



Trauma Care

Course Objectives

- **Importance of Trauma Care**
- **Principles of primary and secondary assessments**
- **Establish management priorities within the Primary Survey**

The Need

- **The leading cause of death in the first four decades of life.**
- **More than 5 million trauma-related deaths each year worldwide.**
- **Motor vehicle crashes cause over 1 million deaths per year.**
- **Injury accounts for 12% of the world's burden of disease.**

The Need In Saudi



Start of Trauma Organization

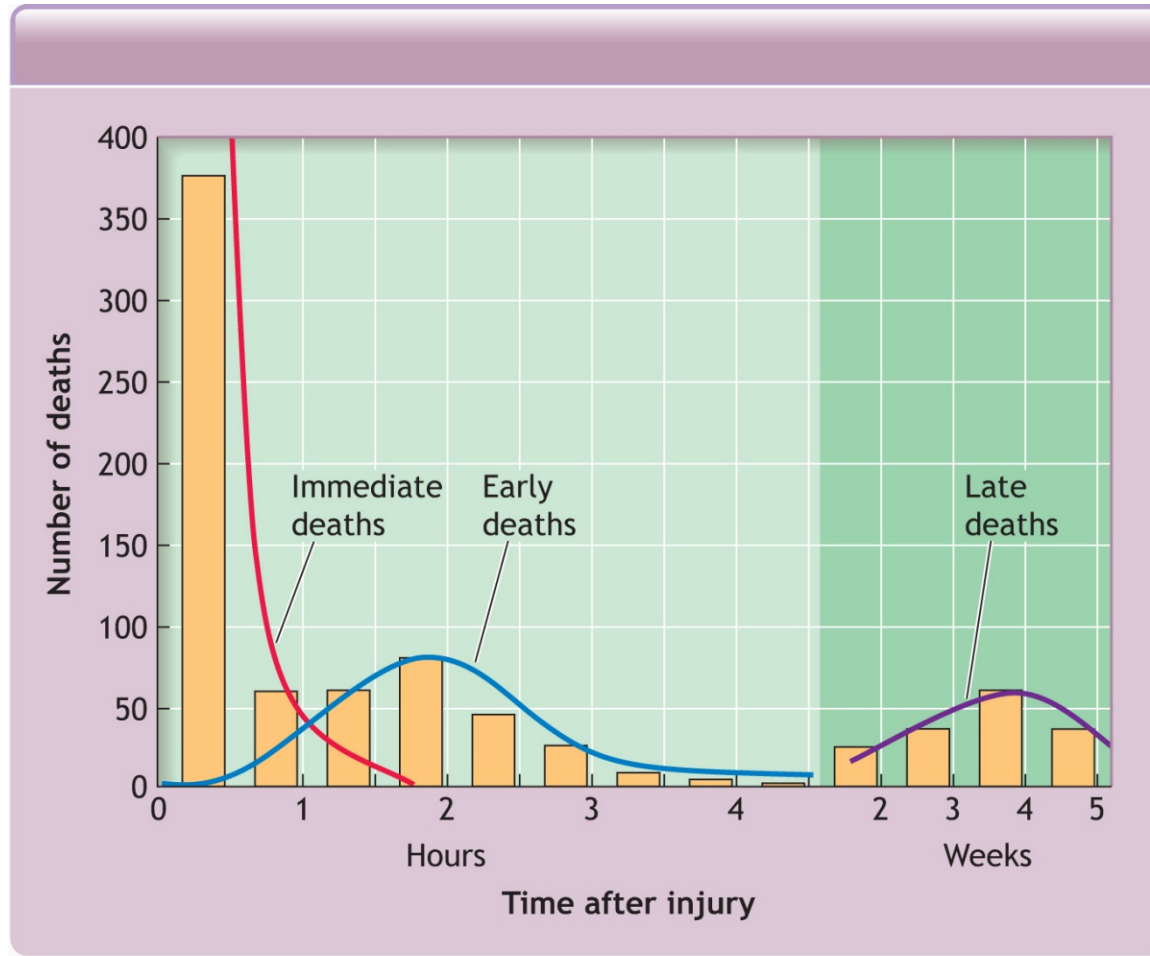


The Beginning

“When I can provide better care in the field with limited resources than what my children and I received at the primary care facility there is something wrong with the system, and the system has to be changed.”

