UB|MD Emergency Medicine
EMS Division

Special Populations in Trauma

Johanna Innes MD NRP FACEP FAEMS

1

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Disclosures

- None
- 30,000 foot view

2

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Introduction

- ECMC ED, Buffalo NY
- AMR-WNY, Eden Emergency & Rescue Squad, Boston EMS
- University at Buffalo EMS Fellowship Program Director
- Paramedic

3

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Objectives

By the end of this presentation, the learner will be able to

- **Understand** the key differences in how trauma affects pregnant, geriatric, obese, and special needs patients.
- **Describe** the initial steps for assessing and managing each of these special patient populations in a trauma situation.
- **Recognize** important communication considerations when transferring care of these patients between EMS and hospital staff.

4

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Why is this a big deal?

- High-risk low frequency patient encounters (mostly)
- Unique physiologic characteristics- altered response to trauma
- Interventions may need to be modified
- Special populations have better outcomes at specialty centers.

National Association of EMS Physicians

ACS Committee on Trauma

5

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Pregnant Patients

ACOG
The American College of Obstetricians and Gynecologists

6

Importance

- Trauma is the leading nonobstetric cause of death in pregnancy – MVC, falls and IPV
- Signs of hemorrhagic shock may be delayed – even minor trauma can be major
- Two patients/one body: Aggressive maternal resuscitation will optimize fetal outcomes
- Physiologic and anatomic changes in pregnancy require modification to resuscitation

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web–based Injury Statistics Query and Reporting System (WISQARS)

7

Intimate Partner Violence (IPV)

- Reported in 5% of pregnancies
- Maternal injury, obstetric complications, fetal injury/death
- Associated with delayed prenatal care, depression and PTSD, substance use, adverse birth outcomes.

National Maternal Mental Health Hotline

HRSA

1-833-TLC-MAMA

8

Intimate Partner Violence (IPV)

- IPV injury patterns: Multiple injuries, head injuries, face/neck/scalp contusions, abrasions/friction burns, contusions of multiple sites, and those with Medicaid or self-pay coverage.

Call

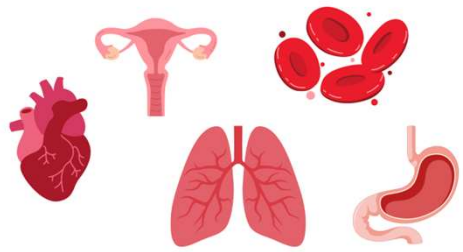
1.800.799.SAFE (7233)

NATIONAL DOMESTIC VIOLENCE HOTLINE

Albini, Paul T MD, FACS; Zakhary, Bishoy MPH; Edwards, Sara B MD, MS, FACS; Coimbra, Raul MD, PhD, FACS; Brenner, Megan L MD, MS, FACS. Intimate Partner Violence and Pregnancy: Nationwide Analysis of Injury Patterns and Risk Factors. Journal of the American College of Surgeons 236(1):p 198-207, January 2023. | DOI: 10.1097/XCS.0000000000000421

9

Physiology



Kepley JM, Bates K, Mohiuddin SS. Physiology, Maternal Changes. [Updated 2023 Mar 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK539766/

10

Cardiovascular/Hemodynamics

- Cardiac output (CO):
  - About 50% above baseline by 30-32 weeks
- Blood volume (preload):
  - Plasma increases 50%, RBC mass 20-30%
- Maternal HR: 15-20 BPM

SHOCK OR PREGNANT?

- Dilutional anemia
- Systemic vascular resistance (afterload)
- Blood pressure
  - (5-15mmHg 1st tri – gradual correction by term)

11

Cardiovascular/Hemodynamics

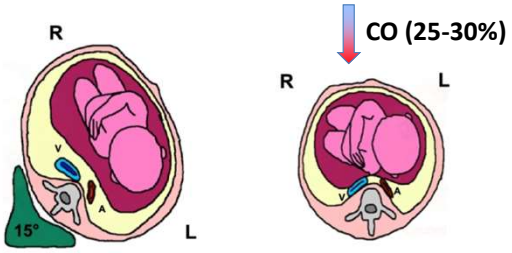
- **Systolic ejection murmur**
- **EKG changes: Left axis, transient ST-T changes**

12

Supine Hypotension

RIGHT SIDE UP!

