

Instructor's Resource Manual

to accompany

INTRODUCTION TO CLINICAL PHARMACOLOGY

SECOND EDITION



MARILYN W. EDMUNDS

INSTRUCTOR'S RESOURCE MANUAL

INTRODUCTION TO
**CLINICAL
PHARMACOLOGY**

Second Edition

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The author and publisher have made every attempt to check dosages and nursing content for accuracy. Because the science of pharmacology is continually advancing, our knowledge base continues to expand. We therefore recommend that the reader always check product information for changes in dosage or administration before administering any medication. This is particularly important with new or rarely used drugs.

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Preface

This text was adopted for use in a wide variety of programs. Based on the excellent feedback from the many faculty and students who used this book, every attempt has been made to include their suggestions. Content covering the most contemporary issues, regulations, and medications has been included.

There is a special challenge in teaching pharmacology content to nursing students. The information is important; the nurse's responsibility great. There is never enough time in the classroom to teach everything. Some students are ill equipped to understand all the content without substantial investment in time; some require remedial help in mathematics or calculations. The responsibility to select the most important ideas from the vast amount of content available is an almost impossible task and one that weighs heavily on the shoulders of conscientious faculty.

Introduction to Clinical Pharmacology attempts to sort through the large quantity of pharmacology information and distill essential content. It reflects the voice of many nurses and nursing educators about what information the beginning student requires to safely and competently administer medications. It provides only an outline of the essential content the nurse must master with the initial course exposure to pharmacology.

This *Instructor's Resource Manual* parallels the content in the text, with suggestions for areas of emphasis, teaching techniques, examples, supplemental materials, and learning activities. There are adequate opportunities for you as an instructor to supplement or emphasize materials that you feel are important but which may be missing from this text.

It is unreasonable to believe that in the few hours allotted to teaching pharmacology in most nursing curricula you will be able to cover all of the information presented in this text. You must pick and choose which content to emphasize, depending on where in the curriculum this content is introduced, on other courses students have completed, and on the skill and knowledge level of your students. The *Instructor's Resource Manual* seeks to present "Key Points" to emphasize.

Numerous teaching-learning activities have been included with this manual, including:

- 84 worksheets
- classroom activities aligned with applicable sections of chapter outlines
- procedure guides
- reproducible medication cards

There is no assumption that all these materials will be used. The faculty should select activities as needed for their particular student groups. The Worksheets developed for each section parallel the content in the text. They are designed to guide the student's personal study. They may also be used as needed for remedial work for some students, as review, drill, or testing. The Chapter Quiz is usually designed to be given as a closed book examination. Questions are often written from a problem-solving approach, requiring the student to use information learned in the worksheets in solving a patient-care problem. Major ideas are tested.

It is intended that the instructor will duplicate procedure guides, worksheets, and chapter quizzes for student or classroom use. Procedures may be personalized to represent institutional policy. All materials are printed in such a format that duplication may easily be accomplished. The publisher authorizes faculty duplication of these materials for students using the text.

Students should be encouraged to perceive the accompanying text as (1) foundational content to classroom lecture materials (2) supplemental content to read on their own when material is not covered in the classroom lectures, and (3) a resource to which they should return when they have questions. Because the text is an outline of essential content, students should be encouraged to supplement the book with other drug information once they have begun administering medications in the clinical area. For example, they should seek information from the *Physicians' Desk Reference*, hospital formularies, and package inserts to provide up-to-date information and details required in completing medication cards.

This text is designed to complement anatomy, physiology, nutrition, and nursing texts describing disease processes. The brief introductions provided with specific drug categories are designed to provide a review of related material that puts in perspective drug action and use. If this introductory content has already been taught in the program, this content may not need to be reviewed. If the content is new, it may be elaborated on. Introductory content in the text is reprinted in this *Instructor's Resource Manual* so reviews may easily be developed for course lectures.

Over the years student use of medication cards has remained a standard of many pharmacology courses. Having students prepare their own medication cards, based on their own experience, is

strongly recommended. There have been many innovations in teaching pharmacology over the years, but preparing medication cards is a learning activity that can hardly be improved upon. To facilitate this process, examples of a printed medication card are included to assist the student. Copies of this may be used to supplement preprinted medication cards that students may opt to purchase.

