

They point out that no study to date has demonstrated that cultural competency leads to reduced health disparities, but also point out that few means have been developed to accurately assess cultural competency. Developing those instruments is a priority in determining the future steps in reducing disparities.

The later chapters of the book deal with health disparities in specific cultures, including Hispanics, Native Americans, and foreign-born persons. Unique challenges for prevalent chronic diseases affecting each group are discussed, as well as the current policies and practices for alleviating them. The final chapters deal with the perspectives of cultural competency in various regions of the United States, including Nebraska (where many of the authors and contributors are located) and St Louis. It is unfortunate that additional geographic locations were not added to this list, such as those on the coasts, where the highest concentrations of people of color reside.

Overall, **Cultural Proficiency in Addressing Health Disparities** serves as a good introduction to the field. The book departs from seminal texts by providing historical references and concise examples. Flow diagrams, tables, and illustrations are prominently placed to make complex information easier to grasp. This allows the reader to feel invested in the topic and to gain a better understanding of how cultural differences influence health outcomes. Most importantly, guidelines are provided to direct practicing clinicians in caring for their diverse patients.

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**Mosby's Respiratory Care Equipment**, 8th edition. JM Cairo PhD RRT FAARC and Susan P Pilbeam MSc RRT FAARC. StLouis: Mosby-Elsevier. 2010. Hard cover, 856 pages, 635 illustrations, \$86.95.

**Workbook for Mosby's Respiratory Care Equipment**, 8th edition. JM Cairo PhD RRT FAARC, Susan P Pilbeam MSc RRT FAARC, and Sinee Kalminson Karpel MPA RRT. StLouis: Mosby-Elsevier. 2010.

Soft cover, 336 pages 75 illustrations, \$32.95.

The 8th edition of **Mosby's Respiratory Care Equipment** once again provides respiratory therapists (RTs) with an excellent resource for their department, classroom, or personal consumption. Cairo and Pilbeam, editors of this comprehensive guide to respiratory care equipment and techniques, last produced **Mosby's Respiratory Care Equipment** in 2004. The hard-cover, 8th edition looks similar in content, layout, and size, at 856 pages. However, there is one major addition this year, with the introduction of the **Workbook for Mosby's Respiratory Care Equipment**, by Karpel.

Upon opening **Mosby's Respiratory Care Equipment**, the first thing that caught my attention was an attractive preface, which is an improvement over the 7th edition. It is here that readers can obtain high-level insight into what the book has to offer. For continuity's sake, the chapter layout in the 8th edition of **Mosby's Respiratory Care Equipment** is identical to the 7th edition, and starts with basic physics for RTs. It is upon this foundation that Cairo and Pilbeam build out the book's 15 chapters. Each chapter begins with an outline, objectives, and key terms to aid the reader with navigating its contents. Chapter summaries are given in the form of bulleted key points—a format I find appealing. Clinical rounds questions are again interwoven throughout each chapter, challenging the reader to think through the material covered in the text. However, the 8th edition requires you to register and log on to the Web-based Evolve interactive learning environment to ascertain the answers. I was disappointed to find that, upon completing the simple registration form, the online resources for the 8th edition were, at the time, “in development.”

Following the first chapter, on basic physics for RTs, Cairo and Pilbeam delve into the manufacture, storage, and transport of medical gases. In addition to covering the basics related to properties of medical gases, cylinder sizes, index safety systems, and bulk liquid systems, the editors introduce newer technology in portable liquid oxygen systems, such as Helios (Tyco Puritan Bennett, Pleasanton, California).

Chapters 3 and 4 focus on flow meters, controlling devices for medical gas delivery, and humidity and aerosol therapy. New to the 8th edition is the introduction of high-flow nasal cannula systems, such as those

produced by Vapotherm and Salter Labs. However, readers should be prepared to find this therapy under low-flow devices, as they are classified as variable performance, due to the inspiratory flow demands of individual patients. I also noted that many figures have been updated in this edition, such as the picture of the INOmax DS nitric delivery system (INOmax, Clinton, New Jersey) and the infant incubator.

Cairo and Pilbeam perform an excellent job of reviewing pressurized metered-dose inhalers and dry-powder inhalers, in light of a rapidly changing market and newly imposed Food and Drug Administration regulations that require the tracking of actuations. One topic that could have been addressed a bit more is the challenges that counters on pressurized metered-dose inhalers pose to utilizing this type of aerosol delivery in-line with a patient's ventilator circuit.

In light of our current bout with the novel H1N1 virus, I found that the chapter on infection control provided an easy to read table on guidelines for standard and transmission-based precautions produced by the Healthcare Infection Control Practices Advisory Committee. Additionally, a small portion of this chapter is dedicated to infection-control issues during mass-casualty events, including a table of potential agents and recommended precautions. However, readers are again directed to the Evolve Web site for additional information on infection-control measures and mass-casualty respiratory failure, which at the time of this review was not up to date.

The chapters dedicated to airway management and lung-expansion devices include some of the newer technology for the critically ill patient. I found the newly added section on adjuncts to endotracheal intubation fascinating, and the American Society for Anesthesiologist's Difficult Airway Algorithm pertinent, as the increase in patients with obstructive sleep apnea—and the link to difficult endotracheal intubation—has now been established. RTs who perform or assist in endotracheal intubation will find this information vital to their practice.

