Breakout A: Custom Wheelchair Prescription Specs and Coverage
Theresa M. Crytzer PT, DPT, ATP • Joseph Everhart DPT, NCS • Rachel Hibbs DPT • Annmarie Kelleher MS, OTR/L, ATP, CRCC

Disclosure
• No Disclosures
• Theresa, Annmarie, Joseph, and Rachel are not promoting any products and do not have any ties to any wheelchair companies.
• This in-service is for educational purposes only.
• This will not be a comprehensive in-service due to limited time and the expanse of material on assistive technology.
• Further questions can be directed to the presenters by email or phone:
  • Theresa Crytzer crytzertm@upmc.edu (412) 822-3694/(412) 647-1329
  • Annmarie Kelleher akellehe@pitt.edu (412) 822-3700 x3681
  • Joseph Everhart everhartj@upmc.edu (412) 232-7820
  • Rachel Hibbs hibbsr@upmc.edu (412) 232-7820

UPMC CAT - Outpatient AT Clinic
Location: 3600 Forbes Ave at Meyran Ave Suite 3010; Pittsburgh, PA 15213
Phone: 412-647-1310
TDD: 412-647-1325
Fax: 412-647-1322
Services:
Wheelchair mobility devices
Augmentative communication (speech output) devices
Audiology (hearing aids and assistive listening devices)
Adaptive driving
Adaptive computer equipment and software
Office of Vocational Rehabilitation Representative

Learning Objectives
• Goal 1: To review and understand the features of ultralight weight manual wheelchairs (K0005) and their role in ergonomic fit and function (e.g., efficient propulsion and prevention of repetitive strain)
• Goal 2: To review and understand the features and seat functions of power wheelchairs (Group 3) and their role in ergonomic fit and function
• Goal 3: To translate knowledge of the structure and content of effective letters of medical necessity to inpatient and outpatient SCI case studies
• Goal 4: To understand special considerations for inpatient and outpatient wheelchair prescription/service delivery
  • Goal 5: To understand insurance reimbursement in relation to the letter of medical necessity (e.g., knowledge of SNF/DME waiver regulations and local coverage determination)
• Goal 6: To become aware of secondary funding sources for wheelchairs
Custom Wheelchair Prescription Specs and Coverage
Manual Wheelchairs

Goal 1
To review and understand the features of manual wheelchairs and their role in ergonomic fit and function of the manual wheelchair.

RESNA Position on the Application of Manual Wheelchairs
• The ideal manual wheelchair is:
  • Light as possible
  • Durable for long-term continuous use
  • Custom-configured to meet the specific mobility and postural needs of the intended user
  • Have customizable rear wheel and caster wheel location and configuration
  • Have customizable seating configuration
  • Ultralight Manual Wheelchairs (K0005)

• Goal: Prevent repetitive strain injury in wheelchair users with spinal cord injury
  • Guidelines on wheelchair seating and mobility
  • Guidelines on exercise

What's Available?
Manual Wheelchair Classification
• Standard/Depot/Transport
  • Heavy Duty
  • Bariatric
• High-strength Lightweight
  • Lightweight
  • Ultra-lightweight

Depot Style
• Over 36 lbs (Heavy)
• Limited size
• Non-adjustable
• Sling upholstery
• Multiple users
• Cheap
• Hemi height

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**Heavy Duty and Bariatric**
- **Heavy Duty**
  - Over 250 lbs
  - Invacare Tracer IV Heavy Duty Wheelchair
  - (450 lbs weight capacity, 24" wide, 18" deep)
- **Bariatric**
  - Over 350 to 1000+ lbs
  - Chair weighs 100 lbs
  - Eclipse Bariatric Extra Wide Manual Wheelchair
  - 600 lb capacity; 1000 lb upgrade option
  - Adjustable back and seat

**Lightweight**
- **Weight 34-36 lbs**
- Unable to propel standard wheelchair
- **Hemi height**
- **Short-term**

**High Strength Lightweight**
- Weighs under 34 lbs
- More sizes available
- Limited adjustability
- Interchangeable seat backs/cushions
- Mobility > 2 hours/day
- Less active and agile users
- One user, long term use