It is my belief that the skill of the faculty member teaching pharmacology has a major impact on the attitude of the students toward pharmacology. The goal is for the nurse to learn to respect the power of drug therapy, and to use it wisely and safely as a member of the health care team.

Medication Cards

These sample medication cards have been printed on the front and back of this page so they can be easily reproduced for student use. We recommend they be photocopied double-sided and cut in 4" by 6" cards.

Drug Name: _____	Trade Name: _____
Major Drug Category: _____	
Drug Action: _____	

Uses: _____	

Adverse Effects: _____	

Drug Interactions: _____	

Usual Drug Dosage: _____	
Nursing Implications:	
Assessment: _____	
Planning: _____	
Implementation: _____	
Evaluation: _____	

Drug Name: _____	Trade Name: _____
Major Drug Category: _____	
Drug Action: _____	

Uses: _____	

Adverse Effects: _____	

Drug Interactions: _____	

Usual Drug Dosage: _____	
Nursing Implications:	
Assessment: _____	
Planning: _____	
Implementation: _____	
Evaluation: _____	

Patient ID	Diagnosis	Comments Re: Administration/Patient Response

Patient ID	Diagnosis	Comments Re: Administration/Patient Response

Contents

List of Worksheets, Quizzes, Role
Plays, and Procedures, viii

Medication Card Format, xi

Unit One

General Principles

1. The Nursing Process, 2
2. Legal Aspects Affecting the
Administration of Medications,
13
3. Basic Concepts in Pharmacology,
21
4. Preparing and Administering
Medications, 29

Unit Two

Mathematics and Calculations

5. Review of Mathematical
Principles, 46
6. Mathematical Equivalents Used
in Pharmacology, 77
7. Calculating Drug Dosages, 89

Unit Three

Drug Groups

8. Allergy and Respiratory
Medications, 104
9. Antiinfective Medications, 131
10. Antineoplastic Agents, 159
11. Cardiovascular Medications, 165
12. Central Nervous System
Medications, 191
13. Gastrointestinal Medications,
233
14. Hematologic Products, 249
15. Hormones and Steroids, 257
16. Immunologic Agents, 279
17. Musculoskeletal and
Antiinflammation Medications, 285
18. Topical Preparations, 301
19. Vitamins, Minerals, and
Electrolytes, 309

Answer Sheets, 317

Transparency Masters, 341

List of Worksheets, Quizzes, Role Plays, and Procedures

Worksheet 1-1 Subjective and Objective Information, 7
Worksheet 1-2 Components of the Nursing Process, 8
Worksheet 1-3 Nursing Drug History, 9
Worksheet 1-4 Planning Drug Therapy, 10
Worksheet 1-5 The Drug Order, 11

Chapter 1 Quiz: The Nursing Process, 12

Worksheet 2-1 Classifying Drugs, 17
Worksheet 2-2 Identifying Parts of the Patient Chart, 18
Role Play 2-1, 19
Worksheet 2-3 More Practice Understanding Medication Orders, 20

Worksheet 3-1 Pharmacologic Definitions and Drug Names, 25
Worksheet 3-2 Identifying Drug Processes, 26
Worksheet 3-3 Classifying Types of Drug Reactions, 27
Worksheet 3-4 Recognizing Types of Drug Interactions, 28

Procedure 4-1 Procedure for the Administration of Oral Medications, 31
Procedure 4-2 Administration of Rectal Medications, 32
Procedure 4-3 Preparing and Administering Parenteral Medications, 34
Procedure 4-4 Preparing and Administering Intravenous Medications, 35
Procedure 4-5 Preparing and Administering Percutaneous Medications, 38
Procedure 4-6 Techniques in Administering Medications to Mucous Membranes, 39
Worksheet 4-1 Recognizing Different Oral Dosage Forms, 41
Worksheet 4-2 Problems With IV Infusions, 42
Worksheet 4-3 Working With Percutaneous Products, 43
Role Play 4-1, 44

