as a guide to CPR compressions and return of spontaneous circulation.
- The ETCO2 should be recorded whenever vital signs are checked and after moving the patient. Minimally, the value should be recorded immediately after intubation and upon arrival at the hospital (or when resuscitative efforts are stopped).

Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 5/21/08	**PRACTICAL SKILL**	Signature:
Revision: 6	**ENDOTRACHEAL INTUBATION**	Page 1 of 1

Purpose:	**Indications:**
To provide positive control of an airway To facilitate assisted ventilation in a patient with inadequate respirations To prevent aspiration in a patient with decreased reflexes	Patients in severe respiratory distress Unconscious patients unable to protect own airway Apnea or inadequate respiratory effort

Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Positive control of the airway Prevents aspiration Facilitates ventilation Provides route for administration of selected medications Facilitates suctioning	Requires special training and equipment May be difficult to avoid C-spine movement Does not prevent gastric regurgitation	Airway trauma Misplacement Esophageal placement causes hypoxia Potential for simple or tension pneumothorax Gastric dilatation	Patient with intact gag reflex

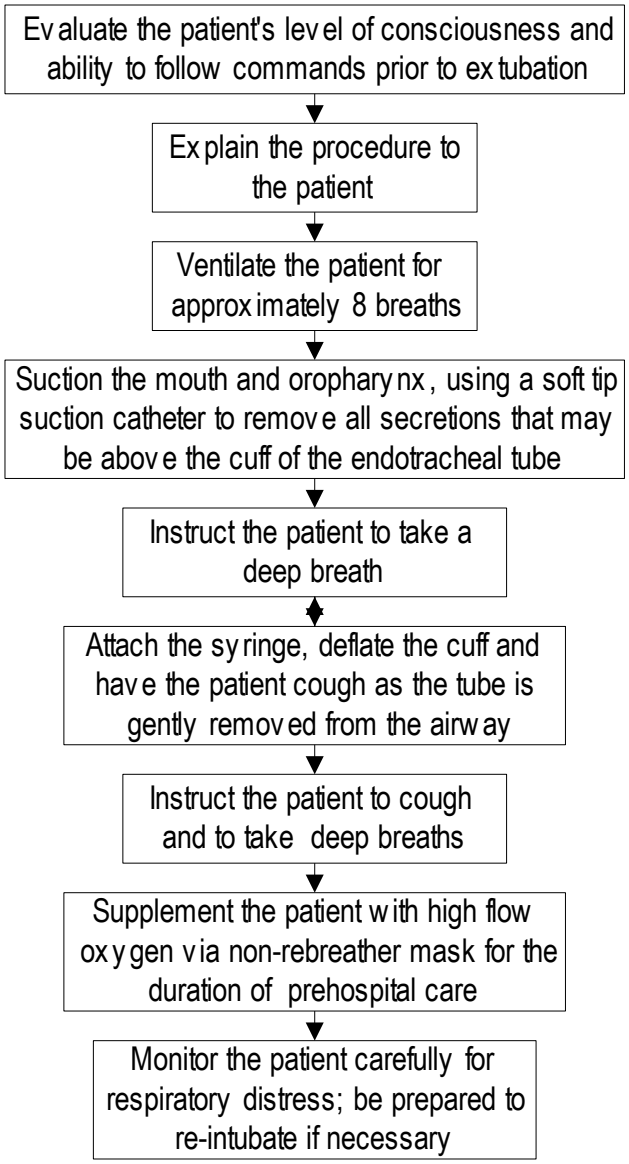


NOTES:

- To prevent accidental extubation of a patient who has been intubated, the following steps should be taken when managing a patient with a 2.5 - 5.5 ET tube:
  - Inflate the cuff with 1 cc air. Avoid overinflating the cuff, as this may cause airway damage. The pilot balloon should remain soft after inflation of the cuff.
  - Verify ETT placement by connecting and documenting the EtCO2 reading.
  - Management of the airway should be maintained by an EMT-Paramedic and not turned over to an EMT-Basic.
  - The head of the intubated patient should be maintained in an in-line stabilized position during transport.
- Most accidental extubations of patients occur during patient movement. The bag-valve assembly should be disconnected from the ETT for no longer than 30 seconds. ETT placement must be verified when reattaching the bag-valve.
- Limit intubation attempts to 2 attempts per provider with one additional attempt by one additional provider – total of 3 attempts. Assure adequate oxygenation and ventilation between intubation attempts. If unable to intubate after 3 attempts, insert non-visualized airway.