**Ultra-Lightweight (K0005)**
- Very light (20-30 lbs)
- Fully adjustable or customizable fixed frame
- Quick release axles
- Rigid or folding frame
- Active, full-time, long term users

**Ultralight Weight Manual Wheelchairs (K0005)**
- Frame
  - Rigid (cantilever/A frame)
  - Folding
Considerations for Customization of Ultralight Manual Wheelchairs

Manual Wheelchair Features

- **Seat to floor height**
  - Footrest fit and clearance
  - Transfers
  - Access to handrim

- **Footrest fit and clearance**
  - Access to tables & work surfaces

- **Seat height**:
  - "Dump"
  - Positioning
  - Access to handrim
  - Used to help stabilize the pelvis and trunk
  - Transfers more difficult

- **Rear axle placement**
  - Ease of popping wheelie
  - Access to handrim
  - Reduce caster flutter

- **Seat width / Seat depth**
  - Fit and maneuverability

- **Seat back height/angle**
  - Clearance from back cane for upper arms
  - Contoured rigid vs adjustable tension Velcro backrest

- **Rear wheel camber**
  - Seat plane angle to leg (frame inset)
  - Clearance for casters to swivel

Seating System: Rigid backrest/seat pan vs Sling seat/back rest

- **Seat Cushions**
  - Lightweight cushion on ultralight manual chair

(See Handout on Cushions for More Information)
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**Tires**

- **Pneumatic/Knobby**
  - Width: 2.125" Width
  - PSI: 40
  - Weight: 1 lb
  - Need tube

- **Kevlar Belted/Pneumatic Tire**
  - Width: 1.9” Width
  - Kevlar belted
  - PSI: 90
  - Puncture resistant

- **Schwalbe Marathon Plus Evolution**
  - Width: 1” Width
  - PSI: 85–140
  - High performance
  - Puncture resistant
  - Weight: 3 lbs.

**Rear Wheels**

- **5 Spoke Mag 24” Wheel**
- **Lite-Spoke Wheel**
- **Carbon Core Wheels**

**Quick Release Rear Wheels**

- A defining feature of ultralight manual wheelchairs. Good hand function - a simple push button ball-lock pin works well. Tetraplegia or impaired hand function – cam lever can lock/unlock the quick release axle.

**Handrims**

- **Ergonomic**
- **Coated**

**Caster Wheels**

- **Size, Width**
  - 4” x 1” Light-Up Caster
  - 4” or 5” or 6” x 1.5” wide Aluminum Wide Soft Roll Wheelchair Caster
  - 7 x 1” 8 Spoke Black Caster Wheel

**Other manual wheelchair options**

- Power Assist
- Chairs that grow (children)
- Tilt-in-Space (not self-propeller/pressure relief/positioning)
- Dynamic wheelchair parts (high tone)
E-Motion Wheels by Frank Mobility

- Electric motors integrated in the wheel hubs to support the wheelchair driver’s pushing force
- E-motion assists the propelling movement up to 3.7 mph
  - Two assistance levels
  - Lithium-ion batteries – on one charge on level ground up to 15 miles
  - 2 wheels (24 lb/11 kg each)
  - Wheel sizes: 22” or 24”
  - Maximum person weight of 286 lb
  - A rollover delay function can be activated that holds the wheelchair safely on inclines

Smart Drive Power Assist

- Operation: You push to go and tap brake to stop. To go slow, push slow. To go fast, push fast. Similar to cruise control – you set the speed by the speed of your push.
  - Anti-rollover feature – only for couple seconds and only for few seconds
  - Rigid and folding chair compatibility
  - Rear wheel size must be between 20” – 26”
    Speed: 0.5 – 5.5 mph
    Range: 10 to 12 miles
  - The system weighs only 168 lbs and 162 lbs
  - **User Weight:** Must be between 36kg and 112kg (80 and 250 lbs).

