

**Teaching in Your Office: A Guide to Instructing Medical Students and Residents**, 2nd edition. Patrick C Alguire MD, Dawn E DeWitt MD MSc, Linda E Pinsky MD, Gary S Ferencik MD. Philadelphia: American College of Physicians Press. 2008. Soft cover, 192 pages, \$49.95.

Ever since Flexner's 1910 report to the Carnegie Foundation for the Advancement of Teaching, "Medical Education in the United States and Canada," regarding the ill state of medical education, considerable effort has been invested by medical schools and educators to standardize and improve medical education and thus the quality of the doctors it produces. One of the first major transitions was the adoption of the basic science curriculum and thus a transition away from the apprenticeship model, to an institutional and classroom based model. Pedagogical pendulums swing, however, and in recent decades there has been a considerable shift toward improving the focus and standardization of clinical teaching, including "community-based" clinical teaching in doctors' offices. In a sense there has been a revival of apprenticeship-style learning in medicine, with attention to the idea that because the "office" is generally the environment in which most doctors practice, it makes good sense to teach them what this experience will be like when they arrive for work.

Thus, this volume is directed primarily at physician-teachers who are based in the "community" and instruct medical students and resident physicians, generally on a volunteer basis, while also managing their practices, seeing patients, doing committee work, and all of the other tasks that physicians typically undertake. Like many other areas of education, the topic of how best to teach student doctors engenders much discussion and opinion, but little fact. There are few scientific studies regarding the best teaching methods, and the quality of the existing studies is poor, in part due to a general lack of funding and institutional interest in researching these topics. Despite this lack of data, Alguire et al undertook a valiant attempt to summarize the available studies regarding office-based teaching methods and principles, in effect summarizing a tor-

rent of literature from lesser-read journals such as *Academic Medicine* and the *Journal of General Internal Medicine*. This effort falls short, as such an effort only can, and ultimately the experience and opinions of the authors and the current pedagogical culture shine through. From my perspective, though, it is these pearls of wisdom and experience that junior teachers crave most to glean from experts.

Like everything else doctors do, teaching can fall prey to becoming a rushed, off-the-cuff activity that occurs at odd times and keeps students feeling awkward and off balance. For example, rapid-fire didactic reviews of cardiac physiology that occur over a hurried lunch may not be the most conducive to information retention. This book works very hard to highlight ways in which physicians can efficiently and effectively fit teaching moments into their day's work. A helpful theme that is highlighted throughout the book is that good teaching and patient care can often occur simultaneously and enhance each other. For example, a patient in the office for uncontrolled asthma may benefit from hearing a preceptor highlight a few points to the student about how physical examination findings such as breath sounds and peak expiratory flow can help a clinician assess disease progression. The patient can learn from these points and better appreciate what the doctor may be doing and thinking. Likewise, a student who, for example, observes a preceptor teach a patient to use a metered-dose inhaler might learn how to use an inhaler better and, more importantly, how to teach the skill to patients.

One of the book's greatest strengths is organization. The chapters make sense and are easy to thumb through for useful tidbits for the mentally blocked clinical teacher. Chapter topics include "Teaching Skills and Organizational Techniques for Office Based Teaching," "Case-Based Learning" (a discussion of different models of teaching cases), and a chapter on efficient use of time while teaching.

The chapter on case-based learning gives several models of how to efficiently teach a student, with high-impact techniques. One technique is the "1-minute observation," in which the preceptor observes the student in

action for 1 minute using a focused skill (such as the cardiac examination) and then provides immediate feedback. Though this approach seems simple and derived from common sense, busy clinical teachers will recognize the tendency to forgo such teaching opportunities unless there is an intentional, structured process such as the 1-minute observation. Thus this book reminds us to pay attention to how we teach.

One of the most important chapters is on how to skillfully provide useful feedback to students. Feedback and evaluation are among the greatest challenges for most clinical teachers, despite all the attention being paid to this topic. In an effort to make preceptors more aware, this book describes pitfalls of and barriers to giving good feedback, which, though fairly obvious, are important to bear in mind. Certainly it is important for teachers to remember that there may be tension from the power structure inherent in the student-preceptor relationship, which creates obstacles to providing nonjudgmental feedback. The book also makes the point that accurate grades and summative evaluation are indeed important for distinguishing students from one another. Humorously pointed out is the "Lake Wobegon Effect" in grading, which is the erroneous trend to grade all students "above average." The chapter finishes with a robust discussion on the standardization of summative evaluation and grading in clinical education with scaled scores such as the RIME (reporter, interpreter, manager, educator) scheme, in which the preceptor rates the student's abilities to report and interpret data, manage patients and develop expertise.

