

**A Compendium for Teaching Physical Therapy Neurologic Content**

**Submission Template SAMPLE**

**1. Name of Activity**

Complex Cases: Development of a Home Exercise Program for an Adult or Pediatric Case

**2. Contributor Information**

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**3. Course & Curriculum Information**

* Course Title: Diagnosis and Management of Neuromuscular Conditions II
* Credits/Units: 4 credit hours
* Placement of Course within the Curriculum (describe where this course is positioned and what relevant courses precede this course):
* It occurs after Neuroscience (neuroanatomy), Neurology Medicine (medical management of neuromuscular conditions) and Diagnosis and Management of Neuromuscular Conditions I (neurologic examination) courses.
* Curriculum Format

Residential

Hybrid

Both

**4. Course Format**

* Format of Course Delivery: Online, Hybrid (with laboratory component) or Residential: Residential
* If Residential:
* Could this activity be used in a Hybrid or Online course?
* Yes, the in-class activity could be adapted to be completed in a synchronous virtual class session. The associated assignment can be implemented in a hybrid or online course without adaptation.
* If Online or Hybrid:
* Could this activity be used in a Residential course?
* N/A

**5. Activity Category/Classification**

Please complete sections 5a-5c for the learning activity.

***5a. ANPT Essential Competency Domains***

Select up to three domains that align with the learning activity. For each selected domain, identify one to two ANPT Essential Competencies that align with the learning activity. The complete list of essential competencies can be found here: <https://journals.lww.com/jnpt/fulltext/2023/07000/essential_competencies_in_entry_level_neurologic.7.aspx>

### Participation:

* + [Type specific competency number and text here]

### Communication & Collaboration

* + [Type specific competency number and text here

### Health Promotion & Wellness

* + 2. Integrate evidence-based health promotion and wellness recommendations through screening, examination, and intervention with every patient/client and/or care partner to address complex multisystem involvement as well as variability in day-to-day function, with special consideration given to safety, balance, aerobic capacity, strength, power, and endurance

### Movement Science

* + 2. Perform systematic movement and task analyses guided by and inclusive of:
    - Theoretical frameworks (eg, Hedman et al's movement continuum,29 Quinn et al's movement analysis of tasks framework,30 and Gentile's taxonomy31)
    - Contextual factors
      * Environmental factors
      * Personal factors (eg, neuromuscular, sensory-perceptual, cognitive, and cardiovascular status)
    - Knowledge and implications of the pathological effects of central and peripheral nervous system disease and injury
  + 3. Design, implement, and modify evidence-based interventions that incorporate contemporary:
    - Motor control theories
    - Motor learning principles (eg, motivation, attention, types and schedules of practice, and feedback)
    - Principles of neuroplasticity
    - Exercise physiology principles

### Assistive Technology & Equipment

* + [Type specific competency number and text here

### Evidence-Based Practice

* + [Type specific competency number and text here

### Provider Health & Wellness

* + [Type specific competency number and text here

***5b. Learning Activity Category*** (Select all that apply)

Case-Based Learning

Lab Activity

Lecture/Didactic Activity

Simulation

Community-Based Experience

Integrated Clinical Experience (ICE)

Interprofessional Education (IPE)

Practical Exam

Evaluative Grading Rubric

Other: \_\_\_\_\_\_\_\_\_\_\_\_

***5c. Instructional Content Category*** (Select all that apply)

Linking Foundational and Clinical Sciences

Examination/Measurement

Diagnosis/Prognosis

Plan of Care/Intervention

Management of Care Delivery (e.g., reimbursement)

Consultation

Other: [please describe]

**6. Time Required for Activity**

* Student Preparation Time Prior to Class: nothing formal
* Class Time Needed
* If Residential: 1 hour in class, 1-2 hours for assignment outside of class
* If Online:
* NA.
* If Hybrid:
* NA
* Any additional time required:

**7. Introduction & Context**

Briefly describe the purpose and setting (e.g., classroom, simulation lab, etc.) of this activity.

* Context: Physical therapists must often select and prioritize home exercises for patients with complex neuromuscular diagnoses who are also predisposed to developing musculoskeletal pain conditions. Additionally, if patients live far away from the evaluating therapists, the provider may only see the patient for 1-2 visits, necessitating instructions for exercises progression and mechanisms to monitor adherence. Exercises should be directly related to activity limitations or body/structure/function variables that are limiting to the patient.
* Purpose: This assignment helps students to develop skills in selection and prioritization of home exercises that are related to activity limitations or participation restrictions and related to a long-term goal for the patient and/or caregiver. In the context of the assignment the student/therapist is a consultant establishing a plan of care (exercises) that the patient/family will continue to do after a single visit.

