Assignment Outline:

This is a 3 part assignment with all parts required in the completed document. The case study involves RW, an 85 year old male admitted to an SNF. Access case study document above.

The first part entails looking at RW’s medications and **briefly** documenting the following requested information:

* List each of RW’s medication
* Identify the class of the medication - antihypertensive, etc
* State primary action of this medication – reduce blood pressure, etc
* This is to be very short – I simply want you to begin to recognize medications and what they are prescribed for

The second part asks you to look at RW globally and to state 2 areas of concern that you have for him, in light of his current physical, emotional, cognitive or social situations or in light of simply aging. Discuss them briefly with references. Consider the 6 areas that you discussed in the prior 2 weeks or you may identify any other areas. Questions posed throughout the case study may help you find your 2 areas of interest.

The third part asks you to look at the patient in light of a physical therapy treatment plan. Please document the following requested information:

* Using the APTA Guide (CD Interactive), or other resources, list 2 functional assessment instruments or tests and measures that would be appropriate to use in your examination and evaluation of this patient.
* For each item selected, **briefly** describe your **rationale** for your selection of the assessment instruments.
* Based on the patient case, select TWO essential functional problems and for each describe your proposed  specific interventions or treatment plans. (Review the APTA Guide definition of “intervention”)
* Cite two resources which provide “evidence-based support” for your suggested interventions with a brief rationale. You may choose interventions based on patient’s physical problems, equipment needs, safety awareness deficits, reimbursement issues, restraints, etc. Whatever particular area of RW’s case that interests you is appropriate for you to address.

**Required length ~ 5-7 pages – please use the following format: 12 point font, 1” margins and 1.5 line spacing.**

**GERIATRIC CASE MODULE**

**(Case study for assignment)**

RW is a 85 year old male, who has been admitted to your Skilled Nursing Facility (SNF) after an acute hospital stay of 5 days – 7/23/14 to 7/27/14. The main admitting diagnosis for RW was recurrent syncopal episodes and frequent falls, along with other multiple comorbidities such as failure to thrive, COPD, bipolar disorder, HTN, anxiety, depression, GI bleed, CVA, h/o alcoholism, cerebrovascular arteriosclerosis, and dementia.

**HISTORY OF PRESENT ILLNESS AND CURRENT TREATMENT**

RW presented to the Emergency department on the 7/23/14 complaining of an episode of syncope. He had been standing in the kitchen of his home when he became dizzy and collapsed. RW reported during his ER visit that he did not remember anything after his fall and was not sure how long he was “out”. He was initially confused when he was brought into the emergency department by EMS. During this visit, patient also reported that ‘he had had mini strokes in the past’. According to the physician, per chart review, patient had multiple TIAs due to presence of several major risk factors of stroke (hypertension, heavy tobacco abuse). During his hospital stay, patient was provided with smoking cessation education, with nicotine patches and with education on how his GI bleed was probably related to his NSAIDs abuse.

**PAST MEDICAL HISTORY AND SOCIAL SITUATION**

RW was admitted to the SNF with a discharge summary from the acute hospital and orders for PT and OT to evaluate and treat. The discharge summary provided the above mentioned information and the past medical history. Past medical history also included the following: abdominal aortic aneurysm, GI bleed, heavy tobacco smoking of 2 to 4 packs per day for 40 years (which translates to 80-160 pack years), GERD, chronic dizziness and h/o skin cancer. In addition, the d/c summary mentioned that the patient had been receiving rehab services at the hospital. Upon initial evaluation, patient was alert and oriented x 2 (name and place); he was on 2 liters FiO2. RW reports that prior to being admitted to the hospital, he was living alone in a 1 level house and was able to complete all ADLs and functional mobility independently. He ambulated in/out of home with a single point cane and had no other adaptive equipment in the home. RW was confused on the number of steps he had at home, but eventually states that he has no steps inside the house, but probably just one step to enter his home.

