

Rau's Respiratory Care Pharmacology, 7th edition. Douglas S Gardenhire EdD(c) RRT. St Louis: Mosby Elsevier; 2008. Softcover, illustrated, 544 pages, \$61.95.

Workbook for Rau's Respiratory Care Pharmacology, 7th edition. Douglas S Gardenhire EdD(c) RRT, Robert J Harwood, MSA RRT. St Louis: Mosby Elsevier; 2008. Softcover, 256 pgs. \$25.95.

This 7th edition of the first pharmacology textbook for respiratory therapy students maintains the focus of the previous 6 versions under the editorship of Gardenhire. It continues to meet respiratory care faculty and practitioner expectations about the organization and completeness of Rau's compilation, and some new expert contributors have improved and updated its content. Although, as with previous versions, this text is focused for the respiratory care student, it will serve as a clinical resource for anyone interested in the pharmacology for pulmonary pathologies, and as an introduction to the developing interest in the pulmonary route for drug delivery. As a resource for the respiratory care student, the text also describes drugs for the cardiac, renal, and neurologic systems, and for infectious processes. This book is a good reference for the wide range of medications that respiratory therapists must consider as medicine becomes more complex and the practice of respiratory care expands to include tasks such as the administration of drugs for conscious sedation.

As in prior editions, the text is divided into 3 units: Basic Concepts and Principles of Pharmacology; Drugs Used to Treat the Respiratory System; and Critical Care and Cardiovascular Drug Classes. The table of contents has been condensed, and several items are noteworthy. Unit I contains the fundamentals of pharmacology and still has a reference chapter on aerosol drug administration. Although other texts within a respiratory care curriculum will contain that information, this is an important convenience. Chapters 6 and 7 lost the 6th edition's sections on the history and development of adrenergic and anticholinergic

bronchodilators, which described the prototypical drugs in those 2 categories and thus established the connection to the physiologic neurotransmitter. That section may also have aided the student's understanding of chemical structure and receptor specificity.

Unit III, "Critical Care and Cardiovascular Drug Classes," has content updates and more tables in Chapters 19 and 20. Chapter 19 has been nicely reorganized and renamed from "Cardiac Drugs" to "Vasopressors, Inotropes, and Antiarrhythmic Agents." Many of the section headings have been modified, and the section "Agents Used in the Management of Shock" was added. The updates to these 2 cardiovascular chapters are examples of material from the expert contributors to this edition. Two thirds of the 16 contributing authors hold a doctorate in pharmacy.

The text's readability has been improved by changes in the color and fonts of the chapter headings and subheadings. Graphics and illustrations have become full color—a substantial improvement over the 6th edition. The instructor's resources at Elsevier's *Evolve* Web site (<http://evolve.elsevier.com>) have also been improved and include images from the text, which are suitable for lecture slides. That, combined with the companion workbook and a test bank, provides an excellent foundation of instructional resources for a respiratory care pharmacology course.

The outline at the beginning of each chapter has been continued in this edition, as have the self-assessment questions and clinical scenarios. The clinical scenarios provide an opportunity to introduce the development of critical thinking skills in a curriculum-comprehensive manner. The summaries of key terms and concepts at the end of each chapter have become "key point thumb prints" interspersed throughout the chapter. New to this edition are chapter objectives, which coincide with learning objectives in the companion workbook.

The content is very well referenced, and the citations have been updated where necessary. Important historical citations were retained, and unnecessary and outdated citations were removed and new citations added. For example, in Chapter 9, on mu-

cus-controlling drugs, the number of citations increased from 83 to 172, whereas some other chapters now have fewer citations. The inclusion of a discussion on a small-particle aerosol generator is interesting and gave me pause. It is notable as an example of how well Gardenhire handles pharmacology, with the ability and commitment to present some of the most difficult pharmacologic concepts, mechanisms, chemical structures, receptor structure and function, and mechanisms of drug action. Although ribavirin is no longer recommended for the treatment of respiratory syncytial virus, Gardenhire discusses ribavirin while explaining respiratory syncytial virus, and discusses concern about occupational exposure. Hopefully, this will raise this as a discussion topic among respiratory therapists and help them more comprehensively consider the risks of aerosol delivery.

The companion workbook, by Gardenhire and Harwood, is a welcome addition to the instructional toolbox. Where applicable, the workbook contains supportive review information that is presented less formally than in the textbook and, at times, in a conversational tone. These sections dovetail with the chapter outline and reinforce the key points from the text. The contents of the 2 books are well organized and matched. Exercises ranging from key terms and definitions to National Board for Respiratory Care type questions orient the student, provide an organized study pattern, and progress to more complex critical thinking and professional-examination-level practice questions. Some chapters include a Respiratory Care Assessment of Therapy category that initiates the critical thinking process, which is continued with case-study activities—an excellent continuation of the book's content.

Gardenhire's 7th edition of **Rau's Respiratory Care Pharmacology** is a complete, updated version of a textbook already known for its quality treatment of its topic. It is improved by text fonts and full-color graphics, and enhanced by Elsevier's *Evolve* instructor resources and the student workbook. There is only one aspect of this book that left me less than satisfied: the cover. As

a valuable resource for students and practitioners, this book is worthy of a hard cover.

