Integrating Clinical Reasoning and the Movement System Across Health Conditions

Friday, February 23, 2018

This course was developed by a larger workgroup and is being presented by a sub-group of speakers on behalf of the entire team. The following list includes all of the workgroup members:

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Objectives:

a. Explain the revised Integrated Framework for Clinical Reasoning with explicit reference to the movement system, movement science, and shared decision making.
b. Integrate the movement system and movement science into clinical reasoning for persons with musculoskeletal, neurological and cardiopulmonary health conditions.
c. Illustrate the value and relevance of a unifying framework of clinical reasoning for physical therapist practice.

Content

Outline of Presentation:

1. High level presentation of the use of an integrated framework to guide clinical reasoning at the patient level as well as guide physical therapist practice

The updated Integrated Framework for Clinical Reasoning will be presented to illustrate how integrating the elements of shared decision making, the movement system and movement

science can enhance use of the Guide to Physical Therapist Practice, enablement models and the HOAC to make clinical decisions for patients with various health conditions.

Specific strategies for incorporating these emerging concepts into the history/interview, systems review, and examination will be presented. Task and movement analysis will guide the examination process complemented by standardized assessments. Evaluation/Diagnosis will summarize the movement system problem. Three patient cases will be used to illustrate the application of the integrated framework:

2. Application of the integrated framework to a person with a neurologic condition

DB is a 48-year-old female with a history of an aneurysm and a left hemisphere stroke resulting in right sided paralysis and aphasia 17 years prior to this episode of care. Her goal is to ambulate in outside areas without having to "hold on". She reports some difficulties with eye fatigue and dizziness. Her roles are as a stroke support group participant, caretaker for her mother and spouse to a gentleman who also had a stroke. Her solutions to help attain her goals are: walking on a treadmill, and using a Fit bit to track her activity. Her resources are her supportive partner and ability to attend therapy. Her constraints are a "vestibular problem that keeps changing." She presents in the outpatient setting.

***Systems Review**:*
Cardiovascular, Pulmonary, Integumentary and Endocrine (noted high BMI) systems are unremarkable.

Musculoskeletal system: She has R foot and ankle pain with a history of plantar fasciitis. Her RLE has decreased AROM excursion and timing. Five Times Sit-to-Stand test is 12.46 seconds.

Nervous system: Reports episodic non-spinning dizziness and decreased balance confidence when walking outside; Romberg = 30 sec; unable to attain R single leg stand. Gaze fixation on a fixed target results in blurred vision.

***Exam**:*
Standardized assessments include the Functional Gait Assessment, Clinical Test of Sensory Integration and Balance, and LE Fugl-Meyer Assessment. Tests and Measures: extra-ocular exam, gaze stability tests, manual muscle tests, coordination tests, and sensory integrity tests.

***Task Analysis:** Walking indoors in a crowded situation, on the stairs and outdoors.*

***Evaluation/Diagnosis**: Summary of the movement system problem, diagnosis, and shared decision making will be presented.*

3. Application of the integrated framework to a person with a musculoskeletal condition

FH is a 72-year-old male who comes to outpatient physical therapy status post left posterolateral approach total hip arthroplasty (THA) two weeks ago due to history of left hip osteoarthritis. His past medical history includes lower back pain and high blood pressure, but was otherwise unremarkable. He takes blood pressure lowering medications, and began taking Tylenol for pain, and blood thinning medications after surgery. He has postoperative range of motion precautions including "no hip flexion greater than 90 degrees, and no adduction or

internal rotation past neutral". He lives alone in an apartment which is part of a retirement community, in which he enjoys socializing with friends and neighbors. He reports difficulty with transferring moving in and out of bed, from sitting to standing, dressing, as well as cooking and cleaning at home independently. He is also currently unable to drive, attend family events, socialize with friends and neighbors, and participate in recreational activities such as walking for exercise and playing golf. His goals for physical therapy are to decrease his reliance on an assistive device for ambulation, be independent in ADLs and duties at home, return to driving, and return to preoperative levels of recreational activities including socializing with friends and neighbors, walking for exercise and golf.

Systems Review:
Cardiovascular system: unremarkable but with history of high blood pressure, tested WNL today (108/74 mmHg, 78 bpm.)

Pulmonary system: WNL, 18 bpm

Integumentary system: Surgical incision inspected, closed without stitches or staples, healthy appearing, without discharge or skin discoloration.

Musculoskeletal system: Difficulty walking, bearing weight on left leg; further testing warranted.

Endocrine system: unremarkable, but noted high BMI (40).

Nervous system: No reports of neurologic symptoms, observed movement is coordinated, observed difficulty with balance.

Task Analysis:
Bed mobility, sit-to-stand transfer, gait with and without assistive device, stair ascent and descent, isolated single limb standing.

Exam:
Standardized assessments: Five Times Sit-to-Stand test, Stair Climb test, NPRS.
Test and Measures: single limb stance time, lower extremity strength at knee and hip, range of motion assessment at hip.

Evaluation/Diagnosis: *Summary of the movement system problem, diagnosis, and shared decision making will be presented.*

4. Application of the integrated framework to a person with a cardiopulmonary condition

A 75 year-old female underwent coronary artery bypass graft (CABG) with a significant post-surgical history that includes a perforated duodenal ulcer and bowel surgical repair within the same week. Past medical history is significant for a long history of cardiovascular system involvement, including a history of cancer. The patient is referred to cardiac rehabilitation, with a medical diagnosis of S/P CABG with generalized weakness, 3 weeks post-surgery. She recently received 2 weeks of inpatient rehabilitation, nursing home health, and assistance for home activities. She reports no exercise regimen and limited physical activity since home discharge, stating "It takes too much energy and it's hard to move about. Why bother?" and "I want to get

stronger, be less short of breath when I move about." The patient's primary goal is to get ready to go on a cruise in 2 months.

The case will demonstrate the complexities a physical therapist needs to navigate with consideration for multisystem involvement, including typical age-related changes, in the movement system framework.

Systems Review:
Cardiovascular and Pulmonary systems: extensive history of heart disease; vital signs assessed, dyspnea reported and observed with transitional movements and gait.

Integumentary system: healing sternal and abdominal incision

Musculoskeletal system: slow walking, gross screen of upper extremity (UE) and lower extremity (LE) reveals generalized weakness noted with tightness in the hip and knee bilaterally

Endocrine system: unremarkable

Nervous system: History of fall x 1, the day after discharge to home; stood up and fell backwards, no apparent injuries. Moves slowly with guarded pace, increased reaction time, and minor use of hands.

Examination:
Standardized assessments: 6-minute walk test, gait speed, Sit-to-Stand test, OLST, 4-stage balance test.

Test and Measures: ROM, UE & LE MMT, functional strength, balance & fall assessment, telemetry, aerobic capacity.

Task Analysis:
Bed mobility, sit-to-stand and stand-to-sit, standing, walking, step up & down; reach & UE manipulation.

Evaluation: *Summary of the movement system problem, diagnosis, and shared decision making will be presented.*

5. Synthesis across the three cases and Panel Discussion with audience participation

The three patient cases will be synthesized to illustrate the usefulness of the integrated framework across individuals with different health conditions. Audience participation will then be invited to raise questions and make suggestions about the proposed integrated framework for clinical reasoning.

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