

The Weird, Wicked, and Wonderful

The Trauma

Your unit is dispatched to a motor vehicle crash involving two cars. Dispatch advises one vehicle has hit a bridge and the driver is pinned.

Thoughts while responding?



Pulse Check 2014

Guy Peifer, EMT-P

Upon Arrival



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Guy Peifer, EMT-P

Size-Up

PPE/BSI

Safety

MOI/NOI

of Patients

Need for Additional Resources

Access Concerns

Spinal Concerns

Size-Up

PPE/BSI

- What precautions are you taking?
- What is the new catchphrase for PPE/BSI?



Size-Up

Safety

- Concerns
- Actions you will take



THE SCENE IS
safe
SAFE

Size-Up

MOI/NOI

- Obviously there is mechanism.
- Is there a possibility of a medical event?



Size-Up

of Patients

- How many?
- Infant/Child car seats?
- Other vehicle?
- Area around the scene?

Size-Up

Need for Additional Resources

- Who/What are you requesting?



Size-Up

Access Concerns

- How are you accessing the victim(s)?



Size-Up

Spinal Concerns

- Are you up-to-date with current protocol?
- Did it really change?

DANGER!



**Not safe for patients with
possible spinal injuries**

Spinal Immobilization Protocols in New York State



***The following groups of patient
should be immobilized!***

Major Trauma Protocol

- All Adult and Pediatric Trauma Patients who meet the Major Trauma Protocols (T 6–7)
- Certain Adult and Pediatric Patients with Blunt Head and Neck Trauma i.e. Based on Mechanism of Injury (T 8)

Consider Spinal Immobilization

Not Meeting Major Trauma Protocol but patient has one or more:

- Altered Mental Status
- Patient Complaint of Neck Pain
- Weakness, Tingling or Numbness
- Pain on Palpation of Posterior Midline Neck

Consider Spinal Immobilization

- *High Risk Patients*
 - *Not Meeting Major Trauma Protocol but patient has one or more:*
 - *Evidence of Intoxication*
 - *Distracting Injury*
 - *Inability to Communicate*
 - *Acute Stress Reaction*
 - *Elderly* - Age Greater than 65 years

Key Point



If there is ANY DOUBT, then SUSPECT that a SPINE INJURY is Present and Treat Accordingly

Termination of Immobilization

- Once spinal immobilization has been initiated, it must be completed.
- An extrication or cervical collar *starts* the immobilization process
- Manual Stabilization does NOT start the immobilization process



General Impression

47 year old female found in the drivers seat. She is still wearing her seat belt. She is awake, alert, and oriented to surroundings. Her airway is open. Breathing is rapid. Skin appears pale and moist.

Thoughts?

The Assessment

Lets Review the
Basics:

A

B

C

D

E

F

G

The Assessment

Airway

Is it open?	Do you need to open it?
Is it clear?	Do you need to clear it?
Is it maintained?	Need for OPA/NPA?

The Assessment

Breathing

IPASSO

- Inspect – Rise and fall. Injury
- Palpate – Tenderness. Crepitus.
- Auscultate – Lung Sounds
- Seal/Stabilize – Occlusive
- Oxygen – Did you get an O2 sat?

The Assessment

Circulation

- Pulse – Regular/Irregular. Rate
- Skin – CTC
- Bleeding – External/Internal

The Assessment

The D's

- Defibrillation – Need for
- Disability – Eyes. Motor.
- Diagnostics – Vitals
- Decision

The Assessment

Expose

- Expose as required. You can't fix what you can't see.
- Examine. Primary/Secondary Exam.

The Assessment

Focused History

- Build a foundation.
 - OPQRSTI
 - SAMPLE
- Other related questions

The Assessment

GO

- If you have not left yet...why?
- How are you getting to the ambulance?
- Where are you going?
- ONGOING Assessment

The Assessment

- Pt. airway is open and clear, maintained.
- Breathing is rapid, shallow, lungs are clear. No pain/tenderness. No holes. Oxygen?
- Pulse is present and rapid. Skin cool, pale, moist. No obvious bleeding.

