

likely to spend a substantial amount of time preparing for the Certified Respiratory Therapist (CRT) and Registered Respiratory Therapist (RRT) examinations, so it is important that a review book actually has the material that, if learned, will prepare the graduate for success. A good review book will help candidates identify areas for improvement so that they are not more confident than is warranted. On the other hand, a review book or review system should not contain material that substantially exceeds the depth for which the candidate will be tested or the candidate may become inordinately discouraged. It is a challenge to evaluate a review book because this type of book is supposed to encompass the full breadth of testable respiratory care knowledge.

As an educator, I have been working to prepare students to become competent respiratory therapists and to pass the national examinations for 26 years. I have used a litany of respiratory therapy preparation materials. In addition to other exam-prep materials for at least 8 years I have consistently used all of the previous editions of Sills' **Advanced Respiratory Therapist Exam Guides**. In early June, the question of the choice of review books came up in the American Association for Respiratory Care's Education Section Digest. This book was among those currently recommended by respiratory care professors.

The fifth edition combined the previous entry and advanced levels into one volume. The book maintains the chapter organization used in previous books. Following an introduction with recommendations for exam success, chapters 1, 3, 4, and 5 review aspects of cardiopulmonary assessment. These aspects include patient assessment and care management, blood gases, pulmonary function testing, and advanced cardiopulmonary monitoring. Chapters 2, 6, 7, 8, 9, and 10 review basic therapeutics, including infection control, medical gas therapy, hyperinflation, humidity, aerosol therapy, pharmacology, and bronchopulmonary hygiene. Chapters 11, 12, 13, 14, 15, and 16 review the more critical care topics of cardiac monitoring, airway management, suctioning, intermittent positive-pressure breathing, and mechanical ventilation of the adult and child. The final 2 chapters review home care, pulmonary rehabilitation, and special procedures. These chapter progressions are easier to follow than those of the National Board for Respiratory Care (NBRC) examination matrix. Not follow-

ing the examination matrix is an important weakness, because if a graduate performs low on "III G, Recommend Modifications in the Respiratory Care Plan," the student or faculty member may not know where to find the corresponding content in the book. With Sills, the examination matrix codes and difficulty levels are cited through the text, but I have always felt that it is difficult to direct a student based on a low score in a particular examination matrix area. I think it is too hard to direct the student to the content that will address a student's low examination matrix WRE (written registry examination) code III F score using this book.

Chapter sizes differ, depending on the number of examination questions found on the credentialing exams. Each chapter begins with a notation about the typical number of exam questions related to the topics presented. The chapters are divided up according to bold-faced matrix code topics. The chapters define and review the key concepts with a generous number of tables, figures, radiographs, photographs, graphs, and charts. Interspersed through each chapter are examination hints that focus the students' attention on how they are likely to be tested on the material. Following the chapter bibliography is a series of entry-level and then advanced-level self-study questions. Answers to these questions and explanations are found in an appendix.

Part of what I believe students need to do to prepare is to practice taking exams. Ideally, the examination should score the student in a way that is comparable to an actual NBRC exam, so that the student does not become over-confident or under-confident. Additionally, the student should be able to discover areas of weakness in both examination reasoning and in content. In this book, students can find exam questions at the back of each chapter, and candidates can access online practice tests in both a study mode and an exam mode for the entry-level exam and the written registry exam. I started each of these examinations and believe them to be valuable resources. Ten clinical simulations are also included on the Elsevier web site. I believe that these simulations are valuable.

However, in my opinion, the simulations have been insufficiently updated over the years. There are ways in which I believe that these simulations are not keeping up with either the revisions in the book itself, with NBRC, or with current practice. In 2009

the NBRC made it a matter of record that it *does* expect graduates to make decisions based upon the National Institutes of Health Acute Respiratory Distress Syndrome Network (ARDSNet) with regard to plateau pressure, small tidal volumes, tolerance of hypercapnia, and not maintaining high P_{aO_2} as long as one is not inducing pulmonary hypertension. None of the simulations tests these concepts at a level sufficient to develop competence in applying ARDSNet ventilation strategies.

