

Vanderbilt University Medical Center

Division of Trauma and Surgical Critical Care

Clinical Management Guideline: Standard Trauma Resuscitation

**Introduction**

Good communication and leadership are the keys to a well organized and efficient trauma resuscitation. It is incumbent upon the trauma team leader to lead and communicate effectively before and during the resuscitation.

**Noise Discipline**

Individual conversations should be kept at a minimum; one voice should be heard by the entire trauma team. All information should be directed by the trauma team leader.

**Pre-Brief**

Prior to the patient arriving a pre-brief is to be performed; this may be initiated by any of the team members but should be led by the trauma team leader. The pre-brief consists of introduction of the team members (name, role, discipline) and concludes with a summary of available patient information and plan of care by the trauma team leader.

**Personal Protective Equipment (PPE)**

Individuals working inside the gray tiled box on the floor of the trauma bay and/or with direct patient contact must observe Universal Precautions and wear PPE. This consists of:

- Gown
- Head Cover
- Mask/Eye Shield
- Shoe Covers
- Gloves
- Lead Apron-available/optional

**Sterile Procedures**

Sterile gowns, gloves and drapes should be used during all sterile procedures such as chest tube insertion, central line placement and thoracotomy.

**Trauma Resuscitation Team/Personnel**

- Trauma Team Leader – Trauma Senior/PGY 4 or Trauma Fellow
- Trauma Attending
- Emergency Medicine Attending
- Primary MD-Emergency Medicine Resident
- Secondary MD-Surgery/EM Junior
- Respiratory Therapist
- Primary RN
- Secondary RN/EMT-P
- Scribe
- Patient Care Tech (PCT)

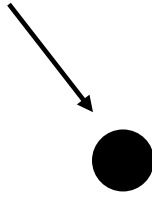
### **Ancillary Personnel**

Ancillary personnel are involved in the resuscitation with limited or no direct patient contact.

- Radiology Technician-takes and develops plain films as directed by the trauma team leader (must wear PPE)
- Medical Student-tasks as assigned by the by the trauma team leader (must wear PPE)
- Service Center Personnel-room prep and equipment management as directed
- Social Worker-gathers information; assists with patient and family needs
- ED Registrar-gathers demographic information
- Environmental Services-room prep and clean up

**Respiratory Tech**

- Assists with Airway Mgt
- Accompanies Patient



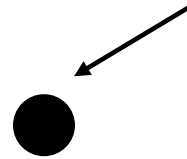
**Primary EM Resident**

- Performs Airway Mgt
- Controls C-spine



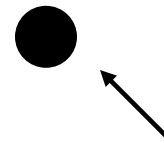
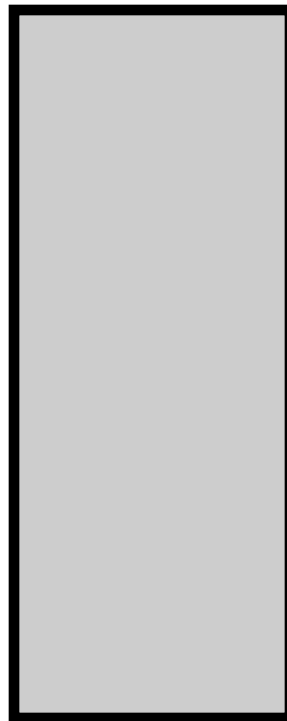
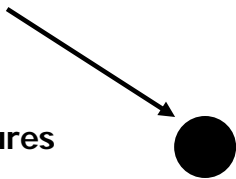
**EM Attending**

- Supervises Airway Mgt



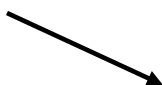
**Primary RN**

- Room Prep
- Connect Monitors
- Assist with Procedures



**Trauma Junior**

- Performs Secondary Exam
- Performs Procedures



**Secondary RN or EMT-P**

- Obtain Manual BP
- Assist with Procedures

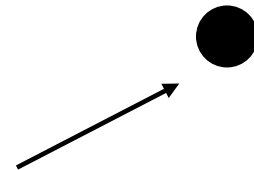


**Trauma Senior/PGY4 or Trauma Fellow**

**Trauma Team Leader**

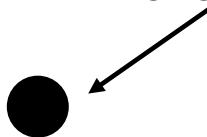
**Trauma Attending**

- Assists/Oversees Resuscitation



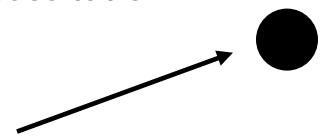
**PCT**

- Room Prep
- Labs/Belongings



**Scribe**

- Records/Documents Resuscitation



## **Trauma Resuscitation Team Personnel: Detailed Description of Responsibilities**

**Trauma Team-Leader**-the senior (PGY-4) Surgical Resident serves as the trauma team leader and directs the overall resuscitation. The TTL initiates the resuscitation and assumes responsibility for life saving procedures such as assisting with procedures including surgical airway, emergent chest tube placement, and ED thoracotomy. The TTL is responsible for the majority of communication during the resuscitation.

**Trauma Attending or Fellow**-the Trauma Attending or Fellow assumes the overall responsibility for the resuscitation and for supervising the Trauma Team Leader. If the Trauma Attending or Fellow is not present, the ED Attending will assume this role and responsibility. The Trauma Attending/Fellow is the designated trauma triage officer responsible for directing flow of patients to the OR, CT and ICU. It is imperative that the Trauma Attending/Fellow be in close communication with the Trauma Unit Charge Nurse for bed allocation and availability.

