Respiratory Therapy Program

Burn Unit Rotation

The burn unit rotation will consist of a 2 day assignment observing and performing respiratory care procedures under the supervision and direction of a licensed Respiratory Care Practitioner throughout each day. The student has already completed competencies for delivering therapies from basic respiratory therapeutics to ICU respiratory care (see student clinical manual for further details).

The objectives of the burn unit rotation are to:

- Allow observation and exposure of the student to the burn unit setting
- Identify the special needs and respiratory care involved for burn patients
- Continue to integrate knowledge with practice and perform respiratory care procedures with this specific patient population

Here is an outline to help the burn unit site and student meet objective goals:

1. Introduction to the burn unit site
    a. Staff
    b. Hours
    c. Responsibilities / Job description
2. Discuss routine in a typical day
3. Equipment
    a. Ventilator
    b. Infection control equipment
    c. Debreeding room
4. Procedures
    a. Infection control standards as they relate to this patient population
    b. Debreeding protocols
    c. Patient documentation

Students have undergone evaluation for standard practices of delivering respiratory care in the ICU setting. Equipment and procedures specific to this institution and unit should be reviewed with the student to gain familiarity.

The student will complete a daily evaluation for each day in clinical. Part A is completed by the student and Part B is completed by the preceptor. This evaluation will serve as participation and documentation of student performance. It is the student's responsibility to facilitate this requirement and present to their preceptor.

In preparation for this rotation, review: Respiratory Disease, Chapter 43, p. 520 – 531

Note: Due to the high susceptibility to infection of this patient population, the student should not report to the clinical site if they show signs of respiratory infection, i.e. cold or flu.

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Respiratory Therapy Program

Homecare Rotation

The homecare rotation will consist of a 2 day assignment following a practitioner throughout each day. The student has already completed competencies for delivering therapies from basic respiratory therapeutics to ICU respiratory care.

The objectives of the Homecare rotation:

- Student exposure to the homecare setting
- Identify differences between homecare and acute care respiratory therapy
- Understand how reimbursement for respiratory care services is achieved
- Interact with a patient with lung disease in the homecare setting

Here is an outline to help the homecare site and student meet objective goals:

5. Introduction to the Homecare site
    a. Staff
    b. Hours
    c. Responsibilities / Job description
6. Discuss routine in a typical day
7. Equipment Inventory
    a. Durable
        i. Oxygen delivery systems
        ii. Air compressors
        iii. CPAP / BIPAP machines
        iv. Ventilators
    b. Disposables
8. Reimbursement
    a. Medicare/Medicaid guidelines
    b. Documentation needed for reimbursement
    c. Rental vs. Purchase
9. Homevisit
    a. Setup of new client
    b. Client assessment
    c. Equipment troubleshooting
10. Patient and Family Education
    a. Participate in an education session

The student will complete a daily evaluation for each day in clinical. Part A is completed by the student and Part B is completed by the preceptor. This evaluation will serve as participation and documentation of student performance. It is the student's responsibility to facilitate this requirement and present to their preceptor.

In preparation for this rotation, read: Egan, Chapter 51 P. 1258 - 1286

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Respiratory Therapy Program

PULMONARY REHABILITATION ROTATION: MAKING A DIFFERENCE FOR PERSONS WITH COPD

INTRODUCTION

COPD now ranks as the fourth leading cause of death in the US. COPD-related deaths rose 60% from 1970-1980 (Dept. HHS). The estimated cost for these illness in 1982 was more than $26 billion (Lenfant, C). According to 1986 data tracking 923,000 hospitalizations, COPD and related factors were the first-listed conditions in a summary of hospital discharges (Higgens, MW).

COPD and its resulting complications and physical limitations usually develop insidiously. Due to a large reserve in lung function, COPD often doesn't produce severe symptoms until the disease's advanced stages. As the symptoms develop, many persons with COPD become inactive due to fatigue and fear of dyspnea, resulting in deconditioned muscles and progressively isolated lifestyles. Pulmonary Rehabilitation (PR) offers persons with COPD a better quality of life (Guyatt), well-being (Atkins), and improved health status (Make)— including reduction in respiratory symptoms, increased exercise tolerance, less anxiety, and enhanced feelings of hope, control, and self-esteem.

PULMONARY REHABILITATION

Goals of Pulmonary Rehabilitation

- Improve function
- Improve control of shortness of breath
- Promote independence
- Improve quality of life

Pulmonary Rehabilitation provides a multidisciplinary approach to restoring patients to their highest possible level of independent function.