Worksheet 5-1 Reviewing Multiplication Facts, 50
Worksheet 5-2 Reviewing Division Facts, 52
Worksheet 5-3 Working With Roman Numerals, 54
Worksheet 5-4 Review of Basic Information on Fractions, 57
Worksheet 5-5 Practice Adding Fractions, 59
Worksheet 5-6 Practice Subtracting Fractions, 61
Worksheet 5-7 Practice Multiplying Fractions, 63
Worksheet 5-8 Practice Dividing Fractions, 65
Worksheet 5-9 Practice With Decimal Fractions, 68
Worksheet 5-10 Practice With Ratio and Percents, 72
Worksheet 5-11 Practice With Proportions, 74

Chapter 5 Quiz: Review of Mathematical Principles, 75

Worksheet 6-1 Apothecaries' System, 80
Worksheet 6-2 Metric System, 81
Worksheet 6-3 Converting Between Apothecaries' and Metric Systems, 84
Worksheet 6-4 Using the Household System, 85
Worksheet 6-5 Using Celsius and Fahrenheit Scales, 87

Chapter 6 Quiz: Mathematical Equivalents Used in Pharmacology, 88

List of Worksheets, Quizzes, Role Plays, and Procedures (continued)

Worksheet 7-1 Practice Computing Oral Dosages, 92
Worksheet 7-2 Practice Computing Parenteral Dosages, 94
Worksheet 7-3 Practice Computing Insulin Dosages, 96
Worksheet 7-4 Practice Computing IV Infusion Rates and Times, 98
Worksheet 7-5 Practice Calculating Pediatric Dosages, 100

Chapter 7 Quiz: Calculating Drug Dosages, 101

Worksheet 8-1 Antihistamines, 119
Worksheet 8-2 Antitussives, 120
Worksheet 8-3 Bronchodilators, 121
Worksheet 8-4 Decongestants, 124
Worksheet 8-5 Expectorants, 126
Worksheet 8-6 Topical Nasal Steroids, 127

Chapter 8 Quiz: Allergy and Respiratory Medications, 128

Worksheet 9-1 Broad Spectrum Antibiotics, 145
Worksheet 9-2 Antifungal Medications, 147
Worksheet 9-3 Antitubercular Agents, 148
Worksheet 9-4 Antiparasitic Agents, 150
Worksheet 9-5 Penicillins, 152
Worksheet 9-6 Sulfonamides, 153

Chapter 9 Quiz: Antiinfective Medications, 155

Worksheet 10-1 Antineoplastic Agents, 163

Worksheet 11-1 Antianginals and Peripheral Vasodilators, 175
Worksheet 11-2 Cardiac Antidysrhythmics, 177
Worksheet 11-3 Antihyperlipidemics, 178
Worksheet 11-4 Antihypertensives, 180
Worksheet 11-5 Stepped-Care Regimen in Antihypertensive Therapy, 182
Worksheet 11-6 Antihypertensive Therapy, 184
Worksheet 11-7 Cardiotonic Medications, 185

Chapter 11 Quiz: Drugs Affecting the Cardiovascular System, 187

Worksheet 12-1 Narcotic Agonists, Narcotic Agonist-Antagonists, and Narcotic Analgesic Combinations, 211
Worksheet 12-2 Nonnarcotic Analgesics, Nonnarcotic Analgesic Combinations, and Antimigraine Agents, 213
Worksheet 12-3 Anticonvulsants, 215
Worksheet 12-4 Antiemetic and Antivertigo Drugs, 217
Worksheet 12-5 Antiparkinsonian Agents, 219
Worksheet 12-6 Antianxiety Agents, 222
Worksheet 12-7 Antidepressive Medications, 223
Worksheet 12-8 Antipsychotic Medications, 225
Worksheet 12-9 Antimanic Agent, 226
Worksheet 12-10 Sedative-Hypnotic Agents, 227

Chapter 12 Quiz: Central Nervous System Drugs, 229

List of Worksheets, Quizzes, Role Plays, and Procedures (continued)

Worksheet 13-1 Antacids and Histamine H₂ Receptor Antagonists, 243
Worksheet 13-2 Anticholinergics, Antispasmodics, and Antidiarrheals, 244
Worksheet 13-3 Laxatives, 245

