

2. CLINICAL MANAGEMENT GUIDELINE

B. Airway management in the Trauma Resuscitation Bay

OBJECTIVE: To define the delineation of responsibility for airway management in the Trauma Resuscitation Bay.

GUIDELINE: The Trauma Attending (TA) is responsible for determining the necessity of obtaining a definitive airway. The EM physician (EDA) or the anesthesiologist may intubate the patient depending on the assessment of airway difficulty.

SCOPE: This guideline includes all physicians, allied health providers, and nurses who practice in the Trauma Resuscitation Bay.

Delineation of Responsibilities:

1. The Trauma Attending is in charge of the patient's airway, including decisions for intubation and adjunctive management.
2. Should the patient require intubation, either the EM attending or the Anesthesia Attending (or trainee under direct supervision of the EM or anesthesia attending) will proceed based on the perceived airway difficulty.
3. The anesthesia attending will respond to the head of the bed and not leave until released by the trauma attending.
4. All patients who had a failed attempt at intubation in the field will be intubated by the anesthesiology attending.

Indications:

1. Airway obstruction
2. Hypoventilation
3. Persistent hypoxemia ($\text{SaO}_2 < 90\%$) despite supplemental oxygen
4. Airway protection (Glasgow Coma Scale score ≤ 8)
5. Cardiac arrest
6. Facial or neck injury with the potential for airway obstruction
7. Cervical spinal cord injury with evidence of respiratory insufficiency
8. Major cutaneous burn ($\geq 40\%$ total body surface area)
9. Smoke inhalation injury with potential for impending airway obstruction
10. Persistent combativeness refractory to pharmacologic agents
11. Physician discretion

PROCEDURE:

1. Video laryngoscopy (VL) should be used the primary means of intubation in trauma patients. VL both decreases c-spine motion and increases first pass success. VL both decreases c-spine motion and increases first pass success. If unable to intubate, follow the difficult airway algorithm below.
2. Backup options include:

2. CLINICAL MANAGEMENT GUIDELINE

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- A. Blind-insertion supraglottic devices (LMA, Cobitube, King Airway)
 - B. Bougie assisted intubation
 - C. Fiberoptic guided intubation
 - D. Direct Laryngoscopy
 - E. Nasotracheal intubation
3. A low threshold for surgical airway (cricothyroidotomy vs tracheostomy) should be used when there is difficulty securing the airway by the above methods
4. Rapid Sequence intubation (RSI) is the preferred method of airway management
5. In patients whose cervical spine has not been cleared, manual stabilization should be used and the c-collar may be opened to facilitate intubation. The jaw thrust maneuver is the procedure of choice for opening the airway
6. The choice of pharmacologic agents used in RSI needs to take into account patient factors, including hemodynamic instability, presence of traumatic brain injury, or comorbid conditions. In order to standardize the stocked medications, the following medications will be available for intubation in the Trauma Resuscitation Bay:
- a. Succinylcholine
 - b. Rocuronium
 - c. Etomidate
 - d. Midazolam
 - e. Propofol
 - f. Ketamine- studies show that ketamine may be used in patients with TBI and this should not be considered a contraindication

RSI drug regimen should be given to achieve the following clinical objectives:

- a. Adequate sedation and neuromuscular blockade to facilitate intubation
 - b. Maintenance of hemodynamic stability and CNS perfusion
 - c. Maintenance of adequate oxygenation
 - d. Prevention of increased intracranial hypertension
 - e. Prevention of vomiting and aspiration
7. Post intubation sedation and analgesia should be started without delay to avoid awareness under paralysis.
- Propofol will be used for sedation and Fentanyl for analgesia unless contraindicated.

