

**Oakes' Respiratory Home Care: An On-Site Reference Guide.** Dana F Oakes RRT-NPS, Kenneth A Wyka MSc RRT FAARC, and Kathleen S Wyka CRT. Orono, Maine: Health Educator Publications. 2006. Loose-leaf bound, unpaginated, \$25.95.

For many, the golden days of respiratory home care are behind us. Over the recent years, reimbursement changes and cutbacks have exposed a fairly well-known but often dismissed reality: that the growth of respiratory home care from the 1970s up until today was due in no small part to the contributions of the thousands of respiratory therapists (RTs) who over the years transitioned into this growing care venue. The growth occurred despite the fact that there is no direct reimbursement for the professional services provided by a home RT. Instead, under most third-party-payer practices (most notably Medicare) reimbursement is provided solely for the sale or rental of the prescribed equipment.

Nonetheless, as home care equipment became more complex, to keep pace with the increased medical complexity of patients being discharged, home care companies looked to RTs to provide the required initial care and follow-up. It was deemed essential for good patient care and safety as well as also being good for business. In the larger scheme of things, the revenue generated solely from equipment sale or rental covered the non-revenue-generating services provided by home care RTs. Better service led to better outcomes, which in turn, contributed to more referrals from satisfied sources.

That brings us to today and the shock waves that the recently enacted Deficit Reduction Act of 2005 is sending through the entire home care industry. In another attempt to slow ever-increasing Medicare expenditures, various federal proposals (both legislative and regulatory) have been enacted that will severely reduce how much, under what conditions, and for how long Medicare will pay for durable medical and home respiratory equipment. Regrettably, in establishing the new rules, policymakers are focusing entirely on the acquisition costs of the equipment, rarely taking into account the added costs associated with providing

essential ongoing technical support services. For many senior industry observers, there is good cause for the growing concern that one potential casualty of the new reimbursement policies will be the eventual decline of respiratory home care services provided by home care RTs. As unappealing as this may sound, it may indeed be an economic reality for many home care providers. Interestingly, the current Medicare Supplier Standards and the standards of all 3 home care accrediting agencies clearly espouse the use of qualified home care professionals (most often an RT) to ensure that the prescribed equipment is appropriate for the patient's condition(s) and that the equipment is properly used. Hopefully, efforts by all home care stakeholders to mitigate the onerous features of the Deficit Reduction Act of 2005 will prove successful.

So what does this have to do with **Respiratory Home Care: An On-Site Reference Guide**, which is a recent arrival and surely a welcome resource for the thousands of home care RTs and those contemplating the move to community-based care? Well, publication of this reference guide could not happen at a better time. It comes at a point when respiratory home care is under siege. However, taken as a whole, this reference guide shows how far respiratory home care has evolved, despite shortsighted reimbursement policies, to become what it is today: a highly complex, functional, and cost-effective care model.

This reference guide represents a collaboration between 2 long-practicing home care RTs and a well-recognized educator. It is bound in a three-ring binder that's about 7 cm × 18 cm, and about 4 cm thick, so it's easily used anywhere and any time.

There are 19 chapters, an appendix, and a cardiopulmonary resuscitation reference card. Each chapter begins with a detailed table of contents, which makes it easy to locate specific topics. Each chapter is a compendium of tables, charts, and brief paragraphs on the chapter topic. Throughout, the authors liberally used and appropriately cited other publications. The sources mentioned are far-ranging and include: position statements from the American Association for Respiratory Care (AARC) and American Thoracic Society; asthma guidelines

promulgated by the National Asthma Education and Prevention Program/National Institutes of Health; guidelines on chronic obstructive pulmonary disease from the National Heart, Lung, and Blood Institute and World Health Organization; and many of the AARC's Clinical Practice Guidelines. One problem with several of the cited clinical practice guidelines is that they were originally developed with an institutional care focus, so they are not totally relevant to the home care setting. One example is in Chapter 9, "Airway Management," where most of the cited material is clearly written for the acute or subacute care setting. However, in the preface the authors do caution readers that none of the cited sources should be considered as absolute, and they advise that the best course of action is always doing what is right for the patient given the available resources.

Though the authors did not organize them as such, it is possible to group the 19 chapters into 3 sections. Chapters 1–3 compose the first section; they address activities that take place when a patient is first considered and referred for respiratory home care services. Chapter 1 discusses what goes into a good discharge planning process. Chapter 2 focuses on the initial home visit. Chapter 3 delves into initial patient assessment. These 3 chapters nicely set forth how a defined, organized process is required to seamlessly transition a patient from an acute care setting to home. This is all the more important as the complexity of home care referrals increases.

The second section, composed of Chapters 4–12, which constitutes the bulk of the guide, addresses the various home therapies and equipment. Chapter 4 covers the essentials of long-term oxygen therapy. Chapter 5 addresses aerosol therapy, but, unfortunately, has no mention of some more efficient nebulizers (breath-enhanced, breath-actuated, and electronic) or the advantages these newer devices offer, such as shorter treatment times and possibly fewer treatments per day. Also absent is any discussion of the adverse impact of electrostatic charge on aerosol delivery to the lung and with the new hydrofluoroalkane-propellant metered-dose inhalers.