*James Styner, MD, FACS
1977*

Trimodal Death Distribution



Standard Concept

- ABCDE approach to evaluation and treatment
- Treat greatest threat to life *first*
- Definitive diagnosis *not* immediately important
- Time is of the essence
- Do no further harm

ATLS Concept

Airway with c-spine protection

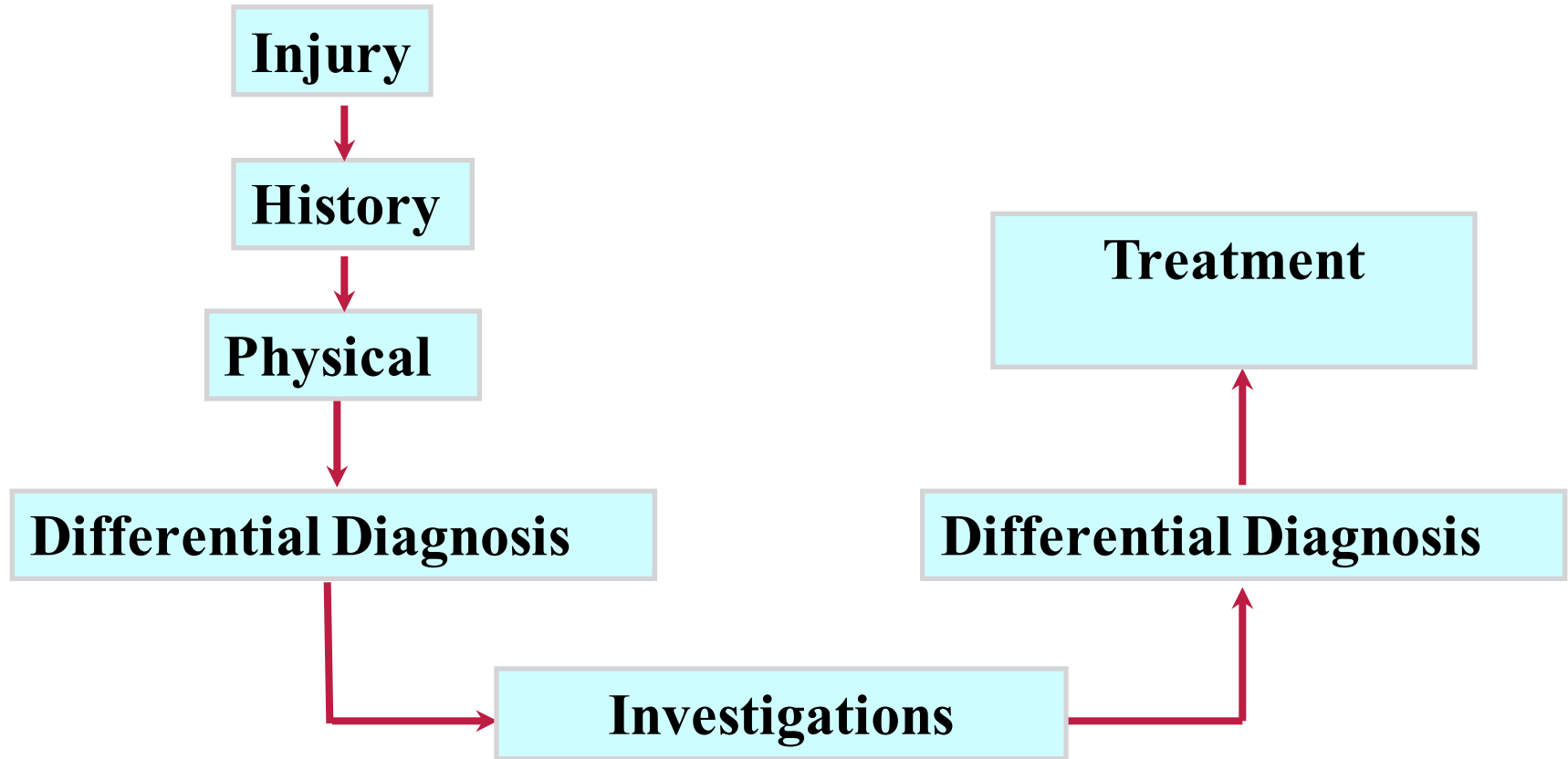
Breathing / ventilation / oxygenation

Circulation: stop the bleeding!

