

# Trauma & Trauma Resuscitation

South Cook County EMS System

# Trauma & Trauma Resuscitation

- Dispatch, pre-arrival & arrival considerations
- Airway & breathing
- Circulation & Shock management
- Putting it all together

# Trauma & Trauma Resuscitation

- Dispatch considerations
  - Dispatch time, location, nature of call

# Trauma & Trauma Resuscitation

- Pre-arrival considerations
  - Responding vehicles/resources, dispatch considerations
  - Anticipation of injuries
  - Extrication possibilities

# Trauma & Trauma Resuscitation

- Arrival considerations
  - patient location
  - number of patients confirmed
  - transport considerations
    - load & go, stay & play
    - air vs. ground
    - emergent vs. non-emergent
    - destination decision (level one trauma center vs. level two)

# Airway considerations

- Airway assessment
  - patent?
    - is breathing quiet or loud?
  - obstructed?
  - ventilation considerations
    - does patient need BLS intervention or is more ALS intervention required?

# Airway considerations (cont'd)

- ventilation considerations cont'd.
  - are lung sounds present?
  - are lung sounds equal or unequal?
  - do you need to take over breathing for the patient?
  - does MOI or physical chest assessment key you in to any respiratory issues (tension pneumo for example)

# Airway considerations cont'd.

- is c-spine immobilization required?
- Key reminder!!!
  - ALWAYS ALWAYS ALWAYS! BLS *BEFORE* ALS interventions!