CO (25-30%)



Sonnino, Chiara, et al. "Impact of Maternal Lateral Tilt on Cardiac Output during Caesarean Section under Spinal Anaesthesia: A Prospective Observational Study." *BMC Anesthesiology*, vol. 22, no. 1, 11 Apr. 2022, https://doi.org/10.1186/s12871-022-01640-6.

13

Pulmonary

- Respiratory drive (progesterone)
  - Hyperventilation
- Tidal volume, minute ventilation
  - Chronic (compensated) respiratory alkalosis
- Oxygen consumption (20%)

OXYGENATE EARLY!!!

- Functional residual capacity (20%)
- Buffering capacity

14

Gastrointestinal

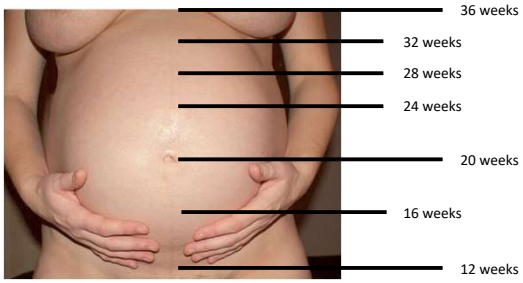
- Smooth muscle motility (progesterone)
  - Lower esophageal sphincter
  - Colon
- Real estate

MITIGATE THE BARF!!!

BARF

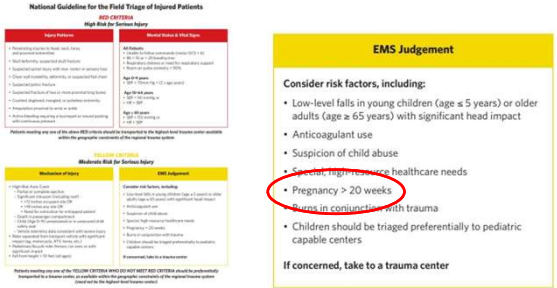
15

Anatomic



16

Prehospital Considerations



EMS Judgement

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma center

17

Injuries

- Retroperitoneal bleeding ⬆pelvic bloodflow
- Uterine injury
- Pelvic fracture (high fetal mortality)
- All the usual organs

- Placental abruption
- Spontaneous abortion/preterm labour
- PROM
- Uterine rupture/laceration
- Placental injury/laceration

18

Injuries

- Uncommon
- 3rd trimester (less amniotic protection)
- Skull fracture/head injury (pelvic fracture)
- Most common causes of fetal demise: Placental abruption, maternal hemorrhage.

19

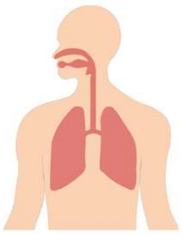
Initial Assessment – ATLS/ITLS/PHTLS

- Maternal prioritization
- Establish gestational age
- Call OB/prenotify early

20

Airway

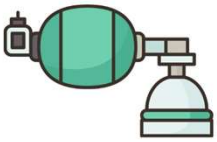
- Airway edema – consider smaller ETT
- Risk of vomiting/aspiration – consider early NGT



21

Breathing

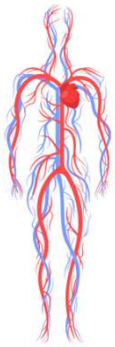
- Increased maternal oxygen demand
- Aggressive supplemental oxygen
- Elevated diaphragm: Consider higher chest tube placement



22

Circulation

- Right side up!!!
- Blood
- Vasopressors decrease placental/uterine bloodflow – last resort.



23

Resuscitative Hysterotomy

- Perimortem C
- NOT A PREHOSPITAL PROCEDURE (unless you're an EMS physician)

A: Anesthetic complications/accident/trauma
B: Bleeding/DIC/placenta abruptio/previa/uterine atony
Cardiac: MI/aortic dissection
Drugs
Embolism: coronary/pulmonary/amniotic fluid embolism
Fever: sepsis
General: Standard ACLS H's & Ts
Hypertension: Preeclampsia/eclampsia

National Association of EMS Physicians

American Heart Association.