The appendixes are quite helpful. For quick reference and to inspire a teacher to try something new or different, they contain various summaries of teaching techniques, evaluation forms, and checklists of clinical skills. These are also accessible online at the American College of Physicians Web site.

My criticisms of this volume are generally limited to secondary issues. Overall the book's approach is a bit generic. Though the authors provide advice about how to teach both medical students and residents (whose learning needs are quite different),

they also suggest that the book is applicable in both primary-care and specialty medicine. Thus it loses focus and impact to appealing its broad scope. Personally, I would more appreciate a focused review of how best to teach medical students general internal medicine in 6 weeks. In general, primary-care physicians will probably find this book more useful than specialists.

Another criticism is that the tone of some of the writing feels a bit pedantic and stifling, often imparting wisdom with rigid statements that left me with the feeling that there is a correct way to teach. There is an excessive reliance on acronyms for teaching and feedback methods (eg, SNAPPS [summarize, narrow, analyze, probe, plan, select], RIME, and mini-CEX [clinical evaluation exercise]), which may be dizzying to the unfamiliar reader. These criticisms are relatively minor, however.

In general the volume is well written and well organized into useful segments for quick access. It covers important topics in teaching techniques for some of the most important teachers in medicine, who were without much useful guidance before the first edition of this book. Although slightly overpriced at \$49.95, this book is a very useful reference for the busy clinician teacher, especially in primary-care medicine, who wishes to enhance teaching effectiveness in an evidence-based manner. Respiratory therapists and allied health professionals will probably have less use for this volume, unless they are heavily involved with medical-student teaching.

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**Egan's Fundamentals of Respiratory Care**, 9th edition. Robert L Wilkins PhD RRT FAARC, James K Stoller PhD RRT FAARC, Robert M Kacmarek PhD RRT FAARC. St Louis: Mosby/Elsevier. 2008. Hard cover, 1,408 pages, \$99.95.

**Egan's Fundamentals of Respiratory Care** has one of the longest and most prolific histories of any respiratory care text. It began as "Egan's Fundamentals of Inhalation Therapy" in 1969, and became a foundation text in respiratory care education by mapping the scope of practice into a logical flow of theories, attributes, and skills. Egan's original intent was to create a text that contained the minimum knowledge to practice the scope of what was then inhalation therapy. After 9 editions, much has changed. The 3 primary editors continue to take up Egan's mantle and attempt to capture the scope of respiratory care in one volume. The book is written for the respiratory care student, but also serves practicing respiratory therapists, nurses, and physicians in training. Egan's is often the first place I look for an overview of a topic as I prepare to teach.

When I received my review copy, the first thing I noticed was the drastically different color scheme from that of the previous edition, which was a wise change. The volume resembles previous editions in size and character, and it appears sturdy. The end papers provide handy symbol and term definitions, tables, and formulas, such as those for  $P_{AO_2}$  and resistance of the airways ( $R_{aw}$ ).

The book has 7 sections with 51 chapters, which follow a logical progression: foundations of respiratory care, applied anatomy and physiology, assessment of respiratory disorders, review of cardiopulmonary disease, basic therapeutics, acute and critical care, patient education, and long-term care. There are 4 appendixes, which include valuable conversion factors and a comprehensive table of normal values. The 45-page glossary contains many common terms students grapple with. The index is comprehensive, clear, and easy to use.

The 3 editors, Wilkins, Stoller, and Kacmarek, captained an impressive cadre of 43 authors. New in this edition are a chapter on the history of respiratory care, and a divided chapter on clinical laboratory values and the electrocardiogram (which were previously combined). Several chapters underwent substantial rewrites that document the many changes in respiratory care in the 5 years since the 8th edition. There is expanded treatment of vital topics, including the Health Insurance Portability and Accountability Act of 1996 (HIPAA), evidence-based medicine, nutrition, and computers in health care. Throughout the section on cardiopulmonary disease are discussions of the respiratory therapist's role in disease management, a trend that Pierson outlined in his 2001 out-

look on the future of respiratory care,<sup>1</sup> which the authors point out in Chapter 1.

