

**Principles and Practice of Sleep Medicine**, 4th edition. Meir H Kryer MD, Thomas Roth PhD, and William C Dement MD PhD. Philadelphia: Elsevier Saunders. 2005. Hard cover, illustrated, 1,517 pages (text with continually updated online reference), \$259.

Every specialty in medicine has a textbook that is considered to be the field's classic tome. In sleep disorders medicine, **Principles and Practice of Sleep Medicine**, affectionately referred to as "P&P," holds this honor. In 1989 the first edition was the only comprehensive text in this new field and served to educate an entire generation of sleep specialists. Now in its 4th edition, this multi-author text has kept pace with the explosive growth of the field of sleep disorders medicine. Despite the publication of many new texts over the last 15 years, in my opinion this newest edition continues to be the most encyclopedic reference for sleep medicine specialists.

The ideal textbook of sleep medicine would serve the needs of basic scientists, sleep physicians, trainees studying for board certification, sleep technologists, respiratory therapists, and primary care physicians. The book would be extensively referenced with reviews of sleep physiology/pathophysiology, descriptions of all the clinical syndromes, recommendations for treatment, an atlas of normal and abnormal polysomnographic fragments, and technical manuals for performing clinical laboratory testing. The book would include clinical pearls and tables/diagrams that could be quickly accessed by a busy clinician. **Principles and Practice of Sleep Medicine** approaches but does not quite meet this high standard.

The book is divided into 2 main sections. Part 1 is devoted to the basic science of sleep and comprises 47 chapters. Part 2, "Practice of Sleep Medicine," is a clinical textbook and includes 11 sections and 77 chapters. The sections and chapters are well organized in a thoughtful and useful fashion. Each chapter begins with an abstract and concludes with a 1 or 2 sentence clinical pearl. I found the abstracts quite helpful, but the clinical pearls

were too brief to be of practical value. The bibliographies remain exhaustive, despite being pared down to include only the most relevant references, which was done to make room for new chapters without increasing the overall length of an already large book, which is about 6 cm thick and weighs 3.6 kg. Its 1,517 pages use a small font, and the figures are pale blue, which make them hard to read unless you are at a well lit desk.

I was impressed with the quality of the editing. There was a consistent writing style among the chapters, written by 174 preeminent sleep scientists and clinicians. There is variability in the quality of the figures and tables. I was disappointed by the paucity of high-quality polysomnogram fragments to demonstrate normal and abnormal phenomenon and technical artifacts. This is a substantial deficiency, given the importance of polysomnograms to the clinical practice of sleep medicine. I found no typographic errors, but did find one incorrect reference.

The basic science chapters exemplify the strengths of this book. The chapters on rapid-eye-movement sleep physiology and the phylogeny of sleep regulation are concise but comprehensive reviews of their respective subjects. The chapters on acute and chronic sleep deprivation, melatonin, public health/policy, jet lag, sleep apnea and metabolic dysfunction, continuous positive airway pressure (CPAP) treatment, and fibromyalgia are well written. They all clearly summarize the literature on their respective topics, but I found them occasionally lacking in firm clinical recommendations. The chapter on fibromyalgia was an excellent review of this difficult subject. The section on pulmonary hypertension was terse and misrepresented the preponderance of evidence on this topic.

I then evaluated the book in my sleep center for its usefulness in researching clinical questions posed during our busy clinical practice. My colleagues provided additional questions relevant to their daily work. There were several helpful references about the effects of alcohol on sleep and sleepiness. I was able to develop an extensive differential diagnosis for a patient with recurrent, stereotypical hypno-

gogic hallucinations in the absence of hypersomnia. My neurologist sleep colleague was interested in CPAP tolerance in patients with Parkinson's disease and in algorithms for second/third-line therapy for periodic limb movements. I did not find any information on CPAP in Parkinson's patients. Treatment for periodic limb movements was not indexed, but there was a superb treatment summary in the chapter on restless legs.

My general internist sleep physician was interested in residual hypersomnia in sleep apnea patients who are otherwise well treated with CPAP. It took a few minutes, but I found excellent advice about his clinical situation. My doctorate sleep laboratory director was interested in technical standards for the multiple sleep latency tests and for analysis of actigraphy. I was very disappointed in the lack of detailed information about these very important clinical tests. The book cited references to some of his questions but did not itself provide the specific information. One of our hospital-based respiratory therapists was interested in the relationship between CPAP/BiPAP (bi-level positive airway pressure) and cardiac function, and in strategies to improve acceptance and compliance in patients being started on CPAP/BiPAP. I easily found an answer to her first question, but practical advice about CPAP was lacking. There were no specifics about custom mask fitting or clinical tips to improve compliance.

