

J.M. JELLIN, P. GREGORY, F. BATZ, K. HICHENS, ET AL., **Pharmacist's Letter/Prescriber's Letter Natural Medicines Comprehensive Database, 3rd Edition.** Stockton, CA: *Therapeutic Research Faculty, 2000. 1530 pp. \$92.00.*

Pharmacists and other health practitioners as well as educators need access to current accurate information on nutritional supplements. This publication, more than any other with which I am familiar, meets that need. I am enthusiastic about it. Earlier editions are student/faculty favorites of the over 200 volume nutritional supplement references and 800 files in our Learning Resource Centers. Students have found this reference invaluable in pharmaceutical practice and for courses in herbal drugs, nutritional supplement therapies and the ten modular courses in our curriculum. Local pharmacists, physicians, nurses, nutritionists and other health professionals appear to be equally enthusiastic when introduced to this reference.

Entries include plant, animal, microbiological, and mineral products and some of their isolates. The special features of this latest edition include: over 1,000 natural medicine entries, arranged alphabetically with a comprehensive index for ready location whatever name is used; a total of 8304 references to supporting data, most of which are from 1996-2000 publications; an index of over 3100 brand named products with a complete listing of contents; a table identifying potential interactions between natural medicines and drugs, organized by therapeutic applications; a table identifying potential interactions between natural medicines and drugs, arranged by an alphabetical list of natural medicines; a table of therapeutically effective natural medicines for 150 different medical problems; and a table listing drug influences on nutrient levels.

This reference has a quality flexible binding clearly intended to withstand frequent use. The comprehensive database is the creation of over two dozen pharmacists, physicians, researchers, dietitians and pharmacologists with the support of over thirty other identified individuals. The database on each entry is divided into the following 15 highlighted categories to provide information for questions that practitioners most often need to address: Name; This Product is Also Known As; Scientific Names; People Use This For; Safety; Effectiveness; Possible Mechanism of Action & Active Ingredients; Adverse Reactions Including Known Allergies; Possible Interactions with Herbs & Other Dietary Supplements; Possible Interactions with Drugs; Possible Interactions with Foods; Possible Interactions with Lab Tests; Possible Interactions with Diseases or Conditions; Typical Dosages & Routes of Administration that are Commonly Used; Comments.

Information is presented in a precise, thorough, conservative, referenced and readable style. Many entries include the word CAUTION followed by references to additional important information. Under Safety, each product is rated, with explanations, as LIKELY SAFE, POSSIBLY SAFE, POSSIBLY UNSAFE, LIKELY UNSAFE or UNSAFE, for a particular application. Under Effectiveness, each product is classified, with explanations, as EFFECTIVE, LIKELY EFFECTIVE, POSSIBLY EFFECTIVE, POSSIBLY INEFFECTIVE, LIKELY INEFFECTIVE, or INEFFECTIVE, for a particular application. The specific formulas or extracts found to be effective are identified.

No natural medicines of significance were found missing although one might question the inclusion of non-natural products such as hydrazine sulfate or questionable products such as vitamin O, ciguatera, or kombucha tea. Although the authors recognize the importance of identifying plant part(s) being discussed, it is difficult or impossible to identify the plant part(s) in some of the entries. Confusion may result from inadequate descriptions such as not identifying the valence of described chromium salts or using the term copper for cupric salts. The Table of Therapeutically Effective Natural

Medicines omits some established natural medicines, e.g., lemon balm for cold sores, *Lactobacillus acidophilus*, peppermint oil and raspberry leaves for diarrhea, and Co-Q10 for periodontal disease.

The Natural Database Team for this publication welcomes critiques and new information. A Web version is available also for \$92 and the combination of printed and Web versions for \$132. CE Credit may be arranged for pharmacists, physicians, nurse practitioners, physician assistants and dietitians in six subjects utilizing this reference.

