**Lab: SM Selection**

**Case Scenario #4:**

**PATIENT NAME:** Maggie Summers

**INTAKE & HISTORY** *Describe the patient’s environment, functions, and activities/participation on a typical day including limitations and restrictions. Include as much objective information as possible.*

**Demographic Information: Age:** 50-year-old **Gender:** F **Weight:** 165# **Height:** 5’5”

**Referring Medical Diagnosis:** Secondary progressive MS **Onset Date:** Age 38

**Medical/Surgical hx:** Twelve years ago, at age 38, after the birth of her first child the pt. was diagnosed with relapsing/remitting MS. She has had numerous exacerbations requiring hospitalization for medical management. She reports that her condition has progressed to secondary progressive MS

**Reason for Referral/Chief Complaint:** Pt is having difficulty with consistent, safe, independent mobility. She is no longer able to safely or functionally, ambulate on a consistent basis due to significantly increased fatigue associated with secondary progressive MS. She reports daily falls or “close calls” when attempting a few steps with a walker or during transfers. In January she fell during a transfer and sustained a Colle’s fracture of the right radius, s/p cast removal mid-March followed by a course of PT. She wants to be able to independently attend to her children’s home and school activities including her children’s community-based sports activities (soccer, swim team, ballet). She was referred by her neurologist for an evaluation for an appropriate wheeled mobility device to help her attain her goals and meet her immediate and future anticipated seating and wheeled mobility needs.

**History of positioning and/or mobility problem:** Progressive increasing difficulty with gait, balance, fatigue, weakness and spasticity. She is no longer able to ambulate functional community distances consistently and safely with a cane, rollator, or by self-propelling a manual wheelchair. She reports experiencing daily falls and/or close calls.

**Treatment diagnosis/ICD-10 related to positioning and/or mobility problem:** Other abnormalities of gait and mobility R26.89, neuromuscular scoliosis thoracolumbar M41.45, lumbosacral M41.47, pressure injury buttocks skin breakdown L98.413

**Patient/Family/Caregiver Goals:**

* “I want to be able to independently get around my house and the community to keep up with my children, their activities and my responsibilities as a full time stay at home mom.
* ” I want to be able to independently get in/out of the van, drive and participate in my children’s activities.”

**Social Status**: Married with 3 kids (age 12, 10, 8)

**Home environment and accessibility:** Resides in a wheelchair accessible ranch home. Her current MWC fits in all rooms in the home. The front and rear entrances (garage & porch) are equipped with a ramp

**Environmental Accessibility:** Encounters a range of terrain on daily basis including pavement, gravel, grass, dirt, hills and inaccessible obstacles e.g. potholes, curbs, inaccessible ramps and steps. Limited in ability to effectively self-propel her MWC with all 4 extremities dependent on fatigue, distance and terrain.

**Employment/work status:** Primary caretaker for 3 young children 12, 10 and 8 years old. She does not work outside of the home, is a full time stay at home mom and a coleader of her children’s scout troops.

**General Health Status:** Fluctuates with nature of chronic progressive MS. No other significant comorbidities reported.

**Functional Status/Activity Level:** ADL’s increasing difficult with numerous falls/close calls (~ 3x/month) with minor injuries (e.g. bruises, cuts, and recent Colle’s fracture R 1/2020). She intermittently is requiring increased assistance for activities such as mobility in her MWC, stand by assistance for transfers, showering, set up for dressing, and other activities such as shopping, laundry, cleaning, garbage, etc. Recently the family has installed assistive devices including (e.g. grab bars, shower seat and handheld shower, door opener to garage). Scheduled for an adaptive driving evaluation for assessment and recommendations to adapt family van.

**Transportation:** Family has a Toyota minivan with van seats. Until about 6 months ago patient was able to drive her children to their activities. She no longer can transfer and load her MWC. She is concerned about her ability to safely drive and is pursuing a driving evaluation to explore her options.