Chapters 6–9 cover humidity therapy, bronchial hygiene therapy, lung expansion therapy, and airway management. Chapter 10 tackles the highly complex issue of home mechanical ventilation. Chapters 11 and 12 address sleep therapy and apnea monitoring.

In the real world of respiratory home care, patients often have multiple respiratory devices prescribed for specific therapies. Thus, information found in one chapter (eg, on humidity therapy) would often be used in conjunction with information from another chapter (eg, on mechanical ventilation or sleep therapy). The guide's format makes it easy for the home care RT to extract the bits and pieces needed to ensure that all aspects of the care plan are properly addressed. Moreover, when modifications to the care plan are anticipated, the guide can be used to individualize the plan to the patient's specific needs. Since the guide also functions as a reference, one advantage of using the guide company-wide might be a reduction in practice differences between RTs.

In the third section, Chapters 13–19, the authors turn their attention to other somewhat related topics of respiratory home care, but with mixed results. These chapters address some topics and issues seldom seen by the home care RT. For example, in Chapter 13, on pulmonary rehabilitation, there is little other than information extracted from the AARC's clinical practice guideline on pulmonary rehabilitation, followed by a brief list of patient exercises. Chapter 14, on disease management, is 40 pages of tables on the definition, etiology, and treatment options for 41 specific diseases, which afford a cursory overview at best. Chapter 15, on pharmacology, and Chapter 16, on infection control, are somewhat better; both have useful information. Chapter 15 includes a nice list of current respiratory medications and recommended dosages. However, starting on page 15–11, in the table that lists commonly used sympathomimetics, in the adverse reactions/comments column the reader is incorrectly referred to page 13–4 (the correct page is 15–6).

Chapter 17, "Education and Training," provides an excellent overview of the importance of properly planned and provided in-home education and training for patients and family/caregivers. Useful advice is provided to help the home care RT promote patient adherence to the care plan. The authors rightly state that, following the initial assessment of a new home care patient, pro-

viding effective and meaningful patient education is the second most important skill of the home care RT. I couldn't agree more.

There are problems with Chapter 18, on reimbursement. Simply stated, the chapter's contents have been trumped by newer developments. Medicare is now well underway in implementing a radically different reimbursement process from that described here. This is certainly not the authors' fault, but it demonstrates the volatility of the home care industry. One topic in the chapter that remains relevant is the discussion on ethical issues, which is, regrettably, a recurring problem in the industry. I was surprised that 2 important resources on this topic were not included or referenced: the AARC's position statements on ethical and professional conduct and home respiratory care services, which articulate the expected professional behavior of home care RTs.

Chapter 19, "Accreditation and Other Rules," is nothing more than a brief overview of the 3 existing accrediting agencies, and the preponderance of information is on the Joint Commission on Accreditation of Health Care Organizations, at the expense of the other two: the Community Health Action Program and the Accreditation Commission for Health Care. Though there is mention of Medicare's planned mandatory accreditation for home medical equipment providers, there is no mention of the current Medicare Supplier Standards, which will be the basis for the additional service and performance standards to be required for participating home medical equipment providers.

Though this small guide can't provide an exhaustive treatment of this complex topic, it does provide relevant and accurate information that home care RTs will find useful in carrying out their daily home care visits, the net effect of which will be better patient outcomes. It is also an excellent resource for RTs transitioning into home care. It can serve another important purpose as well. In the context of the growing concern that new Medicare reimbursement policies may make it increasingly difficult for home medical equipment providers to continue to offer the "value-added" service of home care RTs, this guide sets forth, in no uncertain terms, just how complex respiratory home care has become, and clearly underscores the fact that without such highly competent professionals, patient care would suffer. As the debate over new Medicare policies intensifies, hopefully the policy makers will look

at this guide and realize how vital it is that new rules do not limit Medicare beneficiaries' access to professional home care RTs, especially for patients with complex medical conditions.

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**Imaging of Diseases of the Chest**, 4th edition. David M Hansell, Peter Armstrong, David A Lynch, and H Page McAdams. Philadelphia: Mosby/Elsevier. 2005. Hard cover, illustrated, 1,220 pages, \$295.

The 4th edition of **Imaging of Diseases of the Chest** is a welcome update to one of the most comprehensive thoracic imaging texts currently available. The most notable changes are the retirement of previous edition authors Wilson and Dee and the addition of authors Lynch and McAdams. The authorship of each chapter is no longer specified, which suggests more of a collaborative effort. The book has also grown from 1,039 pages to 1,220 pages, which reflects the more detailed text and additional illustrations and references. Although the chapter on interventional techniques has been removed and the order of the remaining chapters has been somewhat rearranged, the overall organization of the book is similar. Despite the changes, the scope of **Imaging of Diseases of the Chest** is the same: it is a single-volume, comprehensive thoracic imaging text focused on the adult patient, with emphasis on complex and rarer diseases rather than on more common, well-understood entities.

