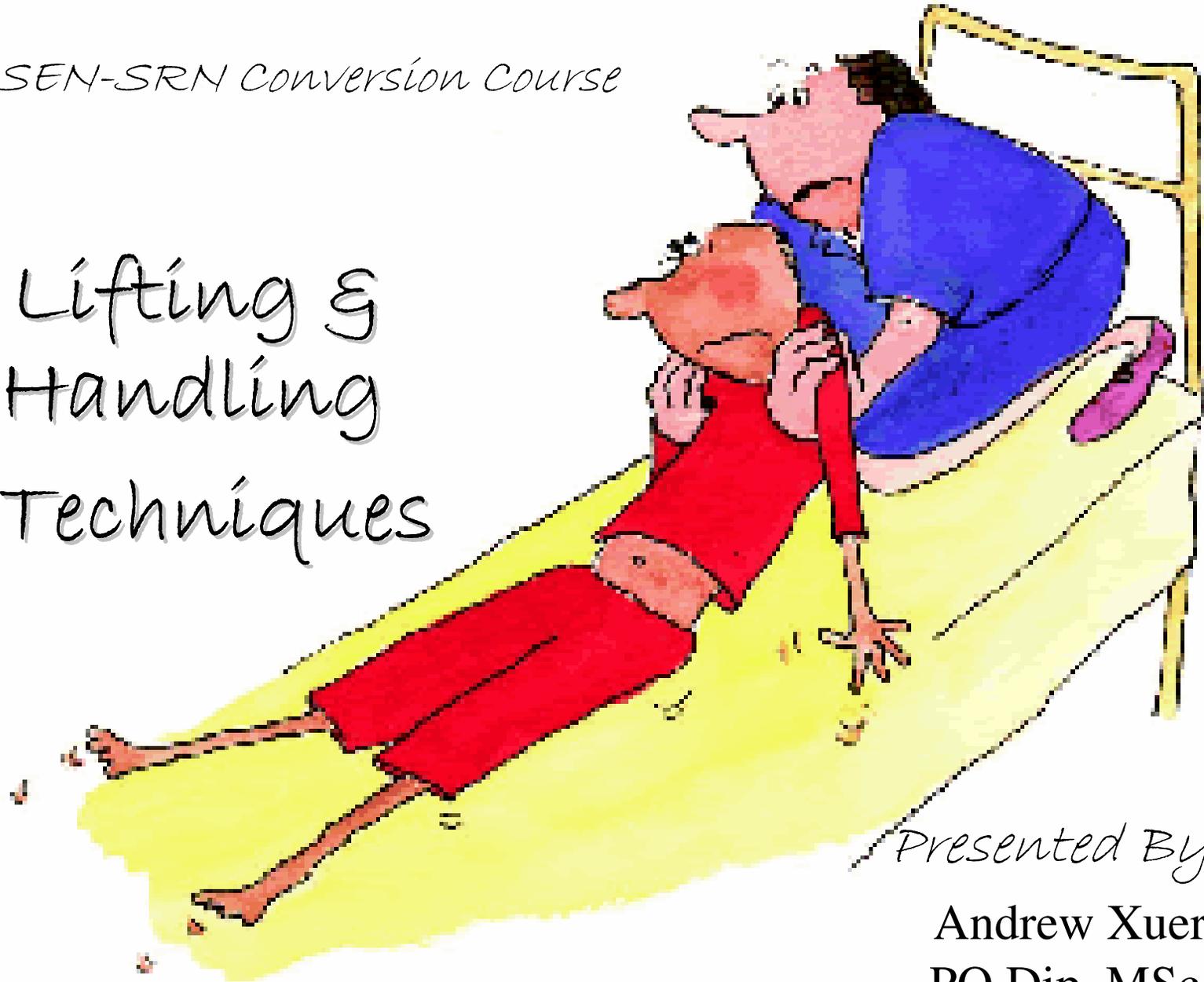


SEN-SRN CONVERSION COURSE

Lifting & Handling Techniques



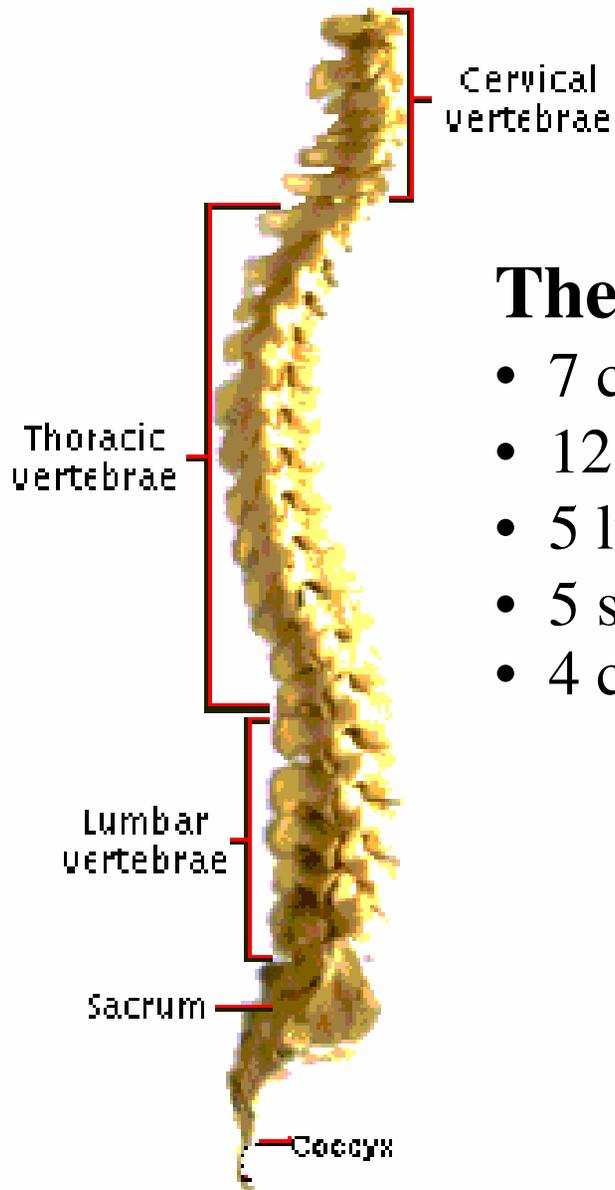
Presented By:

Andrew Xuereb, SRN
PQ Dip, MSc (HSM)
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Overview

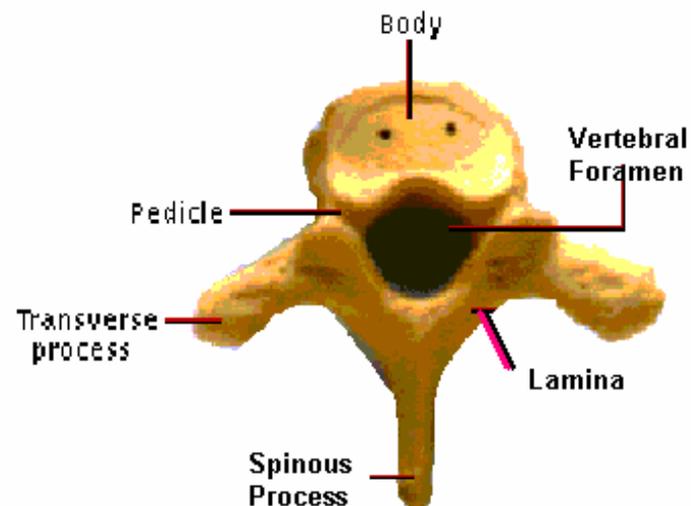
- Some Anatomy of the Spine
- Back Pain & Possible Causes
- Literature Review & Statistics on Back Injuries in Nursing
- Lifting & Handling General Principles
- Lifting Equipment
- General Guidelines
- Techniques: lateral transfers, in bed, from floor, activities of daily living, etc.
- Some exercises

Some Anatomy



The spine is made up of 33 vertebrae:

- 7 cervical
- 12 thoracic
- 5 lumbar
- 5 sacral vertebrae fused together (the sacrum)
- 4 coccygeal vertebrae fused together (the coccyx)



The Vertebrae

- Each vertebra is designed for a specific job within the spinal column.
- Each vertebra has:
 - The front: formed by the body which takes the load
 - The Back: This is formed by bony projections to house the spinal cord providing attachments for ligaments and muscles
 - Each vertebra has a facet and an intervertebral joint which determines the range of movement possible

Inter-vertebral Discs

- Between each vertebra there is the inter-vertebral disc.
 - Acting as a shock absorber
 - Allowing movement of the spine
 - Keeping the vertebrae apart

Muscles

- There are three groups of muscles which act upon the spine
 - The muscles of the spine themselves
 - The muscles of the thigh and hip