**EQUIPMENT ASSESSMENT:** *Provide equipment-specific information.*

**Existing Equipment:**  Rollator walker, Sunrise Medical Quickie 2, 18”w x 18”d with a front seat to floor height = 18” -2” h 70 degree swing away front hangers with composite footplates, push to lock wheel locks., desk length height adjustable armrests, anti-tip tubes.

**Current Seating Equipment:** Jay Ion seat cushion with solid insert 18” w x 18” d x 2” h, Invacare Matrix PB Elite backrest and pelvic belt.

**FUNCTIONAL ASSESSMENT:** *Include subjective and objective evaluations of performance and functional abilities to establish activity level, level of positioning, and mobility impairment, and indicate the prognosis for potential restoration of function.*

**ADL/IADL Status:** Status fluctuatesdependent on fatigue and spasticity, SBA for transfers to/from shower, set up for dressing and assistance required for shopping, laundry, cleaning, garbage, loading/unloading WC in vehicle, extended distance mobility in WC. Reports frequent falls and close calls ~ daily.

**Mobility Status:** Primary mode of mobility is self-propelling MWC with BUE or all 4 ext. Unable to functionally self-propel in a timely manner household distances or community distances.

**Walking/Ambulation Status:** Unable to functionally ambulate. She occasionally will stand with a rollator and contact guard assist for stand pivot transfer. Increasingly difficult, experiencing LE “buckling” and frequent falls/close calls.

**Wheelchair Propulsion Status:** Self propels with BUE. When in small areas (e.g. bathroom) tries to self-propel all 4 extremities.

**Endurance:** Fluctuates due to weakness and fatigue. Waxes/wanes usually more difficult afternoon/evening.

**SCREENING OF BODY FUNCTIONS:** *May require further physical examination, referral, or consideration of seating/mobility needs*

**Cardiovascular/pulmonary/circulatory status:** Intact

**GI system review:** Intact

**Cognitive status:** Intact, mild emotional lability noted during interview

**Communication:** Intact

**Vision/Hearing Status:** Vision intact, no c/o diplopia or functional vision impairments

**Bowel/bladder functions:** Intermittent episodes of urinary incontinence due to spastic bladder, working with neurologist on bladder management, currently using incontinence garments when out of home.

**PHYSICAL EXAMINATION & TEST MEASURES:** *Focus on body functions and structures that are responsible for the patient’s positioning and/or mobility impairment.*

**Sensation:** c/o paresthesia all extremities LE>UE

**Pain:** c/o pain/discomfort with prolonged sitting in current MWC,

**Skin Integrity:** evidence of Stage 1 pressure injury, redness does not balance onB ITs, constantly moving trunk during interview but no evidence of performing regular full pressure relief

**Skeletal Alignment/Posture:** In MWC assumes a posterior pelvic tilt and lateral trunk flexion to lean on armrest for support when fatigued. Sitting on mat with external support able to attain a neutral pelvic tilt and normal thoracolumbar curves with reducible C curve TLS scoliosis,

**Balance:** Requires UE support for propped sitting, Unable to sit unsupported without loss of balance.

**Strength:** Strength varies day to day due to fatigue and waxing/waning symptoms. Unable to move all 4 extremities through full ROM and unable to perform multiple repetitions due to poor muscular endurance, grossly <3/5 throughout.

**ROM**: AROM BUE limited to ~80% due to weakness, PROM BLE WFL, able to attain 90 degrees hip flexion with neutral pelvic tilt, and 110 degrees + knee extension with hip flexed to 90 bilaterally. B ankle PROM 90 degrees

**Neuromuscular Status:** Extensor tone noted with change in hip/knee/foot position, clonus elicited B with contact with ball of foot. Slight ataxia noted BUE with strain when self-propelling MWC.

