Scene Size-Up
Figure 10-1a  Clues such as (A) exterior damage, (B) a deployed air bag, or (C) a damaged windshield may lead you to suspect certain types of injuries. © Daniel Limmer
**Figure 10-1b** Clues such as (A) exterior damage, (B) a deployed air bag, or (C) a damaged windshield may lead you to suspect certain types of injuries. © *Daniel Limmer*
Figure 10-1c  Clues such as (A) exterior damage, (B) a deployed air bag, or (C) a damaged windshield may lead you to suspect certain types of injuries.
Scan 10-1   Establishing the Danger Zone

**Downed Lines**
In incidents involving downed electrical wires and damaged utility poles, the danger zone should extend beyond each intact pole for a full span and to the sides for the distance that the severed wires can reach. Stay out of the danger zone until the utility company has deactivated the wires, or until trained rescuers have moved and anchored them.
Scan 10-1 (continued)  Establishing the Danger Zone

**Vehicle on Fire**
If no other hazards are involved, such as dangerous chemicals or explosives, the ambulance should park no closer than 100 feet (about 30 meters) from a burning vehicle. Park upwind.
Scan 10-1 (continued)  Establishing the Danger Zone

Hazardous Material Threatened by Fire
When hazardous materials are either involved in or threatened by fire, the size of the danger zone is dictated by the nature of the material. Use binoculars to read the placard on the truck and refer to the Emergency Response Guidebook for a safe distance to establish your command post. Park upwind.
Scan 10-1 (continued) Establishing the Danger Zone

**Spilled Fuel**
The ambulance should be parked upwind from flowing fuel. If this is not possible, the vehicle should be parked as far from the fuel flow as possible, avoiding gutters, ditches, and gullies that may carry the spill to the parking site. Remember, your ambulance’s catalytic converter is an ignition source over 1000 degrees Fahrenheit.
Scan 10-1 (continued) Establishing the Danger Zone

Hazardous Materials
Leaking containers of dangerous chemicals may produce a health as well as a fire hazard. When chemicals have been spilled, whether fumes are evident or not, the ambulance should be parked upwind. If the hazardous material is known, seek advice from experts such as CHEMTREC through the Incident Commander.
Figure 10-2  Crowds are a potential source of violence. © Mark C. Ide
Figure 10-3  Whether the call is to a residence or to the street, a variety of hazards may be present.
Scan 10-2  Mechanism of Injury and Affected Areas of the Body

MECHANISM OF INJURY
The force that produced the injury, its intensity and direction.

TYPES OF FORCE
- Direct
- Twisting
- Forced Flexion or Hyperextension
- Indirect

FORCED BENDING OR EXTENSION
- Elbow
- Wrist
- Fingers
- Femur
- Knee
- Foot
- Cervical spine

TWISTING
- Hip
- Femur
- Knee
- Tibia/fibula
- Ankle
- Shoulder girdle
- Elbow
- Ulna/radius
- Wrist

INDIRECT
- Pelvis
- Hip
- Femur
- Knee
- Tibia/fibula
- Shoulder
- Humerus
- Elbow
- Ulna/radius

DIRECT DOWNWARD BLOW
- Clavicle
- Scapula

DIRECT LATERAL BLOW
- Clavicle
- Scapula
- Shoulder girdle
- Humerus

DIRECT LATERAL BLOW
- Knee
- Hip
- Femur
(Very forceful)
Figure 10-4a There are three collisions in a motor-vehicle crash: (A) a vehicle collision, when the vehicle strikes an object; (B) a body collision, when the person's body strikes the interior of the vehicle; and (C) an organ collision, when the person's organs strike interior surfaces of the body.
Figure 10-4b  There are three collisions in a motor-vehicle crash: (A) a vehicle collision, when the vehicle strikes an object; (B) a body collision, when the person's body strikes the interior of the vehicle; and (C) an organ collision, when the person's organs strike interior surfaces of the body.
There are three collisions in a motor-vehicle crash: (A) a vehicle collision, when the vehicle strikes an object; (B) a body collision, when the person's body strikes the interior of the vehicle; and (C) an organ collision, when the person's organs strike interior surfaces of the body.
Figure 10-5  A head-on impact.
Figure 10-6a  In a head-on collision, an unrestrained person is likely to travel in (A) an up-and-over pathway causing head, neck, chest, and abdominal injuries or in (B) a down-and-under pathway causing hip, knee, and leg injuries. (C) A deploying airbag can also cause injuries.
Figure 10-6b  In a head-on collision, an unrestrained person is likely to travel in (A) an up-and-over pathway causing head, neck, chest, and abdominal injuries or in (B) a down-and-under pathway causing hip, knee, and leg injuries. (C) A deploying airbag can also cause injuries.
Figure 10-6c In a head-on collision, an unrestrained person is likely to travel in (A) an up-and-over pathway causing head, neck, chest, and abdominal injuries or in (B) a down-and-under pathway causing hip, knee, and leg injuries. (C) A deploying airbag can also cause injuries.
Figure 10-7  Rear impact. © Edward T. Dickinson, MD
Figure 10-8a  In a rear-end collision, the unrestrained person's head is jerked violently (A) backward and then (B) forward, causing neck, head, and chest injuries.
Figure 10-8b In a rear-end collision, the unrestrained person's head is jerked violently (A) backward and then (B) forward, causing neck, head, and chest injuries.
Figure 10-9  Side impact. © Edward T. Dickinson, MD
**Figure 10-10** A side-impact collision may cause head and neck injuries as well as injuries to the chest, abdomen, pelvis, and thighs.
Figure 10-11  Rollover collision. © Daniel Limmer
Figure 10-12 In a rollover collision, the unrestrained person will suffer multiple impacts and possible multiple injuries.
Figure 10-13  The characteristics of a fall may provide valuable clues to a patient's injuries.
Figure 10-14  Bullets cause damage in two ways: from the bullet itself (A and C) and from cavitation, which is the temporary cavity caused by the pressure wave.
Figure 10-15  Actively look for any additional patients, such as pedestrians or cyclists. © Kevin Link