Major Trauma Resuscitation- Blunt

ORIGINATION DATE: 02/01/2000

LAST UPDATED: 10/08/2026

PURPOSE: To delineate guidelines for the initial assessment and management of the polytrauma patient. In addition to these guidelines, unique clinical situations should be considered as final decisions regarding management are made.

EQUIPMENT: N/A

TIPS AND PITFALLS:

PRE-ARRIVAL

- Pre-arrival should be brief and not an exhaustive review of all contingencies
- Pre-arrival shock should prompt a discussion delineating resuscitation priorities and disposition Patients arriving in extremis require only a very brief MIST from EMS
- Avoid anchoring on presumed, pre-arrival diagnoses.

AIRWAY

- Patients should receive an appropriate resuscitation before intubation
- Patients with severely depressed GCS and no gag reflex may be candidates for intubation w/o induction/paralysis
- Significant 'C' problems may present as a perceived 'A' problem. Intubation in these situations is dangerous.

BREATHING

- A finger thoracostomy will temporize tension pneumothorax. Subsequent chest tube placement can be delayed until further cavitary triage has occurred.

CIRCULATION

- Two failed attempts at an automatic BP in a setting consistent with hemorrhagic shock should prompt rapid evaluation for cavitary hemorrhage.
  - Further attempts at automatic or manual BP delay care.
- Hemodynamic abnormalities should prompt rapid cavitary triage - CXR, PXR, FAST, and foley placement.

DISABILITY

- Patients with suspected TBI should proceed quickly to CT scan (once Airway, Breathing, and Circulation issues have been addressed.)
  - Further delays for secondary survey may result in worse outcomes
- Central cord syndrome can present in the elderly with *very* subtle findings.

EXPOSURE/ENVIRONMENT

- Once patients have been exposed and examined, they should be covered with warm blankets.

PROCEDURE

A. **Airway**

1. A patent airway must be assured in each trauma patient. A rapid assessment of signs of airway obstruction should include inspection for foreign bodies, facial, mandibular, or tracheal/laryngeal fractures.
    a. This **includes** removing the anterior cervical collar for inspection of the neck.
2. In patients requiring airway protection, the preferred method of securing a definitive airway is through orotracheal intubation.
3. Inability to intubate the trachea **mandates** creating a surgical airway
4. Refer to Airway Management Protocol for specifics. See below Attachment A: Trauma Airway Management
5. Surgical cricothyroidotomy is the surgical airway of choice for all adult patients, with a small #5 – 7 endotracheal tube or tracheostomy tube being inserted.

B. **Breathing**

1. Assess ventilation by auscultation of bilateral lung fields.
2. Treatment of presumed tension pneumothorax should be per ATLS guidelines.
    a. Needle decompression in the midclavicular line, 2nd intercostal space or in the lateral chest wall in the 5th intercostal space, followed by chest tube placement -or-
    b. Finger thoracostomy followed by chest tube placement when deemed appropriate (bay, OR, or ICU).
3. Portable AP chest x-ray should be obtained as an adjunct to the primary survey.

C. **Circulation**

1. Assess circulation by palpating peripheral pulses.
2. Insert or ensure two large bore (18g or greater) peripheral IV lines, as directed by Team Captain. The upper extremities are the preferred location.
    a. If peripheral IV access is not rapidly achieved, notify Team Captain and place Intraosseous (IO) device if directed*
3. Utilize intraosseous devices (sternal, humeral, or tibial as appropriate) as second choices.
    a. Avoid left humeral IO If high probability of performing a resuscitative thoracotomy,
4. An introducer or other rapid infusing central line (femoral or subclavian) may be placed if indicated. However, if inadequate access exists, **placement of a central line should not delay transfer** to the operating room in a hemodynamically unstable patient.
5. Fluid resuscitation to follow ATLS guidelines. (**See internal Froedtert policy, FMLH Trauma Program Clinical Massive Transfusion Protocol (MTP) policy** and Trauma Guideline, **Trauma Resuscitation and Whole Blood Guideline**)
    a. Patients with Shock Index (HR/SBP) > 1 and either penetrating trauma, positive FAST, or pelvic fracture should be considered or early initiation of MTP
6. All infused fluids should be warmed to body temperature when possible.
7. The rapid infuser/fluid warmer is available for all trauma activations and used at the direction of the Trauma Captain or faculty.
8. If the Massive Transfusion Protocol (MTP) is ordered the ED Tech or RN will contact the blood bank. Initial blood products will be obtained from the Trauma Blood Refrigerator.
9. All BLUNT TRAUMA ALERTS get a chest x-ray / pelvic x-ray / eFAST
    a. Hypotensive, blunt, injured patients should have the following to assess for cavitary hemorrhage:
    - Foley catheter
    - Lower extremity films if indicated
10. Obtain blood specimens with priority given to blood typing. Trauma Captain will determine needed laboratory tests based on clinical situation and communicate to nursing for processing.
11. Any pulseless extremity should undergo immediate reduction, if applicable.
12. Uncontrolled, compressible hemorrhage should be treated with tourniquet or packing, as appropriate.

