**Title and Focus of Activity:** Balance Examination Lab and Integrated Patient Experience *Examination; Integrated Clinical Experience*

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**Course Information:**  Neuromuscular Physical Therapy (10 credits) and Professional Practice IV (PT607) (2 credits); Semester 4 of 8. The latter course involves 5 3-4 hour “Patient Care Days” that are integrated throughout the semester.

**Learning Experience Description:**  As part of both the neuromuscular physical therapy course and the professional practice course, students participate in hands on patient/client examination, evaluation and intervention with individuals with neurological disorders from the community over the course of the entire semester. The timing of these sessions within the professional practice course coincides directly with content covered over the course of the semester in the didactic neuromuscular physical therapy course. Students are exposed to didactic neurologic physical therapy content, practice relevant psychomotor skills related to tests and measures and interventions in the clinical lab environment with their peers, and then practice these skills with individuals with neurological diagnoses as part of the professional practice course during patient care days. The culmination of the semester coursework is a two-week clinical experience held on campus where students manage patients with neurological disorders through examination, evaluation, intervention, reexamination and discharge. Students are partnered with their “patient” in small groups of 2-4 students under faculty guidance as clinical instructors. The learning activity described here focuses on test and measures that examine balance.

In-class Lab Activity: Group 1 (see below) demonstrates a selected test to the group of students as a whole with clarifications added by the clinical lab instructors as needed. Then group 1 divides up and each student has the opportunity to teach a small group how to perform their test. The instructors monitor the teaching to ensure accuracy. After every student has had the opportunity to practice the activity, the class comes together as a whole. Group 1 then leads a discussion about the classification of their test items and the remaining class preparation materials (listed again below). This repeats until all groups have had the opportunity to teach the class and all students have been exposed to each test and have had the opportunity to complete psychomotor practice of each test.

Following the in-class lab, students are expected to update the guides that they posted on the online forum to assist their peers in studying for the clinical lab practical.

Integrated Patient Experience: One week following the in-class lab, students have the opportunity to practice their newly acquired balance assessment skills with patients with real neurologic deficits. For this integrated patient experience, students are required to review and come prepared to utilize tests and measures practiced during their balance assessment clinical lab session. Students are paired with a classmate. In preparation for this Patient Care Day, the students are required to meet to develop a plan for the patient session, including designing an examination flow, delineating the role each student will play in the different tests and measures performed during the examination time (patient instruction and test performance, documentation, guarding), and creating a basic documentation template to utilize throughout the Patient Care Day. Students are not provided with any information about the patient they will be working with prior to the Patient Care Day and need to be prepared for any patient, though patients are selected from diagnoses that students are familiar with (typically this Patient Care Day involves patients with stroke, vestibular disorders, Parkinsonism, incomplete spinal cord injury and multiple sclerosis).

Students begin the balance examination session prepared to answer the following after they perform a brief subjective history:

Please provide rationale for your selection of the 3 most appropriate assessment tools for your patient. Although we want you to practice as many as you can, we will be soliciting from you your clinical reasoning for selection in a true clinical scenario.

At the end of the session, students regroup with course faculty/”clinical instructors” to collectively reflect on the experience. Individual student feedback occurs throughout the session when appropriate. Students that require additional support and guidance are provided individualized, private feedback before the next integrated patient experience.

Readings/other preparatory materials: Prior to the clinical lab where students learn the balance tests, they complete self-directed study on balance as it relates to patient cases, have formal inquiry seminars on postural control, and complete the follow lab prep:

**Balance Examination Clinical Lab Prep Assignment**

In your groups, apply the following questions to the assigned test(s). Post your answers to the online forum labeled appropriately prior to lab. Your group is responsible for making any updates to the forum following lab. Utilize the following article for questions 5 and 6:

Pardasaney P, Slavin M, Wagenaar R, Latham N, Ni P, Jette A. Conceptual Limitations of Balance Measures for Community-Dwelling Older Adults. Phys Ther. 2013; 93(10): 1351-1368*.*

