Chapter 6
Lifting and Moving Patients

Learning Objectives

• Define body mechanics
• Discuss guidelines and safety precautions that need to be followed when lifting a patient
• Describe indications for an emergency move

Learning Objectives

• Describe indications for assisting in nonemergency moves
• Discuss various devices associated with moving patients in the prehospital environment
• Demonstrate an emergency move
Learning Objectives

- Demonstrate a nonemergency move
- Demonstrate the application of equipment used to move patients in the prehospital environment

Role of the EFR

- Often the first medically trained individual to arrive on the scene of an incident
  - If the scene is unsafe for you or the patient, or if the patient’s condition is critical, your role may include moving the patient to a safer location

- If individuals with a higher level of training are present, your role is to help them lift and move the patient
  - You must understand and be confident in your role
  - Be familiar with equipment used by other healthcare providers
Body Mechanics

- One of the primary responsibilities of an EFR is his/her own safety
  - Back injuries can result from using poor body mechanics when lifting and moving patients or equipment

Body Mechanics

- Proper body mechanics refers to the safest and most effective way to use your body as an advantage when lifting and moving
  - To determine how much help you may need, consider the following issues before attempting to move any patient:
    - Weight of the patient
    - Access to the patient
    - Your own abilities and physical limitations
    - The terrain and distance you need to carry the patient

Body Mechanics

- Lifting techniques
  - Lift items with your leg muscles and not just your arm and back muscles
  - Keep weight of what you are lifting as close to your body as possible
  - Your body should move as a single unit, not in separate pieces
Body Mechanics

- Lifting techniques
  - Proper techniques for lifting someone:
    - Feet are spread wide apart comfortably
    - Knees are bent so you are almost in a semisitting position
    - More than one person is lifting, lift should be simultaneous
    - Back is not twisted
    - Leg muscles are used
    - Weight is kept close to the body

- Lifting techniques
  - Power grip
    - Hand positioning is important when lifting an object
    - To lower a device you should place your hands in a reverse power grip position

- Lifting techniques
  - Power lift
    - Way to effectively lift a heavy object using proper body mechanics
    - Important to do the following during the power lift:
      - Keep back locked in its normal curvature, tighten your abdominal muscles
      - Place your feet comfortably apart
      - Bring center of your body over object you are lifting to keep the lift as vertical as possible
Skill 6-1 Two-Person Power Lift

- Two providers stand at either end of lowered wheeled stretcher
- Feet are approximately shoulder-width apart

- Bend knees while keeping the back locked in its normal curvature, tighten abdominal muscles
- Use the power grip to grasp the stretcher

- On command from lead person, two providers lift stretcher simultaneously
- Maintain communication and eye contact
Principles of Moving Patients

- Patient is usually moved by EMS crew when ready for transport
  - Occasionally, you may take responsibility for moving the patient
    - Two types of patient moves
      - Emergency (urgent) moves
      - Nonemergency (nonurgent) moves

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Principles of Moving Patients

- Emergency moves
  - Patient should be moved immediately only in the following situations:
    - Immediate danger to the patient if he/she is not moved
      - Fire/danger of fire is present
      - Explosives/danger of explosion is present
      - Patient cannot be protected from other hazards on the scene
      - Life-saving care cannot be given because of patient's location or position
      - Access cannot be gained to other patients who need life-saving care

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Principles of Moving Patients

- Emergency moves
  - Not guaranteed to protect the patient from injury/pain
    - Moving a patient even using an acceptable emergency move may actually cause pain and/or injury to the patient
Principles of Moving Patients

- Emergency moves
  - Drags
    - There are several different drags that can be used as emergency moves:
      - Cloth drag
      - Upper extremity drag
      - Blanket drag
      - Incline drag

Skill 6-2
Emergency Drags: One-Person Clothing Drag

- Ensure you have a firm grasp on patient's clothing
- Cradle patient's head in your arms

Skill 6-2
Emergency Drags: Two-Person Clothing Drag
Skill 6-2
Emergency Drags: One-Person
Blanket Drag

- Place blanket under patient by placing blanket next to him
- Roll patient toward you to place blanket underneath him
- Roll onto blanket
- Pull blanket through

Skill 6-2
Emergency Drags: Two-Person
Blanket Drag

Skill 6-2
Emergency Drags: One-Person Upper Extremity Drag
Skill 6-2
Emergency Drags: One-Person
Modified Upper Extremity Drag

- Move used to drag a person from a vehicle if there is only one provider and patient must be moved.

Skill 6-2
Emergency Drags: Incline Drag

- Use a modified upper extremity drag to move a person down stairs.
- Patient should be dragged in head-first position.

