

Joint Theater Trauma System Clinical Practice Guideline

TRAUMA AIRWAY MANAGEMENT

Original Release/Approval	18 Dec 2004	Note: This CPG requires an annual review.	
Reviewed:	May 2012	Approved:	11 Jun 2012
Supersedes:	Trauma Airway Management, 30 Jun 2012		
<input type="checkbox"/> Minor Changes (or)	<input checked="" type="checkbox"/> <i>Changes are substantial and require a thorough reading of this CPG (or)</i>		
<input type="checkbox"/> Significant Changes	New medications added; PI monitoring plan added		

1. **Goal.** To establish guidance for management of trauma airway emergencies by personnel assigned or attached to CENTCOM medical facilities who are involved in the management of patients.
2. **Background.** Airway management is often the first step in the resuscitation of the severely injured trauma patient. Recognition of difficult airways, knowledge of airway management algorithms and rescue devices will allow for a pre-planned strategy for first pass success.
3. **Performance Improvement (PI) Monitoring.**
 - a. Intent (Expected Outcomes).
 - 1) All unconscious and/or apneic patients will have a definitive airway established expeditiously upon arrival to a theater MTF
 - b. Performance/Adherence Measures.
 - 1) All unconscious and/or apneic patients had a definitive airway established expeditiously upon arrival to a theater MTF
 - c. Data Source.
 - 1) Patient Record
 - 2) Joint Theater Trauma Registry (JTTR)
 - d. System Reporting & Frequency.

The above constitutes the minimum criteria for PI monitoring of this CPG. System reporting will be performed annually; additional PI monitoring and system reporting may be performed as needed.

The system review and data analysis will be performed by the Joint Theater Trauma System (JTTS) Director, JTTS Program Manager, and the Joint Trauma System (JTS) Performance Improvement Branch.
4. **Responsibility.** It is the trauma team leader's responsibility to ensure familiarity, appropriate compliance and PI monitoring at the local level with this CPG.
 - a. All Health Care Providers will:
 - 1) be familiar with the guidelines for performance of trauma airway management.
 - 2) be familiar with the guidelines for performance of rapid sequence intubation.
 - 3) be familiar with alternative airway devices mentioned in guidelines for trauma airway management.

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June 2012

Joint Theater Trauma System Clinical Practice Guideline

- 4) provide feedback and suggested CPG changes to the JTTS Director and / or Program Manager.
- b. The Chief, Emergency/Anesthesia/Surgery at each Level III facility will coordinate with the Joint Theater Trauma System Director on the appropriateness of the guidelines being used and provide input for updates on an as needed basis.
- c. The Joint Theater Trauma System Director will:
 - 1) be the subject matter expert on the trauma airway management CPG to be used in the CENTCOM AOR.
 - 2) update the CPG on an as-needed basis and review annually.

5. References.

- ¹ Levitan R, Wayne P. *Guide to Intubation and Practical Emergency Airway Management*. Pennsylvania: Airway Cam Technologies, Inc.; 2004.

Approved by CENTCOM JTTS Director,
JTS Director and CENTCOM SG

Opinions, interpretations, conclusions, and recommendations are those of the authors
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June 2012