The chapters follow a consistent layout throughout the text. Each chapter begins with a set of learning objectives designed to mimic the 3 cognitive levels in the National Board for Respiratory Care (NBRC) examinations: recall, analysis, and application. The objectives are kept brief, even for such substantial chapters as Chapter 43, "Physiology of Ventilatory Support" (only 4 objectives for a 40-page chapter). Following the objectives is a chapter outline, a list of key terms, and an overview statement that explains why the material is important. The chapter content is logically presented, from simplest to most complex. The overall look of the pages is generally clean, owing to the use of more muted colors than in previous editions. The publisher concentrated the color where it is most beneficial: in the graphics. The various graphic elements do a fantastic job of supporting the text. The writing is in a friendly, informative voice that is easy to read. Content is referenced to the detailed chapter bibliographies. Clinical practice guidelines are used in many chapters, which emphasize and support the text. Each chapter concludes with a bulleted list of key points, which will help students answer the perennial question, "What do I need to know?" The included references represent the current state of evidence and provide a great reading list.

The color graphics, photographs, and line drawings are consistently adjacent to the text they support, add value to the text, and are appropriate for the subject matter. Chapter 8, "The Respiratory System," has many full-color illustrations, photographs, radiographs, and micrographs. The subsequent chapter, on ventilation, uses many graphs and illustrations to support the complex material presented. Color graphics adds considerably to the expense of a text, and the publishing team did a good job of getting the most "bang for the buck." The book's price, \$99.95, is moderate, though the price is one of the primary complaints I have heard about **Egan's** over the years.

The book's tables are mostly clear and concise, without clutter. Tables can add tremendous value when used appropriately, and **Egan's** does not disappoint. There are also boxes that illustrate mathematical principles, application of theory, and key points. These are timely and also support the body of the text. Clinical "pearls" are given as "Rules of Thumb," which are called out from

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the main body of the text to strengthen the main themes from the text.

The “Mini Clini” sections give short clinical vignettes that pose clinical problems and give the solutions. The problems are well written and thought provoking. The solutions are informative and illustrative. This is a dynamite way of cultivating critical thinking in students. As an instructor, I question the need to have the solution adjacent to the problem. There are pros and cons to doing so. Presenting a problem is an ideal way to pull a reader from the passive learning mode of reading into a more active role. Placing the solution adjacent to the problem may leave the reader stuck in the passive mode. On the other hand, the solutions are meant to call out the theory from the text and illustrate the application of that theory. I can see the merits of both sides of this argument. Either way, the “Mini Clini” is a thought-provoking way to support claims made in the chapter and to help build the application and analysis skills required in respiratory care.

This text has 2 supporting elements: a workbook (reviewed below), and Elsevier’s “Evolve” learning management system Web site. Elsevier plans to launch an entire Web-based course around **Egan’s**, for which there will be an additional cost. I previewed one of the units of that online course, and found it to be a great companion to the text. Material was presented to accompany the text, and there were numerous interactive learning elements. The module utilizes text and animations that allow learners to work asynchronously. The exercises are designed relative to the 3 cognitive levels. The course also has NBRC-style questions and branching-logic clinical simulations. There are also some synchronous communication and social networking tools at Evolve. As free resources to accompany the text, Evolve also contains (as it has in the past) answers to the workbook questions and some neat links to further research. Something I found intriguing and helpful was an NBRC matrix that is indexed to the text. For instructors it features an online grade book, test bank, and presentation slides for most of the chapters in the text.

The field of respiratory care has grown up with **Egan’s Fundamentals of Respiratory Care**. Egan’s original intent to document the scope of practice and the minimum knowledge base needed for practice is still the backbone for this text. The current editors have retained the spirit of the orig-

inal aims of the book and brought it up to a level commensurate with the state of respiratory care. As with any text, there is, no doubt, already work underway that will date this edition. The editors have done an amazing job of updating and reorganizing the content to document and support the respiratory care profession in a way that will make it understandable for students and informative for practitioners. Strong use of graphic elements add tremendous value to the text, and the book’s accompanying education resources are superior.

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#### REFERENCE

1. Pierson DJ. The future of respiratory care. *Respir Care* 2001;46(7):705-718.

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**Workbook for Egan’s Fundamentals of Respiratory Care**, 9th edition. Robert L Wilkins PhD RRT FAARC and Stephen Wehrman RRT RPFT AE-C. St Louis: Mosby Elsevier. 2008. Soft cover, 592 pages, \$29.95.

In the preface to this 9th edition of the **Workbook for Egan’s Fundamentals of Respiratory Care**, Wehrman writes, “the problem for all health students is information overload.” This is true. With the Internet on everyone’s desktop, laptop, palmtop, and cell phone, instant access to information has become commonplace for the majority of today’s students. The problem is judging the quality of that information. How does one sort through the myriad health-related data on the Internet and decide what to trust and what to discard? Instruction to the modern student must take these facts into account. Wehrman states that one of the goals was to “help you sort out some of the information you will need to succeed in practice and to pass your board examinations.” The book professes to help answer 3 fundamental questions: What do I need to know? Why do I need to know it? and How will I use it?

