

**Perinatal and Pediatric Respiratory Care**, 2nd edition. Michael P Czervinske RRT and Sherry L Barnhart RRT. St Louis, Missouri: Saunders. 2003. Hard cover, illustrated, 778 pages, \$58.95.

**Perinatal and Pediatric Respiratory Care** is the second edition of a book edited by Michael Czervinske and Sherry Barnhart, who also wrote some of the chapters. The editors state that the book is primarily intended for respiratory care students and practitioners new to this aspect of respiratory care. It is also intended to serve as a reference for experienced practitioners and as a study guide for the National Board of Respiratory Care Perinatal-Pediatric specialty exam. The book is divided into 5 sections, each section is divided into chapters, and each chapter is written by a different author. Each chapter begins with an outline, contains an abundance of high quality graphs and tables, line drawings, and photos (both color and black-and-white), and ends with a detailed list of references. The references are current and very complete.

Section I is titled "Fetal Development, Assessment, and Delivery," in which Chapter 1, "Fetal Lung Development," gives a good description of embryologic development. Chapter 2, "Fetal Gas Exchange and Circulation," is very detailed and easy to read. Chapter 3, "Anatomic Assessment and High-Risk Delivery," though generally well written, used the terms "IRDS" and "idiopathic respiratory distress syndrome" when referring to respiratory distress syndrome. I believe that is dated terminology. This chapter made no mention of assessing lecithin/sphingomyelin (L/S) ratios or checking for meconium staining when assessing amniotic fluid. Chapter 4, "Neonatal Assessment and Resuscitation," was easy to read and generally followed Neonatal Resuscitation Program guidelines. However, there wasn't any mention of using heat and humidification when applying free-flow oxygen to a newborn.

Section II is titled "Assessment and Monitoring of the Neonatal and Pediatric Patient." This section's chapters are very thorough and generous with illustrations. Chapter 6, "Examination and Assessment of the Pediatric Patient," has some excellent

case studies at the end. Unfortunately, Chapter 6 is the only one that included case studies. In Chapter 7, "Pulmonary Function Testing in Neonatal and Pediatric Patients," I liked the analogy that "a neonate's lung is more like a bag in a bag instead of a bag in a box" because of higher chest wall compliance. In my 23 years of teaching neonatal respiratory care, I have never been able to explain this concept as simply and elegantly as that author did. In Chapter 8, "Radiographic Assessment," the author refers to acute respiratory distress syndrome (ARDS) as "adult RDS." At this point in time, most would agree that ARDS now means "acute respiratory distress syndrome." Other subjects included in this section are assessment of the neonatal patient, flexible bronchoscopy, invasive blood gas analysis and cardiovascular monitoring, and noninvasive monitoring.

Section III is titled "Therapeutic Procedures for Treatment of Neonatal and Pediatric Disorders." There are chapters on oxygen administration, airway clearance techniques and lung volume expansion, surfactant replacement, administration of gas mixtures, extracorporeal life support, pharmacology, and thoracic organ transplantation. Again, each chapter is very thorough. Many of the chapters give detailed suggestions for step-by-step procedures when administering therapies. However, I am mystified by one author's statement in Chapter 13, "Aerosols and Medication Administration," that "auscultation should never be used to assess bronchodilator response." That statement is made without any clarification or reference. I assume the author meant that auscultation should never be used as the *only* means of assessing bronchodilator response.

Chapter 15, "Airway Management," is very detailed, but seems geared toward the surgical resident, as there are numerous descriptions of surgical approaches to maintaining an airway. Also, this author repeatedly makes reference to the laryngeal mask airway yet never talks about it directly or shows any illustrations of it.

The chapters pertaining to ventilation (covering mechanical ventilators, noninvasive mechanical ventilation, high-frequency ventilation, liquid lung ventilation) are all

excellent. Current terminology is used and many different types and brands of ventilator are described. There is one slight discrepancy in Chapter 18, "Continuous Positive Airway Pressure." On Page 29, the author says to switch from mechanical ventilation to nasal continuous positive airway pressure when the ventilator rate is down to 8–10 breaths per minute. On Page 303, he states that mechanical ventilation can be switched to nasal continuous positive airway pressure when the ventilator rate is between 6 and 10 breaths per minute. Though a minor discrepancy to an experienced practitioner, this could cause some consternation for a student (I know that my students would immediately demand to know, for test-answering purposes, which statement is the correct one).

Chapter 25, "Cardiopulmonary Resuscitation," pretty much follows the American Heart Association's 2000 guidelines for child and infant basic life support. It does not mention any of the techniques and guidelines taught in the Neonatal Resuscitation Program; however, Neonatal Resuscitation Program guidelines and protocols are used in Chapter 4, "Neonatal Assessment and Resuscitation."

Section IV is titled "Neonatal and Pediatric Disorders: Presentation, Diagnosis, and Treatment." There are chapters on congenital and surgical disorders, neonatal complications, congenital cardiac defects, sudden infant death syndrome and pediatric sleep disorders, airway disorders and parenchymal lung diseases, asthma, cystic fibrosis, shock and anaphylaxis, sepsis and meningitis, head injury and cerebral disorders, submersion injury, poisoning, disorders of the pleura, and neurologic and neuromuscular disease. As can be seen by the chapter titles this section of the book is all-inclusive! All information is very current and up to date. Again there is generous use of excellent photos and illustrations. However, I am bothered by a small section in Chapter 36, "Acute Respiratory Distress Syndrome." The author gives a very concise, easy-to-understand description of the oxygenation index, but he fails to mention what values are consistent with or indicative of ARDS. Also I am also befuddled by a statement made in Chapter 39, "Thermal and Inhalation Injury." The

author says "using fire safe cigarettes should prevent pediatric thermal injury." Is there really such a thing as a "fire-safe" cigarette? Should a respiratory care book be advocating the use of any kind of cigarette? Generally, though, this section of the book is excellent. I am pleased to see that one of the authors in this section was one of my students some 22 years ago! It is always gratifying when a teacher learns from a former student!