Joint Theater Trauma System Clinical Practice Guideline

APPENDIX A

TRAUMA AIRWAY MANAGEMENT	
AIRWAY ASSESSMENT	
<ul style="list-style-type: none"> • Evaluate patient for indicators of potentially difficult direct laryngoscopy and/or mask ventilation • Consider an “awake” intubation technique (e.g.; blind nasal) or maintenance of spontaneous breathing during intubation if difficulty anticipated • Recall that the neutral position (“C-spine stabilization”) degrades the laryngoscopic view • Remember that not all patients require medication administration in order to facilitate intubation 	
RAPID SEQUENCE INDUCTION (RSI) AND INTUBATION PATHWAY	
<p>1. Confirm equipment availability and function</p> <ul style="list-style-type: none"> • IV, suction, self-inflating bag and mask, laryngoscope, ETT with stylet, oral & nasal airways, drugs, CO₂ detector, monitors backup plan equipment <p>2. Pre-Oxygenate (Denitrogenate) the lungs</p> <ul style="list-style-type: none"> • Prolongs tolerance of apneic period • ≈ 3 minutes of tidal volume breathing best <ul style="list-style-type: none"> ○ Good mask seal is imperative • Order of efficacy: Jackson-Reese > resuscitation bag > non-rebreather mask <p>3. Maintain cervical spine stabilization</p> <p>4. Remove front of cervical collar</p> <p>5. Apply cricoid pressure simultaneous w/ meds</p> <ul style="list-style-type: none"> • Maintain cricoid pressure until intubation is confirmed <p>6. Administer medications</p> <ul style="list-style-type: none"> • True RSI requires <i>simultaneous administration</i> of sedative and paralytic <p style="text-align: center;"><u>Sedative/hypnotic</u></p> <p>Etomidate (First Line)</p> <ul style="list-style-type: none"> • 0.3 - 0.4 mg/kg IV (“stable” patient) • - 0.2 mg/kg IV (“unstable” patient) <p>Ketamine 1-2 mg/kg IV</p> <p>Propofol 1-2 mg/kg (“stable patient’)</p> <p style="padding-left: 40px;">0.5 mg/kg or less (“unstable patient”)</p>	<p style="text-align: center;"><u>Paralytic</u></p> <p>Succinylcholine – 1.5 mg/kg IV or</p> <p>Rocuronium – 1.2 mg/kg (Will cause prolonged paralysis)</p> <p>7. Perform skillful laryngoscopy following fasciculations seen with succinylcholine or 45-60 seconds after administration of rocuronium.</p> <p>8. If laryngoscopic view is poor:</p> <ul style="list-style-type: none"> • Apply Backward, Upward, & Rightward laryngeal Pressure (“BURP” maneuver) • Consider use of Eshmann stylet <p>9. Confirm tracheal intubation</p> <ul style="list-style-type: none"> • Easy chest rise, lack of gastric insufflation, equal axillary breath sounds, & “fog” in ETT • Consistent, exhaled CO₂ (Mandatory) • Esophageal detector bulb or fiberoptic confirmation during cardiac arrest
Recommendations for Head Trauma Patients	
<ul style="list-style-type: none"> • Provide mild hyperventilation/hypocapnia prior to medication administration • Consider administration of a defasciculating dose of non-depolarizing paralytic: <ul style="list-style-type: none"> ○ Vecuronium 0.01 mg/kg • Administer medications that may blunt the response to laryngoscopy 1 – 3 minutes prior to induction <ul style="list-style-type: none"> ○ Lidocaine 1.5 mg/kg IV ○ Fentanyl up to 3 mcg/kg IV • Aggressively avoid hypotension and/or hypoxemia in head trauma patients 	