Pediatric Manual Wheelchairs that Grow

- Sunrise X’CAPE
  - XLOCK™ technology for the performance of a rigid frame and the convenience of a folding frame
  - 19 lbs. without footrests
  - 165 lb. weight capacity

- Ki Mobility Little Wave “Clik” XP
  - Can add a dynamic 5th wheel, that allows you to adjust both the range and spring rate
  - 12.5 lb. transport weight
  - 165 lb. weight capacity

Folding Tilt-in-Space Manual Wheelchairs

- Ki Mobility Focus CR
  - 85 degrees of recline
  - 33 lbs.
  - 300 lb. weight capacity

Ultraglide Manual Wheelchair – The Final Fitting

- Step #1: Testing Tippiness of the Wheelchair
- Step #2: Horizontal Rear Wheel Alignment
- Step #3: Vertical Seat Position
- Step #4: Seat Width and Seat Depth

Final Fitting Manual Wheelchair Considerations

Client Education
Final Fitting: The Tippiness Test to Assess Center of Gravity
- PT has hands on back canes/seat back, ask the user to raise arms over head and lean back.
  - If the chair tips back too far more than 2-3 inches from ground..... what would you do?
  - If the chair does not tip back when you put your weight through the backrest then .......what would you do?

Final Fitting: Horizontal Wheel Alignment
- Ask user to drop hands down toward rear wheel axle.
- Hands in line with axle
  - What if hands are in front of the axle?
  - What if hands are behind the axle?
- Purpose:
  - Access majority of top of hand rim to reduce number and force of pushes = decrease in upper extremity strain.
  - Increase stability, reduce turning radius, remove castor flutter, reduce veering on downhill inclines.

Final Fitting: Vertical Seat Position
- Ask user to place hands on handrim to determine if the person is sitting too low or too high. Check joint angles
  - What if the person sits with too much elbow flexion and arms abducted?
  - What if person can barely reach the handrim even with fully extended arms?
- Low vertical chair set-up (user sits low in chair) = inefficient propulsion biomechanics; user hikes shoulders, joints in excess flexion/extension.
- High vertical chair set-up (user sits high in chair) = inefficient propulsion; reduces push rim contact so high number of pushes, joints at end range

Final Fitting: Seat Width and Depth
- Assess user in frontal plane with arms at sides of wheelchair
- Ideal if for chair to be as narrow as possible for shoulder alignment and snug fit at hips so that chair moves with you as you maneuver various surfaces and turns.
  - What changes would you make if arms are abducted when accessing hand rims?
Manual Wheelchair Skills Training
Client Education

| Protect Wrist and Hands | Handrim Camber | Standard, contoured, protrusion and ergonomic push rim (i.e., Nature Fit, Invacare) | Grows, reach position of hands during transfers |
| Protect Elbow | Narrow seat width (vertical seat position)- similar | Change thickness of cushion, wheel size, seat dump | Consider height of wheel for side to side transfers. Consider height of chair in environment |
| Protect Shoulder | Rear side position near the Center of Gravity (horizontal wheel alignment) | Move seat forward for less stability, backwards for more stability | Check tightness with “tippy test” |
| Support Back | Lumbar support, pelvic stability | Rigid support, adjustable tension | Check that upper arm clears back canes |

Semicircular Pattern

Custom Wheelchair Prescription
Specs and Coverage
Power Wheelchairs (PWC)

Goal 2

To review and understand the features and seat functions of power wheelchairs (Group 3) and their role in ergonomic fit and function
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**Objectives**
- Identify custom PWCs and seating systems for individuals with SCI
- Identify medical justification/s for custom PWCs and seating systems for individuals with SCI
- Case Study: Outpatient evaluation for custom PWC

**PWC Classification**
- Groups
  - **Basic**
    - 1 (K0813-K0816)
    - 2 (K0820-K0843)
  - **Complex**
    - 3 (K0848-K0864)
    - 4 (K0868-K0886)
  - **Pediatric**
    - 5 (K0890-K0891)