**8. Readings or Preparatory Materials**

List any assigned readings, videos, or other pre-work.

* None

**9. Learning Objectives**

Include no more than five clear, measurable objectives for this activity (e.g., “Students will be able to…”).

1. Identify four exercises that are priorities for the given patient case.
2. Describe the specific body/structure/function variables and/or activity limitation addressed by each exercise.
3. Write an appropriate functional long-term goal that the exercise addresses.
4. Create a home exercise program that is patient centered, in lay language, includes a mechanism to promote adherence, and incorporates exercise progression over time.

**10. Activity Description**

Include prompts, patient cases, step-by-step instructions, and special resources if applicable.

**Complex Cases: Development of a Home Exercise Program for an Adult or Pediatric Case**

Description:

During this class csession, students will view a videotaped examination of either an adult or a pediatric patient with a neurologic condition. Half of the class will view and discuss the pediatric case and the other half will discuss the adult case, each with the guidance of a faculty member.

After viewing the video of the patient case, the following will be discussed as a group:

* most likely movement system diagnosis for PT, based on observations and brief descriptions
* activity limitations and priorities for treatment
* short and long term goals
* implications of age and family on treatment selection
* treatment ideas and rationale
* how you would incorporate principles of motor learning into your HEP (indications for practice and feedback to improve performance and/or learning)
* potential effects of neurological deficits on the development of orthopedic deformities

Assignment

You will assume you have seen this patient for evaluation only and no further ongoing therapy is planned. As a consultant it is up to you to recommend activities or exercises that address the major problems of the patient. You will have to devise a method of follow-up that does not include you seeing the patient for treatment.

Working independently, each student shall develop a home program that consists of four exercises for the patient he/she discussed in class. Assume in the pediatric case that the parents will be assisting the patient. Assume in the adult case that the patient needs to do the exercises alone. Submit the home program to the instructor in the same form you would truly provide to the parent or patient (with clear appropriate instructions and any needed drawings etc.) If you choose to use Physiotools, be sure the instructions and pictures are appropriate and customized as necessary.

For each exercise, you should list:

1. the activity limitation the exercise addresses
2. the specific body/structure/function (impairments) that contribute to the activity limitation (eg. if weakness is an issue, identify the muscles that are weak that limit the task; don’t just say “weakness”)
3. one long-term goal which the exercise addresses. Be sure the exercise addresses the problems that are of priority, as discussed in class. (The time frame of your long-term goal is left to you and can be between one and twelve months.) The LTG should be functional, achievable, specific, and measurable.

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Exercise | Activity Limitation Addressed by the Exercise | Specific Body/Structure/Function (Impairments) that Cause Activity Limitation | LTG |
|  |  |  |  |

Design and present the method(s) that indicate adherence of the patient or parents with the exercises and which will at some point provide you with (1) an accurate and honest indication of how often and how completely the home program was done and (2) some idea about whether or not the program needs modification. Be sure to provide instructions that you would give to a patient/family! When should the patient contact you? How will the patient contact you? Remember, you are only seeing them one time, with no planned follow-up visit.

**11. Methods of Student Evaluation**

Describe how student learning is assessed (e.g., written assessment, rubric, discussion, reflection).

* The following rubric is used to evaluate student performance.

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Check one:** Adult case \_\_\_\_ Pediatric Case \_\_\_\_

For each exercise #1 #2 #3 #4

* identifies the activity limitation addressed by the ex. 1 1 1 1
* identifies body/structure/function ( impairments) 2 2 2 2

related to activity limitation identified

* exercise is appropriate for patient 2 2 2 2
* instruction format is detailed and appropriate 2 2 2 2
* addresses stated activity/impairments 2 2 2 2
* exercise is related to the goal stated 2 2 2 2
* LTG’s are functional/specific/measurable 2 2 2 2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

/52

Method to assure an accurate indication of the frequency with /5

which the program is performed (age appropriate, instructions clear,

method clear, appears to enhance compliance yet promote honest records)

Overall professional appearance of the HEP /3

\_\_\_\_\_\_\_\_\_\_\_

/60