Initial: 7/94	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 12/11/02	**PRACTICAL SKILL**	Signature:
Revision: 2	**ENDOTRACHEAL EXTUBATION**	Page 1 of 1

Purpose:		**Indications:**	
To safely remove an indwelling endotracheal tube (oral or nasal) from the trachea		Patient's gag reflex returns and is ventilating on own	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Removes focus of discomfort and agitation from an alert patient who has an intact gag reflex and is ventilating on his/her own	Loss of positive airway control	Laryngospasm Aspiration	Any patient unable to adequately ventilate or protect his/her own airway

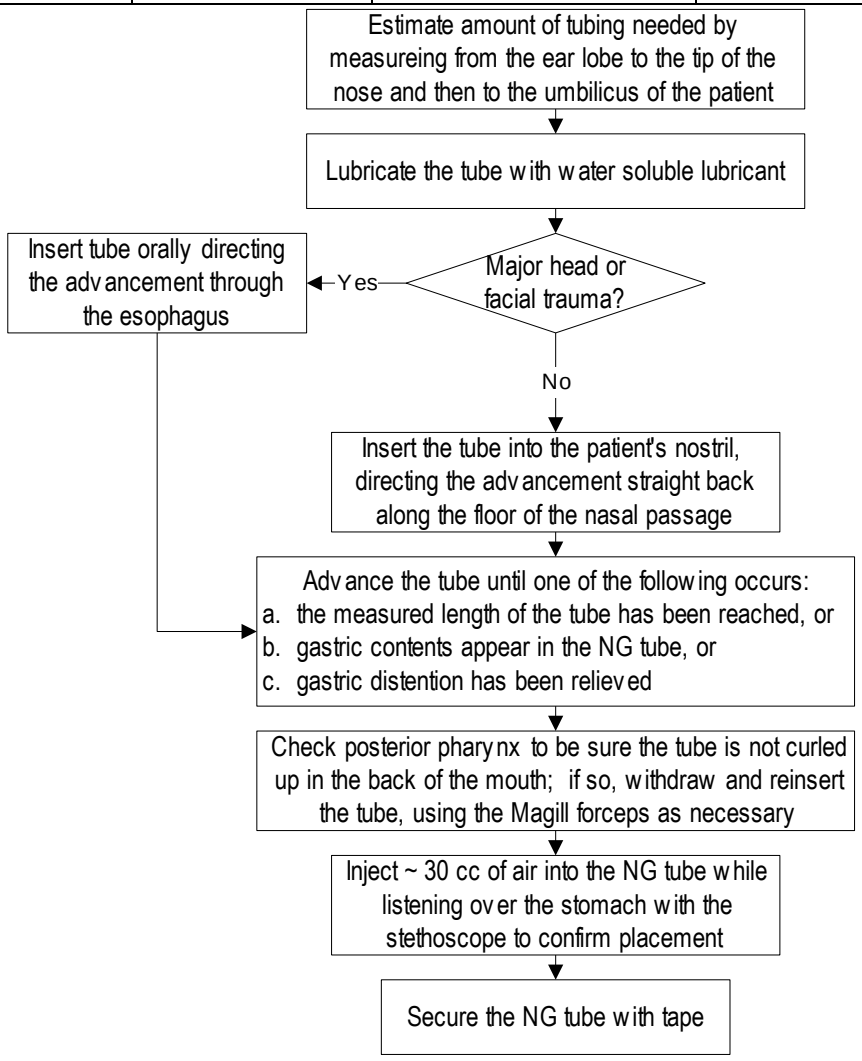


NOTE:

- If considering Extubation due to patient agitation, contact medical control for possible sedation order.

Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 5/10/00	**PRACTICAL SKILL**	Signature:
Revision: 2	**GASTRIC TUBE PLACEMENT**	Page 1 of 1

Purpose:		**Indications:**	
To decompress gastric dilatation following placement of an endotracheal tube		Intubated patient with gastric dilatation	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Decompresses the stomach, reducing the chance for regurgitation and aspiration Allows freer downward movement of the diaphragm, making ventilation easier	May stimulate vomiting	Epistaxis Accidental passage into the trachea may stimulate coughing	May NOT be used with an uncuffed ET tube