This is a "top of the line" reference. Each pharmacy, pharmacist and other health practitioner should have daily access to this publication.

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AMERICAN SOCIETY OF HEALTH SYSTEM PHARMACISTS AND SPRINGHOUSE CORPORATION. **Pharmacist's Drug Handbook.** Springhouse PA: *Springhouse Corporation, 2001. xii + 1282 pp. (paperback).*

The *Pharmacist's Drug Handbook* is a pocket-sized, easy-to-use resource that provides medication information for professionals. The book is available only in text format at this time. It is divided into two major sections: information on pharmacologic classes of medications; and individual monographs sorted by generic name. There is also a photoguide to tablets and capsules and several helpful appendices. There are 39 pharmacologic classes of medications reviewed. The information covered in this section includes the pharmacology, clinical indications and actions, adverse drug reactions, clinical considerations, patient counseling, use in special populations, and representative combinations. A nice feature of this section is that tables are frequently used to compare agents within the class. The *Pharmacists Drug Handbook* gives you comprehensive profiles of more than 780 generic and 2000 brand name medications. The text does not include information on over-the-counter or foreign medications. Information provided includes how the medication is supplied, indications and dosages, pharmacodynamics, pharmacokinetics, contraindications and precautions, interactions, effects on diagnostic tests, adverse reactions, overdose and treatment, clinical considerations, patient counseling. The information that is provided goes beyond the FDA labeling, and includes the outcomes from the primary literature and clinical practice guidelines. There are no references, although this is not surprising because of the compact nature of the text. The type of information in this section is similar to that found in the *Drug Information Handbook* (Lexi-Comp's Clinical Reference Library). The user is able to access changes and updates to the drug information by linking into the www.eDrugInfo.com. This can be helpful to get new information on medications; however, there is no mechanism to include the updates in the book so it can be available on bedside.

The text also provides a photograph of over 300 commonly used tablets and capsules. The user is directed back to the drug information component of the text. There are 10 appendices that describe information helpful to practitioners including subcutaneous, intramuscular, and intravenous injection techniques, therapeutic drug monitoring guidelines, guidelines for use of selected antimicrobials, calculations, cytochrome p450 enzymes and common drug interactions, and general information on common herbal medicines. The appendices that are present are helpful, but could be expanded in future editions to include other clinical issues commonly identified at bedside.

The drug information handbook is a valuable tool for a pharmacist who requires a quick resource for medication information.

Although updates are available on the web, the complete resource is only available in text format at this time.

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ROBERT L. MCCARTHY AND KENNETH W. SCHAFER-MEYER. **Introduction to Health Care Delivery: A Primer for Pharmacists, Second Edition.** Gaithersburg, MD: Aspen Publishers, Inc., 2000. xvii + 599 pp., 22 figs., 32 tbls. \$51.00.

The second edition of this text continues to provide an excellent overview of the United States health care system from the pharmacist's perspective. Several important changes were made since the first edition was published in 1998. First, many of the book's references have been updated and are quite current. Second, nearly every chapter begins with a pharmacy case study that is referred to within that chapter. Pharmacy students who may not always understand how management, public policy, world economics, etc. impact their own practice can easily grasp the situation in the case, then reflect how the chapter's topic may affect the practice of pharmacy. Third, this edition includes six new chapters and is arranged somewhat differently than the first edition. This text is divided into three major topic areas that take the reader through a brief historical review through numerous public policy changes in the 19th and 20th centuries to the current economic systems in health care today.

Part I, entitled, "Social Aspects of Health Care Delivery," consists of seven chapters. This section contains discussions of the history of health care in America, other health care professions involved in interdisciplinary care, the pharmacy profession, the patient, public health, drug use and the pharmaceutical sector, and health care ethics. This section gives the reader an excellent idea of how medical care evolved in the United States and how the ethical practice of pharmacy and use of medications fits into total patient care. Two new chapters in Part I are devoted to "The Pharmacist" which includes a discussion on pharmaceutical care and "The Patient" which describes the patient as a consumer of health care as well as presenting different patient care models.