The overall appearance of the 4th edition is more polished than the previous editions. Text boxes and tables now have a light gray background. The new typefaces are more pleasing to the eyes, and the figure legends are set in larger type, which I think will reduce eye strain. The outlines that open each chapter are also set in larger type, and the use of bold and italic type better highlights the chapter organization. This new edition has better-quality images and many new ones. Illustrations from conventional tomography (a technique that has been obsolete since the wide availability of computed tomography [CT]) have been aban-

done and replaced by higher quality radiographs and CT images.

The first chapter is a review of thoracic imaging techniques, including conventional and digital radiography, CT, and magnetic resonance imaging. Reflecting newer technology, the emphasis was shifted away from conventional film-screen radiographs to digital radiography. Additionally, the section on CT is greatly expanded, with emphasis on multidetector CT. Conventional high-resolution CT (HRCT) techniques have been moved to this chapter from the introductory HRCT chapter (Chapter 4), and the authors address the pros and cons of traditional HRCT versus volumetric multidetector CT scanning, with regard to information obtained and patient radiation dose.

As in the third edition, the second chapter, "The Normal Chest," is a brief overview of normal thoracic anatomy and assumes the reader is already familiar with thoracic radiographic anatomy. Chapter 3, as in the previous edition, covers basic imaging findings and patterns encountered in thoracic imaging. Some figures have been replaced and others have been added. The most notable change is the expanded discussion on the role of fluorodeoxyglucose (FDG) positron emission tomography (PET) in the evaluation of solitary pulmonary nodules. The algorithm for managing the asymptomatic solitary pulmonary nodule has been removed, presumably because it does not include FDG PET, and consensus has yet to be established.

Chapter 4 presents an overview of patterns and findings encountered in chest HRCT. As previously mentioned, technical considerations have been moved to the first chapter. Discussions have been expanded, and the number of references has grown from 258 to 333. The new schematics of the various patterns described are a nice addition.

Chapter 5 covers the broad spectrum of pulmonary and pleural infections, a topic that could be a book by itself. Additional illustrations have been added, but the overall organization and content are relatively unchanged. The discussion and illustration of pulmonary aspergillosis has been expanded and updated, and the text reflects the now preferred terminology, such as "chronic airway invasive aspergillosis" over "semi-invasive aspergillosis." The large table in the third edition has been removed, replaced by better-organized text.

The authors changed the title of the 6th chapter from "Acquired Immune Deficiency Syndrome (AIDS) and Other Forms of Immunocompromise" to "The Immunocompromised Patient," I believe, to reflect the growing number of patients without AIDS who are immunocompromised because of solid-organ or hematopoietic-stem-cell (bone marrow) transplant, immunosuppressive therapy for autoimmune disease, or chemotherapy for cancer. The AIDS section of this chapter was updated to reflect the recently recognized immune restoration syndrome and the new nomenclature and classification of the *Pneumocystis jirovecii* fungus (formerly called *Pneumocystis carinii* and classified as a protozoan), which causes pneumocystis pneumonia in immunocompromised patients. The subsection on nonspecific interstitial pneumonia in patients with AIDS has been expanded to reflect more clinical information and epidemiologic data. The lung transplant section in this chapter (a topic almost worthy of its own chapter) was greatly expanded. This section now includes more information on surgical technique, donor selection, and recipient evaluation. The discussions of complications, both early and late, are more thorough and are better illustrated.

Chapter 7 focuses on pulmonary vascular disease and edema and opens with a very "hot" topic in thoracic imaging: evaluation for suspected acute pulmonary embolism. With the advancement of multidetector CT technology, CT pulmonary angiography has become the diagnostic test of choice for evaluating acute pulmonary embolism. However, the authors correctly address the phenomenon of "technology creep," in regard to CT pulmonary angiography; the surge of interest in its use and applications in clinical practice have outpaced the collection of evidence of its superiority over existing tests. Nevertheless, the discussion of CT pulmonary angiography is greatly expanded, with more discussion on technique and many more illustrations of acute pulmonary embolism and its pitfalls. The in-patient-out-patient algorithm presented in the third edition has been replaced with the 2003 guidelines from the British Thoracic Society, which reflect the availability of D-dimer assay, low-molecular-weight heparin, and the fact that many facilities do not have ventilation/perfusion scanning available. The rest of the chapter focuses on pulmonary arterial hypertension and edema, and many new illustrations are included.

The eighth chapter, "Inhalation Lung Disease," opens with a section, new in this edition, on smoking-related lung diseases. Recently, the relationship between several lung diseases and cigarette smoking has become more evident. The authors appropriately group together Langerhans cell histiocytosis, desquamative interstitial pneumonia, and respiratory bronchiolitis/respiratory bronchiolitis-interstitial lung disease in this section. In the previous edition those were scattered among the chapters on airways disease and idiopathic lung disease. Hypersensitivity pneumonitis has also been moved from the section on immunologic diseases of the lung to this section, and more illustrations have been provided. The section on pneumoconiosis has been updated to reflect the new International Labor Organization classification scheme for chest radiographs, and the discussion on asbestosis has been revised from a detailed table of imaging findings to standard prose. As in many other sections, more and newer examples have been added. The new subsections on flock worker's lung and flavor worker's lung provide information on these 2 newly recognized entities.

