Michael J. Avram, Ph.D., Editor

Delirium in Critical Care. By Valerie Page and E. Wesley Ely. Cambridge, United Kingdom, Cambridge University Press, 2011. Pages: 235. Price: $35.00.

Delirium in Critical Care, written by Drs. Valerie Page and E. Wesley Ely, two of the leading experts in the field, is a timely and welcome addition to the discussion of this diagnosis, which is extremely troublesome for both physicians and patients alike. One of the most powerful elements of this text is the patient testimony following the forward by David K. Menon. In this very moving opening statement, one can clearly see the burden delirium places on the patient and the value of such a text. Fortunately for the reader, this text offers ample information and advice on how to handle such a difficult, and sometimes elusive, diagnosis.

The book is divided into 12 very easy-to-read chapters. Although there is certainly some redundancy between the chapters, each can stand alone and offers valuable information. The book starts with a discussion, answering the question, "What is delirium in critical care?" The authors provide the reader with the history of the disorder, definitions of delirium, and finally, some advices on ways to categorize delirium, which may have implications for outcome. The text then proceeds to a very important discussion of what delirium looks like in the intensive care unit, a topic with which every intensivist should be familiar. The chapters that follow are all enlightening, providing insights into why recognizing delirium is imperative, risk factors for delirium, and how it is diagnosed.

The final chapters focus on the prevention and treatment of delirium in the intensive care unit, restraints, and end of life care. We found these chapters to be extremely valuable. However, they are brief and may leave the reader wanting a more thorough discussion. Although at times one wonders why these chapters were not combined into a more comprehensive discussion, readers of all levels will certainly find them informative.

Overall, this is an extremely easy-to-read text on one of the most pressing issues facing intensivists today. The strengths of the book lie in its simplicity, clarity, and powerful use of patient testimonies and brief cases to underscore the importance of the topics discussed. Although more references would have been nice, the authors have provided the reader with "further reading" suggestions at the end of each chapter, which complement the text very well. We applaud the authors for writing such a "user friendly," interesting, and instructive text on this important topic. We strongly recommend this text to anyone who cares for critically ill patients and is looking for clear guidance on the diagnosis, prevention, and treatment of delirium.

 Anesthesiology 2013; 119:742-3

Rondall K. Lane, M.D., M.P.H.,* Lee-lynn Chen, M.D.
*University of California, San Francisco, California.
laner@anesthesia.ucsf.edu

(Accepted for publication March 13, 2013.)

Physics in Anaesthesia. By Ben Middleton, B.Sc., S.O.P.G.B.I., R.N., Justin Phillips, B.Sc., Ph.D., M.I.P.E.M., Rik Thomas, M.B.B.S., F.R.C.A., and Simon Stacey, M.B.B.S., F.R.C.A. Banbury, Oxfordshire, United Kingdom, Scion Publishing Ltd., 2012. Pages: 384. Price: $59.99.

A textbook on physics is not likely to be the first book an anesthesiologist reaches for on their bookshelf, if there is even one there to grab. For some of us, it has been many years since we thought about the subject, let alone intentionally picked up a physics textbook. The very mention of the topic conjures up images of stuffy classrooms, droning lecturers, and dusty books filled with highly technical equations and complex mathematics. Even when studying for a board exam, a review of physics is often either relegated to the "I'll cover that later" section or skipped altogether. However, if you are an anesthesia care provider and want to add a physics text to your shelf, the book *Physics in Anaesthesia* not only provides a concise review of the basic principles of physics, but also effectively explains how they apply specifically to the practice of anesthesia.

This text is clearly written for the "nonphysicist" anesthesia provider and is intended for not only attending physicians, but also all anesthesia providers, including residents, medical students, and nurse anesthetists. The book seems to have been written primarily as a board review text, specifically covering topics that the authors state were chosen for their relevance to the Fellowship of the British Royal College of Anaesthetists' exam. Although I am sure it serves very well as a review text for persons who are preparing for board examinations, I personally found it useful as a reference and review text for the practicing anesthesia provider.

The book is divided into 29 chapters, each covering a unique physical property or system. The chapters are concise, well-organized, and stand independently enough that a focused review of a specific subject is easily conducted. The chapters cover a broad range of topics, from fundamental principles, such as ideal gas laws, mechanics, and the behavior of waves, to complex systems, such as lasers and magnetic resonance imaging machines. There are also several chapters reviewing mathematical concepts, physical constants and units, and statistics.

Each chapter follows a similar format, starting with a basic discussion of the subject followed by appropriate definitions and an explanation of the laws governing the topic at hand.

Numerous illustrations are provided and are effectively used to further demonstrate these principles. As one may expect from any physics text, there are a number of equations and some mathematics. However, each equation is solved in a logical, step-wise manner with excellent explanations, and the math is also thoroughly explained. Examples using either anesthesia or operating room equipment are then used to demonstrate the clinical application of the physics principle to real-world practice. A summary table outlining the key points from the chapter is provided. Each chapter concludes with a series of board exam-type single-best answer and multiple-choice questions. These allow the reader to test their comprehension of the topics covered in the chapter.

For example, in the chapter titled "Pressure Measurement," the basic definitions of absolute *versus* relative pressure as well as a table with common values are provided and discussed. The rest of the chapter is divided into seven sections, each detailing a different clinical application of pressure measurement. The authors use a series of illustrations and equations to demonstrate the different ways that the physics principle is used clinically in various operating room devices, such as syringes, pressure limiting valves, gas cylinders, and blood pressure sensors. Multiple examples with complete mathematical solutions are included throughout. The chapter concludes with four single-best answer and four multiple-choice questions on the topic.

The book is written and published in the United Kingdom, and consequently, some of the examples and solutions are provided in units that may be unfamiliar to readers in the United States. However, the basic principles are universal, and many of the tables provide values in both SI (International System of Units) and "standard" units.

Overall, *Physics in Anaesthesia* succeeds in providing a concise and easy to read review text covering what has historically been a dry and difficult to present topic. The book is easy to understand and sufficiently covers most topics one would expect from such a book. It seems well suited for those studying for exams, but it can also serve as a good reference text for all levels of anesthesia providers.

As technology advances, new medical devices will continue to creep into our workspace. They offer a dizzying array of features, promising to make our patients safer and our jobs easier. A solid understanding of physics can only help us understand how these devices operate and what limitations they have. It can prevent them from becoming nothing more than magical "black boxes" and is perhaps the main reason physics should not be something we review for board exams and forget.

David A. Alspach, M.D., NorthShore University Healthsystem, Evanston, Illinois. dalspach@northshore.org

(Accepted for publication June 4, 2013.)