Seven chapters make up Part II, "Organizational Aspects of Health Care Delivery." This portion of the text contains information about hospitals, ambulatory care, long-term care, mental health services, home care, health care informatics, and international health care. The new chapter in this section concerns how health care informatics provide insight into use of the internet, computer based patient data, automation, and computer aided monitoring devices.

Part III, "Economic Aspects of Health Care Delivery," consists of eight chapters that ranges from a review of basic economics to the description of financing for various populations in the U.S. health care system. Topics include basic economic principles, unique aspects of health economics, pharmacoeconomics, private health insurance, Medicare, Medicaid, managed health care, and health care reform. New topics for this edition involve economics and how economics in the health care system follow basic economic principles with an ethical twist. The four basic methodologies of pharmacoeconomics are described with an excellent definition of terminology for the beginning student. The last chapter, entitled, "Health Care Reform," discusses past and current financing of the U.S. health care system as well as what the future might hold.

Like the first edition, the second edition offers the student considering a career in pharmacy or another health related field an excellent overview of the practice of pharmacy in the U.S. health care system. Where we were in the past, what pharmacists currently accomplish, and what the profession hopes to build for the future are all described. Further, the senior pharmacy student will profit from a better understand of how pharmacy practice, economics, and general health intertwine in a health care system with many viewpoints and many players. I would continue to recommend this book as an addition to pharmacy libraries of all students and suggest it for incorpora-

tion in courses for pharmacy administration and introduction to pharmacy practice.

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LEON SHARGEL, ALAN H. MUTNICK, PAUL F. SOUNEY AND LARRY N. SWANSON. **Comprehensive Pharmacy Review, Fourth Edition.** Baltimore, MD: Lippincott Williams & Wilkins, 2001. xxi + 1171 pp., 173 figs., 151 Ms. \$55.95.

The fourth edition of this book is designed for both pharmacy undergraduates and professionals. The initial publication was intended to guide students as they prepared for the pharmacy board examination (NAPLEX), thus consisted mainly of outlines and study questions. The main text is divided into two: part I, consists of 18 chapters, and reviews material pertaining to the basic science of pharmacy. Part II, consists of 40 chapters discussing specific disease states. Study questions and answers complete each chapter. Appendix A summarizes some key steps to consider before dispensing any prescription with emphasis on double-checking for accuracy. Also included in the appendices are the conversion system and nomograms.

Chapters One through Three cover topics such as, drug product development in the pharmaceutical industry, pharmaceutical calculations, statistics, pharmaceutical principles and drug dosage forms, dosage calculations and percentages. The concepts of dilutions and electrolyte solutions are well described in the third chapter.

Chapters Four through Eleven provide a detailed review of topics including biopharmaceutics, drug delivery systems, basic pharmacokinetics, and immunology. The addition of figures clearly adds to the content of this section.

Chapters Twelve through Sixteen explore various aspects of medicinal chemistry, while Chapter Seventeen presents a detailed review of drug metabolism and interactions. The text is accompanied by a reasonable number of tables and diagrams for better illustration of concepts. The principle of pharmacokinetics is revisited for better comprehension. The authors gave concrete and detailed explanations to the questions in this section.

Chapter Eighteen highlights the practice of nuclear pharmacy. It begins with definitions of the common terms used in nuclear pharmacy, and discusses specific properties of radiopharmaceuticals. The role of sodium pertechnetate technetium-99 (99mTc) is evident here as the most commonly used radionuclide in diagnostic imaging. A brief discussion of use of radiopharmaceuticals for cardiovascular, hepatic, renal etc. is included in this section, with emphasis on cardiovascular. Chapter Nineteen discusses pharmaceutical care and disease state management. The role of the pharmacist is clearly defined with emphasis on collaboration with the patient and other health professionals to provide optimal care. The highlight of this chapter is the addition of specific templates for both institutional and community practice of pharmaceutical care.