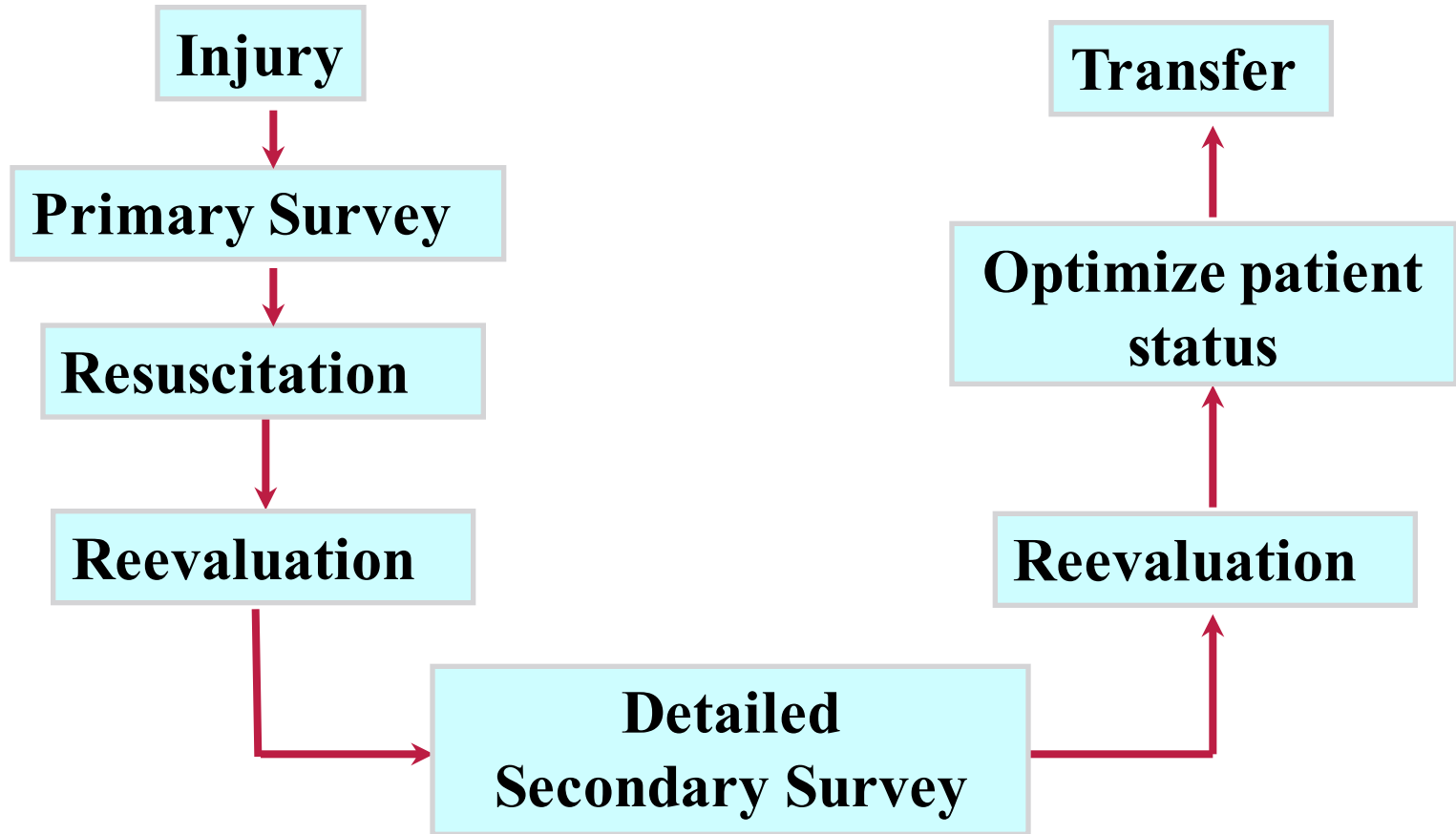
Disability / neurological status

Expose / **E**nvironment / body temperature

Regular Medical Assessment



Initial Assessment / Management



Case Scenario

- 24-year-old male involved in a motorcycle crash in to a truck
- Not wearing a helmet
- Arrives at hospital with the red crescent
- BP 80/40, P140, RR 33, and central cyanosis
- C-collar, Oxygen at 8L/min, Dressing to forehead & thigh soaked in blood
- Has a wrist splint & is on a spinal board

Case Scenario

Demonstration
1

Case Scenario

What do you think of the care?

Standard Precautions

- Cap
- Gown
- Gloves
- Mask
- Shoe covers
- Goggles / face shield



Quick Assessment

What is a quick, simple way to assess a patient in 10 seconds?

Quick Assessment

What is a quick, simple way to assess a patient in 10 seconds?

- **Identify yourself**
- **Ask the patient his or her name**
- **Ask the patient what happened**

Appropriate Response Confirms

- A** Patent airway
- B** Sufficient air reserve to permit speech
- C** Sufficient perfusion to permit cerebration
- D** Clear sensorium