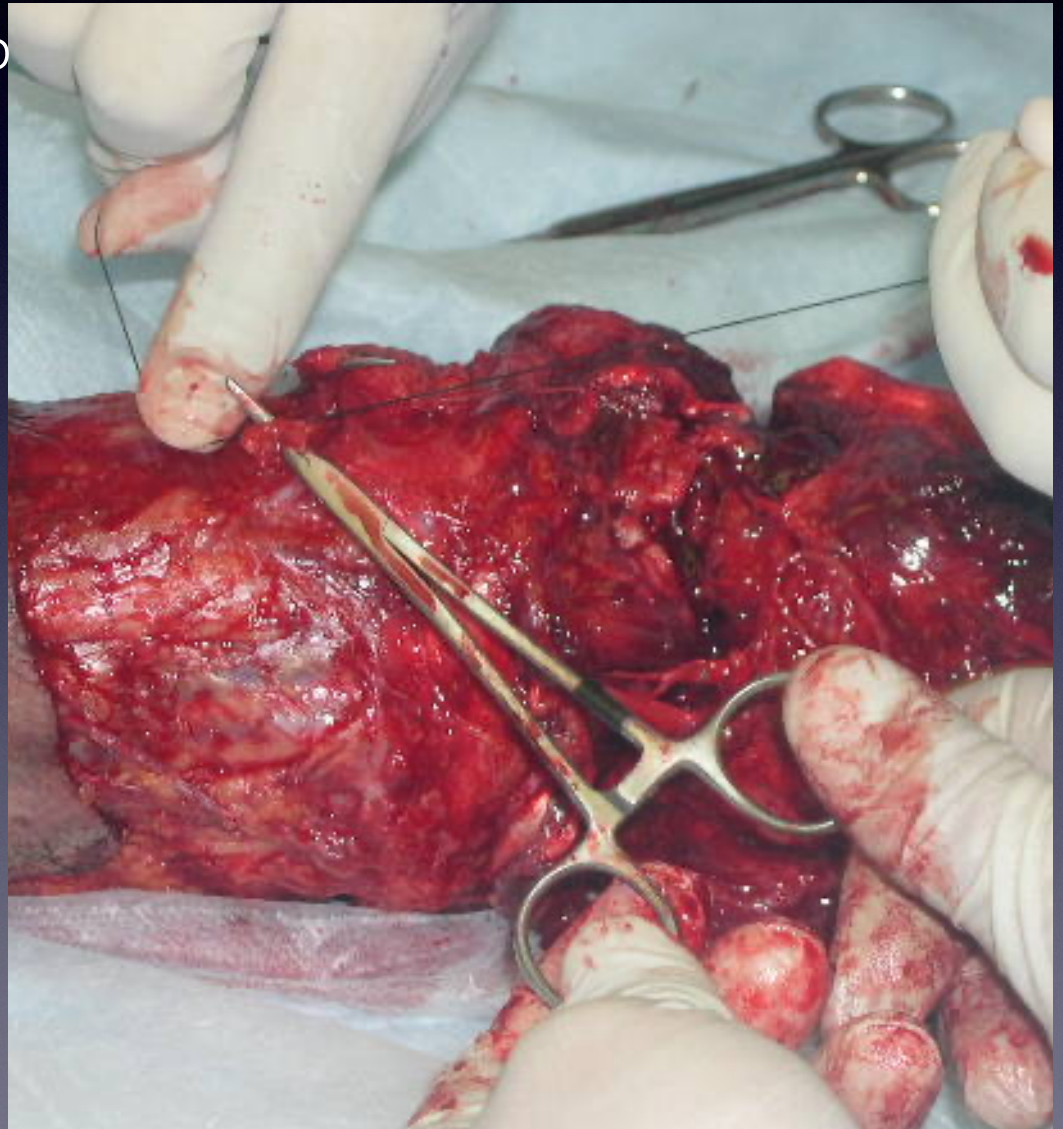


# Breathing considerations

- Ventilation vs. oxygenation
  - ventilation is the movement of air in and out
  - oxygenation is the actual gas exchange at the cellular level
  - You need BOTH in order to properly “breathe” for the patient

# Circulation & Shock management

- Simple & basic goals to keep in mind
  - Identify the source of bleeding
  - stop the bleeding
  - fill the tank AS NECESSARY!