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**PWC Classification cont.**
- Diagnosis driven (ICD 10 codes)
- Standards testing (ISO, ANSI/RESNA)
  - Dimensions
  - Speed
  - Range
  - Fatigue test (200,000 cycles)
  - Obstacle Climb
  - Drop test (666,666 cycles)
- Power seat functions
- Postural supports
- Programmable/alternative controls

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**Group 2 PWC**
- Consumer Rehab
  - Not intended for people requiring complex seating systems
  - Good option for “dynamic sitters”
  - Independent weight shifts
  - Independent transfers
  - Speed: 3MPH
  - Range: 7 miles
  - Obstacle climb: 1.6”
  - Stability/Incline: 6 degrees

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**Group 3 PWC**
- Complex Rehab
  - Neurological condition, myopathy, or congenital skeletal deformity
  - Allows for multiple seat functions
  - Good option for “static sitters”
  - Unable to conduct independent weight shifts or transfers
  - Accommodates ventilator
  - Speed: 4.5MPH
  - Range: 12 miles
  - Obstacle climb: 2.4”
  - Stability/Incline: 7.5 degrees

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**Group 3 PWC cont.**
- Expandable Controller
- Alternative Controls
- Seating & Positioning Supports
- Tilt in Space
- Anterior Tilt
- Recline
- Elevating Legrests
Group 4 PWC
- Complex Rehab
- Same seating options as Group 3
- Power sit to stand
- A “non-covered” CMS benefit
- Greater focus on outdoor mobility
  - Speed: 6MPH
  - Range: 16 miles
  - Obstacle climb: 2.95”
  - Stability/Incline: 9 degrees

Group 5 PWC
- Pediatric Complex Rehab
- Power seating functions and postural supports
- Sizing allows for growth
- Special developmental capabilities
- Crash testing requirements

PWC Drive Wheel Position
- Maneuverability
- Obstacle Climbing
- Stability
- Personal Preference
- Transfer Techniques
- Positioning Requirements

Power Seat Functions (PSFs)
- Tilt in Space
- Anterior Tilt
- Recline
- Elevating Legrests
- Sit to Stand

- RESNA position papers on PSFs

Tilt in Space
- Changes Seat Angle
- Changes Hip Angle

- Allows for gravity assist pressure redistribution
- Increases postural stability
- Reduces risk of shear
- Increases ground clearance
- Maintains level seat descending ramps
- Not always a functional position
- Increases overall length of w/c
Anterior Tilt

- Accommodates limited hip flexion
- Allows for pressure redistribution
- Can assume recumbent position with elevating legrests
- ADL’s
  • Catheterization
  • Dressing
- Increased risk of sliding/shear
  • Posterior pelvic tilt

Recline cont.

- Client Education
- Sequence matters

1) Tilt the seat (10-20 degrees) to maintain sitting stability
2) Recline the back as far as needed
3) Elevate the legrests as needed

Recline

Tilt in Space and Recline

Medical Justification/s:
- High risk for pressure ulcers
- Unable to conduct independent weight shifts or transfers
- Utilizes intermittent catheterization for bladder management
- Management of increased tone or spasticity
- Clinical Recommendation for Pressure Relief
  • Position/s
  • Frequency
  • Duration

Elevating Legrests

Medical Justification/s:
- Musculoskeletal condition and/or cast/brace
- Significant LE edema; and/or
- Meets criteria for a reclining back

- Increase ground clearance
- Tight hamstrings can lead to posterior pelvic tilt
- Elevate LET’s above the heart

Seat Elevator

- Accommodate limited UE function
- ADL’s
- Biomechanical Advantage for Transfers
- Sitting Pivot
- Stand Pivot
- Dependent
- Social Interaction
- A “non-covered” CMS benefit
Sit to Stand
- Survey study: Dunn et al, 1998
- Bladder emptying
- Bowel function
- Bone density
- Circulation
- Pressure relief
- Joint Movement
- Function
- Social Interaction
- Participation in work/school, home, and leisure activities
- Important to have evaluation of bone density prior to any standing activities

