**Name of Activity:** Case Based Oral Practical Exam

*Patient/client management*

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**Course Information:** Neurological System II; 6 credits; Neurological System II is in the Year 2 Spring Semester

**Learning Activity Description:**

This oral practical examination is placed at the end of the second clinical neurological course in the DPT program. The purpose of this oral practical examination is as an assessment of the student’s ability to synthesize and apply all curricular content related to neurologic clinical practice through case development and presentation.

1. 4-5 case examples are provided to the student approximately 3 weeks prior to the examination. The case examples may include a patient history of present illness including diagnosis and point of care, past medical and social history, and current medications. Patient goals and the setting that the patient is being seen by the physical therapist are also provided. Cases are carefully designed to represent various practice settings such as acute care, home care, acute rehab and out-patient. Cases are also designed to represent points of care along the spectrum of a diagnosis from an acute exacerbation through the chronic or end stages of a progressive disease. The students are responsible for the preparation of all cases prior to the actual exam.
2. The students are provided with a list of guided questions (included) to assist with their case development. (see below)
3. The students are encouraged to work on their own in the initial stages of the development of all cases to promote their own understanding of the patient case. Once this has been established they are encouraged to work in small groups to further enhance and debate their understanding of the case. All cases should be fully developed prior to the oral exam.
4. Students are placed in groups of 4-5 (so 1 person per case) and are assessed as a group. The oral assessments take place in blocks throughout the day (depending on the total number of students in your class and instructors). One instructor is assigned to each group for scoring. Each group is videotaped if post exam review is needed.
5. Once in their groups, each student is randomly assigned one case to present to their small group (all cases are presented, but each student is only responsible for the presentation of 1). Each student is given 15 minutes to present and then 5 minutes to answer questions or engage in a discussion. Group mates can also be graded on their ability to participate in the discussion.
6. Students are allowed to bring one index card to the exam to help guide their thoughts.

Time for student to complete the activity:

Students are allowed 3 weeks to develop the cases on their own. The actual exam is 1 hour and 40 minute long if students are placed in groups of 5, with each student presenting/answering questions for a total of 20 minutes.

Readings/other preparatory materials:

The book pages and articles used for the spring semester are included (the articles listed are updated annually so are subject to change from one year to the next). Students are provided these readings to support a variety of learning activities and assessment related to these diagnostic groups throughout the semester, not just to support the oral practical exam.

Traumatic Brain Injury/Vestibular case:

1. O’Sullivan, SB. Schmitz, TJ. Fulk, G. Physical Rehabilitation. F.A. Davis Company; 6th edition. 2013 pgs 859-884
2. Alsalaheen BA. Whitney SL. Vestibular rehabilitation for dizziness and balance disorders after concussion. JNPT 2010;34: 87–93
3. Borich, MR. Cheung, KL. Jones, P. Khramova, V. Gavrailoff, L. Boyd, LA. Virji-Babul, N. Concussion: Current concepts in diagnosis and nanagement. JNPT 2013;37: 133–139
4. McCulloch K. Attention and Dual task conditions. Physical Therapy implications for individuals with acquired brain injury. JNPT 2007. #1: 104-118

Multiple Sclerosis Module:

1. O’Sullivan, SB. Schmitz, TJ. Fulk, G. Physical Rehabilitation. F.A. Davis Company; 6th edition. 2013 pgs 721-737
2. MacAllister. Multiple Sclerosis Related Fatigue. Phys Med Rehabil Clin N Am 16 (2005) 483–502
3. Hebert JR. (2011) Effects of Vestibular Rehab on MS related fatigue and upright PC. A RCT.
4. Motl. RW. Benefits, safety, and prescription of Exercise in MS. Expert Rev. Neurother.2014.14(12), 1429–1436

Parkinson Disease Module:

1. Van Nimwegen, M. Speelman AD. Overeem S. van de Warrenburg, BP. Smulders, K. Dontje ML. Borm GF. Backx FJG. Bloem BR. Munneke M. Promotion of physical activity and fitness in sedentary patients with PD: RCT. BMJ 2013.346:1576
2. Nieuwboer A. Rochester L. Muncks L. Swinnen SP. Motor Learning in PD: limitations to potential for rehabilitation. Parkinson’s and Related Disorders. 15S3 (2009) S53-S58
3. Fernandez HH. Updates on the Medical management of PD. Cleveland Clinical Journal of Medicine. 79:1. 2012
4. Ellis T. Motl RW. Physical Activity Behaviour Change in Persons with Neurologic Disorders: Overview and Examples from PD and MS. JNPT 2013; 00:1-6

Spinal Cord Injury Module:

1. O’Sullivan, SB. Schmitz, TJ. Fulk, G. Physical Rehabilitation. F.A. Davis Company; 6th edition. 2013. Pgs 912-950
2. [Maynard FM, Bracken MB, Creasey G et al International Standards for Neurologic and Functional Classification of Spinal Cord Injury. Spinal Cord 1997;(35):266-274](http://www.nature.com.ezproxy.bu.edu/sc/journal/v35/n5)
3. [Behrman AL et al. (2005). Locomotor training progression and outcomes after incomplete spinal cord injury. Physical Therapy, 85, 1356-1371](http://www.ptjournal.org.ezproxy.bu.edu/cgi/reprint/85/12/1356)
4. SMulroy, Thompson L, Kemp B, et al; Strength and Optimal Movements for Painful Shoulders (STOMPS) in Chronic Spinal Cord Injury: A Randomized Controlled Trial. March 2011; Phys Ther. March 2011; 91(3):1-20
5. [Sisti SA. 2014. Activity and Fitness in SCI: Review and Update](https://learn.bu.edu/bbcswebdav/pid-2983885-dt-content-rid-9950594_1/xid-9950594_1?target=blank). Curr Phys Med Rehabil Rep. 2:147–157

Cerebral Palsy

1. Law M. Darrah J. Pollock N. Rosenbaum P. Russell D. Walter SD. Petrenchik T. Wilson and Wright V. Focus on function: A RCT comparing 2 rehabilitation interventions for young children with CP. BMC Pediatrics. 2007. 7:31
2. Kerr C. McDowell BC. Parkes J. Stevenson M. Cosgrove AP. Age related changes in energy efficiency of gait, activity, and participation in children with CP. Developmental Medicine & Child Neurology 2011, 53: 61–67
3. Hilbericnk SR. Roebroeck ME. Niewstraten W. Jalink L. Verheijden JMA. Stam HJ. Health Issues in Young Adults with CP: Towards a Life Span Perspective. J. Rehabil Med 2007; 39:605-611

Learning Objectives:

1. Demonstrate components of clinical reasoning using the ICF and patient/client management model with a variety of diagnostic groups
2. Demonstrate proficiency with a variety of neurologic diagnoses including pathophysiology, medical management, use of imaging, analysis of movement, application of outcome measurements, and development of a plan of care and relevant interventions.
3. Discuss the association between impairments in body structure and function to activity limitations and participation restrictions.
4. Present a patient case in a professional manner in a small group setting to simulate the experience of a family or team meeting

Methods of evaluation of student learning:

See attached documents. There have been 2 types of assessments used. One provides a detailed breakdown and point distribution. This can be used when there are many faculty or lab instructors grading exams and can assist with consistency in grading. The second grading sheet provides a framework for an A, B, C or failing grade.

**Final Exam**

The final exam is an oral exam worth 30% of the grade for this course.

The exam will take place on XX-XX-XX. Specific time blocks will be posted a few days prior to the exam.

The exam consists of an oral presentation and will take place in a small group setting, with 4-5 students in each group. This will provide the experience of presenting a professional report in a small group setting like a team or family meeting. You will also have the opportunity to learn from each other.