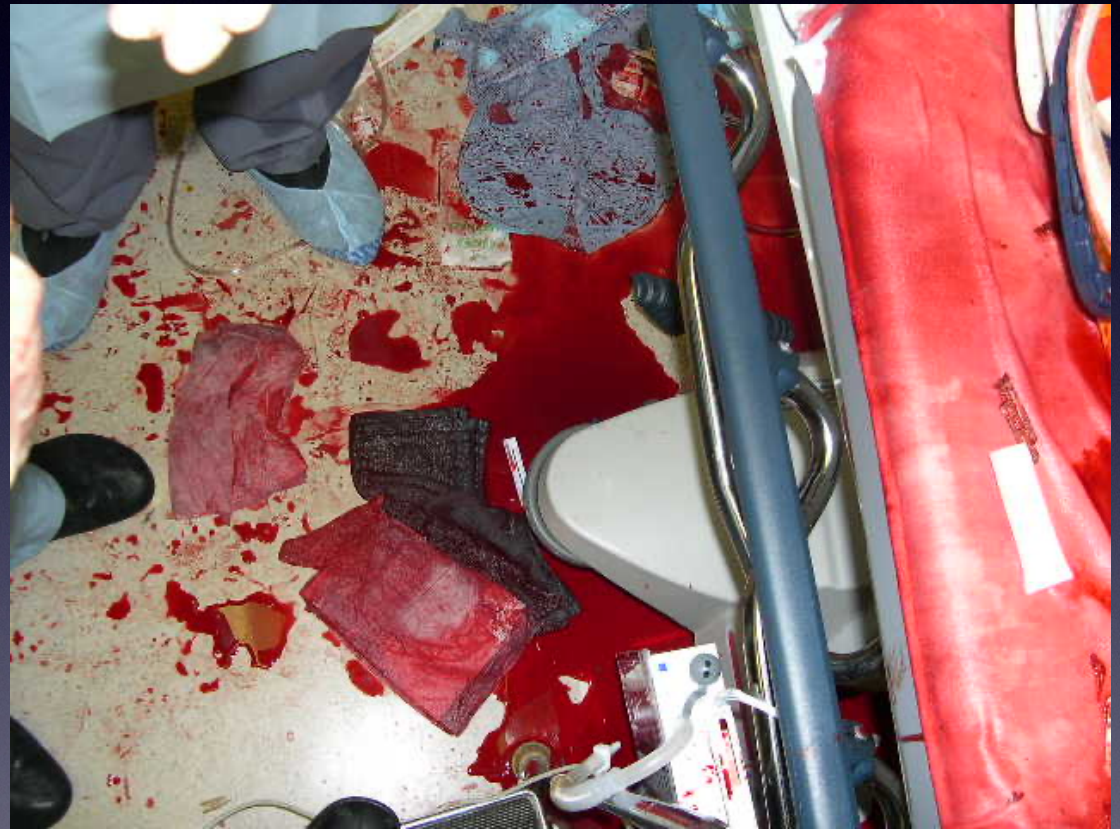


# Circulation & Shock management (cont'd)

- One main goal in trauma
  - IDENTIFY THE LIFE THREAT AND TREAT AS ABLE! YOU DO NOT MOVE ON IN YOUR ASSESSMENT UNTIL THE LIFE THREAT IS TREATED!
  - Tourniquets are back and they work!
  - Utilizing a team approach is critical in trauma as we are able to identify and treat multiple injuries at the same time.

# Circulation & Shock Management (cont'd)

- Managing shock
  - maintaining BP properly
  - Avoid “dumping” fluid in trauma patients unnecessarily



# Circulation & Shock Management (cont'd)

- The main goal in managing BP might surprise you.
  - Overall you want to maintain the patients SBP at 90mmHg or greater
  - The only time you want to be aggressive in fluid administration is if the SBP is BELOW 90mmHg
  - “Dumping” fluid in a trauma patient unnecessarily can lead to “blowing off” clots
  - Remember! Crystalloids do NOT have oxygen carrying capabilities!

# Putting it all together

- Your dispatch and pre-arrival assessment helps you anticipate possible injuries
- Your assessment upon arrival helps you to determine several things
  - Mode of transport
    - emergent vs. non-emergent
    - air vs. ground
  - Destination consideration
    - Level I trauma center vs. Level II

# Putting it all together

- Maintain a team approach
- Provide clear and concise communication
  - Communication to medical control
  - Proper documentation
    - your run report DOES actually stay with the patient!

# Protocol 19

## FIELD TRIAGE PROTOCOLS

- Transport directly to the nearest Level I Trauma Center if transport time is less than 25 minutes.
- Transport to the nearest Level II Trauma Center if transport time is less than 30 minutes.
- Transport to the nearest Emergency Department if transport time is greater than 30 minutes

### FIELD TRIAGE CATEGORY I

Sustained hypotension - B/P  $\leq$  90 systolic on two consecutive measurements five minutes apart. (For Peds hypotension see Peds VS below  $\star$ )

■ Cavity penetration of the torso or neck

□ MANDATORY NOTIFICATION OF THE TRAUMA SURGEON FROM THE FIELD (done by the Trauma Center).

□ PATIENTS BEING BYPASSED TO A TRAUMA CENTER MUST BE ADEQUATELY VENTILATED (ET TUBE OR BVM) AND HAVE CERVICAL IMMOBILIZATION AS INDICATED. OTHERWISE, THE PATIENT SHOULD BE TRANSPORTED TO THE CLOSEST COMPREHENSIVE EMERGENCY DEPARTMENT.

■ Blunt or penetrating trauma with unstable vital signs and/or:

- Hemodynamic compromise as evidenced by:
  - Adult B/P:  $\leq$  90 systolic
  - $\star$  Peds: 0 – 5 mos of age: Sys BP  $<$  60 mmHg
  - 6 mos – 5 yrs: Sys BP  $<$  70 mmHg, HR  $<$  70
  - $\geq$  6yrs: Sys BP  $<$  80 mmHg, HR  $<$  60
- Respiratory compromise as evidenced by: respiratory rate  $<$ 10 OR  $>$ 29
- Head injury with altered mentation as evidenced by a GCS  $\leq$  10.

