Chapter 27
Gaining Access

Learning Objectives

- Describe purpose of extrication
- Discuss role of EMT in extrication
- Identify what equipment for personal safety is required for EMT
- Define fundamental components of extrication

Learning Objectives

- State steps to take to protect patient during extrication
- Evaluate various methods of gaining access to patient
- Distinguish between simple/complex access
Introduction

- Rescue and extrication is a specialized field in prehospital care
- EMTs must work with rescue teams to ensure safe access/removal of entrapped patients

Introduction

- Rescue situations
  - MVCs
  - Heights
  - Caves/tunnels
  - Water
  - Collapsed buildings

Introduction

- EMT primary role:
  - Ensure safety of self and patient
  - Provide emergency care before, during, and after rescue
Response & Approach to Scene

- Decisions made while approaching scene determine the effectiveness of a rescue
  - Can make rescue safe or create a secondary disaster

- When approaching a scene, stop 100 ft, uphill/upwind, look and listen

Response & Approach to Scene

- Observe happenings
  - Number of vehicles involved
  - Number of patients
  - Resources needed
  - Determine whether resources are onsite or available in timely manner

Response & Approach to Scene

- When assessing scene, perform a risk-benefit analysis
  - Determine if rescue attempt poses risk of injury to self/other rescuers
  - If risk is greater than benefit, take action to reduce risk
Response & Approach to Scene

- While approaching a vehicle, perform a windshield survey
  - Determine if patients are moving, conscious, or attempting to exit vehicle
  - Check for downed electrical wires in immediate vicinity
    - If down:
      - Do not touch anything
      - Retreat to safety position
      - Protect bystanders by establishing hazard zone
      - Advise vehicle occupants not to exit

Response & Approach to Scene

- While approaching a vehicle, perform a windshield survey
  - Evaluate vehicle stability
    - Turn over risk
    - Is it on the side?
    - Is it on the wheels?
    - Is it secure?
    - Does it rock?
    - Could the movement of the vehicle or a rescue attempt injure the patient during a rescue?

Response & Approach to Scene

- Scene size-up and scene safety
  - Assess scene for potential danger to rescuers, the public, and the patient
  - Most critical step of every call
  - Not all patients who are in need of rescue can be rescued
  - Adhere to 12 "nevers" to prevent injury to self/partner
Response & Approach to Scene

Traffic control
- Traffic is the most dangerous on-scene hazard
- Standard is to park heavy trucks at angle to the traffic
  - Fends off oncoming vehicles
- Wear highly reflective traffic vests

Response & Approach to Scene

Traffic control
- Establish safety zone around crash perimeter
  - Use reflective traffic cones or road flares at night
  - Use far from flammable vapors or liquids
  - Place well ahead of incident, giving drivers sufficient warning to react
  - Safety zone includes patient loading zone around ambulance
- Only traffic control measure EMT takes
- Law enforcement, specially trained in controlling/diverting high speed traffic protects total scene

Response & Approach to Scene

Personal protection
- Most important factor reducing potential for injury
- Turnout gear
  - Headgear
  - Eye protection
  - Respiratory protection, if required
  - Gloves
  - Boots
  - Coat
Response & Approach to Scene

- Personal protection
  - Patient care always precedes rescue effort unless a life safety hazard exists
    - Situation which rescuers risking serious injury or death as the result of entering the rescue area
    - Your value to the patient is lost if you are injured or killed

- Personal protection
  - Your uniform should provide some degree of protection
    - Flame resistant
    - Flame retardant
    - Reflective

- Personal protection
  - Areas of body to protect
    - Head
    - Eyes
    - Hands
    - Torso
    - Legs
    - Feet
Response & Approach to Scene

- Personal protection
  - Primary hazards EMTs face:
    - Traffic
    - Fire
    - Debris
    - Cuts
    - Toxic contamination

- Respiratory protection
  - Before entering a smoke condition or situation with toxic gases, use a self-contained breathing apparatus (SCBA)
    - Must have specific training with this equipment
    - Local fire service provides training
    - Must be able to recognize possible toxic environments and the need for SCBA use

