

MEDICAL ASSISTING

SIXTH EDITION

Administrative and Clinical Procedures
with Anatomy and Physiology



Kathryn A. Booth, RN-BSN, RMA (AMT), RPT, CPHT, MS
Leesa G. Whicker, BA, CMA (AAMA)
Terri D. Wyman, CPC, CMRS



Mc
Graw
Hill
Education

MEDICAL ASSISTING

Administrative and Clinical Procedures
with Anatomy and Physiology

SIXTH EDITION

MEDICAL ASSISTING

Administrative and Clinical Procedures
with Anatomy and Physiology

Kathryn A. Booth, RN-BSN, RMA (AMT), RPT, CPhT, MS

*Total Care Programming, Inc.
Palm Coast, Florida*

Leesa G. Whicker, BA, CMA (AAMA)

*Central Piedmont Community College
Charlotte, North Carolina*

Terri D. Wyman, CPC, CMRS

*Baystate Wing Hospital
Palmer, Massachusetts*



MEDICAL ASSISTING: ADMINISTRATIVE AND CLINICAL PROCEDURES WITH ANATOMY AND PHYSIOLOGY, SIXTH EDITION

Published by McGraw-Hill Education, 2 Penn Plaza, New York, NY 10121. Copyright © 2017 by McGraw-Hill Education. All rights reserved. Printed in the United States of America. Previous editions © 2014, 2011, and 2009. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of McGraw-Hill Education, including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 DOW/DOW 1 0 9 8 7 6

ISBN 978-1-259-19774-1
MHID 1-259-19774-3

Senior Vice President, Products & Markets: *Kurt L. Strand*
Vice President, General Manager, Products & Markets: *Marty Lange*
Vice President, Content Design & Delivery: *Kimberly Meriwether David*
Managing Director: *Chad Grall*
Executive Brand Manager: *William Lawrensen*
Director, Product Development: *Rose Koos*
Senior Product Developer: *Christine Scheid*
Product Developer: *Michelle Gaseor*
Marketing Manager: *Harper Christopher*
Digital Product Analyst: *Katherine Ward*
Director, Content Design & Delivery: *Linda Avenarius*
Program Manager: *Angela R. FitzPatrick*
Content Project Managers: *April R. Southwood/Brent dela Cruz*

Buyer: *Jennifer Pickel*
Design: *Srdjan Savanovic*
Content Licensing Specialists: *Lori Hancock/Lorraine Buczek*
Cover Image: *Lung*: © *Nucleus Medical Media*; *Taking the temperature*:
© *M. Constantini/PhotoAlto*; *Schedule Practice Fusion*: © *Practice Fusion*; *Urine testing canister with rainbow squares*: © *McGraw-Hill Education*; *Desk*: © *MuzzyLane*; *Gloved hands*: © *McGraw-Hill Education/Mark A. Dierker, photographer*
Compositor: *SPi Global*
Printer: *R. R. Donnelley*

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

Library of Congress Cataloging-in-Publication Data

Booth, Kathryn A., 1957-
Medical assisting : administrative and clinical procedures with anatomy and physiology.—Sixth edition / Kathryn A. Booth, RN-BSN, RMA(AMT), RPT, CPhT, MS, Total Care Programming, Palm Coast, Florida, Leesa G. Whicker, BA, CMA(AAMA), Central Piedmont Community College, Troy, North Carolina, Terri D. Wyman, CPC, CMRS, Wing Memorial Hospital, Monson, Massachusetts.
pages cm
ISBN 978-1-259-19774-1 (alk. paper)
1. Medical assistants. 2. Clinical competence. 3. Medical offices—Management. I. Whicker, Leesa. II. Wyman, Terri D. III. Title.
R728.8.M4 2017
610.73'7092--dc23

2015032229

WARNING NOTICE: The clinical procedures, medicines, dosages, and other matters described in this publication are based upon research of current literature and consultation with knowledgeable persons in the field. The procedures and matters described in this text reflect currently accepted clinical practice. However, this information cannot and should not be relied upon as necessarily applicable to a given individual's case. Accordingly, each person must be separately diagnosed to discern the patient's unique circumstances. Likewise, the manufacturer's package insert for current drug product information should be consulted before administering any drug. Publisher disclaims all liability for any inaccuracies, omissions, misuse, or misunderstanding of the information contained in this publication. Publisher cautions that this publication is not intended as a substitute for the professional judgment of trained medical personnel.

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw-Hill Education, and McGraw-Hill Education does not guarantee the accuracy of the information presented at these sites.

About the Authors

Kathryn A. Booth, RN-BSN, RMA (AMT), RPT, CPhT, MS is a registered nurse (RN) with a master's degree in education as well as certifications in phlebotomy, pharmacy tech, and medical assisting. She is an author, an educator, and a consultant for Total Care Programming, Inc. She has over 30 years of teaching, nursing, and healthcare experience that spans five states. As an educator, Kathy has been awarded the teacher of the year in three states where she taught various health sciences, including medical assisting in both a classroom and an online capacity. Kathy serves on the AMT Examinations, Qualifications, and Standards committee, as well as the advisory board for two educational institutions. She stays current through working at various practice settings as well as obtaining and maintaining certifications. Her larger goal is to develop up-to-date, dynamic healthcare educational materials to assist her and other educators and to promote healthcare professions. In addition, Kathy enjoys presenting innovative new learning solutions for the changing healthcare and educational landscape to her fellow professionals nationwide.

Leesa G. Whicker, BA, CMA (AAMA) is a Certified Medical Assistant with a BA in art with a concentration in art history. She is an educator with more than 20 years of experience in the classroom. With 35 years of experience in the healthcare field as a medical assistant, a research specialist in molecular pathogenesis and infectious disease, and a medical assisting program director and instructor, she brings a broad background of knowledge and experience to the classroom. As a curriculum expert, she has served on several committees, including the Writing Team for the Common Course Library for the North Carolina Community College System and the Curriculum Committee at Central Piedmont Community College. She remains an active member of the Curriculum Committee. Leesa was among the first instructors to develop online courses and remains active in online curriculum development. She has presented Methods of Active and Collaborative learning on the national level. Her passion is finding novel and varied ways to reach the ever-changing learning styles of today's students. She currently teaches at Central Piedmont Community College in Charlotte, North Carolina.

Terri D. Wyman, AS, CPC, CMRS has 35 years of experience in the healthcare field, first as a CMA specializing in hematology/oncology and homecare and then in the medical billing and coding field. At the suggestion of a coworker, she began her career in education as instructor and program director for both medical assisting and medical billing and coding programs for several technical schools in New England. Currently, Terri is the financial applications analyst at Baystate Wing Hospital, where her love of teaching continues in the hospital setting. She is active with her local AAPC chapter and is on the National Advisory Board for the American Medical Billing Association (AMBA). She provides continuing education opportunities for AMBA members by writing numerous billing and coding programs and speaking at their national conferences on medical coding topics, including ICD-10. In the rapidly changing world of healthcare billing and coding, she is excited to continue sharing the language of billing and coding with instructors, students, and career professionals. Terri sends special thanks to Dale for his unending support and to Francis Stein, MD, whose patience with a new medical assistant years ago showed her the joy of learning and education.

Brief Contents

Procedures	xxi
Digital Exercises and Activities	xxiv
A Closer Look	xxvii
Guided Tour	xxx
Digital Materials for Medical Assisting	xxxiii
Connect: Required=Results	xxxiv
Additional Supplementary Materials	xxxvi
Acknowledgments	xxxvii

UNIT ONE: Medical Assisting as a Career

- 1 Introduction to Medical Assisting 1
- 2 Healthcare and the Healthcare Team 12
- 3 Professionalism and Success 28
- 4 Interpersonal Communication 43
- 5 Legal and Ethical Issues 62

UNIT TWO: Safety and the Environment

- 6 Infection Control Fundamentals 93
- 7 Safety and Patient Reception 109
- 8 Office Equipment and Supplies 138
- 9 Examination and Treatment Areas 175

UNIT THREE: Communication

- 10 Written and Electronic Communication 190
- 11 Medical Records and Documentation 219
- 12 Electronic Health Records 244
- 13 Managing Medical Records 259
- 14 Telephone Techniques 276
- 15 Patient Education 299

UNIT FOUR: Administrative Practices

- 16 Schedule Management 320
- 17 Insurance and Billing 345
- 18 Diagnostic Coding 383
- 19 Procedural Coding 408
- 20 Patient Collections and Financial Management 431

UNIT FIVE: Applied Anatomy and Physiology

- 21 Organization of the Body 470
- 22 The Integumentary System 491
- 23 The Skeletal System 506
- 24 The Muscular System 524
- 25 The Cardiovascular System 540
- 26 The Blood 558
- 27 The Lymphatic and Immune Systems 570
- 28 The Respiratory System 584
- 29 The Nervous System 599
- 30 The Urinary System 617