In summary, this state-of-the-art comprehensive textbook is an excellent reference for information about the physiology and pathophysiology of sleep disorders, but is not an ideal clinical handbook or technical manual for sleep technologists, sleep clinicians, or respiratory therapists. Every sleep specialist and sleep center should own a copy, but I would not recommend it for pulmonologists or respiratory therapists who do not specialize in sleep medicine.

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The author reports no conflicts of interest related to the content of this book review.

**Atlas of Sleep Medicine.** Sudhansu Chokroverty MD, Robert J Thomas MD MMSc, and Meeta Bhatt MD PhD. Philadelphia: Elsevier/Butterworth Heinemann. 2005. Hard cover, illustrated, 362 pages, \$95.

This is an updated and revised edition of a major atlas of sleep medicine that was first published in 2003. This book is a joint venture from a group of dedicated neurologists and pulmonologists who have successfully employed a multidisciplinary approach to sleep medicine. In this edition they successfully present a diagnostic overview of sleep medicine and carefully integrate recent changes in the knowledge and management of sleep disorders. It is clear that this multi-author atlas provides a new diagnostic perspective to sleep medicine and is indeed a culmination of years of clinical experience and reflection by its authors.

This atlas is organized into 2 sections: (1) basic aspects of normal sleep architecture and scoring sleep technology, and (2) the diagnostic and therapeutic aspects of sleep. The first section deals with the standard and the recommended recording montages used in sleep laboratories. The section skillfully discusses pneumography, home monitoring, and event recordings. Benefits and pitfalls are also assessed.

The book's second section reviews clinical examples and discusses the recording artifacts frequently encountered during sleep-disordered breathing, pediatric polysomnography, and with overnight sleep titrations.

This unique atlas begins with the basics of polysomnographic and electroencephalographic (EEG) techniques, with special attention to current American Academy of Sleep Medicine guidelines for scoring sleep stages. It clearly explains the interpretation of various EEG findings on sleep studies and covers most of the major disorders in the International Classification of Sleep Disorders. The authors also integrated the new International Classification of Sleep Disorders, 2nd edition, into their discussion and they explain which tests are available, the indication for each, and the findings one can expect.

The section on sleep-disordered breathing emphasizes obstructive sleep apnea. The book also reviews a long list of cardiac, neurologic, and psychiatric illnesses that impact sleep EEG patterns. The section on pediatric sleep disorders talks about the wide array of common and uncommon

clinical disease presentations. The carefully selected clinical cases and polysomnograms demonstrate important concepts that are used to synthesize interpretation and to diagnose sleep disorders. Another useful feature is the hypnogram analysis section in which multiple sleep histograms are studied, along with a guide for interpretation. All the figures are in black-and-white. There is lavish use of polysomnogram tracings and hypnogram plots to illustrate normal and pathologic sleep laboratory findings and artifacts. Also discussed are drug-related artifacts and EEG phenomena.

In this book, clinicians have an impressive array of clinical data and observations to add to their armamentarium for the diagnosis of sleep-related disorders in children. The authors included numerous excellent polysomnograms, hypnograms, and high-quality figures and tables to good effect. Many of the figures show accurate representations of actual patient recordings that illustrate normal and pathologic sleep processes in both adults and children, and these provide a hands-on guide to evaluating sleep disorders.

The primary audience is sleep health professionals, of all levels, who want an overview of clinical sleep medicine and to learn practical clinical implications of advanced polysomnographic interpretation of sleep diseases. This is a very readable and well-illustrated text, designed to provoke interest in sleep medicine specialists as well as neurologists, pulmonologists, psychiatrists, pediatricians, otolaryngologists, general practitioners, and dentists. I highly recommended it to graduate and medical students, residents, fellows, and sleep technologists. While it does not go into elaborate detail for the sleep medicine physician or trainee seeking advanced pathophysiology discussions, it does serve as an excellent quick reference tool, an illustrative guide, and a valuable review tool, especially for the sleep medicine board examinations.