Chapter 13 Quiz: Gastrointestinal Medications, 246

Worksheet 14-1 Anticoagulants, 253

Worksheet 15-1 Insulin and Oral Antidiabetic Agents, 269
Worksheet 15-2 Drugs Acting on the Uterus, 270
Worksheet 15-3 Pituitary and Adrenal Cortical Hormones, 271
Worksheet 15-4 Sex Hormones, 272
Worksheet 15-5 Thyroid Preparations, 273

Chapter 15 Quiz: Hormones and Steroids, 275

Worksheet 16-1 Immunologic Agents, 283

Worksheet 17-1 Antiinflammatory Analgesic Agents, 293
Worksheet 17-2 Skeletal Muscle Relaxants, 295
Worksheet 17-3 Antiarthritis Medications, 297
Worksheet 17-4 Antigout Preparations, 298

Chapter 17 Quiz: Musculoskeletal and Antiarthritis Medications, 299

Worksheet 18-1 Topical Preparations, 305

Worksheet 19-1 Vitamins, 313
Worksheet 19-2 Minerals and Electrolytes, 315

Unit One

General Principles

OBJECTIVES

1. Discuss the steps of the nursing process and how they are used in the administration of medications.
2. List the federal, state, and institutional regulations or policies that affect the nurse who administers medications.
3. Use basic terminology to describe the absorption, distribution, metabolism, and excretion of medications.
4. Evaluate whether responses to medications are therapeutic or nontherapeutic.
5. Describe the procedures for administering enteral, parenteral, and percutaneous medications.
6. Outline the nurse's responsibility in giving medications.

OVERVIEW

The first four chapters of this book describe the basic nursing actions that will be used in the text. Chapter 1 explores the nursing process and shows how assessment, planning, implementation, and evaluation are used in administering medications. The goal is to give the nurse a clear idea of the special responsibility involved in giving medications.

Chapter 2 focuses on the legal rules and the basic federal laws that have shaped policy about drugs. A clear picture of how the federal regulations differ from other regulations is presented. State Nurse Practice Acts are discussed in detail, since they specify who has the authority to administer medications and how that authority must be obtained. Other state and institutional policies are discussed, specifically how they relate to carrying out legal medication orders, ordering medications, and the use and supervision of controlled substances.

Chapter 3 discusses how drugs are used for medicinal purposes. The basic processes that all medications go through in the body are described, as well as the variables that affect a drug's action in the body.

Chapter 4 introduces information that applies to the following chapters. It covers the specific procedures for administering medications. The focus is on accuracy, accepting nursing responsibility, and maintaining asepsis as medications are given enterally (orally, nasogastrically, or rectally), parenterally (intradermally, subcutaneously, intramuscularly, or intravenously) or percutaneously (by application to the skin surface or through mucous membranes).

The Nursing Process

OBJECTIVES

At the conclusion of the chapter the student should be able to:

1. List four steps of the nursing process.
2. Discuss how the nursing process is used in administering medications.
3. Identify subjective and objective data.
4. List specific nursing activities related to planning, implementing, and evaluating the patient's response to medications.

KEY TERMS

assessment
auscultation
data base
evaluation
implementation
inspection
nursing process
objective data
palpation
percussion
six rights of drug administration
subjective data
therapeutic effects

Steps of the Nursing Process

Nursing actions are specific and deliberate and are not performed in a random manner. A plan that organizes and coordinates the nurse's activities has developed over the years and is known as the nursing process. The nursing process consists of the following four major parts:

1. Assessment
2. Planning
3. Implementation
4. Evaluation

All of these steps are followed when giving medications to patients.

Goal: Student will identify components of the nursing process.