Balance Tests

1. Group 1: Berg Balance Scale
2. Group 2: Trunk Control Test, Functional Reach Test
3. Group 3: Timed Up and Go, Time Up and Go w/attentional demands
4. Group 4: Tinetti Performance Oriented Mobility Assessement (POMA)
5. Group 5: Clinical Test of Sensory Integration of Balance (Modified) , SOT (Students in this group should schedule a meeting with the clinical lab instructor to learn how to use the BalanceMaster®)
6. Mini BESTest
7. Dynamic Gait Index, Functional Gait Assessment (note the similarities of these tests)

Questions/Tasks:

1. Where can one find directions to this test or measure? Are their accurate videos available to assist clinicians with learning how to perform the test?
2. Where can one find a scoring sheet for this test or measure? Can it be reproduced?
3. Has an MDC or MCID be documented in the literature? If so, what is it?
4. Provide a list of equipment needed to perform the examination.
5. Provide any special tips to make completion of the test or scoring of the test easier.
6. Using the article1, how would you classify the test and the test items?

Be sure to consider the role of the task, level of environmental variation, object interaction, obstacle negotiation, external forces, dual tasking, and moving people/objects for EACH item individually. See the following table for details. The table was taken directly from the article listed above: Pardasaney P, Slavin M, Wagenaar R, Latham N, Ni P, Jette A. Conceptual Limitations of Balance Measures for Community-Dwelling Older Adults. Phys Ther. 2013; 93(10): 1351-1368*.*

1. Use a compilation of these individual analyses to provide a description of the overall test. Does it measure items in different categories? What categories are missing?
2. Who would be appropriate to use this test with? Who would not be appropriate?
3. What else would you need to look at if you choose to use this test(s) to be sure you were looking at balance comprehensively?

\*\*\*Be prepared to instruct your peers in proper completion of the balance examination during lab!\*\*\*

Time for student to complete the activity: 1. Preparation for activity outside of/before class: 4 hours (2 for clinical lab prep assignment and 2 preparing for the Patient Care Day) 2. Class time completion of the activity: 6 hours (2 in clinical lab and 4 for the Patient Care Day)

Learning Objectives:

1. Evaluate results of technology assisted analysis in relation to neuromuscular disorders
2. Apply concepts of sensation and perception to patients with neuromuscular disorders
3. Demonstrate ability to communicate with patients, caregivers, health care professionals with intact or impaired communication.
4. Apply concepts of teaching and learning across the lifespan and in relation to the challenges of working with individuals with cognitive and/or behavioral deficits
5. Select, perform, analyze, and evaluate the findings of gait, locomotion, and balance tests including quantitative and qualitative measures with patients who have neuromuscular disorders

6.Communicate with patients and their family members while being sensitive to culture, age, gender, ethnicity, and health status. 7**.** Demonstrate the ability to perform an initial examination utilizing appropriate tests and measures for patients with neuromuscular disorders.

Methods of evaluation of student learning: The evaluation of students learning of this material is multimodal. For Neuromuscular Physical Therapy, students are evaluated through multiple choice examination questions that ask the students to analyze different test items or interventions based on the role of the task, level of environmental variation, object interaction, obstacle negotiation, external forces, dual tasking, and moving people/objects. Students may also encounter multiple choice examination questions regarding the minimal clinically important differences (MCID) of the balance tests when available, the most appropriate balance test when provided with a patient scenario, or a question as to which balance test to choose when the therapist would like to look at a specific type of test item. Students are also evaluated on this information by having them assess a video of a patient performing one of the above named balance tests. The students are asked to score the test and then provide 2 appropriate goals and 2 appropriate interventions for the patient based off of the deficits that they note.

While the students do complete the Patient Care Days as part of PT 607 Professional Practice IV, they are not provided a grade for their performance on this date. Students are provided with qualitative feedback regarding their patient interactions, clinical skills, documentation, and professionalism based off of their performance in the Patient Care Days. The students are expected integrate this feedback into practice for the final 2-week clinical experience at the end of the semester.