What I liked about this book is that it explains, in a very simple yet very effective manner, how to apply the principles of polysomnography and sleep medicine concepts. It surveys recording montages, pneumograms, artifacts, normal sleep, and findings in sleep disorders, ranging from the most practical to the esoteric. The book's strong points include the numerous easy-to-view illustrations of well-

lected examples, and its easy-to-use format. Like most atlases, the text is brief and limited to descriptions of the illustrated polysomnogram epochs. This precise layout and text free of jargon makes it easy to read for both the experienced specialist and a novice trainee. This is a visual guidebook to sleep disorders, consisting of a large number of illustrations and captions, enabling the user to visualize many different clinical situations. The chapters are well organized and integrated, with minimal substantive overlap or contradictions among chapters. There is also a continuity of themes between chapters. Readers will appreciate the balanced structure of each chapter, with a combination of relevant case vignettes and tables. The tables are easily readable and nicely complement the text. A highly systematic, practical approach was adopted, and key concepts are well illuminated with visual examples.

The chapter references are few but selective and up-to-date, with the most recent being from 2005. A list of abbreviations used in the book is provided at the beginning, as well as in certain sections of the book. I found the index very detailed and complete. The book's price is somewhat lower than comparable atlases. The format and print quality are good.

It would have been useful to end each chapter with a conclusion section or short synopsis. Specialists may think the book's main shortcoming is that it lacks detail and depth of coverage in specific topics. It is, however, an atlas of polysomnographic tracings, and is not intended to be an exhaustive review on sleep. The addition of a knowledge-assessment section, with questions and answers, would enhance the educational value for trainees.

The text lacks the scientific and evidence-based perspective on sleep disorders and management. Some of the conclusions are made on personal biases. For example, the author endorses use of bilevel pressure in particular clinical scenarios but fails to show any research data to support that approach. The authors kept the language lucid and avoided talking about controversies in sleep medicine. All the contributors shared their own opinions based on their experiences in practice and wrote as specifically as possible.

One possible problem is that the American Academy of Sleep Medicine is currently revising the existing and developing

new standards for polysomnographic scoring. Though it is not likely there will be major changes, such changes would put this volume out of date.

Overall, the book is a useful adjunct for sleep specialists and a practical reference for the busy clinician. I highly recommend it.

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The author reports no conflicts of interest related to the content of this book review.

**Surgical Management of Sleep Apnea and Snoring.** David J Terris and Richard L Goode, editors. Boca Raton: Informa/Taylor & Francis. 2005. Hard cover, illustrated, 492 pages, \$199.95.

Amidst the many volumes dedicated to sleep disorders and sleep-disordered breathing, this is just the third book devoted to surgical treatment of snoring and obstructive sleep apnea. Part of the explanation lies in the relative newness of sleep surgery as a field. Since the initial description of uvulopalatopharyngoplasty (surgery of the soft palate) as a surgical treatment of snoring, by Ikematsu in 1964,<sup>1</sup> and the application of this procedure to treat patients with obstructive sleep apnea, by Fujita et al in 1981,<sup>2</sup> the past 25 years have witnessed the development of many procedures designed to treat the soft palate and other regions of the upper airway.

This text is designed as a reference for surgeons interested in surgical techniques for treatment of snoring and obstructive sleep apnea. Others may find (1) the description of patient evaluation and nonsurgical treatment too brief, and (2) the discussion of surgical procedures too detailed and esoteric. While surgeons will probably need to supplement the text with additional reading and training, the book provides a sound framework from which the interested reader can approach the patient with snoring or obstructive sleep apnea, with an awareness of available procedures.

The chapters cover the anatomy and physiology of sleep and sleep-disordered breathing, nonsurgical treatments (such as positive airway pressure therapy and oral appliances), and surgical evaluation and

management. Approximately two thirds of the chapters are devoted to specific procedures, and the detailed discussions of techniques and the role of surgery in the treatment of sleep-disordered breathing are the core of the book. The illustrations, photographs, and radiographs throughout are clear and very useful in elucidating key points.

No surgical text would be complete without a discussion of anatomy. This book not only offers an excellent chapter on upper-airway anatomy but also a thought-provoking evolutionary perspective on that anatomy. The subsequent chapters on the physiology of sleep, sleep-disordered breathing, and nonsurgical evaluation of sleep-disordered breathing are good but perhaps not as clear and thorough as those that can be found elsewhere in the literature. Admittedly, these subjects are not the primary focus of the book, so relatively little space is devoted to them. One exception was the chapter on home sleep studies, which thoroughly reviews the validation studies for various home sleep study technologies.