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Chronic Obstructive Pulmonary Disease: A Forgotten Killer. Carol Midgley, editor. *Introducing Health Sciences: A Case Study Approach* series. Basiro Davey, series editor. Oxford UK: Oxford University Press/The Open University. 2008. Soft cover, illustrated, 108 pages, with DVD, \$37.50.

This book is one of 7 separate presentations that compose the text material for an Open University first-year introductory course in an undergraduate program in health sciences. As the foundation for a distance-education course, its DVD and Web site provide multimedia learning materials and activities. Some resources and activities are only accessible by enrolled Open University students, but this does not detract from the text's ability to stand alone.

The book is professionally presented, with liberal use of color photographs, charts, tables, and boxes. Interspersed through the text are "life snippets" from 2 women with chronic obstructive pulmonary disease (COPD), which personalize the text's academic points. The book's intended audience is novices; it introduces many global issues associated with disease in general and COPD in specific. The book is very easy to read and uses a global approach, both geographically and theoretically, which is refreshing. It assumes a very low entering knowledge base and discusses such concepts as scientific objectivity, statistical probability, and how chemical bonds hold atoms together to form simple and complex molecules.

One peculiarity that manifests the book's European roots is its use of the terms "respiratory nurse" and "clinical specialist respiratory physiotherapist," rather than the more familiar North American terms "respiratory therapist" and "pulmonary function technician." It also uses British spellings such as "humour."

Chapter 1 presents a very basic introduction to COPD and its morbidity and mortality. A couple of very interesting tables are provided. One compares the 10 leading health risks in the world, Europe, and Africa, based on 2000 data from the World

Health Organization. Europe has a predictable list of risks, similar to that in the United States. Health risks worldwide and in Africa are quite different; the number 1 and 2 health risks are being underweight and unsafe sex (the latter barely made the European list, at number 10). The other noteworthy table lists the leading causes of mortality globally in 2002 and the predicted leading causes in 2030.

The DVD has a fascinating 13-minute video that focuses on the personal experiences of individuals coping with COPD. It provides insight on the plethora of factors that contribute to COPD sufferers' limitations during physical and social activities. A common reason given for not attending social functions was the fear of having a coughing attack that would draw disapproval in a formal setting or unwanted attention in a casual setting.

Given the overall tenor of the book, Chapter 2 provides a surprisingly thorough discussion of the worldwide prevalence of COPD and which populations are most likely to contract it. Various studies are referenced, and the Latin American COPD prevalence study (PLATINO, <http://www.platino-alat.org>) is used to make several points. There is a revealing discussion on the role of sex in COPD development, and the contrast between developed nations and developing nations in the pattern of COPD. A theme throughout the book is that tobacco is the most important cause of COPD worldwide. Globally, approximately 15% of COPD may be due to occupational exposure. Although workplace health and safety are increasingly being addressed by a growing number of countries, smoky and dusty work environments continue to have a global impact. Another rarity in western society is home exposure to smoke from biomass fuels such as dung and crop residues, which, globally, remain an important cause of respiratory disorders, including COPD.

Chapter 3 focuses on respiratory anatomy and physiology. Considerable space is spent on such basic concepts as molecules, chemical bonds, balancing of chemical equations, and gas physics. The chapter ends with a brief description of the oxygen cascade. The majority of the 15-min multimedia presentation provides little that is not found in the text, but in a different format. The presentation ends on a high note, with innovative magnetic-resonance-imaging lung studies with inhaled magnetized hyperpolarized helium 3, in a healthy volun-

teer and in a patient with COPD. The images clearly show the marked contrast in gas movement and distribution between the normal lungs and those with COPD. There is also an excellent artificially colored electron microscopy image of respiratory epithelium, which shows cilia, mucus-producing cells, sputum, and a dust speck.

Chapter 4 describes the mechanisms involved in transporting oxygen from the lungs to the tissues via the cardiovascular system. The crucial relationship between hemoglobin and oxygen transport is well discussed in simple terms. A nice presentation is made on the impact of carbon monoxide poisoning on oxygen transport. Other topics discussed include cor pulmonale and the effects of hypoxia on cognitive function. Staying at the introductory level, the authors indicate that it would benefit a patient with COPD to breathe 100% oxygen rather than air for most of the day. This simplification is justified perhaps at the introductory level, but it does gloss over some important clinical considerations, such as that patients with COPD generally respond readily to small increases in $F_{I_{O_2}}$, and that when initiating oxygen therapy we must monitor for oxygen-induced hypoventilation, though that is fairly rare. I give this example because it represents the book's overall approach. The chapter ends with a brief discussion of the relationship between CO_2 and blood pH and how in COPD pulmonary dysfunction may lead to a low blood pH that can interfere with many body processes.

Chapter 5 gives an overview of the immune system and how chronic irritation affects the lungs. It presents how large numbers of phagocytic cells migrate to the lungs, where they release large amounts of elastase, which overwhelm the body's natural defenses and break down healthy lung tissue. This leads to loss of alveoli, as in emphysema, and chronic airway changes associated with bronchitis. The presentation is consistent with the target novice audience. There are 2 great figures in this chapter. One is a color electron microscopy image of a particle being engulfed by a phagocyte. The second is photographs of normal lungs, alveoli, and an airway juxtapositioned with pictures of severely emphysematous lungs, alveoli, and an airway with chronic bronchitis.

Chapter 6 focuses on the diagnosis of COPD. The text proposes that there are 2 methods of diagnosis. The first is chest ra-