Five cases will be provided prior to the oral exam. Each case presentation should summarize the patient’s background, results of the PT examination and evaluation, recommendations, and a specific intervention plan. You should be prepared to answer questions about your exam methods, to explain the basis for your prognosis and goal setting, and to justify your intervention plan. In addition, be prepared to measure the effects of your interventions, how you might modify the intervention based on a specific performance and response to the activity, and alternative treatments you might try. You may also be asked how you would modify the examination and/or intervention at a later point in time.

A set of guided questions have been provided to help you prepare your cases, as has the attached grading rubric.

Four to Five case presentations (depending on the size of your group) will be given in each group exam session. When you come to the exam session, you will draw a card that determines which one of the five cases you will present to the group. You will have 12-15 minutes each to present your case. Your presentation will be followed by a 5-minute period of questions from the instructor and other students in your group. For each of your classmates' case presentations, be prepared to add and discuss one thing that you would do differently for that particular case.

You are allowed to bring index cards or small note cards **no larger than 4” x 6”** with outlines and short cues into the exam. However, you should present your case mostly without relying on your notes and you should absolutely not read your card. If the instructor feels you are relying on your note card too much it will be removed during the exam.

As you prepare your cases, you should first do your own individual work, formulating your own ideas based on lectures, labs, and readings. Once you have developed a first draft or framework for your case, I encourage you to work in small groups to discuss your ideas and cases with other students as you work through questions and finalize details. The final work for each of your cases should be your own work and ideas.

**Final Oral Exam: Presentation of cases / Guiding questions**

The cases that you will be given provide a scenario that gives some, but not complete, information on the person's diagnosis, age, background, current situation, functional abilities and potential impairments, similar to what you might receive when you receive a new referral for a PT evaluation. Your job is to develop a plan for examination, elaborate on the case to report on and evaluate the results of your exam, establish a physical therapy prognosis and goals, and develop an intervention plan.

**History**

What is the person's age and relevant background (family, vocational, living situation)?

How will knowledge of the pathophysiology guide your examination and evaluation?

What significant past medical history will affect your physical therapy evaluation? What are the current medications, their purpose, and their potential side effects? How will the meds affect your patient’s functional status? Identify other medical concerns at this time and how they are being managed.

**Examination**

What are the results of any diagnostic tests, standardized examination tools, and additional objective and descriptive measurements you performed during your physical therapy examination? Be able to support how you chose your examination plan.

**Evaluation and Prognosis**

Describe the link between pathophysiology and clinical presentation using a disablement model: e.g. pathophysiology ⇒ body structure/function (impairments) ⇒activities (functional limitations) ⇒ participation (disability).

What are the MOST IMPORTANT activity and participation limitations for this person based on your history and examination? What are the KEY impairments that you think have the strongest impact on activity and participation? How amenable to change are these impairments if physical therapy intervention is provided? Would intervention be better directed at the functional or impairment level or both? To what degree will your intervention be aimed at restoration? compensation?

Are there any impairments and activity limitations that this person is at HIGH RISK for developing without intervention? Identify the risks.

What is the potential for this person to benefit from physical therapy intervention (poor, fair, good, excellent) and what data support your estimate of rehab potential? Identify the factors that contribute to your estimate of rehab potential (diagnosis, stage of the disease, age, relevant past medical history, etc). How much change would you expect to see in functional status after 1 week, 1 month, etc. of physical therapy intervention?

Would this person benefit from referral to other specialists at this time and if so for what specific reasons? Who else is likely to be part of the rehabilitation team for this individual? What are the potential areas of overlap between P.T. and the other team members.

If this person is being admitted to a particular setting, estimate the length of stay, predicted status at discharge, and likely discharge setting (e.g. home, out-patient therapy, SNF, etc).

**Physical Therapy Goal Setting**

What are the key activity and participation limitations that are of main concern to the person and to their family? What goals does the person and family have for physical therapy? How realistic are these goals and can they be modified so that they are achievable?

