

Handbook for Health Care Research, 2nd edition, Robert L Chatburn RRT-NPS FAARC. Sudbury: Massachusetts. Jones & Bartlett. 2010. Soft cover, 368 pages, \$59.95.

For a respiratory care practitioner trying to expand his or her professional skills into clinical or laboratory research, the experience is akin to living in a foreign country. The language and customs of scientific inquiry are often starkly different from those typically encountered in clinical practice. Like a culturally incompetent tourist, just about every neophyte makes seemingly innocuous comments concerning research, only to be greeted with unanticipated responses such as uncomfortable silence, apparent excessive nitpicking, or even outright hostility. The experience can be bewildering.

Those of us fortunate enough to have ventured to a foreign country with a friend well acquainted with that culture, have had a much smoother and richer experience than if we had traveled alone. They are crucial in helping to explain unusual customs and assist us with our communication skills. In much the same way, respiratory care practitioners wishing to explore the world of scientific research also need a travel guide or "cultural informant." When I started out on my journey in research I was blessed to have several gifted and kind mentors. Yet many clinicians interested in research do not have the good fortune of having an enthusiastic, caring mentor to guide them into this new world of intellectual inquiry. Moreover, introductory textbooks on clinical research mostly are geared towards physicians, or those training in the behavioral sciences. Often the subject matter is approached in a fashion that either is too advanced for allied health professionals, or too remote from their daily experiences.

Therefore, reading Robert Chatburn's **Handbook for Health Care Research** was a rewarding and welcome departure from the usual textbooks I have perused over the years. This 368-page textbook contains 17 chapters and 6 appendices, including a glossary. The book is well made with good-quality paper and formatting that makes it easy on the eyes. One of its many appealing features is that its structure lends itself for

use as a primary text for an introductory course on research methodology. Each chapter has test questions with answers provided in one of the appendices, and, when appropriate, a brief summary is provided.

Handbook for Health Care Research is divided into 4 sections beginning with an introduction consisting of 3 brief chapters that provide a *what-and-why* sketch of research. These include descriptions of the various types of research a respiratory care practitioner may encounter, as well as the socioeconomic context in which research takes place. In addition, it also provides an excellent overview of the ethical conduct of clinical research.

The core material follows in the subsequent sections. Section II, "Planning the Study," consists of 4 chapters that succinctly discuss scientific methodology, how to develop a study question, how to read a scientific paper/conduct a competent literature review, as well as basic designs used for different kinds of studies. As fitting, the bulk of the text resides in Section III, "Conducting the Study," consisting of 6 chapters discussing how to actually implement a clinical trial and make measurements. The majority of chapters in this section focus on biostatistics and systematically deal with every possible type of data and test the respiratory care practitioner is likely to encounter. This includes statistical methodology for nominal, ordinal, and continuous measures.

Unlike other textbooks on research design that I've encountered, Chatburn has very thoughtfully provided an entire section devoted to publishing one's scientific findings. Section IV provides chapters detailing how to write an abstract, a research paper, and even discusses the steps involved in making a poster presentation for a scientific meeting. Moreover, Chatburn not only provides concrete examples of scientific writing for the novice researcher to model their own projects, he devotes over 30 pages to the actual mechanics of scientific writing.

What struck me about **Handbook for Health Care Research** was the care, precision, and detail of the material covered. For instance, the discussion of informed consent and the process of getting a study protocol approved by an institutional review board will greatly assist the reader in pre-

paring for this crucial hurdle in the research process. Also, there is a concerted effort throughout to provide concrete examples of concepts that should assist the novice in understanding abstract scientific concepts. When first discussing the scientific method, the relationship between a study problem, a test hypothesis, and an experiment is conveyed by a simple example, whereby a test is designed to determine whether a coin is a penny. This is presented elegantly as an algorithm in figure form. Likewise, the numerous figures and tables are handsomely constructed and convey information in a straightforward manner.

In essence, Chatburn has created a very thoughtful and eminently accessible textbook not only for the respiratory care practitioner who is starting out on a research path, but also as a useful reference for the seasoned researcher. As someone with several decades of clinical research experience, I only wish that I had had **Handbook for Health Care Research** available to me when I was beginning my career. I highly recommend it to any health care practitioner, and particularly to those who are beginning their journey.

Richard H Kallet MS RRT FAARC
Respiratory Care Services
San Francisco General Hospital
San Francisco, California

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The Comprehensive Respiratory Therapist Exam Review: Entry and Advanced Levels, 5th edition. James R Sills MEd CPFT RRT. Maryland Heights, Missouri: Mosby/Elsevier. 2010. Soft cover, 672 pages, \$89.95.

Examination review systems are a serious matter for educators and students. Program accreditation and reputation depend upon the examination outcomes of graduates. Graduates are able to secure employment only if they are successful on the national boards. A responsible program prepares its students for practice and to pass the credentialing examinations. Respiratory care faculty, students, and graduates are

likely to spend a substantial amount of time preparing for the Certified Respiratory Therapist (CRT) and Registered Respiratory Therapist (RRT) examinations, so it is important that a review book actually has the material that, if learned, will prepare the graduate for success. A good review book will help candidates identify areas for improvement so that they are not more confident than is warranted. On the other hand, a review book or review system should not contain material that substantially exceeds the depth for which the candidate will be tested or the candidate may become inordinately discouraged. It is a challenge to evaluate a review book because this type of book is supposed to encompass the full breadth of testable respiratory care knowledge.