Chapter 9 is on drug and radiation induced lung disease, and the authors have expanded the discussion on mechanisms and injury in the introduction and have reorganized specific drugs into cytotoxic and non-cytotoxic categories. More examples of radiation-induced lung disease have been added, and the number of references in this chapter increased from 144 to 347.

Chapter 10 tackles the difficult and incompletely understood topic of idiopathic pneumonias and immunologic diseases of the lungs. The authors greatly expanded on the idiopathic interstitial pneumonias, employing the newest classification scheme proposed by the joint committee of the American Thoracic Society and European Respiratory Society. Numerous additional examples have been added, and up-to-date references are provided. The topics of amyloidosis and eosinophilic lung disease have been moved from this chapter to Chapter 11, which also addresses sarcoidosis, eosinophilic lung disease, neurocutaneous syndromes, and other miscellaneous lung diseases. Thoracic manifestations of storage disorders and inflammatory bowel disease have been added, and the number of illustrations was increased.

Chapter 12 covers diseases of the central and peripheral airways, including tracheal

disease, bronchiectasis, small airways diseases, and chronic obstructive pulmonary disease. In this edition the authors moved the topic of cystic fibrosis from the chapter on congenital disorders to this chapter and expanded the text on the topic. The revised section on bronchiolitis reflects a better understanding of small airways disease, and the authors have added a subheading for neuroendocrine hyperplasia, an uncommon and recently recognized cause of constrictive bronchiolitis.

Chapter 13, "Neoplasms of the Lungs, Airways, and Pleura," has new information on population screening for lung cancer, the new World Health Organization classification of pre-invasive and malignant lung tumors, and expanded coverage of FDG PET in lung cancer staging. Survival data have been updated to include a large series from Japan, and a relatively recently described neoplasm, atypical adenomatous hyperplasia, has been added to the text. The topic of "missed" lung cancer is also presented. The lymphoma section has been restructured to include the new World Health Organization classification of Hodgkin lymphoma and lymphoid neoplasms excluding Hodgkin lymphoma, and staging of mesothelioma has been added.

Chapter 14 covers mediastinal diseases, including those of the thoracic aorta. There is a new section on differential diagnosis of mediastinal masses that has helpful tables for each mediastinal "compartment." The section on aortic disease has also been lengthened, and there are many new examples that highlight the role of magnetic resonance imaging in aortic disease.

Chapter 15 is a minor update on pleural disease, with newer, additional, and higher-quality images. Chapter 16 discusses congenital anomalies of the lungs and airways. Cystic fibrosis was appropriately moved from this chapter to Chapter 12.

Chapter 17 focuses on chest trauma. The authors clearly demonstrate the central role of CT in evaluating chest trauma, with numerous new illustrations and expanded text, particularly on the topic of traumatic aortic injury.

The shortcomings of the 4th edition of **Imaging of Diseases of the Chest** are few. There are very few typographical errors, and the information provided is up to date. Controversial issues are presented as such, and the authors, while expressing their own opinions, avoid a dogmatic tone or approach. A few of the older figures, despite having been

reprocessed, are still less than ideal, and some figures are too pixilated or have too much contrast. The authors excluded the previous edition's chapter on thoracic interventions, which allowed them to fill those pages with more figures and longer discussions of other topics, which, in my opinion, will be more useful to the majority of radiologists. The topic of thoracic intervention may better belong on its own or in an interventional radiology text.

In summary, the authors of the 4th edition of **Imaging of Diseases of the Chest** have kept true to the aim of previous editions: to produce a single-volume comprehensive text on thoracic imaging. This book is by no means an introductory text on thoracic imaging and is best suited for individuals who have a good understanding of thoracic imaging and anatomy. Though targeted primarily at radiologists, many pulmonologists and thoracic surgeons may find it useful.

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**High-Resolution Computed Tomography of the Lungs: A Pattern Approach.** D Karthikeyan DMRD DNB. London: Hodder Arnold/Oxford University Press. 2005. Hard cover, illustrated, 223 pages, with CD ROM, \$110.

**High-Resolution Computed Tomography of the Lungs: A Pattern Approach** attempts to provide an overview of lung disease, with an emphasis on high-resolution computed tomography (CT). Unfortunately, shortcomings in the book's organization, limited discussion of a pattern approach, dearth of high-resolution images, and the low quality of images included disappointed us. The paper, printing, and binding quality are fair.

The book has 3 sections and an appendix. The first section reviews anatomy and fundamentals of high-resolution CT. The diagrams of lung anatomy are clear. The illustrations of segmental and bronchial anatomy are especially good. However, the figures of airways and secondary lobule anatomy are small and grainy. The discussion on fundamental high-resolution CT is

limited to basic protocol, indications, and technique.

The book's second (and shortest) section describes lung disease patterns and concomitant differential diagnoses and gives short descriptions of specific pathologies. This section is hampered by lack of CT images, though included schematics present the material adequately. As pattern of lung disease is the focus of the text, the second section proves to be the most disappointing aspect of the book, and, at best, it may be helpful as a primer for reading a more in-depth text.

