Objectives

1. Define key terms introduced in this chapter.
2. Explain elements of dispatch information, including location and whether it is a motor vehicle collision or other type of emergency, that would indicate possible obstacles to patient access, extrication, and care, and discuss how you can plan for such situations (slides 12-17).

Objectives

3. Use scene size-up findings to anticipate and prepare for the following (slides 18-40):
   a. Potential problems in accessing patients
   b. Need for additional resources
   c. Appropriate personal protective equipment
   d. Appropriate measures to improve scene safety
   e. Location of all patients
   f. Vehicle safety in a collision situation
4. Explain actions that may be required to gain residential access (slides 42-44).
5. Explain actions that may be required to gain motor vehicle access, including the concepts of simple and complex access (slides 45-46).
Objectives

6. Describe the role of the EMT and basic considerations for caring for a patient entrapped in a vehicle (slides 48-52).
7. Describe equipment and methods for stabilizing an upright vehicle, a vehicle on its side, and a vehicle on its roof (slides 54-56).
8. Describe various methods of accessing, disentangling, and extricating a patient entrapped in a vehicle (slides 53, 57-65).

Multimedia Directory

Slide 53  Rapidly Extricating Patients Video

Topics

- Planning Ahead
- Sizing Up the Scene
- Gaining Access
- Extrication
- Specialized Stabilization, Extrication, and Disentanglement Techniques
CASE STUDY

Dispatch

Respond to Solzman Road just north of Pin Oak Court for a vehicle crash with reported multiple injuries and entrapment.

EMS Unit 204

Time out 2337

Upon Arrival

- Small vehicle nose to nose with a large dump truck
- The front of the car has collapsed underneath the front axle of the truck
- The front bumper of the truck is even with the windshield of the automobile
- Two motionless people are inside the car with considerable bleeding and facial lacerations
- The dash is crushed onto the patients, pinning them
How would you proceed with the assessment of this patient?

Planning Ahead

Dispatch
• Patient ill or injured
• Mechanism of injury
• Location of incident
• Time of day
• Weather
• Report of entrapment
• Leak or spill

Location

• Know your territory
• Access may be difficult
• Scenes may be high above ground and well below ground
• Preplan access strategies for high risk areas
Motor Vehicle Collisions

- More common at high traffic times
- More serious at low traffic times
- Higher speeds increase risk of entrapment

Sizing Up the Scene
Perform a 360-Degree Assessment

360-Degree Assessment

• Look at the front, back, and both sides of vehicle
• Look over and under vehicle
• Look for hazards
• Determine number of patients
• Identify mechanisms of injury

Evaluate the Need for Additional Resources
Additional Resources

- Extrication team
- Fire suppression
- Law enforcement
- Hazmat team
- Utility company
- Air evacuation
- Swift water rescue

Personal Protective Equipment

- High-visibility vest
- Protective coveralls
- Full turnout gear
- Follow local protocols
Scene Safety

Your safety comes first!

Scene Safety

Electrical Lines
Electrical Lines

- Assume all lines are live
- Lines may whip and arc
- Remain in vehicle if lines are touching

Scene Safety

Control Traffic Flow

- Reroute traffic if possible
- Use vehicles to create a safety zone
- Wear reflective clothing
- Place warning devices
- Park uphill if liquid is leaking
Scene Safety

Alternative-Fueled Vehicle Systems

• High voltage batteries increase chances of electrical shock
• Other fuels such as hydrogen may be under pressure and explosive

Alternative-Fueled Vehicles

Scene Safety

Undeployed Air Bags
Undeployed Air Bags

• Air bags may deploy during extrication
• Unexpected deployment may result in injury or death
• Disconnecting the battery cables may reduce chance of air bag deployment

Scene Safety

Energy-Absorbing Bumpers

• Absorb low-velocity impacts
• May be pushed in and “loaded”
• May forcefully spring outward and cause serious injury
Locate All Patients

- Locate patient prior to attempting access
- Look for signs of a missing patient
- Sometimes crashes are hard to find
- Use specialized rescue teams as necessary

Vehicle Safety
• Have extinguisher available
• Stabilize vehicle
• Turn off engine and set parking brake
• Rescue personnel may disconnect the battery
• Do not enter an unstable vehicle
Residential Access

• Attempt simple access first
  – Try windows or doors
  – Ask neighbors or landlords for keys
• If necessary, consider the need for
  forceful entry with the assistance of the
  fire department or law enforcement

Forceful Entry

• Check for open windows
• Cut through window screen of open window
• Break through window where you can see
  what is on the other side
• Always attempt to contact patient prior to
  forceful entry

Motor Vehicle Access
Motor Vehicle Access

Simple Access
- Try all doors and windows
- Ask the patient to roll down a window or unlock a door
- Direct the patient not to move his head and neck

Complex Access
- Easiest complex access is by breaking a window
- See EMS Skill 42-1

Extrication

The Role of the EMT
Attempt simple access
Work with other rescuers
Advocate for patient care and safety
Patient care should precede rescue if possible

Caring for the Patient

Maintain manual immobilization
Perform primary assessment
Perform controlled rapid extrication
Remove the vehicle from around patient
Use adequate personnel
Use path of least resistance
• Provide emergency medical care as you would any trauma patient
• Establish rapport and calm the patient
• Pay close attention to the patient’s condition
• Mentally prepare patient for extrication
• Cover patient with blanket

Rapidly Extricating Patients

Click here to view a video with information about rapidly extricating patients.

Return to Directory

Specialized Stabilization, Extrication, and Disentanglement Techniques

Back to Topics
Stabilizing a Vehicle

• Upright vehicle can be stabilized by chocking or cribbing under vehicle; then deflate tires with deflator tool or valve stem removal tool
• Vehicle on its roof should be stabilized in a similar manner; remember that roof posts are not designed to support weight of vehicle
• Vehicle on its side: see EMS Skill 42-2

Extricating a Patient
Extricating a Patient

- All crew involved should have adequate training in extrication procedures
- Utilize an incident command system
- Hydraulic tools are most often used

“Rip and Blitz” Disentanglement

See EMS Skill 42-3.
Extricating a Patient

Other Methods of Access and Disentanglement

• Pry open latch
• Cut hinges
• Upon removal, the door may be propelled several feet

Door Removal

• Roof may be rolled rather than removed completely
• Cut all but one set of posts
• Roll roof toward trunk or hood

Roof Rolling
Extricating a Patient

Special Disentanglement Procedures

• Other complications may arise, such as a foot being trapped under a brake pedal or a seat entrapping a patient
• Extricating a patient from a vehicle on its side presents unique challenges (EMS Skill 42-4)
• Very often improvisation and common sense must prevail

CASE STUDY

Follow-Up
Case Study

Scene Survey

- Identified as a complex access
- Establish an airway and maintain cervical spine immobilization
- Extrication team arrives and directs patient disentanglement

Case Study

Scene Survey

- You stay with these patients during extrication
- Your partner helps the driver of the other vehicle using simple access

Critical Thinking Scenario

- Arrive on scene of a motor vehicle crash
- A vehicle has struck a power pole head on
- The driver is not alert and isn’t responding when you call to him
- All of the windows are rolled up and the doors are locked
Critical Thinking Questions

1. Do you need to gain immediate access to the patient or should you wait for the extrication crew to arrive?
2. What methods could you use to gain immediate access to the patient?
3. Once access has been gained, what is your primary role?
4. How can you assist the extrication crew while providing care to the patient?

Reinforce and Review

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