***LAB ASSIGNMENT: Complete the following portion for this Case Scenario***

**WHEELCHAIR ASSESSMENT:** *Describe technology-specific trial, simulation, and specification.*

**Technology trial/simulation:** Equipment feature(s), rationale for selecting trial.

**Measurements:** Body measurements

|  |  |  |
| --- | --- | --- |
| **Anatomical Measurement** | **Left** | **Right** |
| **Thigh length** | 19” | 19” |
| **Lower leg length** | 17” | 17” |
| **Seat to PSIS** | 6” | 6” |
| **Seat to axilla** | 15” | 15” |
| **Seat to shoulder** | 18” | 18” |
| **Seat to top of head** | 33” | 33” |
| **Seat to elbow** | 8” | 8” |
| **Hip width** | 18” |
| **Chest width** | 15” |
| **Shoulder width** | 18” |
| **Foot length w/ shoes** | 9” | 9” |

**Person/technology match:** Discuss benefits/tradeoffs of equipment features with patient/family and identify technology features needed to attain identified goals

***INSTRUCTOR KEY TO PART 1 ASSIGNMENT – SAMPLE ANSWER OR COMPARABLE***

***LAB ASSIGNMENT PART 1: Complete the following portion for this Case Scenario***

**WHEELCHAIR ASSESSMENT:** *Describe technology-specific trial, simulation, and specification.*

**Technology trial/simulation:** Equipment feature(s), rationale for selecting trial.

SAMPLE ANSWER

* Trial MWD and FWD PWC to determine which is more functional in home and community environment.
* Trial power tilt and power seat elevate to determine if patient obtains adequate weight shift and gravity assisted positioning to facilitate sitting balance, functional tasks, rest without needing to transfer. Patient felt that power seat elevate would be a critical function for daily tasks required for homemaking and caring for her children including- cooking, laundry, shopping, reaching in refrigerator, washing at sink, etc.
* Trial different material cushions- closed cell foam, and viscous gel to determine which is preferred for stability, pressure distribution and ability to scoot and transfer

Results: (Sample documentation of trial results).

* Patient trialed the MWD and FWD PWC bases driving down a long hallway and turning 90 degrees into through a doorway. She maneuvered in an accessible bathroom. She took the PWCs outside to travel on side slopes, up/down ramps and on different surfaces- carpet, tile, pavement, grass. She felt that the MWD was the most intuitive to operate and she will be able to easily navigate in the small spaces in her home and in a van when she completes her adaptive driving program.

**Measurements:** Body measurements (provided above)

**Person/technology match:** Discuss benefits/tradeoffs of equipment features with patient/family and identify technology features needed to attain identified goals

A Group 2 PWC was ruled out due to the progressive nature of the patient’s condition. Furthermore she has the need for multiple drive modes (slow indoor, slow outdoor, fast indoor, fast outdoor and power seat functions) to enable her to safely navigate in various environments – e.g. safely cross a busy parking lot or street without getting hit, navigating a busy school hallway or shopping center, maneuvering in small spaces at home or in the grocery store. etc. A Group 2 PWC is unable to be fit with multiple drive modes or multiple power seat functions.

***Consider and discuss with your group the following for this Case Scenario***

**EVALUTION & PLAN OF CARE:** *Describe goals, treatment procedures/interventions, recommended equipment, feature specification and clinical rationale, duration/frequency of services required to attain goals, anticipated discharge plan.*

**Diagnosis related to positioning and/or mobility limitation:** Factors that are influencing the individual’s condition and/or level of functioning in his or her environment. Diagnosis code must correspond to payer coverage policy. Review payer policy for eligibility criteria.

