



Western Technical College

# 10524146 Physical Therapist Assistant Management of Cardiopulmonary and Integumentary Conditions

## Course Outcome Summary

### Course Information

<b>Description</b>	Integrates concepts of cardiopulmonary and integumentary pathologies, physical therapy interventions, and data collection in patient treatment.
<b>Career Cluster</b>	Health Science
<b>Instructional Level</b>	Associate Degree Courses
<b>Total Credits</b>	3
<b>Total Hours</b>	72

### Pre/Corequisites

Prerequisite	10524139 PTA Patient Interventions
Prerequisite	10524143 PTA Biophysical Agents
Prerequisite	10524141 PTA Kinesiology 2 OR 10524157 PTA Applied Kinesiology 2

### Textbooks

*Physical Rehabilitation*. 7th Edition. Copyright 2019. O'Sullivan, Susan B., Thomas J. Schmitz, and George Fulk. Publisher: F.A. Davis Co. **ISBN-13**: 978-0-8036-6162-2. Required.

### Success Abilities

1. Live Responsibly: Develop Resilience
2. Refine Professionalism: Improve Critical Thinking
3. Refine Professionalism: Participate Collaboratively

## Program Outcomes

1. Function under the supervision of a physical therapist in a safe, legal, professional, and ethical manner to ensure the safety of patients, self, and others throughout the clinical interaction
2. Demonstrate clear and collaborative communication with patients, families, and health care team
3. Exhibit behaviors and conduct that reflect respect and sensitivity according to physical therapy practice standards
4. Produce documentation to support the delivery of physical therapy services
5. Demonstrate critical thinking skills to implement and modify treatment within a plan of care under the direction and supervision of a physical therapist
6. Perform data collection essential for carrying out the plan of care under the direction and supervision of the physical therapist
7. Perform technically competent, evidence-based physical therapy interventions under the direction and supervision of the physical therapist
8. Educate patients, families, and other health providers
9. Integrate components of operational and fiscal practices of physical therapy service in a variety of settings

## Course Competencies

### 1. Identify function and location of structures in normal cardiovascular and pulmonary systems

#### Assessment Strategies

- 1.1. through a description (format may be written, oral, graphic, or three-dimensional model)
- 1.2. by answering questions related to the learning objectives on exam
- 1.3. through a case study scenario (oral or written)

#### Criteria

*Your performance will be successful when:*

- 1.1. description addresses major anatomical components of the cardiovascular and pulmonary systems
- 1.2. description illustrates the relationships among the cardiovascular and pulmonary systems
- 1.3. description summarizes the functions of the cardiovascular and pulmonary systems

#### Learning Objectives

- 1.a. Identify the names and locations of the major anatomical components of the heart and lungs.
- 1.b. Explain the function(s) of each of the major anatomical components of the heart and lungs.
- 1.c. Compare the structures and functions of the major types of blood vessels.
- 1.d. Trace the pathway of blood through the body, heart and lungs.
- 1.e. Describe the mechanisms that aid in returning venous blood to the heart.
- 1.f. Summarize the process of gas transfer in the lungs.
- 1.g. Explain physiologic feedback loops related to the cardiac and pulmonary systems.

### 2. Identify etiology, signs and symptoms and usual course of pulmonary disorders

#### Assessment Strategies

- 2.1. through an analysis (format may be oral, written, or graphic)
- 2.2. by answering questions on one or more exams

#### Criteria

*Your performance will be successful when:*

- 2.1. you explain the signs and symptoms of disease and/or disorder
- 2.2. you explain etiology and pathogenesis of the disease and/or disorders
- 2.3. you summarize progression of the disease and/or disorders

- 2.4. you describe medical management including pharmacological and surgical interventions and diagnostic testing

#### **Learning Objectives**

- 2.a. Identify signs and symptoms of pulmonary disorders including lung cancer.
- 2.b. Examine etiology of pulmonary disorders.
- 2.c. Explain pt/client impairments, activity and participation limitations related to pulmonary disorders.
- 2.d. Identify precautions and contraindications for intervention for patients with pulmonary disorders.
- 2.e. Analyze intervention guidelines for therapy patients with a specific pulmonary disorder.
- 2.f. Examine usual progression of pulmonary disorders, including interventions for acute, sub-acute and chronic stages.
- 2.g. Examine expected and unexpected patient physiologic response to intervention, including responses that would terminate intervention or require that the supervising PT/ physician be notified.

