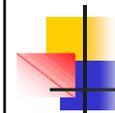


Patient Assessment -- Trauma

Aaron J. Katz, AEMT-P, CIC

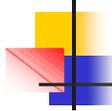
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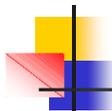
Scenario #1

- The nightmare call



Scenario #2

- You are called to a residence where a woman tells you: "I can't wake him up!"



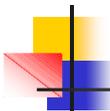
Scenario #3

- You are called to a home of a 63YO male patient who tells you: "I don't feel well".



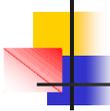
Scenario #4

- You are the first one on the scene of a car accident where a car hit a tree. Bystanders show you the patient lying 50 feet from the car saying that “he was thrown through the windshield”.



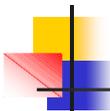
Guiding Principles!

- In order to appropriately **TREAT** a patient, you must **FIRST** do an **APPROPRIATE PATIENT ASSESSMENT!**
- *Whatever level of EMT you ever become, you **MUST** learn how to do an EXCELLENT patient assessment!*



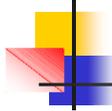
Outline

- Scene Size-up
- Mechanism of Injury/Illness
- Primary (Initial) Assessment
 - Rapid Scan (Rapid Assessment)
- **Decisions!**
 - Transportation
 - Type of assessment
 - Full Body Scan (Detailed Assessment)/Focused Scan (Assessment)
- Reassessment (Ongoing assessment)



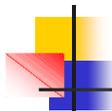
Scene Safety

- Fire, crime scene, “Hazmat” ...
- Personal and crew
 - BSI
- Patient
- Bystanders



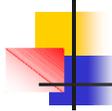
Establish Danger Zone

- 50 feet if no hazards
- 100 feet if there are hazards
- **Usually best left to PD/FD**



Number of patients

- Do I need more resources?
- If so, what type?
 - **ALS**
 - **More BLS**
 - Police
 - Fire department
 - Not only for fires!
 - Gas/Electric company



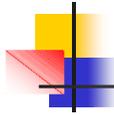
Mechanism of Injury (“MOI”)

- Important clues of what types of injuries to expect
- Keeps your “index of suspicion” up – ***even when no injuries are obvious!***
- Modern cars and MOI?



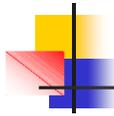
Types of force

- Direct
- Indirect
- Forced flexion
- Hyperextension
- Twisting



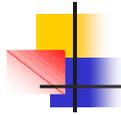
Motor Vehicle Accidents

- “MVA”
- Types of MVAs
 - Head on
 - Rear end
 - Side impact (“T-bone”)
 - Rollover
 - Rotational
 - Struck then spins



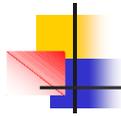
Significant MOI

- Person ejected from a vehicle
- **Death of a person in the same vehicle**
- Fall > 20 feet (adult)
- Fall > 10 feet (child)
- Rollover
- “High speed” collision
- Vehicle-pedestrian collision
- Motorcycle crash
- Bicycle crash



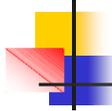
Collisions in an MVA

- Several energy transfers
 - Vehicle collision
 - Body's collision with interior of vehicle
 - Organ collisions
 - Torn organs
 - Organs tearing from their "holder"



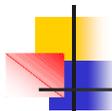
Penetrating trauma

- Low velocity
 - Knives
- Medium velocity
 - Guns, arrows
- High velocity
 - Assault weapons



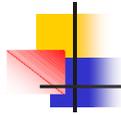
What damage is caused?

- Damage caused by the projectile *itself*
- Damage caused by **cavitations** in surrounding tissue
 - “Tumbling effect”



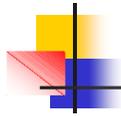
Blunt force trauma

- **Major** risk for internal bleeding and organ damage
- **Especially in the chest and abdominal areas**



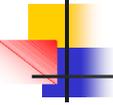
Nature of the illness

- What is *medically* wrong with the patient
- Used primarily for “medical” patients
 - Corresponds to the MOI of a trauma patient
- **Always consider the possibility that some medical issue came before the trauma!**
 - For example?