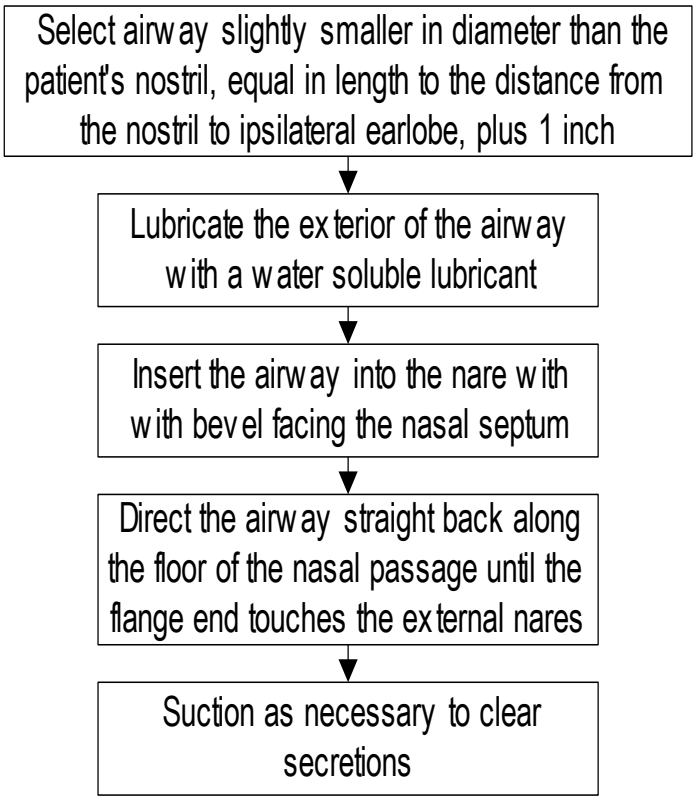


NOTES:

- The tube may be inserted orally if difficulty is encountered during attempt at nasal insertion.
- If a Combi-tube is in place with ventilation through the **blue** port, the NG tube (or a pediatric feeding tube) may be inserted through the white port.

Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 6/1/06	**PRACTICAL SKILL**	Signature:
Revision: 2	**NASOPHARYNGEAL AIRWAY INSERTION**	Page 1 of 1

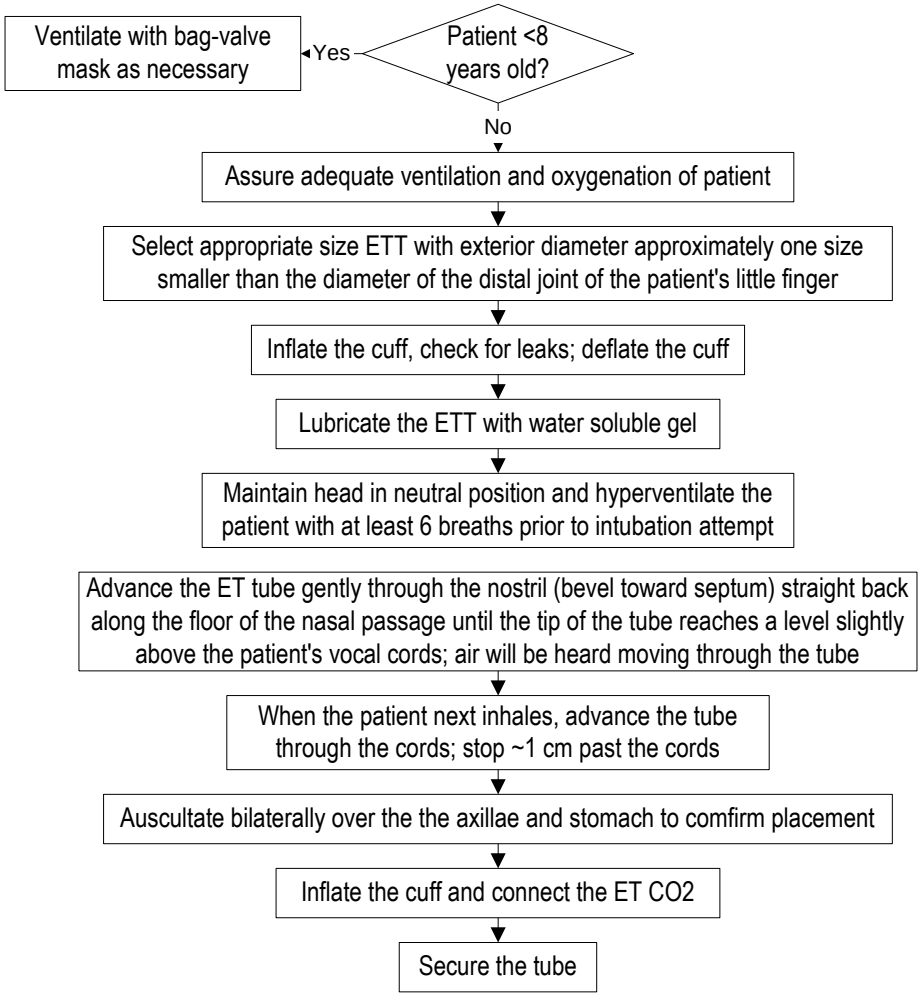
Purpose:		**Indications:**	
To maintain a patent airway by holding the tongue off the posterior pharynx		Decreased level of consciousness	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Better tolerated than rigid oral airway Less likely to stimulate gag reflex as patient regains consciousness Can be inserted without having to open mouth	Does not prevent aspiration	May cause epistaxis Pharyngeal stimulation may cause gagging or vomiting	Should not be inserted in patients with suspected basilar skull fractures or severe facial trauma



Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 6/1/06	**PRACTICAL SKILL**	Signature:
Revision: 4	**NASOTRACHEAL INTUBATION**	Page 1 of 1

Purpose:	**Indications:**
To provide positive control of an airway, especially in patients with some respiratory effort, who have a suspected C-spine injury, an intact gag reflex, or whose mouth cannot be opened To facilitate assisted ventilation in a patient with inadequate respirations	Patients in severe respiratory distress Conscious patients unable to protect own airway Apnea or inadequate respiratory effort

Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Positive control of the airway Prevents aspiration Facilitates ventilation Provides route for administration of selected medications Facilitates suctioning No need to manipulate C-spine Better tolerated by conscious patient	Requires special training and equipment Cannot be used on pediatric patients under 8 years of age due to anatomy of the airway	Airway trauma Misplacement Esophageal placement causes hypoxia Potential for simple or tension pneumothorax Gastric dilatation Epistaxis	Basilar skull fracture Major facial trauma Laryngospasm

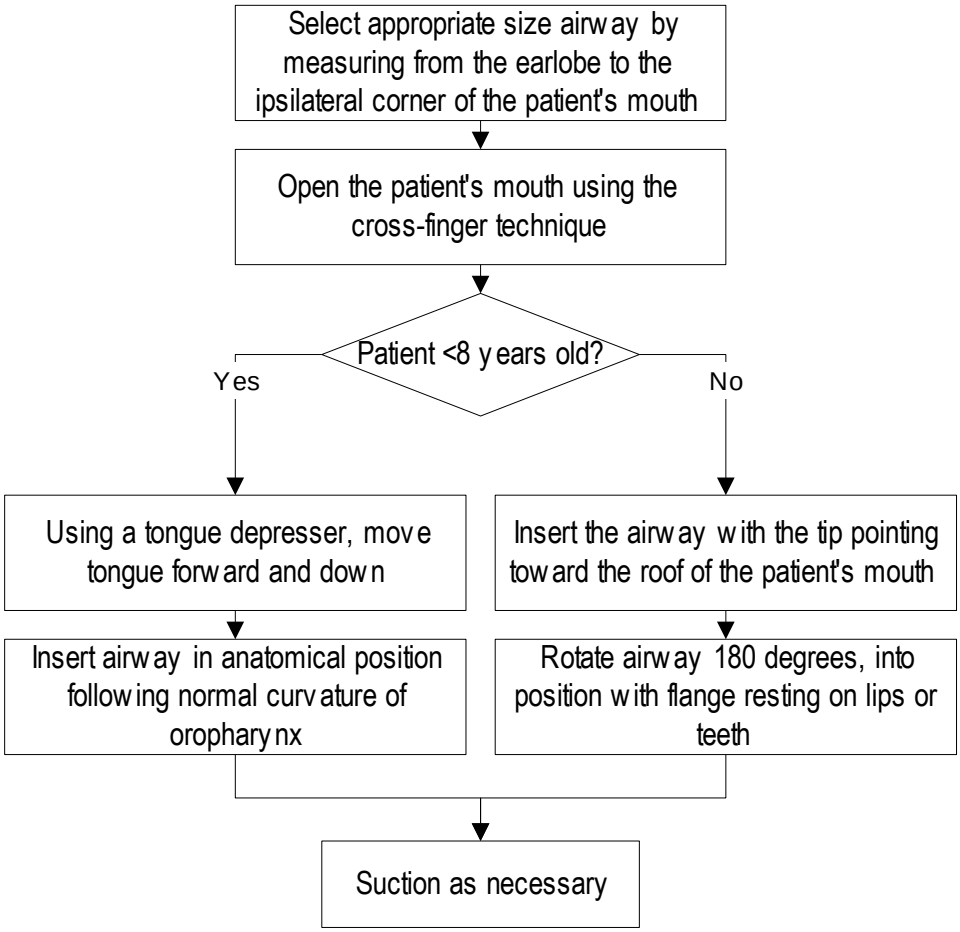


NOTES:

- Limit the intubation attempts to no longer than 10 seconds. Abort the attempt at that time and hyperventilate the patient. Repeat the attempt.

Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 6/1/06	**PRACTICAL SKILL**	Signature:
Revision: 2	**ORAL AIRWAY INSERTION**	Page 1 of 1

Purpose:		**Indications:**	
To maintain a patent airway by holding the tongue off the posterior pharynx		Unconscious patients without a gag reflex	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Maintains a patent airway Easy to use with minimal training necessary Prevents the patient from biting down on objects in the mouth (e.g. endotracheal tube)	Does not prevent aspiration May stimulate gag reflex	Oral trauma Vomiting with possible aspiration	Any patient with an intact gag reflex



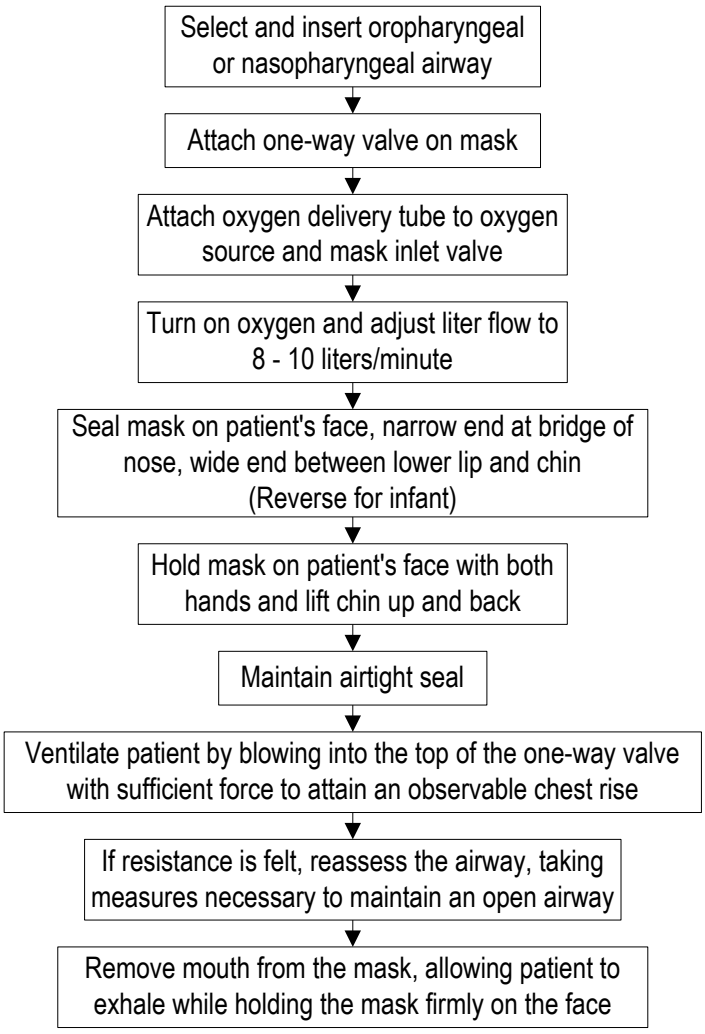
NOTES:

- A tongue blade may be used to insert the airway in anatomical position for the adult patient.
- Use the jaw lift or jaw thrust without head tilt for the patient with a possible cervical spine injury.

Initial: 7/94	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 6/1/06	**PRACTICAL SKILL**	Signature:
Revision: 3	**POCKET MASK VENTILATION**	Page 1 of 1