 - The abdominal muscles
- These muscles all provide:
 - Postural support
 - Stability
 - Power of movement

Ligaments

- Function of the Ligaments:
 - Provide stability
 - Provide control of the spine
 - Can withstand stress and loads
- Ligaments are damaged by:
 - Excessive load
 - Load in abnormal direction
 - Load applied at high speed

Functions of the Spine

- Protection the spinal cord
- Central support of the body
- Allowing movement
- Point of attachment of the ribs, muscles and girdle

Back Pain – Possible Causes

<i>Type</i>	<i>Cause</i>
<i>Lumbago</i> <i>(Strained muscle/ligament)</i>	Bad posture Repetitive Bending Twisting of the spine while lifting and moving Obesity Fatigue Lack of fitness History of injury
<i>Slipped Discs</i>	Aggravation of the above Accidents (falling etc.) Excessive physical activity
<i>Degenerative Disc diseases</i>	Ageing Child bearing House work Heavy physical work over a long period of time
<i>Diseases</i>	Ankylosis Spondilitis Arthritis Calcium loss leading in bone leading to Osteoporosis

What back injuries do Health Care Workers suffer?

Back injuries are the most common job-related health problem among health care workers and include:

- low back pain,
- herniated discs
- strained muscles,
- pulled and/or torn ligaments, and
- discs break apart due to excessive strain

The most common symptoms include pain and stiffness in the back. Other symptoms include numbness in the back, legs, or arms, and decreased mobility.