The Assessment

- No need to defib.
- PERRLA. Follows commands. Moves extremities x4.
- Pulse 110 reg. & strong. Resp. 22 shallow. BP 100/70. O2 sat 98% with NRB. Anything else??
- Trauma center?

The Assessment

Exam:

HEENT unremarkable. Neck supple, no JVD. Pos. cervical pain. No chest trauma. Lungs clear. Abdomen soft. You note the pt has an insulin pump. Pain in pelvis. Extremities unremarkable. No neuro deficits.

The Assessment

O – 15 min ago

P – car crash

Q – unbearable

R – No

S – 10

T – from impact

I - none

S – as noted earlier

A – None

M – Insulin

P – Diabetes

L – 2 hours ago

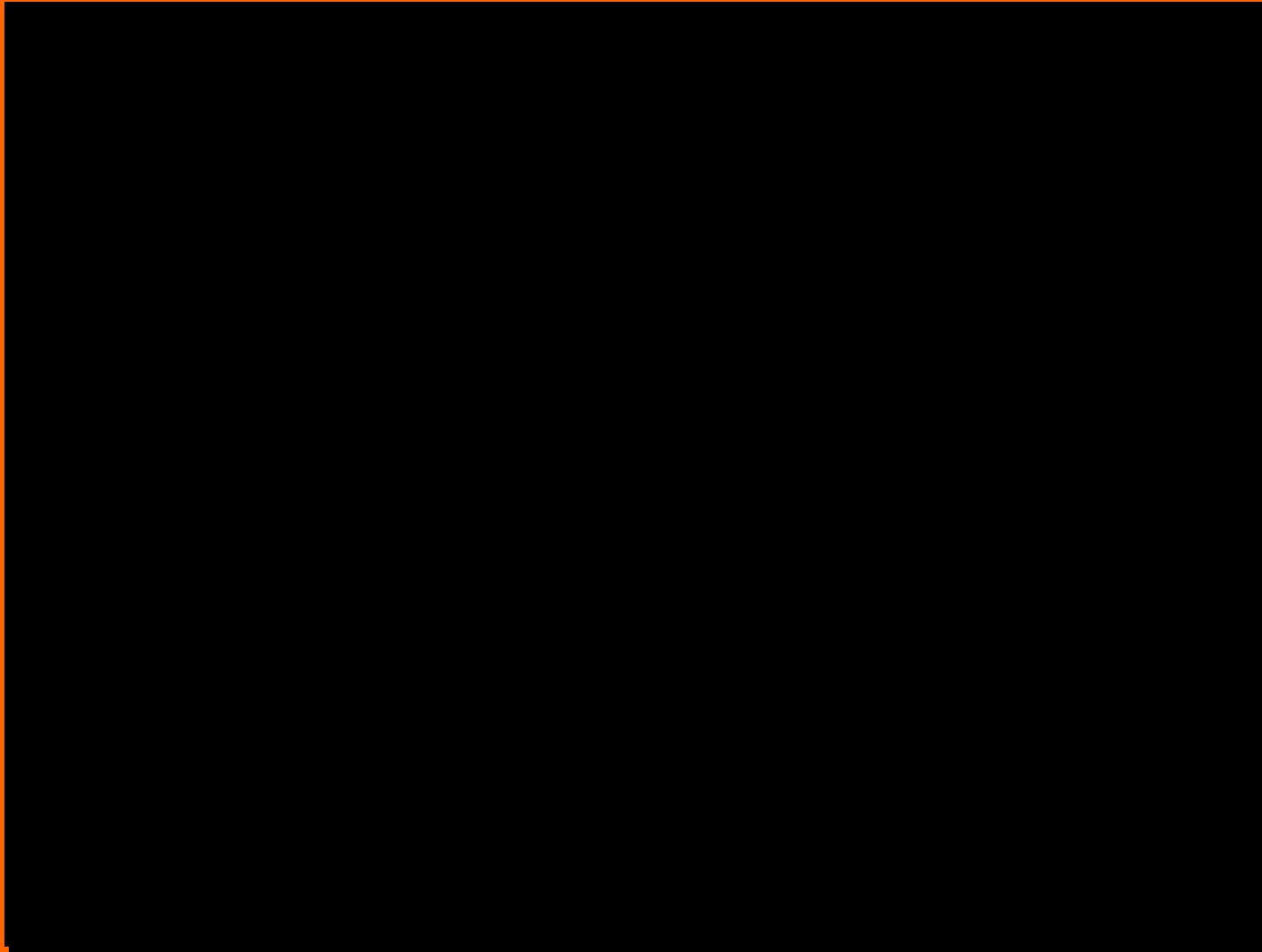
E – Struck by an auto

Extrication

This patient is trapped in vehicle. Knees are pushed into the dash. There is no access through drivers or passenger door.

Your partner has accessed the patient already. He notes the patient's mental state is changing. Why?

Insulin Pump



Extrication

FD has disentangled the patient.

How are you going to extricate her?

What is your diagnosis?

What is your treatment going to be?

The Hazmat

Scene Safety

Hot – Warm – Cold Zones

Victim Decon

Dirty Resuscitation

Safety

What are safety concerns specific to hazardous materials incidents?

Are you going to manage the patients differently?

Zones

Purpose of zone designation:

- Reduce accidental spread of contaminants
- Reduce the number of personnel authorized in the high-risk areas
- Delineate required levels of personal protection to be worn
- Implement emergency evacuation routes.

Zones

Hot Zone - contaminated area

Warm Zone - the area where decontamination of personnel and equipment takes place

Cold Zone - the uncontaminated area where workers should not be exposed to hazardous conditions

The Patient

A water department worker has been exposed to leaking chlorine at a local water treatment facility. Co-workers state he is the building and the leak is ongoing.

EMS Role?

The Patient

The co-workers are insisting you enter the building to rescue the exposed (contaminated) patient.

What do you do?

Signs and Symptoms of Chlorine Exposure

- Blurred vision
