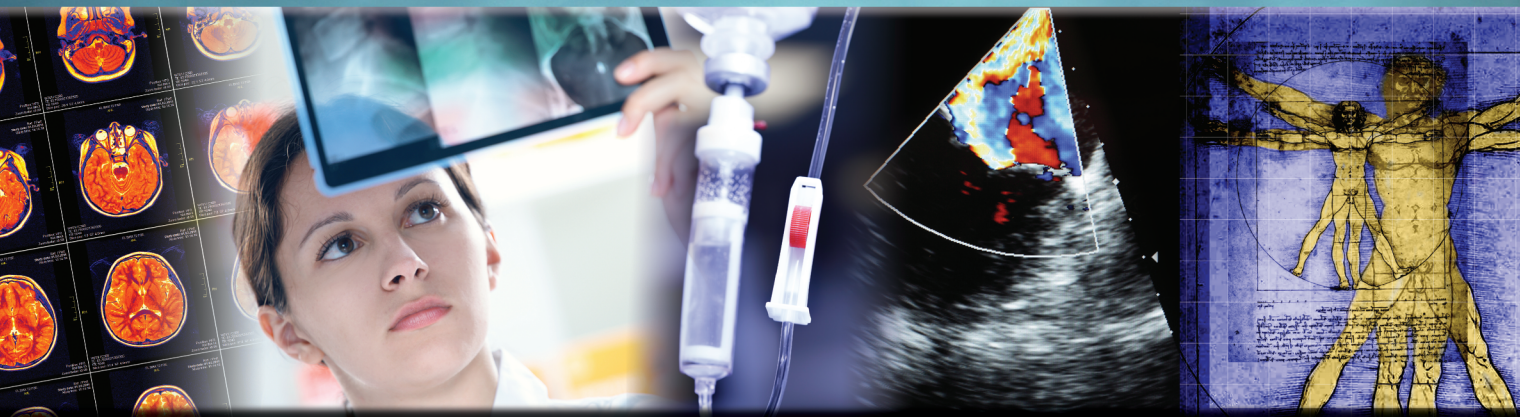


ESSENTIAL

MEDICAL TERMINOLOGY

FOURTH EDITION



Peggy Stanfield, MS, RD/LD, CNS

Dietetic Resources
Twin Falls, Idaho

Y.H. Hui, PhD

Science Technology System
West Sacramento, California

Nanna Cross, PhD, RD/LD

Cross & Associates
Chicago, Illinois



JONES & BARTLETT
LEARNING



World Headquarters

Jones & Bartlett Learning
5 Wall Street
Burlington, MA 01803
978-443-5000
info@jblearning.com
www.jblearning.com

Jones & Bartlett Learning books and products are available through most bookstores and online booksellers. To contact Jones & Bartlett Learning directly, call 800-832-0034, fax 978-443-8000, or visit our website, www.jblearning.com.

Substantial discounts on bulk quantities of Jones & Bartlett Learning publications are available to corporations, professional associations, and other qualified organizations. For details and specific discount information, contact the special sales department at Jones & Bartlett Learning via the above contact information or send an email to specialsales@jblearning.com.

Copyright © 2015 by Jones & Bartlett Learning, LLC, an Ascend Learning Company

All rights reserved. No part of the material protected by this copyright may be reproduced or utilized in any form, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written permission from the copyright owner.

The content, statements, views, and opinions herein are the sole expression of the respective authors and not that of Jones & Bartlett Learning, LLC. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not constitute or imply its endorsement or recommendation by Jones & Bartlett Learning, LLC and such reference shall not be used for advertising or product endorsement purposes. All trademarks displayed are the trademarks of the parties noted herein. *Essential Medical Terminology, Fourth Edition* is an independent publication and has not been authorized, sponsored, or otherwise approved by the owners of the trademarks or service marks referenced in this product.

There may be images in this book that feature models; these models do not necessarily endorse, represent, or participate in the activities represented in the images. Any screenshots in this product are for educational and instructive purposes only. Any individuals and scenarios featured in the case studies throughout this product may be real or fictitious, but are used for instructional purposes only.