**Problem list:** Identification of problems pertinent to patient management/clinical services and necessary/recommended MAE

**Goals for treatment intervention:** Stated in measurable terms with expected completion date, appropriate for patient and diagnosis

**Goals for MAE intervention (Expected Outcome):** A realistic evaluation of the patient’s functional potential with the use of the recommended equipment, stated in measurable terms related to functional activity

**Plan for interventions and/or additional test and measures:** Pressure mapping, equipment trial/simulation, AT assessment, custom molding, fitting, manual wheelchair skills training, power mobility training, patient/family teaching, frequency/duration of visits, discharge plan/discharge summary

**Equipment Recommendation:** Details of recommended equipment features and clinical rationale for items requested

**Current Equipment:** Describe current primary mobility device and seating (age/manufacturer/model), pertinent features, hrs/day used, funding source, reason for new equipment (what worked/didn’t work)

**Patient/Caregiver Goals:** In their words

***STUDENT DOCUMENTATION ASSIGNMENT: USE PLANNING WORKSHEET- DEFENSIBLE DOCUMENTATION PROJECT: PART 2A & B TO DOCUMENT THE FOLLOWING:***

**Problem list:** Identification of problems pertinent to patient management/clinical services and necessary/recommended MAE

**Goals for MAE intervention (Expected Outcome):** A realistic evaluation of the patient’s functional potential with the use of the recommended equipment, stated in measurable terms related to functional activity

**Product Feature Recommendation:** Details of recommended equipment features and clinical justification/rationale for items requested

|  |  |  |  |
| --- | --- | --- | --- |
| **Pt Problem** | **Goal** | **Product Feature** | **Justification** |
| **ADD MORE ROWS AS NEEDED** |  |  |  |

1. **Describe wheelchair configuration needed to maximize function (e.g. specific seat width/depth, back height, seat to floor height, axle position, seat to back angle, tilt, power assist, etc.)**
2. **Describe features of seat / back support and postural supports needed for functional mobility**
3. **Explain why the lower level MWC or PWC cannot be configured and/or will not meet patient’s needs.**
4. **Describe how recommended MWC or PWC will improve patient’s ability to participate in ADLs and IADLs.**

***ANSWER KEY FOR INSTRUCTOR TO 2 ASSIGNMENTS INCLUDING ACCEPTABLE ALTERNATIVES & RATIONALE***

1. **Describe wheelchair configuration needed to maximize function (e.g. specific seat width/depth, back height, seat to floor height, axle position, seat to back angle, tilt, power assist, etc.)**
* Permobil M3 – ocean blue accents 19” w x 18” d
* Tilt in space, 90-degree seat to back angle
* With or without power seat elevation given adequate rationale
* Full length arm pads (16”)
* Right side mounted RNET slim line joystick with multiple seat function controller
* Expandable controller with harness
* Swing away joystick mount
* Group 34 batteries
1. **Describe features of seat / back support and postural supports needed for functional mobility**
* 19” w x 18” d Jay Fusion cushion with cool tech cover (lateral thigh contour to minimize abduction)
* Corpus Contoured back 18” w x 23” tall
* lumbar support pad
* contoured lateral trunk supports
* Corpus Head rest (support head during tilt and fatigue)
* Pelvic positioning device
* Angles adjustable foot platform (easier to operate)
* Transport tie down securement points
1. **Explain why the lower level MWC or PWC cannot be configured and/or will not meet patient’s needs.**

Group 3, MWD, multiple drive options (slow indoor, slow outdoor, fast outdoor, tremor dampening potentially, maybe seat lift for transfers and tilt in the future and vehicle tie downs. A lower level PWC will is not capable of multiple drive modes or power seat features.

1. **Describe how recommended MWC or PWC will improve patient’s ability to participate in ADLs and IADLs.**

A PWC with power tilt and seat elevation will enable patient to be independent in all evironments as primary caregiver for 3 young children. She will be able to drive from her wheelchair in her adapted van and is currently taking driving assessment with plans to retrofit or purchase new van. Requires power tilt to minimize number of transfers and facilitate effective weight relief. Power seat elevation is needed to complete daily tasks e.g. cooking, laundry, cleaning, washing dishes, loading/unloading dishwasher, etc.