Primary Survey

Airway with c-spine protection

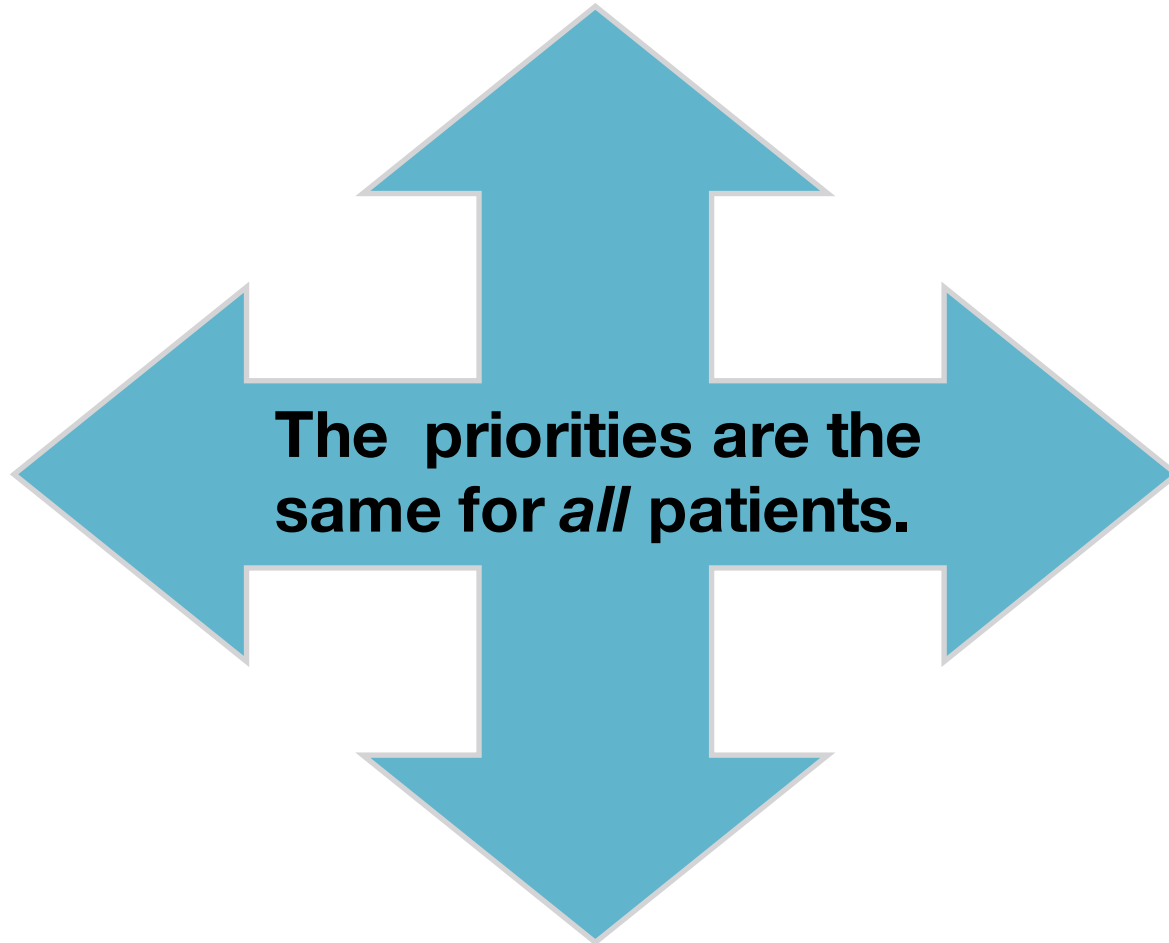
Breathing with adequate oxygenation

Circulation with hemorrhage control

Disability

Exposure / **E**nvironment

Primary Survey



Special Considerations

- **Trauma in the elderly**
- **Pediatric trauma**
- **Trauma in pregnancy**



Primary Survey

Airway

Establish patent airway and protect c-spine



Occult airway injury

Progressive loss of airway

Equipment failure

Inability to intubate

Primary Survey

Basic Airway Techniques

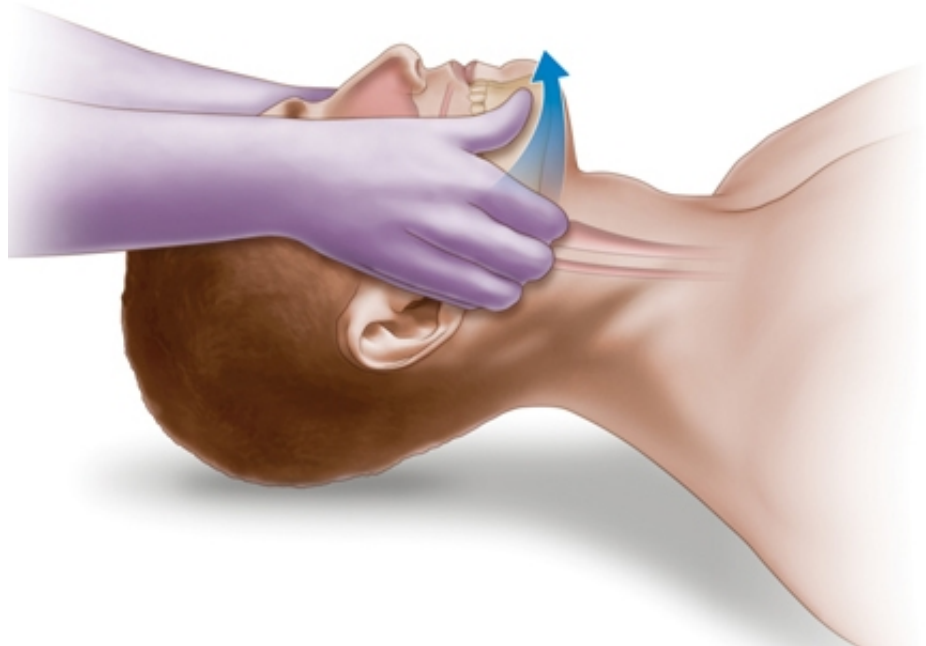
Chin-lift Maneuver



Primary Survey

Basic Airway Techniques

Jaw-thrust Maneuver



Primary Survey

Advanced Airway Techniques

Orotracheal intubation



Primary Survey

Breathing

Assess and ensure adequate oxygenation and ventilation

- Respiratory rate
- Chest movement
- Air entry
- Oxygen saturation

Primary Survey

Breathing

The **Immediate** life threatening injuries

- Laryngeotracheal injury / Airway obstruction
- Tension pneumothorax
- Open pneumothorax
- Flail chest and pulmonary contusion
- Massive hemothorax
- Cardiac tamponade

Primary Survey

Circulation

- **Level of consciousness**
- **Skin color and temperature**
- **Pulse rate and character**

Primary Survey

Circulatory Management

- **Control hemorrhage**
- **Restore volume**
- **Reassess patient**
- **Lethal triad**

Primary Survey

Disability

- **Baseline neurologic evaluation**
 - **Glasgow Coma Scale score**

Table 4. Pediatric Glasgow Coma Scale For Nonverbal Children.