RW appears to be very sociable and answers the evaluation questions fairly well, although he frequently requires several repetitions of each question before he is able to give an appropriate response. He also adds that “I have been wobbly on my feet for a long time” and that “I may have had a fall or two in the past”, but with no resulting major injuries. RW also hints that some of the falls may not have been his fault, but will elaborate no further. Interestingly, the d/c summary adds that patient was receiving home health services, but according to patient, he was receiving no such services at home.

**CURRENT MEDICATIONS**

Abilify - 10 mg tablet daily

Pantoprazole - 40 mg tablet q AM

Aspirin - 81 mg tab daily

Lisinopril - 20 mg tablet daily

Namenda XR - 14 mg capsule daily

Phenergan - 12.5 mg tablet q 6 hours prn nausea

Exelon - 9.5 mg/ 24 hr patch daily. Rotate site of patches each day. Site not to be repeated within 14 days.

Divalproex - 125 mg, 2 capsules BID

AdvAIR diskus - 250-50 mcg, inhale 1 puff BID. Rinse mouth after inhalation

Clonazepam - 1 mg tablet QID

Haloperidol lactate 5 mg q 8 hours, prn agitation

Meclizine - 12.5 mg tablet TID

Acetaminophen – 650 mg tab q 6 hours, prn pain

Olanzepine - 10 mg tab q 6 hours prn agitation

Hydrocodone-acetaminophen - 10-325 mg tab q 4 hours prn pain

Ipratropium-albuterol - 0.5-3mg/ 3 ml, 1 inhalation q 4 hours prn respiratory distress

Robafen -100mg/5ml. Take 10 ml by mouth q 4 hours prn coughing

Ventolin HFA - 90 MCG. Inhale 2 puffs by mouth q 4 hours prn respiratory distress

Miralax - 17 gm dissolved in water, daily prn constipation

Change nebulizer tubing weekly when in use

**IMAGING STUDIES**

RW underwent CT brain imaging which revealed no acute intracranial abnormalities, but it did show atrophy with moderate to severe chronic ischemic small-vessel white matter disease with left parietal encephalomalacia. Endogastroduodenoscopy (EGD) revealed duodenal ulcers and severe antral gastritis. X-rays of left hip revealed severe osteoarthritis but no fracture.

**CURRENT FUNCTIONAL LEVEL**

The initial physical therapy evaluation consisted of the following:

* RW required minimal assist (25% assistance for completion of task) for bed mobility, sit <> stand transfers, pivot transfers, and for ambulation of 125 feet with rolling walker.
* He presents with static standing balance of Fair (-) grade and dynamic standing balance of poor (+) grade.
* He exhibits a gait pattern of the following deficits: decreased cadence, decreased step length, mildly forward flexed posture, decreased heel strike and foot clearance bilaterally and tendency toward knee buckling during stance phase bil.
* His O2 sats at the end of 125 feet of ambulation with minimal assist with rolling walker was 92-94%.
* His baseline vital signs were as follows: blood pressure 160/92, pulse oximetry 99%, respiration 18, temperature 98.0 degrees F, weight 159 pounds and height 72 inches. Where is he on the BMI scale – underweight, normal, overweight, obese or morbidly obese? What does this say about his nutritional status?
* Gross strength in bilateral hip flexors was found to be 4-/5, hip extensors 3+/5; knee extensors 3-/5 and ankle dorsiflexors 3/5. He was found to lack active terminal knee extension, but ROM was within functional limits.
* ROM in all joints WFL although with some discomfort at extremes of ranges in bil shoulders and spine
* RW was able to tolerate 8 minutes of seated activity at edge of bed (EOB), prior to needing a rest break.
* He repeatedly complained during the session about an annoying pain in the left hip with ambulation, stating 5/10 on numeric pain scale.

At the end of the assessment, RW reports that “I am going back home (now)”, though he admits that he has very limited social support available at home.

Patient is advised of the following: .