As a sleep surgeon, I thought the editors' selection of individual procedures and combinations of procedures in a surgical plan was based, in some cases, on limited information. The devotion of an entire chapter to the Friedman staging system, which can be used to select patients more likely to have good outcomes after uvulopalatopharyngoplasty, was warranted. This chapter gives a clear summary of the work that has been reported in several separate publications and is valuable reading for any surgeon interested in snoring and obstructive sleep apnea. In contrast, other surgical evaluation techniques, such as radiographic imaging and video sleep endoscopy, did not receive the same attention and/or did not get as thorough a discussion of their association with surgical outcomes. A more complete assessment of the growing literature would have been welcome.

With the emphasis on surgical treatment, not surprisingly the discussion of nonsurgical options, such as positive airway pressure and oral appliances, is limited. However, the chapter on oral appliances was thorough enough and very practical; the presentation of many devices, with photographs, is appropriate for surgeons, who may not be providing these devices themselves but should be aware of their characteristics.

Patient (and procedure) selection and anesthesia management (intraoperative and postoperative) are both far-reaching topics,

and the authors of these 3 chapters faced daunting tasks. Although sleep surgery has made tremendous strides, these topics constitute much of the art of surgical treatment. As with the surgical evaluation of patients (mentioned above), a more comprehensive discussion of these topics would have been helpful. In particular, the anesthetic management of patients with sleep-disordered breathing—both for upper-airway surgery and nonupper-airway surgery—has increasingly become a topic of interest for physicians and major specialty organizations such as the American Society of Anesthesiology and the American Academy of Otolaryngology–Head and Neck Surgery. Though the existing literature is sparse, coverage of this topic should be expanded in future editions, to reflect the attention that has been devoted to it in the last few years.

The bulk of this book is dedicated to surgical techniques, and this is the book's greatest strength. A book written, by and large, by surgeons and for surgeons should provide an understanding of procedures and their application, and, indeed, this is the case. The high quality of the illustrations is invaluable. They do not provide as much detail as those in the commonly-used surgical atlases of otolaryngology and head-and-neck surgery that describe procedures other than those included in this book, but the illustrations and accompanying text are more than sufficient. Each chapter presents specific aspects of patient selection and discusses technique and potential complications.

In several cases the contributors (who in many cases are the surgeons who developed the procedure or made important technical modifications) incorporated technical modifications that they have developed since the original publications that described the procedures. For transpalatal advancement pharyngoplasty, these modifications are not found elsewhere in the literature. Others, such as the chapter on tracheotomy, present a range of techniques that are summarized clearly. Some of the chapters (eg, those on distraction osteogenesis and maxillomandibular advancement) are somewhat brief or simply do not provide sufficient detail for the reading surgeon to be able to perform the procedure. Nevertheless, the book otherwise succeeds with flying colors in its presentation of surgical procedures and their technical aspects.

The final 2 chapters are more philosophical than the rest and provide editorial perspective in 2 areas: the evaluation of surgi-

cal outcomes and the “Ideal Procedure for Snoring and Obstructive Sleep Apnea.” Together, they provide much food for thought for sleep surgeons and other health-care providers. Despite the progress of the past 25 years, sleep surgery remains in its infancy in terms of the available procedures, the selection among them, and the understanding of outcomes. Advances in our understanding of upper-airway physiology, snoring, and obstructive sleep apnea will enable better application of existing procedures and the development of new procedures to build on the foundations described in this book.

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The author reports no conflicts of interest related to the content of this book review.

**Respiratory Genetics.** Edwin K Silverman MD PhD, Scott T Weiss MD MSc, David A Lomas PhD ScD, and Steven D Shapiro MD, editors. London: Hodder Arnold/Oxford University Press. 2005. Hard cover, illustrated, 527 pages, \$149.50.

Now that there is a much improved understanding of our genome, the search for genes that either directly cause disease or are associated with susceptibility or outcome in respiratory diseases has become a vibrant and fast-expanding field. This book has met the daunting challenge of summarizing the major findings in the genetics of multiple lung disorders and providing relevant methodological and clinical information.

The book has 4 major divisions: key concepts in respiratory genetics; obstructive lung diseases; interstitial lung diseases; and miscellaneous pulmonary conditions. Part 1, which focuses on key concepts in respiratory genetics, is divided into 8 chapters that introduce background information on the multifaceted research in respiratory diseases.

The first chapter gives a very brief overview of human genetics and is well written, but could have been strengthened by expanding the focus beyond coding variation and by providing more details regarding haplotypes and microsatellites as key elements of disease susceptibility or modifying the phenotype (and not simply as tools to map the functional variants). The second chapter highlights the importance of environmental impact on the setting of the disease, and the heterogeneity of disease status. For the latter, the author’s proposition of using different tests to characterize the phenotype is more than justified, with several tests listed, including measurement of lung function, airway responsiveness, allergy testing, and inflammation.