- 31 The Reproductive Systems 626
- 32 The Digestive System 649
- 33 The Endocrine System 664
- 34 Special Senses 677

UNIT SIX: Infection Control and Clinical Practices

- 35 Infection Control Practices 692
- 36 Patient Interview and History 715
- 37 Vital Signs and Measurements 737
- 38 Assisting with a General Physical Examination 756
- 39 Assisting in Reproductive and Urinary Specialties 775
- 40 Assisting in Pediatrics 798
- 41 Assisting in Geriatrics 829
- 42 Assisting in Other Medical Specialties 845
- 43 Assisting with Eye and Ear Care 867
- 44 Assisting with Minor Surgery 895

UNIT SEVEN: Assisting with Diagnostics

- 45 Orientation to the Lab 922
- 46 Microbiology and Disease 943
- 47 Collecting, Processing, and Testing Urine and Stool Specimens 973
- 48 Collecting, Processing, and Testing Blood Specimens 1000
- 49 Electrocardiography and Pulmonary Function Testing 1036
- 50 Diagnostic Imaging 1065

UNIT EIGHT: Assisting in Therapeutics

- 51 Principles of Pharmacology 1085
- 52 Dosage Calculations 1108
- 53 Medication Administration 1121
- 54 Physical Therapy and Rehabilitation 1153
- 55 Nutrition and Health 1176

UNIT NINE: Medical Assisting Practice

- 56 Practice Management 1203
- 57 Emergency Preparedness 1231
- 58 Preparing for the World of Work 1262

APPENDICES

- I Prefixes, Suffixes, and Word Roots in Commonly Used Medical Terms A-1
- II Abbreviations and Symbols Commonly Used in Medical Notations A-5
- III Diseases and Disorders A-7
- Glossary G-1
- Index I-1

Procedures	xxi
Digital Exercises and Activities	xxiv
A Closer Look	xxvii
Guided Tour	xxx
Digital Materials for Medical Assisting	xxxiii
Connect: Required=Results	xxxiv
Additional Supplementary Materials	xxxvi
Acknowledgments	xxxvii

UNIT ONE

Medical Assisting as a Career

CHAPTER 1

Introduction to Medical Assisting 1

- 1.1 Responsibilities of the Medical Assistant 2
- 1.2 Medical Assisting Organizations 4
- 1.3 Medical Assistant Credentials 5
- 1.4 Training Programs 7
- 1.5 Professional Development 8

- ▶ **PROCEDURE 1-1: Obtaining Certification/Registration Information Through the Internet** 9

CHAPTER 2

Healthcare and the Healthcare Team 12

- 2.1 Healthcare Trends 13
- 2.2 Medical Specialties 15
- 2.3 Working with Other Healthcare Professionals 18
- 2.4 Specialty Career Options 21
- 2.5 Healthcare Professional Associations 24

CHAPTER 3

Professionalism and Success 28

- 3.1 Professionalism in Medical Assisting 29
- 3.2 Professional Behaviors 30
- 3.3 Strategies for Success 35

- ▶ **PROCEDURE 3-1: Self-Evaluation of Professional Behaviors** 39

CHAPTER 4

Interpersonal Communication 43

- ▶ **ACTIVSIM: Cindy Chen** 43

- 4.1 Elements of Communication 45

- 4.2 Human Behavior and Needs 46
- 4.3 Types of Communication 48
- 4.4 Improving Your Communication Skills 49
- 4.5 Therapeutic Communication Skills 50
- 4.6 Communicating in Special Circumstances 52

- ▶ **SKILLS VIDEO: Communicating with the Anxious Patient** 52

- ▶ **SKILLS VIDEO: Communicating Effectively with Patients from Other Cultures and Meeting their Needs for Privacy** 54

- 4.7 Communicating with Coworkers 56

- ▶ **PROCEDURE 4-1: Communicating with the Anxious Patient** 57

- ▶ **PROCEDURE 4-2: Communicating with the Angry Patient** 58

- ▶ **PROCEDURE 4-3: Communicating with the Assistance of an Interpreter** 58

- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Interactions** 61

CHAPTER 5

Legal and Ethical Issues 62

- ▶ **ACTIVSIM: Cindy Chen** 62

- 5.1 Laws and Ethics 64

- 5.2 The Physician-Patient Contract 66

- 5.3 Preventing Malpractice Claims 69

- 5.4 Administrative Procedures and the Law 73

- 5.5 Federal Legislation Affecting Healthcare 76

- 5.6 Confidentiality Issues and Mandatory Disclosure 83

- 5.7 Ethics 85

- 5.8 Legal Medical Practice Models 86

- ▶ **PROCEDURE 5-1: Obtaining Signature for Notice of Privacy Practices and Acknowledgment** 88

- ▶ **PROCEDURE 5-2: Completing a Privacy Violation Complaint Form** 88

- ▶ **PROCEDURE 5-3: Obtaining Authorization to Release Health Information** 89

- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Privacy and Liability** 92

UNIT TWO

Safety and the Environment

CHAPTER 6

Infection Control Fundamentals 93

- ▶ **ACTIVSIM: Shenya Jones** 93

- 6.1 Occupational Safety and Health Administration 94

6.2 The Cycle of Infection 95

▶ **SKILLS VIDEO: Aseptic Hand Hygiene** 98

6.3 OSHA Bloodborne Pathogens Standard and Universal Precautions 98

6.4 Transmission-Based Precautions 103

6.5 OSHA-Required Education and Training 104

▶ **PROCEDURE 6-1: Aseptic Handwashing** 105

▶ **PROCEDURE 6-2: Using an Alcohol-Based Hand Disinfectant** 106

▶ **PROCEDURE 6-3: Using a Biohazardous Sharps Container** 106

▶ **PROCEDURE 6-4: Disposing of Biohazardous Waste** 106

▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Office Operations** 108

CHAPTER 7

Safety and Patient Reception 109

▶ **ACTIVSIM: Peter Smith** 109

7.1 The Medical Office Safety Plan 111

7.2 OSHA Hazard Communication Standard 111

7.3 Electrical Safety 112

7.4 Fire Safety 113

7.5 Chemical Safety 115

7.6 Ergonomics and Physical Safety 116

7.7 Preventing Injury in the Front Office 118

7.8 Design of the Reception Area 120

7.9 The Importance of Cleanliness 123

7.10 Office Access for All 125

7.11 Functions of the Reception Staff 128

7.12 Opening and Closing the Office 129

▶ **PROCEDURE 7-1: Handling a Fire Emergency** 130

▶ **PROCEDURE 7-2: Maintaining and Using an Eyewash Station** 132

▶ **PROCEDURE 7-3: Creating a Pediatric Reception Area** 132

▶ **PROCEDURE 7-4: Creating a Reception Area Accessible to Patients with Special Needs** 133

▶ **PROCEDURE 7-5: Opening and Closing the Medical Office** 133

▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Work Task Proficiencies** 137

CHAPTER 8

Office Equipment and Supplies 138

8.1 Computers 139

8.2 Components of the Computer 141

8.3 Software 143

8.4 Software Training 146

8.5 Selecting Computer Equipment 147

8.6 Computer System Care and Maintenance 148

8.7 Security in the Computerized Office 148

8.8 Administrative Medical Office Equipment 149

8.9 Purchasing Decisions for Office Equipment 154

8.10 Maintaining Office Equipment 155

8.11 Maintaining Medical Office Supplies 157

8.12 Taking a Supply Inventory 160

▶ **SKILLS VIDEO: Establishing and Conducting the Supply Inventory and Receiving Supplies** 160

