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Area	Trauma Surgical Critical Care
Applicability	Erlanger Health - Baroness

Surgical Critical Care Rapid Sequence Induction & Difficult Airway Practice Management Guideline

A. Process/Procedure Description

To facilitate endotracheal tube placement for definitive airway management utilizing chemical paralysis and sedation. To provide guidance on escalation of care and available resources in surgical/trauma patients with respiratory or neurological deterioration that may require urgent or emergent endotracheal intubation.

B. Background

Background: Definitive airway management is frequently needed in trauma patients. These patients are often unable to protect their own airways due to decreased level of consciousness coupled with copious secretions and/or blood, hypoventilation or apnea, foreign bodies, oropharyngeal trauma or facial trauma. Endotracheal intubation utilizing pharmacological agents such as sedatives and narcotics in addition to chemical paralytics facilitates the ability to establish a definitive airway (endotracheal tube). It is important to remember to have all necessary adjunct equipment/monitors assembled and in proper working order prior to initiation of the procedure.

C. Medications

1. Administer IV sedation/pain medication: Versed, Fentanyl, Ketamine or Propofol.
2. Administer paralytic: Succinylcholine or Rocuronium
3. Tube placement and confirmation
4. Consider initiating/administering a long-term paralytic – Vecuronium Bromide (Norcuron)

    *Always administer sedation before paralytic agent

5. Relative Contraindications to Succinylcholine

a. Hypersensitivity to succinylcholine/pseudo cholinesterase deficiency

b. Personal or family history of malignant hyperthermia or skeletal muscle myopathy

c. Patients in the acute phase of injury with burns or extensive denervation of skeletal muscle or paralysis/spinal cord transections.

d. Known hyperkalemia/Renal Failure (acute and chronic)

e. Penetrating eye injury or acute angle glaucoma

**If patient requires continued paralytic use or a paralytic drip utilize BIS to monitor sedation levels

D. Difficult Airway Scenario

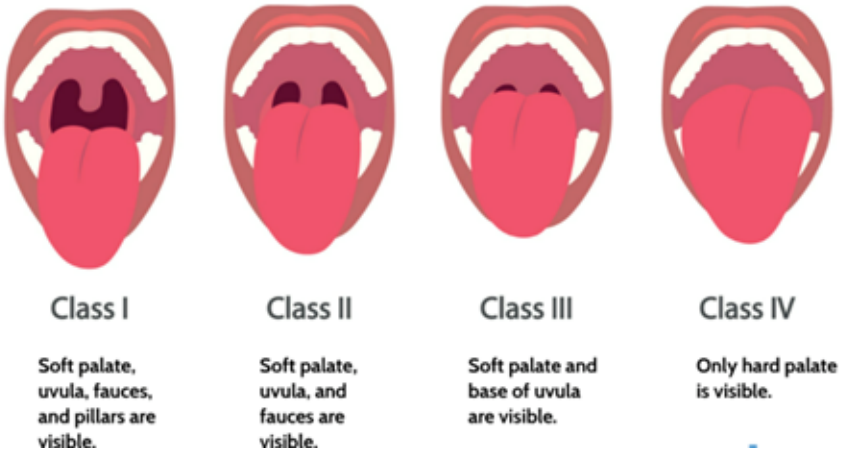
Patients with respiratory or neurologic deterioration may require urgent or emergent endotracheal intubation. Inability to expeditiously and successfully intubate can result in catastrophic neurologic injury or death. Appropriate assessment of airway difficulty at the time of Rapid Sequence Intubation (RSI) is a critical step in this process. The Simplified Airway Index (SARI) is a seven-part standardized methodology that can be used to assess a patient's airway difficulty prior to RSI.