**Primary EM Resident**- an Emergency Medicine Resident will perform the primary survey and also complete the neurological/HEENT part of the secondary survey. The EM Resident will perform airway procedures and will be supervised by the EM Attending. The EM resident may also be tasked with insertion of a gastric tube and controlling bleeding from head/scalp lacerations.

**ED Attending**- is responsible for the airway and supervising the Primary EM Resident. In the absence of the Trauma Attending/Fellow the ED Attending will have overall responsibility for supervising the TTL and the resuscitation as a whole. The EDA is also responsible for all ED staffing, equipment and triage into the ED. The EDA may also assume the role of TTL during the resuscitation of multiple patients.

**Trauma Junior**-a Surgery or Emergency Medicine R2 that performs the secondary survey with the exception of the airway/HEENT portion. This individual performs the rectal exam and other procedures as directed by the TTL.

**Respiratory Therapist**-responsible for placing patient on high flow oxygen via mask/or ventilating the patient via ambu bag as directed by the Primary EM resident. The RT will accompany the patient to the Trauma Unit and/or CT scan.

**Primary Nurse**-this role is filled by a RN who places monitoring devices (ECG, SaO<sub>2</sub>, NIPBP) on the patient after the move from the EMS stretcher. The PN will also assure that there is a functioning IV in place and if not initiate one; the PN may be tasked with blood draw, administering drugs, log rolling the patient and packaging the patient for transport. The PN is also responsible for room stocking.

**Secondary Nurse or Paramedic** – The SN or PM will obtain the first manual blood pressure from the left arm and call it out for the TTL and team to hear.

This person has the responsibility for coordinating transport outside the trauma bay; at times the secondary person may be accompanied by other ED staff.

**Scribe Nurse (Scribe)** The scribe nurse is primarily responsible for keeping a written record of the resuscitation (the trauma flow sheet) and for coordinating the retrieval of equipment and items requested by the trauma team. (blood products, drugs, etc.) The scribe also initiates videotaping, acts as a conduit for information to the Trauma Unit, OR and assists in crowd control.

**Patient Care Technician/PCT** - The PCT's primary responsibilities are to ensure that blood is sent for appropriate tests, placing patient on secondary monitor, sorting and performing an inventory of belongings, assisting with transportation and equipment set up.

### **Ancillary Personnel**

**Radiology Technicians (RT)** - The RT should be present at all trauma resuscitations and be prepared to perform the standard chest x-ray and pelvis xray as directed by the Trauma Team Leader.

**ED Social Worker**-the ED Social Worker assists as directed by the TTL, Trauma/ED Attending.

**Trauma Nurse Practitioner(TNP)**- The TNP will be available to assist with trauma resuscitations at night and occasionally during the day depending on the acuity and volume of the TNP service.

**Medical Student (MS)**- The role of the MS is commensurate with their abilities as determined by the trauma service. The MS will be assigned tasks by either the TTL.

**Service Center Personnel** -one staff member should remain in the bay to bring additional supplies needed for the resuscitation.

**ED Registration Personnel**- one ED registration person may be present in the bay to gain demographic information. At no time should the gathering of said information interrupt any part of the resuscitation. Registration personnel are not allowed at the patient's bedside during the resuscitation.

### **Trauma Resuscitation: Sequential Management**

- Prior to patient arrival a prebrief shall be done; see prebrief section for more detail
- Upon patient arrival a primary survey is done by the Primary EM Resident (ABCs)
- Patient moved to Trauma Bay Bed/Primary Survey reconfirmed
- Monitors applied/patient exposed/manual BP obtained and reported to TTL
- Warm Blankets applied/portable x-rays initiated/FAST
- Report by air medical/EMS personnel
- Secondary Survey given by EM resident and Trauma Jr
- Log roll performed/spine inspected/posterior surfaces inspected/rectal exam done
- Decide Traumagram versus OR

### **Trauma Resuscitation Pearls**

- The prebrief is an important part of the resuscitation and should be completed shortly before the patient arrival. Generally it is initiated by the TTL but can be initiated by anyone on the team
- Clear, concise communication is paramount. The TTL must lead and direct the team while verbalizing a plan. There must be a shared mental model between all team members at all times. Ambiguity and/or a vacuum in leadership can lead to medical error.
- Upon the patient entering the room neither the TTL nor other members of the team should inhibit the EMS stretcher from coming all the way into the bay ie: no stopping the patient prior to entering for a primary survey by anyone other than the primary EM resident.
- All patients should receive a threat assessment ie: assess for the presence of weapons, contraband or hazardous materials.

- All patients that require decontamination from hazardous/toxic materials must be decontaminated in the ED decon area prior to leaving the department. Most of these materials are gasoline or diesel fuel.
- Beware sharps! If you utilize a sharp instrument or needle for a procedure you own it until it has been deposited in a red sharps container!
- Noise discipline is vital; extraneous noise should be minimized during procedures and critical phases of the resuscitation. This includes but is not limited to side conversation, phone calls, portable radio traffic and talking in general.

#### Specifics for Penetrating Trauma

All ballistic wounds should be marked prior to radiologic intervention with a paperclip. For gunshot wounds to the torso and patients that are not agonal, three films taken one after the other from the chest through the pelvis will allow trajectory determination.

These practice management guidelines (PMG) have been developed by the Division of Trauma, Burn and Surgical Critical Care in an attempt to standardize and optimize care of the trauma patient. They are based on a combination of accepted surgical practice and recent contributions to the medical literature. PMG's are intended to provide guidelines to the management of the majority of patients and are not proposed as rules, policies or as a substitute for good clinical judgment. Deviations from the PMG's are necessary and expected; all exceptions should be documented in the medical record and discussed with the Attending Physician.

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Kevin High, RN and Richard Miller MD