D. Disability (Neurological Exam)

1. Perform a rapid neurologic evaluation. This includes establishing a patient's level of consciousness, pupillary size and reaction, and a sensory/motor exam.
    a. A Glasgow Coma Score should be repeatable, worsening scores are concerning for evolving traumatic brain injury that may require rapid intervention and should prompt expedited CT head.
2. A decreased level of consciousness may indicate decreased cerebral oxygenation and/or perfusion. An altered level of consciousness mandates immediate re-evaluation of the patient's oxygenation, ventilation, and perfusion status.
    a. Exclusion of hypoxemia and hypovolemia as etiology for decreased level of consciousness indicates central nervous system injury until proven otherwise.

E. Exposure

1. The patient should be completely undressed to facilitate a thorough examination.
2. The patient is then examined for injury from head to toe and front to back while maintaining spinal precautions.
3. After thorough examination, the patient should be covered and warmed to prevent hypothermia.
4. Obtain and document a baseline temperature.
5. Patient warming methods should be continued when the patient is in a Radiology Suite.
6. When the patient is taken to the OR or ICU, the esophageal warming device can be used for warming.
7. **See below Attachment B: Warming Guideline**

F. Secondary Survey (Commence after primary survey is completed)

1. Secondary survey is initiated following airway, breathing and circulation reassessment. Diagnostic procedures should be performed **in conjunction** with physical examination.
    a. i.e., the secondary can be performed during the FAST or x-rays and reported following cavitary triage, when appropriate.
2. Conduct a complete head to toe examination.
3. When able, obtain detailed history of the incident as well as prehospital care. The AMPLE format should be used. If appropriate, a family history and social history should also be obtained.
4. Conduct adjunctive radiographs and other tests as indicated (nonlife-threatening x-rays of suspected fractures – e.g., hand).
5. Perform bladder decompression.
6. If indicated, insert a gastric tube (oral or nasal).
7. Notify consultants in a timely fashion. All consults should be facilitated through the ED HUC's.
    a. Consults requiring Emergent Response will respond within 30 minutes of consult.
8. Documentation of resuscitation assessments, events, and procedures (including timing) should be reflected in the medical record.
9. Certain situations (ex. suspicion for isolated or severe TBI) may prompt the treating team to obtain axial imaging prior to the secondary exam. This will be at the discretion of the Trauma and EM faculty.

G. Disposition

1. If indicated, the bed request should be made promptly for the SICU. The goal is to expedite the transfer to the SICU. Non-urgent procedures and consults and can be done in the SICU after the patient is admitted.
2. Handoffs to OR, utilize ED to OR MIST Report (See below, **Attachment C: ED to OR MIST Report**)
3. Antibiotics- dosing pre-operatively, intraoperatively in patients with MTP after major hemorrhage controlled and a dose at the end of the case

APPROVAL:

Author: David Milia
Reviewer: David Milia, Trauma Medical Director
Approval: Trauma Quality and Operations Committee