Subsequent chapters in Part II review numerous disease states such as: diabetes mellitus, cancer, congestive heart failure, cardiac arrhythmias, infectious diseases and hypertension. Caution is exercised with use of over-the-counter products (OTC), herbal/nutritional supplements and drug use in special populations (elderly). Pharmacy law and the pharmacist's role in reviewing and dispensing prescriptions are discussed with emphasis on Pharmaceutical care.

Up to date information is used in disease states management. Hypertension management for example utilized INC VI for optimal management. Caution was exercised in the elderly and special populations regarding dosage adjustment.

The chapter on infectious disease was comprehensive. The different classes of drugs were listed on tables including the route of administration, route of elimination, dosage range, and half-lives. However, most antibiotics were listed as miscellaneous, instead of their usual sub-category (e.g., glycopeptide-vancomycin). Unfortunately, no test questions were included at the end of this chap-

ter. New drugs such as kaletra and zyvox were not discussed.

I was also impressed with the review of diabetes mellitus. The chapter was up to date with the newest insulin products (glargine and aspart). The newest oral insulin secretagogue (Nateglinide-StalixR) was however not discussed since by the time of print it had not yet been approved. The addition of current references would be very useful. Most chapters either lacked references or included a couple. This book differs significantly from *Appleton & Lange's Pharmacy Review*, by Hall and Reiss in that less patient cases were used, and the answers to questions are not as elaborate. I would highly recommend this book primarily to pharmacy students and graduates in preparation for the national board examination, as well as pharmacy practitioners.

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ALFONSO R. GENNARO. **Remington: The Science and Practice of Pharmacy, 20th Edition.** Baltimore, MD: Lippincott Williams & Wilkins, 2000. xv + 2077 pp., 620 figs., 351 this. \$99.00.

The 20th edition of *Remington* returns to the one volume, hard cover format of volume 18 and before. The cover and colors are quite contemporary. The new title adopted with the 19th edition, *Remington: The Science and Practice of Pharmacy*, is retained with this new edition. The old title of the series, *Remington's Pharmaceutical Sciences*, apparently ended with the 18th edition. The authorship and editorship is also quite contemporary with 52 first time contributors among the 143 authors and editors.

In the Preface, the editor acknowledges the challenges of providing current and relevant information using a publication with a five-year life cycle. As pharmaceutical scientists and students know, information from the Internet, primary publications, etc. make it almost impossible to keep abreast of current developments. To meet these challenges, *Remington's* authors and editors have modified a number of areas in the reference book. A notable example is the omission of dosing and dosage form information from the individual drug monographs found in Part 7, *Pharmaceutical and Medicinal Agents*. In my opinion, this was one area that should have remained in the reference. *Remington's* was one of the premiere information sources for the drugs described in the monographs. Finding another resource with that information will not be an easy task. Manufacturer names were also not included, the editors noting that 25 percent of the pharmaceutical companies had changed names or merged during the interval between completion of the manuscript and the publication date.

There are the same number of parts (8) in this new edition as found in the 19th edition. The largest expanded section is Part 8, *Pharmacy Practice*, which contains 10 new chapters and approximately double the number of pages compared to the previous edition. Some of the new chapters are titled, "Extemporaneous Prescription Compounding," "Complementary and Alternative Medical Health Care," "Marketing Pharmaceutical Care Services," "Self-Care/Diagnostic Products," and "Nutrition in Pharmacy Practice." Other chapters in the book have been combined, redistributed, or re-titled, but only the *Calculus* chapter was omitted. The overall content of this edition is what one would expect to be in an edition of *Remington's*.

This edition is published by Lippincott Williams & Wilkins, not Mack Publishing Company who had published the reference since 1948. The layout of each chapter is in the *Remington's* style, but distinctive heading and subheading designs help clarify the organization of the material. The unfortunate problem with the pages is that the ink easily smears and smudges. This difficulty occurs with other books printed by the same publisher and thus is not specific to this volume.