8.13 Ordering Supplies 162

▶ **PROCEDURE 8-1: Using a Facsimile (Fax) Machine** 169

▶ **PROCEDURE 8-2: Using a Photocopier Machine** 169

▶ **PROCEDURE 8-3: Using a Postage Meter** 170

▶ **PROCEDURE 8-4: Using a Check-Writing Machine** 170

▶ **PROCEDURE 8-5: Step-by-Step Overview of Inventory Procedures** 171

▶ **ELECTRONIC HEALTH RECORDS: Reminders for Ordering Office Supplies** 174

▶ **ELECTRONIC HEALTH RECORDS: Working with the Task Feature** 174

▶ **ELECTRONIC HEALTH RECORDS: Task Sequencing** 174

▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Office Operations** 174

CHAPTER 9

Examination and Treatment Areas 175

▶ **ACTIVSIM: Shenya Jones** 175

9.1 The Exam Room 176

9.2 Sanitization and Disinfection 177

▶ **SKILLS VIDEO: Guidelines for Disinfecting Exam Room Surfaces** 180

9.3 Preparation of the Exam and Treatment Areas 180

9.4 Room Temperature, Lighting, and Ventilation 182

9.5 Medical Instruments and Supplies 183

▶ **PROCEDURE 9-1: Performing Sanitization with an Ultrasonic Cleaner** 186

▶ **PROCEDURE 9-2: Guidelines for Disinfecting Exam Room Surfaces** 186

▶ **PRACTICE MEDICAL OFFICE: Clinical – Office Operations** 189

UNIT THREE

Communication

CHAPTER 10

Written and Electronic Communication 190

▶ **ACTIVSIM: Valarie Ramirez** 190

10.1 Professionalism and Document Preparation 191

10.2	Selecting Document Supplies	191
10.3	Effective Writing	193
10.4	Medical Office Documents and Correspondence	195
10.5	Written Communication Using Electronic Format	198
10.6	Editing and Proofreading	203
10.7	Preparing Outgoing Mail	205
10.8	Mailing Options	209
10.9	Processing Incoming Mail	212
▶	PROCEDURE 10-1: Creating a Professional Letter	213
▶	PROCEDURE 10-2: Writing an Interoffice Memo	214
▶	PROCEDURE 10-3: Composing a Professional E-mail Message	214
▶	PROCEDURE 10-4: Composing an Electronic Patient Letter	215
▶	PROCEDURE 10-5: Sorting and Opening Mail	215
▶	ELECTRONIC HEALTH RECORDS: Creating a Patient Letter	218
▶	ELECTRONIC HEALTH RECORDS: Creating a Letter to Referring Physician	218
▶	ELECTRONIC HEALTH RECORDS: Drafting an Email to a Patient	218
▶	PRACTICE MEDICAL OFFICE: Admin: Check In – Privacy and Liability	218

CHAPTER 11

Medical Records and Documentation		219
▶	ACTIVSIM: Mohammad Nassar	219
11.1	The Importance of Medical Records	220
11.2	Contents of Patient Medical Records	222
▶	SKILLS VIDEO: Registering a New Patient	222
▶	SKILLS VIDEO: Initiating a Paper-Based Patient Medical Record	227
11.3	Types of Medical Records	229
11.4	Documentation and the 6 Cs of Charting	232
11.5	Appearance, Timeliness, and Accuracy of Records	234
11.6	Correcting and Updating Medical Records	236
▶	SKILLS VIDEO: Correcting the Patient Medical Record	236
11.7	Responding to Release of Records Request	237
▶	PROCEDURE 11-1: Preparing a New Patient Paper Medical Record	239
▶	PROCEDURE 11-2: Correcting Paper Medical Records	239
▶	PROCEDURE 11-3: Entering (Adding) Information into a Paper Medical Record	240
▶	ELECTRONIC HEALTH RECORDS: Updating a Patient's Chart	243
▶	ELECTRONIC HEALTH RECORDS: Updating Patient Demographics	243
▶	PRACTICE MEDICAL OFFICE: Admin: Check In – Privacy and Liability	243

CHAPTER 12

Electronic Health Records 244

▶	ACTIVSIM: Ken Washington	244
12.1	A Brief History of Electronic Medical Records	245
12.2	Electronic Records	245
12.3	Meaningful Use and the EHR	247
12.4	Advantages and Disadvantages of EHR Programs	248
12.5	Working with an Electronic Health Record	249
12.6	Other Functions of EHR Programs	250
12.7	Security and Confidentiality and EHR	253
▶	SKILLS VIDEO: PHI Authorization to Release Health Information	253
▶	PROCEDURE 12-1: Creating a New Patient Record Using EHR Software	254
▶	PROCEDURE 12-2: Making an Addition or Addendum (Correction) to an Electronic Health Record	254
▶	PROCEDURE 12-3: Creating an Appointment Matrix for an Electronic Scheduling System	255
▶	PROCEDURE 12-4: Scheduling a Patient Appointment Using an Electronic Scheduler	255
▶	ELECTRONIC HEALTH RECORDS: Reviewing a Face Sheet	258
▶	ELECTRONIC HEALTH RECORDS: Correcting Errors in EHR	258
▶	ELECTRONIC HEALTH RECORDS: Creating an Electronic Schedule Matrix	258
▶	ELECTRONIC HEALTH RECORDS: Scheduling a Patient Appointment	258
▶	PRACTICE MEDICAL OFFICE: Admin: Check Out – Privacy and Liability	258

CHAPTER 13

Managing Medical Records 259

13.1	Filing Equipment	260
13.2	Security and Safety Measures	261
13.3	Filing Supplies	262
13.4	Filing Systems	262
13.5	The Filing Process	267
13.6	Active, Inactive, and Closed Files	269
▶	PROCEDURE 13-1: Creating a Filing System for Paper Medical Records	271
▶	PROCEDURE 13-2: Setting Up an Office Tickler File	272
▶	PROCEDURE 13-3: Developing a Records Retention Program	272
▶	PRACTICE MEDICAL OFFICE: Admin: Check Out – Work Task Proficiencies	275

CHAPTER 14

Telephone Techniques 276

- 14.1 Telecommunications Equipment 277
- 14.2 Effective Telephone Communication 280
- 14.3 Telephone Etiquette 281
- 14.4 Types of Incoming Calls 283
- ▶ **SKILLS VIDEO: Manage a Prescription Refill** 284
- 14.5 Managing Incoming Calls 288
- 14.6 Taking Complete and Accurate Phone Messages 290
- 14.7 Placing Outgoing Calls 291
- ▶ **PROCEDURE 14-1: Using a Telecommunications Device for the Deaf (TDD)** 293
- ▶ **PROCEDURE 14-2: Renewing a Prescription by Telephone** 293
- ▶ **PROCEDURE 14-3: Screening and Routing Telephone Calls** 294
- ▶ **PROCEDURE 14-4: Handling Emergency Calls** 295
- ▶ **PROCEDURE 14-5: Retrieving Messages from an Answering Service or System** 296
- ▶ **ELECTRONIC HEALTH RECORDS: Documenting a Patient Message** 298
- ▶ **ELECTRONIC HEALTH RECORDS: Sending and Processing a Patient Message** 298
- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Office Operations** 298

UNIT FOUR

Administrative Practices

CHAPTER 15

Patient Education 299

- ▶ **ACTIVSIM: Sylvia Gonzales** 299
- 15.1 The Educated Patient 300
- 15.2 Learning and Teaching 301
- 15.3 Teaching Techniques 301
- 15.4 Patient Education Materials 302
- 15.5 Promoting Health and Wellness Through Education 306
- 15.6 The Patient Information Packet 308
- 15.7 Patient Education Prior to Surgery 311
- ▶ **PROCEDURE 15-1: Creating Electronic Patient Instructions** 314
- ▶ **PROCEDURE 15-2: Identifying Community Resources** 314
- ▶ **PROCEDURE 15-3: Locating Credible Patient Education Information on the Internet** 315
- ▶ **PROCEDURE 15-4: Developing a Patient Education Plan** 316
- ▶ **PROCEDURE 15-5: Outpatient Surgery Teaching** 316
- ▶ **ELECTRONIC HEALTH RECORDS: Administering Patient Educational Material** 319
- ▶ **ELECTRONIC HEALTH RECORDS: Documenting Administration of Patient Educational Material** 319

- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check Out – Interactions** 319

CHAPTER 16

Schedule Management 320

- ▶ **ACTIVSIM: John Miller** 320
- 16.1 The Appointment Book 321
- 16.2 Applying the Matrix 322
- 16.3 Appointment Scheduling Systems 326
- 16.4 Organizing and Scheduling Appointments 329
- 16.5 Special Scheduling Situations 332
- 16.6 Scheduling Outside Appointments 335
- ▶ **SKILLS VIDEO: Scheduling Outpatient Surgical Appointments** 335
- 16.7 Maintaining the Practitioner's Schedule 336
- ▶ **SKILLS VIDEO: Scheduling Inpatient Surgical Appointments** 336
- ▶ **PROCEDURE 16-1: Creating an Appointment Matrix** 338
- ▶ **PROCEDURE 16-2: Scheduling Appointments** 339
- ▶ **PROCEDURE 16-3: Completing the Patient Appointment Card** 339
- ▶ **PROCEDURE 16-4: Placing Appointment Confirmation Calls** 340
- ▶ **PROCEDURE 16-5: Scheduling Outpatient Surgical Appointments** 340
- ▶ **PROCEDURE 16-6: Scheduling Inpatient Surgical Appointments** 341
- ▶ **ELECTRONIC HEALTH RECORDS: Scheduling an Appointment for a New Patient** 344
- ▶ **ELECTRONIC HEALTH RECORDS: Scheduling an Appointment for an Existing Patient** 344
- ▶ **ELECTRONIC HEALTH RECORDS: Blocking Appointment Times** 344
- ▶ **ELECTRONIC HEALTH RECORDS: Charting a No Show** 344
- ▶ **ELECTRONIC HEALTH RECORDS: Locating an Existing Appointment** 344
- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check Out - Work Task Proficiencies** 344