What causes back injuries among HCW?

Most back injuries are the result of lifting, pushing, and pulling over a long period of time. The working conditions that cause back injuries are called **risk factors**.

The main risk factors for back injuries in health care are:

- **Force**, the effort it takes to lift, move, or reposition a patient or object.
- **Repetition**, how often a movement must be performed.
- **Awkward positions**, lifting or doing other tasks while the body is in a twisted, bent, stooped or other position that puts a strain on muscles and joints.



Shortage of staff, mandatory overtime, or extended hours increase the risk of back injuries. These conditions cause fatigue and result in increased exposure to the risk factors that cause injuries.

Some Statistics regarding Back Injuries among Nurses

- 70 per cent of workplace accidents were associated with handling people and nearly half of these involved injury to the back (*HSE 1991*).
- One in four qualified nurses reported having time off due to a back injury at work (*Seccombe and Ball, 1992*).
- 1.3 million working days are lost to the NHS each year because of back pain (Barker et al (1994), and many nurses choose to leave the profession as a result of it (Stubbs et al 1986).
- In monetary terms, it has been estimated to cost £50 million per year to replace trained nurses and £70 million a year in lost nursing hours through sickness (*HSE 1985*).

Literature Review on Back Injuries

- People who lifted 11.3kg 25 times per day were more than three times more likely to develop acute prolapsed intervertebral disc compared with people who did not do this (*Kelsey et al, 1984*)
- The risk of injury from lifting is affected by the weight of the load (**the heavier the load, the greater the risk**), the **frequency of lifting**, the position the lifter assumes (**stooped or twisted postures increase risk**) and **the distance at which the weight is held away** from the body. (*Pheasant, 1986*)
- The high levels of back injury in nurses may be **related to inadequate training and poor staffing levels** (*Seccombe and Ball, 1992*).

General Principles

- Avoid unnecessary lifting
- Learn to lift correctly
- Use aids when necessary
- Maintain good posture
- Regular exercising and keep fit
- Watch your weight

Main Principle



- In essence a 'no lifting policy' should be implemented, but how possible???
- Not that easy as the handling of people is a complex situation with many issues and situations to be met

Equipment commonly used for lifting or transfers:

- Transfer belts with handles
- Pat slides
- Pivot discs
- Monkey bar
- Draw sheets
- Incontinence pads
- Lifters

Patient Slider

- Patient Slider: The slider is designed to bridge the gap between two seats, beds or stretchers.



Patient Handling Sling

- The patient handling sling is a flexible sheet of polymer with two hand holds at each end. The sling's surfaces are not alike, one slippery more than the other. The least slippery is put against the patients' body. The sling has a breaking strain of approximately 1500 kgs.



Blocks

- Block: A block is a raised handle on a firm base. The patient uses the block to lift buttocks off bed.



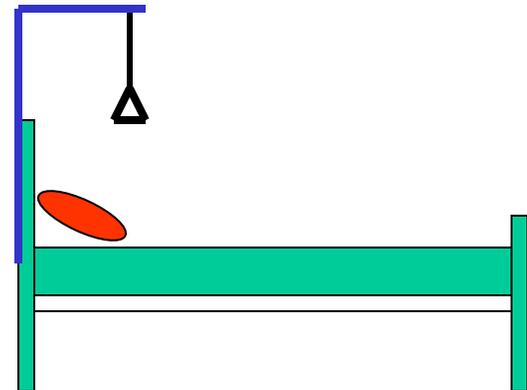
Pivot Discs

- Pivot disc: This consists of two discs, between which ball-bearings allow one disc to rotate on the other. After balancing feet onto the board, the patient pivots round in the new direction before sitting down.



The Monkey Bar

- The Monkey bar is a handle suspended from a pole at the head of the bed. The monkey bar is a useful equipment used by the patient in bed to move about or to transfer from bed to chair or stretcher.



The Mobile Hoist

- The mobile hoist is a mechanical, hydraulic or electrical device used in lifting patients. The lifting capacity of hoists varies from 127-250 kgs.



Important General Guidelines (1)

- Help patient to help himself
- Tell patients what they can do to help you.
- Eliminate lifting and moving patients manually whenever possible by using assist equipment and devices.
- Get help from other staff.
- Give them clear, simple instructions with adequate time for response.

Important General Guidelines (2)

- Use upright, neutral working postures and proper body mechanics:
- Bend your legs, not your back. Use your legs to do the work.
- When lifting or moving people, always face them.
- Do not twist when turning. Pick up your feet and pivot your whole body in the direction of the move.
- Try to keep the person you are moving, equipment and supplies close to the body. Keep hand-holds between your waist and shoulders.

Important General Guidelines (3)

- Move the person towards you, not away from you
- Use slides and lateral transfers instead of manual lifting.
- Use a wide, balanced stance with one foot slightly ahead of the other.
- Lower the person slowly by bending your legs, not your back. Return to an erect position as soon as possible.
- Use smooth movements and do not jerk. When lifting with others, co-ordinate lifts by counting down and synchronising the lift.

