

findings. This chapter emphasizes a step-by-step approach to thorough physical examination and defining normal findings with abnormal findings that the practitioner may encounter. The chapter also includes “age awareness” alerts to which the clinician should pay close attention when assessing children or the elderly, and “red flags” to highlight subjects that could be of great importance (eg, during chest inspection, watch for areas of abnormal collapse during inspiration or abnormal expansion during expiration, which could signify paradoxical movement). The “age awareness” and “red flag” alerts appear throughout the book and emphasize the most important parts of each section. Chapter 2 provides a table with which to interpret assessment findings and probable causes, which will be very useful, especially for students to help them critically think through the various possible diagnoses or problems a patient may present with.

Chapter 3, on diagnostic tests and procedures, provides detailed synopses of respiratory diagnostic tests, including the course of obtaining the samples. The chapter starts with blood studies, particularly arterial blood gas values and white-blood-cell counts. The section on arterial blood gases covers the common probable causes of abnormal blood gas values in an easy table format. The one typographical error I noticed in the chapter was in the alveolar gas equation, which is given as:

$$P_{aO_2} = F_{IO_2}(P_B - P_{H_2O}) - 1.25(P_{aCO_2})$$

It should read

$$P_{AO_2} = F_{IO_2}(P_B - P_{H_2O}) - 1.25(P_{aCO_2})$$

The chapter also covers sputum and fluid studies, the difference between transudative and exudative effusions, endoscopic and radiologic imaging, pulmonary function tests, and noninvasive monitoring such as end-tidal CO<sub>2</sub> and pulse oximetry. I would have liked to see more on pulse oximetry, such as device limitations and precautions (eg, abnormal hemoglobins and low-perfusion states) and debunking of some widespread misconceptions regarding the appropriate applications of pulse oximetry.

Chapter 4, on treatments, is a nice reference. It covers all the major treatments seen in respiratory care. This chapter starts off with a thorough yet brief dialogue on drug

therapy and explains the various classes of drugs, such as anti-infectives,  $\beta_2$  adrenergics, corticosteroids, and xanthines. Included in this section are drug-delivery methods (eg, metered-dose inhaler, powder inhaler), indications, adverse effects, and points to which the clinician should pay close attention when delivering medications. Also included are discussions on inhalation therapy, continuous positive airway pressure, mechanical ventilation, and bronchial hygiene. I found all the treatments to be very accurate and according to the American Association for Respiratory Care clinical practice guidelines. I particularly liked the table on troubleshooting mechanical-ventilator alarms, which includes potential causes and interventions.

Chapters 5–10 cover the most common respiratory conditions, from pneumonias (viral vs bacterial) to obstructive, restrictive, and neoplastic disorders, and traumatic injuries. Each chapter covers the pathophysiology, assessment findings, complications, and treatment considerations of a given disease, in a brief, accurate, and easy-to-follow format. I noticed that the description of diagnosing acute respiratory distress syndrome (ARDS) failed to completely use the American/European Consensus Conference’s definition. There is a mention of  $P_{aO_2}/F_{IO_2}$  ratio of <200 mm Hg ( $P_{aO_2} < 60$  mm Hg on room air), but there is mention that the patient needs a pulmonary artery wedge pressure of < 12 mm Hg, which is lower than the 18 mm Hg stated in the consensus-conference definition. Most importantly, there was no mention of using a low-tidal-volume strategy when ventilating a patient with ARDS. The National Institutes of Health ARDS Network study found that a tidal volume of 4–6 mL/kg predicted body weight and a static pressure of < 25 cm H<sub>2</sub>O reduced mortality by 20%, compared to the traditional style of ventilation, when treating patients with ARDS.

Another item I would have liked to see added is in the asthma section of this chapter. The authors mention that the National Institutes of Health endorses a stepwise approach (step 1 mild persistent, through step 4 severe persistent) to treating asthma. However, they failed to mention the corresponding treatment the National Institutes of Health endorses. I found it odd that the authors would describe the steps of diagnosing the severity of asthma but fail to include the treatment options. Including that treat-

ment chart would have been extremely helpful.

The highlights in each of these chapters were the author’s inclusion of educational discharge notes, which will help clinicians and student prepare the patient and family for discharge by making them aware of possible outcomes. Overall, each of these chapters was what I would call the “CliffNotes” for most common respiratory diseases and problems. These supplement big heavy pathophysiology books very well, and this book is an easy-to-use reference.

The last chapter, on emergencies, mainly included information on airway obstruction, bronchospasm, anaphylaxis, and respiratory arrest. I think these discussions will be easily understood, and they include the pathophysiology, assessment findings, complications, and treatment options. I particularly like the illustrated step-by-step explanation of what happens during anaphylaxis. Other chapter highlights were on ways to manage an obstructed airway and a list of common antidotes for drug/toxin-induced respiratory depression.