The authors, editor, and publisher have made every effort to provide accurate information. However, they are not responsible for errors, omissions, or for any outcomes related to the use of the contents of this book and take no responsibility for the use of the products and procedures described. Treatments and side effects described in this book may not be applicable to all people; likewise, some people may require a dose or experience a side effect that is not described herein. Drugs and medical devices are discussed that may have limited availability controlled by the Food and Drug Administration (FDA) for use only in a research study or clinical trial. Research, clinical practice, and government regulations often change the accepted standard in this field. When consideration is being given to use of any drug in the clinical setting, the health care provider or reader is responsible for determining FDA status of the drug, reading the package insert, and reviewing prescribing information for the most up-to-date recommendations on dose, precautions, and contraindications, and determining the appropriate usage for the product. This is especially important in the case of drugs that are new or seldom used.

Production Credits

Chief Executive Officer: Ty Field
President: James Homer
Chief Product Officer: Eduardo Moura
Executive Publisher: William Brottmiller
Editorial Assistant: Sean Fabery
Production Editor: Jessica Steele Newfell
Marketing Manager: Grace Richards
VP, Manufacturing and Inventory Control: Therese Connell
Composition: Laserwords Private Limited, Chennai, India

Cover and Interior Design: Kristin E. Parker
Rights & Photo Research Coordinator: Amy Rathburn
Cover and Title Page Images: (MRI scan) © Kondor83/Shutterstock, Inc.; (female with x-ray) © Stokkete/Shutterstock, Inc.; (IV drip) © sfam_photo/Shutterstock, Inc.; (ultrasound machine) © sfam_photo/Shutterstock, Inc.; (Vitruvian Man) © juatasc/Shutterstock, Inc.
Printing and Binding: Courier Companies
Cover Printing: Courier Companies

To order this product, use ISBN: 978-1-284-03878-1

Library of Congress Cataloging-in-Publication Data

Stanfield, Peggy, author.
Essential medical terminology / Peggy Stanfield, Y.H. Hui, Nanna Cross. — Fourth edition.
p. ; cm.
Includes bibliographical references and index.
ISBN 978-1-284-02228-5 (pbk. : alk. paper)
I. Hui, Y. H. (Yiu H.), author. II. Cross, Nanna, author. III. Title.
[DNLM: 1. Terminology as Topic—Problems and Exercises. W 15]
R123
610.1'4—dc23

2013019527

6048

Printed in the United States of America
17 16 15 14 13 10 9 8 7 6 5 4 3 2 1

Brief Contents

UNIT I	Word Parts and Medical Terminology	1
CHAPTER 1	Word Pronunciations	3
CHAPTER 2	Word Parts and Word Building Rules	5
UNIT II	Root Words, Medical Terminology, and Patient Care	21
CHAPTER 3	Bacteria, Color, and Some Medical Terms	23
CHAPTER 4	Body Openings and Plural Endings	33
CHAPTER 5	Numbers, Positions, and Directions	41
CHAPTER 6	Medical and Health Professions	57
UNIT III	Abbreviations	69
CHAPTER 7	Medical Abbreviations	71
CHAPTER 8	Diagnostic and Laboratory Abbreviations	81
UNIT IV	Review	91
CHAPTER 9	Review of Word Parts from Units I, II, and III	93

UNIT V**Medical Terminology and Body Systems 109**

CHAPTER 10	Body Organs and Parts	111
CHAPTER 11	Integumentary System	119
CHAPTER 12	Digestive System	137
CHAPTER 13	Respiratory System	159
CHAPTER 14	Cardiovascular System	177
CHAPTER 15	Nervous System	205
CHAPTER 16	Genitourinary System	225
CHAPTER 17	Musculoskeletal System	249
CHAPTER 18	Eyes and Ears	275
CHAPTER 19	Endocrine System	293
CHAPTER 20	Cancer Medicine	307