Components of Pulmonary Rehabilitation

- Education Of Disease Process: A&P, disease, PFT's
- Retraining Of Breathing (Pursed-Lip Breathing, Diaphragmatic Breathing): rest & exercise
- Techniques Of Secretion Clearance: PDP, Huff cough, PEP, flutter valve therapy
- Proper Use Of Medications, Actions, And Side Effects: sequence, prevention of candidiasis
- Techniques And Cleaning of MDIs, Spacers, And Nebulizers
- Use Of Oxygen—Precautions And Portability,)2 Rx with rest, exercise & sleep
- Psychosocial Support, Stress Management, Panic control, depression issues
- Conservation Of Energy, Pacing, Stair Climbing
- Control And Prevention Of Infection, vaccination
- Smoke cessation
- Travel with Lung Disease
- Pulmonary Irritants and Asthma Triggers
- Nutrition
- Sexuality issues
- End of life issues

- **Monitored Exercise**: treadmill, stationary bicycle, arm ergometer, weight lifting and resistance exercises.
  Goal: 30 minutes of continous aerobic exercise (treadmill, bike)
  Exercise Rx: Mode, Intensity, Duration
  Types of Exercise: Aerobic, Resistance, Flexability

Patient Selection for Pulmonary Rehabilitation

Any patient with symptomatic, moderate to severe chronic lung disease is a candidate for a PR program. Patients should generally be stabilized on standard medical therapy. The patient should be accurately diagnosed with recent PFTs. Other diagnostic tests that may be appropriate include exercise testing, ABGs, EKGs, and blood counts and chemistries.

How Pulmonary Rehabilitation "Makes a Difference"

PR offers a cost-effective method of improving function, controlling dyspnea, and reducing respiratory-related hospitalizations. Several reports have followed patients for long-term analysis of results of PR. Hudson surveyed COPD hospitalizations over a four-year period for those patients who had participated in the PR program. For the 44 patients still alive at the end of that period, hospital days were reduced from 529 in the year preceding the PR to 145, 270, 278, and 207 days in the four years after PR.

Seton Medical Center in Daly City performed follows-up on 234 patients for an 18-month period (1991 through 1998) after discharge from PR. For the sample, the average respiratory hospital stay decreased 71% from the year preceding to the year following PR.

CONCLUSION
PR offers a unique opportunity to improve the quality of life, function, and exercise capacity of persons with COPD while reducing the costs associated with their care.

* * * * *

Role of the student RCP in Pulmonary Rehabilitation setting

Chart review
Review resources for patients: self - tour of department
Attend patient education class: 9:30 & 1pm
Observe (and assist if possible) exercise sessions: 1:30-1pm, 2-3:30pm

During exercise sessions:

- Introduce yourself to patients, try to be social (a great distraction from dyspnea) and reasonably encouraging
- Check SpO_2 (at rest and at least once – *usually more frequently* during exercise). Report any abnormalities to staff, e.g., severe dyspnea, pain, SpO2 < 90%
- Ask patient their level of shortness of breath with exercise: 1-10 on Borg scale.

The student will complete a daily evaluation for each day in clinical. Part A is completed by the student and Part B is completed by the preceptor. This evaluation will serve as participation and documentation of student performance. It is the student's responsibility to facilitate this requirement and present to their preceptor.

In preparation for this rotation, read: Egan, Chapter 50 p.1233 - 1253

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Respiratory Therapy Program

SubAcute Rotation

The subacute rotation will consist of a 2 day assignment observing and performing respiratory care procedures under the direction of a licensed Respiratory Care Practitioner throughout each day. The student has already completed competencies for delivering therapies from basic respiratory therapeutics to ICU respiratory care (see student clinical manual for further details).

The objectives of the subacute rotation are to:

- Expose the student to the subacute setting
- Identify differences between subacute and intensive care respiratory therapy
- Continue to integrate knowledge and perform respiratory care procedures with this patient population

Here is an outline to help the subacute site and student meet objective goals:

11. Introduction to the subacute site
    a. Staff
    b. Hours
    c. Responsibilities / Job description
12. Discuss routine in a typical day
13. Equipment
    a.
    b. Ventilator
        i. Circuit
        ii. Modes
        iii. Parameters
        iv. Alarms
        v. Troubleshooting
14. Airway Management
    a. Tracheostomy
        i. Cleaning
        ii. Changing
        iii. Suctioning
        iv. Infection Control
15. Therapies
    a. Oxygen
    b. Aerosol
        i. Bland
        ii. Medication
    c. Airway clearance
16. Procedures
    a. Weaning Protocols
    b. Patient documentation
    c. Arterial Blood Gas Draw
        i. Indication
        ii. Contraindication
        iii. Sample sites

iv. Procedure
v. Complications

The student will complete a daily evaluation for each day completed. Part A is completed by the student and Part B is completed by the preceptor. This evaluation will serve as documentation of student performance .