Chapter 3 provides a very good background on the methods for the study of association of genetic variants with disease susceptibility and how linkage disequilibrium is utilized in association studies, the advantages and disadvantages of cohort and case-control studies, environmental effects and the importance of power, and the spurious associations that can be caused by population stratification. Although without providing a definition or a clear scheme of what a haplotype is, the authors highlight the importance of haplotypes in association studies, in terms of power.

Chapter 4 guides the reader through basic procedures for sample collection and characterization of genetic variation, with helpful information on how to start the sample collection (which brings up issues of the ethics of managing data and how to collect the samples, depending on the interests and the number to collect) along with the most extended methods for extraction of deoxyribonucleic acid. The chapter ends with a very well organized and written summary of the types of genetic variation, the appropriate use of the different types, depending on the study design, and up-to-date methods to genotype and search for variation, with special emphasis on single-nucleotide polymorphisms (SNPs) and high-throughput approaches. Quality controls are needed to recognize and incorporate genotyping errors and reduce the chance of false positive or negative associations.

Chapter 5 is dedicated to bioinformatics methods; it provides a basic guide to several public databases to retrieve relevant bibliographic material (PubMed), sequences (Blast-Like Alignment Tool [BLAT]), and polymorphism information (dbSNP and

SNPper) of the gene(s) of interest. Because of their relevance in association analyses, tools for power calculations and the exploration of linkage disequilibrium are expertly discussed. It would have enhanced this book to include other key databases for association studies, such as the HapMap, and the resequencing efforts of hundreds of inflammatory genes, such as the Seattle SNPs, the National Institute of Environmental Health Sciences (NIEHS) project, or the Innate Immunity database. The last portion of the chapter concerns microarray methods, practical guidelines to perform these experiments, probe alternatives, normalization, and detection of differentially expressed genes, clustering, and annotation. Chapter 6 outlines the available strategies to characterize and study the functional consequences of genetic variation and gives useful information about algorithms to allocate the genetic variation in the context of a gene (eg, promoter, splice site, and poly-A signal). The chapter also deals with the expression and purification of recombinant proteins, the biochemical and biophysical characterization of the “mutant” protein, and the determination of protein structure.

Expression of the “mutant” protein, particularly in mice, is an invaluable approach to study the phenotypical consequences in a cell context and constitutes the key bridge to the study of the functional consequences of the mutation, by providing additional physiologic changes that do not take place in a single cell; this is the focus of Chapter 7. This chapter presents the basics of obtaining genetically modified mice, several models used for different respiratory diseases, and a complete guide on general issues in mouse genomics, including quantitative trait loci (QTL) mapping, useful software, statistical interpretations, and their application to respiratory diseases.

Chapter 8 describes the respiratory-disease-related side of pharmacogenetics, which is a growing field with promising applications. This is a well written overview of the field; it discusses unequivocal measured phenotypes and has in-depth discussion of relevant examples related to smoking cessation, lung cancer, and asthma, among others.

The book’s second part comprises 3 chapters that concentrate on the 3 best genetically characterized respiratory diseases: asthma, chronic obstructive pulmonary disease (COPD), and cystic fibrosis (CF). The chapter on asthma (Chapter 9) is a meticulous

lous review of the genetic findings in asthma, including genetic factors in asthma susceptibility. The astounding data collected by the authors include a review of twin studies, the evidence from linkage analysis and the use of isolated populations, the support from association studies, a review of the 10 most replicated genes, and mouse models in asthma. Lastly, the correlation of data derived from QTL mapping in mouse models with those from linkage studies in humans confer to this chapter the closing support for the connections of genetic variation and the susceptibility to asthma.

The chapter on COPD (Chapter 10) provides key COPD epidemiologic data, definitions of COPD, characterization of COPD severity, and the genetic basis of the disease. Though this is discussed primarily in the context of alpha-1 antitrypsin deficiency, a large list of genes associated with COPD is also provided, with occasional linkage to evidence from knockout mice. Because the major risk factor for COPD is tobacco smoke, genetic aspects of susceptibility to nicotine dependence are also discussed.