The last section of the book is titled "Neonatal and Pediatric Transient and Ambulatory Care." It contains 2 chapters: "Transport of Infants and Children" and "Home Care." Both chapters are state-of-the-art in describing strategies and equipment used in these environments.

In summary, I think this book is an excellent reference for all practitioners, and especially for those preparing for the National Board of Respiratory Care Perinatal-Pediatric specialty exam. However, the book is more like an encyclopedia than a textbook for respiratory care students. I prefer that a respiratory care textbook contain objectives at the beginning of each chapter, case scenarios or studies so that students can see the material applied to the clinical setting, and discussion questions at the end of each chapter. Indeed, many newer respiratory care textbooks also include interactive CD-ROMs just for this purpose. Again, this is an excellent book for the experienced practitioner but would not be the best one for a respiratory care student.

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**Clinicians' Guide to Asthma.** Kian Fan Chung MD DSc, with a contribution by Andrew Bush MB BS MA MD. London, United Kingdom: Arnold. 2002. Soft cover, illustrated, 165 pages, \$45.

**Clinician's Guide to Asthma** is clearly meant to be a synopsis of a vast and oft-times overwhelming subject. The text is geared toward the practicing physician on one hand, but the novice researcher or fellow would also benefit from the book in that it would provide a springboard off which to jump into the sometimes murky waters

dealing with the pathophysiology and management of asthma. I was impressed at the author's ability to incorporate such a large amount of material into such a compact package.

There are only 8 chapters and 156 pages in this book, with some chapters being easier to read than others. The book is arranged in a logical fashion, beginning with definitions and epidemiology, moving on to clinical diagnosis and assessment, laboratory evaluation, asthma mechanisms, treatment, and management (with a special chapter on infants and children), and ending with a discussion of current and future challenges of asthma.

Chapter 1 is really just a brief overview of the disease, including definitions, clinical presentation, measurement of lung function, and epidemiology, including mortality and economic costs. At the end of the chapter there is also a section dealing with the natural history of the disease, separating children and adults. This chapter and all the subsequent chapters are subdivided into subheadings, making it easy to locate various topics.

Chapter 2 deals with the clinical diagnosis and assessment of asthma, starting with the patient's history and important questions to ask and document. It then moves on to the physical examination and differential diagnosis, since not everything that wheezes is asthma. The differential diagnosis is relatively extensive, with a brief synopsis of each of the differential diagnoses, such as carcinoid or chronic obstructive pulmonary disease. There is a concise segment on when an asthmatic should be referred to a specialist, and a discussion of the various clinical presentations of asthma and classification according to severity.

Chapter 3 deals with the objective evaluation of asthma, such as pulmonary function studies. I found this chapter difficult to follow and somewhat disorganized. There is a reasonable discussion of spirometry and peak expiratory flow and meter readings, followed by a rather scattered discussion of bronchial hyperresponsiveness. The author also includes in this chapter a brief mention of quality-of-life measures available for asthma and an assessment of risk factors such as allergens, briefly covering the most common allergens, such as dust mites, cockroaches, pollen, and cat and dog dander. The end of the chapter has a discussion on airway inflammation and induced sputum, which would have been better placed in the

next chapter, which covers the mechanisms of asthma.

Chapter 4, "Mechanisms of Asthma: Risk Factors and Pathophysiology," is one of the more involved chapters in the book, dealing with the research/pathophysiological aspects of asthma. For working on such a vast topic, the author did a good job of condensing the information. This chapter is subdivided into 3 sections, the first of which covers the risk factors for asthma, including atopy and genetic factors, allergen exposure, respiratory infections, respiratory irritants, pollutants, and chronic stress. The second subdivision covers the processes that lead to chronic airway inflammation and airway remodeling. This includes a succinct discussion of various cytokines, their expression in asthma, antigen presentation and release, the immunoglobulin E response, and mast cells. Included is a section on the role of immunoglobulin E and eosinophils and associated cytokines. For a subject that can be overwhelming and confusing to the novice or non-research-oriented individual, I particularly like that the author included some well done diagrams summarizing the text in an easy-to-follow manner. The third subsection of this chapter involves a dialogue about the underlying pathophysiology of airway wall narrowing and of bronchial hyperresponsiveness. This section also has some clear and informative diagrams discussing transcription factors and inflammatory mediators in asthma, as well as the link between inflammation and abnormal physiology.

Chapter 5 is one of the longest chapters, giving an extensive review of current asthma therapy, dividing the asthma drugs by class, then mechanism of action, pharmacokinetics, available preparations, and adverse effects. This chapter has a number of tables summarizing the text, and the author has included tables of the inhalable corticosteroids and  $\beta_2$  agonists, with both generic and brand names and the available modes of delivery. The most extensive discussions cover corticosteroids and  $\beta_2$  agonists, and there are discussions on anticholinergics, theophylline, cromolyn, and anti-leukotrienes. The author cites the potential benefits of these drugs and references some studies with these agents. There is a good discussion on inhaler devices and a brief but very interesting section on immunotherapy and alternative therapies.

Chapter 6 deals largely with the management of asthma. It covers the overall ap-