RSPC A255: HOME CARE AND REHABILITATION

Item	Value
Curriculum Committee Approval Date	04/17/2019
Top Code	121000 - Respiratory Care/Therapy
Units	1 Total Units
Hours	18 Total Hours (Lecture Hours 18)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

Techniques and operation of respiratory home care and pulmonary rehabilitation. Includes special equipment set-up, patient and family education, patient evaluation, and care of the ventilator dependent patient at home. Also includes regulations of home care and third party reimbursement. PREREQUISITE: RSPC A190. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Describe and apply the techniques and equipment utilized in the pulmonary patient home care and rehabilitation setting.

Course Objectives

- 1. List the members and function of members of a pulmonary rehabilitation team.
- 2. Describe current reimbursement conditions for respiratory care practitioners in home health services.
- 3. Describe the goals of pulmonary rehabilitation.
- 4. State medicare definitions for home medical equipment.
- 5. State the advantages and disadvantages to home care compared to hospital care.
- 6. Describe requirements for a patient to be a successful rehabilitation candidate.
- 7. List typical problems presented by the pulmonary patient and describe measures to control or reverse them.
- 8. State factors that might limit progress for a patient in pulmonary rehabilitation.
- 9. List purposes for conduction a patient interview.
- 10. List three simple methods to assess the degree of impairment in a patients pulmonary mechanics.
- 11. Describe the rationale for exercise testing of the pulmonary rehabilitation patient.
- 12. State the parameters measured during an exercise stress test.
- 13. Distinguish between normal and abnormal physiological responses to exercise in the pulmonary patient.
- 14. Describe the concept of interval training.
- 15. List in order the physiological parameters that change the most in the trained pulmonary patient.
- 16. Describe the difference between respiratory muscle weakness and respiratory muscle failure.
- 17. State the factors which indicate respiratory muscle weakness.
- 18. Describe the following types of respiratory muscle training: resistive, isocapneic breathing, diaphragmatic, pursed lip, and pacing.
- 19. Describe the concept and use of the following bronchial clearance devices: P.E.P. therapy and flutter valve.
- 20. Describe the sources of stress.
- 21. List the pulmonary and cardiovascular responses to stress.
- 22. Describe the different types of relaxation techniques.
- 23. Describe healthy ways to cope with stress.
- 24. List benefits for patient education.
- 25. State the guidelines which should be followed when creating patient educational materials.
- 26. Create an instructional media intended for patient use using one of the themes listed: Cleaning home respiratory equipment, travel tips for patients with breathing problems, proper use of metered dose inhalers, or sources of indoor air pollution.
- 27. Describe the concept of delayed billing and its effects.
- 28. Describe manufacturer support for medical equipment (service, repair).
- 29. List factors that add to the cost of medical equipment retail sales.
- 30. Describe the role of the medical equipment manufacturers, distributors, dealers and customers.
- 31. Describe medicare payment for home oxygen equipment.
- 32. Describe the set up, advantages, and disadvantages of home each type of home oxygen delivery system.
- 33. State the advantages and disadvantages of oxygen conserving devices.
- 34. State reasons why home continuous aerosol therapy is not practical.
- 35. List advantages and disadvantages to unit dose format medications.
- 36. Describe bubble humidifiers and why they are not usually provided in low flow oxygen at home.
- 37. Compare the advantages of high humidity generators to continuous aerosol for home use.
- 38. State three recommended methods for cleaning and disinfecting respiratory care equipment at home.
- 39. Describe the advantages and disadvantages of nasal masks and "pillows".
- 40. Describe different types and use of negative pressure ventilators.
- 41. List emergency equipment required for patients on home ventilator systems.
- 42. Compare the advantages and disadvantages of different types of negative pressure ventilators.
- 43. Compare common features found on home positive pressure ventilators.
- 44. Describe the possibilities for illegal/unethical behavior in health care scenarios.
- 45. Describe how current federal law seeks to control fraud and abuse in the health care system.

Lecture Content

Unit One -Introduction to rehabilitation Definition of rehabilitation Definition of rehabilitation The rehabilitation team Functions Patient assessment Course of treatment Patient/family input and