Chapter 11 reviews the genetic basis of CF caused by mutations in the CF transmembrane conductance regulator gene (CFTR) and the epidemiology and organ manifestations of the disease. The complexity of the gene, the number of known mutations, and the spectrum of phenotypes is discussed and connected to the animal models (knockouts or mice harboring mutations found in humans) and their use in clinical testing. Adequately discussed is the role of genetic testing in CF diagnosis. However, a significant number of CF patients with F508 mutations in CFTR do not develop the disease, so the stratification of mutations in human populations as a major drawback of genetic testing for diagnosis of CF should have been considered in this chapter.

The book's third part has 2 chapters, which focus on idiopathic pulmonary fibrosis and sarcoidosis. Chapter 12 presents a thorough list of clinical features of idiopathic pulmonary fibrosis and emphasizes the changes in lower lung function, and morphological and histological changes in the lungs. Very useful information is provided on the epidemiology of the disease and current treatments. The evidence supporting the involvement of genetic factors in the development of the disease is based on clues from monogenic disorders associated with pulmonary fibrosis and from animal models.

Chapter 13 introduces the evidence on the genetic basis of sarcoidosis, the most apparent coming from the epidemiology of the disease, since it is more common in populations of African descent than in Asian or European populations. The authors also present the hypothesis that sarcoid antigen triggers the disease, which is congruent with the described seasonal clustering of this condition and current experimental data. Although only a few linkage studies have been conducted to date, the candidate gene association studies are congruent in that they show the contribution of the human leukocyte antigen region, cytokines, and chemokines in the development of the disease. Although there have been no animal models for this disease, other relevant conditions (eg, chronic beryllium disease) are discussed to provide new candidate genes that may be useful for unraveling the pathogenesis of sarcoidosis.

The book's fourth part has 5 chapters, which introduce pulmonary hypertension, lung cancer, respiratory infections, congenital, metabolic, neuromuscular diseases, and rarer lung diseases. Particularly well written is the discussion of genetic anticipation in the younger generations in families with primary pulmonary hypertension and the links to candidate genes that affect the disease. In this respect, the bone morphogenetic protein receptor type II (BMPRII) gene is deeply examined with regard to how known mutations exert the phenotype.

Chapter 15 describes the genetics of lung cancer and provides a detailed and well-written discussion of studied candidate genes and somatic mutations that accumulate in cancers and how this information may drive the choice of chemotherapies in the future.

Chapter 16 reviews the involvement of genetic variation in susceptibility to respiratory infections, but the chapter does not have the depth of the earlier chapters, particularly with regard to genetic polymorphisms associated with respiratory infections, given that several candidate genes have now been associated with sepsis and acute lung injury.

Chapters 17 and 18 constitute a brief background on rare monogenic and complex diseases that compromise pulmonary function, and the chapters include excellent illustrations for human diagnosis.

In summary, the book is an excellent review of the most common tools and applications in the exploding field of human genetics and is a state-of-the-art opus for

investigators of common but complex lung diseases. This is a major text and an invaluable aid to nascent translational scientists interested in the basics of the study of genetic variation and its functional consequences in respiratory disease.

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The authors report no conflicts of interest related to the content of this book review.

**Pulmonary Rehabilitation.** Claudio F Donner MD, Nicolino Ambrosino MD, and Roger S Goldstein FRCP(c), editors. London: Hodder Arnold/Oxford University Press. 2005. Hard cover, illustrated, 405 pages, \$149.50.

Within the past decade, pulmonary rehabilitation has become more recognized and valued in treating chronic lung disease. Despite this professional acceptance, there is a paucity of pulmonary rehabilitation texts. Donner et al collaborated with North American and European authorities to create a comprehensive text on current pulmonary rehabilitation techniques and conventions. This text is divided into 4 parts and 40 chapters. Each chapter is succinctly written and well referenced; lists of key points provide clear and concise content summations.

Part I is divided into 6 chapters that cover the foundations of pulmonary rehabilitation, including: definition and rationale for pulmonary rehabilitation; international trends in the epidemiology of chronic obstructive pulmonary disease (COPD); pathophysiologic basis of pulmonary rehabilitation in COPD; influence of tobacco smoking on lung disease; genetics of airflow limitation; and using rehabilitation literature to guide patient care. Overall, these topics evidence pulmonary rehabilitation justification and application. For example, Chapter 6 emphasizes the importance of evidence-based medicine in pulmonary rehabilitation direction and optimization.