* He must have a minimal amount of assistance for performing functional mobility
* He must use his call bell to call for a certified nursing assistant (CNA) before attempting any out of bed activities.
* He is also informed that he must always have the CNA with him when he uses his walker until he gets stronger with therapy.
* He is cautioned that attempting to get up on his own may result in an increased risk for falls, further injury, and prolonged hospitalization and rehab services.
* RW is very agreeable and reports that “I will do whatever it takes to go back home”.

After this delightful encounter with RW, an activity order is written for the physician’s signature that RW is a 1 person assist with all functional mobility and ambulation with a rolling walker. A wheelchair is obtained for RW for use on the unit so that he can be somewhat mobile and not bedbound, thus improving his mental, social and emotional outlook.

What are possible barriers for RW’s progress in physical therapy based on his medications and past medical history? Begin to consider what tests and measures, interventions, goals and treatment will constitute his SNF subacute rehab stay. Please justify with evidence-based literature in the assignment.

**SUBSEQUENT VISITS AND DEVELOPMENTS**

After a 2 week stay in the SNF, RW has significantly improved in his ability to perform functional mobility tasks and ambulation. He now presents to be standby assist of 1, progressing from the initial evaluation of minimal(25%) activity assist.

 However, a new and potentially devastating problem now arises. The nursing staff reports that they are no longer able to follow the activity order of providing the patient with a 1 person assist, as patient does not remain in his bed or in his wheelchair and is constantly standing and ambulating without their knowledge or assistance. He also had a fall trying to walk from his bed to the bathroom last night, sustaining just a forearm abrasion, although the potential for further significant injury had been present. RW had another near fall today, again trying to walk in his room. It was fortunate that a CNA was walking past the room at just the right moment and was able to help prevent the fall. What safety measures/ devices/ equipment would you suggest to nursing to use in RW’s room for his safety?

Upon discussion of this lack of safety precautions, safety awareness and associated fall risks with RW, he reacts very strongly stating that he “does not need help to walk, does not need a wheelchair!”.

This SNF nursing staff always depends on physical therapy to provide the activity order and is looking for clarification and assistance with RW’s lack of compliance. The activity order must be one which the nursing staff will be able to follow, with the current patient’s behaviors to avoid further falls. (Information: With an activity order, based on the SNF’s policy, CNAs cannot provide lesser assistance than what has been recommended by PT in the activity order).

PHYT 820

Meredith Smythe

**RW Case Study Assignment**

**Part I: RW’s medications:**

Abilify - 10 mg tablet daily

Class: 2nd generation atypical antipsychotic1

Indication: Bipolar I disorder, major depressive disorder, adjunctive treatment of major depressive disorder1

Pantoprazole

Class: Gastrointestinal agent and a proton pump inhibitor1

Indication: reduction heartburn symptoms in adult patients with gastroesophageal reflux1

disease (GERD)

Asprin-81 mg tab daily

Class: a salicylate and a non-steroidal anti-inflammatory drug1

Indication: “immediate release: Analgesic/Antipyretic. Vascular indication (ischemic stroke, transient ischemic attack, acute myocardial infarction, prevention of recurrent myocardial infarction, unstable angina, and chronic stable angina)”1

Lisinopril - 20 mg tablet daily

Class: Angiotensin-Converting Enzyme inhibitor1

Indications: Heart failure, Hypertension1

Namenda XR - 14 mg capsule daily

Class: NMDA ([*N*-methyl-D-aspartate](https://en.wikipedia.org/wiki/N-methyl-D-aspartate) ) receptor antagonist1

Alzheimer disease: Treatment of moderate to severe dementia of the Alzheimer type1

Phenergan - 12.5 mg tablet q 6 hours prn nausea

Class: phenothiazines1

Indication: Motion sickness, and to prevent nausea and vomiting1

Exelon - 9.5 mg/ 24 hr patch daily. Rotate site of patches each day. Site not to be repeated within 14 days