2. CLINICAL MANAGEMENT GUIDELINE

B. Airway management in the Trauma Resuscitation Bay

8. All patients should have correct positioning of the endotracheal tube verified by at least the 4 means listed:

- A. Direct visualization of the endotracheal tube passing through the vocal cords
- B. Auscultation of bilateral breath sounds
- C. Colorimetric end-tidal carbon dioxide detector (acceptable)/continuous waveform capnography (preferred)
- D. Chest x-ray or CT

9. Endotracheal tube exchange

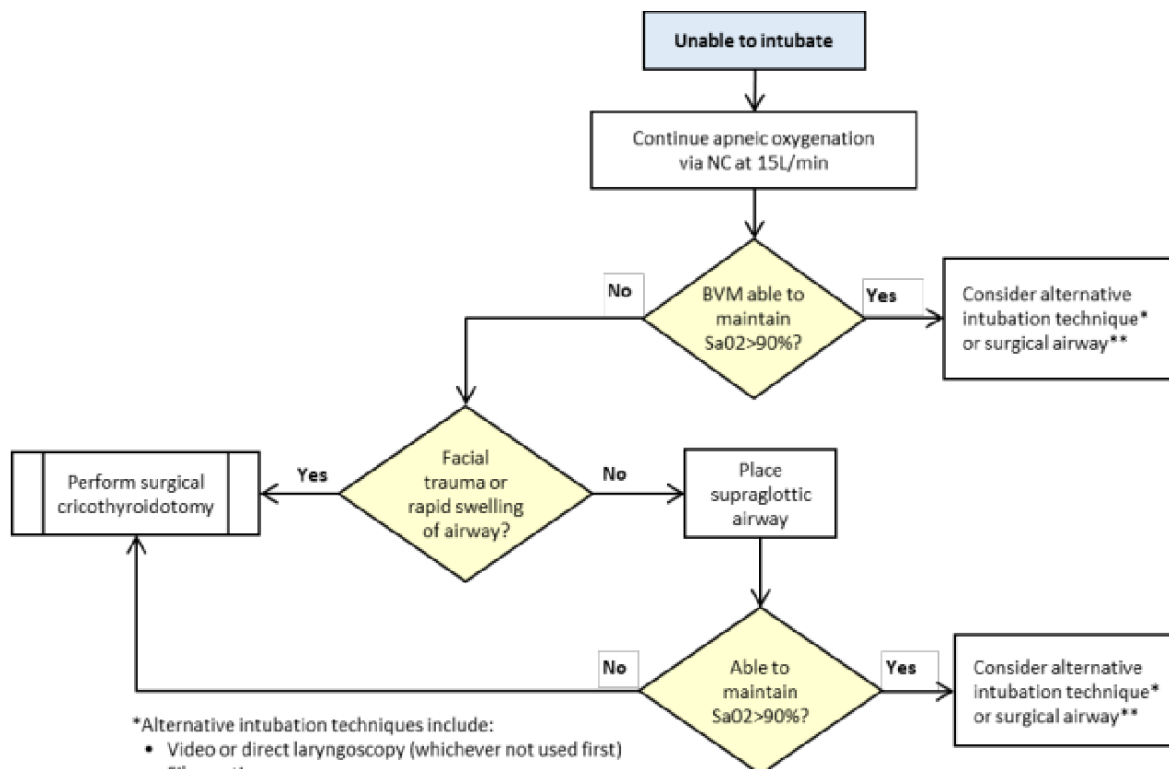
- A. In patients who are intubated and require exchange of the endotracheal tube, management should incorporate an airway exchange catheter and/or fiberoptic bronchoscopy
- B. Presence of a laryngotracheal airway or esophageal obturator airway may indicate a potentially difficult airway and a high risk of aspiration. These are non-definitive airways. These airways should be removed only with an anesthesiologist present as well as the presence of a surgeon capable of a surgical airway.

10. Intubation in patients with Cervical Spine injury

All blunt trauma patients requiring intubation in the trauma bay should be considered to require cervical spine precautions. Patients who are transferred from other hospitals should be considered to require cervical spine precautions unless imaging and work-up from outside hospital has clinically cleared the cervical spine.

2. CLINICAL MANAGEMENT GUIDELINE

B. Airway management in the Trauma Resuscitation Bay



*Alternative intubation techniques include:

- Video or direct laryngoscopy (whichever not used first)
- Fiberoptic scope
- Transtracheal illumination device
- Retrograde wire with Magill forceps
- Changing providers

**Surgical airway includes both tracheostomy and surgical cricothyroidotomy will be performed.