Establish measurable, time limited, functional goals (at the activity or the participation levels). These may be aimed at improving activity and participation levels or in prevention of restrictions due to secondary impairments.

**Physical Therapy Intervention Plan**

How much PT is recommended and what level of physical therapy is recommended (direct? consult? home program?)?

What interventions are recommended and what physical therapy goals are addressed by the intervention? Why did you choose these specific interventions?

Education: Describe how you will incorporate education of the person and/or their family and/or caretakers into the physical therapy intervention plan.

Activities: If activities are recommended, specify the activity, the intensity (how much at one time), and the duration (for how many days, weeks, months)? Be specific in how time will be spent with the physical therapist, and what activities/exercises are recommended beyond what is done within therapy sessions. How will recommended activities be instructed, supervised, monitored, etc)?

Task/Environment modifications: What (if any) environmental and task modifications will be recommended?

Adaptive Equipment: Does the person need adaptive equipment (positioning, mobility, assistive devices, orthoses)? If so, what adaptive equipment is recommended and why you are recommending the equipment? Be specific in describing the goals and recommended components of your equipment recommendations. How will the person acquire the adaptive equipment? How will the person be trained in the use of the adaptive equipment? How will you decide if the equipment is effective?

Setting: In what setting is physical therapy likely to be provided for this person? What are alternative settings? What kind of setting would be optimal and why? How will the cost of physical therapy and any adaptive equipment be covered?

What component of the physical therapy intervention could be carried out by a PTA under a PT's supervision? By a home health aide or personal care attendant or family member under the PT's supervision? Independently after an instructional period by the PT?

How will you determine the degree to which your intervention(s) are effective and whether a given intervention should be continued, modified, or discontinued?

What do you anticipate will be needed when you discharge this person from physical therapy?

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Student\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Spring 2013

**Final Practical Case Presentation**

**Item Scoring**

5 = Excellent; item is complete, accurate and focused

4 = Good; item is mostly complete and accurate. Some key information is missing or inaccurate