24

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Initial Labs & Diagnostics

- Usual trauma labs (Rh)
- Hcg
- Usual trauma XR/CT/US
- Fetal US (FHR > 120)
- Kleihauer Betke (KB)
  - Fetal hemorrhage
  - Preterm labour

25

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Fetal assessment

- Ultrasound:
  - FHR
  - EGA (femur length)
  - Movement
- Pelvic
  - Bulging perineum
  - Vaginal bleeding
  - Leaking fluid
  - Prolapsed cord
- Min 6h continuous monitoring (absolute min 4) – signs of fetal instability may be first signs of impending shock

26

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Radiation: JUST DO IT

ACOG
The American College of Obstetricians and Gynecologists

Table 2. Effects of Gestational Age and Radiation Dose on Radiation-Induced Teratogenesis

Gestational Period	Effects	Estimated Threshold Dose*
Before implantation (0–2 weeks after fertilization)	Death of embryo or no consequence (all or none)	50–100 mGy
Organogenesis (2–8 weeks after fertilization)	Congenital anomalies (skeleton, eyes, genitals)	200 mGy
	Growth restriction	200–250 mGy
Fetal period	**Effects**	**Estimated Threshold Dose***
8–15 weeks	Severe intellectual disability (high risk)†	60–310 mGy
	Intellectual deficit	25 IQ-point loss per 1,000 mGy
	Microcephaly	200 mGy
16–25 weeks	Severe intellectual disability (low risk)	250–280 mGy*

*Data based on results of animal studies, epidemiologic studies of survivors of the atomic bombings in Japan, and studies of groups exposed to radiation for medical reasons (eg, radiation therapy for carcinoma of the uterus).

27

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Radiation: JUST DO IT

Procedure	Radiation Dose (mSv)
Head CT	1.6
Spine CT	8.8
CTA chest	6.1
CTA Abdomen/Pelvis	15.4

= 36.9
(way less than 100)

The American College of Obstetricians and Gynecologists. "Guidelines for Diagnostic Imaging during Pregnancy and Lactation." *Www.acog.org*, Oct. 2017, www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/10/guidelines-for-diagnostic-imaging-during-pregnancy-and-lactation.

28

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JACS Journal of the American College of Surgeons

Use of Low-Titer O-Positive Whole Blood in Female Trauma Patients: A Literature Review, Qualitative Multidisciplinary Analysis of Risk/Benefit, and Guidelines for Its Use as a Universal Product in Hemorrhagic Shock

Clements, Thomas W MD, FRCSC; Van Gent, Jan-Michael DO, FACS; Menon, Neethu MD; Roberts, Aaron MD; Sherwood, Molly BS; Osborn, Lesley MD; Hartwell, Beth MD; Refuerzo, Jerrie MD; Bai, Yu MD; Cotton, Bryan A MD, MPH, FACS

Author Information

Journal of the American College of Surgeons 238(3):p 347-357, March 2024. | *DOI:* 10.1097/XCS.0000000000000906

29

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Blood Administration

- Low Titer O Whole Blood (vs component therapy)
  - Less processed/less preservative/less volume
  - Less coagulopathy
  - Better outcomes (shorter stay, increased survival)
- Alloimmunization risk in Rh- female patients in hemorrhagic shock exposed to Rh + blood is low (3% to 20%).
  - Not all Rh- female patients are pregnant
  - 7% of the US population is Rh-
- A pregnant patient with anti-D antibodies with a D + fetus has a rate of fetal demise of approximately 4%.

TRAUMA PATIENTS WHO DON'T GET BLOOD WHEN THEY NEED IT DIE

30

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RhoD Immune Globulin (RhIG)

- Give within 72 hours of exposure
- Routine in Rh- pregnancies
  - Amniocentesis
  - 2nd/3rd tri miscarriage
  - External cephalic version
  - Trauma
  - Following delivery

RhoGAM® Ultra-Filtered PLUS
[Rho(D) Immune Globulin (Human)] (300 µg)

31

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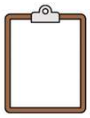
Prehospital Pearls (hospital too)

Prioritize maternal well-being

Aggressive oxygenation

Anticipate & treat hypotension early

Mitigate the barf!!!



History

32

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- Pregnant?
- How pregnant?
- Blunt abdominal trauma/pain?
- Signs of labour?

33

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Geriatric Patients

AGS Geriatrics Healthcare Professionals
Leading Change. Improving Care for Older Adults.