### **3. Identify etiology, signs and symptoms and usual course of cardiac disorders**

#### **Assessment Strategies**

- 3.1. through an analysis (format may be oral, written, or graphic)
- 3.2. by answering questions on one or more exams

#### **Criteria**

*Your performance will be successful when:*

- 3.1. you explain the signs and symptoms of disease and/or disorder
- 3.2. you explain etiology and pathogenesis of the disease and/or disorders
- 3.3. you summarize progression of the disease and/or disorders
- 3.4. you describe medical management including pharmacological and surgical interventions and diagnostic testing

#### **Learning Objectives**

- 3.a. Identify signs and symptoms of cardiac disorders.
- 3.b. Examine etiology of cardiac disorders including modifiable and non modifiable risk factors.
- 3.c. Summarize pt/client impairments, activity and participation limitations related to cardiac disorders.
- 3.d. Explain treatment guidelines for therapy patients with a specific cardiac disorder.
- 3.e. Examine cardiac rehabilitation programs.
- 3.f. Correlate the function of the renal system as it relates to compensatory mechanisms for the cardiac system.
- 3.g. Examine expected and unexpected patient physiologic response to intervention, including responses that would terminate intervention or require that the supervising PT/ physician be notified.

### **4. Identify etiology, signs and symptoms and usual course of peripheral vascular disease**

#### **Assessment Strategies**

- 4.1. through an analysis (format may be oral, written, or graphic)
- 4.2. by answering questions on one or more exams

#### **Criteria**

*Your performance will be successful when:*

- 4.1. you explain the signs and symptoms of disease and/or disorder
- 4.2. you explain etiology and pathogenesis of the disease and/or disorders
- 4.3. you summarize progression of the disease and/or disorders
- 4.4. you describe medical management including pharmacological and surgical interventions and diagnostic testing
- 4.5. you identify the structure and function of the peripheral vascular system

#### **Learning Objectives**

- 4.a. Identify the signs and symptoms of peripheral vascular disease.
- 4.b. Examine the etiology of peripheral vascular disease.
- 4.c. Discuss patient impairments, activity and participation limitations related to peripheral vascular disorders.
- 4.d. Discuss treatment implications for therapy for patients with a specific peripheral vascular disease.
- 4.e. Examine expected and unexpected patient physiologic response to intervention, including responses that would terminate intervention or require that the supervising PT/ physician be notified.

## **5. Perform physical therapy interventions for patients with cardiac impairments**

### **Assessment Strategies**

- 5.1. through a skill demonstration
- 5.2. through an analysis (format may be oral, written, or graphic)
- 5.3. by answering questions on one or more exams

### **Criteria**

*Your performance will be successful when:*

- 5.1. you identify common treatments for cardiac patients
- 5.2. you select interventions appropriate to the level and condition of the patient
- 5.3. you select the correct equipment and supplies
- 5.4. you perform all critical steps in the right order
- 5.5. you position yourself correctly
- 5.6. you employ appropriate interventions
- 5.7. you follow safety procedures
- 5.8. you verbalize an explanation of the process
- 5.9. your explanation presents sound reasoning as you describe the decisions you make throughout the process
- 5.10. you identify the physical therapist assistant's role in prevention, diagnosis, and treatment of the disease and/or disorder

### **Learning Objectives**

- 5.a. Complete baseline vital assessment and patient interview for prior and current level of function, general health status/ symptoms.
- 5.b. Identify precautions and contraindications for various types of cardiac impairments.
- 5.c. Select appropriate interventions for patients with cardiac disorder in acute, sub-acute and chronic stages.
- 5.d. Implement appropriate treatment, after full health record review, for patient with cardiac disorder within target parameters for each condition/ patient as outlined in the plan of care established by the physical therapist.
- 5.e. Demonstrate safe and correct exercise interventions using corrective cues if needed.
- 5.f. Monitor patient response to intervention, adjust if needed, or discontinue based on clinical indications and report to the physical therapist.