CHAPTER 17

Insurance and Billing 345

- ▶ **ACTIVSIM: Sylvia Gonzales** 345
- 17.1 Basic Insurance Terminology 346
- 17.2 Private Health Plans 347
- 17.3 Government Plans 351
- 17.4 Payer Payment Systems 357
- 17.5 The Claims Process: An Overview 360

- ▶ **SKILLS VIDEO: Requesting Prior Authorization** 362
- 17.6 Preparing and Transmitting the Healthcare Claim 364
- 17.7 Transmitting Electronic Claims 373
- 17.8 Insurer Processing Claims and Payments 374
- ▶ **PROCEDURE 17-1: Verifying Workers' Compensation Coverage** 376
- ▶ **PROCEDURE 17-2: Submitting a Request for Prior Authorization** 377
- ▶ **PROCEDURE 17-3: Completing the CMS-1500 Claim Form** 377
- ▶ **PROCEDURE 17-4: Tracking Insurance Claims Submissions** 379
- ▶ **ELECTRONIC HEALTH RECORDS: Verifying a Patient's Insurance Coverage** 382
- ▶ **ELECTRONIC HEALTH RECORDS: Creating a Patient Referral** 382
- ▶ **ELECTRONIC HEALTH RECORDS: Creating a Routing Slip for Billing** 382
- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Work Task Proficiencies** 382

CHAPTER 18

Diagnostic Coding 383

- ▶ **ACTIVSIM: Cindy Chen** 383
- 18.1 The Reasons for Diagnosis Codes 384
- 18.2 A Basic Comparison of ICD-9-CM and ICD-10-CM 385
- 18.3 An Overview of ICD-10 387
- 18.4 Coding with ICD-10 391
- 18.5 External Cause of Injury and Health Status Codes 395
- 18.6 Synopsis of ICD-10 Coding Guidelines by Chapter 397
- ▶ **SKILLS VIDEO: Locating an ICD-10-CM Code** 403
- ▶ **PROCEDURE 18-1: Locating an ICD-10-CM Code** 403
- ▶ **PROCEDURE 18-2: Locating a Health Status (Z) Code** 403
- ▶ **PROCEDURE 18-3: Locating an External Cause Code** 404
- ▶ **ELECTRONIC HEALTH RECORDS: Using ICD-10 Diagnostic Codes** 406
- ▶ **ELECTRONIC HEALTH RECORDS: Maintaining the ICD-10 Database** 406
- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check Out – Office Operations** 407

CHAPTER 19

Procedural Coding 408

- ▶ **ACTIVSIM: Raja Lautu** 408
- 19.1 The CPT Manual 409
- 19.2 General CPT Guidelines 411
- 19.3 Evaluation and Management Services 417
- 19.4 Surgical Coding 419

- 19.5 Using the CPT Manual 423
- ▶ **SKILLS VIDEO: Locating a CPT Code** 424
- 19.6 The HCPCS Coding Manual 424
- 19.7 Coding Compliance 424
- ▶ **PROCEDURE 19-1: Locating a CPT Code** 426
- ▶ **PROCEDURE 19-2: Locating a HCPCS Code** 426
- ▶ **PROCEDURE 19-3: Entering CPT/HCPCS and ICD Codes into an EHR Program** 427
- ▶ **ELECTRONIC HEALTH RECORDS: Using CPT Codes** 429
- ▶ **ELECTRONIC HEALTH RECORDS: Maintaining the CPT Database** 429
- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check Out – Work Task Proficiencies** 430

CHAPTER 20

Patient Collections and Financial Management 431

- 20.1 The Medical Practice as a Business 433
- 20.2 Medical Office Accounting Methods 433
- 20.3 In-Office Transactions 437
- 20.4 Standard Billing Procedures 441
- 20.5 Standard Collection Procedures 443
- ▶ **SKILLS VIDEO: Posting Charges, Payments, and Adjustments** 445
- 20.6 Laws That Govern Credit and Collections 446
- 20.7 Credit Arrangements 448
- 20.8 Common Collection Problems 450
- 20.9 Banking and Negotiable Instruments 452
- 20.10 Preparing a Bank Deposit 454
- 20.11 Reconciling the Bank Statement 455
- 20.12 Electronic Banking 457
- 20.13 Accounts Payable and Managing Disbursements 458
- ▶ **PROCEDURE 20-1: Posting Charges, Payments, and Adjustments** 460
- ▶ **PROCEDURE 20-2: Using the Superbill as Bill/Receipt** 461
- ▶ **PROCEDURE 20-3: Posting a Nonsufficient Funds (NSF) Check** 461
- ▶ **PROCEDURE 20-4: Processing a Payment Resulting in a Credit Balance** 462
- ▶ **PROCEDURE 20-5: Processing Refunds to Patients** 462
- ▶ **PROCEDURE 20-6: Preparing an Age Analysis** 462
- ▶ **PROCEDURE 20-7: Referring an Account to a Collection Agency and Posting the Payment from the Agency** 463
- ▶ **PROCEDURE 20-8: Completing a Truth in Lending Statement (Agreement)** 464
- ▶ **PROCEDURE 20-9: Making a Bank Deposit** 464
- ▶ **PROCEDURE 20-10: Reconciling the Bank Statement** 465
- ▶ **PROCEDURE 20-11: Setting Up the Disbursements Journal** 466
- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check Out – Work Task Proficiencies** 469

UNIT FIVE

Applied Anatomy and Physiology

CHAPTER 21

Organization of the Body 470

- ▶ **ACTIVSIM: John Miller** 470
- 21.1 The Study of the Body 471
- ▶ **BODY ANIMAT3D: Homeostasis** 472
- 21.2 Structural Organization of the Body 472
- 21.3 Major Tissue Types 472
- 21.4 Body Organs and Systems 474
- 21.5 Understanding Medical Terminology 477
- 21.6 Anatomical Terminology 477
- 21.7 Body Cavities and Abdominal Regions 478
- 21.8 Chemistry of Life 479
- ▶ **BODY ANIMAT3D: Basic Chemistry (Organic Molecules)** 480
- 21.9 Cell Characteristics 482
- ▶ **BODY ANIMAT3D: Fluid and Electrolyte Imbalances** 482
- ▶ **BODY ANIMAT3D: Cells and Tissues** 484
- 21.10 Movement Through Cell Membranes 484
- 21.11 Cell Division 484
- ▶ **BODY ANIMAT3D: Meiosis vs. Mitosis** 485
- 21.12 Genetic Techniques 485
- 21.13 Heredity and Common Genetic Disorders 486
- 21.14 Pathophysiology: Common Genetic Disorders 487

CHAPTER 22

The Integumentary System 491

- ▶ **ACTIVSIM: Christopher Matthews** 491
- 22.1 Functions of the Integumentary System 492
- 22.2 Skin Structure 492
- 22.3 Skin Color 493
- 22.4 Skin Lesions 494
- 22.5 Accessory Organs 495
- 22.6 Skin Healing 497
- ▶ **BODY ANIMAT3D: Inflammation** 497
- 22.7 Pathophysiology: Common Diseases and Disorders of the Skin 498
- ▶ **BODY ANIMAT3D: Burns** 499

CHAPTER 23

The Skeletal System 506

- ▶ **ACTIVSIM: John Miller** 506
- 23.1 Bone Structure 507
- 23.2 Functions of Bones 509
- 23.3 Bone Growth 509

- 23.4 Bony Structures 511
- 23.5 The Skull 511
- 23.6 The Spinal Column 513
- 23.7 The Rib Cage 513
- 23.8 Bones of the Shoulders, Arms, and Hands 515
- 23.9 Bones of the Hips, Legs, and Feet 516
- 23.10 Joints 517
- 23.11 Pathophysiology: Common Diseases and Disorders of the Skeletal System 517
- ▶ **BODY ANIMAT3D: Osteoarthritis vs. Rheumatoid Arthritis** 518
- ▶ **BODY ANIMAT3D: Osteoporosis** 520

CHAPTER 24

The Muscular System 524

- ▶ **ACTIVSIM: Ken Washington** 524
- 24.1 Functions of Muscle 525
- ▶ **BODY ANIMAT3D: Muscle Contraction** 525
- 24.2 Muscle Cells and Tissue 525
- 24.3 Production of Energy for Muscle 527
- 24.4 Structure of Skeletal Muscles 528
- 24.5 Attachments and Actions of Skeletal Muscles 528
- 24.6 Major Skeletal Muscles 529
- 24.7 Aging and the Musculoskeletal System 535
- 24.8 Pathophysiology: Common Diseases and Disorders of the Muscular System 535