Consider C-spine protection

- Hold C-spine in “neutral” position
- **Use other units as they become available!**



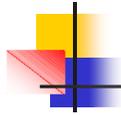
Primary assessment – Key concepts

- Treat the problem as you find it
- **DO NOT** go to the next step before you correct or manage the current step
- ***Do NOT feel inadequate if you don't get to far into the assessment with a critical patient!***
 - ***You must set your priorities***



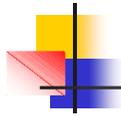
General impression

- First impression of the patient
- How does the patient look?
 - Dead
 - Seriously injured
 - Not seriously injured
 - Not injured
- Gender, age, race



Determine Level of Consciousness

- Using “AVPU” Scale
- **A**lert
- **V**erbal
- **P**ain
- **U**nresponsive



Alert

- Correctly responds to your questions about:
 - Person
 - Place
 - Time
 - Event
- “A & O X 4”



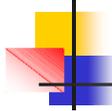
Verbal

- Patient is able to speak but can not answer all “4 questions” correctly



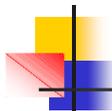
Pain

- Patient does not respond to the “4 questions”, but does respond to painful stimuli



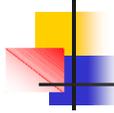
Unresponsive

- Patient does not respond to verbal or painful stimuli



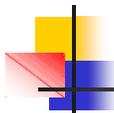
Glascow Coma Scale

- A more accurate measure of LOC using a combination of various neurological “items”
 - Eye opening
 - Speech
 - Motor response
- Varies from 3 to 15



Glasgow Coma Scale (GCS)

- Evaluates long-term memory, intermediate-term memory, and short-term memory
- The Glasgow Coma Scale (GCS) score can be helpful in providing additional information on mental status changes.



Glasgow Coma Scale (GCS)

- Uses parameters that test a patient's eye opening, best verbal response, and

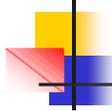
Table 8-1 Glasgow Coma Scale

Eye Opening		Best Verbal Response		Best Motor Response	
Spontaneous	4	Oriented conversation	5	Obeys commands	6
In response to speech	3	Confused conversation	4	Localizes pain	5
In response to pain	2	Inappropriate words	3	Withdraws to pain	4
None	1	Incomprehensible sounds	2	Abnormal flexion	3
		None	1	Abnormal extension	2
				None	1

Score: 13-15 may indicate mild dysfunction, although 15 is the score a person with no neurologic disabilities would receive.

Score: 9-12 may indicate moderate dysfunction.

Score: 8 or less is indicative of severe dysfunction.



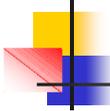
Determine *Chief Complaint*

- Why did you call?
- What's wrong?
- **Not necessarily the most critical problem!**
- *Apparent* life threats



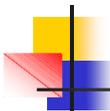
Assess airway

- Is the airway open?
 - **Will it stay open?**
- CPR "Quick Check"
 - Is patient breathing?
 - Is there a pulse?
- Suction PRN
- OPA or NPA PRN
 - While maintaining spinal precautions
 - Careful with NPA and head injuries
 - OPA – watch for awakening patient
 - Gagging!



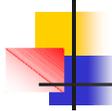
Assess breathing

- Determine rate and quality
- Initiate appropriate O₂ therapy
 - Patient breathing adequately?
 - NRB (nasal cannula PRN)
 - Patient **not** breathing adequately?
 - BVM/Pocket mask
- Manage life threatening chest trauma
 - Flail chest
 - Sucking chest wounds



Circulation

- Locate and control major bleeding
- Assess pulse
 - Presence, rate and quality
- Assess skin
- Capillary refill time?
- **Obtain BP Estimate**
- **TREAT FOR SHOCK PRN**



Assess skin

- Color
 - **Pale**, flushed, **cyanotic**, jaundice
- Condition
 - Dry, moist, **diaphoretic**, **clammy**
- Temperature
 - Hot, **cool**, **cold**



Obtain BP estimate

- Radial pulse present?
 - Systolic BP => 80
- Femoral pulse present?
 - Systolic BP => 70
- Carotid pulse present?
 - Systolic BP => 60
- Well “known” but now questionable