In preparation for this rotation, read: Egan chapter 51 P. 1256 - 1286

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Respiratory Therapy Program

Sleep Lab Rotation

Information and Preparation for Student Observation at
UCSF/Mt. Zion Sleep Disorders Center

BACKGROUND

Reasons for and benefits of a sleep study
- OSA, CSA, UARS, Alveolar Hypoventilation
- Many of these disorders may be hard to DX and TX w/o a sleep study

How to read the patient chart for physician orders
- Dx, Split, CO2 monitoring

Preparing the equipment
- Cal SpO2, CO2, PSG, Computer

Preparing the patient
- Education (videotape), electrodes, rules (call tech)

MONITORING THE SLEEP STUDY

Differentiating the waveforms
- EEG, EOG, EMG, Legs, snore, EKG, A/F, Thor, Abd, SpO2, TCCO2

The key waveforms for identifying sleep apnea
- Snore, A/F, Thor, Abd, SpO2

Troubleshooting the waveforms

TREATMENT INTERVENTIONS

Why and when to apply CPAP/BiLevel therapy
Different masks, and how to fit them properly
Titration of therapy

FINAL INTERACTIONS WITH THE PATIENT

Final settings of therapy
Educating patient on machines and masks
Calling in the order to Homecare

PATIENT FOLLOW-UP

Homecare responsibilities
- Follow-up program
- Communication with sleep lab
- Communication and availability to patient

Sleep lab responsibilities
- Follow-up program
- AWAKE Group

Patient responsibilities
- Assertiveness and interest in therapy
- Communication with support systems (Sleep lab, M.D., Homecare Co.)

Sleep Lab:

Egan Chapter 30 P. 625 - 638
Des Jardins Ch. 31 p. 414-426
CPG - Polysomnography

Respiratory Therapy Program

Pulmonary Function Rotation

The pulmonary function rotation will consist of a 2 day assignment observing and pulmonary function rotation procedures under the direction of a licensed Respiratory Care Practitioner throughout each day.

The objectives of the pulmonary function rotation are to:

- Expose the student to the pulmonary function setting
- Apply pulmonary function theory with practice
- Continue to integrate knowledge and assist with pulmonary function procedures with this patient population

Here is an outline to help the pulmonary function site and student meet objective goals:

1. Introduction to the pulmonary function site
    a. Staff
    b. Hours
    c. Responsibilities / Job description
2. Discuss routine in a typical day
3. Pulmonary Function Tests
    a. Flow/volume loop
    b. Plethysmography
    c. DLCO
    d. Brochodilator efficacy (Pre-Post)
    e. Bronchial Provocation
    f. Metabolic Study
4. ABG / Co-oximetry
    a. Blood draw procedure
    b. Laboratory test procedure
    c. Equipment calibration

The student will complete a daily evaluation for each day completed. Part A is completed by the student and Part B is completed by the preceptor. This evaluation will serve as documentation of student performance.

In preparation for this rotation, read: Egan Chapter 19 P. 399 - 429

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Respiratory Therapy Program

Neuromuscular Clinic Rotation

The neuromuscular clinic rotation will consist of a 1 day assignment observing and performing respiratory care assessment and procedures under the direction of a licensed Respiratory Care Practitioner throughout each day. The student has already completed competencies for assessing and delivering therapies from basic respiratory therapeutics to ICU respiratory care (see student clinical manual for further details).

The objectives of the neuromuscular clinic rotation are to:

- Expose the student to the neuromuscular clinic setting
- Identify differences between neuromuscular clinic and other respiratory care settings
- Continue to integrate knowledge and perform assessment and respiratory care procedures with this patient population

Here is an outline to help the neuromuscular clinic site and student meet objective goals:

1. Introduction to the neuromuscular clinic site
    a. Staff
    b. Hours
    c. Responsibilities / Job description
2. Discuss routine in a typical day
3. Assessment of the neuromuscular patient
    a. Vital signs
    b. Respiratory patterns
    c. Pulmonary mechanics
4. Considerations in airway management
    a. Pulmonary secretions
    b. Tracheostomy
5. Ventilation assistance
    a. Devices
6. Disease progression
7. Treatment plans

The student will complete a daily evaluation for each day completed. Part A is completed by the student and Part B is completed by the preceptor. This evaluation will serve as documentation of student performance.

In preparation for this rotation, read: AARC Respiratory Care Journal –
"Respiratory Effects of Amyotrophic Lateral Sclerosis: Problems and Solutions
Respiratory Care – August 2006 – Vol 51 – No. 8
The Neuromuscular Respiratory System: Physiology, Pathophysiology, and a Respiratory Care Approach to Patients"
Respiratory Care – August 2006 – Vol 51 – No. 8

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