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June 2012

Joint Theater Trauma System Clinical Practice Guideline

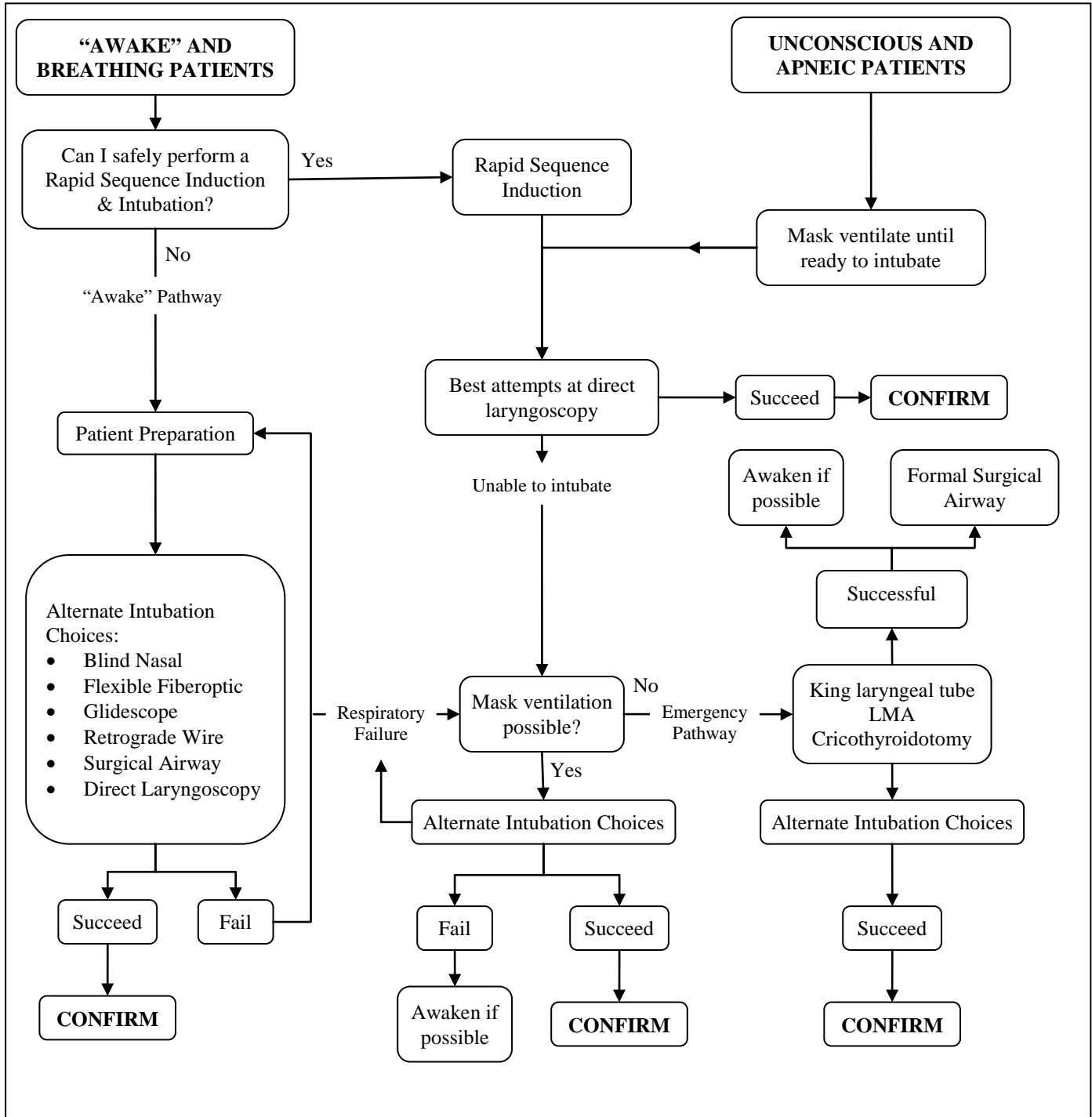
TRAUMA AIRWAY MANAGEMENT		
UNABLE TO INTUBATE ... CAN YOU MASK VENTILATE?		
<p>Mask Ventilation Pearls</p> <ul style="list-style-type: none"> • Skilled operator • Good seal • Jaw thrust • Oral airway • Nasal airway(s) • <i>Two person mask ventilation</i> 	<p>YES</p>	<ul style="list-style-type: none"> • Improve position, change blade/operator, “BURP” maneuver, Eshmann stylet • Attempt alternate technique: Fiberoptic, Intubating LMA, Glidescope or video laryngoscope • Consider waking patient up (resumption of spontaneous breathing) • <i>More than ≈ 3 attempts at intubation may abolish your ability to mask ventilate due to edema caused by laryngoscopy</i>
	<p>NO</p>	<ul style="list-style-type: none"> • Emergency pathway...seconds matter. • Attempt laryngeal mask airway (LMA), surgical or percutaneous cricothyroidotomy, or King Laryngeal tube. • <i>Do not delay surgical airway</i> if alternate methods are problematic

