

**Respiratory Care Protocols: Education and Implementation Manual for Managers, Staff, and Students.** Judy Tietsort RN RRT FAARC, Michael McPeck RRT FAARC, and Douglas E Masini EdD RPFT RRT NPS AE-C FAARC. Dana Point, California: Academy Medical Systems. 2007. Soft cover, 175 pages, with CD ROM, \$99.

Respiratory care protocols have been shown to improve the efficiency of delivering respiratory care and to decrease costs. The use of respiratory care protocols has been endorsed by the American Association for Respiratory Care (AARC) and the American College of Chest Physicians. Although respiratory care protocols have been in use for over 15 years, it is not known exactly how widespread their use is. **Respiratory Care Protocols: Education and Implementation Manual for Managers, Staff, and Students** is a 175-page soft-cover manual designed to assist respiratory care managers with the development, staff education and training, and implementation of respiratory care protocols. The intended readership includes respiratory therapists, supervisors, educators, managers, medical directors, and administrators.

The book's introduction defines respiratory care protocols and briefly refers to the rationale for using them. Special messages directed to hospital administrators and respiratory care medical directors are included, as is a list of the medical director's responsibilities, as put forth by the National Association for Medical Direction of Respiratory Care.

The remainder of the manual is divided into 5 sections: Implementation, Education, Case Studies, Competency Assessment, and Bibliography.

The implementation section provides examples of 4 basic protocols, along with their objectives and common treatment modalities, examples of "boundaries" that indicate when a physician should be notified, and examples of care plan documentation forms.

The authors state that using evidence-based guidelines is desirable but that the example protocols may need to be modified to fit specific institutional preferences.

The education section contains an extensive outline regarding patient assessment and relating observed signs and symptoms to

the appropriate clinical protocol. The next part of this section provides examples of diagnosis-related protocols for 5 common respiratory-related diagnoses (asthma, chronic obstructive pulmonary disease [COPD], congestive heart failure, pneumonia, and postoperative complications). The treatment goals and indications are outlined and correlated with the 4 therapeutic protocols featured in the manual. The last portion of this section is devoted to 2 examples of educational content that could be used by a respiratory therapist for patient education on asthma and COPD.

Section 3 contains 3 case studies, on chronic bronchitis, asthma, and pulmonary edema, which are designed to test the therapist's competency to use the protocols correctly. The case studies are borrowed from *Respiratory Care Case Studies: The Therapist-Driven Protocol Approach*, by Des Jardins, Burton, and Tietsort, published by Mosby in 1997. The case reports are very detailed and describe the initial assessment and subsequent re-assessments, which were conducted with the SOAP (subjective, objective, assessment, plan) approach, commonly used by nurses. There is a list of key points and questions at the end of each case study. Practice cases are provided for use in a group activity to foster discussion.

Section 4, on competency assessment, has the same general goal as Section 3, but these competencies pertain more to the therapist's ability to perform therapy appropriately. There are 7 blank therapeutic modality competency forms, along with the associated answer keys. These forms can be modified to fit specific institutional practices.

The final section is an extensive bibliography of both peer-reviewed and non-peer-reviewed articles, and text books. The authors give their rationale for providing a bibliography rather than referencing the manual.

There are nice tables at the end of the section on education, designed for each of the 4 protocols featured in the manual. The tables correlate protocol goals with common signs and symptoms that indicate the protocol.

The case study re-assessment scenarios provide an opportunity for the therapist to determine when the therapy should be modified (increased or decreased). These are very

helpful and important decision-making exercises.

The examples of educational content for therapists to use for patient instruction provide excellent models for developing institution-specific education guidelines. Something similar for smoking cessation would be a nice addition.

The key points and questions at the end of each case study are also very detailed and will be very useful for educators. The practice cases are also helpful.

The book comes with a compact disc that contains a Microsoft PowerPoint presentation of the education materials in Section 2. Department educators will be delighted with this added feature, as it makes providing an assessment review for staff quite easy. The presentation is provided in 3 different formats, so most everyone should be able to access the file.

The book would be strengthened by several modifications. First, in the introduction, the rationale offered for using respiratory care protocols would be more meaningful if a few specific references were included. The same applies to the special messages for hospital administrators and medical directors. These messages are specifically designed to convince those individuals that respiratory care protocols would benefit their hospital and respiratory care department. Including specific references would make that assertion more convincing and obviate searching through the bibliography for articles that support respiratory care protocol implementation.

The section on implementation provides the basic tools (eg, the 4 basic protocols, tables) but it lacks a description or process for gaining acceptance ("buy-in") from the parties involved in implementing respiratory care protocols. A very brief outline of the process, along with text that stresses the importance of buy-in, could serve the purpose.

Also, the indications used in the example protocols are not well aligned with the AARC Clinical Practice Guidelines. It would seem that the AARC guidelines should be put forth as the model, with the acknowledgment that modifications may be needed.

The indications used in the examples do not always correspond to the stated outcome criteria. For example:

1. The inhaled bronchodilator protocol does not mention the need to mobilize secretions in the indications, but improved ability to mobilize secretions is listed as an outcome.

2. The lung re-expansion protocol does not mention fever in the list of indications, but resolution of fever is listed as an outcome.

The indications listed in the recap at the end of the section, are not the same as the indications previously provided. I realize that the indications for therapy differ from hospital to hospital, but the inconsistency within this section could be confusing.