■ Anatomical Injury:

- Penetrating injury of the head, neck, chest or abdomen.
- Two or more body regions with potential life or limb threat.
- Combination trauma with  $\geq$  20%TBSA burn.
- Amputation above the wrist or ankle.
- Limb paralysis and/or sensory deficit above the wrist or ankle.
- Flail chest.
- Two or more proximal long bone fractures.

■ All patients who, *in the judgment of the prehospital personnel*, would benefit from the care derived at a Trauma Center- those conditions which may be considered for direct bypass to a Trauma Center may include:

- Head Injury with persistent unconsciousness or focal signs such as seizures, posturing or the inability to respond to simple commands.
- Transmediastinal gunshot wounds
- Spinal cord injury with paralysis
- Maternal trauma with significant mechanism and/or obvious trauma at 20-32 weeks gestation.
- Pediatric trauma including blunt or penetrating head, chest or abdominal trauma.
- Older Adults: Risk of injury/death increases after age 55, SBP  $<$ 110 may represent shock after age 65, Low impact mechanisms (e.g. ground level falls) may result in severe injury
- Anticoagulants and bleeding disorders: Patients with head injury are at a high risk for rapid deterioration

### CATEGORY II

Mechanism of Injury:

- Ejection from a motor vehicle.
- Death in the same passenger compartment.
- Falls  $>$  20 feet.
- Falls  $>$ three times the body length of a child.
- Maternal trauma  $>$  20 weeks.

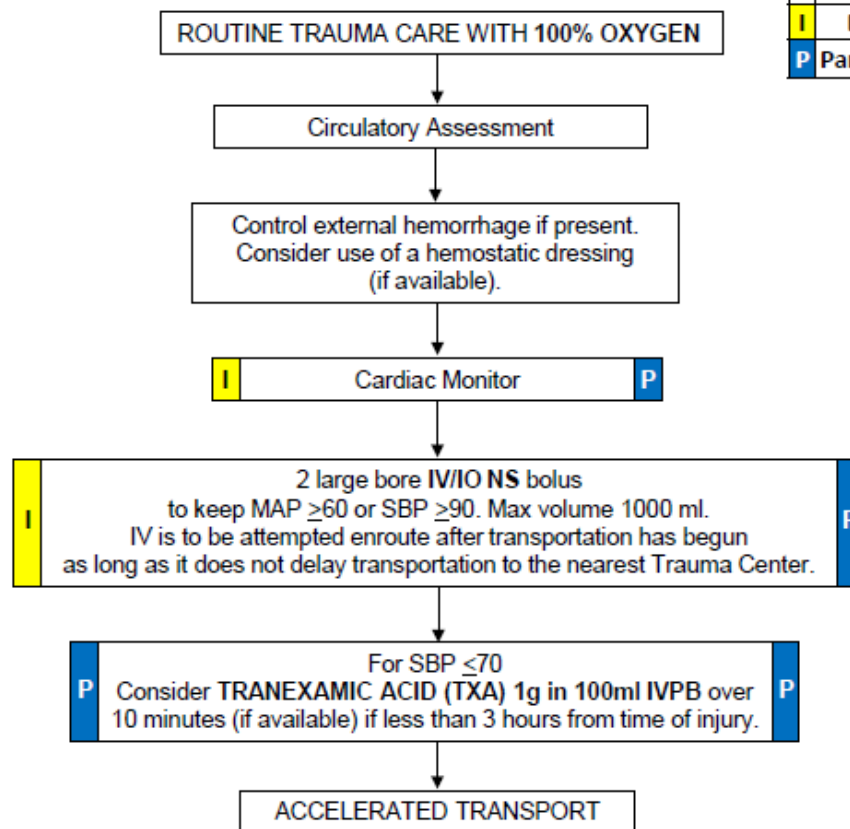
B	EMT	B
I	EMT-I	I
P	Paramedic	P



## Protocol 22

# ADULT HEMORRHAGIC SHOCK

B	EMT	B
I	EMT-I	I
P	Paramedic	P



**NOTE TO PREHOSPITAL PROVIDERS:**

Consider pelvic binding for patients with suspected pelvic fracture and unstable vital signs.