As an educator, I have been working to prepare students to become competent respiratory therapists and to pass the national examinations for 26 years. I have used a litany of respiratory therapy preparation materials. In addition to other exam-prep materials for at least 8 years I have consistently used all of the previous editions of Sills' **Advanced Respiratory Therapist Exam Guides**. In early June, the question of the choice of review books came up in the American Association for Respiratory Care's Education Section Digest. This book was among those currently recommended by respiratory care professors.

The fifth edition combined the previous entry and advanced levels into one volume. The book maintains the chapter organization used in previous books. Following an introduction with recommendations for exam success, chapters 1, 3, 4, and 5 review aspects of cardiopulmonary assessment. These aspects include patient assessment and care management, blood gases, pulmonary function testing, and advanced cardiopulmonary monitoring. Chapters 2, 6, 7, 8, 9, and 10 review basic therapeutics, including infection control, medical gas therapy, hyperinflation, humidity, aerosol therapy, pharmacology, and bronchopulmonary hygiene. Chapters 11, 12, 13, 14, 15, and 16 review the more critical care topics of cardiac monitoring, airway management, suctioning, intermittent positive-pressure breathing, and mechanical ventilation of the adult and child. The final 2 chapters review home care, pulmonary rehabilitation, and special procedures. These chapter progressions are easier to follow than those of the National Board for Respiratory Care (NBRC) examination matrix. Not follow-

ing the examination matrix is an important weakness, because if a graduate performs low on "III G, Recommend Modifications in the Respiratory Care Plan," the student or faculty member may not know where to find the corresponding content in the book. With Sills, the examination matrix codes and difficulty levels are cited through the text, but I have always felt that it is difficult to direct a student based on a low score in a particular examination matrix area. I think it is too hard to direct the student to the content that will address a student's low examination matrix WRE (written registry examination) code III F score using this book.

Chapter sizes differ, depending on the number of examination questions found on the credentialing exams. Each chapter begins with a notation about the typical number of exam questions related to the topics presented. The chapters are divided up according to bold-faced matrix code topics. The chapters define and review the key concepts with a generous number of tables, figures, radiographs, photographs, graphs, and charts. Interspersed through each chapter are examination hints that focus the students' attention on how they are likely to be tested on the material. Following the chapter bibliography is a series of entry-level and then advanced-level self-study questions. Answers to these questions and explanations are found in an appendix.

Part of what I believe students need to do to prepare is to practice taking exams. Ideally, the examination should score the student in a way that is comparable to an actual NBRC exam, so that the student does not become over-confident or under-confident. Additionally, the student should be able to discover areas of weakness in both examination reasoning and in content. In this book, students can find exam questions at the back of each chapter, and candidates can access online practice tests in both a study mode and an exam mode for the entry-level exam and the written registry exam. I started each of these examinations and believe them to be valuable resources. Ten clinical simulations are also included on the Elsevier web site. I believe that these simulations are valuable.

However, in my opinion, the simulations have been insufficiently updated over the years. There are ways in which I believe that these simulations are not keeping up with either the revisions in the book itself, with NBRC, or with current practice. In 2009

the NBRC made it a matter of record that it *does* expect graduates to make decisions based upon the National Institutes of Health Acute Respiratory Distress Syndrome Network (ARDSNet) with regard to plateau pressure, small tidal volumes, tolerance of hypercapnia, and not maintaining high P_{aO_2} as long as one is not inducing pulmonary hypertension. None of the simulations tests these concepts at a level sufficient to develop competence in applying ARDSNet ventilation strategies.

Despite some issues mentioned, I highly recommend this review book as part of a collection of methods to help students and graduates prepare for the credentialing examinations. Programs need to take advantage of the resources provided by the NBRC, this review book, and the resources provided by other publishers to assure that graduates are ready to take the boards and to enter the workforce credentialed. I have always felt that the Sills package is a great value for the quantity of resources provided.

**James L Hulse PhD MPH
RRT-NPS RPFT**
Respiratory Care Program
Oregon Institute of Technology
Klamath Falls, Oregon

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Critical Care Handbook of the Massachusetts General Hospital, 5th edition. Luca M Bigatello MD, senior editor. Hasan B Alam MD, Rae M Allain, Edward A Bittner MD PhD, Dean R Hess PhD RRT, Richard M Pino MD PhD, and Ulrich Schmidt MD PhD, associate editors. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 2010. Soft cover, 752 pages, \$54.95.

The authors describe the **Critical Care Handbook of the Massachusetts General Hospital** as a "pragmatic review of the basis of adult critical care, designed for all trainees and practitioners." Written by experts from anesthesiology, surgery, medicine, respiratory therapy, nursing and pharmacy, it covers diverse aspects of intensive care unit (ICU) medicine, with the self-stated goal of describing the physiology and scientific evidence behind their recommendations with a focus on the implementation of practices from outcomes-based research.