The third section presents cases of commonly encountered disease. Though not exhaustive, the cases are of adequate scope and complexity for resident radiologists and clinical physicians. However, the images are of low quality, and many are not high-resolution, which is unacceptable, given the availability of modern printing techniques and digital technology. In addition, the organization could be improved. Rather than an alphabetical approach, specific subcategories would have been more helpful. The appendix is completely text, mainly consisting of differential diagnoses and pearls.

**High-Resolution Computed Tomography of the Lungs: A Pattern Approach** is worth reading after other similar texts have been perused. Its format is easy to read, but it lacks good organization. Its appeal is that it can be digested without a major time commitment. It should be recognized, however, that this is not an exhaustive text. Overall, this book has many shortcomings, compared to other comparable works.

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**IASLC Textbook of Prevention and Detection of Early Lung Cancer.** Fred R Hirsch MD PhD, Paul A Bunn Jr MD, Harubumi Kato MD PhD, and James L Mulshine MD, editors. Boca Raton: Informa/Taylor & Francis. 2006. Hard cover, illustrated, 396 pages, \$149.95.

Lung cancer is the leading cause of cancer deaths, with over one million annual deaths worldwide. Despite decades of research and advances in treatment, lung cancer remains highly lethal; over 90% of lung

cancer patients succumb to the disease. Public health efforts at reducing the smoking rate have been modestly successful in reducing lung cancer deaths in the United States, and the majority of cases now occur in previous or never-smokers. The IASLC [International Association for the Study of Lung Cancer] **Textbook of Prevention and Detection of Early Lung Cancer** addresses important and timely subjects concerning how soon, and by which methods, early interventions can be made in persons with or at risk for lung cancer, to catch the disease in an earlier, more curable stage. The book's editors are thought leaders in the lung cancer field and they selected contributors who are experts in their sub-fields. The book lives up to its designation as a "textbook" in that it is very thorough in its discussion and is well-referenced, with an average of a hundred references in each of its 20 chapters. As such, it makes a very useful reference, but most readers are unlikely to read it in its entirety. The book is intended for physicians and researchers interested in lung cancer, and it is written in a detailed and technical fashion. It may appeal to respiratory therapists with special interest in lung cancer, but the comprehensiveness that is its strength may deter the casual reader.

The book starts with an epidemiologic overview of lung cancer, discussing temporal and geographic trends and environmental risk factors. Subsequent chapters review lung cancer biology, genetic risk factors, and the strong epidemiologic and basic science evidence that links tobacco smoke to lung cancer. Tobacco control measures and clinical approaches to smoking cessation are reviewed. Some chapters discuss the pathology of lung neoplasia and pre-neoplasia. Early detection is a major focus of this text. A chapter on proteomic approaches to early detection reviews the methods of proteomic analyses in general and discusses the literature on detection of lung cancer in lung tissue, serum, plasma, pleural fluid, sputum, bronchoalveolar lavage fluid, and exhaled breath condensate, using proteomic profiling. Sputum cytology has for decades been proposed as a means of early detection. Also discussed are the data regarding conventional cytology and newer techniques, such as automated cytometry and specific molecular markers such as rat sarcoma (RAS) oncogene activation or abnormal methylation.

Novel bronchoscopic techniques, including autofluorescence bronchoscopy and en-

dobronchial ultrasound, are explained in detail, and data on their use in early cancer detection are presented. Techniques for dealing with the early lung cancer lesions (eg, photodynamic therapy, brachytherapy, and electrocautery) detected via the latter sensitive techniques are discussed, and the limited data on their effectiveness are presented.

Previous efforts at early detection of lung cancer with chest radiographs failed to demonstrate a survival benefit between screened and control groups in randomized clinical trials. Current efforts at early detection utilize spiral CT scanning to detect early lung cancer lesions. The text provides a useful summary of the expanding literature in CT-based lung cancer screening; the rationale for this method and data from prospective cohort series are reviewed, and the ability of the technique to identify early lesions is demonstrated. The ongoing randomized clinical trials that might establish CT-based screening for lung cancer are described, though results are not expected for many years.

Because CT can identify very small lesions, the high frequency of indeterminate pulmonary findings is the clear challenge in CT-based screening. One chapter covers how image processing and computer-aided diagnosis can enhance detection while minimizing false-positive results. Several chapters are devoted to how to work up these lesions, and how radiographic appearances correlate with pathologic findings. Many of the lesions detected are too small for needle biopsy, so many patients with screening-detected lesions will require surgery. Evidence from studies of non-screening-detected lung cancer established lobectomy as the operation of choice for patients with adequate pulmonary reserve. Screening-detected lung cancers are typically much smaller than incident lung cancers and may have a less aggressive biology, allowing for alternative, less-aggressive treatment approaches. Surgical techniques and issues surrounding sub-lobe resections are reviewed. Numerous nonsurgical treatments have emerged, including conventional and stereotactic radiation therapy, brachytherapy, and other local modalities. Explanations of these techniques and the limited data supporting their effectiveness are reviewed.