- Patient & bystander safety
  - Every attempt must be made to ensure patient safety
    - Cover patient with rescue blanket or take other protective measures Decreases possibility of injury from glass, metal, fire
  - Explain nature of extrication to patient
    - Loud sounds, activities and anxiety surrounding extrication process likely to result in increased epinephrine secretion
Response & Approach to Scene

- Stabilizing the vehicle
  - Goal is to prevent unwanted or dangerous movement of the vehicle body on its springs
  - Ensure structural integrity is not compromised by rescue effort from rolling, tipping, falling, or rocking

  - Accomplished by taking weight off the vehicle and spreading it over as large an area as possible
    - Make as many points of the vehicle as possible come in contact with the ground
    - Do not use methods that stabilize with hands
    - Use cribbing method
      - Hardwood, carry different sizes
      - Build base of large pieces, integrating smaller pieces at the top
      - Chock wheels

Gaining Access at the Scene

- Use the most expedient manner possible
  - Gain entry into vehicle, provide lifesaving care and stabilization before removal
Gaining Access at the Scene

- Methods to gain access:
  - Simple access - tools not required
  - Complex access - tools & other specialized equipment are needed

- Once inside the vehicle, assessment of the patient’s condition may change
  - Priorities of the rescue may be altered accordingly
  - Cover patient with a rescue blanket

Gaining Access at the Scene

- Keep rescue operation as simple as possible
  - Check all doors, including hatchbacks before breaking the glass
  - Use Slim Jim on locked door; causes little/no damage to the vehicle

Gaining Access at the Scene

- Entering through a window
  - Quickest access if vehicle locked & patient unconscious:
    - Break window glass farthest away from the patient
    - Use spring-loaded window punch
  - Perform an initial assessment through window before you are able to enter vehicle with your whole body
Gaining Access at the Scene

- Doors
  - Allows patient to be removed rapidly
  - May have to be widened
    - Done by “walking” door back
    - Ensure vehicle is stabilized, wheels chocked, and the brake is set
    - 1 to 2 EMTs press body weight against door, slowly push door open beyond normal operating range

- Freeing the driver
  - Most common extrication challenges encountered
  - Steering wheel presents problems, but removal of driver may require only a few inches of space
  - Always disconnect battery during extrication
Supplemental restraints (airbags)

- Every vehicle built since early 1990s has at least one
- Woven bladder that fills with inert gas to cushion occupant from hitting hard objects
- Once it deploys and protects, it rapidly deflates

Supplemental restraints (airbags)

- Types
  - Front airbags
    - Driver’s airbag
    - Passenger airbag
  - Side-impact airbag

Deployed airbags pose less of a hazard

- Some have dual stage deployment; could refire after initial deployment
- EMTs have been injured by postcrash deployment during extrication

- Use “5-10-20 rule”
  - Keep area clear from airbag’s path
  - Keep back 5” from side bag
  - Keep back 10” from driver’s airbag
  - Keep back 20” from passenger airbag
Gaining Access at the Scene

- Supplemental restraints (airbags)
  - Dust from the airbag - usually talc or cornstarch
  - Turn the ignition off; remove the key

Gaining Access at the Scene

- Supplemental restraints (airbags)
  - Other supplemental protection systems
    - Automatic roll bar
    - Seat belt pretensioner devices

Gaining Access at the Scene

- Essential emergency care
  - Immediately on gaining access, 1 EMT assumes inline cervical stabilization & other EMT conducts initial assessment
  - MOI used to guide assessment
  - If life-threatening conditions, use rapid extrication procedure if patient is not trapped
Gaining Access at the Scene

- Essential emergency care
  - If removal not possible, attempt stabilization in vehicle
    - For front seat patients in need of airway maintenance and ventilation, lower seat back
  - ABCs - priority

- Disentanglement
  - Most pivotal stage of extrication for rapid patient removal from the scene
  - Primary focus is patient care, not patient removal
  - Prepare for removal by maintaining cervical spine stabilization