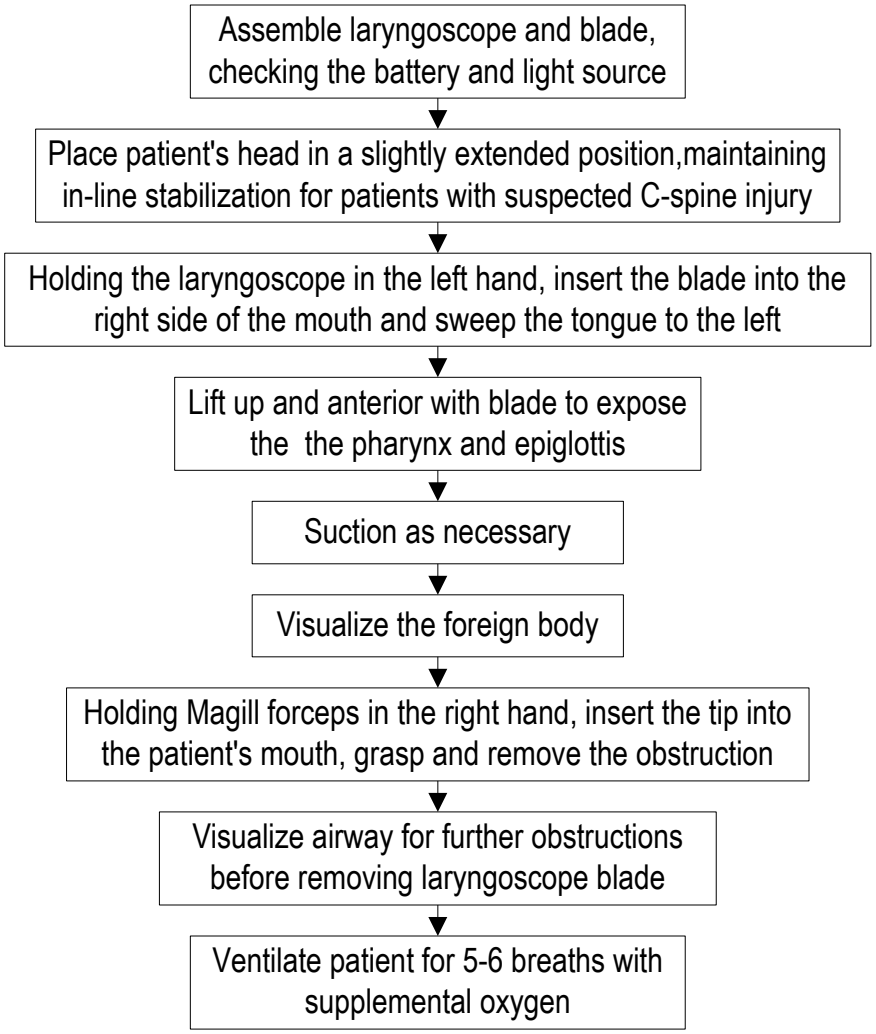
Purpose:	**Indications:**
To ventilate a patient when a bag-valve-mask is not available To administer supplemental oxygen To reduce exposure to the patient's upper respiratory secretions	Any patient with inadequate or absent respiratory effort

Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Barrier device to provide mouth-to-mouth ventilation without direct contact with secretions Provides supplemental oxygen Easier to obtain face seal by using 2 hands to seal the face mask	Does not prevent aspiration	Gastric distention	Facial or upper airway trauma



Initial: 7/94	**MILWAUKEE COUNTY EMS PRACTICAL SKILL REMOVAL OF AIRWAY OBSTRUCTION**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 5/21/08		Signature:
Revision: 2		Page 1 of 1

Purpose:		**Indications:**	
To remove a foreign body from the upper airway		Patient with an airway obstruction	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Rapid removal of visible obstruction Avoids potential trauma of abdominal thrusts	Requires specialized equipment and training Obstruction must be visible	Oral or airway trauma	Foreign body below the level of the vocal cords