1. Guidelines for Transferring From the Floor

Use mechanical device wherever and whenever possible. If not:

- Position at least two persons on each side of the patient
- Get additional help for large patients
- Pass a blanket or sheet under the patient by rolling them to sides
- Kneel on one knee, grasp the blanket or sheet
- Bend at your knees, not your back. Do not twist
- Count down and synchronise the lift
- Perform a smooth lift with your legs as you stand up
- Do not bend your back

2. Lateral Transfers

- Position surfaces (e.g., bed and gurney, bed and cardiac chair) as close as possible to each other. Surfaces should be at approximately waist height, with the receiving surface slightly lower to take advantage of gravity.
- Lower the rails on both surfaces (e.g., beds and stretcher trolleys).
- Use draw sheets or incontinence pads in combination with friction-reducing devices (e.g., slide boards, slippery sheets, plastic bags, low-friction mattress covers, etc.).

Lateral Transfers (Cont'd)

- Get a good hand-hold by rolling up draw sheets and incontinence pads or use other assist equipment such as slippery sheets with handles.
- Kneel on the bed or gurney to avoid extended reaches and bending of the back.
- Have team members on both sides of the bed or other surfaces. Count down and synchronise the lift. Use a smooth, co-ordinated push-pull motion. Do not reach across the person you are moving.



Using Gait or Transfer Belts with Handles

- Keep the individual as close as possible.
- Avoid bending, reaching or twisting your back when:
 - Attaching or removing belts (e.g., raise or lower beds, bend at the knees)
 - Lowering the individual down
 - Assisting with ambulation
- Pivot with your feet to turn.
- Use a gentle rocking motion to take advantage of momentum.

Performing Stand-Pivot Type Transfers

Used for transferring from bed to chair, etc., or to help an individual get up from a sitting position.

- Use transfer discs or other assists when available. If using a gait or transfer belt with handles, follow the above guidelines.
- Keep feet at least at shoulder width apart.
- If the patient is on a bed, lower the bed so that they can place their feet on the floor to stand.
- Place the receiving surface (e.g., wheelchairs) on the individual's strong side (e.g., for stroke or hemi-paralysis conditions) so they can help in the transfer.

Performing Stand-Pivot Type Transfers (Cont'd)

- Get the person closer to the edge of bed or chair and ask them to lean forward as they stand (if medically appropriate).
- Block the individual's weak leg with your legs or knees (this may place your leg in an awkward, unstable position; an alternative is to use a transfer belt with handles and straddle your legs around the weak leg of the patient or resident).
- Bend your legs, not your back.
- Pivot with your feet to turn.
- Use a gentle, rocking motion to take advantage of momentum.