Class: cholinesterase inhibitor1

Indication: Alzheimer dementia: Treatment of mild to moderate dementia.1

Divalproex - 125 mg, 2 capsules BID

Class: anticonvulsant1

Indication: to treat mania, epilepsy or migraine headaches1

AdvAIR diskus - 250-50 mcg, inhale 1 puff BID. Rinse mouth after inhalation

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Class: respiratory inhalant combination1

Indication: Chronic Obstructive Pulmonary Disease (COPD)1

Clonazepam - 1 mg tablet QID

Class: benzodiazepine1

Indication: panic disorder, bipolar disorder, seizure disorders1

Haloperidol lactate 5 mg q 8 hours, prn agitation

Class: first generation typical antipsychotic1

Indication: Schizophrenia, bipolar disorder 1

Meclizine - 12.5 mg tablet TID

Class: antiemetic and anti-vertigo agent1

Indication: motion sickness, vertigo1

Acetaminophen – 650 mg tab q 6 hours, prn pain

Class: non-steroidal anti- inflammatory1

Indication: pain management and fever management1

Olanzepine - 10 mg tab q 6 hours prn agitation

Class: second generation atypical antipsychotic1

Indication: bipolar disorder, schizophrenia, treatment resistant depression

Hydrocodone-acetaminophen - 10-325 mg tab q 4 hours prn pain

Class: opioid analgesic combination1

Indication: moderate to severe pain1

Ipratropium-albuterol - 0.5-3mg/ 3 ml, 1 inhalation q 4 hours prn respiratory distress

Class: Anticholinergic and bronchodilator1

Indication: Chronic Obstructive Pulmonary Disease( COPD)1

Robafen -100mg/5ml. Take 10 ml by mouth q 4 hours prn coughing

Class: Expectorant1

Indication: loosens phlegm and thin bronchial secretions to make coughs more productive1

Ventolin HFA - 90 MCG. Inhale 2 puffs by mouth q 4 hours prn respiratory distress

Class: sympathomimetic (bronchodilator)1

Indication: COPD1

Miralax - 17 gm dissolved in water, daily prn constipation

Class: laxative1

Indication: constipation1

**Part II: Areas of concern**

 One area of concern for RW is that he seems have more than one geriatric syndrome. According to Inouye et al the term geriatric syndrome is used to define conditions in an older adult that do not fit into disease categories.2 RW has multiple chronic conditions including: frequent falls, cognitive impairment and failure to thrive. Inouye et al looked the risk factors leading to certain geriatric syndromes including: pressure ulcers, falls, functional decline and delirium. They found that there were four shared risk factors for these syndromes: older age, baseline cognitive impairment, impaired mobility, and baseline functional impairment.2 RW has both older age and baseline cognitive impairment. For the studies that look at falls they identified risk factors as: older age, prior history of falls, functional impairment, cognitive decline or dementia and depression.2 RW has many of these risk factor for increased falls including older age, depression, dementia, and a history of falls. The study found that there may be some common pathophysiological mechanisms across geriatric syndromes: multisystem dysregulation, inflammation, sarcopenia and athelersclerosis.2 These mechanisms can be seen in RW as he has sarcopenia and atherosclerosis.

Another geriatric syndrome RW presents with is failure to thrive. Failure to thrive includes symptoms of weight loss, loss of appetite, poor nutrition and inactivity.3 While his BMI is within the normal range it is on the low side at 21.6. Failure to thrive can be caused by chronic diseases such as atherosclerosis, chronic obstructive Pulmonary disease and depression.3 RW has all of the conditions that pre-dispose him to failure to thrive. Russel et al found four syndromes predictive of adverse outcomes when paired with failure to thrive: impaired physical function, malnutrition, depression and cognitive impairment.3 RW is at a high risk for a bad outcome with his failure to thrive because he is depressed and he has dementia.