Eye Opening	
Spontaneous	4
To speech	3
To pain	2
No response	1
Verbal Response	
Coos, babbles	5
Irritable cry	4
Cries to pain	3
Moans to pain	2
No response	1
Motor Response	
Follows commands	6
Localizes pain	5
Withdraws to pain	4
Decorticate flexion	3
Decerebrate extension	2
No response	1

Primary Survey

Disability

- **Baseline neurologic evaluation**
 - **Glasgow Coma Scale score**
 - **Pupillary response**

Primary Survey

Exposure / Environment

Completely undress the patient



**Prevent
hypothermia**

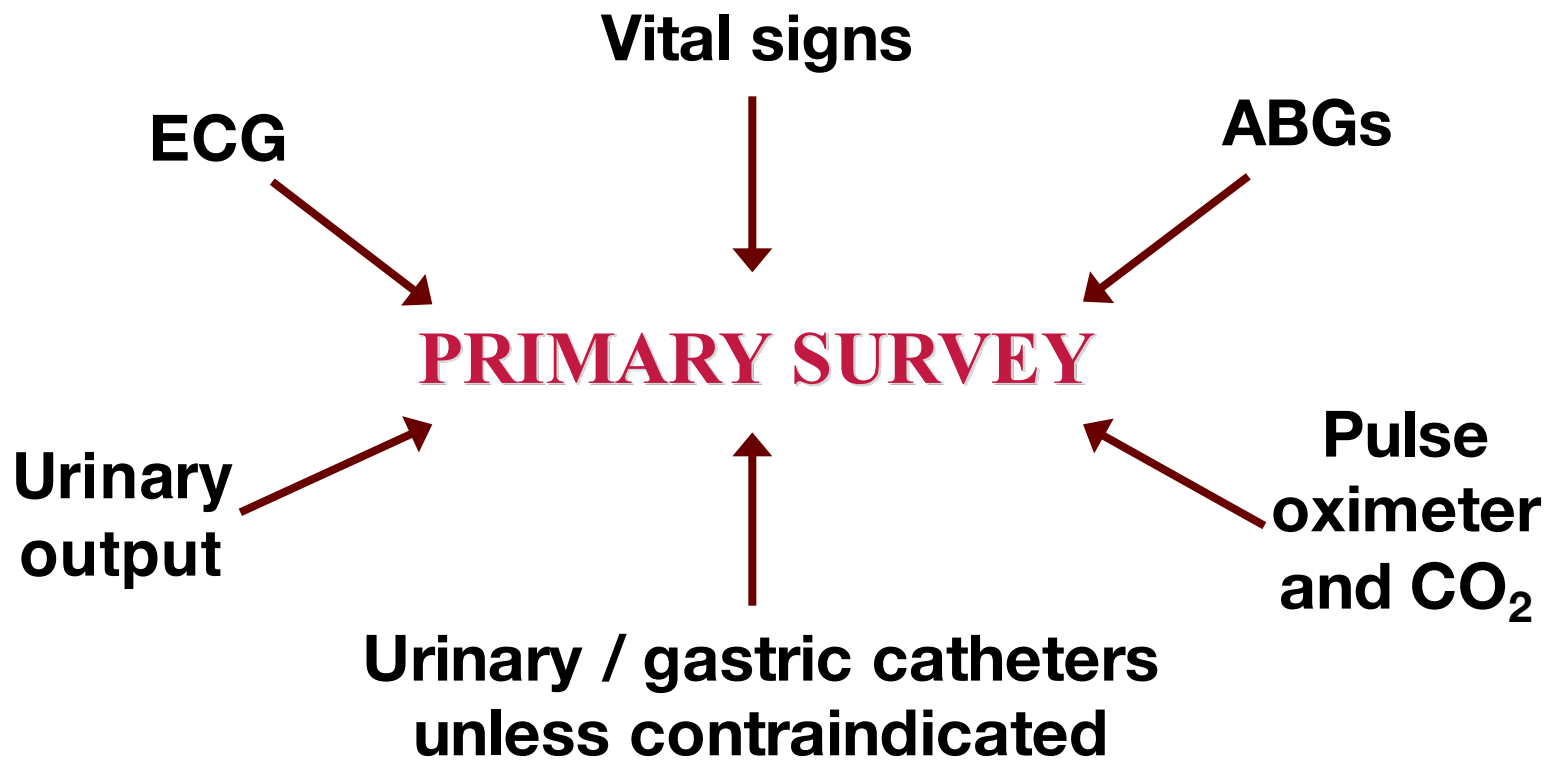


**Missed
injuries**

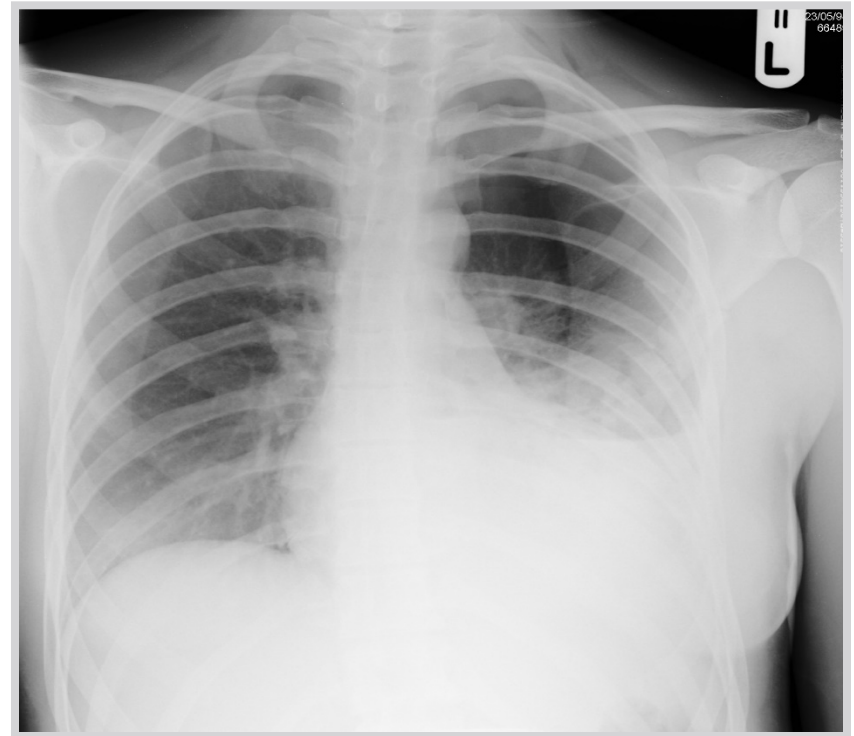
Resuscitation

- **Protect and secure airway**
- **Ventilate and oxygenate**
- **Stop the bleeding!**
- **Vigorous shock therapy**
- **Protect from hypothermia**