For those interested in the assessment of pulmonary and cardiac function, Chapters 8 and 9 provide a great overview of pulmonary function testing and hemodynamic monitoring equipment. For those responsible for overseeing the pulmonary function testing laboratory, the updated recommendations from the American Thoracic Soci-

ety and European Respiratory Society on standardized lung function testing will prove useful for quality-control initiatives. The chapter on cardiovascular diagnostic testing provides a basic overview of cardiac electrical activity and measurement of function, but I was disappointed at the absence of newer minimally invasive cardiac output monitoring systems.

The next few chapters are dedicated to blood gas monitoring and mechanical ventilation. The chapter on blood gas monitoring is virtually unchanged from the 7th edition, yet provides a good review of the intricacies of arterial blood gas analysis, both invasive and noninvasive. As a respiratory care manager who feels that the art of managing mechanical ventilators requires well educated, astute RTs, I think the chapters covering modes and devices for adult, pediatric, and neonatal intensive care applications are a necessary read for all clinicians. As mechanical ventilators become more sophisticated and industry trademarked modes muddy the waters, Chatburn's classification of ventilation modes is a great addition to the 8th edition and helpful to those just learning the finer points of mechanical ventilation. While I found the table titled "Common Modes on Five ICU Ventilators Used in the United States" quite helpful, I also found the landscape orientation quite cumbersome. In short, the chapters addressing mechanical ventilators are updated to include newer equipment for neonates through adults in both critical care and home care settings, leading readers to certainly find something to their liking.

The concluding chapter on sleep diagnostics provides a brief overview of normal sleep patterns, polysomnography, and the pathophysiology of sleep apnea. As this is a growing specialty within the respiratory care world, I suspect this chapter will grow in future editions, to include additional health concerns associated with sleep disorders.

New to the 8th edition of **Mosby's Respiratory Care Equipment** is the workbook, by Karpel. At 336 pages, the workbook adds an exciting way for readers to apply the knowledge contained in **Mosby's Respiratory Care Equipment**, with crossword puzzles, helpful Web sites, and National Board for Respiratory Care type questions that correspond to the 15 chapters of the main text. I believe the textbook will help individuals entering the exciting profession of respiratory care to learn about the

equipment essential to who we are as professionals.

I found the 8th edition of **Mosby's Respiratory Care Equipment** and the **Workbook** to be well written and updated to include newer devices in the ever-changing health-care industry. While the 8th greatly resembles the 7th edition, the changes implemented by Cairo and Pilbeam this time around are surely worth investigating if one wishes to stay abreast of respiratory care technology.

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**The Little ICU Book of Facts and Formulas.** Paul L Marino MD PhD, with contributions from Kenneth M Sutin MD. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 2009. Soft cover, illustrated, 781 pages, \$48.95.

**The Little ICU Book of Facts and Formulas**, at 781 pages, "is a smaller, more condensed version of its older sibling, *The ICU Book*, and is intended as a compact reference for the bedside." It measures roughly  $10 \times 18 \times 2$  cm and will fit into a lab coat, but not easily into a pants pocket. It is divided into 15 sections and 46 chapters. There are 3 appendixes: units and conversions; selected reference ranges; and additional formulas. The book "is intended to be a compact reference for the bedside."

As a condensation of a standard-size textbook in critical care, it appears to be intended for all members of the critical care team. Its main utility to respiratory therapists (RTs), nurses, and other non-physician team members is its compact summary of the relevant topics that come up in the every day care of critically ill patients.

I used this book over a period of 3 months, and compared it to *UpToDate*, a commonly used reference, easily accessed at the bedside hospital information system or on my cellular phone. I also asked a 4th-year medical student and some RTs to review selected topics in the book and to compare the information to the corresponding *UpToDate* material.

I found the topics to be appropriate and well organized. Some subjects, such as pulmonary hypertension and use of intra-abdominal pressure monitoring, are not covered, and the coverage of some others (eg, poisons/toxins) is markedly abbreviated.

In general the covered material was easy to read, which was especially useful when historically difficult physiological concepts for new students were discussed. My favorite chapters, in this regard, were those on acid-base disorders and renal and electrolyte disorders, which were excellent, concise, and clinically useful reviews that my senior medical student found easier to understand and use than the same topics in *UpToDate*.

My favorite section was the one on disorders of circulatory flow.

I was somewhat frustrated with some of the individual chapters, either because of lack of inclusion of pertinent clinically useful material, or for summary opinions that seemed unjustified. For example, the chapter on systemic oxygenation was very well written, with a clear description of the derivation and physiologic importance of the oxygen-extraction ratio and its relation to the mixed venous oxygen saturation. There was no reference to the now widely used application of this concept with the central-venous-oximetry measurement ( $S_{cvO_2}$ ) (eg, with the PreSep triple-lumen catheter, Edwards, Irvine, California) in the management of sepsis, using the central-venous-oximetry signal as an index of resuscitation.

Further on in the book, the chapter on inflammation and infection in the intensive care unit describes the "early goal-directed therapy" protocol, which directs efforts to achieve a normal  $S_{cvO_2}$  and therefore a normal oxygen-extraction ratio ( $> 70\%$ ) with intravenous fluids, vasopressors, inotropes, and blood if necessary. After describing the Severe Sepsis Bundle, the author makes the astonishing assertion that "optimizing oxygen transport variables is not recommended." This is completely contradictory. In the face of high metabolic demand and increased oxygen consumption, the only way to decrease oxygen extraction ( $S_{cvO_2} > 70\%$ ) is to optimize oxygen delivery to meet the demand.

The chapters that may be of greatest interest to RTs, "Modes of Positive-Pressure Breathing," "The Ventilator Dependent Patient," "Discontinuing Mechanical Ventilation," and "Analgesia and Sedation," are also of mixed quality. The chapter on ventilation