The technologies used for lung cancer screening and workup are expensive, and it is clear that at some point this will have to be addressed from a societal standpoint. A chapter is devoted to the economic evalua-

tion of lung cancer screening that, like many of the chapters in this text, builds basic concepts in the discipline, such as cost/benefit evaluation and criteria for evaluating the quality of economic evaluations, and then reviews the relevant data for lung cancer screening. A subsequent chapter discusses how to select the population to be screened to enrich for persons at high risk and thus improve the cost/benefit ratio. This same high-risk population can also be targeted for pharmacologic chemoprevention to reduce lung cancer risk. The rationale for this approach, including the concepts of multi-step carcinogenesis and field cancerization, is discussed. A historical overview of the field includes several large randomized clinical trials of promising agents such as beta-carotene, which proved to promote rather than prevent lung cancer.

Overall the coverage of topics is complete, and I did not identify any important topic that was omitted. The chapters are well written, and there are few typographical errors. The book has many useful illustrations and tables that enhance the text. The references are extensive, and the book has a reasonable index. One problem with having multiple contributing editors is that there is a certain degree of overlap between sections, especially in the chapters' introductory parts. The benefit of this approach is that the chapters can be read individually.

Given the slow progress in the treatment of advanced lung cancer, early detection and prevention appears to be the most important front in reducing mortality. This book synthesizes material from many different disciplines and provides a comprehensive overview of the emerging data in this field, which are poised to make an important impact on lung cancer deaths.

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**Air, the Environment, and Public Health.**

Anthony S Kessel MBBS MPhil MSc. Cambridge, United Kingdom: Cambridge University Press. 2006. Hard cover, illustrated, 243 pages, \$90.

Readers of *RESPIRATORY CARE*, unless they have broad perspectives and interests,

may have difficulty digesting the information and arguments presented in **Air, the Environment, and Public Health**. Though many readers might be expected to have an interest in air pollution specifically, and in the environment more generally, this book largely makes use of these subjects ultimately for the purpose of promoting changes in the philosophy and teaching of public health—topics likely to be of less interest to this audience. I am a pulmonary physician and an air pollution epidemiologist in a school of public health, so I might be expected to be in a good position to appreciate the themes developed in the book. My heretofore mostly irrelevant undergraduate degree in philosophy should also have put me in a better position than most to deal with this book's heavy doses of philosophy (including the philosophy of science, ethics, philosophy of knowledge, and political philosophy) that the author, Kessel, summarizes and critiques as background for his thesis. In parallel with the public health theme, Kessel also develops the theme that in order to deal effectively with human-induced damage to the environment, our relationship to the environment needs to undergo radical change. At first blush, these themes (changing the philosophy of public health and changing our relationship to the environment), regardless of how sympathetic we are to each of them individually, seem difficult to integrate into a cohesive exposition. Unfortunately, based on this book at least, this initial impression turns out to be correct.

Kessel is an academician in the London School of Hygiene and Tropical Medicine (a school of public health), where he directs the International Programme for Ethics, Public Health, and Human Rights, and he is also a public health practitioner. He introduces this book with a helpful preview of its contents and the themes he plans to develop. Following this introduction, the book is divided into 4 parts that vaguely correspond to historical periods, but in which Kessel also jumps back and forth in time in attempting to draw out the threads that the reader hopes will be woven together into a cogent and coherent thesis. Each chapter is introduced with an overview and ends with a conclusion that works as a summary. How one views this extraordinary degree of summarization will depend on whether the book is read in only one (or very few) sittings, or whether it is read more leisurely (as I did). Is this extensive summarization too much

or really very helpful? I found it a little of both: helpful when I came back to the book after letting it sit awhile, and too much when reading several chapters in one sitting.

Part I reviews conceptions about medicine and of the role of air in health and disease, from the ancient Greeks to the middle of the 1800s. A holistic approach to health, as in antiquity, surfaces later, as the case is made for a radically different relationship between mankind and the environment. Early manifestations of public health are identified. Even Darwin and evolutionary theory are included, although the rationale for including these in an already far-ranging discussion never quite becomes clear.

Part II is devoted largely to a history of air pollution until about 1970. The conceptions about air in earlier periods have now changed to one that views air as polluted air. Even though adverse health effects of air pollution had been identified, the policy responses to controlling air pollution were sluggish at best. Being one of many, I suspect, who were under the misapprehension that the London Fog of 1952 single-handedly galvanized the political response to air pollution in England, I found the details on the motivations for policy change to be insightful. A history of public health in England is included here and provides a nice background for those interested in the evolution of public health practice and organization. American readers can be forgiven for drifting off because of the exclusive focus on England. In Kessel's defense, however, most of the action on the public health front and in air pollution regulation was in fact taking place in England at that time.

Part III continues the story of air pollution, again almost entirely in the British context, including developments in air pollution science and regulation. The further evolution of public health is also described. In this section, Kessel develops an argument about the limitations of science and its view of the world—an argument that surfaces later as other ways of viewing the world are promoted. While one can be sympathetic to the notion that science has many limitations, Kessel unfortunately takes too many liberties in making his case, and demonstrates some lack of familiarity with current air pollution science in the process.