Contents

Preface to *Fourth Edition* xi

Preface to *First Edition* xiii

Acknowledgments xv

How to Use This Book xvii

UNIT I Medical Terminology 1

CHAPTER 1 Word Pronunciations 3

CHAPTER 2 Word Parts and Word Building Rules 5

Objectives 5

Lesson One: Materials to Be Learned 5

Parts of a Medical Term 5

Listing of Word Parts 7

Prefixes, Word Roots with Combining Forms, and Suffixes 8

Lesson Two: Progress Check Part A 15

Lesson Two: Progress Check Part B 18

UNIT II Root Words, Medical Terminology, and Patient Care 21

CHAPTER 3 Bacteria, Color, and Some Medical Terms 23

Objectives 23

Lesson One: Materials to Be Learned 24

Root words for Bacteria 24

Prefixes for Color 24

Commonly Used Prefixes 25

Lesson Two: Progress Check 29

CHAPTER 4	Body Openings and Plural Endings	33
	Objectives	33
	Lesson One: Materials to Be Learned	34
	Body Openings	34
	Plural Endings	35
	Lesson Two: Progress Check	37
CHAPTER 5	Numbers, Positions, and Directions	41
	Objectives	41
	Lesson One: Materials to Be Learned	41
	Part 1: Prefixes for Numbers	41
	Part 2: Prefixes for Positions and Directions	43
	Part 3: Terms for Directions and Positions	45
	Units of Weight and Measurement	47
	<i>Weights and Measures</i>	50
	<i>Common Weights and Measures</i>	51
	Frequently Used Symbols	52
	Lesson Two: Progress Check	53
CHAPTER 6	Medical and Health Professions	57
	Objectives	57
	Lesson One: Materials to Be Learned	58
	Scientific Studies	58
	Specialties and Specialists	59
	<i>Physicians and Medical Specialties</i>	59
	<i>Other Health Professions</i>	61
	<i>Additional Professions</i>	64
	Lesson Two: Progress Check	65
UNIT III	Abbreviations	69
CHAPTER 7	Medical Abbreviations	71
	Objectives	71
	Lesson One: Materials to Be Learned	71
	Abbreviations for Services or Units in a Healthcare Facility	72
	Abbreviations for Frequencies	73
	Abbreviations for Units of Measure	73
	Abbreviations for Means of Administering Substances into the Body	74
	Abbreviations for Diet Orders	75
	Abbreviations for Activity and Toiletry	76
	Abbreviations for Laboratory Tests, X-Ray Studies, and Pulmonary Function	76
	Abbreviations for Miscellaneous Terms	77
	Lesson Two: Progress Check	79
CHAPTER 8	Diagnostic and Laboratory Abbreviations	81
	Objectives	81
	Lesson One: Materials to Be Learned	82
	Diagnostic Abbreviations	82
	Laboratory Abbreviations	84
	A List of Common Diagnostic and Laboratory Abbreviations	84
	Lesson Two: Progress Check	87

UNIT IV**Review 91****CHAPTER 9 Review of Word Parts from Units I, II, and III 93**

Objectives 93

Lesson One: Materials to Be Learned 94

Review A: Suffixes 94

Review B: Prefixes 95

Review C: Root Words for Body Parts 97

Review D: Descriptive Word Elements 99

Review E: Additional Medical Terms 100

Lesson Two: Progress Check 104

UNIT V**Medical Terminology and Body Systems 109****CHAPTER 10 Body Organs and Parts 111**

Objectives 111

Lesson One: Materials to Be Learned 112

Structural Units of the Body 112

Body Cavities and Planes 114

Metabolism and Homeostasis 116

Lesson Two: Progress Check 117

CHAPTER 11 Integumentary System 119

Objectives 119

Lesson One: Materials to Be Learned 123

Parts of the Skin 123

Functions of the Skin 124

Surgical Processes and the Skin 125

Skin Growths 125

Biologic Agents and Skin Infection 126

Allergy and the Skin 128

Skin Disorders from Systemic Diseases 128

Skin Tests 129

Vocabulary Terms and the Skin 129

Lesson Two: Progress Check 132

CHAPTER 12 Digestive System 137

Objectives 137

Lesson One: Materials to Be Learned 141

Major and Accessory Organs 145

Clinical Disorders 146

Surgery 148

Medical Tests 149

Abdominal Reference Terms 151

Digestive Processes 151

Miscellaneous Terms 153

Lesson Two: Progress Check 154

CHAPTER 13 Respiratory System 159

Objectives 159

Lesson One: Materials to Be Learned 162

The Respiratory System	162
Respiratory Body Parts	164
Common Disorders of the Respiratory System	165
Diagnostic, Surgical, and Medical Procedures and General Terms	168
Lesson Two: Progress Check	172

CHAPTER 14 Cardiovascular System 177

Objectives	177
Lesson One: Materials to Be Learned	183
The Cardiovascular System	183
<i>Parts of the Heart</i>	183
<i>The Circulatory System</i>	186
<i>Types of Blood Vessels</i>	189
<i>Blood Components</i>	189
<i>Blood Pressure</i>	190
<i>Clinical Disorders Affecting the Cardiovascular System</i>	191
<i>Surgery, Lab, and Medical Tests</i>	193
<i>Abbreviations</i>	195
Lesson Two: Materials to Be Learned	196
The Lymphatic System	197
<i>Components of the System</i>	197
<i>Parts and Functions of the System</i>	197
<i>Pathologic Conditions of the Lymph System</i>	198
Lesson Three: Progress Check	199