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June 2012

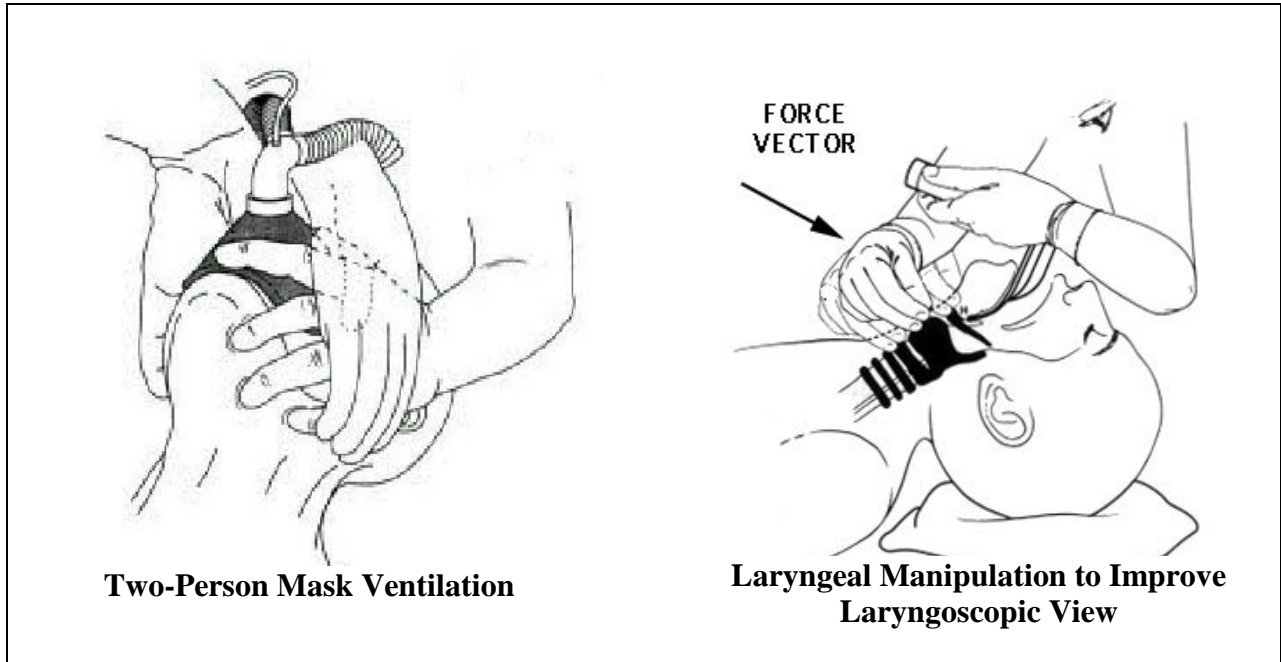
Joint Theater Trauma System Clinical Practice Guideline

APPENDIX B



Guideline Only/Not a Substitute for Clinical Judgment

June 2012



APPENDIX C

ADDITIONAL INFORMATION REGARDING OFF-LABEL USES IN CPGs

- 1. Purpose.** The purpose of this Appendix is to ensure an understanding of DoD policy and practice regarding inclusion in CPGs of “off-label” uses of U.S. Food and Drug Administration (FDA)–approved products. This applies to off-label uses with patients who are armed forces members.
- 2. Background.** Unapproved (i.e., “off-label”) uses of FDA-approved products are extremely common in American medicine and are usually not subject to any special regulations. However, under Federal law, in some circumstances, unapproved uses of approved drugs are subject to FDA regulations governing “investigational new drugs.” These circumstances include such uses as part of clinical trials, and in the military context, command required, unapproved uses. Some command requested unapproved uses may also be subject to special regulations.
- 3. Additional Information Regarding Off-Label Uses in CPGs.** The inclusion in CPGs of off-label uses is not a clinical trial, nor is it a command request or requirement. Further, it does not imply that the Military Health System requires that use by DoD health care practitioners or considers it to be the “standard of care.” Rather, the inclusion in CPGs of off-label uses is to inform the clinical judgment of the responsible health care practitioner by providing information regarding potential risks and benefits of treatment alternatives. The decision is for the clinical judgment of the responsible health care practitioner within the practitioner-patient relationship.
- 4. Additional Procedures.**
 - a. **Balanced Discussion.** Consistent with this purpose, CPG discussions of off-label uses specifically state that they are uses not approved by the FDA. Further, such discussions are balanced in the presentation of appropriate clinical study data, including any such data that suggest caution in the use of the product and specifically including any FDA-issued warnings.
 - b. **Quality Assurance Monitoring.** With respect to such off-label uses, DoD procedure is to maintain a regular system of quality assurance monitoring of outcomes and known potential adverse events. For this reason, the importance of accurate clinical records is underscored.
 - c. **Information to Patients.** Good clinical practice includes the provision of appropriate information to patients. Each CPG discussing an unusual off-label use will address the issue of information to patients. When practicable, consideration will be given to including in an appendix an appropriate information sheet for distribution to patients, whether before or after use of the product. Information to patients should address in plain language: a) that the use is not approved by the FDA; b) the reasons why a DoD health care practitioner would decide to use the product for this purpose; and c) the potential risks associated with such use.