

# Manual *for* Pharmacy Technicians

FOURTH EDITION



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# Dedication

This *Manual* is dedicated to the pharmacy technicians I have worked with who are such valuable partners in patient care; their knowledge and dedication to the profession allow us to perform at the highest level possible.

This *Manual* is also dedicated to future pharmacy technicians and their educators, who must be fearless in using their curiosity and creativity to push the boundaries of current practice so that we can continue to move the profession forward.

*Bonnie S. Bachenheimer, PharmD*



# Acknowledgments

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The Illinois Council of Health-System Pharmacists (ICHP), for giving me the opportunity to be editor of this edition of the *Manual*.

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All of the contributing authors and reviewers. Their efforts are the main reason that this book is such a high quality and highly respected reference book.

My colleagues at Advocate Lutheran General Hospital for their advice and enthusiasm regarding the book and for sharing my passion for the profession of pharmacy.

I am grateful to my husband Eric, and my children, Sara, Ben, and Max for their love, support, and understanding throughout the publication of this book.

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# Preface

This is an exciting time to be in the profession of pharmacy! Pharmacists continue to be more involved in direct patient care, drug therapy continues to become more complex, and ensuring appropriate and safe medication use continues to be a major focus of our profession. Pharmacists rely on the support of pharmacy technicians to be able to provide quality patient care, and technicians are valued members of the healthcare team. Technicians are assuming more responsibilities and are taking on more leadership roles. As their roles continue to expand and evolve, it is imperative that pharmacy technicians be well-trained. Many states are passing laws that mandate technician certification as a minimum requirement for all technicians.

This manual has been updated to reflect the changing role of pharmacy technicians and of the profession. The *Manual*, *Workbook*, and *Practice Exam Guide* were constructed as instructional manuals for pharmacy technicians enrolled in formal training programs, for those wishing to achieve certification, and for training purposes at the workplace. This manual and additional Web content will also appeal to instructors of formal and informal pharmacy technician training programs.

If you are familiar with previous editions of the *Manual*, you will notice significant changes in its appearance, organization, and content. This edition was developed to meet the current and future needs of pharmacy technicians and their educators. The look of the *Manual* has been given a make-over that includes more color, more figures, and additional features to stimulate students interest and inspire instructors.

## Organization and Chapter Content

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The order of the chapters has changed from the previous edition to follow the structure of most curriculums and to complement the ASHP model curriculum. The Manual is now divided into four parts:

- 1. Introduction to Pharmacy Practice.** This section introduces the practice of pharmacy and the most common practice settings, including a new chapter on “Specialty Pharmacy.”
- 2. Foundation Knowledge and Skills.** This section highlights the important foundation knowledge and skills that are necessary to understand the basics of medication use. A new chapter on “Communication and Teamwork” is included in this section.
- 3. Practice Basics.** This section includes the chapters directly related to processing prescriptions and medication orders.

**4. Business Applications.** This section includes the chapters related to the business end of the practice of pharmacy. There are two new chapters in this section: “Durable and Nondurable Medical Equipment, Devices, and Supplies,” and “Billing and Reimbursement.”

**Appendixes.** A glossary of key terms can be found at the end of the book. Several appendixes have been added as important resources:

Appendix A: Medical Terminology and Abbreviations

Appendix B: Confused Drug Names

Appendix C: Glossary

## Organization within the Chapters:

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The beginning of each chapter contains an **outline of the chapter** and **key terms** with definitions. Key terms are also bolded within the text for reinforcement.

**Learning outcomes** help the student understand what they need to learn from the chapter.

An **introduction** explains what the student will learn in the chapter and why it is important.

A **summary** at the end of each chapter briefly reiterates the chapter’s key topics and learning outcomes and why they are important.

**References** and a listing of **resources**, such as suggested books, journals, Web sites, and other media, is included at the end of each chapter.

**Self-Assessment questions** help students test their knowledge of the content and evaluate their learning outcomes. The **Self-Assessment answers** include a rationale for the correct answers.

## Explanation of New Features:

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A number of new pedagogical features in the chapters have been added to this edition:

**Key Points** are highlighted in the chapter as in the example below:

- ✓ The qualifications for pharmacy technician registration or licensure generally include a minimum age, high school graduation or the equivalent, completion of a training program, including pharmacy employer training programs, and an examination.