CHAPTER 15 Nervous System 205

Objectives	205
Lesson One: Materials to Be Learned	210
Central Nervous System	210
Autonomic Nervous System (Peripheral Nervous System)	210
Clinical Disorders	212
Terms Used in Diagnosis and Surgery	215
Psychiatric Terms	217
Special Terms	218
Lesson Two: Progress Check	220

CHAPTER 16 Genitourinary System 225

Objectives	225
Urinary System	226
Reproductive System	227
<i>Male Reproductive System</i>	227
<i>Female Reproductive System</i>	230
Lesson One: Materials to Be Learned	231
Urinary System	231
<i>Organs and Structures</i>	231
<i>Clinical Conditions and Procedures</i>	232
<i>Diagnostic Medical Terms</i>	233
Reproductive System	235
<i>Male Organs</i>	235
<i>Female Organs</i>	237
<i>Male Clinical Conditions</i>	238

<i>Female Clinical Conditions</i>	238
<i>Male and Female Conditions</i>	240
<i>Pregnancy and Birth</i>	241
Lesson Two: Progress Check	244

CHAPTER 17	Musculoskeletal System	249
	Objectives	249
	Lesson One: Materials to Be Learned	255
	The Skeletal System	257
	<i>Division</i>	257
	<i>Body Bones</i>	258
	<i>Head Bones</i>	259
	<i>Joints and Accessory Parts</i>	259
	<i>Bone Processes, Depressions, and Holes</i>	260
	The Muscular System	261
	<i>Muscles of the Body</i>	263
	<i>Motion</i>	264
	<i>Physiologic Status of Muscles</i>	264
	<i>Injuries</i>	265
	<i>Clinical Disorders</i>	265
	<i>Medical Management</i>	268
	<i>Abbreviations (Musculoskeletal System)</i>	269
	Lesson Two: Progress Check	270

CHAPTER 18	Eyes and Ears	275
	Objectives	275
	Lesson One: Materials to Be Learned	279
	Eyes	279
	<i>Structure of the Eye</i>	279
	<i>Eye Disorders</i>	280
	<i>Eye Diagnosis and Surgery</i>	282
	<i>Common Medical Eye Terms</i>	283
	Ears	284
	<i>Structure of the Ear</i>	284
	<i>Ear Disorders</i>	285
	<i>Ear Surgery</i>	286
	<i>Common Medical Ear Terms</i>	286
	Lesson Two: Progress Check	288

CHAPTER 19	Endocrine System	293
	Objectives	293
	Lesson One: Materials to Be Learned	296
	Classification and Function of the Endocrine System	296
	Disorders of the Endocrine System	298
	Miscellaneous Terms	302
	Lesson Two: Progress Check	303

CHAPTER 20	Cancer Medicine	307
	Objectives	307
	Lesson One: Materials to Be Learned	309
	Medical Terms in Cancer Medicine	309

Cancer: Classification, Terminology, and Types 309
 Basic Classification 309
 Cancer with Specific Names 312
Screening and Early Detection 312
Medical Terms Related to the Diagnosis of Cancer 313
Special Cancer Diagnostic Tests 314
Methods of Cancer Treatment 315
 Cancer Treatment 315
Medical Terms Related to the Treatment of Cancer 316
Different Surgical Procedures Used to Treat Cancer 318
Breast Cancer and Medical Illustrations 318
Medical Terms Related to Types of Cancer 320
Lesson Two: Progress Check 322

APPENDIX A **Answer Keys** 325

APPENDIX B **Bibliography** 359

Index 361

Preface to the *Fourth Edition*

As we move forward into the advancing fields of medicine and health practices we find an ever increasing need to make changes and add new material. We asked our students for feedback, their instructors for suggestions, and our reviewers for contributions in expertise and experience. We received many valuable suggestions and comments and have included much constructive input wherever space permits. We hope that the resulting changes from us and from them will continue to improve the contents of *Essential Medical Terminology, Fourth Edition* and facilitate your effort in learning medical terminology. This revision is divided into two categories: changes in the contents of the *Third Edition* and the addition of new didactic tools, as explained here.