concerns Implementation Follow up Members and their roles II. Structure of rehabilitation programs In-patient programs Diagnostic work up Recommendations Implementation Out-patient programs Referral Implementation Problems encountered Reimbursement Private insurance Types Managed Care Health Maintenance Organizations (HMO) Preferred Provider Networks (PPO) Medicare Historical perspective Current legislation Other funding sources Medi-Cal Optima Medical services for indigents Home health care Part A services Home health agencies Health occupations Reimbursement Home infusion services Part B services Home medical equipment (HME) / Durable Medical Equipment (DME) Health occupations Reimbursement Home infusion services Ethics and legal considerations etc. Unit 2 - Pulmonary rehabilitation benefits and goals Epidemiology of pulmonary problems Chronic Obstructive Pulmonary Disease (COPD) Pneumonia Emphysema Asthma Financial impact on pulmonary disease Asthma COPD Cost cutting measures Diagnostic related groups (DRG) Out-patient care Goals of pulmonary rehabilitation Control or reverse current problems Shortness of breath Decreased chest wall mobility Decreased level of bronchial hygiene Decreased exercise tolerance and physical work capacity Prevent the re-occurrence of pulmonary problems Optimize medication regime Institute exercise and breathing retraining program Institute bronchial clearance measures PEP therapy Postural Drainage and percussion Flutter valve Huff cough Impediments to rehabilitation Patient problems Stages of grief Coping mechanisms Rehabilitation team problems Unit 3 - Patient assessment and interview process The patient interview Confirm the diagnosis Obtain list of symptoms Determine the patient reaction to disease Development of rapport Review of systems Nervous system Cardiovascular system Gastrointestinal system Metabolic conditions Locomotor system Evaluation of respiratory mechanics Observation of breathing patterns Use of diaphragm Use of accessory muscles Observation of body position Measure dyspnea index Index definition Application index Evaluation of laboratory data Arterial blood gases pH Oxygenation Carbon dioxide Pulmonary function tests (PFT) spirometry lung volume measurement Auscultation Breath sounds Adventitious sounds Disorders of the spoken voice nb Bronchophony Egophony Unit 4 - Exercise testing and training Exercise testing Benefits Protocols Naughton Balke Bruce Jones Parameters measured and anticipated changes Heart rate/target heart rate Respiratory rate Blood pressure Oxygen consumption VO2 Metabolics Oxygenation levels PaO2 SpO2 Respiratory quotient a-v O2 difference Time Exercise training concepts Long slow distance training Interval training Exercise training techniques Stationary bike Time Resistance Walking Time Distance Swimming Time Endurance Benefits of exercise Endurance Physical work capacity VO2 a-v O2 difference Vital sign changes Arterial bl ood gases Breathing retraining Muscle weakness vs muscle failure Respiratory muscle weakness Respiratory muscle failure Manifestations of respiratory muscle weakness Limited exercise tolerance Altered breathing pattern Weak cough effort Changes in blood gases Treatment of respiratory muscle weakness Restore balance between supply and demand Increase strength and endurance resistive devices diaphragmatic breathing isocapneic breathing pursed lip breathing pacing Improved nutrition status Assessment of restorative techniques Bronchial clearance techniques P.E.P. therapy Flutter device Huff cough Glossopharyngeal breathing (GPB) Unit 5 - Relaxation techniques Stress Definition Sources Family/social interaction Decision making Changes in routine Changes in work Physical changes (illness or pain) Phobias Body reaction to stress Effects of unmanaged stress s p; Alarm reaction Resistance Exhaustion Stress management Steps Give (self) permission to change Make a commitment Make a written list include genuine wants define impediments make a plan of action Relaxation techniques Progressive muscle relaxation Scanning Contract/relax Imagery Word (mantra) Music Unit 6 - Patient Education Learning Principles Learning is an experience Positive aspects Negative aspects Uniqueness to the individual History of patient education Old attitude New attitude Desire for information Partnership with healthcare Improved compliance Fewer complications How to educate Domains of learning Use of instructional objectives Creating printed materials Simplicity Clarity Type style and margins Constructing informational data Check list for educat ional materials Information is appropriate in scope Information is appropriate in content for the audience Material is organized in a logical manner Information is consistent with established policy Reading level is appropriate for the audience Illustrations are accurate The aid is practical in terms of cost and usability Unit 7 - Evaluating Equipment Product utilization and the customer Role of the manufacturer Role of the distributer Role of the dealer/retailer Customer/patient relations Selecting products Considering market potential Considering reliability Who is believable Warranties and support Manufacturer Remote service centers Evaluation performance Purchase considerations Cash on delivery Net 30 Delayed billing Contract pricing Freight costs Purchase orders Unit 8 - Oxygen therapy Benefits N.O.T.T. study Lancet study Qualifying for reimbursement Private Health insurers Medicare Diagnosis Laboratory evidence Medi-cal/IMS Equipment considerations Stationary tanks Advantages Disadvantages Oxygen concentrat ors Advantages Disadvantages Liquid oxygen systems Advantages Disadvantages Selecting the correct system Oxygen conserving devices Cannulas Electronic conservers Transtracheal catheters Home aerosol and humidity therapy Humidity therapy Limits of humidification Types used in home care Aerosol delivery Continuous aerosol Medication aerosol Hand held nebulization Metered dose inhaler Unit 9 - Mechanical ventilation Benefits of home mechanical ventilation Medical benefits Financial considerations Potential candidates Patient pathology Patient psychology Family concerns Types of ventilators Positive pressure ventilators Lifecare Puritan Bennett Bear Negative pressure ventilators Drinker Collins Cuirass types Alternatives to ventilators Rocking beds P neumobelts Chest cuirass Home ventilator planning Family concerns Education Equipment and home access

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)

Instructional Techniques

Lecture and application of ideas; demonstration of equipment.

Reading Assignments

Students will spend 1-2 hours per week reading from assigned textbook.

Writing Assignments

Students will spend 1-2 hours completing written homework assignments and case studies for each unit of the course. Proficiency will be demonstrated by satisfactorily completing assignments with a 75% or better. Students will demonstrate critical thinking skills and apply knowledge of pulmonary patient home care and rehabilitation through satisfactory completion of in-class written exams containing home

equipment diagrams, multiple choice and short answer questions and mathematical calculations.

Out-of-class Assignments

Students will spend 1-2 hours per week completing homework assignments and case studies to apply knowledge of the techniques and equipment utilized in the pulmonary patient home care and rehabilitation setting. Students will spend 1-2 hours per week in small groups working on a patient education project creating an instructional media intended for patient use using one of the themes listed: disease management, using and cleaning home respiratory equipment, or travel tips for patients with breathing problems.

Demonstration of Critical Thinking

Written content based and objective examinations.

Required Writing, Problem Solving, Skills Demonstration

Written examinations.

Eligible Disciplines

Respiratory technologies: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Cairo, J.M.. Mosbys Respiratory Care Equipment, 10 ed. St. Louis, MO: Elsevier, 2018