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JACQUES WALLACH. **Interpretation of Diagnostic Tests, Seventh Edition.** Philadelphia, PA: Lippincott Williams & Wilkins, 2000. xiii + 1026 pp., 192 tpls., 93 figs., \$49.95.

More than three decades ago, this resource who first published to help clinicians determine "Which lab tests do I order?" "Is this test result normal or abnormal?" or "What might be causing this abnormal result?" In the preface to this, the seventh edition of *Interpretation of Diagnostic Tests*, the author states that "laboratory tests have greater specificity and sensitivity than the physical examination for many disorders," and indicates that "laboratory tests are an increasing part of most patient-physician relationships and contribute greatly to the selection of additional diagnostic procedures and ultimately to diagnosis and treatment." However, the number, cost, complexity, sophistication, variety, utility and availability of laboratory tests continues to grow along with clinicians' dependence on them. Since the occurrence of many diseases can only be established or diagnoses confirmed or appropriate therapy selected by knowing which tests to order, this comprehensive reference provides expert guidance in ordering and interpreting clinical laboratory tests.

As in previous editions, the text is divided into three parts. The first provides an introduction to normal laboratory values or reference ranges (this later term is used throughout the text), as well as summarizing those critical values that may indicate the need for prompt clinical intervention. The first three pages of Chapter 1 provide an excellent overview of important principles underlying the utilization of clinical laboratory tests including the final statement that "negative laboratory (or any other type of tests) do not necessarily rule out a clinical diagnosis." The second part entitled "Specific Laboratory Examinations," consists of an alphabetical listing of specific blood and urine laboratory tests including their diagnostic use and those diseases in which they are either increased or decreased. Algorithms and tables first appear in this part and continue throughout the reference. Finally, part 3 consists of fifteen chapters, each applying laboratory tests to diseases of specific organ systems. Included in this extensive coverage of diseases are chapters discussing disorders due to physical and chemical agents including drugs of abuse and common poisons, therapeutic drug monitoring and toxicology and a very helpful description of body substances, including tears and hair, which are often overlooked as sources of diagnostic information. This is followed by a short but current bibliography primarily of other texts, and three appendices including abbreviations and acronyms, tables enabling the reader to convert values between conventional units and the newer SI units that have been used by some journals and the effect of artifacts on laboratory test values. The index, as in previous editions, is comprehensive and detailed.

A unique feature of the current edition is the use of a symbol to mark tests that are diagnostic for a disease and a different icon to indicate those tests that are "suggestive or supportive or should arouse suspicion of, but are not diagnostic for that disease, thus encouraging more cost-effective and immediate diagnosis." Tests, which are not marked, inform the reader that the results of such tests are nonspecific, although they can in some instances provide useful information in assisting in the differential diagnosis of a disease or medical condition. Another helpful attribute of this reference are the edge tabs, which quickly lead the reader to the appropriate section.

In the first paragraph of the first chapter of this well organized and extensively used reference, the author points out "that the purpose of all testing is to reduce clinical uncertainty." He has succeeded by providing a reference that will enable clinicians to make better decisions and provide optimum patient care. This is an excellent reference that can be used by students, and faculty to answer questions most often posed by clinicians as they seek to interpret diagnostic tests.

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HARRY A. SULTZ AND KRISTINA M. YOUNG. **Health Care USA: Understanding Its Organization and Delivery. Third Edition.** Gaithersburg MD: Aspen Publishers, Inc, 2001. xviii + 461 pp., 45 figs., 17 tbls., \$52.00.

The objective of the third edition of the book, *Health Care USA: Understanding Its Organization and Delivery*, as stated by the authors, is to "provide an introduction to the U.S. health care system and an overview of the professional, political, social, and economic forces that have shaped it and will continue to do so." This book has accomplished this objective beautifully.

