An Algorithm for Selecting Physical Therapy Outcome Measures in the Outpatient Setting for Clients with Acquired Brain Injury
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In the TBI and CVA populations, physical therapy (PT) outcomes and interventions are often focused on mobility and balance. Many outcome measures have ceiling effects, and in this case use of other, more challenging measures may be required to document additional progress, determine new goal areas, and assist with recommendations. In our outpatient clinic, we have devised an algorithm to help choose outcome measures that will be most appropriate and will provide the most relevant information based on client status, age, and interests. Our goal is to provide an objective framework for decision making for outcome measures in the outpatient neurologic PT setting for clients with acquired brain injury to improve clinicians’ ability to justify medical necessity and document ongoing progress.

Objectives:

- Provide an objective framework for decision making for outcome measures in the outpatient setting for clients with acquired brain injury.
- Familiarize clinicians with a variety of outcome measures for use in the TBI and CVA populations and improve clinician ability to interpret scores of these measures.
- Improve clinician ability to choose PT outcome measures effectively at various points of the recovery process after acquired brain injury in clients of a variety of ages and prior functional abilities, and illustrate this through case studies.
**Outcome Measures**

**10m Timed Walk (10mTW)**
This test assesses walking speed over a short distance. Clients walk a 10m course at self-selected speed using usual assistive device with middle 6m being timed; walking speed is calculated in m/s. Can be used to predict fall risk (< 1.0 m/s) as well as ambulation status (< 0.4 m/s = household ambulator, 0.4-0.8 m/s = limited community ambulator, > 0.8 m/s = community ambulator). Population normative values are 1.2-1.4 m/s.

**6 Minute Walk Test (6MWT)**
This test assesses distance walked over 6 minutes as a sub-maximal test of aerobic capacity. A distance of greater than 1043 feet indicates that the client is a community ambulator. Normative values are available for older adults.

**Berg Balance Scale (BBS)**
The BBS is an outcome measuring static balance/postural control and fall risk in a variety of patient populations. There are 14 items with a maximum score of 56. Items are scored based on ability to perform without assist, stability, and/or time to complete a task and include SLS, tandem stance, sit to stand, and static standing balance. A score of less than 45/56 indicates increased fall risk. Significant change ranges from 4-7 points in the research.

**Functional Gait Assessment (FGA)**
This test examines postural stability and adaptability of gait to a variety of dynamic demands and has been validated for a variety of neurological conditions. It includes items such as changing speed and direction of gait, ambulation with head turns, and tandem ambulation. A score less than 23 indicates an increased fall risk. Normative values are available for ages 40-89 by decade. The minimal clinically important difference is 4-6 points.

**Community Balance and Mobility Scale (CB&M)**
This measure is a higher level balance tool based on tasks that may be encountered in community settings. There are 13 items with a maximum score of 96 (5 points/items with one extra point on stair negotiation task). Items are scored based on speed and movement quality and include static balance, various walking tasks, step-ups, and running. The test has been validated for TBI and CVA populations. Minimal clinical difference is established as 8 points. Normative values are available for ages 20-79.

**High Level Mobility Assessment Tool (HiMAT)**
This test is designed to measure high level motor performance in clients with various neurological conditions and includes challenging tasks such as skipping, hopping, and running. Normative data for healthy 18-25 year-olds is 50-54 for males and 44-54 for females. An improvement of 4 points or a reduction of 2 points is considered significant.

**References**