CHAPTER OUTLINE	ACTIVITIES
<p>I. Steps of the Nursing Process</p> <p>A. Assessment</p> <ol style="list-style-type: none"> 1. Subjective information 2. Objective information <p>B. Planning</p> <p>C. Implementation</p> <ol style="list-style-type: none"> 1. The right drug 2. The right time 3. The right dose 4. The right patient 5. The right route 6. The right documentation <p>D. Evaluation</p> <p>II. Summary</p>	<p>Stress the nurse's growing role in patient assessment.</p> <p>Have students study and complete Worksheet 1-1 on subjective and objective information. Students often are confused on this material and practice is helpful in clarifying the differences in the two. Some schools and nursing authors may consider the nursing process to have five components, including nursing diagnosis as a step following assessment. Many other authors consider nursing diagnosis a subcategory of assessment, or do not use nursing diagnosis in their program. Shape content to your program requirements.</p> <p>In teaching the difference between subjective and objective findings, give examples similar to the following: The patient complains of pain (S). The nurse examines the patient and elicits tenderness (O). The patient complains of difficulty breathing or dyspnea (S); the nurse counts the patient's respirations and concludes the patient is short of breath (O). Some problems like weight gain and elevated BP may be subjective if the patient reports them, and then become objective when further assessments confirm or document the problem.</p> <p>Have students complete Worksheet 1-2 on components of the nursing process to clarify differences in the parts. A role-playing situation may be helpful in assisting students in understanding the nursing process. Give a group of students a situation, such as a patient complaining of pain. Have them use the nursing process in giving a medication to relieve pain. The goal should be to make this information helpful and relevant, not boring. Students often feel that the nursing process is not relevant to them as students. It is only when they are really given the responsibility for giving medications on a busy hospital unit that they may then realize the value of the nursing process in guiding their actions.</p>

Goal: Focus more closely on how to implement the steps of the nursing process in drug administration.

CHAPTER OUTLINE

- I. Factors to Consider in Assessing the Patient
 - A. Assessment made in three main areas
 - 1. Patient's need for medication
 - 2. Current and past use of all medications
 - a. prescription
 - b. over-the-counter
 - c. street drugs
 - 3. Problems with drug therapy
- II. Factors to Consider in Planning to Give a Medication
 - A. Determine therapeutic goal
 - B. Review information about the drug
 - C. Anticipate special storage, administration procedures, techniques, or equipment needs
 - D. Develop teaching plan for the patient
- III. Factors to Consider in Implementing Drug Therapy: The Six "Rights" of Drug Administration
 - A. The right drug
 - B. The right time
 - C. The right dose
 - D. The right patient
 - E. The right route
 - F. The right documentation
- IV. Factors to Consider in Evaluating Response to Medication
 - A. Therapeutic effects
 - B. Adverse or side effects

ACTIVITIES

See sample of nursing admission history form. Use Worksheet 1-3 to practice classifying assessment information.

See Worksheet 1-4 for specific activities in drug planning.

Key Point: Emphasize the need for teaching the patient the first time the medication is given.

Use the handouts on drug abbreviations, parts of a drug order, parts of a prescription. Drill on abbreviations and their meanings.

Key Point: Stress the nurse's responsibility for repeated assessment of the patient receiving medications.

Use Quiz #1 for practice in interpreting drug orders and distinguishing between therapeutic and adverse or side effects.

The Nursing Process

Table 1-1 Common Abbreviations Used in Pharmacology (in student text this is table 2-5.)

Abbreviation	English Meaning	Abbreviation	English Meaning
aa	equal parts	non	not to be
ac	before meals	O	pint
AD	right ear	OD	right eye
ad	up to	od	every day
ad lib	if desired	oh	every hour
AM	before noon	OI	oil
aq	water	on	every night
aq dest	distilled water	OS	left eye
AS	left ear	os	mouth
AU	each or both ears	OU	both or each eye
bid	twice a day	oz	ounce
bin	twice a night	pc	after meals
bt	bedtime	pil	pill
c	with	PM	after noon
cap	capsules	prn	when required
comp	compound	q	every
D	give	qd	every day
d	day	qh	every hour
dil	dilute	q2h	every 2 hours
div	divide	qid	four times a day
dos	doses	qs	as much as required
dr	dram	repetat	repeated
elix	elixir	Rx	take
ext	extract	S	mark
fl	fluid	s	without
ft	make	SC or SQ	subcutaneous
gm	gram	Sig	write on label
gr	grain	sos	one dose if necessary
gt (gtt)	drop(s)	ss	one half
h	hour	stat	immediately
hs	hour of sleep	tab	tablets
IM	intramuscular	tal	such
IV	intravenous	tid	three times a day
M	mix	tin	three times a night
m	minim	tr	tincture
m et n	morning and night	ung	ointment
mist	mixture	℥	dram
m m dict	as directed	℥	ounce
noct/n	night		