## **6. Perform physical therapy interventions for patients with pulmonary impairments**

### **Assessment Strategies**

- 6.1. through a skill demonstration
- 6.2. through an analysis (format may be oral, written, or graphic)
- 6.3. by answering questions on one or more exams

### **Criteria**

*Your performance will be successful when:*

- 6.1. you identify common treatments for pulmonary patients
- 6.2. you select interventions appropriate to the level and condition of the patient
- 6.3. you select the correct equipment and supplies
- 6.4. you perform all critical steps in the right order
- 6.5. you position yourself correctly
- 6.6. you employ appropriate interventions
- 6.7. you follow safety procedures
- 6.8. you verbalize an explanation of the process
- 6.9. your explanation presents sound reasoning as you describe the decisions you make throughout the process
- 6.10. you identify the physical therapist assistant's role in prevention, diagnosis, and treatment of the disease and/or disorder

### **Learning Objectives**

- 6.a. Complete baseline vital assessment and patient interview for prior and current level of function and general health status/symptoms.
- 6.b. Recognize precautions and contraindications for various types of pulmonary impairments.

- 6.c. Select appropriate interventions for patients with pulmonary disorder in acute, sub-acute or chronic stage.
- 6.d. Implement appropriate treatment, after full health record review, for patient with pulmonary impairment within treatment parameters for each patient/ condition as outlined in the plan of care established by the physical therapist.
- 6.e. Demonstrate safe and correct exercise interventions using corrective cues if needed.
- 6.f. Monitor patient response to intervention, adjust if needed, or discontinue based on clinical indications and report to the physical therapist.
- 6.g. Demonstrate pursed lip breathing, coughing techniques, and manual secretion mobilization.

## 7. Examine physical therapy interventions for wound management

### Assessment Strategies

- 7.1. through an analysis (format may be oral, written, or graphic)
- 7.2. by answering questions on one or more exams

### Criteria

*Your performance will be successful when:*

- 7.1. you identify common treatments for patients with integumentary disorders
- 7.2. you select interventions appropriate to the level and condition of the patient
- 7.3. you identify the correct equipment and supplies
- 7.4. you verbalize an explanation of the process
- 7.5. your explanation presents sound reasoning as you describe the decisions you make throughout the process
- 7.6. you identify the physical therapist assistant's role in prevention, diagnosis, and treatment of the disease and/or disorder

### Learning Objectives

- 7.a. Identifies type of wound, viable and non-viable tissue correctly.
- 7.b. Recognize precautions and contraindications for treatment of various types of wounds.
- 7.c. Compare isolation techniques and sterile techniques as it relates to application and removal of dressing or agents.
- 7.d. Implement appropriate intervention, after full health record review, for patient with integumentary disorders including documentation of integumentary/wound characteristics.
- 7.e. Assess response to intervention and notifies physical therapist if needed.
- 7.f. Adjusts interventions within the plan of care established by the physical therapist appropriately.
- 7.g. Recognizes when intervention should not be provided due to changes in the patient's status and reports this to the supervising physical therapist.
- 7.h. Classify burns, including % of body involvement using the rule of nines.
- 7.i. Summarize interventions used for burn care/ rehabilitation.
- 7.j. Correlate impairments from severe burns to other systems (cardiac, pulmonary, musculoskeletal, nervous, etc...).
- 7.k. Examine diet, activity, posture, position, and contributing health factors related to pressure ulcers.