Despite some issues mentioned, I highly recommend this review book as part of a collection of methods to help students and graduates prepare for the credentialing examinations. Programs need to take advantage of the resources provided by the NBRC, this review book, and the resources provided by other publishers to assure that graduates are ready to take the boards and to enter the workforce credentialed. I have always felt that the Sills package is a great value for the quantity of resources provided.

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The author has disclosed no conflicts of interest.

Critical Care Handbook of the Massachusetts General Hospital, 5th edition. Luca M Bigatello MD, senior editor. Hasan B Alam MD, Rae M Allain, Edward A Bittner MD PhD, Dean R Hess PhD RRT, Richard M Pino MD PhD, and Ulrich Schmidt MD PhD, associate editors. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 2010. Soft cover, 752 pages, \$54.95.

The authors describe the **Critical Care Handbook of the Massachusetts General Hospital** as a "pragmatic review of the basis of adult critical care, designed for all trainees and practitioners." Written by experts from anesthesiology, surgery, medicine, respiratory therapy, nursing and pharmacy, it covers diverse aspects of intensive care unit (ICU) medicine, with the self-stated goal of describing the physiology and scientific evidence behind their recommendations with a focus on the implementation of practices from outcomes-based research.

The material is written as prose organized in outline form, with keywords marked in bold print for easy discovery. It is written as a broad reference handbook to be read by individuals from various backgrounds (nurses, respiratory therapists, pharmacists, and physicians), though specific areas will be more relevant to certain individuals than others. The more advanced practitioners will find it most useful as a reference manual, whereas trainees could use it as a guide to complement their education in ICU medicine.

The information and recommendations made in the book mostly come from established practice guidelines and clinical trial results, with some expert opinion, and the authors are usually conscientious in describing the source of the information. The knowledge is presented in formulated statements with limited discussion of the primary data; however, numerated links connecting the text to individual references are not provided.

The book is written in 2 parts, entitled "General Principles" and "Special Considerations," with a table of contents, index, and an appendix covering the pharmacology of typical medications used in ICU medicine. Within the appendix there are 3 distinct tables containing a pharmacopeia of intravenous antimicrobial medications, followed by 2 charts comparing the relative potency of common opioids and benzodiazepines.

"General Principles" contains 16 chapters, including expected sections on ICU monitoring, mechanical ventilation (including airway management and sedation), volume and vasopressor management, general infectious-disease considerations, and nutrition, with additional chapters focused on the care of the neurologic and trauma patient. New to this edition is the inclusion of a chapter on the use of ultrasound in the ICU, with clear and demonstrative screen images of exceptional quality. Although it cannot replace the necessary hands-on instruction required for anyone interested in applying ultrasound to the ICU, it is an excellent introduction for the untrained practitioner and serves as a reference to those who have already received instruction. Also new to this edition is a chapter entitled "Quality Improvement and Prophylaxis" that has detailed sections on infection control; intravenous catheter management; and prophylaxis of ventilator-associated pneumonia, deep

vein thrombosis, and stress-induced gastrointestinal bleeding.

Additional chapters of note include one on the ethical and legal matters encountered in the ICU, which contains a synopsis on the palliative care of the dying patient. The section on "Evidence Based Practice and Basic Statistics in Critical Care" defines introductory statistical terms and clinical trial design, with a description of a method for grading the strength of scientific evidence, definition of severity-of-illness scores, and explanation of clinically important variables in outcomes-based ICU research.