CHAPTER 25

The Cardiovascular System 540

- ▶ **ACTIVSIM: John Miller** 540
- 25.1 The Heart 541
- 25.2 Cardiac Cycle 543
- ▶ **BODY ANIMAT3D: Cardiac Cycle** 544
- 25.3 Blood Vessels 545
- 25.4 Circulation 548
- 25.5 Blood Pressure 549
- 25.6 Pathophysiology: Common Diseases and Disorders of the Cardiovascular System 551
- ▶ **BODY ANIMAT3D: Hypertension** 551
- ▶ **BODY ANIMAT3D: Coronary Artery Disease (CAD)** 552
- ▶ **BODY ANIMAT3D: Heart Failure Overview** 553
- ▶ **BODY ANIMAT3D: Left-Side Heart Failure** 553
- ▶ **BODY ANIMAT3D: Right-Side Heart Failure** 553

CHAPTER 26

The Blood 558

- ▶ **ACTIVSIM: Cindy Chen** 558
- 26.1 Components of Blood 559

- 26.2 Bleeding Control 562
- ▶ **BODY ANIMAT3D: Strokes** 563
- 26.3 ABO Blood Types 563
- 26.4 The Rh Factor 563
- 26.5 Pathophysiology: Common Diseases and Disorders of the Blood System 565

CHAPTER 27

The Lymphatic and Immune Systems 570

- ▶ **ACTIVSIM: Cindy Chen** 570
- 27.1 The Lymphatic System 571
- ▶ **BODY ANIMAT3D: Lymph and Lymph Node Circulation** 572
- 27.2 Defenses Against Disease 574
- 27.3 Antibodies 576
- 27.4 Immune Responses and Acquired Immunities 576
- 27.5 Pathophysiology: Common Diseases and Disorders of the Immune System 578
- ▶ **BODY ANIMAT3D: Immune Response: Hypersensitivity** 579
- ▶ **BODY ANIMAT3D: Inflammation** 582

CHAPTER 28

The Respiratory System 584

- ▶ **ACTIVSIM: Mohammad Nassar** 584
- 28.1 Organs of the Respiratory System 585
- 28.2 The Mechanisms of Breathing 588
- ▶ **BODY ANIMAT3D: Acid-Base Balance: Acidosis** 589
- ▶ **BODY ANIMAT3D: Acid-Base Balance: Alkalosis** 589
- 28.3 The Transport of Oxygen and Carbon Dioxide in the Blood 589
- ▶ **BODY ANIMAT3D: Oxygen Transport and Gas Exchange** 589
- 28.4 Respiratory Volumes 589
- 28.5 Pathophysiology: Common Diseases and Disorders of the Respiratory System 591
- ▶ **BODY ANIMAT3D: Asthma** 591
- ▶ **BODY ANIMAT3D: COPD** 592
- ▶ **BODY ANIMAT3D: Respiratory Tract Infections** 592
- ▶ **BODY ANIMAT3D: Respiratory Failure** 592

CHAPTER 29

The Nervous System 599

- 29.1 General Functions of the Nervous System 600
- 29.2 Neuron Structure 600
- 29.3 Nerve Impulse and Synapse 601
- ▶ **BODY ANIMAT3D: Nerve Impulse** 601
- 29.4 Central Nervous System 602
- 29.5 Peripheral Nervous System 606

- ▶ **BODY ANIMAT3D: Spinal Cord Injury** 606
- 29.6 Neurologic Testing 609
- 29.7 Pathophysiology: Common Diseases and Disorders of the Nervous System 611
- ▶ **BODY ANIMAT3D: Alzheimer's Disease** 611
- ▶ **BODY ANIMAT3D: Strokes** 616

CHAPTER 30

The Urinary System 617

- ▶ **ACTIVSIM: Peter Smith** 617
- 30.1 The Kidneys 618
- 30.2 Urine Formation 619
- 30.3 The Ureters, Urinary Bladder, and Urethra 621
- 30.4 Pathophysiology: Common Diseases and Disorders of the Urinary System 623
- ▶ **BODY ANIMAT3D: Renal Function** 623

CHAPTER 31

The Reproductive Systems 626

- ▶ **ACTIVSIM: Raja Lautu** 626
- 31.1 The Male Reproductive System 627
- 31.2 Pathophysiology: Common Diseases and Disorders of the Male Reproductive System 631
- ▶ **BODY ANIMAT3D: Prostate Cancer** 632
- 31.3 The Female Reproductive System 633
- 31.4 Pathophysiology: Common Diseases and Disorders of the Female Reproductive System 636
- ▶ **BODY ANIMAT3D: Breast Cancer** 636
- 31.5 Pregnancy 638
- 31.6 The Birth Process 640
- 31.7 Contraception 642
- 31.8 Infertility 644
- 31.9 Pathophysiology: Sexually Transmitted Infections Occurring in Both Sexes 644
- ▶ **BODY ANIMAT3D: Meiosis vs Mitosis** 648

CHAPTER 32

The Digestive System 649

- ▶ **ACTIVSIM: Sylvia Gonzales** 649
- 32.1 Characteristics of the Alimentary Canal 650
- 32.2 Characteristics of the Digestive Accessory Organs 656
- ▶ **BODY ANIMAT3D: Food Absorption** 656
- 32.3 The Absorption of Nutrients 657
- 32.4 Pathophysiology: Common Diseases and Disorders of the Digestive System 659
- ▶ **BODY ANIMAT3D: Liver Failure** 659

CHAPTER 33

The Endocrine System 664

▶ **ACTIVSIM:** Ken Washington 664

33.1 Hormones 665

33.2 Hormone Production 667

33.3 The Stress Response 670

33.4 Pathophysiology: Common Diseases and Disorders of the Endocrine System 670

▶ **BODY ANIMAT3D:** Type 1 Diabetes 672

▶ **BODY ANIMAT3D:** Type 2 Diabetes 672

▶ **BODY ANIMAT3D:** Hyperthyroidism 674

CHAPTER 34

Special Senses 677

▶ **ACTIVSIM:** Valarie Ramirez 677

34.1 The Nose and the Sense of Smell 678

34.2 The Tongue and the Sense of Taste 679

34.3 The Eye and the Sense of Sight 680

34.4 Visual Pathways 682

34.5 Pathophysiology: Common Diseases of the Eyes 684

34.6 The Ear and the Senses of Hearing and Equilibrium 685

34.7 The Hearing Process 686

▶ **BODY ANIMAT3D:** Hearing Loss: Sensorineural 687

34.8 Pathophysiology: Common Diseases and Disorders of the Ears 688

UNIT SIX

Clinical Practices

CHAPTER 35

Infection Control Practices 692

▶ **ACTIVSIM:** Ken Washington 692

35.1 Healthcare-Associated Infections 693

35.2 Infection Control Methods 695

▶ **SKILLS VIDEO:** Applying Standard Precautions 698

35.3 Safe Injection Practices and Sharps Safety 698

35.4 Respiratory Hygiene/Cough Etiquette Practices 699

35.5 Infection Control Practices with Medical Equipment 701

35.6 Surgical Site Infections (SSIs) 701

35.7 Sterilization 702

▶ **SKILLS VIDEO:** Wrapping and Labeling Instruments for Sterilization in the Autoclave 703

35.8 Reporting Guidelines for Infectious Diseases 706

▶ **PROCEDURE 35-1:** Removing Contaminated Gloves 707

▶ **PROCEDURE 35-2:** Removing a Contaminated Gown 708

▶ **PROCEDURE 35-3:** Wrapping and Labeling Instruments for Sterilization in the Autoclave 708

▶ **PROCEDURE 35-4:** Running a Load Through the Autoclave 709

▶ **PROCEDURE 35-5:** Notifying State and County Agencies About Reportable Diseases 710