The original contents of the third edition have been revised extensively as follows:

- Objectives are added to the chapters.
- New terms are added throughout the text.
- Selected old terms in text are replaced with new ones.
- New test questions are added throughout text.
- The bibliography in Appendix B is replaced with a new one.
- Special corrections or replacements are made for Chapters 15, 16, and 20.
- Standard minor changes are made throughout the whole text whenever the need arises.

We have added new didactic materials in specially designed enclosures to catch the attention of the students and satisfy their curiosity. Your responsibility to learn such materials is at the discretion of your instructor and your own personal interest. They include the following:

- Alerts to commonly confusing medical terms
- The connection between drugs and medical terms
- Types of professions available in the allied health field
- New full-color photographs and illustrations showing common clinical disorders and associated medical terms appearing in the text

Several electronic aids also are included.

We hope you will notice that this is a full-color book to brighten your learning spirit

and increase your attention.

Thank you so much for your continued support and use of the book. Please keep sending us your suggestions for improvement. We will strive to accommodate your wishes.

Preface to the *First Edition*

Essential Medical Terminology is a brief, user-friendly text designed to aid students in mastering the medical vocabulary and terms they will encounter in allied health, nursing, and medical careers. The terms have been selected on the basis of their utility, practical value, and application to the real world of the healthcare work environment.

The intended audience includes students in nursing, nursing assistants/aides, vocational/practical nurses, medical secretaries, medical technologists, medical librarians, medical assistants, physician's assistants, and other persons in the allied health and paramedical fields. This text is designed for use in one-semester or two-semester course, as it provides students with the basic principles of medical terminology and teaches vocabulary by applying terms in practice examples.

Although many instructors have expressed satisfaction with our 1989 text, *Medical Terminology: Principles and Practices*, others prefer a smaller text because their students need only a general knowledge of medical terminology. Therefore, we were ready when the publishers expressed an interest in a more compact text. To accomplish this goal, we made a careful selection of the most essential terms, exercises, illustrations, and other instructional materials that are of maximum benefit to those students required to take a general survey course of medical terminology.

After much hard work, we have succeeded in producing a text that has fewer than 400 pages. This condensed edition has many unique features that distinguish it from other medical terminology texts:

1. The selection of medical terms is unique, and, although some terms are found in other texts, many are not.
2. Half of the text is devoted to practice exercises or self-instructional modules.
3. The amount of descriptive text is minimal, allowing students to concentrate on learning the key terms.
4. Although the frame format is common in some texts, we have not adopted that didactic mode. Rather, we present medical terminology as it applies to the major body systems.
5. Students will find that learning by way of the major body systems is a meaningful and unifying method of mastering medical terminology and solidifying previously learned concepts of anatomy and physiology.

The text is organized into five units:

- Unit I Word Parts and Medical Terminology (Chapters 1–2)
- Unit II Root Words, Medical Terminology, and Patient Care (Chapters 3–6)
- Unit III Abbreviations (Chapters 7–8)
- Unit IV Review (Chapter 9)
- Unit V Medical Terminology and Body Systems (Chapters 10–20)

With the exception of Chapter 1, all chapters contain two components: Lesson One: Materials to Be Learned and Lesson Two: Progress Check.

This unique text is accompanied by both traditional and modern supplementary teaching materials. The instructor's manual provides a spectrum of information: clinical case histories, practice tests, and student activities. It serves two important objectives: a wide selection of teaching materials and a reduction in class preparation time. For example, by using clinical case histories to supplement a complex topic in the classroom, the instructor can usually elicit enthusiastic participation and enliven classroom presentations. We also include full-color illustrations of human anatomy in this text, which detail the major body systems, special senses, and skin. These figures provide an anatomic reference for all of the medical terms in the text.

Our intention was to create a text that would serve the needs of both instructor and student. We strove to create a text that is both concise and thorough, thematically unified, easy to read, beautifully illustrated, and fully supplemented with supporting material to assure mastery of the material. We hope that both instructor and student will find *Essential Medical Terminology* a satisfactory and rewarding experience in teaching and learning medical terminology.

Acknowledgments

We acknowledge the invaluable assistance and advice provided by the editorial team at Jones & Bartlett Learning, who have helped move this edition from manuscript to publication. Thanks also to the production staff whose dedicated work and professionalism are evident in the quality of their work. You are the best judge.

We sincerely thank our reviewers who offered many valuable suggestions. Your comments were very helpful, and we incorporated as many of them into this edition as allocated page space would permit.