## 8. Perform physical therapy interventions for the person with an amputation

### Assessment Strategies

- 8.1. through a skill demonstration
- 8.2. through an analysis (format may be oral, written, or graphic)
- 8.3. by answering questions on one or more exams

### Criteria

*Your performance will be successful when:*

- 8.1. you identify common treatments for patients with amputations
- 8.2. you select interventions appropriate to the level and condition of the patient
- 8.3. you select the correct equipment and supplies
- 8.4. you perform all critical steps in the right order
- 8.5. you position yourself correctly
- 8.6. you employ appropriate interventions
- 8.7. you provide instruction for gait activities
- 8.8. you follow safety procedures

- 8.9. you verbalize an explanation of the process
- 8.10. your explanation presents sound reasoning as you describe the decisions you make throughout the process
- 8.11. you identify the physical therapist assistant's role in prevention, diagnosis, and treatment of the disease and/or disorder

**Learning Objectives**

- 8.a. Examine incidence and etiology of amputation.
- 8.b. Explain considerations related to the level of amputation in a patient.
- 8.c. Demonstrate safe transfers, exercise instruction, transfer training, and gait training for a patient with an amputation.
- 8.d. Recognize precautions and contraindications for various types of amputations.
- 8.e. Explain post operative protocols for exercise, stump protection, contracture prevention.
- 8.f. Explore indications, precautions, and contraindications for wearing prosthesis.
- 8.g. Analyze intervention goals for acute, sub-acute and outpatient phases of rehabilitation for a person with a lower extremity amputation.
- 8.h. Assess response to intervention and notifies physical therapist if needed.
- 8.i. Adjusts interventions within the plan of care established by the physical therapist appropriately.
- 8.j. Recognizes when intervention should not be provided due to changes in the patient's status and reports this to the supervising physical therapist.

**9. Educate in the care and use of prosthetic devices**

**Assessment Strategies**

- 9.1. through a skill demonstration
- 9.2. through an analysis (format may be oral, written, or graphic)
- 9.3. by answering questions on one or more exams

**Criteria**

*Your performance will be successful when:*

- 9.1. you identify the various types of prosthetic devices
- 9.2. your explanation presents sound reasoning as you describe the decisions you make throughout the process
- 9.3. you explain the indications for use of various prosthetic devices
- 9.4. you demonstrate fitting various orthoses to patient.
- 9.5. you identify the individual's and caregiver's ability to apply and care for the device
- 9.6. you recognize changes in skin condition while using prosthetic devices
- 9.7. you recognize safety factors involved in using prosthetic devices

**Learning Objectives**

- 9.a. Examine the components of a lower extremity prosthesis.
- 9.b. Summarize the correct sequence in donning and doffing prosthesis.
- 9.c. Summarize the necessary elements of stump care, including observation of stump to avoid breakdown.
- 9.d. Determine a wearing schedule for prosthesis with instructions for progression.
- 9.e. Outline the cleaning and storage of prosthesis.
- 9.f. Identify strategies to assess patient and caregiver's understanding.
- 9.g. Adjust instructions as needed with use of visual, written and demonstrated instructions.
- 9.h. Identify common gait deviations related to prosthetic use and wear.

**10. Assess ventilation, respiration and circulation**

**Assessment Strategies**

- 10.1. by collecting, organizing and reporting data related to ventilation, respiration, and circulation
- 10.2. by developing an analysis (written, graphic, or oral]
- 10.3. by answering questions related to the learning objectives on exam
- 10.4. in a skill demonstration

**Criteria**

*Your performance will be successful when:*

- 10.1. you identify data necessary to perform assessment of patient's ventilation, respiration, and circulation
- 10.2. you recognize cyanosis
- 10.3. you recognize activities which aggravate or relieve edema, pain, dyspnea, and other symptoms

- 10.4. you describe cough and sputum characteristics
- 10.5. you describe chest wall expansion and excursion
- 10.6. data is recorded completely and accurately
- 10.7. data is relevant
- 10.8. data sources are identified
- 10.9. data results are organized and clearly communicated
- 10.10. data is presented in graphs or charts; graphical representations are accurate and easy to read
- 10.11. data analysis includes a written description and analysis of the results
- 10.12. data analysis makes a recommendation based on the results; recommendation is clearly supported by the data

