Course Objectives

• Appreciate the importance of bowel, bladder and bathing management to the perception of quality of life in individuals with SCI.
• Evaluate bowel, bladder and bathing DME for their ability to address seating, positioning and functional needs.
• Assess and recommend appropriate bowel, bladder and bathing DME for individuals with SCI and other disabilities.

Background & Significance

Primary Health Issues

Secondary Health Issues

Stewardship of Limited Healthcare Dollars

OUR PATIENTS
Important Lessons…
From the Literature


Important Lessons…
From the Literature

Anderson et al., 2004

Our Passion

We must appreciate:

“how far the clinical reality can stand away from the ideal situation created in ideal settings. It invites reflection and urges more continuous action. This makes us realize that the work is seldom finished, but needs to be continued, repeated, and improved”

Accessibility Considerations

• Determine accessibility via:
  – Formal home accessibility evaluation and visit
  – Report from vendors and/or home health providers
  – Home evaluation templates completed by patient/caregiver
  – Specific measurements, sketches, photographs, or video provided by patient/caregiver.
  – Tape the area(s) out on the floor
  – Use of cardboard cut to wheelchair dimension sizes

Accessibility Considerations

• Consider accessibility from the bedroom to the bathroom
• Consider turning radius from the hallway into the bedroom and bathroom
• Consider turning radius in the bathroom
• Consider whether the chair will enter the bathroom facing forward or backward

General Accessibility Considerations

• 5’ x 4’ ideal for turning radius and room for caregiver
• Smaller may be better for patient stability
• Strategic use of grab bars for stability and to store hygiene products
• Removal of existing bathtub
• Large wheels vs. caster wheels
• Overall length of chair and use of elevating leg rests, tilt, recline
• Graded slope and shower seals
Toilet Accessibility

- Traditional transfer, forward transfer, side sit transfer
- Consider which direction will lean for bowel, bladder & hygiene management
- Accessibility with pants pulled half-way down
- Male or female
- Toilet height and shape
- Direction & shape of commode cutout
- Role of toilet tank, seat lid, and toilet bowl shape
- Ensure that equipment is appropriate to allow sitting alignment for urination and bowel movement to occur INTO the toilet

Toilet Accessibility

Transfer Style

Forward facing transfer

Side sitting transfer

Toilet Accessibility

Seat Shape

Toilet seat shape

18.5"

16.5"
Toilet Accessibility
Bowl and Tank Shape

Toilet tank and bowl style

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Toilet Accessibility
Bowl and Tank Shape

Toilet tank height

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Toilet Accessibility
Alignment

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Toilet Accessibility Alignment

Seat to floor height

Standard: 15"
Handicapped accessible: 18"

Toilet Accessibility
Height

Seat to floor height

Standard: 15"
Handicapped accessible: 18"
Tub Accessibility

• Bath bench or bath chair facing vs. not facing the plumbing
• Parallel transfer wheelchair to/from tub
• Perpendicular transfer wheelchair to/from tub
• Transfer toilet to/from tub
• Transfer floor to/from tub
• Multipurpose modular transfer systems
• Tub style and shape

Specific Tub Considerations

Perpendicular transfer w/c to/from tub

Specific Tub Considerations

Tub styles and shapes
Shower Accessibility

General Considerations

Durable Medical Equipment

- Toilet seats
- Bathtub benches
- Multipurpose stationary modular systems
- Roll-in shower commode chairs (RSCC)
- Multipurpose mobile modular systems

Toilet Seat Considerations

- Padded, non padded
- Commode cutout and direction & can this change
- Adjustable seat depth
- Reach access & unders eat frame design
- Arm support and is it removable for lateral transfers
- If “drop arm”, ease to engage release mechanism
- Back support & is it removable
- Frame design to fit around toilet
Toilet Seats

- Clamp On
- 3 in 1 Bedside Commode
- Drop Arm Commode
- Multi Directional Free Standing

Bathtub Bench Considerations

- Bench extension supported on the tub ledge or outside the tub
- Padded vs. nonpadded
- Commode cutout vs. no commode cutout
- Shape and direction of commode cutouts
- Ordered with/without bucket attachment
- Backrest style: rigid vs sling
- Side arm vs. no side arm and ease to lock/unlock
- Suction cups (2 or 4) vs. no suction cups
- Ease to change from left side vs. right side
- Standard or aftermarket seatbelt/chest strap
- Portability
- Versatility to function for bathing and toileting
- Garden Tub – leg height and seat width

Bathtub Benches
Multipurpose Stationary Modular Systems

- May Function As:
  - Toilet Chair
  - Shower Chair
  - Tub Bench

- Considerations and Options May Include
  - Same considerations as toilet chairs and tub benches
  - No back
  - Padded back or upholstery back
  - No armrests, one armrest, two armrests
  - Transfer bench extensions
  - Portable
  - Carrying cases
Multipurpose Stationary Modular Systems