Chair transfer

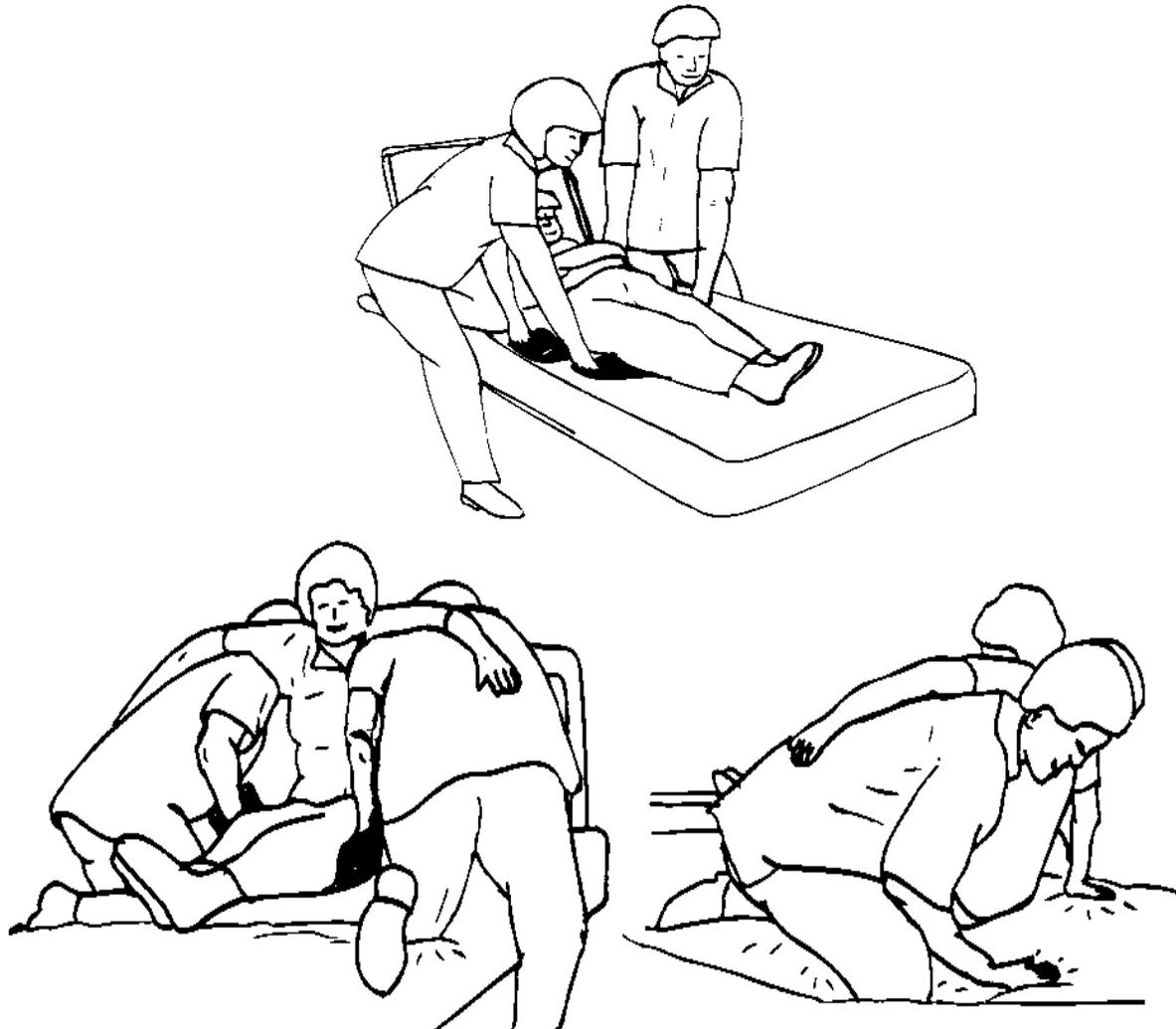


Lifting or Moving Tasks with the Patient in Bed

Some common methods include scooting up or repositioning individuals using draw sheets and incontinence pads in combination with a log roll or other techniques.

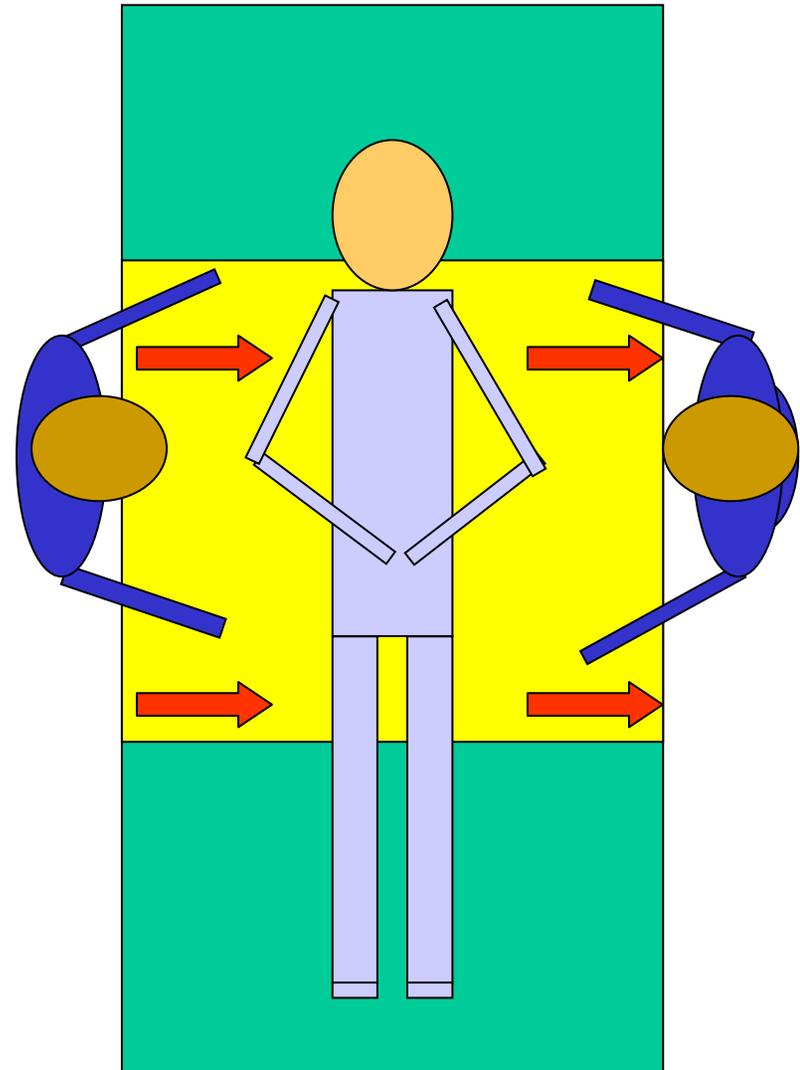
- Adjust beds, gurneys or other surfaces to waist height and as close to you as possible.
- Lower the rails on the bed, gurney, etc., and work on the side where the individual is closest.
- Place equipment or items close to you and at waist height.
- Get help and use teamwork.