The intended readership includes respiratory care students and instructors. The book has 592 pages, a soft cover, and perforated pages, which make it easy to tear

out sections, presumably for use as homework assignments. The workbook follows, almost verbatim, the outline of **Egan’s Fundamentals of Respiratory Care**. There are 7 sections (Foundations of Respiratory Care; Applied Anatomy and Physiology; Assessment of Respiratory Disorders; Review of Cardiopulmonary Disease; Basic Therapeutics; Acute and Critical Care; and Patient Education and Long-term Care), and 51 chapters.

Elsevier’s “Evolve” learning resource center (<http://evolve.elsevier.com>) provides valuable complementary materials for instructors and students, including all the answers to the workbook exercises, and a cross-reference guide that links items from a detailed content outline of the National Board for Respiratory Care (NBRC) Certified Respiratory Therapist examination to the respective content in the textbook and the workbook. The preface to the workbook states that this feature is also available for the Registered Respiratory Therapist examination, but I did not find it at the Evolve Web site at the time of this review. Elsevier has done a nice job of integrating the traditional textbook with the online environment, which will appeal to many respiratory care programs that use a similar approach to deliver course content. The modern, computer savvy student will probably find the online resources attractive as well.

Many workbooks published in conjunction with respiratory care textbooks amount to nothing more than a collection of multiple-choice/fill-in-the-blank questions. Such exercises, while somewhat helpful, are rarely engaging or interesting on their own, and rarely require the student to do more than re-read a section of text to find the answer. That type of question falls into the NBRC category of “recall,” which is the lowest of the 3 cognitive levels assessed by the national board examinations. With each new iteration of its matrix and detailed content outline, the NBRC continues to raise the bar. More questions are being written to assess the application and analysis levels of understanding expected of the new graduate, so it is important that exercises engage the student and challenge his or her understanding to this higher level of thinking. The workbook accomplishes this through an engaging tone, a variety of learning activities, and by inviting the student to explore other learning resources. It will enhance any respiratory care course.

Each chapter begins with a quotation and foreword that touches on a key point in the chapter's exercises or details an author's personal experience. For example, Chapter 25, on pleural diseases, begins, "Imagine a piece of cake enclosed in Saran Wrap. Or, if you prefer collapsed lungs, a sandwich covered in that thin, tough clear stuff that we use to store food. Thinking about pleura always makes me think of plastic wrap." This conversational tone helps attract and retain reader attention. Often the text reads as if the instructor is present, leading you through the activities. The inclusion of anecdotes and explanations helps answer the question, "Why do I need to know it?"

One aspect of a successful workbook is variety, which helps to keep the learning process interesting. This workbook does a nice job of providing several ways to test your knowledge and understanding of the subject matter. Recurring sections include "Word Wizard," "What Does the NBRC Say?," "Case Studies," and "Information Age."

Respiratory care is filled with terminology. Terms describing breathing patterns, acronyms for our professional organizations, and acronyms for ventilator modes all find their way into our everyday work. For the new student, simply learning the differences between all of these terms is daunting. Add to this the importance of applying this terminology in a meaningful way to difficult concepts and we, as educators, are faced with a difficult task. The "Word Wizard" sections cover the important task of reinforcing our profession's language. Activities under this heading include matching exercises, crossword puzzles, and fill-in-the-blank questions. These exercises always occur at the beginning of the chapter, which reinforces the importance of understanding the vocabulary before moving on to more difficult concepts.

The "What Does the NBRC Say?" sections typically include sample NBRC-style multiple-choice questions and comments regarding what is typically found on the examination (eg, how many questions on this subject). Early exposure to the NBRC-style test format is important. Students learn to tackle this type of question through practice. Though these sections are no substitute for a book dedicated to NBRC examination preparation, the handful of questions provided is a nice aspect of this text.

Each chapter also has a case studies section, with open-ended questions that require

the learner to operate on the application and analysis levels. There is space provided in the text for short answers. This type of learning, in which the student applies the textbook material to a new patient context, helps reinforce understanding and prepare the student for the NBRC clinical simulation examination and clinical practice (ie, How will I use it?).

Textbooks are at a decided disadvantage in today's health care world. As soon as they are printed, they begin to become outdated. The omnipresence of the Internet can help keep practitioners informed and up to date, but how does one sort through all that information? This workbook helps point the student in the right direction. At the end of each chapter the "Information Age" section provides one or two Web sites to explore. These are typically high-quality educational sites that have worthwhile, relevant information that complement the text.