Roll-in Shower Commode Chairs (RSCC)

- **Advantages**
  - Reduces need for multiple pieces of equipment
  - Decreases number of transfers required on/off toilet and to/from shower
  - Provides support and stability while performing bowel program over toilet (or other place) and for showering

- **Disadvantages**
  - Require accessibility
  - Expensive

RSCC Considerations

- **Seat**
  - “Locks out” moisture and odor
  - Seamless
  - Padding
  - Shape for pressure distribution
  - Shape for perineal access
  - Shape for transfers
  - Depth adjustable
  - Seat back to seat angle adjustable
  - Ability to add “dump”
  - Seat back: contoured, padded, upholstery
RSCC Considerations

• Armrest
  – Height adjustment
  – Ability to move out of place and put back in place
  – Removable from frame of chair or pivots out of place
  – Locks in place
  – Padding

• Footrest
  – Height adjustment and hanger angle
  – Ability to move out of place and put back in place or fixed
  – Heel loop
  – Protects skin integrity of the foot

RSCC Considerations

• Brakes
  – Accessible
  – Easily engaged and disengaged
  – Durable in wet conditions and with different tire options

• Ability to self propel
  – Consider wet conditions
  – Tire size
  – Tire type
  – Push rim diameter
  – Push rim coatings or projections

RSCC Considerations

• Floor to seat height
  – Effects on perineal access over toilet
  – Effects on transfers on/off the RSCC
  – Is it adjustable

• Portability and bathroom accessibility
  – Portability and bathroom accessibility
  – Folding design
  – Quick release push wheels
  – Interchangeable push wheels with casters
  – Tilt vs. recline
  – Elevating legrests
RSCC Considerations

- Stable surfaces for hand placement during transfers
- Perineal access for bowel program and hygiene
- Alignment over different toilet heights and shapes
- Ease cleaning and resistant to rust, abrasion, tearing
- Adjustability for future disease progression or

RSCC Comparison Chart

<table>
<thead>
<tr>
<th>Considerations</th>
<th>G</th>
<th>F</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Flexibility to change seat shape, size, angle, depth</td>
<td>G</td>
<td>F</td>
<td>P</td>
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<tr>
<td>Seat padding</td>
<td>F</td>
<td>G</td>
<td>P</td>
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<tr>
<td>Seat shape for hand placement during transfers</td>
<td>G</td>
<td>G</td>
<td>P</td>
</tr>
<tr>
<td>Armrest style</td>
<td>F</td>
<td>P</td>
<td>G</td>
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<tr>
<td>Footrest style</td>
<td>P</td>
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<tr>
<td>Brake accessibility and effectiveness</td>
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<td>Bowel program accessibility</td>
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<td>G</td>
<td>G+</td>
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<tr>
<td>Ability to self propel</td>
<td>P</td>
<td>P</td>
<td>P</td>
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<tr>
<td>Seat to floor height inches or adjustable</td>
<td>22</td>
<td>18</td>
<td>22</td>
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<tr>
<td>Durability</td>
<td>G</td>
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RSCC–Reclining and Tilt

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Multipurpose Mobile Modular Systems

- Advantages
  - May reduce need for multiple pieces of equipment
  - Allows for greater variability and adjustability regarding bathroom accessibility (vs. typical RSCC)
  - Many of the modular systems allow for growth
  - Many of the modular systems have overall widths and swivel casters that allow for access through typical door width

- Disadvantages
  - Offers fewer seat style choices for bowel program access for patient and/or caregiver (vs. typical RSCC)

- Considerations
  - Positioning (pros and cons) and weight limits

Case Presentation # 1

- 24 y/o S/P MVA which resulted in C4 SCI with zone of partial preservation to C6/C7.

- Objective Measures at Discharge Home
  - ROM: WNL except hip abduction and ER
  - Tone: increased spasticity MAS 1 bilateral hip adductors and plantarflexors
  - Strength: active shoulder movement and elbow flexion, minimal elbow extension & minimal ability to support weight through upper extremities

Case Presentation # 1

- Functional Status at Discharge Home:
  - Poor sitting balance
  - Bed mobility with DE assistance
  - Lateral transfers with DE assistance and slide board
  - Bowel and bladder management with DE assistance
  - Intermittent catheterization every 6 hours
  - Bowel program every other day in the morning at bed level. 60" to complete (suppository, 30 minutes later digital stimulation, 15 minutes later digital stimulation again, eventual bowel movement.
Case Presentation #1

- Functional Status at Discharge Home:
  - Sleeps unclothed. AM bowel program. Then transfer unclothed to RSCC to shower. Transfer back to bed for dressing UE/LE to begin the day.