Adjuncts to Primary Survey



Adjuncts to Primary Survey



Adjuncts to Primary Survey

Diagnostic Tools

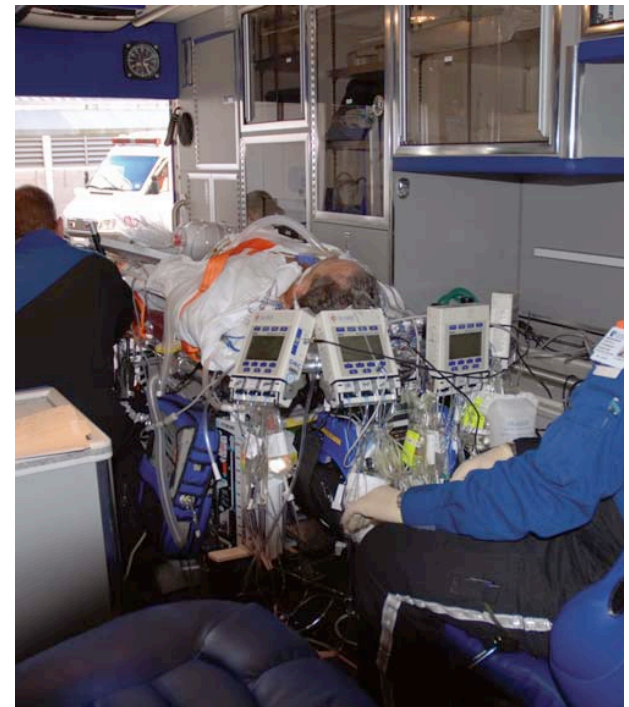
- **FAST**
- **DPL**



Adjuncts to Primary Survey

Consider Early Transfer

- Use time before transfer for resuscitation
- Do not delay transfer for diagnostic tests

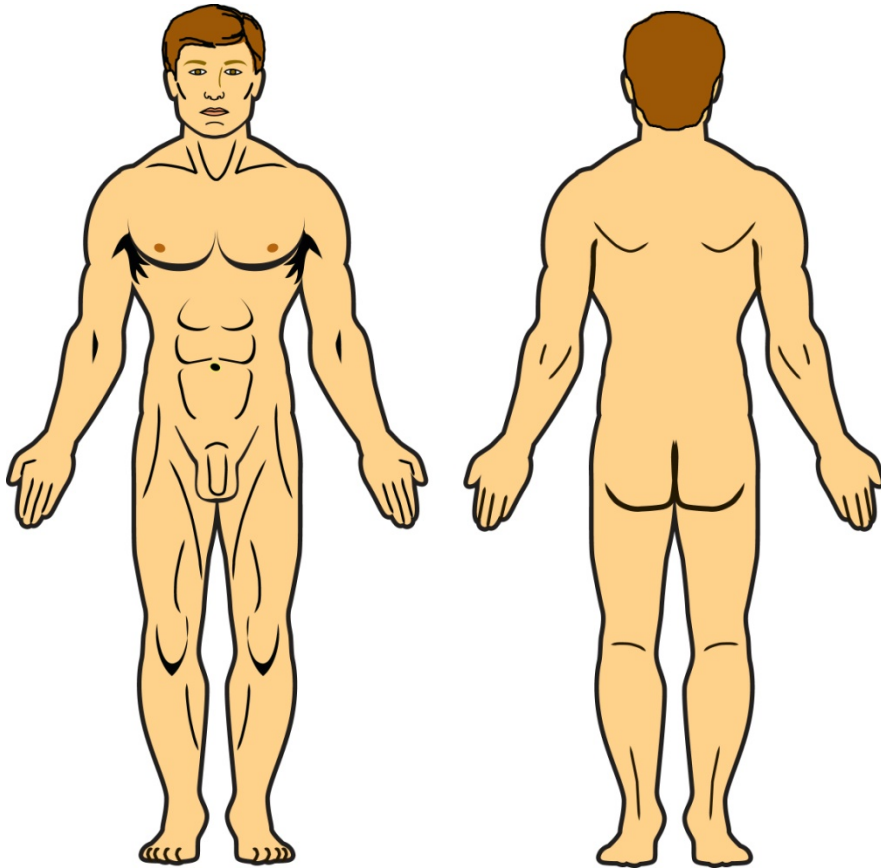


Case Scenario

Demonstration

11

What is the secondary survey?



The ***complete***
history and
physical
examination

Secondary Survey

When do I start the secondary survey?

After

- **Primary survey is completed**
- **ABCDEs are reassessed**
- **Vital functions are returning to normal**

Secondary Survey

What are the components of the secondary survey?

- **History**
- **Physical exam: Head to toe**
- **Complete neurologic exam**
- **Special diagnostic tests**
- **Reevaluation**

Summary

- **ABCDE approach to trauma care**
- **Do no further harm**
- **Treat the greatest threat to life first**
- **One safe way**
- **A common language**

Trauma Care

Questions