We do want to extend our appreciation to many students and their instructors for continued use of *Essential Medical Terminology* through the first three editions. We have tried to provide you with the updates and new information that you have asked for. We hope our mutual relationships continue with this *Fourth Edition* and beyond.

We also thank Mr. James Keating of Watsonville, Oregon. As the original acquisition editor of the *First Edition*, he gave us an unusual opportunity to educate many students for more than 25 years. We are indebted to him and his vision.

How to Use This Book

Essential Medical Terminology, Fourth Edition fits all types of medical terminology courses. It can be the primary text in either a one- or two-semester course.

One instructional mode other than formal classroom lecturing is as follows. The instructor serves as a supervisor and assigns materials in the text for self-study. The instructor may or may not enforce the following: class meetings between instructor and students, supervised or unsupervised tests, and preparation of tests with questions similar to those in this text.

Essential Medical Terminology offers a great deal of flexibility to instructors. Our recommendation is to progress through the table of contents as written. In any learning process, studying the information progressively provides sequence of thought and ensures that one does not overlook critical information.

The student, especially one studying independently of a formal class lecture, should read each chapter thoroughly and complete all exercises.

GENERAL GUIDELINES

We also offer the following guidelines to both instructors and students:

1. Read the table of contents to determine the syllabus or match up the contents to a prepared syllabus.
2. After studying the basis of pronunciation, students may start with any of the remaining chapters in Units I to IV. The chapters on body systems (10–19) can be taught in any order.
3. For each chapter after Chapter 1, the study procedure is simple. Read the materials to be learned a few times and proceed with the progress check. Students may want to repeat or review chapter materials before taking a test.
4. Once a chapter is started, finish it before proceeding to the next one.
5. Complete each chapter from beginning to end. Do not begin randomly within a chapter.
6. When students begin Unit V, they will find that each chapter contains an overview of a body system. Each body system can be studied in more depth with an anatomy and physiology text.

7. We encourage students to develop their own methods of memorizing unfamiliar words. Word associations are useful. Flashcards are a useful adjunct to study. Studying in pairs also is helpful for most students.
8. Students should review completed materials as often as possible to refresh their memories.
9. All of the answers to the Progress Checks are provided in Appendix A. Most instructors prefer that students do not look at the answers until they have completed the assigned exercise.

NEW DIDACTIC TOOLS

We have added a new category of didactic tools. These tools contain information related to but not included in this text. Each tool or tidbit of information is enclosed in a specially designed box within the outer margin. You may have to study them if they are included in class assignments by the teachers, or you may peruse them because they are of personal or general interest to you. No matter how these tools are used by you, they are supplementary to your text both in terms of unique information or a moment of escape from the more structured medical terms in the text. Each tool is explored in the following subsections.

Allied Health Professions

There was a time when the doctor, nurse, and an aide or two took care of a patient. Not very much interaction occurred unless the physician called for a conference with selected individuals. Today's medical facilities are run by teams of medical personnel, for instance, doctor, nurse, aide, pharmacist, laboratory personnel, technicians, dietary personnel, and social service workers. All have important roles in patient recovery. Are you interested in pursuing a career in this field? Chapter 1 shows a list of such professions in a special box. The boxes in Chapters 10–20 give a summary of each profession. You can contribute to patient care in each field if you select a career in the health professions.

Confusing Medical Terms

Many medical terms have derived from Latin and Greek, among other European languages. Sometimes, two terms with different medical meaning may differ only in one letter in their spellings. Sometimes, two terms with different medical meanings may sound alike though their spellings are completely different. Sometimes, two terms with the same medical meanings may be spelled entirely differently. Obviously, it is not possible to explain or list all such variations in a book of this size. Samples are provided in a special box, starting in Chapter 2.

Pharmacology and Medical Terminology

Most of us are familiar with such terms as *ulcer*, *chemotherapy*, and *antibiotic treatments*. This text does not have a chapter on pharmacology and medical terms. Instead, we have provided boxes in Chapters 11–20 relating medical terminology to drugs and their targeted medical treatments. Although they are examples only, they provide you with some perspectives about prescription and over-the-counter drugs. The ultimate objective is for you to learn some medical terms in pharmacology.

FULL-COLOR ILLUSTRATIONS AND PHOTOGRAPHS FOR CLINICAL DISORDERS

There is an old adage: A picture is worth a thousand words. We believe it is true, so we have included in this edition new full-color illustrations and photographs showing common clinical disorders and their assorted medical terms to enhance your understanding and identification of diseases and how they may be treated.