As one example, he sets up a straw man in claiming that the time series study typifies what is wrong not only with air pollution epidemiology, but with biomedical sci-

ence in general. The time series study is the most common type of study in air pollution epidemiology. In a time series study, daily air pollution concentrations are related to daily counts of deaths or hospitalizations. Kessel wrongly equates time series studies with air pollution epidemiology itself. He criticizes them for being reductionistic and narrowly focused in order to achieve scientific validity by ignoring social, political, and economic contexts. In fact, cohort studies of the long-term effects of air pollution (epidemiological studies in which a defined population is followed over time for some health outcome, most commonly death), which Kessel conveniently ignored, are arguably more influential in air pollution epidemiology and regulatory policy than are time series studies, and cohort studies have also investigated the modifying effects of socioeconomic status on air pollution impacts. In a particularly galling argument, Kessel condemns time series studies for controlling for the effects of temperature in attempting to identify specific effects of air pollution, rather than considering important effects of greenhouse warming. However, from both a scientific and policy perspective, it is vital to determine whether air pollution is currently having effects on health that are not due to meteorology alone. I suspect that Kessel was trying to indicate that pollution, meteorology, and global warming are parts of a complex picture, which at least is true.

Quantitative risk assessment (an easy target) and evidence-based medicine and policy come in for treatment similar to that accorded the time series study. The points against evidence-based medicine—a sacred cow in many circles—I found to be fairly reasonable.

The picture of science presented here (reductionistic, narrowly focused, and socially and culturally conditioned) is one that intentionally invites consideration of alternative approaches to viewing the world. However, while science and its current world view can be legitimately criticized, it is more difficult to criticize the scientific *method*, which is really at the heart of science. It is the scientific method that allows us to judge alternatives to the way science currently views the world. Interestingly, there is no mention of complexity theory,<sup>1</sup> which provides a *scientific* alternative to the reductionism that pervades much of current scientific thinking, and which presents a very holistic world view of the sort that Kessel

favors. One wonders whether this might have shed a more favorable light on science than he would wish.

Part IV is almost entirely devoted to climate change. Here Kessel finds his voice. The earlier parts of the book barely intrude on the exposition, apart from a few tenuous threads, as he develops the thesis. Utilitarianism comes in for special criticism as the current bankrupt ethical basis for much environmental policy. Global climate change presents serious challenges to utilitarianism: policies of developed countries are adversely affecting developing countries, the spatial scale of impacts is global, and future generations may be more affected than current ones. The favored alternative ethical foundation is one based on fairness and justice, as presented in the writings of John Rawls. In this discussion, the reader may get the uneasy impression that Kessel, as even he himself fears, is making climate change a forum for “expressing dissatisfaction with the perceived reasons for many of the world’s ills.” In this light, the rhetoric used to present the solution to preventing climate change and its public health impacts as one requiring a “redistribution of wealth” becomes perhaps more understandable. If all this (a new relationship with the environment and redistribution of wealth) is required to prevent the dire consequences of climate change, then I suspect we are in for a very bad time.

A few other issues here deserve comment. Kessel confuses the reader (perhaps deliberately) when he repeatedly attributes climate change solely to the increase in anthropogenic (man-made) greenhouse gases. He was more on the mark when he ascribed a more limited role to anthropogenic pollution in contributing to climate change—a role that essentially, and most likely, “distorted a natural effect.” He also displays an excessive tendency to classification and definition, much like Aristotle (about whom Kessel appears to have mixed feelings), but that might be forgiven in a book that covers such a broad range of topics over a relatively few pages.

The concluding section of the book ends with a whimper, which is a strategically suspect approach to ending a book. I expected final recommendations for preventing environmental devastation and attenuating global warming and its likely negative impact on global public health. Instead we get recommendations on changes to public health *education*. These are recommenda-

tions that are not likely to bring new recruits to the battle against air pollution and climate change, although these could be influenced in an evolutionary manner by the recommendations. As an aside, readers who are familiar with public health education in the United States may protest the assertion that public health schools in the United States aim more at training those who work in federal or international agencies, rather than at the state or local level.

**Air, the Environment, and Public Health** covers a large amount of territory, but does not always tie it all together. The attempt to provide both a philosophical basis for policies to combat climate change and its effects, as well as practical advice on public health training, is perhaps too ambitious for this relatively slim volume. Nevertheless, I learned a fair amount in reading this book, despite the critical tenor of many of my comments. Kessel successfully engages the reader in the important debate on air pollution and global warming, and expands the boundaries of the debate to include some of the philosophical bases of Western civilization. And that is not a mean feat. I suspect that it will be only the rare reader of *RESPIRATORY CARE* who will find these to be compelling topics. But I could be surprised.

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**REFERENCE**

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**Tropical Lung Disease**, 2nd edition. Om P Sharma, editor. *Lung Biology in Health and Disease*, volume 211, Claude Lenfant, executive editor. Boca Raton: Taylor & Francis. 2006. Hard cover, illustrated, 541 pages, \$198.95.

The tropics is the geographical region of the Earth centered on the equator and limited by the Tropic of Cancer on the north

and the Tropic of Capricorn on the south. Tropical diseases are unique because of the hot climate present all year round. Large volumes of rain each year impact the formation of breeding grounds, the number and variety of animal diseases that can be transmitted to humans, and insect disease vectors. Socioeconomic factors also impact heavily on the epidemiology of tropical diseases, since most of the poorest nations are located within the tropics.