REFERENCES

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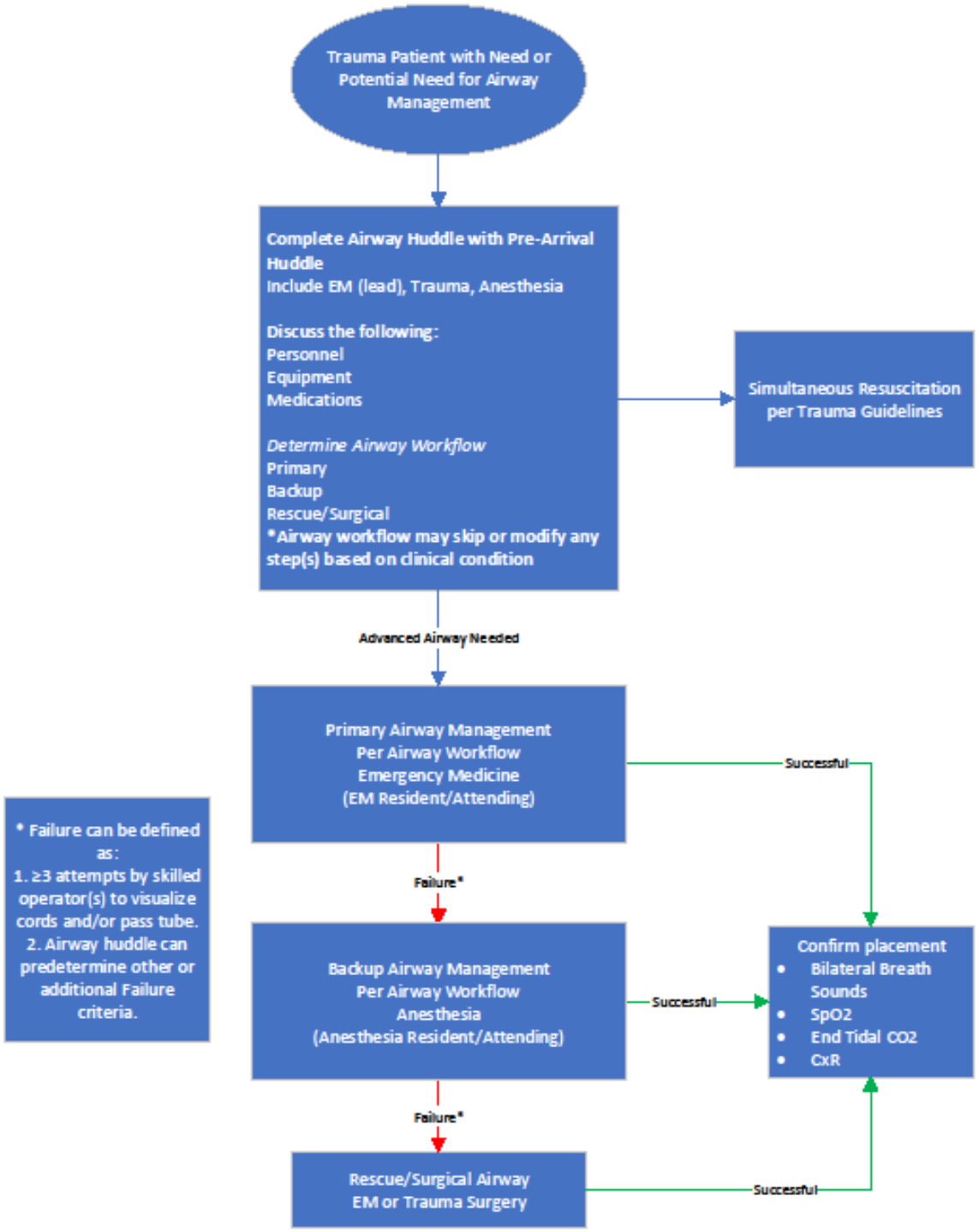
ATTACHMENT A: TRAUMA AIRWAY MANAGEMENT ALGORITHM

Management of Emergency Airways in Patients with Traumatic Injuries
Origination Date: 5/11/2011
Last Updated: 2/2/2026



This document is intended to be a general guideline for the care of most trauma patients. Clinician may appropriately vary from the guideline to meet the individual needs of the patient.

Awake Intubation

Awake Intubation

1. Apply oxygen 3 L by nasal cannula OR 8 L by face mask
2. Dry secretions (ideally 15 minutes prior to procedure)
    a. Glycopyrrolate 0.2 mg IV (preferred) o Atropine 0.01 mg/kg IV
    b. Suction then apply gauze pad to tongue to remove saliva/oral secretions prior to topicalization
3. Topical anesthesia, (start 5-10 minutes prior to intubation attempt)
    a. Lidocaine 4% solution 5ml in HHN or by facemask @ 5L/min ***AND***
    b. Lidocaine 2% atomize 1-2ml to base of tongue and oropharynx q 1 min pm **OR**
    c Apply 4-5ml of viscous Lidocaine 2% onto tongue depressor and apply to base of tongue

4L Sedation:

a. Titrate Ketamine 5-10 mg IV q 2 min prn (max 1mg/kg) b. Midazolam 1-2 mg IV

5. . Intubation: Have full RSI medications at bedside. Following adequate visualization of cords or laryngeal structures, consider:
    a. Direct passage of ET tube
    b. Passage of gum elastic bougie followed by ET tube
    c. Passage of video or fiber optic intubating bronchoscopy followed by ET tube
6. Confirm placement and begin post-intubation sedation

ATTACHMENT B: WARMING GUIDELINE

WARMING GUIDELINE- EnsoETM and BLANKETROL II/III

PRECAUTIONS:

The EnsoETM should be used with caution in patients with known esophageal deformity, evidence of esophageal trauma and in patients known to have ingested acidic or caustic poisons within the prior 24 hours. The EnsoETM has not been evaluated in patients weighing less than 40 kg.

EQUIPMENT NEEDED:

The EnsoETM, water soluble lubricant, waterproof tape or securement device, circumferential bite block and Cincinnati Sub-Zero Blanketrol II or III Conductive Hyper/Hypothermia System.