Control Options
- Dependent on functional ability
- Ability to program driving parameters
- Proportional joystick most common
  - Alternative knobs (i.e. goal post)
  - Compact/mini/short throw joystick
  - Locations variable (i.e. chin)
- Proportional VS. non-proportional control
- Head Array
- Switches
- Sip and Puff

Postural Supports
Seating 101: position/stabilize the pelvis first
- Backrests
  - Lateral supports
- Seat Cushions
- Thigh guides
- Pommel
- Headrest
- Armrests/troughs
- LE supports

Complex Rehab Equipment Coverage and Letters of Medical Necessity
Goal 3
To translate knowledge of the structure and content of effective letters of medical necessity to inpatient and outpatient SCI case studies

Tips For Success
- There is a difference between DME (durable medical equipment) and CRE (complex rehab equipment)
  - For Complex Rehab Equipment
  - Patients have freedom of choice when it comes to who provides the equipment
  - Different coding and payment structure
  - More documentation required
  - Equipment is customized and medically necessary based on diagnosis, impairments, and need for completion of mobility related activities of daily living.
Tips For Success

• Establish good working relationships with vendors (ATP’s, office personnel, techs), manufacturer reps, other clinicians with experience in seating and mobility
• Learn about the equipment and coverage with various payers
• Check coverage before trialing or recommending any equipment
• Relate necessity to completion of MRADL’s (mobility related activities of daily living)
• Justify items based on use in the home (payers do not cover items for community mobility, work related issues)

Tips For Success

• In your documentation talk about the potential for costly medical complications in absence the device being recommended
• If your patient needs something, get it for them even if coverage may be an issue
  • GOOD DOCUMENTATION
  • Write appeals- advocate for your patient
  • Only way to change coverage and legislation- fight for the good stuff
  • If you accept denial, then was it really necessary?
• Pressure Map! Only way to know what the cushion is doing for the patient

Medicare Face to Face Process

• Face to Face exam documented by Physician, must indicate need for prescribed mobility device
• Mobility Evaluation- can be performed by another licensed clinician (PT/OT)
• Prescription can then be written and must be within 45 days of exam for power, 6 months for manual
• Completion of Face to Face is when all documents (LMN, script) have been signed
• After submission/authorization, equipment must be delivered within 120 days of face to face for power, and 6 months for manual

Medicare Coverage

• Good documentation and medical justification is crucial
• Cannot submit for equipment as inpatient (hospital or SNF) with straight Medicare (rental or purchase)
• Home must be accessible for use of the equipment- home assessment
• Physician, Licensed Certified Medical Professional (LCMP), Assistive Technology Professional (ATP) must all be involved
• A lot of private insurances are following Medicare Guidelines

Medicare Coverage

• Medicare Part B provides 80% coverage (20% paid by patient)
• Managed Medicare HMO’s may have more coverage (ex. UPMC For Life)
  • May have restrictions on providers (must be In-Network)
• Certain items are typically not covered
  • Seat Elevators on power wheelchairs
  • Upgraded wheels, tires, handrims
  • There are exceptions
  • Attendant Controls- exception if patient cannot drive and caregiver cannot push
• Enhanced Display
• Anything deemed “should already be part of the chair”- wheels, electronics

Medicaid/ Medical Assistance Coverage

• Managed plans may have better coverage (ex. UPMC For You)
  • May have restrictions on providers (must be In-Network)
• Items typically not covered
  • All 3 power seat functions- difficult to get covered
  • Upgraded wheels, handrims, and tires
  • Seat Elevators
  • Attendant Controls
• Cannot submit for equipment as inpatient (hospital or SNF) with straight MA
  • DME Waiver
**Durable Medical Equipment (DME) Waiver Process**

- Must be considered long term care (100 days or more in SNF)
- Can claim long term status sooner
- Required paper work must be completed (Script, LMN, medical documentation)
- Evaluated in accredited facility (UPMC Rehab, CAT)
- Equipment must have at least a $5000 allowable
- Equipment must be custom