This book is timely; it reminds us that although these diseases are mostly seen in the tropics, they can have a worldwide impact because of the increased mobility of people and animals, as evidenced by the recent severe acute respiratory syndrome epidemic and the spread of avian influenza. In addition, weather and climate changes will impact the geography of tropical lung diseases, making this topic less exotic and more relevant than ever.

This book is divided into 3 main parts: an approach to tropical lung disease diagnosis (Chapters 1–5), common presentations of tropical lung disease (Chapters 6–9), and discussions on specific tropical diseases that affect the lung (Chapters 10–22).

The introductory chapters provide a good overview to the spectrum of tropical lung diseases and a useful clinical algorithm for approaching patients with these diseases. These chapters would be of interest to readers who are unfamiliar with tropical diseases, in that they provide a “bird’s eye view” of what medical conditions they might encounter when they travel to the tropics or consult on a patient who has recently returned from the tropics. Chapter 2 includes a detailed list of diseases by geographic distribution, which will be a useful quick reference guide for physicians. However, there was no mention that malaria is commonly encountered in many parts of South and Southeast Asia, which is an important point. The discussion of the role of diagnostic bronchoscopy in the diagnosis of tropical lung disease will be useful, especially to pulmonologists. A welcome addition to this chapter would have been information on infection-control practices, such as patient isolation, use of contact precaution, and use of the powered air purifying respirator, since many tropical diseases are infectious. Chapter 4, on lung immunology, provides an up-to-date summary of host defense mechanisms in the lung and is well-presented, since the topic is vast and new findings are published regularly. This chapter will be a good

starting point for physicians and students with a keen interest in lung immunology, although the reading might be heavy for those unfamiliar with the topic.

The second part of the book focuses on the differential diagnosis of common presentations of tropical lung disease: community acquired pneumonias, pleural effusions, granulomatous conditions, and eosinophilic lung diseases. There are useful discussions on the immunological basis of disease and the approach and differential diagnoses that should be entertained. Certain chapters suffer from a lack of illustrations, focusing instead on textural descriptions of life cycles, which can be hard to follow.

The third part of the book focuses on specific tropical organisms that affect the lung, as well as noninfectious lung conditions encountered in the tropics.

Chapters 10–15 discuss specific parasitic lung diseases: malaria, entamoeba, paragonimiasis, echinococcus, and schistosomiasis. The chapters on malaria discuss the immunopathogenesis of disease in malaria and severe malaria, as well as the development of immunity to malaria. Physicians unfamiliar with malaria should read these chapters: the pathophysiology, diagnosis, and treatment of malaria are well presented. The tables and charts give a good overall view on the critical care aspects of treating malaria and serve as a quick reference on specific management issues. The chapters on entamoeba, paragonimiasis, and schistosomiasis are well written and include illustrations of the life cycle of the inciting parasite and how humans can become infected. The included chest radiographs and case studies help illustrate the disease.

The discussions on familial Mediterranean fever, Behçet's disease, sickle cell disease, and diffuse panbronchiolitis summarize the common clinical presentations and the latest research results. In most chapters, radiographs are appropriately used to show the anatomical abnormalities. More diagrams and radiographs could have been used, however, to illustrate the pathophysiology and immunology aspects of sickle cell disease's effects on the lung. The reading would be easier if the clinical presentation was discussed after the pathophysiology and immune alterations in the chapter on Behçet's disease. In addition, the authors used the older terminology of "bronchiolitis obliterans organizing pneumonia" instead of "organizing pneumonia," which is the currently accepted term. Otherwise, adequate reference was made to relevant publications, and the authors put forward a clear and concise picture of this disease.

Chapters 18 and 19 discuss 2 important infections that occur in the tropics: endemic mycosis and leptospirosis. The chapter on endemic mycosis must have been difficult to write, as the authors had to limit their scope of discussion to what is considered endemic, depending on the locality concerned. The authors chose the 3 fungi most common in North America, and paracoccidioidomycosis, which is endemic in Central and South America. The main emphasis was on clinical presentation and diagnosis, but the radiographs chosen could have been better. The authors focused mainly on the pulmonary aspect of leptospiral disease, with some mention of other systemic involvement of leptospirosis. However, 4 tables on Brazilian leptospirosis statistics were shown, which were probably unnecessary and not

representative of world statistics. Again, the quality of the radiographs could have been better.

The last chapter reviews treatment of tuberculosis in the tropics and highlights the problem of the high burden of tuberculosis and human immunodeficiency virus in these regions, which is often fraught with limited resources. Clinicians and health administrators would find this timely contribution particularly useful and relevant to their practice. We would have liked to see greater use of summary tables for the details, facts, and treatment recommendations on tuberculosis, which instead were presented in a narrative fashion that does not make for easy reading and quick reference.

We highly recommended this book, both as a reference and as a quick guide to tropical lung disease for students, respiratory therapists, nurses, and physicians. Given the broad spectrum of diseases covered, the authors avoided the pitfall of providing too many details on each topic, which could make the reading tedious. The up-to-date references facilitate further in-depth reading into each topic. Although some chapters lack accompanying illustrations and summary tables, this book remains an excellent and well-written text.

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