- Equipment Trialed
  - Activeaid 480-24
  - Activeaid JTG-24
  - RAZ SP

Case Presentation #1

- Considerations
  - Seat stability for pelvic stability & trunk control
  - Adjustability in anticipation that sitting & functional needs will change
  - Adjustability in anticipation that home accessibility/travel accessibility may change
  - Durability
  - Comfort of seat and back could open & close back angle as needed
  - Patient, caregiver, therapist input
  - Not covered by 3rd party, 100% out of pocket expense

Case Presentation #1

- RAZ – SP
  - Seat Configuration:
    - Originally Visco-Foam Interface, Bridged Front
    - Later changed to 18"W x 16"D Right Opening
  - Backrest: Fixed Back - 17" Back Height
  - Foot & Leg Supports
    - Adjustable Footrest 16"-20 1/2 " (pair)
  - Other Options & Accessories:
    - 22 " wheel textured hand rim
    - Conversion Kit with 5" caster assembly
    - Molded Flat Arm Pad – Left/Right
    - Pelvic Positioning Strap (2 pc w/ Fastex Buckle)
    - Chest Strap (Velcro Closure)
Case Study #2

• 72 year old male s/p fall from a tree resulting in complete injury at T5
• PMH:
  – CAD with multiple stent placements
  – Rotator cuff surgery
• Objective Measures at Discharge Home:
  – ROM: WNL, except hip adduction and IR
  – Tone: MAS scores of 0-2, with hip adductors and ER most affected

Case Study #2

• Functional Status at Discharge Home:
  – Modified Independent with all mobility
  • Lateral transfers with transfer board to/from bed, car, bathroom equipment
  • Bed mobility in hospital bed with bed rail
  – Propels manual wheelchair over level and unlevel surfaces at MOD I level
  • Requires assistance for curbs
  – Independent with performing bowel program and ICP

Case Study #2

• Equipment TRIaled:
  – Activeaid Tub Chairs (Model 310 & SS277)
  – Activeaid Rehab Shower Chair (Model 480 series)
  – RAZ-SP Rehab Shower Commode Chair
• Considerations:
  – Bathroom Accessibility:
    • Fully accessible with roll in shower
    • Wall on right side of toilet that did not allow for lateral lean
  – Conservation of shoulder and energy Conservation
  – Configuration of shower chair to allow self propulsion, independent performance of bowel program, and safety with showering
Case Study #2

- Activeaid Model 480-24/18 with Left Seat Opening
  - Self-propel over toilet in simulated home bathroom environment
  - Transfer MOD I to/from shower chair
  - Position easily and safely on shower commode chair to allow for independent performance of bowel program*

Case Study #3

- 25 year old male s/p MVC resulting in complete injury at C6
- ROM:
  - Decreased elbow extension B
  - Decreased wrist extension L
- Tone:
  - MAS scores of 2-3 for BLEs
  - Frequent full body spasms
- Pain: Neck, L shoulder
- B Heel Wounds

Case Study #3

- Functional Status at Discharge:
  - Bed mobility requiring up to MOD A
  - Lateral transfers with transfer board to/from bed and bathroom equipment with MOD-MAX A
  - Propels manual wheelchair with power assist over level surfaces at MOD I level, ramps with MAX A
  - Dependent with performing bowel program
  - SP Tube for bladder management
Case Study #3

• Equipment Trialed:
  – Activeaid Rolling Shower Chair
  – RAZ-AT Rehab Shower Commode Chair
• Considerations:
  – Positioning and support
  – Spasms
  – Progression of independence with bowel management
  – Caregiver assistance

Case Study #3

• RAZ-AT Rolling Shower Commode Chair:
  – Seat Configuration:
    • Visco-Foam Interface, 18"W x 19"D-Right Opening
  – Back Rest:
    • Adjusta-Back - 20" Back Height
  – Foot & Leg Supports
    • Adjustable Footrest 16"-20 1/2" (pair)
    • Heel Loops (pair)
  – Other Options & Accessories:
    • Directional Caster Lock
    • Tilt Assist Pedal
    • Molded Flat Arm Pad – Left/Right
    • Pivot Arm Mount – Left/Right
    • Chest Strap (1px w/ Velcro closure)
    • Pelvic Positioning Strap (2pc w/ Fastex Buckle)
    • Lateral Support with Lateral Extension Plate – Left/Right

Please Visit Exhibit Hall

• Active Aid
• Columbia
• Invacare
• My Shower Buddy
• NuProdx
• Raz Design
Questions?
Discussion?
Thank You !!!