▶ **PRACTICE MEDICAL OFFICE:** Admin: Check Out – Privacy & Liability 714

CHAPTER 36

Patient Interview and History 715

▶ **ACTIVSIM:** Peter Smith 715

36.1 The Patient Interview and History 716

▶ **SKILLS VIDEO:** Using Critical Thinking Skills During an Interview 720

36.2 Your Role as an Observer 720

36.3 Documenting Patient Information 722

36.4 Recording the Patient's Medical History 727

▶ **SKILLS VIDEO:** Obtaining a Medical History 730

▶ **PROCEDURE 36-1:** Using Critical Thinking Skills During an Interview 733

▶ **PROCEDURE 36-2:** Using a Progress Note 734

▶ **PROCEDURE 36-3:** Obtaining a Medical History 734

▶ **ELECTRONIC HEALTH RECORDS:** Building a Patient's Face Sheet 736

▶ **ELECTRONIC HEALTH RECORDS:** Printing a Patient's Face Sheet 736

▶ **ELECTRONIC HEALTH RECORDS:** Documenting in a Patient's Progress Note 736

▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 736

CHAPTER 37

Vital Signs and Measurements 737

▶ **ACTIVSIM:** Mohammad Nassar 737

37.1 Vital Signs 738

37.2 Temperature 738

▶ **SKILLS VIDEO:** Measuring and Recording Temperature 742

37.3 Pulse and Respiration 742

▶ **SKILLS VIDEO:** Measuring and Recording Pulse and Respirations 744

37.4 Blood Pressure 745

▶ **SKILLS VIDEO:** Taking the Blood Pressure of Adults and Older Children 747

37.5 Orthostatic, or Postural, Vital Signs 747

37.6 Body Measurements 747

▶ **SKILLS VIDEO:** Measuring Adults and Children 748

- ▶ **PROCEDURE 37-1:** Measuring and Recording Temperature 749
- ▶ **PROCEDURE 37-2:** Measuring and Recording Pulse and Respirations 750
- ▶ **PROCEDURE 37-3:** Taking the Blood Pressure of Adults and Older Children 751
- ▶ **PROCEDURE 37-4:** Measuring Adults and Children 752
- ▶ **ELECTRONIC HEALTH RECORDS:** Documenting Vital Signs 755
- ▶ **ELECTRONIC HEALTH RECORDS:** Adding Vital Signs as Part of an Office Visit 755
- ▶ **ELECTRONIC HEALTH RECORDS:** Recording Vital Signs for Pediatric Patients 755
- ▶ **ELECTRONIC HEALTH RECORDS:** Viewing Vital Signs in a Patient's Chart 755
- ▶ **BODY ANIMAT3D:** Hypertension 755
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Office Operations 755

CHAPTER 38

Assisting with a General Physical Examination 756

- ▶ **ACTIVSIM:** Valarie Ramirez 756
- 38.1 The Purpose of a General Physical Exam 757
- 38.2 The Role of the Medical Assistant 758
- 38.3 Safety Precautions 758
- 38.4 Preparing the Patient for an Exam 758
- 38.5 Positioning and Draping 759
- ▶ **SKILLS VIDEO:** Positioning the Patient for an Exam 762
- 38.6 Special Patient Considerations 762
- ▶ **SKILLS VIDEO:** Transferring a Patient in a Wheelchair for an Exam 762
- 38.7 Exam Methods 762
- 38.8 Components of a General Physical Exam 763
- ▶ **SKILLS VIDEO:** Assisting with a General Physical Exam 764
- 38.9 After the Exam 767
- ▶ **PROCEDURE 38-1:** Positioning a Patient for an Exam 767
- ▶ **PROCEDURE 38-2:** Communicating Effectively with Patients from Other Cultures and Meeting Their Needs for Privacy 768
- ▶ **PROCEDURE 38-3:** Transferring a Patient in a Wheelchair for an Exam 769
- ▶ **PROCEDURE 38-4:** Assisting with a General Physical Exam 770
- ▶ **SKILLS VIDEO:** Communicating Effectively with Patients from Other Cultures and Meeting Their Needs for Privacy 774
- ▶ **ELECTRONIC HEALTH RECORDS:** Documenting a Physical Exam 774
- ▶ **ELECTRONIC HEALTH RECORDS:** Documenting a Procedure 774
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 774

CHAPTER 39

Assisting in Reproductive and Urinary Specialties 775

- ▶ **ACTIVSIM:** Raja Lautu 775
- 39.1 Assisting with the Gynecologic Patient 776
- ▶ **SKILLS VIDEO:** Assisting with the Gynecological Exam 779
- 39.2 Assisting with the Obstetric Patient 779
- 39.3 OB/GYN Diagnostic and Therapeutic Tests and Procedures 782
- ▶ **SKILLS VIDEO:** Pregnancy Testing Using the EIA Method 783
- 39.4 Assisting in Urology 788
- 39.5 Urologic Diagnostic Tests and Procedures 788
- 39.6 Diseases and Disorders of the Reproductive and Urinary Systems 789
- ▶ **PROCEDURE 39-1:** Assisting with a Gynecologic Exam 792
- ▶ **PROCEDURE 39-2:** Assisting During the Exam of a Pregnant Patient 794
- ▶ **PROCEDURE 39-3:** Assisting with a Cervical Biopsy 794
- ▶ **BODY ANIMAT3D:** Breast Cancer 797
- ▶ **BODY ANIMAT3D:** Prostate Cancer 797
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 797

CHAPTER 40

Assisting in Pediatrics 798

- ▶ **ACTIVSIM:** Chris Matthews 798
- 40.1 Developmental Stages and Care 799
- 40.2 Pediatric Examinations 808
- 40.3 Pediatric Immunizations 810
- 40.4 Pediatric Screening and Diagnostic Tests 813
- ▶ **SKILLS VIDEO:** Measuring Infants 814
- 40.5 Pediatric Diseases and Disorders 817
- 40.6 Pediatric Patient Special Concerns 820
- ▶ **PROCEDURE 40-1:** Measuring Infants 822
- ▶ **PROCEDURE 40-2:** Maintaining Growth Charts 823
- ▶ **PROCEDURE 40-3:** Collecting a Urine Specimen from a Pediatric Patient 825
- ▶ **SKILLS VIDEO:** Measuring Adults and Children 827
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 828

CHAPTER 41

Assisting in Geriatrics 829

- ▶ **ACTIVSIM:** Peter Smith 829
- 41.1 The Geriatric Patient 830
- 41.2 Diseases and Disorders of Geriatric Patients 833
- 41.3 Assisting with Geriatric Care 833

- ▶ **SKILLS VIDEO:** Obtaining Information from a Geriatric Patient 835
- 41.4 Geriatric Patient Special Concerns 838
- ▶ **PROCEDURE 41-1:** Educating Adult Patients About Daily Water Requirements 841
- ▶ **BODY ANIMAT3D:** Alzheimer’s Disease 844
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 844

CHAPTER 42

Assisting in Other Medical Specialties 845

- ▶ **ACTIVSIM:** Valarie Ramirez 845
- 42.1 Working in Other Medical Specialties 846
- 42.2 Diseases and Disorders of Medical Specialties 850
- 42.3 Exams and Procedures in Medical Specialties 853
- ▶ **PROCEDURE 42-1:** Assisting with a Scratch Test Examination 862
- ▶ **PROCEDURE 42-2:** Assisting with a Sigmoidoscopy 863
- ▶ **PROCEDURE 42-3:** Assisting with a Needle Biopsy 864
- ▶ **BODY ANIMAT3D:** Coronary Artery Disease 866
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 866

CHAPTER 43

Assisting with Eye and Ear Care 867

- ▶ **ACTIVSIM:** Valarie Ramirez 867
- 43.1 Ophthalmology 869
- 43.2 Eye Diseases and Disorders 869
- 43.3 Ophthalmic Exams 872
- ▶ **SKILLS VIDEO:** Performing Vision Screening Tests 874
- 43.4 Ophthalmologic Procedures and Treatments 874
- 43.5 Otolaryngology 875
- 43.6 Ear Diseases and Disorders 875
- ▶ **SKILLS VIDEO:** Obtaining Information from a Patient with a Hearing Aid 879
- 43.7 Hearing and Other Diagnostic Ear Tests 879
- ▶ **SKILLS VIDEO:** Measuring Auditory Acuity 880
- 43.8 Ear Treatments and Procedures 880
- ▶ **SKILLS VIDEO:** Performing Ear Irrigation 881
- ▶ **PROCEDURE 43-1:** Preparing the Ophthalmoscope for Use 883
- ▶ **PROCEDURE 43-2:** Performing Vision Screening Tests 883
- ▶ **PROCEDURE 43-3:** Administering Eye Medications 886
- ▶ **PROCEDURE 43-4:** Performing Eye Irrigation 888
- ▶ **PROCEDURE 43-5:** Measuring Auditory Acuity 889
- ▶ **PROCEDURE 43-6:** Administering Eardrops 890
- ▶ **PROCEDURE 43-7:** Performing Ear Irrigation 891
- ▶ **BODY ANIMAT3D:** Hearing Loss: Sensorineural 894
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Work Task Proficiencies and Clinical – Interactions 894

CHAPTER 44

Assisting with Minor Surgery 895

- ▶ **ACTIVSIM:** Peter Smith 895
- 44.1 The Medical Assistant’s Role in Minor Surgery 896
- 44.2 Surgery in the Physician’s Office 897
- ▶ **BODY ANIMAT3D:** Wound Healing 898
- 44.3 Instruments Used in Minor Surgery 900
- 44.4 Asepsis 904
- ▶ **SKILLS VIDEO:** Creating a Sterile Field 905
- ▶ **SKILLS VIDEO:** Performing a Surgical Scrub 907
- ▶ **SKILLS VIDEO:** Donning Sterile Gloves 907
- 44.5 Preoperative Procedures 907
- 44.6 Intraoperative Procedures 909
- 44.7 Postoperative Procedures 912
- ▶ **SKILLS VIDEO:** Assisting after Minor Surgical Procedures 913
- ▶ **SKILLS VIDEO:** Suture Removal 913
- ▶ **PROCEDURE 44-1:** Creating a Sterile Field 913
- ▶ **PROCEDURE 44-2:** Performing a Surgical Scrub 914
- ▶ **PROCEDURE 44-3:** Donning Sterile Gloves 915
- ▶ **PROCEDURE 44-4:** Assisting as a Floater (Unsterile Assistant) During Minor Surgical Procedures 916
- ▶ **PROCEDURE 44-5:** Assisting as a Sterile Scrub Assistant During Minor Surgical Procedures 917
- ▶ **PROCEDURE 44-6:** Assisting After Minor Surgical Procedures 917
- ▶ **PROCEDURE 44-7:** Suture Removal 918
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Work Task Proficiencies 921