**DME Waiver Process**

- Facility applies for grant (Office of Long Term Living through the state) by turning in all completed paper work
- Grant awarded to facility on behalf of patient
- They must place order to vendor within 15 days
- If device is deemed medically necessary but does not meet grant requirements, grant can be denied, but the facility must still purchase the equipment
  - Only risk involved
  - Make sure equipment is medically necessary AND custom

**When recommending Power Wheelchair**

- The patient is able to transfer to device safely, operate steering system, maintain postural stability and position to operate in the home
- The patient’s mental and physical capabilities are sufficient to safely operate device in the home
- The patient’s home provides adequate access between rooms, maneuvering space, and surfaces for operation of the device
- The patient’s weight is less than or equal to the capacity of the device
- Use of the device will significantly improve the patient’s ability to participate in MRADL’s
- The patient has not expressed unwillingness to use the device in the home

**When recommending Power Wheelchair**

- All of the items below are in relation to completing MRADL’s
- Unable to ambulate with any assistive device independently
- Unable to maneuver any optimally configured manual wheelchair due to impairments related to a covered DX
- Unable to maintain postural stability in a power scooter system

**When recommending custom Ultra-lightweight Manual Wheelchair**

- All of the items below are in relation to completing MRADL’s
  - Unable to ambulate with any assistive device independently
  - Unable to propel a standard weight wheelchair (K0001)
  - Unable to propel a lightweight wheelchair (K0003)
  - Unable to propel a high strength lightweight wheelchair (K0004)
  - Requires use of a ultra-lightweight wheelchair (K0005)
    - Adjustable axle
    - More available sizing options (such as 17” width and 20” depth)

**Letter of Medical Necessity**

- Background/History
- Pertinent Medical Info
  - Make sure qualifying DX is in there
  - Most neurologic conditions will qualify for CRE
  - Be careful with orthopedic conditions (check coverage)
  - Wounds, or other injuries
  - Any info that will help or be used when justifying wheelchair components
Letter of Medical Necessity

• Physical/Motor Exam
  • Strength grades
  • Sensation
  • Anatomical body measurements
  • ROM restrictions
  • Postural deformities
  • Anything that will help justify the sizing, setup, positioning features and other additional wheelchair components

Letter of Medical Necessity

• Simulations and Clinical Trials
  • Describe what the person has trialed and what worked well
  • List what they are unable to use to justify what is being recommended
  • Must rule out all other lower levels of mobility devices
  • Relate use of equipment to completion of MRADL's

Letter of Medical Necessity

• Equipment recommendations and specifications with justification
  • Must medically justify all coded items (anything additional to the wheelchair, anything that costs extra)
  • List of specs will be provided by vendor after mobility evaluation
  • Use this to build letter
  • Include all specs in letter, justify the necessary components
  • Conclude with statement of medical necessity
  • Must be signed by Physician and LCMP

Letter of Medical Necessity

Inpatient Power Wheelchair Case

Goal 4
To understand special considerations for inpatient and outpatient wheelchair provision in relation to letters of medical necessity.

Case #1 Background

• 29 year old male with traumatic cervical spinal cord injury from a fall
• C4 ASIA B tetraplegia
• Impaired sensation below C4 dermatome (shoulders)
• Decreased upper extremity strength (good strength in shoulders and biceps, fair strength in wrist extensors, trace to absent strength in triceps, absent finger movement and grip, no active movement in trunk or lower extremities (C6 Motor Level)
• Other medical issues- hypotension, and repeated respiratory problems, but skin intact
• Complicated acute care and initial rehab stay, prolonged SNF stay prior to inpatient rehab at UPMC Mercy

Case #1 Simulations and Clinical Trials

• Trialed multiple power wheelchairs
• Trialed optimally configured ultra-lightweight wheelchair (unsuccessful due to poor grip, arm weakness, poor endurance, and postural instability)
• Patient had most success with mid-wheel drive Quantum Q6 Edge power wheelchair with multiple seat functions
Case #1 Specifications and Justification