Although the SOAP technique is an effective assessment process, the purposes of this manual might be better served if the assessment and evaluation process used in the case studies were consistent with the format of the example assessment forms and care plans presented in the section on implementation, so the case studies would better serve as reinforcement.

The re-assessment portion of the case studies uses the terms “up-regulate” and “down-regulate” in reference to therapy modifications. It may be more meaningful for students if the changes were more completely described: does up-regulate suggest greater frequency, higher dose, or both?

Finally, perhaps it is time to omit mention of ethanol nebulization. There are probably only a few of us who recall this therapy, as it has not been recommended for some time.

This book contains a great deal of useful information that can help educate respiratory therapy staff regarding patient assessment and evaluation, and can facilitate implementation of respiratory care protocols. The basic groundwork is provided and needs only to be modified to fit the user’s specific institution. Overall, the book will be a useful addition to libraries in hospital where respiratory care protocols are in use or are being contemplated. The modifications suggested above would make the book even more useful, internally consistent, and attractive.

**Lucy Kester MBA RRT FAARC**

Section of Respiratory Therapy  
Respiratory Institute  
Cleveland Clinic  
Cleveland, Ohio

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**Pulmonary Physiology and Pathophysiology: An Integrated, Case-Based Approach**, 2nd edition. John B West MD PhD DSc. Philadelphia: Point/Lippincott Williams & Wilkins. 2007. Soft cover, illustrated, 166 pages, \$36.95.

West’s **Pulmonary Physiology and Pathophysiology** offers a case-based introduction to both respiratory physiology and pathophysiology. This relatively uncommon format is targeted toward curricula that combine physiology and pathophysiology into a single course. The text is derived from the author’s 2 renowned, widely read books *Respiratory Physiology: The Essentials* and *Pulmonary Pathophysiology: The Essentials*. Although the new 2nd edition is also case-based and offers new chapters on respiratory infections, lung cancer, and cystic fibrosis, the target audience remains pre-clinical students. The discussion of epidemiology, natural history, diagnosis, and treatment of respiratory diseases is limited in scope, and this lack of clinical emphasis limits its applicability to routine practice. However, the discussion of physiology and pathophysiology is sufficiently detailed to serve as a resource for other clinicians, including respiratory therapists, residents, and pulmonary subspecialists.

The first 2 chapters focus exclusively on normal physiology. Chapter 1 reviews oxygen uptake and delivery in the context of a maximal exercise test in a normal subject. In Chapter 2 a climber at high altitude provides the framework for discussing acid-base status and control of ventilation. The subsequent 7 chapters use a case presentation of a respiratory disease as a springboard for further discussion of the relevant physiology and pathophysiology. For instance, Chapter 3 compares pressure-volume curves, regional differences in ventilation, airway closure, dynamic compression of airways, arterial blood gases, ventilation-perfusion mismatch, and pulmonary function tests in normal subjects and patients with chronic obstructive pulmonary disease. Other case presentations include asthma, pulmonary fibrosis, pulmonary embolism, coal workers’ pneumoconiosis, congestive heart failure, and acute respiratory distress syndrome. Although coal workers’ pneumoconiosis is infrequently encountered, the author uses it to frame a discussion of inhaled pollutants and aspects of host defense. Each chapter ends with 3 to 10 multiple-choice questions.

Readers familiar with the author’s previous introductory texts will recognize much of the same material in **Pulmonary Physiology and Pathophysiology**. This heavy reliance on time-tested text and figures is, overall, a strength of the book. The figures are particularly effective in rendering complex physiology comprehensible to the novice learner. The non-linear discussion of related topics inherent to a case-driven approach to the material does present challenges. For instance, the chapter on pulmonary fibrosis refers the reader back to figures from previous chapters over a dozen times and alludes to material to be discussed in subsequent chapters on a number of occasions. The text manages this issue as well as can be expected.

Although the format is case-based, discussion of the clinical aspects of respiratory disease is limited. This is particularly true of respiratory infections. For instance, in the less than 1 page of text dedicated to community-acquired pneumonia, there is no discussion of host defense, routes of acquiring pneumonia, or treatment. Similarly, tuberculosis is covered in a third of a page and pulmonary complications of human immunodeficiency virus in one paragraph. There is no discussion of respiratory disease in other immunocompromised populations. Arguably, further discussion of non-infectious-disease topics, such as pleural effusion, massive pulmonary embolism, and obstructive sleep apnea, would also enhance understanding of the relevant pathophysiology and highlight the clinical applicability of the material. However, some of these limitations may not be a concern if these topics are covered elsewhere in the curriculum by another discipline.

There are several instances in which aspects of the clinical material are suboptimally presented. For instance, chest computed tomography angiogram, D-dimer assay, and lower-extremity Doppler ultrasound are not mentioned as diagnostic options for pulmonary embolism, even though lower-extremity venography, radioactive fibrinogen uptake, and impedance plethysmography are included. There is no mention of inherited hypercoagulable states, yet Homans sign, which has poor sensitivity and specificity, is covered. In the chapter on pulmonary fibrosis the case presented is referred to primarily as “diffuse interstitial pulmonary fibrosis” rather than idiopathic pulmonary fibrosis, there is no mention of the pathology term “usual interstitial pneu-