Part 2 (11 chapters) addresses the need for outcome measurement and the assessment of lung function and respiratory mechanics, respiratory muscles, peripheral muscle function, respiratory function dur-

ing sleep in chronic lung disease, cardiopulmonary interaction during sleep, pathophysiology of exercise, physiologic basis of dyspnea, measurement of dyspnea, impact of health status (quality of life) issues in chronic lung disease, evaluation of impairment and disability, and outcome measures for rehabilitation, and the economics of pulmonary rehabilitation and self-management education for patients with COPD. All these chapters provide illustrations and tables that promote the importance of pulmonary rehabilitation outcome measurement. While not all of these chapters (especially 13–15) focus on the pulmonary rehabilitation setting, all provide an important comprehensive view of how chronic lung disease influences physical and psychosocial well-being.

In 7 chapters, Part 3, “Delivering Pulmonary Rehabilitation: General Aspects,” covers fundamental components of pulmonary rehabilitation. The chapters include: establishing a pulmonary rehabilitation program, respiratory physiotherapy, exercise in stable COPD, the role of collaborative self-management education, treatment of tobacco dependence, nutrition and metabolic therapy, and pharmacologic management in chronic respiratory diseases. These chapters competently advocate a comprehensive therapeutic approach to pulmonary rehabilitation applications. The chapters on exercise training and collaborative self-management education are especially noteworthy in that they clearly evidence this content’s central role in pulmonary rehabilitation.

Part 4, “Delivering Pulmonary Rehabilitation: Specific Problems,” comprises 16 chapters that examine a wide range of pulmonary rehabilitation settings. Two chapters cover rehabilitation for typically encountered diseases in facility-based (eg, hospital out-patient) locations, such as the chapters on asthma and COPD, and 3 chapters address the rehabilitation of patients usually found in home settings: thoracic wall deformities, neuromuscular disease, and cystic fibrosis. In addition, there are 11 chapters on rehabilitation of patients with special needs: lung-volume-reduction surgery, transplantation, long-term oxygen therapy, pulmonary rehabilitation in the intensive care unit and transition to home, chronic ventilatory assistance in the hospital, ventilatory assistance at home, the challenge of self-management, exacerbations in chronic lung disease, long-term compliance after COPD rehabilitation, ethical/regulatory is-

issues concerning long-term mechanical ventilation, and end-of-life issues in advanced COPD.

In sum, the editors prepared a well-organized, coherent, and consistently themed advocacy for pulmonary rehabilitation. This text is an ideal resource for pulmonary rehabilitation program staff and (especially) administrative leaders. As further pulmonary rehabilitation guidelines evolve, this text (resource) will improve understanding of and optimize pulmonary rehabilitation patient care. In a future edition I would suggest expanding the content on the status of global pulmonary rehabilitation applications, which could better substantiate the global generalizability of North American and European findings. Pulmonary rehabilitation efficacy as a valid and reliable treatment for chronic lung disease depends on evidence-based medicine credibility. To this end, this text succeeds.

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The author reports no conflicts of interest related to the content of this book review.

**Hospital Medicine**, 2nd edition. Robert M Wachter MD, Lee Goldman MD, and Harry Hollander MD. Philadelphia: Lippincott Williams & Wilkins. 2005. Hard cover, illustrated, 1,290 pages, \$99.

There is a certain impracticality to the idea of a textbook of hospital medicine, since hospitalists spend the bulk of their days roving the wards, away from the usual settings where a textbook might be read. Many hospital physicians—many of whom finished residency training within the past decade—would probably identify among their top ward references the resources offered for handheld electronic devices and on point-of-care Web sites accessible from any computer workstation. Some hospital physicians also carry a pocket-sized handbook for rapid consultation. These media can be updated as new evidence for a diagnostic or treatment modality emerges; the same cannot be said for a textbook.

In any case, **Hospital Medicine**, the founding textbook for the young specialty by the same name, has survived to a second edition, released in 2005. The editors, Wachter, Goldman, and Hollander, are pro-

fessors of medicine from the University of California, San Francisco. As we are frequently reminded, Wachter and Goldman brought us the term “hospitalist” 10 years ago; they and colleagues have brought us much of our current knowledge of hospitalist practice in the intervening years. (Goldman is now Dean of Health Sciences and Medicine at the College of Physicians and Surgeons, Columbia University.) Their objectives for this edition were 2-fold: to capture the fast-and-furious advances in hospital practice, and to tighten the book’s focus on management of in-patients.