- Quantum Q6 Edge power wheelchair- necessary for independent mobility in the home for completion MRADL’s.
- Power Tilt- necessary for independent weight shifts for relief of pressure to prevent skin breakdown, and for repositioning
- Power Recline- necessary for postural stability, repositioning, and self care from wheelchair level, reclining after tilting improves effectiveness of pressure relief
- Power Center-mount Elevating Leg Rests- necessary for lower extremity repositioning, edema management, and increasing venous return to the heart in instances of hypotension

Case #1 Specifications and Justification

- Controller and Joystick with expandable controls and multiple actuators through controller- necessary electronics for operation of the wheelchair and use of seat functions through the joystick
- Goalpost Joystick Handle- necessary for power wheelchair operation, patient is unable to manipulate a standard joystick knob due to impaired hand function, needs horizontally oriented surface
- Tru-Comfort backrest and Stealth Headrest- necessary for proper back and head/neck support while operating the power wheelchair and during pressure relief

Case #1 Specifications and Justification

- Gel arm pads- necessary for upper extremity protection while patient is using armrests for upper extremity positioning and additional trunk stability by weight bearing through the arms
- Lateral trunk wedges- necessary to provide trunk support while seated in the power wheelchair and prevent the development of fixed or flexible skeletal deformities
- Lateral thigh guides- Lateral thigh guides are necessary to maintain proper lower extremity positioning while seated in the wheelchair. Without that lateral support the lower extremities could fall off the side of the cushion possibly resulting in injury.

Case #1: Outcome

- Wheelchair and all specs approved
- Patient was unable to return to UPMC Mercy for final fitting
- Fitting occurred at home and pictures emailed by ATP to confirm good fit, adequate setup, and that wheelchair matches specs

Case #1 Outpatient Considerations

- 6 years post d/c from in-patient rehab, he presents at the CAT clinic for a new PWC.
- PWC has required frequent maintenance/repairs and left him stranded in the community.
Case #1 Outpatient Considerations

- Current AT
- Age (5 years?), Condition and Function of PWC
- Identify change/s in medical condition
- Referral source
- Identify environmental change/s
- AT Considerations:
  - Modifications VS. New
  - New technology available
  - Tried and failed
  - Review & Educate

Case Study 2: Inpatient Rehabilitation Manual Wheelchair Evaluation

- 50 year old female
- T12 ASIA A
- Complications: lower extremity edema, hypotension
- Mild pain in shoulders and back
- Bilateral Stage II Ulcers - Ischial Tuberosities

Letter of Medical Necessity

Inpatient and Outpatient Manual Wheelchair Cases

Case Study 2: Specifications and Justifications

- Quickie Q7 Adjustable Wheelchair - necessary for independent mobility within the home
- Soft Roll Casters - Necessary for wheelchair propulsion on community surfaces and over small obstacles.
- Leg Straps - The leg strap is necessary prevent feet from coming off of the platform during operation possibly resulting in injury.

Case Study 2: Simulations and Clinical Trials

- Initially utilized power wheelchair to manage weight shift, poor endurance, lower extremity edema and hypotension
- Transitioned to manual wheelchair - trialed multiple manual wheelchairs, backrests, handrims, tires
- Patient had most success with optimally configured ultra-lightweight wheelchair
- Trialed multiple brands and options - selected Quickie Q7 with Jay3 backrest
Case Study 2: Specifications and Justifications

- **Jay 3 Backrest**: The J3 Mid-thoracic back is necessary to provide proper positioning of trunk.
- **Armrests**: Rigid armrests necessary to perform a full wheelchair push up for pressure relief. The swing-away feature is necessary so that they can be moved out of the way for her to be able to transfer in and out of the chair with or without a sliding board.
- **Wheel lock extension handles**: To safely reach the wheelchair locks without leaning forward in unsafe manner.

**Natural Fit Handrims**: Necessary to maximize the surface area of contact between hands and the push rims. The Natural Fit handrims are ergonomically designed and offer 80% more surface area for gripping and puts the hand in a more natural position. The Natural Fit handrims ease stress on the hands and wrists resulting in ease of propulsion and less risk for upper extremity repetitive use injury. It also increases efficiency of every push on the hand rim decreasing energy expenditure.

