

*Alan Jay Schwartz, M.D., M.S.Ed., Editor*

**Clinical Anesthesia Fundamentals.** Edited by Paul G. Barash, M.D., Bruce F. Cullen, M.D., Robert K. Stoelting, M.D., Michael Cahalan, M.D., M. Christine Stock, M.D., Rafael Ortega, M.D., Sam R. Sharar, M.D. Philadelphia, Wolters Kluwer Health, 2015. Pages: 912. Price: \$99.99.

In an already crowded field of Anesthesiology textbooks comes a new entry: *Clinical Anesthesia Fundamentals* published by Wolters Kluwer. Edited by Paul G. Barash, Bruce F. Cullen, Robert K. Stoelting, Michael K. Cahalan, M. Christine Stock, Rafael Ortega, and Sam R. Sharar, it has a distinguished panel of expert editors and contributors as would be expected for a survey of the specialty. Like most modern textbooks, it comes in print with online supplements. It is relatively compact, and an inspection of size alone reveals that it could not possibly cover the specialty in minute detail. What then, makes this book unique and worth adding to your collection?

The answer is twofold: a pragmatic focus on basic topics and a true integration of multimedia learning. These two elements represent a welcome addition for many learners who are new to the specialty and for those of us who embrace a multimodal learning style. The executive summary is this: It won't replace your reference tome, but it will offer an accessible start to core topics that appeal to interactive learners. Don't take my word for it: Dr. Barash says as much in the preface.

As a disclaimer, I am reviewing this text from the perspective of both a perpetual student of anesthesiology (the proverbial "old dog") and a program director looking to provide appropriate resources to learners. I will begin this review with some of the formatting and content discussion, then move into my opinions on how it might be used by those familiar with the specialty and those just starting out.

## Format

Both the book and online resource are divided into 44 chapters. There are also 8 appendices containing useful guidelines, protocols, and formulas including a compendium of herbal medications. The only thing missing from the online version is the author's preface (I'm admittedly an education nerd who likes to get into the head of the author and understand their goals for a text before diving in), but it more than compensates with a treasure trove of useful interactive content (see the full discussion of the online version to follow). After the Introduction and History of Anesthesia, the first third of the book is dedicated to "Scientific and Technical Foundations of Anesthesia" including Organ Functions (divided by organ system), Pharmacology, and Technology. The latter two third of the book is devoted to clinical issues and is divided by organ system.

The attention paid to anatomy and physiology early in the text may prove useful in preparation for the BASIC examination as the American Board of Anesthesiology content outline puts a significant amount of emphasis on this area that is historically neglected by both students and teachers of anesthesiology. It also serves to decompress the subsequent clinical chapters into the most clinically relevant information, potentially allowing them to be a clinical reference or refresher. The section on wellness at the end represents a well-constructed and welcome addition that is often overlooked in introductory level texts.

## Online Version

While I began my review perusing the written text, I rapidly converted to the online version as it easily gave access to the video content. This format, driven by the Inkling engine, allows for the greatest appreciation of the full breath of multimedia content of this resource.

The full text, images, and figures from the text are not only faithfully reproduced but also enhanced with a variety of useful adjuncts including the following:

### *Hyperlinks to Related Topics Elsewhere in the Text*

Referrals to other chapters can be accessed simply by clicking on the blue text, decidedly easier than flipping through paper pages. Although not unique to this resource or platform, it is a great benefit for an online text!

### *Free Text Search Engine*

The ability to type any word or phrase and call up all related references is one I have admittedly become addicted to in online textbooks, and it works well in this instance. I loaded free samples of other Inkling-based resources, but unlike some other collections such as expertconsult.com, terms could not be searched between resources, something that would be of great value if one amassed a collection of the anesthesia-based resources available on this platform.

### *Interactive Diagrams*

There are many interactive diagrams with a testing feature allowing the reader to deidentify structures until clicked on, numerous short video segments, and longer video summaries of each chapter. At the time of my initial review, some of the video summaries (17 of 44 chapters) were available, and the publisher noted that the remaining videos will be "loaded in two updates later this year." I held my review for more online content, and after the American Society of Anesthesiologists meeting, several more chapter summaries appeared, all of similar quality to the initial product, with consistent narration and presentation style. I am confident that the remaining summaries will complete the resource nicely.

### *Note Taking*

Similar to other titles, the reader can highlight passages of interest, and there is a feature that allows notes to be posted

either in the margin or in conjunction with a highlighted passage.