Lifting Patient in Bed



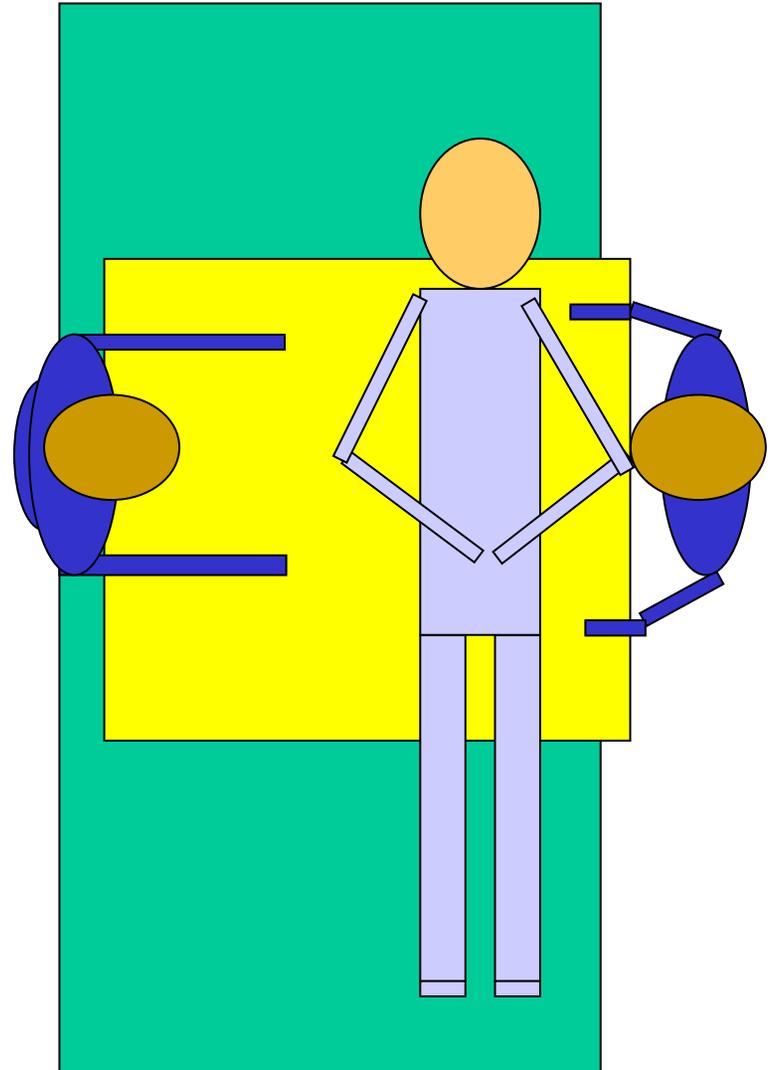
Moving Patient in Bed (1)

- Position yourself one on each side of the patient
- Put patient on his back with arms on trunk and legs straight
- Grab draw sheet, one hand under shoulder, the other under hip joint
- Prepare for simultaneous shift of patient to one side
- Remember to keep back straight



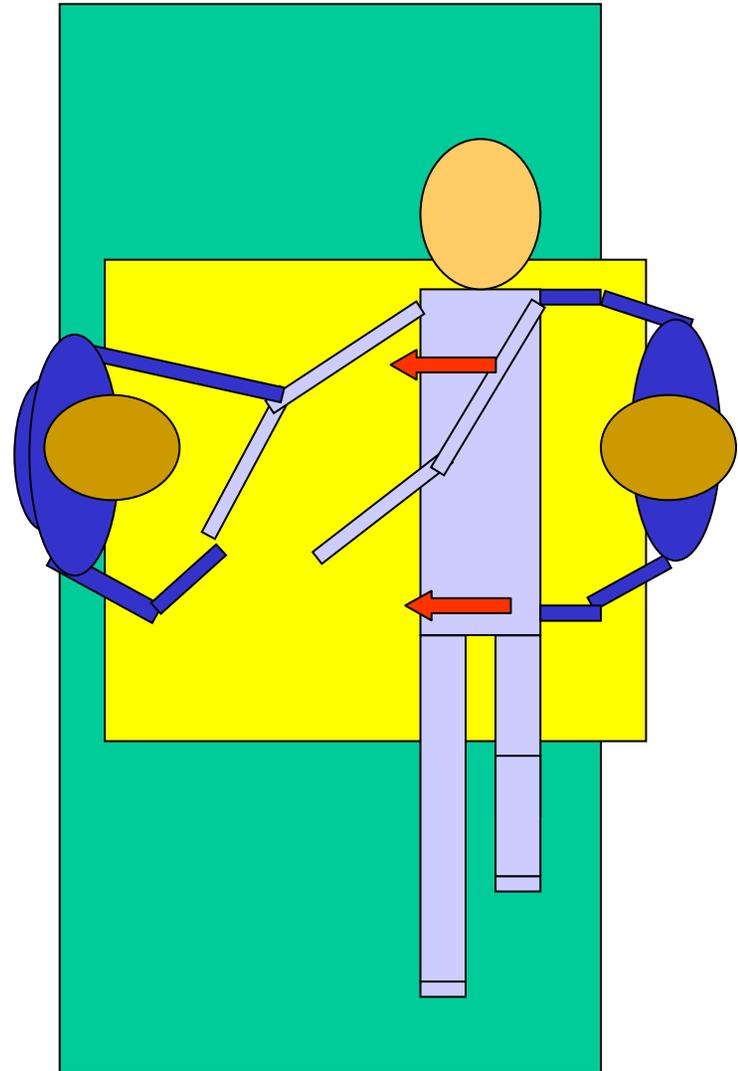
Moving Patient in Bed (2)