Skill 6-2
Emergency Drags: Firefighter Drag

- Patient’s hands are tied together and passed over provider’s head.
- Provider crawls on hands and knees, keeping patient’s head as low as possible.
- Used to drag patients out of smoke-filled area.
Principles of Moving Patients

- Emergency moves
  - Carries
    - Patient can also be carried out of an emergency situation by either one or two providers
    - Ideally you should work with someone who is of similar build, height, and strength to ensure a balance when lifting and carrying a patient

Skill 6-3
Emergency Carries: Pack Strap Carry

- Provider firmly grasps patient's arm around his neck and leans forward to pull the patient onto his back

Skill 6-3
Emergency Carries: One-Person Cradle Carry

- Recommended for lighter patients
Skill 6-3
Emergency Carries: Piggyback Carry

Skill 6-3
Emergency Carries: Firefighter Carry

Skill 6-3
Emergency Carries: One-Person Assist

- Patient's arms are grasped and placed around provider's neck
- Provider holds patient's hand with one hand and the other is placed around patient's waist
Skill 6-3
Emergency Carries: Two-Person Cradle Carry

- Two providers can cradle a patient between them to carry patient to safety

Skill 6-3
Emergency Carries: Two-Person Assist

- Providers should ensure they are each gripping patient’s wrists

Skill 6-3
Emergency Carry: Two-Person Extremity Carry

- Carry a patient down a flight of stairs feet first
Principles of Moving Patients

- Nonemergency moves
  - Performed when there is no immediate threat to the patient's life
    - Usually performed with other responders
    - Practicing nonemergency moves with other potential EFRs will add confidence and coordination that will be beneficial when assisting with a patient move
    - At a minimum, you should know two nonemergency moves, the direct ground lift and extremity lift

Skill 6-4 Direct Ground Lift

- Two or three providers line up on one side of patient
- Providers kneel on one knee

Provider at head places one arm under patient's neck and shoulder and cradles the head while other arm in placed under patient's lower back
Skill 6-4 Direct Ground Lift

- On signal, rescuers lift the patient to their knees and roll patient toward their chests.

Skill 6-4 Direct Ground Lift

- On signal, rescuers stand and move patient.
- To lower the patient, the steps are reversed.

Skill 6-5 Extremity Lift

- One provider kneels at patient’s head.
- Another kneels at patient’s side by knees.
Skill 6-5 Extremity Lift

- The providers stand up simultaneously and move the patient

Principles of Moving Patients

- Nonemergency moves
  - Transfer of a supine patient from bed to stretcher
    - First be sure you understand why the patient is in bed
    - If you understand why the patient is in bed, you can choose the best method of transfer, either the direct carry or draw sheet method
  - If patient is experiencing pain, direct carry is the most effective method
    - Method keeps patient close to you and allows a better grip
    - Wheeled stretcher is positioned perpendicular to the bed with head end of stretcher at the foot of the bed
    - The height of the stretcher should be positioned as high as possible to allow placement of patient without having providers bend at waist any more than necessary
Principles of Moving Patients

- Nonemergency moves
  - If the patient is experiencing pain, direct carry is the most effective method
    - The straps are unbuckled and other items removed from the stretcher
    - Both providers stand between the bed and stretcher and face the patient
    - The first provider slides an arm under the patient’s neck and cups the patient’s shoulder
    - The second provider slides a hand under the patient’s hips and lifts slightly

- Nonemergency moves
  - First provider slides his/her other arm under the patient’s back
  - Second provider slides his/her other arm under the patient’s hips and calves
  - Providers slide the patient to edge of the bed
  - The patient is lifted or curled toward provider’s chest
  - Providers rotate and place the patient gently onto the wheeled stretcher

Skill 6-6
Draw Sheet Transfer

- Providers should be on either side of patient
- Roll from edges of the sheet
Skill 6-6
Draw Sheet Transfer

- Lifting together on the count of 3
- Providers lift and move the patient to adjacent bed or stretcher

Skill 6-6
Draw Sheet Transfer

- Patient is moved from bed to stretcher by pulling on the rolled-up sheet

Patient Positioning

- As important as moving the patient
  - You should not reposition a trauma patient from the position in which they are found unless absolutely necessary to treat immediate life-threatening injuries
  - Such as a compromised airway or significant hemorrhage

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Patient Positioning

- Most patients will best be served when they are placed in a supine position
  - Patient is lying on his/her back, looking skyward
    - Position allows rescuer to have access to the patient’s airway, observe patient’s respiration, and stay in the patient’s field of vision

Patient Positioning

- Appropriate patient position depends on the patient’s clinical presentation
  - An unresponsive, breathing, nontrauma patient should be placed in the recovery position

Patient Positioning

- A patient experiencing difficulty breathing or chest pain should be allowed to rest in a position of comfort, as long as there are no indications of spinal injury
  - Usually a sitting position with patient leaning forward, with hands on legs, in an attempt to breathe more easily
Patient Positioning

- Log roll
  - When a patient is in the prone (face down) position, he/she must usually be moved to a supine position so that a thorough patient assessment can be done.