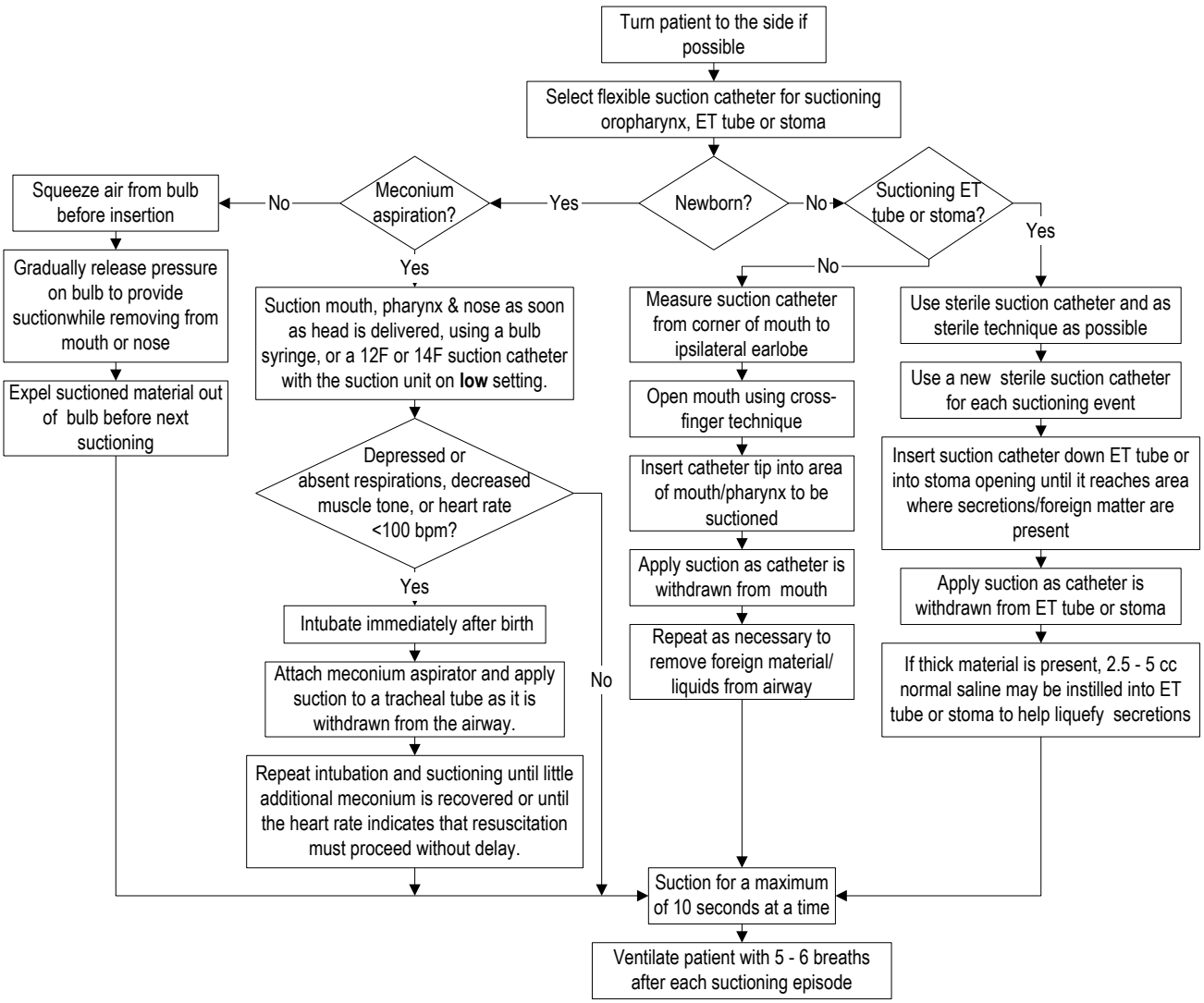


NOTES:

- To prevent damaging the patient's teeth, avoid any leverage on the laryngoscope blade or teeth.

Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 5/21/08	**PRACTICAL SKILL**	Signature:
Revision: 4	**SUCTIONING**	Page 1 of 1

Purpose:		**Indications:**	
To remove foreign material from the upper airway, endotracheal tube, and Combi-tube		Patient with foreign material in upper airway	
Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Clears foreign material and liquids from the airway	Removes air May introduce bacteria into the airway	Hypoxia Oral trauma May stimulate vomiting	None