The appendix has a very useful section on common English-to-Spanish translations, such as ¿Tiene ud tos? (Do you have a cough?) and ¿Ha tenido ud problemas de los pulmones? (Have you had any lung problems?). I’m sure most clinicians who speak only English will greatly appreciate this section when taking care of patients who speak only Spanish. I know I will.

In summary, this text is wide-ranging in its coverage of all areas of respiratory care. I found this compact text logically structured, well written, accurate, and, most importantly, useful to health care practitioners especially nurses, respiratory therapists, and students. I recommend this text.

**Greg S Carter RRT**

Respiratory Care Program  
Tacoma Community College  
Tacoma, Washington

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

**Irwin and Rippe’s Intensive Care Medicine**, 6th edition. Richard S Irwin MD and James M Rippe MD, editors. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 2008. Hard cover, illustrated, 2,847 pages, \$239.

This is the 6th edition of this title, which is a classic multi-author adult critical care

textbook and reference with substantial clinical utility and a cross-disciplinary approach for the intensivist. Having searched for an updated, thoroughly comprehensive reference on evidence-based medicine, I am very impressed with all aspects of this new edition, mostly that the authors maintained the strengths of the previous editions while providing crucial updates. Edition 6 remains an easy-to-use reference with a now-familiar outline style. The content is systematic, solid, timely, and organized in a practical, organ-by-organ way. Other important mainstays include common techniques and procedures; surgical and trauma sections; and pulmonary, immunologic, transplantation, endocrine, cardiac, and psychiatric sections—all of which have been appropriately expanded. General updates establish this as a multidisciplinary work that covers medical and surgical intensive care across every topic, facilitated, in part, by the book's consecutive progression through each organ system and by new collaborations, which are reflected in the updates to almost all 211 chapters. Accompanying the book is a companion online searchable version that is extremely useful for conducting desktop research. Especially helpful is that the references are all hyperlinked directly to the journal articles. With some work this online book could be enhanced to the level of *UpToDate*, a useful online medical information resource.

The list of specific updates is extensive. A portion of this list includes the latest techniques for gastrointestinal endoscopy (Chapters 13 and 16); surgical, shock and trauma events regarding multiple organ failure and sepsis; recombinant technologies for managing sepsis (human activated protein C, the safety of which is nicely referenced in Chapter 32; sepsis in Section 12); modern interventions for acute coronary events (Section 3); the role of the pulmonary artery catheter; techniques in chronic obstructive pulmonary disease; strategies for acute respiratory distress syndrome and acute lung injury (Section 4); diabetes (specifically, glycemic control, Section 8); new chapters on sleep disorders (Chapter 69); epidemic viral pneumonias (Chapter 67); and a completely new section, "Minimally Invasive Monitoring" (Section 2). With patient safety now a major concern of the general public and in policy making, Chapter 210 (Section 18) is especially timely, in particular, its details on government regulation of patient safety. Opportune updates to patient safety

can be found in other various chapters: in Chapter 51 with reference to prophylaxis for deep venous thrombosis, and in Chapter 68 regarding the latest findings in lung biopsy procedures, such as the use of endobronchial ultrasound to pinpoint lymph nodes and blood vessels during transbronchial needle aspiration.

There are many new illustrations and graphics, and new annotated up-to-date references and case studies throughout. Also new is the inclusion of the "Advances in Management" subsections at ends of the chapters; these summarize randomized controlled clinical trial results and key advances in the chapter subjects. The illustrations reproduce well, complement the text, are sufficient in their descriptions, and are abundantly spread throughout the book. The index is highly detailed and useful, and the appendices provide state-of-the-art reference formulas and calculations for cardiopulmonary and metabolic variables.

The cover style of this 6th edition is sleek and contemporary, integrated in a modern way but with a medical feel and a new color palate that is appealing. The writing style presents the scholarly and authoritative work simply and clearly. And the fonts and subheadings are easy-to-read. The contributors to this book represent a wide and varied background of critical care, including internists, surgeons, anesthesiologists, psychiatrists, professors, and clinical instructors. The quality of information coverage is uniform and consistent from subject to subject, and the subject matter is presented in a stimulating way that appeals to all aspects of intensive care medicine and disciplines, and a wide spectrum of intensive care unit (ICU) clinicians.

As with previous editions, the text is organized into 18 sections, each of which encompasses numerous chapters of roughly 10–15 pages each. The first 2 sections, "Procedures and Techniques" and "Minimally Invasive Monitoring," cover critical care techniques. The section on minimally invasive monitoring will help clinicians minimize the surgical stress response, speed up the physiological recovery process, and shorten the hospital stay. Following these approximately 25 chapters on techniques, the organization style takes a mostly organ-system approach, with smooth transitions between sections and among the chapters within each section. Sections 3–9 cover illness management of the major organ systems, starting with cardiac issues and con-

tinuing through pulmonary, gut, endocrine, and hematologic problems.

