Multisystem Trauma
OBJECTIVES

32.1 Define key terms introduced in this chapter. Slides 12, 24

32.2 Describe the considerations for teamwork, timing, and transport decisions in assessing and managing patients with multisystem trauma or multiple trauma. Slides 18–19
32.3 Discuss the physiologic, anatomic, and mechanism of injury criteria for determining patient severity with regard to trauma triage and transport decisions. Slides 13–16
32.4 Recognize special patient considerations that increase the patient’s priority for transport, such as age, anti-coagulation bleeding disorders, burns, time-sensitive extremity injuries, end-stage renal disorders requiring dialysis, and pregnancy. Slides 13–16
32.5 Discuss general principles of multisystem trauma management. Slides 20–23

32.6 Describe the purposes of trauma scoring systems. Slides 24–26
MULTIMEDIA

• Slide 27  Emergency: Gunshot Wound Video
• Slide 28  Multiple System Injuries in Front-end Collisions Video
• Slide 29  Mechanism of Injuries in Vehicle Collisions Video
How to balance the critical trauma patient’s need for prompt transport against the time needed to treat all the patient’s injuries at the scene

How to determine the severity of the trauma patient’s condition, priority for transport, and appropriate transport destination

continued
CORE CONCEPTS

• How to select the critical interventions to implement at the scene for a multiple-trauma patient
• How to calculate a trauma score
Topics

• Multisystem Trauma
• Managing the Multisystem Trauma Patient
Multisystem Trauma
Multisystem Trauma

- Patient with one or more injuries serious enough to affect more than one body system
Determining Patient Severity

- Physiologic criteria
- Anatomic criteria
- Mechanism of injury

continued
Determining Patient Severity

- Physiologic criteria
  - Altered mental status (GCS <14): head injury
  - Hypotension (systolic <90mmHg): shock, internal bleeding
  - Abnormally slow respiratory rate: head injury, later stages of shock
  - Abnormally high respiratory rate: shock
Anatomic Criteria

- Injury to specific a body part/area requiring immediate surgical intervention
- Injuries to the head and chest
- Multiple musculoskeletal injuries
- Amputations
- Severely mangled extremities
- Pelvic injuries
Mechanism of Injury

- In absence of anatomic or physiologic signs, MOI is considered if severe
- Fall
- High-risk auto crash
- Automobile-pedestrian crash
- Motorcycle crash
Managing the Multisystem Trauma Patient
Preparing for Multisystem Trauma Patients

- Practice with crew: determine roles
- En route to call, review roles each member of the crew will have
Scene Safety

- Scene safety is paramount
- Different trauma is associated with different dangers
- Auto crash will have passing traffic
- Penetrating trauma—assailant may still be on the scene
Treating Multisystem Trauma

- Follow priorities determined by primary assessment
- Attend to threats to life
- Reassess what to treat on scene and what needs definitive care
- Call hospital so they can prepare
Treating Multisystem Trauma

Postpone vitals

Alert hospital

continued
Treating Multisystem Trauma

- Limit scene treatment
  - Suction airway
  - Insert oral or nasal airway
  - Restore patent airway
  - Ventilate with bag-valve mask
  - Administer oxygen
  - Control bleeding
  - Immobilize patient
Expect the Unexpected

• Adapt to situation
• Do what is necessary to ensure an open airway
• Perform urgent or emergency moves as necessary
• If part of patient’s body is not accessible, assess part of the body you can reach
Trauma Scoring

- Numerical rating system for trauma
- Assigns number to certain patient characteristics to create a score
- Objectively describes severity
- Helps determine transport to a trauma center or local hospital
- Helps trauma centers evaluate the care of similar patients
Revised Trauma Score (RTS)

- Components
  - Glasgow Coma Scale (GCS)
  - Systolic blood pressure
  - Respiratory rate

- Follow local protocol for use of the trauma scoring system

- Do not let it interfere with patient care
### REVISED TRAUMA SCORE

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Criterion</th>
<th>RTS Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow Coma Scale</td>
<td>13-15</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>9-12</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6-8</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>4-5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Systolic Blood Pressure</td>
<td>&gt; 89 mmHg</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>76-89 mmHg</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>50-75 mmHg</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>49-44 mmHg</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Respiratory Rate</td>
<td>10-29/min</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>&gt; 29/min</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6-9/min</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1-5/min</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Revised Trauma Score (Total)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Click [here](#) to view a video on the subject of treating gunshot wounds.
Multiple System Injuries in Front-end Collisions Video

Click here to view a video on the subject of trauma due to front-end collisions.
Mechanism of Injuries in Vehicle Collisions Video

Click here to view a video on the types of injuries in motor vehicle collisions.
Chapter Review
Chapter Review

• Multisystem trauma is a serious condition in which two or more major body systems are injured or affected.

• Recognizing multisystem trauma, triaging properly, transporting promptly, and choosing the correct destination are vital for the survival of your patient.

continued
Chapter Review

• The CDC has issued guidelines for trauma triage and transport. These are a guide and should be used in conjunction with your protocols.
Chapter Review

- The revised trauma score (RTS) is one method of classifying trauma patients by severity and includes the Glasgow Coma Score (GCS), systolic blood pressure, and respiratory rate.
Remember

• Your primary assessment should determine whether your patient is seriously injured or potentially seriously injured.

• Limit scene treatment to life-threatening conditions.

• The “golden hour” begins from the time of trauma.
Remember

• Use patient severity (physiologic criteria, anatomic criteria, MOI) to decide whether to transport to a trauma center or local hospital.
Questions to Consider

• Is my patient seriously injured or potentially seriously injured?
• Should I expedite my scene time?
• What is the most appropriate transport destination for my patient?
Critical Thinking

• A patient was involved in a car crash with significant intrusion into the area where the patient was sitting. The patient is alert and complains of pain in the ribs. Pulse: 96 and regular; respirations: 30 and adequate; blood pressure: 100/62; pupils: equal and reactive; skin: cool and dry.

continued
Critical Thinking

- Your partner says the patient is stable and could be easily transported to the community hospital nearby. You think the patient should be transported to the trauma center. How would you justify your decision to your partner?
Please visit Resource Central on www.bradybooks.com to view additional resources for this text.