This paperback edition contains 13 chapters. Chapter 1 does an excellent job of setting up the content of subsequent chapters and the need for understanding the complexities and dynamic nature of the US health care system. Chapter 2 provides readers with a snapshot of the evolution of health care in the U.S. from a simple to a complex system, as a result of various legislative, political, economic, organizational and professional influences.

The next nine chapters covers topics such as hospitals and their origin, organization and performance, ambulatory care, medical education, health care personnel, financing health care, managed care, long-term care, mental health, and public health. Chapter 12 on "Research: How Health Care Advances" is an appropriate chapter in a book of this nature, which I have seen lacking in several introductory books on health care delivery in the U.S. Given the importance and capability that scientific research has in demonstrating the successes and failures of basic science, clinical and technological advances, this chapter does an excellent job of introducing novice researchers to the various types of research and the challenges associated with conducting such research. The book concludes with a chapter on the future of health care, which summarizes how the health care system has evolved, identifies major challenges affecting the system, and makes predictions for the future. At the beginning of each chapter, a brief description of the contents of that chapter is helpful. An appendix containing a listing of web site addresses of important health care organizations is useful for readers who may want to seek in-depth information about a particular organization or topic.

Overall, I liked the book and believe the authors achieve their goal of bringing together a diverse array of issues and provide a good starting point for someone who needs to achieve an understanding of the organization, complexities and dynamic nature of the U.S. health care system. An advantage of this book lies in the breadth of material that is presented. It is easy to read and presents the various topics in a well-structured manner. This book can serve as a valuable resource for an introductory course in health care systems. The only limitation that I see of this book is the lack of a strong emphasis on the pharmacy perspective, which is acknowledged by the authors. They justify this by indicating that such information would probably be included in the curricula of the various health professions. Pharmacy students will be unable to get an appreciation of topics such as the history and growth of the profession, the impact of managed care on pharmacy, an overview of the pharmaceutical industry, evolution of pharmaceutical care etc. For obtaining information about the pharmacy perspective, Robert L. McCarthy and Kenneth W. Schafermeyer's *Introduction to Health Care Delivery: A Primer for Pharmacists* (An Aspen Publication, 2001, 599 pp.) may be more useful.

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LARRY E. BOH. **Pharmacy Practice Manual: A Guide to the Clinical Experience, Second Edition.** Baltimore, MD: Lippincott Williams & Wilkins, 2001. xvi + 816 pp., 29 figs., 71 tbls. \$40.00 (softbound).

This book, first published six years ago under the title *Clinical Clerkship Manual*, is promoted as "the only clinical rotation manual created specifically for the pharmacy student." Consisting of twenty

chapters by twenty-six contributing authors, the manual is intended as a pocket reference for students enrolled in their introductory and advanced practice experience clerkships. The book is not a compilation of drug-related information (e.g., mechanisms of action, dosages, side effects) but rather focuses on how to apply drug information in a patient-care setting.

Seven chapters focus on understanding the health care system and the role of the pharmacist in the delivery of health care. They present an overview of the health care system and the professional practice experience, describe what is meant by professional conduct, offer insight on proper documentation of patient information, discuss public health practices, describe patient consultation in the cycle of patient care, and present approaches to evaluating drug-related problems.

Eight chapters describe various pharmacy care services and present information essential for the student to carry out these services. They include providing drug information, interpreting physical examination data, using home test kits, administering medications, and reviewing basic pharmacy calculations. They also provide an overview of pharmacokinetics, describe clinical drug monitoring, and discuss nonprescription drug therapy.

In addition, five chapters provide excellent reference material for use in clinical situations, including clinical lab tests, diagnostic procedures, fluids and electrolytes, as well as parenteral and enteral nutrition. The three appendices contain information on medications which contribute to medical problems; medical abbreviations, terms, and notations; and common anatomic terms.