Section 10 covers pharmacology and poisoning syndromes. Sections 11–16 address surgical issues, shock, neurological problems, organ transplants, metabolism, nutrition, and immunological issues. The concluding sections tackle important ancillary considerations vital to ICU medicine—specifically, psychiatric issues and "Contemporary Challenges."

Each section is well-organized and succinct. Section 4 is a prime example; it details pulmonary problems in the ICU, subgrouped with the individual chapters distinguished with highly descriptive titles, the first 5 of which (Chapters 45–49) each describe a specific respiratory-failure scenario. Chapter 45, "Respiratory Failure Part I: A Physiologic Approach to Respiratory Failure," provides a comprehensive and simple overview of respiration physiology and biochemistry, with an excellent didactic clinical wrap-up section.

Chapter 46, "Respiratory Failure Part II: Acute Respiratory Failure Due to Acute Respiratory Distress Syndrome and Pulmonary Edema," nicely represents a classic topic enriched with new data and findings. In particular, this chapter impresses because it defines acute lung injury (ALI) and acute respiratory distress syndrome (ARDS) and their relevant risk factors, followed by sections that describe the epidemiologic, radiographic, and various pathology features of the syndrome, including the pathogenesis of ventilator-induced lung injury. Current statistics are provided on ALI/ARDS morbidity and mortality.

Chapter 46 also summarizes the numerous biological signaling cascades involved in the pathogenesis of ALI and ARDS, with particular emphasis on pro-inflammatory cytokines and signaling cascades in the bronchoalveoli. This is followed by a comprehensive summary of approaches to ARDS management via mechanical ventilation and pharmacologic interventions. Overall, Chapter 46 provides timely and relevant data and up-to-date references. For example, reference 61 is a particularly good report on endothelial activation associated with survival in patients with lung injury.

Chapter 47 provides a fastidious review of status asthmaticus and its therapy, complete with a comprehensive description of asthma pathophysiology and links to materials on the effects of environmental trig-

gers on airway inflammation. Overall, Section 4 was very impressive.

The editors accurately cover the entire range of topics in adult critical care, which is an ambitious task given the dramatic changes to virtually all aspects of the field since 2000. Additionally, given that the field has changed so dramatically, this work accomplishes the editor's goal of being the first all-inclusive accurate reference of its kind. It is filled with clear explanations of the latest assessments of the organ systems and their various pathologies. Throughout, the work is erudite and solid, with basic science and clinical applications covered well. Topics are given space proportional to their importance to critical care. A stated goal of the book is to maintain an editorial leadership that ensures that the material evolves sufficiently from previous editions to meet the demands of this heterogeneous field, which they accomplish impressively.

Furthermore, the material remains a balanced mix of state-of-the-art and traditional facts, unencumbered by irrelevant information. The editors took a purposely conservative approach to discussing treatment options and thus did not address emerging or new ICU procedures that are now commonly used (eg, ultrasound-guided central-line insertion). Many ICU patients have difficult central-line insertion, and the ultrasound-

guided technique reduces complications and insertion time, but the book does not mention the value of this technique, possibly because there is no solid data or literature to support it, or because it provides little or no advantage in patients in whom there is no predicted insertion difficulty. Regardless, ultrasound-guided central-line insertion is common in the ICU. Another procedure gaining popularity is intubation with the GlideScope, which the book mentions briefly but does not cover well. In attempting to avoid controversy, the book overlooks that valuable technique.

Perhaps the best strength of this book is that anyone with a medical background can read and assimilate the information. The authors present the topics simply and clearly and build on a solidly presented foundation with increasingly detailed information. For example, to describe sleep pathology, the new Chapter 69 covers all issues of sleep disturbances; it gives a basic review of normal sleep physiology and builds on these basics to logically reveal the various pathologies. This path provides a practical approach to the diagnosis and treatment of sleep problems and a current summary of their classification. This chapter begins by naming and describing the basic sleep cycles, which serves as a tutorial for the beginner and as a reminder for the advanced

practitioner. Ultimately, this chapter delves into the more idiosyncratic case studies and sleep pathologies in the context of comorbid conditions such as chronic fatigue syndrome.

In conclusion, this 6th edition achieves the lofty goal of accurately translating research into ICU clinical practice. Each chapter reflects the important advances in medical intensive care since the publication of the 5th edition. Noted shortcomings aside, this is a very complete textbook of the science and art of intensive care medicine, and it is updated, organized and easy to read. Overall, this edition is improved over the 5th edition, and reflects current principles and protocols.

**M Osama Alnajjar MD**

**Michael J Apostolakos MD**

Pulmonary and Critical Care Division  
Department of Medicine  
University of Rochester  
Rochester, New York

**Peter J Papadakos MD**

Department of Anesthesia  
University of Rochester  
Rochester, New York

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