- Count '1-2-3' loudly to make one simultaneous shift
- Shift patient to the left with the draw sheet



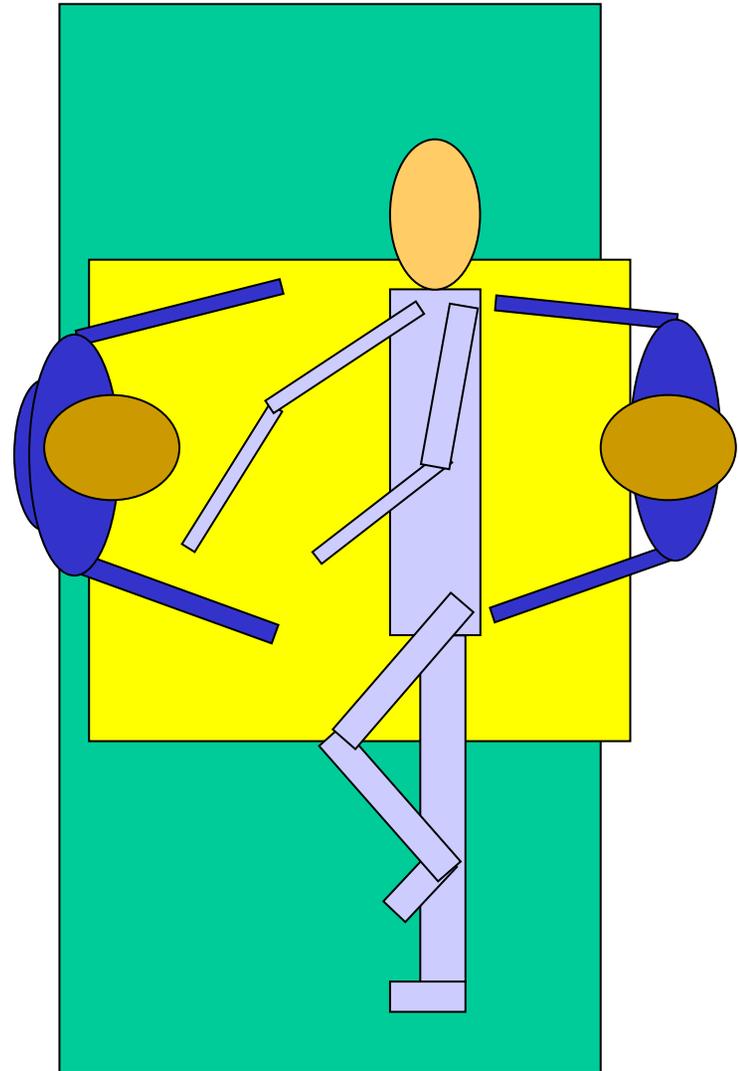
Moving Patient in Bed (3)

- Nurse on the right side of the patient
 - Straighten patient's right arm
- Nurse on the side of the patient
 - Bend the patient's left leg at the knee
 - Push and *ROLL* the patient from the shoulder and hip on to his right side



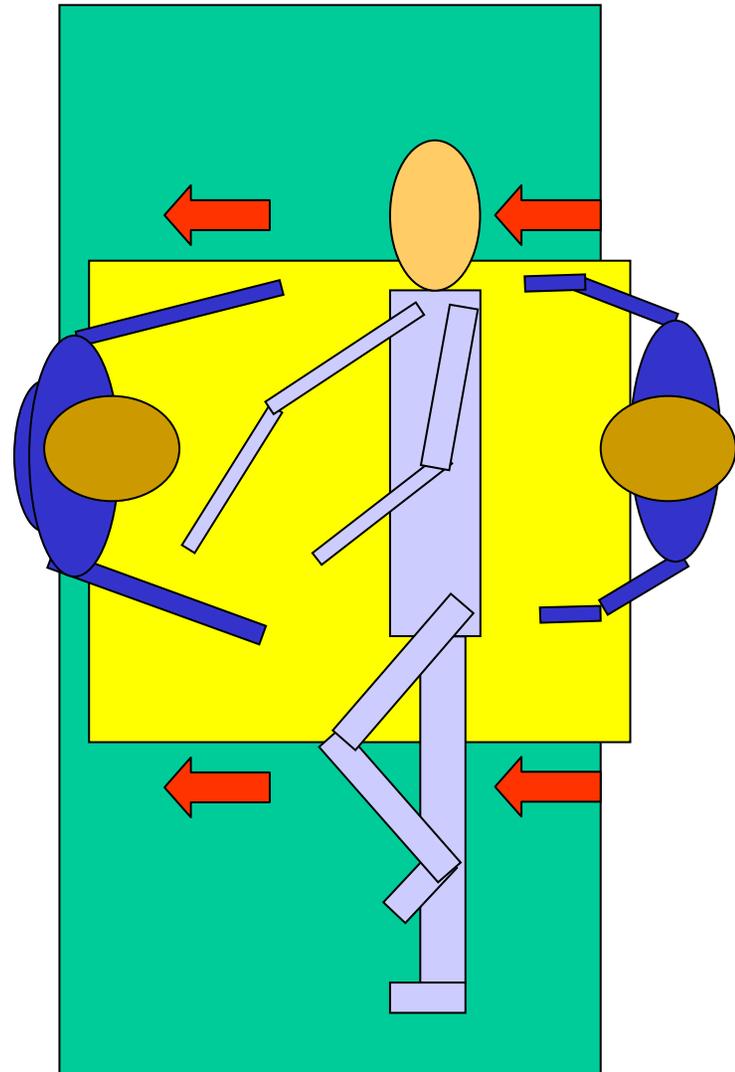
Moving Patient in Bed (4)