- Burning pain, redness, and blisters on the skin if exposed to gas.
- Skin injuries similar to frostbite can occur if it is exposed to liquid chlorine
- Burning sensation in the nose, throat, and eyes
- Coughing
- Chest tightness
- Difficulty breathing
- Pulmonary edema
- Nausea and vomiting
- Watery eyes
- Wheezing

Fire Department Hazmat



Hazmat Has Arrived

Hot, Cold, and Warm zones have been established. Where will EMS stage?

EMS trained in Level A or Level B suits?



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Patient is in Decon

The Hazmat Branch Director is advising they have a patient in respiratory arrest in the decon area.

Are you prepared to enter and begin resuscitation?

Can You Do This?



- Airway management
- Needle decompression
- Hemorrhage control
- Administration of antidotes
- Decon with soap and water

EMS Concerns

- Before approaching the patient, EMS at the site must make sure that they do not risk exposing themselves to chlorine.
- Patients exposed only to chlorine gas do not pose a significant risk of secondary contamination.
- Patients whose clothing or skin is contaminated with liquid chlorine can contaminate rescue and medical personnel by direct contact or through off-gassing chlorine.
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EMS Concerns

- Chlorine gas is rapidly corrosive when it comes in contact with moist tissue.
- Laryngospasm and signs of pulmonary edema (shortness of breath, cyanosis, expectoration, cough) may occur.
- There is no antidote to be administered to counteract the effects of chlorine.
- Treatment consists of supportive measures

Let's Discuss How We Would Manage This Patient.

The Cardiac Arrest

FD and EMS are dispatched to the unconscious female. Dispatch states patient is 28 years old and the caller states she is not breathing. CPR instructions are being given.

Thoughts?



Sudden Cardiac Arrest

Causes of Sudden Cardiac Arrest

- V-Fib
- Slow or Stopped electrical signal
- Coronary Artery Disease
- Intense Physical Activity – adrenaline
- Very low blood levels of potassium or magnesium
- Inherited – LQTS
- Structural changes – BP, disease

Could This Cause It?