Skill 6-7
Log Roll with No Suspected Spinal Injury

- Three providers line up on same side of patient and are down on one or two knees

Skill 6-7
Log Roll with No Suspected Spinal Injury

- One person at the head counts
- Patient is rolled as a single unit toward providers
Skill 6-8
Log Roll with Suspected Spine Injury from Prone Position
- While one provider holds manual inline stabilization of the head and neck
- Second provider applies a cervical collar

Skill 6-8
Log Roll with Suspected Spine Injury from Prone Position
- While first provider continues to stabilize the head and neck
- Second and third providers position themselves on patient’s side placing hands in position to evenly distribute weight

Skill 6-8
Log Roll with Suspected Spine Injury from Prone Position
- While patient is in this position, a provider should examine the patient’s back
Skill 6-8
Log Roll with Suspected Spine Injury from Prone Position

- A fourth provider moves a backboard into position, and patient is lowered onto the backboard on a 3 count

Transporting Equipment

- As an EFR, you will often be asked to assist the EMT team to package and move the patient into the ambulance for transport to the hospital
  - You should become familiar with all the transportation equipment used by your local EMS agency and the skills used to move patients

Transporting Equipment

- Stretchers and cots
  - Wheeled stretcher
  - Portable stretcher
  - Scoop stretcher
  - Basket stretcher
  - Stair chair
  - Long backboard
  - Short backboard and vest
Transporting Equipment

- Wheeled stretcher/wheeled cot is the transporting device most commonly found in ambulances
  - There are many varieties and most allow the head to be raised and lowered.

Transporting Equipment

- Portable stretcher
  - Made of canvas or heavy plastic
  - Can be folded or collapsed when not in use

Transporting Equipment

- Scoop stretcher
  - Splits into two pieces
  - Each piece can be placed on either side of the patient and then reconnected to "scoop" up the patient
Transporting Equipment

- Basket stretcher
  - Can be used to lift patients out of difficult terrain or to a different level

Transporting Equipment

- Stair chair
  - Preferred method of transporting a patient down a flight of stairs

Transporting Equipment

- Long backboard (or long spine board)
  - Long backboard is used for patients who are lying down or standing up and for those who must be fully immobilized to prevent worsening a potential spinal injury
Transporting Equipment

- Short backboard (or short spine board)
  - Short backboard is usually used to remove patients in sitting position from a vehicle

Transporting Equipment

- Transporting equipment
  - As an EFR, you will often be asked to assist the EMT team to package and move the patient into the ambulance for transport to the hospital
  - Practice with your local agency to learn the use of each piece of equipment so that you are able to assist in moving patients

Immobilization and Trauma Patients

- Primary objective of any healthcare provider with any level of training should be to provide good patient care
  - You can increase your ability to provide care by knowing how to interact with other caregivers
Immobilization and Trauma Patients

- With trauma victims, there is great potential for spinal injury and extreme caution should be used to prevent further injury.
  - This is accomplished through spinal immobilization.
  - Techniques are discussed in Chapter 12.
  - It is important to note that a spinal injury can be ruled out only by radiography studies such as:
    - X-ray films
    - MRI
    - CT scan

Skill 6-9
Rapid Extrication

- One provider maintains manual inline stabilization of the head and neck while other applies cervical collar.

Skill 6-9
Rapid Extrication

- While manual stabilization is maintained, the patient’s upper torso, lower torso, and legs are rotated in a series of short controlled movements until the patient is in a position so that manual stabilization can no longer be maintained.
Skill 6-9
Rapid Extrication

- Provider at patient’s legs comes around the outside of the vehicle to take over manual stabilization
- Provider previously maintaining manual stabilization moves to control patient’s lower torso and legs

Skill 6-9
Rapid Extrication

- Patient is rotated until he can be lowered out of the vehicle door opening and onto a long spineboard

Skill 6-9
Rapid Extrication

- The patient is moved onto a long backboard
Skill 6-9
Rapid Extrication

- Patient is secured onto a long backboard

Questions?