34

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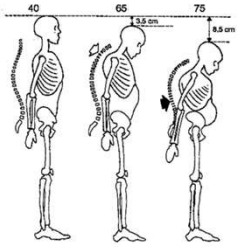
Importance

- Falls are the leading cause of fatal and nonfatal injury in adults over 65.
  - 25% of older adults report falling every year.
- Higher mortality and complication rates – decreased physical reserve.
- Elderly-specific challenges



Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web–based Injury Statistics Query and Reporting System (WISQARS)

35

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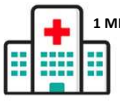
Falls (not lift assists)



Centers for Disease Control and Prevention. "Older Adult Fall Prevention." 14 May 2024, www.cdc.gov/falls/about/index.html.

36

Fall Risks

- Vision impairment
- Hearing loss (wear a hearing aid!)
- Gait deficits
- Medications
- Home hazards

National Council on Aging . "Get the Facts on Falls Prevention." *Www.ncoa.org*, 1 June 2024, www.ncoa.org/article/get-the-facts-on-falls-prevention/.

37

Maia Dorsett
@maiadorsett

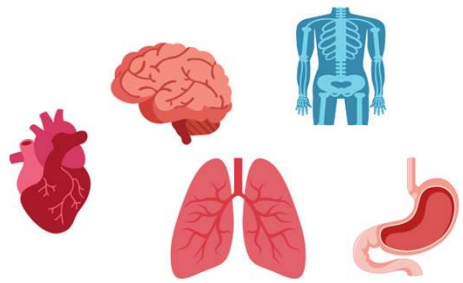
Some resources:
1) educational resources on geriatric fall assessment (and some lift assist data discussion): drive.google.com/file/d/1-EFeTX...
2) The MEMAW assessment (the result of a local mneumonic contest won by Dave DeCanzio):

FRONT	BACK
Geriatric Fall Assessment	Geriatric Fall Assessment
Manual Vitals	Tachycardia (HR > 100) or relative hypotension (SBP < 110) is concerning for sepsis.
Events leading to fall	Any new symptoms? Generalized weakness? Poor appetite? Shortness of breath? Syncope?
Medications	Any new medications? Blood Thinners? Anti-platelet agents?
Assessment (including stroke)	Head-to-Toe assessment - not just for trauma, but for medical illness such as stroke, CHF or infection
Walk	ALWAYS determine if able to ambulate at baseline prior to refusal.
... and document what you find!	... involve family and caregivers ... be specific about your concerns when discussing refusal.

https://drive.google.com/file/d/1-EFeTXY1p_sOXLyciOWPNc9HKRzQP1WS/view?usp=sharing...

38

Physiology



Atinga, Angela, et al. "Trauma in the Elderly Patient." *The British Journal of Radiology*, vol. 91, no. 1087, 30 Apr. 2018, p. 20170739, www.ncbi.nlm.nih.gov/pmc/articles/PMC6221775/, https://doi.org/10.1259/bjr.20170739.

39

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Cardiovascular

- Peripheral vascular resistance
- Baseline BP
- Scary drugs

BEWARE THE VITALS!

- Cardiac output (CO)
- HR variability

40

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Pulmonary

- Work of breathing
- Respiratory illness

OXYGENATE EARLY!!!

- Chest wall compliance
- Forced Expiratory Volume (FEV)
- Cough effectiveness/airway clearance

41

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Renal

- Blood flow
- Nephrons
- Drug clearance

YOU CAN'T UN-DOSE DRUGS!!!

42

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Neuro

- Brain size
- Balance
- Hearing
- Vision

- Falls
- Agitation
- Drug reactions

43

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Musculoskeletal

- Joint degeneration
- Disc degeneration
- Bone degeneration

SPLINT/PAD/MODIFY!!!

- Muscle bulk
- Mobility

44

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Prehospital Considerations

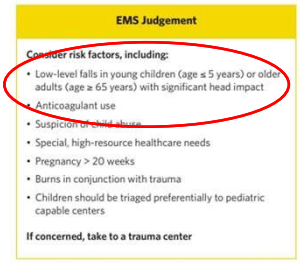

National Guideline for the Field Triage of Injured Patients

RED CRITERIA

High Risk for Serious Injury

YELLOW CRITERIA

Moderate Risk for Serious Injury


EMS Judgement

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma center

45

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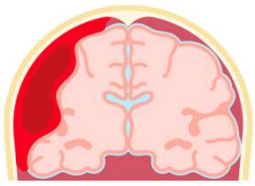
Common Injuries



46

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Hospital Considerations

- GLF for patients on antithrombotic agents
- SBP less than 110
- Heart rate above 90
- SI greater than 1
- GLF patients not on anticoagulants with GCS < 14 and signs of head trauma

SHOCK INDEX = HR/SBP

SI > 1 = BAD

ACS Trauma Programs
American College of Surgeons

47

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Initial Assessment – ATLS/ITLS/PHTLS

- Overtriage
- Don't spare the imaging

WHAT ABOUT CONTRAST-INDUCED NEPHROPATHY!?!