#### **Learning Objectives**

- 10.a. Position self and patient safely while assessing ventilation, respiration and circulation.
- 10.b. Assess ventilation, respiration and circulation accurately.
- 10.c. Document the data correctly.
- 10.d. Compare findings to norms for ventilation, respiration and circulation.
- 10.e. Identify activities that may aggravate or reduce edema, pain, dyspnea, orthopnea and other symptoms.
- 10.f. Identify cough, heart sounds and sputum characteristics.
- 10.g. Explain chest wall expansion, excursion and factors that may affect it.
- 10.h. Identify breathing patterns that may be seen in patients with cardiopulmonary disorders.

### **11. Analyze patient response to physical therapy interventions for cardiovascular, pulmonary, lymphatic, and integumentary disorders**

#### **Assessment Strategies**

- 11.1. by developing an analysis (written, graphic, or oral]
- 11.2. by answering questions related to the learning objectives on exam

#### **Criteria**

*Your performance will be successful when:*

- 11.1. you identify expected responses to PT interventions
- 11.2. you recognize abnormal responses to interventions
- 11.3. you adjust interventions within the plan of care developed by the PT in response to patient clinical indications
- 11.4. you recognize when the intervention should not be provided based on changes in the patient status.
- 11.5. you recognize when the direction to perform the intervention is beyond what is appropriate for a PTA

#### **Learning Objectives**

- 11.a. Explain expected physiologic response to intervention.
- 11.b. Identify possible unexpected physiologic responses to intervention.
- 11.c. Hypothesize possible risks to patient safety related to physiologic responses.
- 11.d. Collect data regarding patient response to intervention and notify physical therapist if needed.
- 11.e. Coorelate possible physiologic responses to various diseases.
- 11.f. Identify patient responses that require emergency action.
- 11.g. Adjust interventions within the plan of care established by the physical therapist appropriately.
- 11.h. Recognize when intervention should not be provided due to clinical indications and report this to the supervising physical therapist.

### **12. Conduct data collection for patients with cardiovascular, pulmonary, lymphatic, and integumentary disorders**

#### **Assessment Strategies**

- 12.1. by collecting, organizing and reporting data
- 12.2. by answering questions related to the learning objectives on exam
- 12.3. in a skill demonstration

#### **Criteria**

*Your performance will be successful when:*

- 12.1. you collect data for blood pressure, heart rate, and respiratory rate at rest, during, and after activity
- 12.2. you collect data using pulse oximetry
- 12.3. you collect data for height, weight, length, and girth
- 12.4. you collect data for measuring and staging pressure ulcers

- 12.5. you collect data for gross sensation
- 12.6. you collect data and administer pain scales

#### **Learning Objectives**

- 12.a. Identify pertinent data collected including outcome measures that relate to cardiopulmonary or integumentary disorders.
- 12.b. Examine data collected for peripheral vascular system, including data related to wound care.
- 12.c. Examine fitness screens done in physical therapy to document cardiopulmonary status.
- 12.d. Explore testing procedures done by other medical professionals to document cardiopulmonary status.
- 12.e. Explain how to document progression in a patient with cardiopulmonary or integumentary disorders.
- 12.f. Demonstrate collection of data including blood pressure, respiration, ventilation, circulation, perceived exertion and fitness screens.
- 12.g. Demonstrate subjective examination to determine patient understanding/perspective on his or her medical condition, patient goals, and patient discharge environment, including anticipated need for assistance.