Arrival



Assessment

28 year old female. No obvious trauma.
Bystander performing CPR.

What else do you want to know?

What else are you looking for?

Getting to Work

Assessment is performed.

Manual CPR is initiated while LUCAS, AED, and ResQpod are readied.

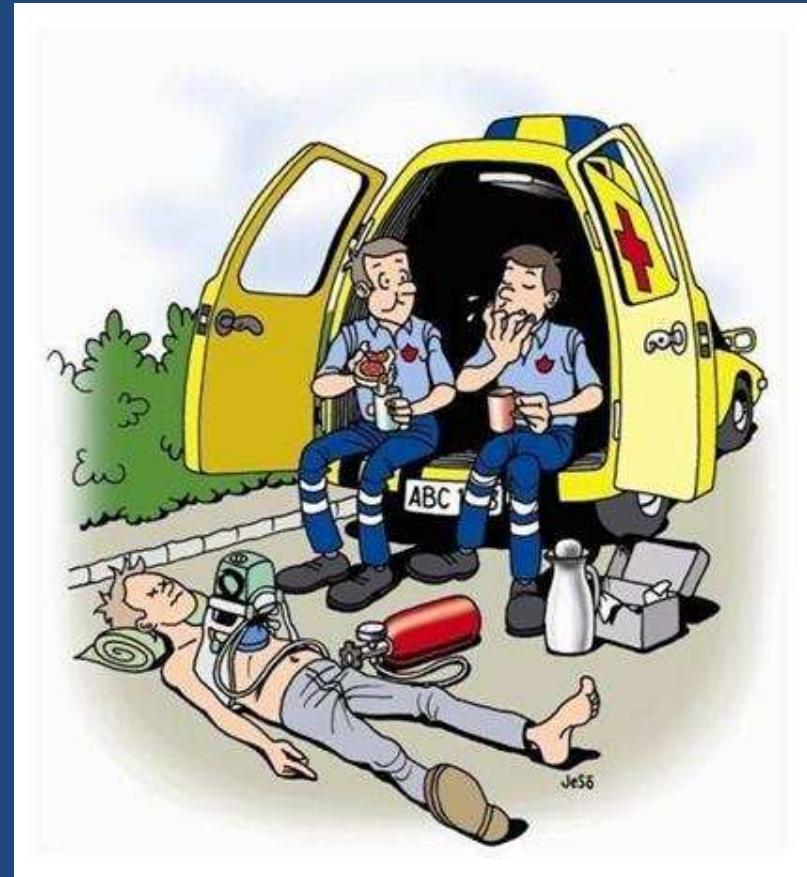
What does your assessment include?

Early Defibrillation Works

The patient has received one defibrillation. She has a pulse and is breathing on her own. As you package her for transport she regains consciousness.

Benefits of Mechanical CPR

- consistent rate and depth of compression
- Increased EtCO₂ levels
- Increased hands-on times
- defibrillation during compressions



Impedance Threshold Devices

“Use of the impedance threshold device (ITD) improved ROSC and short-term survival when used in adults with out-of-hospital cardiac arrest”



What do you think caused her
to go into cardiac arrest?

The Diff. Breather

Dispatch sends you to a private house for 50 year old male with a chief complaint of difficulty breathing.

You find him awake, alert, and oriented, in obvious respiratory distress.

Classify the Problem

D – disordered control of breathing

U – upper airway obstruction

L – lower airway obstruction

L – lung tissue disease

Assessment

- Airway - open, clear, self maintained
- Breathing – equal, labored, L/S wheezes, no trauma, O2 sat 92%
- Circulation – strong but irregular pulse, skin warm & moist, no obvious bleeding

Assessment

What else do you want to know?

Remember D – E – F - G



Differential Diagnosis

Pneumonia?

COPD?

Asthma?

Pulmonary Edema?

Inhalation Emergency?

Allergic Reaction?

- Always do a thorough assessment
- Think outside the box
- Communicate
- You can't do everything
- Vitals, Vitals, Vitals
- Don't be afraid to ask questions