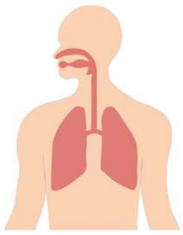
Finigan, Ryan, et al. "Risk for Contrast-Induced Nephropathy in Elderly Trauma Patients." The American Surgeon, vol. 78, no. 10, Oct. 2012, pp. 1114–7, pubmed.ncbi.nlm.nih.gov/23025953/.

Olufajo OA, Tulebaev S, Javedan H, Gates J, Wang J, Duarte M, et al. Integrating geriatric consults into routine care of older trauma patients: one-year experience of a level I trauma center. J Am Coll Surg 2016; 222: 1029–35. doi: 10.1016/j.jamcollsurg.2015.12.058

48

Airway

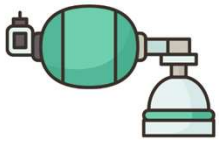
- Obstruction risk
- Cervical spine precautions
- Aspiration risk



49

Breathing

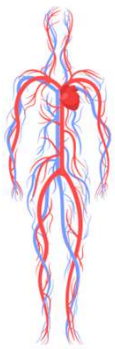
- Reduced respiratory reserve
- Aggressive supplemental oxygen
- Be prepared to provide ventilatory support



50

Circulation

- Beware ”Normal” vitals:
  - Beta blockers
  - Shock may be masked
- Hypovolemia
- Beware volume overload



51

Initial Labs & Diagnostics

- Usual trauma labs
  - Lactate, base deficit
  - Coags
- Bedside US (echo)
- 12-Lead EKG
- Consider medical causes
- Early geriatrics consult
- Discharge planning

52

Anticoagulation/Reversal

- History of anticoagulant use
  - Agent
  - Dose/last given
- Be ready to reverse!

Andexxa
Coagulation Factor Xa (Recombinant), inactivated-zhzo

KCENTRA
Prothrombin Complex Concentrate (Human)
Urgent Warfarin Reversal

Praxbind
idarucizumab

53

Anticoagulation/Reversal in ICH

- Benefit of not dying outweighs risk of clotting.
- Who gets reversed?
  - ICH
  - GCS < 14/"clinical deterioration"
  - Supratherapeutic INR

American College of Surgeons. ACS TQIP Geriatric Trauma Management Guidelines. Chicago, IL: American College of Surgeons; 2013. https://www.facs.org/media/rddahzbb/geriatric_guidelines.pdf.

54

Hips & Femurs

- Consider transfer for:
  - Unstable pelvic/acetabular fractures
  - Neurovascular compromise
  - More than one system injured (ie. also with TBI or rib fractures)
- Early management:
  - Geriatric specialist
  - Surgical intervention within 48 hours
  - VTE prophylaxis
  - Multimodal analgesia (consider regional block)

55

Prehospital Pearls (hospital too)

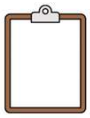

Gentle care

Aggressive oxygenation & resuscitation


Don't trust the vitals


Don't spare the imaging


Consider medical causes


AC History

56

- Anticoagulation
- Baseline mentation
- Bring the meds/home oxygen
- POA or advocate
- Advance directives

57

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Medical Orders for Life-Sustaining Treatment (MOLST)

58

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Patients With Obesity

Obesity Medicine Association

59

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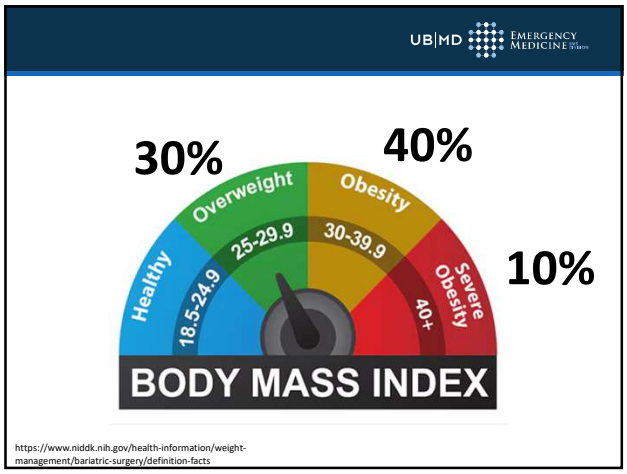
Importance

- 40% of American adults are obese.
- Scene logistics – Extrication/patient movement.
- Anatomic considerations – airway, vascular access, immobilization.
- Significantly higher in-hospital mortality, hospital LOS and ICU LOS.