Another concern for RW is his long list of medications. Polypharmacy is defined as taking five or more medications a day.4 Olsson et al conducted a study on polypharmacy and found that with increased number of medications there is an increased risk of inappropriate drug use and adverse drug events.4 Polypharmacy is also associated with increased hospitalizations and death.5 There is also a question of compliance with the increased number of medications. In the study done by Orlsson et al only 56 % of community dwelling adults with five or more prescriptions felt able to handle their drug regime.4 This will be a particular issue for RW as his dementia progresses.

 An additional concern to the number of medications is the type of medications he takes along with their side effects. A couple of the medications that RW is taking are listed on the revised Beers criteria for potentially inappropriate medications for older adults. These include Clonazepam, fluoxetine, and long term use of laxitives.6 Clonazepam, a long-acting benzodiazepines, has a long half-life in elderly patients which can last several days.6 They can cause sedation and increasing the risk of falls.6 Fluoxetine is a SSRI (selective serotonin reuptake inhibitor) and has a high risk of adverse effects in older adults including: sleep disturbances, and increased agitation.6 Additionally benzodiazepine, opioids, and SSRIs can contribute to RW’s failure to thrive.3

 RW’s medications need to be reviewed for appropriateness for his age. Many of the side effects of his medications could be causing his syncope, dizziness and even depression.1 Lisinopril, Namenda XR, olanzepine, hydrocodone and Rabfen all have dizziness as a side effect.1 In an Australian study of frail community dwelling adults Potter et al found that deprescribing medications that were deemed unnecessary based on medical review “had no significant adverse effects.”7 It is possible that his function would improve if inappropriate medications were eliminated.

**Part III: Assessment and Interventions**

RW has COPD and possibly endurance issues. Since he can only walk a short distance the two-minute walk test could evaluate his endurance. If he is going to return to his home he will need to walk longer distances. This test will provide a baseline measurement of his cardiovascular endurance and help guide his treatment. It has been validated on patients with COPD as well as with community dwelling older adults.8 It has excellent convergent validity with the six minute walk test in testing cardiovascular endurance.8 Additionally studies have found significant responsiveness in the COPD population with an effect size of .61.8

RW was admitted to the hospital for syncope and falls. He needs to be assessed with a measure that will assess his falls risk. The Berg Balance Scale tests both dynamic and static balance. It has an established cut off score where if he scores bellow 45/ 56, he has an increased risk of falling.9 The Berg has excellent test-retest reliability as well inter-rater relaibility.9 It’s predictive validity is excellent and it is highly specific (96 %).9 However, it does have low sensitivity.9 Therefore if RW scores bellow 45 there is a high statistical probability that he is a falls risk.

RW needs an intervention to improve his balance. This could include practicing static balance in standing with a progressively smaller base of support. It could also include dynamic balance. For example, having him walk with his walker down a hall with objects in the way to create an obstacle course. This specific balance training could be combined with resistive exercise in order to increase his strength and functional mobility.A clinical prediction guideline from the American Geriatrics Society listed balance, strength, and gait training as effective at reducing falls risk when part of a multifactorial approach.10 Other interventions that were combined with exercise were home modifications, minimizing or withdrawal of psychoactive medications, management of hypotension, and providing appropriate footwear.10 Cameron el al conducted a systematic review of randomized controlled trials looking at interventions to prevent falls in older adults and found that exercise may reduce falls for older adults with intermediate balance problems.11 They also found that multifactorial interventions reduced the risk of falls and injury from falls in residents of skilled nursing facilities.11

Another intervention that RW would benefit from is aerobic training. A systemic review of pulmonary rehabilitation by McCarthy et al strongly supported pulmonary rehabilitation with at least four weeks of exercise for patients with COPD.12 A key component to pulmonary rehabilitation is an individualized aerobic exercise program, which is something a physical therapist can design. The review found that patients had improvements in quality of life, dyspnea, fatigue, and their distance in the six minute walk test.12 Additionally, aerobic exercise training could improve RW’s cognition.13 A randomized controlled trial by Baker et al found that high intensity aerobic exercise (60 minutes, 4 times a week) improved cognition in patients with mild Alzheimer’s disease dementia.13

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