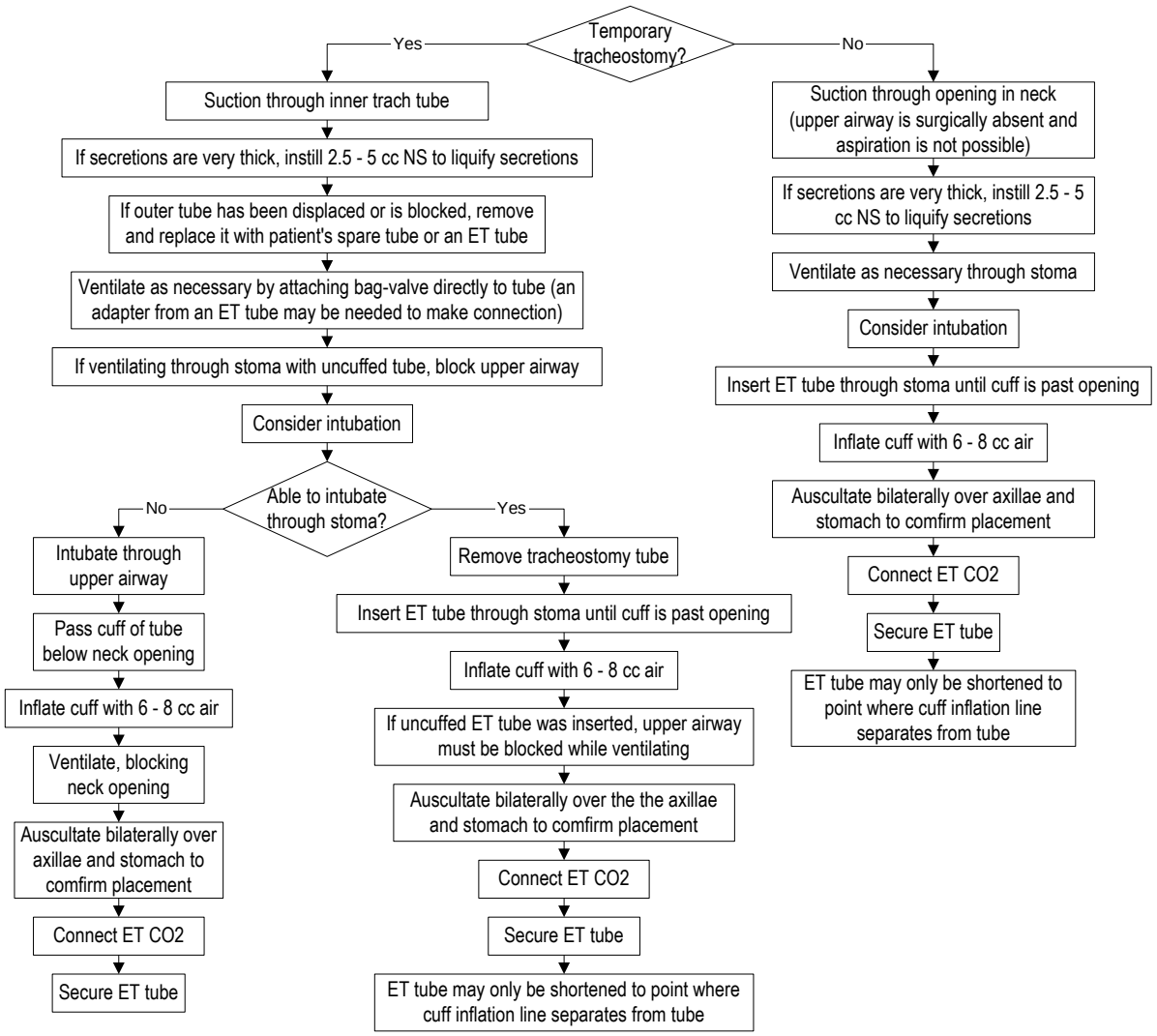
NOTES:

- Suctioning removes air as well as secretions. Ventilate with 5-6 breaths supplemental oxygen after each procedure.
- During suctioning, the ECG monitor (or pulse rate if not on a monitor) should be observed to quickly identify if bradycardia - an indicator of hypoxia - occurs.
- The rigid suction tip can cause airway trauma and is NOT to be used in a moving vehicle.
- Aggressive suctioning of a newborn may cause a vagal bradycardia.
- Use a length based tape to select the appropriate catheter size for suctioning a newborn.

Initial: 9/92	**MILWAUKEE COUNTY EMS**	Approved by: Ronald Pirrallo, MD, MHSA
Reviewed/revised: 5/21/08	**PRACTICAL SKILL**	Signature:
Revision: 4	**TRACHEOSTOMY CARE**	Page 1 of 1

Purpose:	**Indications:**
To maintain a patent airway and adequate oxygenation of the patient with a temporary or permanent tracheostomy To remove or replace a tracheostomy tube	Patients with temporary or permanent tracheostomies obstructed by secretions Patients unable to replace tracheostomy tubes

Advantages:	**Disadvantages:**	**Complications:**	**Contraindications:**
Clears foreign material and liquid from the tracheostomy	Removes air May introduce bacteria into the airway	Hypoxia Airway trauma	None



NOTES:

- A temporary tracheostomy bypasses the upper airway. A metal or plastic tube is inserted through the soft tissue of the anterior neck into the trachea and is held in place with ties circling the neck.
- Temporary tubes are rarely cuffed and aspiration is possible from above or from gastric contents.
- A permanent tracheostomy is created when the upper airway structures are surgically removed. A stoma is created in the anterior neck and the trachea surgically attached to the stoma.
- Suctioning removes air as well as secretions. Hyperventilate with 5 – 6 breaths after suctioning.