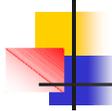
Make a transport decision

- Rapid transport
 - With further stabilization enroute
- Continued assessment and stabilization at scene
 - Followed by transport



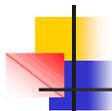
***Always* a Priority transport**

- Poor general impression
- Unresponsive
- Responsive but does not follow commands
- Difficulty breathing (“SOB”)
- Shock
- Complicated childbirth
- Chest pain with systolic BP < 100
- Uncontrolled bleeding
- Severe pain



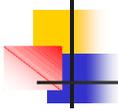
Rapid Scan

- Rapid “entire body” exam
 - To uncover life threats and hidden injuries
- All areas of the body will be **inspected and Palpated for “DCAP-BTLS”**
- Includes the head, neck, chest, abdomen, pelvis, extremities, posterior



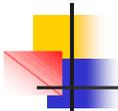
DCAPBTLS

- **D**eformities
- **C**ontusions
- **A**brasions
- **P**unctures
- **B**urns
- **T**enderness
- **L**acerations
- **S**welling



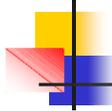
Head

- DCAP-BTLS
- Crepitation
- Drainage of fluid from the mouth/nose
- Battles sign / Raccoons eyes



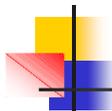
Neck

- DCAP-BTLS
- Jugular Venous Distention (“JVD”)
- Tracheal deviation
- Crepitation
- Subcutaneous emphysema
- **Apply a cervical collar**



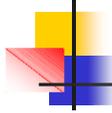
Chest

- DCAP-BTLS
- Crepitation
- Sucking chest wounds
- Paradoxical motion (“flail chest”)
- Assess lung sounds
 - Are there lung sounds?
 - Are they equal bilaterally?
 - Any *unusual* sounds?



Abdomen

- DCAP-BTLS
- Inspect and palpate each quadrant for
 - Quality
 - Hard, soft, **distended**
 - Point tenderness
 - Rebound tenderness



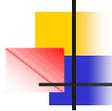
Pelvis

- DCAP-BTLS
- Crepitation
- **Gently** “rock” the iliac crests
 - Check for motion
 - If **any** pain, **STOP**
- Assess for priapism
- Assess for incontinence



Extremities

- In all four extremities:
 - DCAP-BTLS
 - Assess distal “PMS”



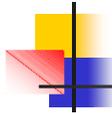
Posterior

- DCAP-BTLS
- Crepitation
- Follow up on bleeding found earlier
- **As needed, roll patient on side while maintaining spinal precautions**
- **Great time to place person on backboard**



Baseline vital signs

- Pulse
 - Rate and quality
- Respiratory
 - Rate, quality, effort
- Blood pressure
 - By auscultation
 - By palpation **ONLY** in a noisy environment



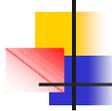
“SAMPLE History”

- **S**igns and Symptoms
- **A**llergies
- **M**edications
- **P**ast/pertinent medical history
- **L**ast meal
- **E**vents leading up to



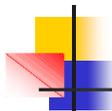
Full Body Scan

- Completed in entirety before treating
- For patients with significant MOI
 - Done enroute to hospital
 - If time permits AND
 - All critical interventions have been done
- For patients with no life threatening injuries
 - Done at the scene



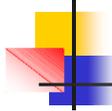
Full Body Scan -- 2

- Includes same assessments as for rapid scan
- But include assessment of:
 - Eyes
 - For pupillary reaction
 - Ears and nose
 - For blood and CSF
- At conclusion, treat any non-life threatening injuries
 - E.g. splint extremity injuries



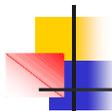
Full Body Scan -- 3

- If you never get to the Full Body Scan on a critically ill patient – that's **fine**
- **Don't feel inadequate!**
- That's why we have an initial assessment
 - **To identify and treat life threatening issues**



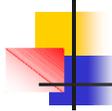
Reassessment

- **Done for EVERY patient**
- As time permits, keep repeating
 - Primary assessment
 - Vital signs
 - Unstable patients
 - At least every 5 minutes
 - Stable patients
 - At least every 15 minutes
 - Focused and/or Full Body scans



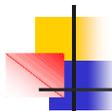
Summary (1 of 8)

- The assessment process begins with the scene size-up, which identifies real or potential hazards. The patient should not be approached until these hazards have been dealt with.