In summary, this workbook is a well-rounded, engaging companion piece that accomplishes its stated goals. The authors speak in an engaging, conversational tone throughout, and employ a variety of learning activities that will strengthen students' knowledge and skills on the recall, analysis, and application levels. The text also points the learner to online resources, including the publisher's online learning center and other sites that are peer reviewed and routinely contain high-quality information. This workbook would be a quality addition to any program using **Egan's Fundamentals of Respiratory Care**.

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**Emergencies in Critical Care.** Martin Beed, Richard Sherman, Ravi Mahajan, editors. *Emergencies In* series. New York: Oxford University Press. 2007. Soft cover, 523 pages, \$42.95.

**Emergencies in Critical Care** is a handbook in the Oxford University Press *Emergencies In* series. It is intended to fit in a lab coat pocket and to be used by critical care house staff, nurses, and consultant physicians in the emergency setting.

Given the book's aim, the authors faced several formidable challenges. One of the

most important was organization. The book must be organized predictably and logically to be effective. This extends from how the information is grouped into chapters to how the information is presented on the page. In my view the authors succeed admirably in this endeavor. This is one of the main strengths of the text.

The book is divided into 2 broad sections. The first two thirds covers the standard airway/breathing/circulation/disability algorithm. One chapter is devoted to each of those. The last third of the book is organized by patient population (eg, surgical or obstetrical) and condition (eg, poisoning/overdose or infection).

The chapter heading appears on top of the right page, in large clear print, and the subject heading appears at the top of the left page. This makes it easy to quickly find information without having to rely on the index.

Most chapters begin with a few pages that give an approach to and overview of treating emergencies in whichever organ system or patient group the chapter covers. The information for each subject is presented in a consistent order. First the condition is summarized in a few sentences. Then the subject is broken down under the following headings: causes, presentation and assessment, investigations, differential diagnoses, immediate management, further management, pitfalls/difficult situations, and further reading.

The immediate management section is, in my view, the book's most important and useful feature. It is highlighted and easy to spot, and it contains concise and immediately applicable information, including information about drugs, doses, and essential points of early management. Directly following the immediate management sections there are often useful tables and charts on the subject. For example, the section on myocardial infarction features tables with thrombolysis indications and absolute and relative contraindications.

The immediate management section is followed by the further management section, which rounds out the topic once the patient is stabilized. The further management section is useful, but presents a challenge, because some of the information in these sections is controversial. The authors did a good job of offering what is viewed as common practice by the critical care community. For example, the use of steroids for sepsis is debatable, and the evidence for ste-

roids for sepsis is not absolutely clear. But the majority of clinicians use them in certain situations, so it is important to mention them.

Given the limited space in a pocket book, this text can't be fully comprehensive, but the authors chose an excellent balance of which conditions to include and which to leave out.

Another useful feature is the chapter on common emergency procedures, which gives the steps of various procedures, including needle cricothyroidotomy and intraabdominal pressure measurement. Admittedly, if this text were a reader's first exposure to certain techniques, it would be dangerous to attempt them based solely on this book's instructions. However, it may serve as a checklist for a junior trainee to quickly review the procedure before commencing.

The book uses symbols (which appear by the subject headings) that denote the degree of instability or danger associated with

each condition. This may help inexperienced practitioners identify emergencies.

The book is bound in a soft plastic cover, which, in my experience with other Oxford handbooks, is durable and can survive the wear and tear associated with accompanying a resident around the wards. There are 2 ribbon bookmarks built into the binding, which I found useful.

For a future edition I would suggest that the book be made friendlier to North American users. Glucose should be reported in both mg/dL and mmol/L, and gas pressure should be reported in both mm Hg and kPa. In the section on infections, the antibiotic selections for severe pneumonia could also be augmented to include first-line options for North America, where drug-resistant organisms are more prevalent.

I had the opportunity to "road test" the book while acting as a junior consultant regarding a patient with diabetic ketoacidosis. I easily found the relevant section without using the index, by leafing through to the metabolic/endocrine chapter. The symbol

key notified me that this patient was unstable, and, were I a resident, that senior help should be sought. The immediate management section was useful and relatively complete for the initial resuscitation. It correctly warned about common complications of resuscitation, such as hypokalemia. The investigations section provided the framework for investigating the etiology, which in this case was myocardial infarction. The section included a handy sliding scale for insulin adjustment and a table that detailed a potassium-replacement algorithm for resuscitation.

Overall I recommend this book for junior and senior house staff and critical care nurses. It is portable, well constructed, well organized, and has an excellent balance of completeness and concision.

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