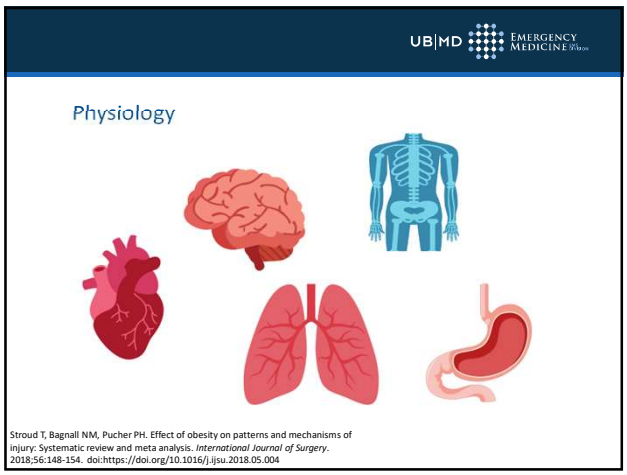
Cromwell PM, Reynolds IS, Heneghan HM, Glasgow SM. Obesity and outcomes in trauma - a systematic review and meta-analysis. *Injury*. 2022;54(2). doi:https://doi.org/10.1016/j.injury.2022.10.026

60



https://www.niddk.nih.gov/health-information/weight-management/bariatric-surgery/definition-facts

61



Stroud T, Bagnall NM, Pucher PH. Effect of obesity on patterns and mechanisms of injury: Systematic review and meta analysis. *International Journal of Surgery*. 2018;56:148-154. doi:https://doi.org/10.1016/j.ijsu.2018.05.004

62

Cardiovascular

- Incidence of CAD and hypertension
- Incidence of venous thromboembolism (VTE)
- Incidence of arrhythmias

DON'T DO A STRESS TEST

- Exercise capacity

63

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Pulmonary

- Adipose tissue in abdomen and chest
- Incidence of respiratory issues (asthma, OSA)
- Oxygen consumption

OXYGENATE EARLY!!!

- Chest wall compliance
- Strength of respiratory muscles
- Expiratory reserve volume (ERV), functional residual capacity (FRC), and total lung capacity (TLC)

64

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Musculoskeletal

- Body mass/kinetic energy

SPLINT/PAD/MODIFY!!!

- Vitamin D levels
- Anatomic landmarks

65

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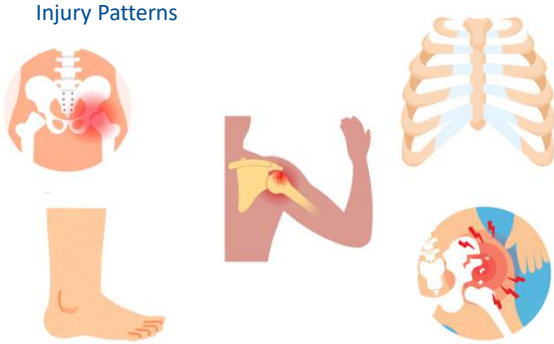
Injury Patterns



66

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Prehospital Considerations


National Guideline for the Field Triage of Injured Patients

RED CRITERIA
High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and extremities proximal to elbow/knee • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	All Patients: • Unable to follow commands (motor GCS < 6) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room air pulse oximetry < 90% Age 0–9 years: • SBP < 70mm Hg + (2 × age years) Age 10–64 years: • SBP < 90 mm Hg or • HR > 120 Age > 65 years: • SBP < 110 mm Hg or • HR > 120

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA
Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgement
• High-Risk Auto Crash • Partial or complete ejection • Significant intrusion (including roof): • >12 inches occupant site • >18 inches any site OR • Need for extrication for entrapped patient • Death in passenger compartment • Vehicle telemetry data consistent with severe injury • Auto vs. pedestrian/bicyclist thrown, run over, or with significant impact (eg, motorcycle, ATV, horse, etc.) • Pedestrian/bicyclist Ride-Down, run over, or with significant impact • Fall from height > 10 feet (all ages)	Consider risk factors, including: • Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy > 20 weeks • Burns in conjunction with trauma • Children should be triaged preferentially to pediatric capable centers