3.5 = Fair; item is missing several key pieces or information or lacks accuracy

3 = Poor; item is not complete or accurate

0 = Unacceptable; item is missing or completely inaccurate

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 5 | 4 | 3.5 | 3 | 0 | COMMENTS |
| EXAMINATION (30pts) *(A=30, A- = 27.5, B=25.5, C=22.5, F <18)* |
| Organized, professional, articulated well |  |  |  |  |  |  |
| Demonstrates an understanding of the patient’s current and PMH. Able to ID key components in history and case description and relate then to examination  |  |  |  |  |  |  |
| The choice of areas to examine and the results reflect understanding of the diagnosis and stage of disease progression/recovery |  |  |  |  |  |  |
| Includes standardized measures that are appropriate given the diagnosis, functional level, and clinical setting |  |  |  |  |  |  |
| Functional skill exam targets the appropriate functional areas and provides a good clear picture of what the patient can and can-not do. Movement can be described sufficiently to provide clues to key underlying impairments. |  |  |  |  |  |  |
| Impairment level test findings are consistent with the diagnosis and the description of functional skill performance |  |  |  |  |  |  |
| EVALUATION AND PROGNOSIS (30pts) (A=30, A- =27.5, B=25.5, C=22.5, F <18) |  |  |  |  |  |  |
| Provides a clear picture of the patients current level of function and need for/potential to benefit from PT intervention |  |  |  |  |  |  |
| Identifies MAIN activity/ participation restrictions  |  |  |  |  |  |  |
| Identifies KEY impairments likely to explain functional limitations |  |  |  |  |  |  |
| Integrates history, diagnosis, age, and exam findings to generate logical hypothesis that relate to how impairments contributes to restrictions in activities and participation |  |  |  |  |  |  |
| Anticipates RISKS of 2° behaviors |  |  |  |  |  |  |
| Prognosis: Established rehab potential and projected timelines are logical and appropriate given diagnosis, disease progression/stage of recovery, exam results, and the evaluation statement. Justifies prognosis by predictors of disease recovery and the patient’s strengths and limitations. |  |  |  |  |  |  |
| RECOMMENDATIONS (10pts) (A=10, A- = 9, B=8.5, C= 7.5, F <6) |  |  |  |  |  |  |
| Recommended focus of PT is logical and appropriate given diagnosis, history, exam results, MAIN functional impairments, and KEY underlying problems. Considers stage of disease process/ recovery, safety, and cognitive status.  |  |  |  |  |  |  |
| Able to discuss PT frequency, duration, who provides it, whether direct, consult, etc. Considers prevention of secondary problems. Includes education/instruction to family or other team membersIncludes equipment and environmental modifications |  |  |  |  |  |  |
| GOALS (10pts)(A=10, A- = 9, B=8.5, C= 7.5, F <6) |  |  |  |  |  |  |
| Goals reflect excellent clinical decision making, are based on sound clinical reasoning, and current evidence. Able to elaborate in detail if asked |  |  |  |  |  |  |
| LTG’s are functional AND relate to the key problems that were identified in the evaluation AND are reasonable given the diagnosis and history |  |  |  |  |  |  |
| INTERVENTION (10pts)(A=10, A- = 9, B=8.5, C= 7.5, F <6) |  |  |  |  |  |  |
| The interventions are a good choice and is focused given the identified goals, key functional limitations and underlying impairments discussed in the evaluationThe rationale for the intervention is thorough, logical and evidence based |  |  |  |  |  |  |
| The intervention is clearly explained. When prompted can elaborate on how the PT will modify or progress the activity, depending on how the person responds. The description of the intervention and how it will be modified should take into account the patients disease state and progression |  |  |  |  |  |  |
| Communication (10pts)(A=10, A- = 9, B=8.5, C= 7.5, F <6) |  |  |  |  |  |  |
| Presentation is accurate, complete, focused, and professional |  |  |  |  |  |  |
| Able to clarify and expand when asked questions. Answers are accurate and reflect good clinical reasoning |  |  |  |  |  |  |

ADDITIONAL COMMENTS:

Total points = \_\_\_\_\_\_\_\_

**Sample Case #3: Parkinson’s Disease**

Mr. Jacobs is a 62 year old male with a 15 year history of Parkinson’s disease. At the time of diagnosis in 1998, Mr. Jacobs presented with complaints of deteriorating handwriting, tremor in his right hand, and difficulty buttoning and brushing his teeth.

Mr. Jacobs started taking a low dose of Sinemet 2 times per day a few years after he was initially diagnosed. He was reasonably well managed over about a 10-12 year period until he began wearing off between doses of Sinemet. Over the last 1-2 years, he tells you he has had an increasing number of “off periods”.

Mr. Jacobs is referred to out-patient physical therapy with a diagnosis of gait disorder. He tells you that his main problems are difficulty walking especially when turning, or when walking through tight spaces. He also notes trouble getting out of a chair (takes 2-3 attempts), and moving in bed at night. His wife needs to help him get out of bed during the night and it is disrupting her sleep. He complains of an increasing slowness with his morning activities and increasing difficulty getting around in the community, especially later on in the day. He has fallen 2x in the last 6 months. Mr. Jacobs enjoys taking long walks with his wife but an increasing slowness and difficulty turning has led to walking less frequently.

H & Y: 2.5 UPDRS: Section II: 20/52 Section III: 38/132

PMH: chronic low back pain diagnosed with mild lumbar spinal stenosis

Meds: Sinemet 25/100 - 2 tab 5x/day; Mirapex 1.5 mg 3x/day; Azilect 1 mg 1x/day

Social: Mr. Jacobs lives with his wife in a 2-story colonial house with 5 stairs to enter. He has 2 children and 3 grandchildren who all live locally. He currently works part-time as a globe reporter that requires prolonged periods of time working at his computer, and can be done in the office or at home.