PROCEDURE:

Insert EnsoETM:

- Obtain measurement for placement by extending the EnsoETM from the patient's lips to the earlobe and then from the earlobe to the tip of the xiphoid process. Mark the location on the EnsoETM.
- Turn the Cincinnati Sub-Zero Blanketrol II or III on; place the temperature probe (Foley or rectal) and connect to the device. Connect the EnsoETM to the Blanketrol II or III in place of a blanket or pad. Set the target
  patient temperature to the desired setpoint and press "Auto Control" to initiate water flow. Inspect the EnsoETM for leaks prior to placement.
- Lubricate the EnsoETM generously with water soluble lubricant prior to insertion. Do not use petroleum- based products.
- Insert the EnsoETM using gentle pressure posteriorly and downwards through the mouth, past the oropharynx and into the esophagus. Gently assist the passage of the EnsoETM with light pressure until the required length of the tube has been inserted. Do not use force during insertion of the EnsoETM. If resistance is encountered during insertion of the EnsoETM, immediately stop the procedure.
- Secure the EnsoETM with a securement device or waterproof tape as per unit protocol. Ensure the EnsoETM and tubing connections are not in contact with the patient's skin.
- Periodically reposition the EnsoETM in accordance with hospital protocol. Prolonged excessive pressure may cause dermal injury, tissue ischemia, or necrosis.
- Confirm placement of the EnsoETM via X-ray, auscultation or aspiration as per Institutional policy.
- Connect the central lumen to low intermittent suction. Always use the lowest suction setting that will effectively decompress the stomach.

DOCUMENTATION:

Monitor Blanketrol II or III water temperature and patient's core temperature as per unit protocol. Temperature must be confirmed with a secondary source to ensure accuracy. Assess for signs of shivering. If present, institute prescribed interventions and ensure EnsoETM is not contacting patient's skin.

TROUBLESHOOTING:

- If an occlusion alert occurs on the external heat exchanger, look for kinks or pinched tubes in the system. If the cause of the obstruction of water flow cannot be found, treatment should be stopped and the EnsoETM removed and examined for failure.
- If excessive accumulation of liquid in the suction collection system for the gastric tube is observed, treatment should be stopped and the EnsoETM should be removed and examined for presence of leaks
- If the central lumen of the EnsoETM becomes blocked or clogged, standard approaches for clearing blocked gastric tubes are recommended. If standard approaches are unsuccessful, it may be necessary to remove and then replace the EnsoETM.
- A discrepancy greater than 0.5°C between temperature sources warrants discontinuation of treatment and investigation of the cause of the discrepancy.

DISCONTINUATION:

Press "Monitor Only" to stop the external heat exchanger and withdraw the device. Disconnect the EnsoETM from the tube set connections and dispose as per institutional policy.

Turn off the Blanketrol II or III.

ADDITIONAL SUGGESTED INSTRUCTIONS FOR PROTOCOL

- The EnsoETM should only be used by healthcare professionals with training in the use of orogastric tubes and the use of the Cincinnati Sub-Zero Blanketrol II or III Conductive Hyper/Hypothermia System.
- The EnsoETM is intended for esophageal placement
- The EnsoETM is single use only and has an intended duration of use of 72 hours or less.
- The presence of the EnsoETM may interfere with other devices in the esophagus or mouth.
- Large patients with a body mass greater than 120kg may exhibit slower responses to intended temperature changes. Small patients with a body mass less than 60kg may exhibit faster cooing than anticipated and may exhibit slower rewarming than anticipated. Environmental conditions, such as the temperature of the room, may also affect patient temperature. Removing or adding blankets or sheets may be necessary if the desired cooling or warming rate is not being achieved.
- Avoid pinching or kinking the EnsoETM and the connecting hoses during placement or use, because this may cause the flow of coolant to become occluded.
- The external heat exchanger must be in proper operating condition and must have received all the required maintenance.
- Follow the Instructions for Use for the external heat exchanger for all device operations, including connections to electric wall power, patient probes, and tube set connections.
- Monitor circulating coolant temperature and ensure that it does not fall below 4°C or exceed 42°C.

References:

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ATTACHMENT C: ED to OR Handoff MIST Report

ED to OR Handoff

- Reduce noise so entire team can hear trauma surgeon report.
- Surgeon report will guide next steps and determine criticalness of patient

M-	Mechanism of Injury	• Mechanism, blood loss • Criticality of situation
I-	Injuries	• Preliminary diagnosis, extent of injury
S-	Signs/ Stability	• Hemodynamic stability • Verge of coding • Drape or no drape
T-	Treatment(s)	• Procedure(s) planned and priority • Induction plan (timing) • IV access adequate? • MTP activated? Is blood enroute? • ABX given?