While this book is valuable to the clerkship student, it is even more useful to students in the classroom. Too often students enter the pharmacy curriculum with pre-conceived ideas that they need to know "drug facts," i.e., pharmacology and therapeutics. This manual contains none of this information, but instead presents the tools by which pharmacists utilize their drug knowledge to provide pharmaceutical care. The chapters on the health care system, the professional practice experience, and professional conduct set the stage for expected roles and behaviors. The chapters on clinical lab tests and diagnostic procedures serve as excellent references for students in disease management, pathophysiology, and pharmacotherapy courses or in any course that is taught by a case-based, patient-centered approach. The chapters on public health practices, approaches to evaluating drug-related problems, and documentation of information stimulate students to consider entrepreneurial practices.

Although some chapters are better written and more useful than others, the overall book is well thought out and provides useful information for pharmacy students at any level of their education.

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RONALD D. SCHOENWALD. **Pharmacokinetic Principles of Dosing Adjustments: Understanding the Basics.** Lancaster PA: Technomic Publishing Company, Inc., 2001. xii + 258 pp., 72 figs., 32 tbls., \$69.95.

The subtitle, *Understanding the Basics*, accurately describes the author's approach in writing this introductory text. In the preface, he states that the goal of the text is "to provide the concepts used to formulate approaches but was not intended to be a clinical guide to dosing adjustments." This text serves as an introduction for the student, or a re-introduction for the practicing pharmacist, to the basic pharmacokinetic concepts that form the foundation for calculating pharmacokinetic dose adjustments.

The book is divided into four sections: Basic Concepts, Parenteral Dosing Adjustments, Oral Dosing, and Advanced Considerations. Each section is further divided into a total often chapters. The Basic Concepts section contains chapters on Pharmacokinetic Processes, Kinetic Processes Applied to the Whole Body, Disposition Parameters, and Parameters Used in Adjusting

Doses. The lone chapter in the Parenteral Dosing Adjustments section is entitled Infusion. Chapters in the Oral Dosing section include Important Parameters, Bioavailability/Bioequivalence, and Multiple Dosing Regimens. Finally, the Advanced Considerations section introduces readers to the Two-Compartment Model and Non-Linear Pharmacokinetics.

Each chapter begins with a set of study guide questions. These questions are clear, well written, and help readers focus on the most important concepts presented. At the end of each chapter is a set of study problems. The problems allow readers to apply the concepts presented, and with the answers found in the appendix, serve as a means of self-assessment.

With the focus of the book in mind, concepts are presented in a simple but scientifically sound manner. Equations are presented in their most universal form, and are not altered to perform dosing calculations for specific drugs or drug classes. Rather than introducing equations through extensive mathematical derivations, Schoenwald employs more intuitive and physiologic explanations. The examples illustrating pharmacokinetic concepts are easily understood, even for readers whose calculus classes are but a distant memory. This seems to be especially true of the chapters in the Basic Concepts section. Figures and tables are used efficiently, and they are labeled in a way that quickly acclimates readers.

This book's strength is also its weakness. While it provides an easy to understand introduction to the concepts and skills needed to calculate dose adjustments for patients, it does not go beyond that. Those looking for a text covering the latest techniques in pharmacokinetics research or to provide in-depth instruction on dose optimization of clinically monitored drugs should probably look elsewhere. Therefore, it would probably not be appropriate as the lone text used in advanced clinical pharmacokinetics courses or graduate level pharmacokinetics courses.

Practicing pharmacists needing to recall basic pharmacokinetic concepts will find this to be a helpful reference, but there are a number of clinical pharmacokinetics references available that provide more of the information needed to calculate specific pharmacokinetic dose adjustments. With its concise presentation and user-friendly examples, this text would best be utilized in introductory pharmacokinetics courses at the undergraduate level. It would also be a valuable addition to the reference collection of any medical library or drug information center.

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