The second part of the book, entitled "Specific Considerations," consists mostly of chapters dedicated to particular pathologic conditions, with several addressing the postoperative care of selected patient populations. Initial chapters deal with cardiac (coronary artery disease, valvular heart disease, and dysrhythmias) and pulmonary concerns (COPD, asthma, pulmonary embolus, acute respiratory distress syndrome, and ventilator liberation). Additional chapters cover other medicine subspecialties in single chapters, including nephrology, gastroenterology, endocrinology, and infectious disease, with specific attention to the ICU aspects of each area of expertise. Three chapters deal with neurologic conditions, including cerebral vascular accidents, encephalopathy, ICU weakness, seizures, and neurologic trauma. Chapters on transfusion medicine, drug overdose, and resuscitation are also included, with the resuscitation chapter containing the current 2005 American Heart Association guidelines for cardiopulmonary resuscitation. There are important chapters on the burned patient, disaster preparedness, obstetrics, and an interesting chapter on the role of the intensivist outside of the ICU, regarding 24-hour coverage, rapid-response teams, triage to ICU beds, and telemedicine for critical-care coverage from a distance. There is a timely chapter focused on the specialized care of the obese patient, with specific attention to their unique physiology, pharmacokinetics, respiratory problems, and bariatric surgery.

Chapters on the ICU care of postoperative patients after vascular, thoracic, or transplant surgery highlight the early postoperative course and commonly encountered complications. The post-transplantation chapter focuses only on liver, kidney, and lung transplants pertaining to the immediate postoperative ICU care, with a brief description of long-term management complica-

tions that may also require ICU care. There is a notable absence of a section on heart transplantation, whose complexity would probably demand its own chapter.

Throughout the book there are high-quality images and electrocardiograms that are well marked to illustrate the principles described in the text. There are multiple tables and figures to provide additional data best presented in tabular form or flowcharts. The mechanical ventilation chapters have respectable waveform diagrams that assist the reader in understanding the more salient principles of artificial respiration. In general, all of the graphics are expertly presented, except for figure 11-2, which has a hand-drawn diagram of the placement of a stilet feeding tube, which is less useful and out of place, compared to the other diagrams.

My criticism of this book is the lack of a more established bibliography to allow the reader to evaluate the primary literature as interest dictates. The included references appropriately refer to the larger clinical trials with the greatest impact on the practice of ICU medicine (the Acute Respiratory Distress Syndrome Network trials, the Early Goal Directed Therapy trial); however, the lack of numerated citations in the text makes it harder to refer to the primary literature, especially for more junior individuals, who may not be as familiar with the noted studies. Although other journal articles that support the text are not included, the reference section is listed as "Selected References," allowing for the exclusion of less prominent literature.

On a technical note, the index does not have references for some key topics, including "intensive insulin therapy" and "lung-protective ventilation," despite mentioning them in the text as bolded key words. Most of the indexed listings appear to be accurate; however, given the overall quality of this book, I was surprised to find multiple errors in the index. The listing for "septic shock, adrenal insufficiency in" and "insulin" refer to pages 339 and 343, respectively, of the "Acute Kidney Injury" chapter, and the listing for "steroids for sepsis" refers to page 138 of the "Fluids, Electrolytes, and Acid-Base Management" chapter. Review of those pages does not reveal coverage of the indicated topics. For the "septic shock, adrenal insufficiency in" listing, the alternative page reference and listing for "adrenal insufficiency, in septic shock" is accurate; however, there are 2 distinct listings

for “adrenal insufficiency,” with different subheadings separated by “adrenal glands burned patient reassessment” and “adrenalin.” Although not a critical point in terms of the accuracy of the knowledge covered within the text, an inaccurate index in a reference manual is unfortunate and hinders the reader who is looking for specific topics.

Given the breadth of the material it covers, this handbook is a useful reference for physicians, respiratory therapists, nurses, and trainees who work predominantly in the ICU. I foresee it used mostly as a reference

manual for anyone with ICU experience, and a coat-pocket textbook for those in training. Though the book is written for intensivist physicians, I believe the content is beneficial to all, regardless of their background or previous training, as long as they work in the ICU setting. The writing is clear and concise, makes excellent use of bolded keywords for ease of finding specific concepts, and broadly covers the foundation of knowledge necessary for ICU work. The images and electrocardiograms are of exceptional quality and very demonstrative, and the figures and tables expertly summa-

rize or detail complicated concepts in easy-to-follow diagrams. Except for the lack of numbered references in the text and errors of the index pages, this is an excellent guide to the basic knowledge necessary for all ICU team members to comprehend.

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The author has disclosed no conflicts of interest.