UNIT SEVEN

Assisting with Diagnostics

CHAPTER 45

Orientation to the Lab 922

- ▶ **ACTIVSIM:** Sylvia Gonzales 922
- 45.1 The Role of Laboratory Testing in Patient Care 923
- 45.2 The Medical Assistant’s Role 924
- 45.3 Use of Laboratory Equipment 924
- ▶ **SKILLS VIDEO:** Using a Microscope 926
- 45.4 Safety in the Laboratory 927
- 45.5 Quality Assurance Programs 928
- 45.6 Communicating with the Patient 935
- 45.7 Recordkeeping 936
- ▶ **PROCEDURE 45-1:** Using a Microscope 938
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Privacy and Liability 942

CHAPTER 46

Microbiology and Disease 943

- ▶ **ACTIVSIM:** Cindy Chen 943
- 46.1 Microbiology and the Role of the Medical Assistant 944
- 46.2 How Microorganisms Cause Disease 944
- 46.3 Classification and Naming of Microorganisms 945
- 46.4 Viruses 946
- 46.5 Bacteria 949
- 46.6 Protozoans 953
- 46.7 Fungi 955
- 46.8 Multicellular Parasites 955
- 46.9 How Infections Are Diagnosed 957
- 46.10 Specimen Collection 957
 - ▶ **SKILLS VIDEO:** Obtaining a Throat Culture Specimen 960
- 46.11 Transporting Specimens to an Outside Laboratory 961
- 46.12 Direct Examination of Specimens 961
- 46.13 Preparation and Examination of Stained Specimens 962
- 46.14 Culturing Specimens in the Medical Office 962
 - ▶ **PROCEDURE 46-1:** Obtaining a Throat Culture Specimen 966
 - ▶ **PROCEDURE 46-2:** Performing a Quick Strep A Test on a Throat Specimen 967
 - ▶ **PROCEDURE 46-3:** Preparing Microbiologic Specimens for Transport to an Outside Laboratory 967
 - ▶ **PROCEDURE 46-4:** Preparing a Microbiologic Specimen Smear 968
 - ▶ **PROCEDURE 46-5:** Performing a Gram Stain 968
 - ▶ **PRACTICE MEDICAL OFFICE:** Admin: Check Out – Privacy and Liability 972

CHAPTER 47

Collecting, Processing, and Testing Urine and Stool Specimens 973

- ▶ **ACTIVSIM:** Ken Washington 973
- 47.1 The Role of the Medical Assistant 974
- 47.2 Obtaining Urine Specimens 975
 - ▶ **SKILLS VIDEO:** Collecting a Clean-Catch Midstream Urine Specimen 976
- 47.3 Urinalysis 980
 - ▶ **SKILLS VIDEO:** Performing a Reagent Strip Test 984
 - ▶ **SKILLS VIDEO:** Pregnancy Testing Using the EIA Method 986
- 47.4 Collecting and Processing Stool Specimens 988
 - ▶ **PROCEDURE 47-1:** Collecting a Clean-Catch Mid-Stream Urine Specimen 990
 - ▶ **PROCEDURE 47-2:** Collecting a 24-Hour Urine Specimen 991
 - ▶ **PROCEDURE 47-3:** Establishing Chain of Custody for a Urine Specimen 992

- ▶ **PROCEDURE 47-4:** Measuring Specific Gravity with a Refractometer 993
- ▶ **PROCEDURE 47-5:** Performing a Reagent Strip Test 993
- ▶ **PROCEDURE 47-6:** Pregnancy Testing Using the EIA Method 994
- ▶ **PROCEDURE 47-7:** Processing a Urine Specimen for Microscopic Examination of Sediment 995
- ▶ **PROCEDURE 47-8:** Fecal Occult Blood Testing Using the Guaiac Testing Method 997
- ▶ **ELECTRONIC HEALTH RECORDS:** Ordering a Test 999
- ▶ **ELECTRONIC HEALTH RECORDS:** Recording Test Results 999
- ▶ **ELECTRONIC HEALTH RECORDS:** Processing Test Results 999
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 999

CHAPTER 48

Collecting, Processing, and Testing Blood Specimens 1000

- ▶ **ACTIVSIM:** Sylvia Gonzales 1000
- 48.1 The Role of the Medical Assistant 1001
- 48.2 Preparation for Collecting Blood Specimens 1002
 - ▶ **SKILLS VIDEO:** Quality Control Procedures for Blood Specimen Collection 1002
- 48.3 Patient Preparation and Communication 1008
- 48.4 Performing Blood Collection 1011
- 48.5 Performing Common Blood Tests 1013
 - ▶ **SKILLS VIDEO:** Preparing a Blood Smear Slide 1020
 - ▶ **SKILLS VIDEO:** Measuring Hematocrit Percentage after Centrifuge 1020
 - ▶ **SKILLS VIDEO:** Measuring Blood Glucose Using a Handheld Glucometer 1022
- ▶ **PROCEDURE 48-1:** Quality Control Procedures for Blood Specimen Collection 1024
- ▶ **PROCEDURE 48-2:** Performing Venipuncture Using an Evacuated System 1025
- ▶ **PROCEDURE 48-3:** Performing Capillary Puncture 1027
- ▶ **PROCEDURE 48-4:** Preparing a Blood Smear Slide 1029
- ▶ **PROCEDURE 48-5:** Measuring Hematocrit Percentage After Centrifuge 1030
- ▶ **PROCEDURE 48-6:** Measuring Blood Glucose Using a Handheld Glucometer 1032
- ▶ **PROCEDURE 48-7:** Performing a Rapid Infectious Mononucleosis Test 1032
- ▶ **ELECTRONIC HEALTH RECORDS:** Sending a Patient's Test Report 1034
- ▶ **ELECTRONIC HEALTH RECORDS:** Creating a Patient Order Form 1034
- ▶ **PRACTICE MEDICAL OFFICE:** Clinical – Work Task Proficiencies 1035

CHAPTER 49

Electrocardiography and Pulmonary Function Testing 1036

▶ **ACTIVSIM:** John Miller 1036

49.1 The Medical Assistant's Role in Electrocardiography and Pulmonary Function Testing 1037

49.2 Basic Principles of Electrocardiography 1037

49.3 The Electrocardiograph 1039

49.4 Performing an ECG 1042

▶ **SKILLS VIDEO:** Obtaining an ECG 1050

49.5 Exercise Electrocardiography (Stress Testing) and Echocardiography 1050

49.6 Ambulatory Electrocardiography (Holter Monitoring) 1052

▶ **SKILLS VIDEO:** Holter Monitoring 1052

49.7 Pulmonary Function Testing 1052

▶ **SKILLS VIDEO:** Measuring Forced Vital Capacity Using Spirometry 1055

▶ **SKILLS VIDEO:** Obtaining a Peak Expiratory Flow Rate 1056

49.8 Pulse Oximetry 1056

▶ **SKILLS VIDEO:** Obtaining a Pulse Oximetry Reading 1056

▶ **PROCEDURE 49-1:** Obtaining an ECG 1056

▶ **PROCEDURE 49-2:** Holter Monitoring 1057

▶ **PROCEDURE 49-3:** Measuring Forced Vital Capacity Using Spirometry 1059

▶ **PROCEDURE 49-4:** Obtaining a Peak Expiratory Flow Rate 1060

▶ **PROCEDURE 49-5:** Obtaining a Pulse Oximetry Reading 1061

▶ **PRACTICE MEDICAL OFFICE:** Clinical – Work Task Proficiencies 1064

CHAPTER 50

Diagnostic Imaging 1065

▶ **ACTIVSIM:** Raja Lautu 1065

50.1 Brief History of the X-ray 1066

50.2 Diagnostic Radiology 1066

50.3 The Medical Assistant's Role in Diagnostic Radiology 1067

50.4 Common Diagnostic Radiologic Tests 1069

50.5 Common Therapeutic Uses of Radiation 1077

50.6 Radiation Safety and Dose 1078

50.7 Electronic Medicine 1079

▶ **PROCEDURE 50-1:** Assisting with an X-ray Examination 1081

▶ **PROCEDURE 50-2:** Documentation and Filing Techniques for X-rays 1081

▶ **PRACTICE MEDICAL OFFICE:** Clinical – Interactions 1084

UNIT EIGHT

Assisting in Therapeutics

CHAPTER 51

Principles of Pharmacology 1085

51.1 The Medical Assistant's Role in Pharmacology 1086

51.2 Pharmacology 1087

▶ **BODY ANIMAT3D:** Pharmacokinetics vs. Pharmacodynamics 1088

▶ **BODY ANIMAT3D:** Medication Absorption 1088

▶ **BODY ANIMAT3D:** Medication Distribution 1088

▶ **BODY ANIMAT3D:** Medication Metabolism 1088

▶ **BODY ANIMAT3D:** Medication Excretion 1088

51.3 Drug Names and Categories 1090

51.4 FDA Regulation and Drugs 1090

51.5 Sources of Drug Information 1094

51.6 Controlled Substances 1095

51.7 Prescriptions 1099

▶ **SKILLS VIDEO:** Interpreting a Prescription 1101

51.8 Nonpharmacologic Pain Management 1102

51.9 Vaccines 1102

▶ **PROCEDURE 51-1:** Helping the Licensed Practitioner Comply with the Controlled Substances Act of 1970 1104