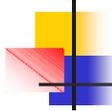
Summary (2 of 8)

- The primary assessment is performed on all patients. It includes forming an initial general impression of the patient, including the level of consciousness, and identifies any life-threatening conditions to the ABCs.



Summary (3 of 8)

- A rapid scan is performed to assist in prioritizing time and mode of transport. Any life threats identified must be treated before moving to the next step of the assessment.
- ABCs are assessed to evaluate the patient's general condition.



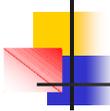
Summary (4 of 8)

- History taking includes an investigation of the patient's chief complaint or history of present illness. A SAMPLE history is generally taken during this step and may be obtained from the patient, family, friends, or bystanders.



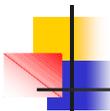
Summary (5 of 8)

- By asking several important questions, you will be able to determine the patient's signs and symptoms, allergies, medications, pertinent past history, last oral intake, and events leading up to the incident.



Summary (6 of 8)

- The secondary assessment is a systematic physical examination of the patient.
- The secondary assessment is performed on scene, in the back of the ambulance en route to the hospital, or not at all.



Summary (7 of 8)

- The reassessment is performed on all patients. It gives you an opportunity to reevaluate the chief complaint and to reassess interventions, modifying treatment as appropriate.



Summary (8 of 8)

- A patient in stable condition should be reassessed every 15 minutes.
- A patient in unstable condition should be reassessed every 5 minutes.
- The assessment process is systematic and dynamic. Each assessment will be slightly different, depending on the patient's needs.

- 
1. During the scene size-up, you should routinely determine all of the following, EXCEPT:
 - A. the mechanism of injury or nature of illness.
 - B. the ratio of pediatric patients to adult patients.
 - C. whether or not additional resources are needed.
 - D. if there are any hazards that will jeopardize safety.



2. You arrive at the scene of an "injured person." As you exit the ambulance, you see a man lying on the front porch of his house. He appears to have been shot in the head and is lying in a pool of blood. You should:
- A. immediately assess the patient.
 - B. proceed to the patient with caution.
 - C. quickly assess the scene for a gun.
 - D. retreat to a safe place and wait for law enforcement to arrive.



3. Findings such as inadequate breathing or an altered level of consciousness should be identified in the:
- A. primary assessment.
 - B. full-body scan.
 - C. secondary assessment.
 - D. reassessment.



4. Which of the following would you NOT detect while determining your initial general impression of a patient?
- A. Cyanosis
 - B. Gurgling respirations
 - C. Severe bleeding
 - D. Rapid heart rate



5. Your primary assessment of an elderly woman who fell reveals an altered level of consciousness and a large hematoma to her forehead. After protecting her spine and administering oxygen, you should:
- A. reassess your interventions.
 - B. perform a rapid scan.
 - C. transport the patient immediately.
 - D. perform an exam focusing on her head.



6. A semiconscious patient pushes your hand away when you pinch his earlobe. You should describe his level of consciousness as:
- A. alert.
 - B. unresponsive.
 - C. responsive to painful stimuli.
 - D. responsive to verbal stimuli.



7. Assessment of an unconscious patient's breathing begins by:
- A. inserting an oral airway.
 - B. manually positioning the head.
 - C. assessing respiratory rate and depth.
 - D. clearing the mouth with suction as needed.



8. Your 12-year-old patient can speak only two or three words without pausing to take a breath. He has a serious breathing problem known as:
- A. nasal flaring.
 - B. two- to three-word dyspnea.
 - C. labored breathing.
 - D. shallow respirations.



9. How should you determine the pulse in an unresponsive 8-year-old patient?
- A. Palpate the radial pulse at the wrist.
 - B. Palpate the brachial pulse inside the upper arm.
 - C. Palpate the radial pulse with your thumb.
 - D. Palpate the carotid pulse in the neck.



10. When assessing your patient's pain, he says it started in his chest but has spread to his legs. This is an example of what part of the OPQRST mnemonic?
- A. Onset
 - B. Quality
 - C. Region/radiation
 - D. Severity