**Title and Focus of Activity:** Gait Lab Assignment using Community Patient Resource Group (CPRG) *Patient/Client Management*

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**Course Information:** Examination of & Interventions for Neuromuscular Conditions I; 4 credits; 2nd year, after Gross Anatomy, Neuroscience, Movement Science and concurrent with Musculoskeletal Conditions I and Integumentary and Medical Conditions

**Learning Activity Description**: Context/Purpose: The CPRG program consists of people living in the community with various medical conditions. They are typically a previous patient of a faculty member who volunteers to work with our students throughout the academic year. For this lab, we typically invite 10-12 patients from the CPRG who have a neurologic condition (i.e. stroke) and who continue to experience difficulty with walking. They are asked to come in for two separate class sessions, one week apart, for two hours each day. The purpose of this gait lab assignment is for students to practice hands-on application of gait examination and intervention concepts that were discussed in the classroom.

Instructions to Students:

**CPRG Gait Lab Assignment**

You will be assigned to a group of 2-3 students to work with a patient in the CPRG for two class sessions, one week apart. During session 1 you will complete an examination of your patient (focused on gait) and in Session 2 you will implement appropriate gait-related interventions. You will only have one hour to spend with your patient for each session and one additional hour of class will include a lab activity (of your instructors design) that does not involve your CPRG patient. Class will meet 30 minutes prior to beginning with your CPRG patient to ask questions and prepare as well as 30 minutes after lab to debrief with your instructors.

**Session I**

1. Take a brief subjective history. Prior to initiating the physical portion of the exam, students should perform a **screen**, including **vitals.**
2. Conduct a **task/strategy exam of the patient’s gait** and any other relevant mobility and postural control activities. While doing the selected activities, take note of the strategies the patient uses in order to document quality of the gait pattern.
3. Score the patient’s performance of gait and stairs using the **FIM**. **Select 2-3 additional** **performance-based outcome measures** that you believe would provide you with helpful information regarding this patient’s function. Think of measures that would best capture the patient’s deficits and will be useful for goal-setting and intervention planning.
4. **Prior to conducting any outcome measure with your patient, you must inform a course instructor of your tool selection(s) and justify why you chose it.**
5. Conduct the performance-based outcome measures. Examine movement strategies during performance of the functional outcome measures as well.
6. Based on the above examination, hypothesize any impairments you would expect to find. Test those impairments**. It is strongly recommended that all students participate with a portion of the assessment of motor status rather than one student performing the entire examination.**

**After Session 1:**

* Your group should work together to discuss the following in preparation for the intervention lab with your patient the following week

* + Develop a problem list- separate out task/strategy level problems from impairments.
	+ Develop 2 long-term functional goals and 1-2 STG’s (impairment or functional) that relate to each long term goal.
	+ Develop an intervention plan that includes both part-task and whole task activities appropriate for your patient. Interventions should be goal-oriented and meaningful to the patient. Concepts of motor control and principles of neuroplasticity should be evident. **Groups will have time to meet during class next week for 30 minutes prior to initiating the intervention lab to discuss their plan and gather equipment. Each group should touch base with a course instructor or GA during this time to discuss their plan.**

**Session 2**

1. Complete any additional examination items if necessary. Screen vitals
2. Implement the intervention plan. Be prepared to modify your intervention plan as appropriate.
3. Prior to completing the session, instruct the patient in at least one new impairment-based exercise or functional activity they can continue to work on at home.

**Copies of the following examination tools will be available during the exam. If a tool not listed is needed, see a course instructor or GA for assistance:**

10 meter Walk Test

6 min. Walk Test

Dynamic Gait Index

Functional Gait Assessment

ABC

Berg Balance Scale

POMA

Timed Up and go

Time for student to complete the activity: This activity consists of two lab experiences, each lasting three hours. It is recommended to provide ~ 30 minutes of discussion of the assignment and set up prior to each lab as well as 30 minutes after each lab for discussion and follow up. The class is split into two groups for this lab. One half of the class works in pairs with a single CPRG member for one hour. The second half of the class works with a single CPRG member for the next hour. We offer an additional activity related to gait examination or intervention for those students not working with a patient, such as gait analysis using an electronic walkway or body weight supported treadmill training.

Readings/other preparatory materials:

Shumway-Cook A, Woollacott M. *Motor Control Translating Research into Clinical Practice*, 4th ed. Lippincott, Williams and Wilkins: Baltimore, MD, 2012. p. 381-465.

*Observational Gait Analysis Handbook*. Downey, CA: Los Amigos Research and Education Institute, Inc, 1996

Fritz S, Lusardi M. White paper: “Walking speed: The sixth vital sign.” *J Geriatr Phys Ther.* 2009; 32:2-5.

Hornby GT, Straube DS, Kinnaird CR, et al. Importance of specificity, amount, and intensity of locomotor training to improve ambulatory function in patients post-stroke. *Top Stroke Rehabil.* 2011; 18: 293-307.

Learning Objectives: 1. Examine gait across the task/strategy levels based on their patient’s current level of function. 2. Select and perform appropriate performance-based outcome measures of gait based on their patient’s presentation and goals. 3. Hypothesize potential impairments underlying their patient’s limitations in the chosen gait tasks. 4. Prioritize impairments and conduct appropriate impairment-based tests. 5. Apply concepts of motor learning and principles of neuroplasticity during the gait intervention. 6. Develop a task-oriented intervention that maximizes their patient’s ambulation abilities while considering recovery versus compensation concepts.

Methods of evaluation of student learning: Each group will write a short reflection of their experience during these CPRG labs. Please address the following in your paper:

**Examination (4 points)**

1. How is this patient limited in their gait function? (Consider each gait task you examined and the gait deviations) What were the primary impairments leading to the gait dysfunction? Is the patient restricted in participation due to their gait, and if so, in what way?
2. Describe the outcome measures you chose to use and provide your rationale. Given the results on these outcomes are there other measures that you should use as a follow up or in place of these measures? If you had more time, or during subsequent visits are there other measures you would want to conduct, and why?

**Transition (1 point)**

1. Write one long term goal and two supporting short term goals for this patient. How are these goals meaningful to the patient?

**Intervention (4 points)**

1. Describe 2-3 interventions that you implemented to address the patient’s limitations related to gait (impairment and/or task/strategy levels).
2. Reflect on the interventions you implemented. How did they go? Did you have to adapt the interventions in any way and why? Would you change or progress these interventions if you were to see the patient again, and if so, how?

**Overall Reflection (1 point)**

1. How will this CPRG experience impact you as you prepare for your upcoming clinical rotation?

Papers should be no longer than 3 pages, typed, 12 point font, double spaced with 1 inch margins. Please include names of all group members on your paper as well as the name of your patient.