

12TH EDITION

ABRAMS' CLINICAL DRUG THERAPY

Rationales for Nursing Practice

Geralyn Frandsen
Sandra Smith Pennington

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DRUG THERAPY
Rationales for Nursing Practice

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Twelfth Edition

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I dedicate this edition to my husband and nursing colleague, Gary. I also dedicate this edition to the Maryville University nursing faculty, alumni, and students. Each one of you inspires me!

Geralyn Frandsen

To my family, my constant source of strength, inspiration, and gratitude.

Sandy Pennington

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Foreword

The 12th edition of *Abrams' Clinical Drug Therapy: Rationales for Nursing Practice* comes at a critical juncture in health care worldwide. Even as health care was in transition due to changes in delivery, access, and economics, the global pandemic related to COVID-19 shook traditional processes for everyone. News headlines around the world hailed nurses for their steadfastness and diligence in providing frontline care, frequently in dire circumstances. This unprecedented showcase of the work nurses do every day, pandemic or not, demonstrates the deep knowledge and skills that characterize professional nursing practice and the professional values and attitudes that drive nurses. Every day nurses are the primary administrators for medications. Quality safe medication administration, though, became a centerpiece of managing the COVID-19 outbreaks and highlighted the imperative of evidence-based nursing practice. The principles and practices in this book are a roadmap to guide nurses across health care settings to ensure a patient-centered approach to quality safe care for all populations and settings.

Now as never before, the challenges for quality safe medication administration hinge on nurses' knowledge, skills, and attitudes. Daily, nurses call on the basic pharmacologic knowledge honed in academic programs and refined in practice to address challenges in medication management across all environments, and particularly when following strict infection control guidelines.

To guide quality safe care practices, nurses have turned to the Quality and Safety Education for Nurses (QSEN) project, launched in 2006 as an evidence-based framework of six competencies: patient-centered care, teamwork and collaboration, evidence-based practice, safety, quality improvement, and informatics (Cronenwett et al., 2007, 2009). These six competencies are integrated into national curriculum standards for nursing so that all nurses are accountable for integrating safety and quality responsibilities into their daily work. Many schools of nursing apply the

QSEN framework to guide their curriculum and course objectives. Each has a role in safe clinical drug therapy.

In the midst of COVID-19, nurses' stories from the frontlines of care revealed the role of these six competencies as nurses valiantly applied the knowledge, skills, and attitudes to keep their patients safe. But was this really any different from the holistic care nurses provide every day, except for the fact that it was now illuminated because of the exponential explosion of demand for intense care brought on by the influx of critically ill patients in nearly every country?

As noted in this evidence-based 12th edition, nurses are the primary administrators of medications in most settings. Every day, nurses administer pharmacologic interventions. Every day, they apply the six QSEN competencies by considering patient-centered preferences and situations, collaborating across interprofessional teams, applying evidence-based standards for each medication and within the patient's context, participating in continuous quality improvement, applying safety science concepts, and using informatics to plan and manage the pharmacology needs of their patients.

Medication administration is multifaceted, complex, team-based, patient-centered, and carries the possibility of multiple failures. One in nine emergency department admissions is related to an adverse drug event, 3.2 billion medication orders are prescribed each year, and 160 medication errors occur each year in primary care (AHRQ, 2018). These shocking statistics remind us that nurses may in fact be a last line of defense in safe medication administration.

Nurses are accountable for current knowledge of a particular patient's medication regimen. To achieve reliability, nurses must follow practices that ensure the right medication is administered in the right dose, by the right route, at the right time, and to the right patient, every time. Safety culture, a subset of the overall organizational culture, demands awareness of the potential for error, willingness to report errors and near misses, and action to correct system failures. Safety culture includes "just culture." In just culture, all personnel are responsible for reporting near misses and breakdowns in care but share accountability across the system to trace broken processes, analyze the action pathway for administering a

medication, and implement improvement processes to prevent the same type of event from happening again.

This text serves as a reliable reference for safe medication administration. A key feature of *Abrams' Clinical Drug Therapy: Rationales for Nursing Practice* is the incorporation of disease characteristics with clinical drug knowledge in demonstrating a comprehensive approach to safe medication administration. Nurses are provided a step-by-step guide for medication safety through pharmacologic knowledge, evidence-based standards for administration, awareness of organizational challenge, instructions for careful medication administration, and knowledge of how to complete documentation. Learners at all levels are able to apply the learning actions included in this text to ensure reliability and safety by following the QSEN competencies.

- Patient-centered care means treating all patients and families with respect and honor. By including patients and families as partners in care, they become safety allies. Engaging patients and their family members in making decisions about the treatment plan encourages active engagement as team members so they help with choices about their care that are more likely to have the desired therapeutic effects.
- Teamwork and collaboration may include nurses, physicians, a nurse practitioner, a physician assistant, pharmacist, social worker, dietitian, physical therapist, occupational therapist, and speech-language pathologist. To help coordinate the complexities of safe medication administration, teamwork behaviors include flexible leadership, standardized communication, mutual support, and constant environmental scans.
- Evidence-based practice requires an enquiring mind to constantly seek the best available information in pharmacotherapeutics, which appears in the QSEN Alerts throughout the text. Safe medication administration uses evidence-based practice standards to ensure that appropriate precautions are taken to assess for adverse effects.
- Quality improvement processes measure care outcomes to compare with benchmark data to determine areas to improve. Teams apply quality improvement tools to raise performance.
- Safety is the constant awareness of the inherent risks in medication administration and how that risk can be mitigated through

collaboration among physicians, pharmacists, nurses, and the patient and family.