The book begins with a broad, diffuse view of the skills and knowledge necessary to practice hospital medicine. The 21 chapters in this opening section address topics such as quality-of-care measurements, patient safety practices, clinical information systems, and hospital ethics, and they survey clinical arenas such as treatment of pain in the hospital and care of the geriatric inpatient. An intriguing chapter examines physician interfaces in the hospital, including the interfaces between the patient and the hospitalist, the emergency physician and the hospitalist, and the primary physician and the hospitalist; the point about the centrality of skillful communication in hospital medicine is well made. This section as a whole is less of a ward reference than it is a proposal for a hospitalist knowledge base, and practicing or aspiring hospitalists may benefit from reading this section straight through. The chapters are well written, in accessible language, with succinct bullet points to summarize each chapter. The references are timely, and the suggested reading list is of a manageable size.

Following this is a short section on critical care medicine. This section covers the basics of sepsis, shock, organ failure, acute respiratory failure, and mechanical ventilation. There isn’t enough here to make **Hospital Medicine** the “go-to resource” for someone with a complicated intensive care service, but the material will be a useful review for providers who manage hospital patients. There is a chapter on the common bedside procedures, including central lines, lumbar punctures, paracentesis, thoracentesis, and joint injection. The segment on joint injection provides enough detail on anatomy and technique to suit my tastes, but the piece on subclavian vein cannulation (the procedure that troubles me most) offered less clinically helpful advice and illustration than I hoped for.

A section on medicine consultation follows, with a well-rounded selection of material on consultative care around the time of surgery, plus chapters that touch on issues in psychiatric patients, pregnancy, and following trauma—3 issues that arise frequently in medicine consultation. The chapter on patients with psychiatric illness offers clinically useful advice for identifying depression, anxiety, and psychosis, practical information about “difficult” and violent patients, and handy briefings on informed consent, competency, and the right to refuse care.

The remainder and majority of the book is devoted to bread-and-butter in-patient medicine topics and looks much like any textbook of internal medicine. The sections are separated by organ system, and a typical individual chapter concerns itself with a single disease entity. Happily, however, the similarities and comparable texts end there. The sections are organized so that the most common and acutely life-threatening conditions are at the top of the order, with cardiovascular and pulmonary conditions leading the way, and infectious disease and gastroenterology just behind. The content in these sections is substantial and comprehensive. The remaining sections touch on topics in human immunodeficiency virus medicine, hematology, oncology, renal disease, endocrinology, rheumatology, and neurology. A brief allergy and toxicology section at the end of the book deals only with allergic reactions, drug overdoses, and alcohol intoxication and withdrawal; this thoughtfully chosen selection, like nearly all of the clinical chapters, should be use-

ful to hospitalists, regardless of the practice setting.

These clinical chapters are particularly appealing in how they follow the flow of hospitalization. After a brief introduction, a chapter addresses issues at the time of admission, including symptoms and signs that contribute in the admission decision. Next is a segment on issues that arise in the hospital, with special focus on diagnostic testing and the appropriate settings in which the tests might be obtained, parameters for consultation, and excellent extensive reviews of treatment options. The third segment concerns planning and communications at discharge. Some chapters have short additional pieces on cost concerns and resource use. The selective absence of commentary on matters that are less relevant at the bedside adds to the appeal and readability of the material. The only subject on which I would have hoped for a more comprehensive look was infection control, which is addressed piecemeal in this edition, by individual microorganism.

The overall editorial approach in these clinical sections is potent: there is broad coverage of in-patient topics, without overwhelming comprehensiveness, and the management advice is highly practical. There is little to distract from what should be happening at the bedside. This textbook contains, in other words, much of the information that a hospitalist should have in her brain, ready for immediate clinical use, and little that is extraneous. The organization and narrative flow of the clinical chapters is intuitive, and the index is quite comprehensive, so the answer to a clinical query can be located quickly, without sorting through

the floods of information offered by many of the electronic publications.

Taken as a whole, this textbook is not just a manual of clinical medicine, as are most references, but a guide to clinical life in the hospital. This makes for somewhat choppy transitions between sections, but the overall effect is to capture all that a hospitalist does, and all of the growing pains of this young specialty. I suspect that future editions will gain cohesion as the specialty matures. Regardless, the skillful editing in this edition of **Hospital Medicine** has included highly practical content that should provide “play-by-play” usefulness (yes, for the wards), which more than makes up for any deficits.

The editors dedicated this book to their trainees, and the dedication feels appropriate. Students and residents will find a substantial amount of clinical knowledge here to augment the bedside experience, and they can gain enough exposure to hospital practice to inform career decisions. But the audience need not be limited just to trainees; this book is a solid reference on in-patient management for any provider who sees hospitalized patients.

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The author reports no conflicts of interest related to the content of this book review.