### Offline Use

The biggest concern I hear from residents about the online resources our program provides for them is an absence of downloadability and an inability to use a text offline. Happily, that is not an issue with this title. The Inkling App allows for downloads of portions or the entire book to your mobile device for offline use. I downloaded the entire text to my iPhone 6 plus *via* hotel Wi-Fi in less than 15 min and tested it in airplane mode to ensure no Wi-Fi access. Aside from the videos, the book is fully functional offline including the “test yourself” function on some of the diagrams and postchapter assessments. The videos of course worked fine when Wi-Fi was reestablished.

### Perspectives and Summary

For the practicing anesthesiologist, this book may not represent a paradigm shifting text; it is a solid review resource for topics you may have long-since forgotten. I found the videos and figures very helpful ways to access things that I had mentally misplaced or never quite grasped. For my aging brain, the audio–visual components were a help over reading text alone, and the review questions kept me honest about knowledge gaps. With MOCA (Maintenance of Certification in Anesthesiology Program) 2.0 nearly upon us, the more clinical chapters may fill a need for a refresher in some areas that are not in your daily practice, but it is too soon to tell.

For the initiate to anesthesiology, this book represents an excellent gateway into the specialty, with a variety of approaches to providing content and built-in active learning aids. As the American Board of Anesthesiology BASIC examination has only been conducted once, it is impossible to say for certain, but the content outline seems to map nicely in many cases, and the search engine can help search keywords efficiently. I will be happy to recommend *Clinical Anesthesia Fundamentals* to my students and residents as a great option for early-on learning.

In either case, this reasonably priced (\$99.99 list price, available for less at some outlets), resource can indeed find a role in the collections for students, residents, and practicing anesthesiologists alike. It is versatile and forward thinking and should resonate in particular with millennial learners and technophiles. In my opinion, it represents the most comprehensive effort at multimedia integration into a traditional textbook to date and has raised the bar for future texts in this area. The authors should be applauded for an excellent effort at redefining what an introductory textbook should provide.

**John D. Mitchell, M.D.,** Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts. [jdmitche@bidmc.harvard.edu](mailto:jdmitche@bidmc.harvard.edu)

(Accepted for publication November 23, 2015.)

### Crisis Management in Anesthesiology, 2nd Edition.

Edited by David M. Gaba, M.D., Kevin J. Fish, M.Sc., M.B., Ch.B., Steven K. Howard, M.D., Amanda R. Burden, M.D. Philadelphia, Saunders, an Imprint of Elsevier Inc., 2015. Pages: 432. Price: \$79.95.

*Crisis Management in Anesthesiology* is an important resource on my library shelf. I came across the first edition of this book when I graduated from anesthesia residency in 1995. The title was enticing, and I was motivated by a desire to improve my skills as a clinician in challenging and complex settings. It was the first book I had seen that detailed the cognitive processes of the anesthesia provider—something not explicitly taught in residency programs at the time. My original copy is full of dog-eared pages and underlined and starred passages. The book contained a catalog of critical events in anesthesiology, which I used as an efficient and high-value study tool for the American Board of Anesthesiology oral examinations. A few years later, I became the Director of our Department’s new anesthesia simulation center and was given the task of teaching crisis management to our residents. This book became the “bible” for our efforts.

Why did it take 20 yr to produce a second edition? Classic teaching suggests that scientific discoveries take an average of 17 yr to become widely implemented in clinical practice. The principles of crisis management are based in the social sciences, which are often viewed skeptically by the medical profession. Medical practice has certainly evolved in the last two decades, with an increased emphasis on patient safety and teamwork in healthcare settings. The proliferation of anesthesia simulation centers has provided a setting for structured teaching of crisis management. In 2009, the American Society of Anesthesiologists created a network of endorsed simulation centers to provide simulation training that allows American Board of Anesthesiology diplomates to earn points to fulfill the American Board of Anesthesiology’s Maintenance of Certification in Anesthesiology Part 4 requirements.

*Crisis Management in Anesthesiology* is divided into two sections. The first section, titled Basic Principles of Crisis Management in Anesthesiology contains four chapters. The first chapter explores fundamental aspects of the dynamic decision-making process during intraoperative anesthesia care. The best figure of the entire book (figure 1–4) is in this chapter and displays a model of the anesthesia provider’s cognitive processes during complex intraoperative decision-making. This diagram is worthy of extensive review and reflection, as it illustrates the interplay of different levels of mental activity such as paying attention to data streams, predicting future states, and prioritizing problems and activities.

The second chapter addresses the principles of anesthesia crisis resource management (ACRM). The authors describe how they adapted the principles of crew resource management in the aviation industry to the field of anesthesiology and chose the