- Informatics is the thread in all the competencies for managing care, documentation, and decision support tools.

Reflection before action (planning), reflection in action (pausing to problem solve), and reflection on action (debriefing) are processes for nurses to ask questions to examine their actions for constant improvement and growth. With a spirit of enquiry, nurses develop a habit of the mind for constant questioning as they follow clinical drug therapy in their practice. In using this text, central questions guide practice development.

- What are the roles and responsibilities for each team member in the complex steps in medication administration? How do I maintain awareness of the scope of responsibility for each discipline involved, particularly when patients have multiple providers?
- How do I ensure medication safety during transitions in care when I hand over my patient to another provider?
- Where do I find the information I need about this medication for safe administration?
- What communication skills will help me understand my patient's preferences and values related to medications?

Reflecting on questions like these develop a quality and safety mindset so that by following the guidance in this book, nurses will ensure that the next national medication safety measures will reflect improvement. The year 2020 will be remembered for the global COVID-19 pandemic but also the designation by WHO as the Year of the Nurse and Midwife. It is also the year the first *State of the World's Nursing* was released (WHO, 2020). It has and continues to be the year of the nurse; stories of the impact of nurses stand out in all media outlets. As the largest health care profession, nurses have a profound impact in universal access and in safety. Medication safety is a key area where nurses can truly make a difference for every patient, every time, every day.

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Preface

Abrams' Clinical Drug Therapy: Rationales for Nursing Practice has a long tradition of guiding students and instructors through the practice of safe and effective medication administration. The 12th edition includes Quality and Safety Education for Nurses (QSEN) content in each chapter. Each chapter also includes information about the pathophysiology of disease and associated drug therapy for prevention and treatment of disease.

GOALS AND RESPONSIBILITIES OF NURSING CARE RELATED TO DRUG THERAPY

Varied goals and responsibilities inherent in safe medication administration are identified in each chapter. The following information will guide you in developing your own goals and responsibilities inherent to safe and effective nursing practice.

- Preventing the need for drug therapy, when possible, by promoting health and preventing conditions that require drug therapy.
- Using nonpharmacologic interventions alone or in conjunction with drug therapy. When used with drugs, such interventions may promote lower drug dosage, less frequent administration, and fewer adverse effects.
- Administering drugs accurately and taking into consideration patient characteristics such as age, weight, and hepatic and renal function, which can influence drug response.
- Preventing or minimizing adverse effects by knowing the major adverse effects associated with particular drugs. It is important to assess patients with impaired hepatic and renal function closely for

adverse effects. The early recognition of adverse effects allows for the implementation of interventions to minimize their severity. All drugs cause adverse effects, and nurses must maintain a high index of suspicion that the development of new signs and symptoms may be drug induced.

- The effect produced if medications are combined with other medications, herbs, or foods.
- Teaching patients and families about the effects of medications. The nurse must instruct patients and families about the role and importance of their medications in treating particular illnesses, accurate administration of medications, nonpharmacologic treatments to use with or instead of pharmacologic treatments, and when to contact their health care provider.

ORGANIZATIONAL FRAMEWORK

The 10 sections of the textbook provide the reader with basic information about drug therapy as well as the administration of medications for the prevention and treatment of disease. The first section introduces the safeguards in place to promote drug safety, the Institute of Medicine Core Competencies, and medication administration. It also describes the nursing process and explains the application of the nursing process in the care of patients receiving drug therapy. The use of concept maps addresses priority considerations and nursing actions related to drug therapy. The second section addresses the effect medications have throughout the life span. The text introduces the effects of drugs on infants, children, older adults, pregnant and lactating women, and drugs affecting male and female health. The remaining sections provide information on drug therapy related to systems, infections, and disease processes.

Each chapter opens with a case study, and its use throughout the chapter helps the reader integrate information about a particular disease and its drug therapy so he or she can apply it. The chapters also have NCLEX-style questions distributed throughout to test knowledge of the content and its application to patient care. This approach will help the reader prepare for class examinations as well as the NCLEX itself.

The chapters that focus on drug treatment for specific diseases use the prototype approach, allowing the reader to see the similarity in medications within each broad drug classification. Introduction and Overview sections provide the basis for understanding the drug therapy that prevents or treats the disease. The presentation of disease pathophysiology helps the reader understand the effect of a particular medication on the prevention and treatment of disease. Drug therapy sections summarize the medications, identifying the pharmacokinetics, action, use, adverse effects, contraindications, and nursing implications—including administration, assessment, and patient teaching. Many chapters discuss the effect of herbal supplements on prescribed medications. This information has become crucial for the maintenance of patient safety. Boxes containing patient teaching guidelines for a drug or class of drugs highlight crucial information the nurse should teach the patient and family. Each chapter also includes a clinical reasoning case study to assist in the application of drug therapy in the care of patient.