### **13. Identify etiology, signs and symptoms and usual course of lymphatic disorders**

#### **Assessment Strategies**

- 13.1. through an analysis (format may be oral, written, or graphic)
- 13.2. by answering questions on one or more exams

#### **Criteria**

*Your performance will be successful when:*

- 13.1. you explain the signs and symptoms of disease and/or disorder
- 13.2. you explain etiology and pathogenesis of the disease and/or disorders
- 13.3. you summarize progression of the disease and/or disorders
- 13.4. you describe medical management including pharmacological and surgical interventions and diagnostic testing

#### **Learning Objectives**

- 13.a. Identify the anatomical structures in the lymphatic system.
- 13.b. Examine the function of anatomical structures in the lymphatic system.
- 13.c. Explore etiology, signs, symptoms and usual course of various diseases that affect the lymphatic system.
- 13.d. Examine interventions used in physical therapy to treat lymphatic disorders.
- 13.e. Examine expected and unexpected patient physiologic response to intervention, including responses that would terminate intervention or require that the supervising PT/ physician be notified.

### **14. Perform physical therapy interventions for patients with lymphatic disorders**

#### **Assessment Strategies**

- 14.1. through a skill demonstration
- 14.2. through an analysis (format may be oral, written, or graphic)
- 14.3. by answering questions on one or more exams

#### **Criteria**

*Your performance will be successful when:*

- 14.1. you identify common treatments for patients with lymphatic disorders
- 14.2. you select interventions appropriate to the level and condition of the patient
- 14.3. you select the correct equipment and supplies
- 14.4. you perform all critical steps in the right order
- 14.5. you position yourself correctly
- 14.6. you employ appropriate interventions
- 14.7. you follow safety procedures
- 14.8. you verbalize an explanation of the process
- 14.9. your explanation presents sound reasoning as you describe the decisions you make throughout the process
- 14.10. you identify the physical therapist assistant's role in prevention, diagnosis, and treatment of the disease and/or disorder

#### **Learning Objectives**



- 14.a. Complete baseline vital assessment and patient interview for prior and current level of function and general health status/symptoms.
- 14.b. Recognize precautions and contraindications for various types of lymphatic disorders.
- 14.c. Select appropriate interventions for patients with lymphatic disorder in acute, sub-acute or chronic stage.
- 14.d. Implement appropriate treatment, after full health record review, for patient with lymphatic disorder within treatment parameters for each patient/ condition as outlined in the plan of care established by the physical therapist.
- 14.e. Demonstrate safe and correct manual intervention and exercise intervention using corrective cues if needed.
- 14.f. Monitor patient response to intervention, adjust if needed, or discontinue based on clinical indications and report to the physical therapist.

**15. Perform physical therapy interventions for patients with peripheral vascular disease**

**Assessment Strategies**

- 15.1. through a skill demonstration
- 15.2. through an analysis (format may be oral, written, or graphic)
- 15.3. by answering questions on one or more exams

**Criteria**

*Your performance will be successful when:*

- 15.1. you identify common treatments for patients with peripheral vascular disease
- 15.2. you select interventions appropriate to the level and condition of the patient
- 15.3. you select the correct equipment and supplies
- 15.4. you perform all critical steps in the right order
- 15.5. you position yourself correctly
- 15.6. you employ appropriate interventions
- 15.7. you follow safety procedures
- 15.8. you verbalize an explanation of the process
- 15.9. your explanation presents sound reasoning as you describe the decisions you make throughout the process
- 15.10. you identify the physical therapist assistant's role in prevention, diagnosis, and treatment of the disease and/or disorder

**Learning Objectives**

- 15.a. Complete baseline vital assessment and patient interview for prior and current level of function and general health status/symptoms.
- 15.b. Recognize precautions and contraindications for various types of peripheral vascular disease.
- 15.c. Select appropriate interventions for patients with peripheral vascular disease in acute, sub-acute or chronic stage.
- 15.d. Implement appropriate treatment, after full health record review, for patient with peripheral vascular disease within treatment parameters for each patient/ condition as outlined in the plan of care established by the physical therapist.
- 15.e. Demonstrate safe and correct manual intervention and exercise intervention using corrective cues if needed.
- 15.f. Monitor patient response to intervention, adjust if needed, or discontinue based on clinical indications and report to the physical therapist.