- Perform focused trauma examination
  - Take immediate action to stabilize patient condition
  - Minor injuries can be treated later
  - If time permits, dress & bandage open wounds
  - When possible, splint fractures before removal
  - Attach patient to torso immobilization device
  - Remove from vehicle onto long spine board
  - Once immobilized, extrication can proceed
  - Exercise care in selecting route; follow path of least resistance
Gaining Access at the Scene

- Essential emergency care
  - Personnel needed
    - 3+ prehospital providers needed to perform extrication procedure
    - Recruit personnel based on experience handling patients and physical strength
  - Remove carefully, without abrupt/jerky movements to prevent loss of inline stabilization of c-spine
  - Review path & steps of removal with rescuers before removal
  - Initiate each step with verbal clue from team leader

- Protect patient during removal
  - When lifting patient, support as 1 unit
  - As a rule, lift patient, not the device
  - Place wheeled cot stretcher adjacent to exit route
Gaining Access at the Scene

- Supplemental restraints (airbags)
  - Vehicles built since early 1990s have at least one
  - Woven bladder that fills with inert gas to cushion occupant from hitting hard objects
  - Types
    - Driver's
    - Passenger-side
    - Side-impact

Gaining Access at the Scene

- Supplemental restraints (airbags)
  - Deployed airbags, less hazard
  - Some have dual stage deployment, could refire after initial deployment
    - EMT's injured by postcrash deployment during extrication
    - "5-10-20 rule"
    - Turn engine off, remove, key, unplug cigarette lighter, disconnect battery

Gaining Access at the Scene

- Supplemental restraints (airbags)
  - Automatic roll bar
  - Seat belt pretensioner devices
Gaining Access at the Scene

- Essential emergency care
  - Gain access, immediately, 1 EMT assumes inline cervical stabilization, other EMT conducts initial assessment
    - Mechanism of injury guides assessment

Gaining Access at the Scene

- Essential emergency care
  - Life-threatening conditions identified
    - Rapid extrication procedure if not trapped in vehicle
      - Removal not possible, attempt stabilization in vehicle
    - ABCs priority

Gaining Access at the Scene

- Essential emergency care
  - Disentanglement
    - Most pivotal stage of extrication
      - Primary focus, patient care
      - Prepare for removal, maintain cervical spine immobilization
      - Focused trauma examination
      - Identify serious injuries, immediate action to stabilize
      - When possible, splint fractures before removal
      - Attach patient to torso immobilization devise
Gaining Access at the Scene

- Essential emergency care
  - Disentanglement
    - Once immobilized, extrication can proceed
    - 3+ prehospital providers needed to perform extrication procedure
    - Remove carefully, without abrupt/jerky movements
    - Review path, steps with rescuers before removal

Gaining Access at the Scene

- Essential emergency care
  - Disentanglement
    - Protect patient during removal
    - When lifting patient, support as 1 unit
    - Place wheeled cot stretcher adjacent to exit route
    - Facilitate transfer to long spine board

Summary

- Specialized rescue personnel are usually responsible for gaining access to patient. EMT’s role is primarily related to safety, patient assessment, care

- On arrival at scene that may require specialized rescue personnel, EMT should communicate as first step to ensure timely response
Summary

- The use of personal protective equipment is critical aspect of safety at scene of rescue situation, includes headgear, eye wear, gloves, other clothing/equipment appropriate for the situation.

- Use of self-contained breathing apparatus is critical at scenes where toxic gases might be present, should be used only by trained individuals.

Summary

- When approaching suspected hazardous materials incident, EMT should park 100 feet uphill, upwind.

- Simple access to patient trapped in vehicle does not require tools. Complex access requires use of tools, specialized equipment.

Summary

- The EMT should begin scene assessment with "window assessment," looking at scene as approach for hazards.

- Potentially unstable vehicles should be stabilized with cribbing before EMT enters to care for an injured patient.
Summary

- The EMT must remain aware of location of airbags, take necessary steps to disarm airbags to avoid additional injury to patient/themselves

- After assuring their own safety, priority of EMT on scene is medical assessment, care, transport of patient

Questions?