**Rx for Success** boxes include practice tips, pearls, and words of wisdom. They provide additional insight into important topics with the goal of helping the reader achieve success on the job and in their career. An example is shown below:

### R<sub>x</sub> for Success


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Technicians who are able to identify patients with these types of special needs and can effectively communicate these concerns with the pharmacist and other health care professionals are invaluable in patient care.

**Safety First** boxes stress prevention, identification, and management of drug-related problems and point out alerts and cautions relating to the safe use of medications. An example is shown below:

**Safety First**  The patient's name and some other identifying information (e.g., date of birth, address, phone number) must be verified to ensure that the correct medication is being given to the correct patient.

**Technology Topics** boxes highlight technology, as in the example below. The previous edition had a chapter on Technology, but this edition integrates the latest technology into individual chapters both within the text and by using this feature.

 **TECHNOLOGY TOPICS**  
"Smart pumps" are equipped with IV medication error prevention software. These devices have specific drug libraries, dose calculators, programming limits, and remote communication capabilities.

## Updated Content:

All of the chapters from the previous edition were revised and updated. Several new chapters were created, including:

**Specialty Pharmacy Practice.** This chapter includes information on Nuclear Pharmacy, Specialty Compounding, and Veterinary Pharmacy Practice.

**Communication & Teamwork.** This chapter was specifically requested by pharmacy technicians and technician educators since effective communication skills and working well as a team are so important in the workplace.

**Durable and Nondurable Medical Equipment, Devices and Supplies.** This chapter describes commonly used durable medical equipment (DME) and non-DME devices and supplies, since many pharmacies provide them for their patients.

**Billing and Reimbursement.** Pharmacy technicians are often involved in pharmacy billing and reimbursement; therefore, this chapter was added to provide a broad overview of the topic.

**Web Content.** Additional Web content includes links to the Top 200 Drugs, ASHP Technical Assistance Bulletins, and Practice Guidelines. There will be Web content for instructors including powerpoint presentations and additional sample problems with answers that will be available for downloading for teaching and testing purposes. Web content can be found at: [www.ashp.org/techmanual](http://www.ashp.org/techmanual).

## Pharmacy Technician Certification: Review and Exam Guide

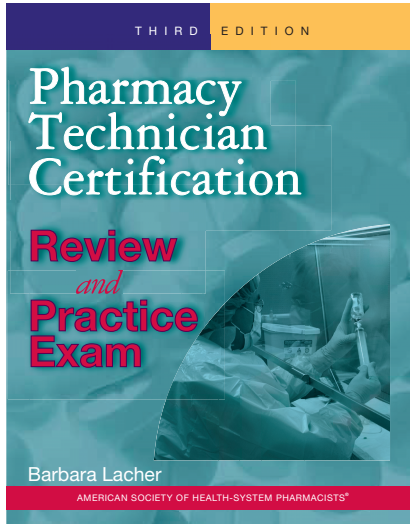
*The Pharmacy Technician Certification Review and Practice Exam*, third edition, is a self-study guide designed as a companion to the *Manual for Pharmacy Technicians*. While the Manual is designed to provide a broad overview of essential knowledge and skills, the goal of the Exam Guide is to prepare technician students for the Pharmacy

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Technician Certification Exam offered by the Pharmacy Technician Certification Board (PTCB), as well as other certification exams.

The Exam Guide contains chapters focused on each section of the PTCE exam, as well as a thorough calculations review, a section on commonly prescribed medications, and important test-taking tips and strategies. In addition to the practice exam and numerous review questions throughout the text, a CD packaged with the book allows users to build multiple practice exams. We recommend using this book in conjunction with the Manual as a helpful study aid in preparing for certification.



## New! Workbook for the Manual for Pharmacy Technicians

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The *Workbook for the Manual for Pharmacy Technicians* helps technician students master the concepts and skills discussed in the *Manual*. By asking students to apply their knowledge, the exercises in the Workbook reinforce key points and allow for targeted assessment. Chapters in the Workbook complement those in the Manual, so that instructors and students can easily work between both books. Each chapter includes a wide range of exercises, such as multiple-choice, true/false, fill in the blank, concept and key term matching, short answer, and activity questions. Where appropriate, calculation, conversion, and visual identification questions are included. We recommend using this book alongside the Manual to enhance learning.

A lot of hard work, time and energy have gone into making this Manual a valuable resource for pharmacy technicians and their educators. We hope that you are as excited about this new edition as we are!

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