RECURRING FEATURES

This updated edition includes new and revised features to enhance learning.

Chapter-Opening Features

- **Learning Objectives** summarize what the student should learn while reading the chapter and answering both the Clinical Application Case Study Questions and NCLEX Success questions, described below.
- A **Clinical Application Case Study** opens each chapter with a patient-focused clinical scenario. Throughout the chapter, the reader is asked **critical thinking questions** to apply chapter content, emphasizing a patient-centered and interdisciplinary approach to pharmacology.
- **Key Terms** with definitions help the reader understand the chapter's content.

Special Features

- Each chapter introduces the disease process and the pertinent **pathophysiology**. This allows students to make connections between the pathophysiology and pharmacologic management of a disease.
- **QSEN Alerts**, presented in the context of the chapter discussion, alert the reader to important QSEN considerations and emphasize safety as a primary objective in patient care.
- **Black Box Warnings** highlight serious or life-threatening adverse effects identified by the FDA as being associated with a drug.
- **Drugs at a Glance Tables**—which include **Canadian drug names**—summarize the routes and dosage ranges (for adults and for children), as well as the pregnancy category, for each drug in the class. The prototype drug is indicated with an icon. Medications developed after 2015 reflect the new FDA Pregnancy Category guidelines.
- **Drug Interactions** and **Herb and Dietary Interactions** boxes highlight the risk of interactions as well as increased or decreased drug effects when drugs are combined with other medications, food, or herbal supplements.
- **Patient Teaching Guidelines** list specific information for the education of the patient and family.
- **NCLEX Success** sections interspersed throughout the chapter ask the student to answer NCLEX-style questions that pertain to the learning objectives and the information just presented. This feature helps students check and apply their knowledge as they read and assists them to prepare for patient care and for the NCLEX. The questions align to the terminology used on the NCLEX. The NCLEX Success questions exclusively use generic names for medications, which is consistent with the RN licensure examination.
- **Nursing Process Concept Maps** provide a succinct overview of drug therapy in terms of assessment, planning/goals, nursing interventions, and evaluation. Located at the end of each chapter, the nursing process concept maps provide the guidelines for drug therapy specifically related to nursing care. (Nursing diagnoses do not appear in these concept maps because nursing diagnoses are not tested on the NCLEX.)

- **Clinical Reasoning Case Studies** focus on the action of the medication prescribed and the associated assessment of medication outcomes.
- **Unfolding Patient Stories**, written by the National League for Nursing, are an engaging way to begin meaningful conversations in the classroom. These vignettes, which appear in relevant chapters, feature patients from Wolters Kluwer's *vSim for Nursing | Pharmacology* (co-developed with Laerdal Medical) and DocuCare products; however, each Unfolding Patient Story in the book stands alone, not requiring purchase of these products.
- **Concept Mastery Alerts** clarify common misconceptions as identified by Lippincott's Adaptive Learning Powered by prepU
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Chapter-Ending Features

- **Key Concepts** summarize the most salient content that appears in each chapter.
- **References and Resources** provide sources on which content is based and direction for further reading.

A COMPREHENSIVE PACKAGE FOR TEACHING AND LEARNING

To further facilitate teaching and learning, a carefully designed ancillary package has been developed to assist faculty and students.

Resources for Instructors

Tools to assist with teaching this text are available upon its adoption on

thePoint[®] at <http://thePoint.lww.com/Abrams12e>.

- An **e-Book** gives you access to the book's full text and images online.
- The **Test Generator** lets you put together exclusive new tests from a bank containing more than 1,000 questions to help assess students'

understanding of the material. Test questions are mapped to chapter learning objectives and page numbers.

- An extensive collection of materials is provided for each book chapter:
 - **Pre-Lecture Quizzes** (and answers) are quick, knowledge-based assessments that allow you to check students' reading comprehension.
 - **PowerPoint Presentations** provide an easy way for you to integrate the textbook with your students' classroom experience, either via slide shows or handouts. Multiple-choice and true/false questions are integrated into the presentations to promote class participation and allow you to use i-clicker technology.
 - **Guided Lecture Notes** walk you through the chapters, objective by objective, and provide you with corresponding PowerPoint slide numbers.
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- The following **online appendices**:
 - Appendix A: Answers for NCLEX Success
 - Appendix B: Answers for the Clinical Application Case Studies
 - Appendix C: Critical Thinking Questions and Answers
 - Appendix D: The International System of Units
 - Appendix E: Serum Drug Concentrations
 - Appendix F: Tables of Normal Values
- **Journal Articles** for each book chapter offer access to current research available in Wolters Kluwer journals.
- **Dosage Calculation Quizzes** provide opportunities for students to practice math skills and calculate drug dosages.
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- Plus **Heart and Breath Sounds** and **Learning Objectives** from the textbook.

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