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

EMS Judgement

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma center

67

UB|MD Emergency Medicine

Initial Assessment – ATLS/ITLS/PHTLS

- Appropriate equipment
- Consider patient position
- Anticipate a difficult airway

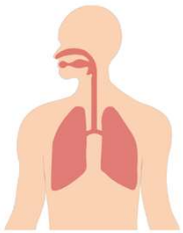
Gray S, Dieudonne B. Optimizing Care for Trauma Patients with Obesity. *Cureus*. 2018;10(7). doi:https://doi.org/10.7759/cureus.3021

68

UB|MD Emergency Medicine

Airway

- Obstruction risk
- Pad under shoulders
- Apneic oxygenation



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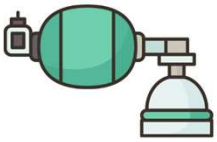
Breathing

- Aggressive supplemental oxygen
- Base vent settings on ideal body weight
- Adequate PEEP to encourage recruitment
- Consider HFNC



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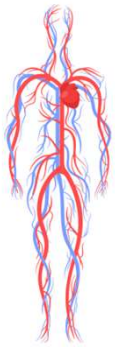
Circulation

- IV access: US-guided, CVC, IO
- NIBP may be inaccurate – art line
- Beware volume overload



71

Initial Labs & Diagnostics

- Usual trauma labs
  - Lactate, base deficit
  - Coags
- Bedside US (echo)
- 12-Lead EKG
- Know your limits

72

Prehospital Pearls (hospital too)

Anticipate a difficult airway

Aggressive oxygenation

Use appropriate equipment

Anticipate difficult access and pivot quickly

Teamwork makes the dream work

73

- Logistics – if you need a bari stretcher, we'll need a bari bed.
- Prenotification

74

Patients With Special Needs

75

Importance

- 5% of children, over 25% of adults have a disability.
- 20% of children have a special healthcare need.
- Cognitive difficulty can complicate assessment and care.

Health Resources and Services Administration. Children and Youth with Special Health Care Needs (CYSHCN) | MCHB. HRSA Maternal and Child Health. https://mchb.hrsa.gov/programs-impact/focus-areas/children-youth-special-health-care-needs-cyshcn

76

Physiology

- May respond to pain differently
- Sensory issues:
  - Tactile
  - Sound/light
- Special physical needs

77

Communication is Key

- Check in with the caregiver
- Multiple communication methods
- Address the patient directly
- Consider sensory sensitivities

78

Involve the Caregiver/Gather Information

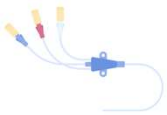
- Caregivers as experts
- Information:
  - MOLST
  - Med list
  - Transport binder
  - Contact information

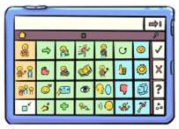
Brent D. K. The Prehospital Care of Children With Special Health Care Needs. *Clinical Pediatric Emergency Medicine*. 2014;15(1):89-95. doi:https://doi.org/10.1016/j.cpem.2014.02.001

79

Be Equipment Aware

- Tracheostomy/travel vent
- Self-suction
- Central lines/catheters
- Mobility devices
- Communication devices





80

Prehospital Considerations


National Guideline for the Field Triage of Injured Patients

RED CRITERIA
High Risk for Serious Injury

YELLOW CRITERIA
Moderate Risk for Serious Injury

EMS Judgement

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma center

81

ED Considerations

- Sensory-friendly environment
- Modified exam
- Collaborative history-taking
- Early specialist involvement (neurology, psychiatry, social work, discharge planning)

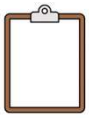
82

Prehospital Pearls (hospital too)

Know their baseline

Caregivers as experts

Communicate clearly and adaptively



Document/communicate needs

Treat the patient, not the special need.

Sensory sensitivity matters

83

- Specific equipment needs (vent)
- Baseline functional/mental status
- What worked for you?
- What do you need on arrival?

84

TL;DR

- Know the CDC trauma triage criteria
- Know how to manage non-standard patients
- Prepare for the worst case scenario
- Communicate the anomalies

85

86

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