Parameter	0 Points	1 Point	2 Points
1) Mouth Opening	>4 cm	< 4 cm	
2) Thyromental distance	>6.5 cm	6-6.5 cm	<6 cm
3) Mallampati Score	I or II	III	IV
4) Neck Movement	>90°	80-90°	<80°
5) Underbite	Can protrude jaw	Cannot protrude jaw	
6) Body Weight	<90 kg	90-110 kg	>110 kg
7) Previous Intubation Hx	No difficulty	Unknown	Known difficult

1. A score of ≥4 is a predictor of a difficult airway and should prompt having difficult airway resources available.

- Mouth opening is measured with the mouth fully open from the bottom of the top incisors to the top of the bottom incisor known as the incisor gap. This measurement is confounded in edentulous patients.
- Thyromental distance is measured in a straight line from the thyroid notch to the lower border of the mandibular mentum with the head fully extended.
- Mallampati score is performed with the patient ideally sitting in the Fowler position with the mouth open, tongue maximally protruded without speaking or saying "ahh".
- Range of motion is measured by asking the patient to move the from full extension to full flexion. Patients in cervical collars cannot undergo cervical range of motion and should receive 2 points for this category. These individuals will need to have the collar removed an undergo in line stabilization during orotracheal intubation.
- The patient is asked to protrude the lower incisors in front of the upper incisors.

- Weight and prior intubation status are self-explanatory.



These criteria were developed for the assessment of elective surgical patients in preparation for planned general anesthesia and are not necessarily applicable to a deteriorating patient in need of urgent or emergent intubation. However, a quick assessment of mouth opening, thyromental distance, Mallampati score, incisor gap, and weight can be quickly determined for an approximation of airway difficulty while other preparations for intubation are being made.

E. Communcation/Response

1. When a surgery or trauma patient develops neurologic or respiratory deterioration, the patient's nurse will call the surgery resident on duty. In the case of an ICU patient, there is a PGY2 or higher on call 24/7/365 at EMC. If this resident is unavailable, the Surgical Critical Care (SCC) Fellow will be called. If both of these individuals are not available, the SCC attending on duty will be called. Call Schedules for residents, fellows and attendings are posted monthly in each of the three surgical ICU's, available in AMION, and updated monthly to the electronic Shock Trauma Guide resource located on the intra net and accessible by QR code.

2. Trauma and surgery patients located in floor beds experiencing respiratory or neurologic deterioration will have the appropriate resident on duty notified. In an acutely decompensating floor patient, a Rapid Response shall be initiated which activates a team of Critical Care nurses (CCRN) and respiratory therapists to the patient's bedside. The CCRNs on this team also double as the nurses that respond to all the trauma activations. If the patient deteriorating is a trauma patient, then they would contact the trauma chief resident. A board certified Pulmonary Critical Care attending is on duty 24/7 to cover the Rapid Response team.

3. Once the appropriate resident has evaluated the patient, they will contact the trauma/SCC attending on duty. If the patient needs to be intubated, the attending may assist. If the attending is not available, the anesthesia team can be notified at 423-778-5580 24/7 if attending level expertise is necessary.

4. Once the airway difficulty has been determined, the appropriate bedside instrumentation can be obtained in addition to the normal equipment; i.e., a video laryngoscope and bougie. All six trauma/SCC are experienced in the management of most difficult airways. However, if they are uncomfortable with a particular situation, they can consult anesthesia at 423-778-5580. Depending on the acuity of the situation, the anesthesia team could come to the bedside or the patient could be taken to the

operating room. Awake fiberoptic bronchoscopy can be performed and the patient can be prepared for an awake or emergent tracheostomy or cricothyroidotomy. If any particular intubation scenario deteriorates at the bedside and the patient cannot be intubated, all PGY2 or higher are trained and capable of performing an emergent cricothyroidotomy. An EPIC flag is placed in patient charts when a difficult airway is determined - this flag will carry over to each subsequent EPIC encounter.

Approval Signatures

Step Description	Approver	Date
VP Approval	Jessica Holladay: VP & ACNO Surg & Trauma Svcs	04/2025
Trauma Services Committee Approval	Stephanie Spain: Trauma Prgm Mgr Adult	04/2025
	Stephanie Spain: Trauma Prgm Mgr Adult	04/2025

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