- **High Profile ROHO Cushion**: Does not independently ambulate and has absent sensation in the trunk and lower extremities putting her at risk for pressure ulcers. The Roho high profile cushion provides optimal buttock pressure distribution while seated in the wheelchair to deter the formation of pressure sores.

**Spinergy Spoke Wheels**: Spinergy LX wheels are recommended because they are lighter and easier to manage to promote independent parts management of the wheelchair. The decreased weight also provides a more efficient propulsion stride which is crucial in preventing upper extremity overuse injuries, since this chair will be her primary means of mobility. Spoked wheels such as these provide better shock absorption on rough surfaces, decreasing axial forces on the spine, which is important due to a history of spinal cord trauma and spinal surgery. This better shock absorption also prevents wear to the rims which will decrease the frequency of wheel replacement.

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Case Study 2: Outcome

- **Wheelchair and all specifications approved**
- **Patient returned to RI for final fitting - PT and ATP made adjustments to backrest and footplate**
- **All other specifications were appropriate and fit well**

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Case Study 2: Simulations and Clinical Trials

- **Received a Q7 manual wheelchair 5 years ago**
- **Repair issues**:
  - Cushions are original to the chair and have not been replaced, the foam in the back support is broken down and the cover is frayed.
  - The seat is slogging and has a rip in the attachment to the front edge of the frame.
  - Her goal is to continue propelling efficiently
- **Discussion......**

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Case Study 2: Outpatient Manual Wheelchair Evaluation

- Five years later the same client comes to CAT
- 55 year old female
- T12 ASIA A
- Continues works as a high school science teacher, highly active, travels in the summers.
- Has developed mild scoliosis with pelvic obliquity
- Weight gain
- No pressure wounds, but getting redness over R IT
- She had a R rotator cuff injury when loading her wheelchair into her car and has 5/10 pain L shoulder, receiving PT now
- History of stage II wounds over ischial tuberosities

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**SPECIAL CONSIDERATIONS**

- Function in the home and community
- Are they working?
- OVR
- Review / education with transfers
- Reduce weight through physical activity (adaptive sports/exercise) and diet (referral to registered dietitian)

**Bibliography**


**Application of Medicare Clinical Criteria Algorithm for Wheelchair Prescribing**

- He is unable to ambulate even with the use of assistive devices due to his TBI where he has increased spasticity and UE weakness.
- He is unable to propel any type of manual wheelchair due to UE paralysis and spasticity.
- He is not a candidate for a scooter as he would not be able to safely transfer into a scooter seating system that replaces the pushrim driving system effectively.
- Therefore, the use of a power wheelchair is necessary to significantly improve Tony’s ability to participate in mobility-related activities of daily living.
- Power tilt in space is necessary as Tony is at high risk for development of pressure ulcers as he sits for extended periods of time during transfers and when he is in his wheelchair for up to 10+ hours a day and is unable to perform a functional Power tilt in-space is necessary as Tony is at high risk for development of pressure ulcers as he sits in his wheelchair for 10+ hours a day. When the wheelchair is in use and the tilt in space is needed to manage his increased tone and spasticity.
- A seat elevator is needed as it will allow Tony to transfer more safely and efficiently by raising the seat to stand up or to use a transfer in a down-ready direction. Lifting it will also allow him to reach and carry out tasks at different surface heights given his limited reach. His need for a seat elevator is also consistent with the Rehabilitation Engineering & Assistive Technology Society of North America’s (RESNA) Position Paper on Seat Elevating Devices.
Sport Specific Wheelchairs

- Basketball
- Fencing
- Rugby
- Tennis
- Wheelchair Racing

Basketball

Wheelchair Fencing

RUGBY

Tennis

Wheelchair Racing
Wheelchair Racing Propulsion Technique

What is a sport you could do if you use a power wheelchair for mobility?

Power Soccer