- Position the patient on his right side with bent left leg



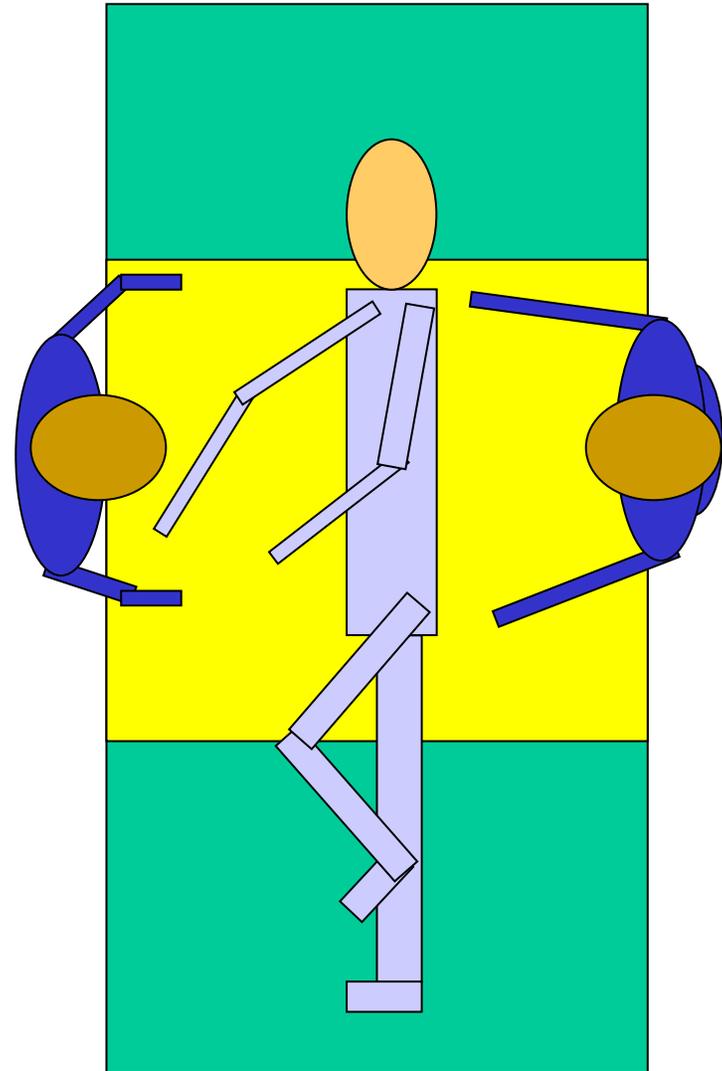
Moving Patient in Bed (5)

- Prepare to shift patient with draw sheet to the middle of the bed



Moving Patient in Bed (6)

- Straighten draw sheet to avoid creases and remove any particles



Guidelines for Transporting Patients and Equipment (1)

It is often necessary to transport patients on stretcher trolleys, wheelchairs, or beds, or handle various types of carts, monitors, instrument sets, and other medical equipment.

- Decrease the load or weight of carts, instrument trays, etc.
- Store items and equipment between waist and shoulder height.
- Use sliding motions or lateral transfers instead of lifting.

Guidelines for Transporting Patients and Equipment (2)

- Push, do not pull. Keep loads close to your body. Use an upright, neutral posture and push with your whole body, not just your arms.
- Move down the centre of corridors to prevent collisions
- Watch out for door handles and high thresholds which can cause abrupt stops
- Promptly take out of service any equipment that is defective or in need of maintenance and tag with a description of the problem. Report it to the appropriate department.

Guidelines for Performing Activities of Daily Living

Crammed showers, bathrooms or other facilities in combination with poor work practices may cause providers to assume awkward positions or postures or use forceful exertions when performing ADLs.

- Use upright, neutral working postures and proper body mechanics. Bend your legs, not your back.
- Eliminate bending, twisting and long reaches by using long-handled extension tools (e.g., hand-held shower heads, wash and scrub brushes).

Guidelines for Performing Activities of Daily Living (Cont'd)

- Wheel people out of showers or bathrooms to wash hard-to-reach places
- Turning patients around to wash hard-to-reach places
- Use shower-toilet chairs which are high enough to fit over toilets. This eliminates additional transfers to and from wheelchairs, toilets, etc.
- Use shower carts or gurneys, bath boards, pelvic lift devices, bathtub and shower lifts, and other helpful equipment.

Some useful exercises.....