▶ **PROCEDURE 51-2:** Interpreting a Prescription 1104

▶ **SKILLS VIDEO:** Managing a Prescription Refill 1106

▶ **PRACTICE MEDICAL OFFICE:** Clinical – Privacy and Liability 1107

CHAPTER 52

Dosage Calculations 1108

▶ **ACTIVSIM:** Chris Matthews 1108

52.1 Ensuring Safe Dosage Calculations 1109

52.2 Measurement Systems 1110

52.3 Conversions Within and Between Measurement Systems 1111

52.4 Dosage Calculations 1112

52.5 Body Weight and Body Surface Area Calculations 1116

▶ **PRACTICE MEDICAL OFFICE:** Clinical – Privacy and Liability 1120

CHAPTER 53

Medication Administration 1121

▶ **ACTIVSIM:** John Miller 1121

53.1 Preparing to Administer a Drug 1122

53.2 Rights of Medication Administration 1125

- 53.3 Drug Routes and Equipment 1126
- 53.4 Medications by Mouth 1128
 - ▶ **SKILLS VIDEO: Administering Drugs by Mouth** 1129
- 53.5 Medications by Injection 1129
 - ▶ **SKILLS VIDEO: Drawing a Drug from an Ampule** 1130
 - ▶ **SKILLS VIDEO: Reconstituting and Drawing a Drug for Injection** 1130
 - ▶ **SKILLS VIDEO: Giving an Intradermal Injection** 1132
 - ▶ **SKILLS VIDEO: Giving a Subcutaneous Injection** 1132
 - ▶ **SKILLS VIDEO: Giving an Intramuscular Injection** 1132
- 53.6 Other Medication Routes 1134
- 53.7 Special Considerations 1134
- 53.8 Patient Education About Medications 1136
- 53.9 Charting Medications 1138
 - ▶ **PROCEDURE 53-1: Administering Oral Drugs** 1139
 - ▶ **PROCEDURE 53-2: Administering Buccal or Sublingual Drugs** 1141
 - ▶ **PROCEDURE 53-3: Drawing a Drug from an Ampule** 1142
 - ▶ **PROCEDURE 53-4: Reconstituting and Drawing a Drug for Injection** 1142
 - ▶ **PROCEDURE 53-5: Giving an Intradermal (ID) Injection** 1143
 - ▶ **PROCEDURE 53-6: Giving a Subcutaneous (Subcut) Injection** 1144
 - ▶ **PROCEDURE 53-7: Giving an Intramuscular (IM) Injection** 1145
 - ▶ **PROCEDURE 53-8: Administering Inhalation Therapy** 1146
 - ▶ **PROCEDURE 53-9: Administering and Removing a Transdermal Patch and Providing Patient Instruction** 1147
 - ▶ **PROCEDURE 53-10: Assisting with Administration of a Urethral Drug** 1148
 - ▶ **PROCEDURE 53-11: Administering a Vaginal Medication** 1148
 - ▶ **PROCEDURE 53-12: Administering a Rectal Medication** 1149
 - ▶ **ELECTRONIC HEALTH RECORDS: Documenting Medication Administration** 1152
 - ▶ **ELECTRONIC HEALTH RECORDS: Managing Patient Prescriptions** 1152
 - ▶ **PRACTICE MEDICAL OFFICE: Clinical – Office Operations** 1152

CHAPTER 54

Physical Therapy and Rehabilitation 1153

- ▶ **ACTIVSIM: Chris Matthews** 1153
- 54.1 General Principles of Physical Therapy 1154
- 54.2 Cryotherapy and Thermotherapy 1157
- 54.3 Hydrotherapy 1160
- 54.4 Exercise Therapy 1161
- 54.5 Massage 1163
- 54.6 Traction 1164
- 54.7 Mobility Aids 1164

- ▶ **SKILLS VIDEO: Teaching a Patient How to Use Crutches** 1167
- 54.8 Referral to a Physical Therapist 1169
 - ▶ **PROCEDURE 54-1: Administering Cryotherapy** 1169
 - ▶ **PROCEDURE 54-2: Administering Thermotherapy** 1170
 - ▶ **PROCEDURE 54-3: Teaching a Patient How to Use a Cane** 1171
 - ▶ **PROCEDURE 54-4: Teaching a Patient How to Use a Walker** 1172
 - ▶ **PROCEDURE 54-5: Teaching a Patient How to Use Crutches** 1172
- ▶ **PRACTICE MEDICAL OFFICE: Clinical – Work Task Proficiencies** 1175

CHAPTER 55

Nutrition and Health 1176

- ▶ **ACTIVSIM: Mohammad Nassar** 1176
- 55.1 Daily Energy Requirements 1177
- 55.2 Nutrients 1178
 - ▶ **BODY ANIMAT3D: Protein Synthesis** 1179
- 55.3 Dietary Guidelines 1185
- 55.4 Assessing Nutritional Levels 1187
- 55.5 Modified Diets 1187
- 55.6 Patients with Specific Nutritional Needs 1189
 - ▶ **BODY ANIMAT3D: Digestion: Lactose Intolerance** 1193
 - ▶ **BODY ANIMAT3D: Obesity** 1194
- 55.7 Eating Disorders 1195
- 55.8 Patient Education 1196
 - ▶ **PROCEDURE 55-1: Teaching Patients How to Read Food Labels** 1198
 - ▶ **PROCEDURE 55-2: Alerting Patients with Food Allergies to the Dangers of Common Foods** 1199
- ▶ **PRACTICE MEDICAL OFFICE: Admin: Check In – Interactions** 1202

UNIT NINE

Medical Assisting Practice

CHAPTER 56

Practice Management 1203

- ▶ **ACTIVSIM: Cindy Chen** 1203
- 56.1 Organizational Design 1204
- 56.2 Managing the Medical Practice 1206
 - ▶ **SKILLS VIDEO: Petty Cash** 1208
- 56.3 Human Resources and Practice Management 1210
- 56.4 Being a Leader 1213
- 56.5 Risk Management and Quality Assurance 1214
 - ▶ **SKILLS VIDEO: Completing an Incident Report** 1216
- 56.6 Handling Payroll 1216

56.7 Calculating and Filing Taxes 1221

▶ **PROCEDURE 56-1: Preparing a Travel Expense Report** 1225

▶ **PROCEDURE 56-2: Preparing an Agenda** 1226

▶ **PROCEDURE 56-3: Completing an Incident Report** 1226

▶ **PROCEDURE 56-4: Generating Payroll** 1227

▶ **PRACTICE MEDICAL OFFICE: Admin: Check Out – Privacy and Liability** 1230

CHAPTER 57

Emergency Preparedness 1231

▶ **ACTIVSIM: Mohammad Nassar** 1231

57.1 Understanding Medical Emergencies 1232

57.2 Preparing for Medical Emergencies 1233

▶ **SKILLS VIDEO: Performing an Emergency Assessment** 1235

57.3 Accidental Injuries 1235

▶ **BODY ANIMAT3D: Concussions** 1238

▶ **SKILLS VIDEO: Controlling Bleeding** 1238

▶ **SKILLS VIDEO: Cleaning Minor Wounds** 1242

57.4 Common Disorders 1242

▶ **SKILLS VIDEO: Caring for a Patient Who Is Vomiting** 1245

57.5 Less Common Disorders 1245

▶ **SKILLS VIDEO: Performing Cardiopulmonary Resuscitation (CPR)** 1247

57.6 Common Psychosocial Emergencies 1249

57.7 The Patient Under Stress 1250

57.8 Educating the Patient 1250

57.9 Disasters and Pandemics 1250

57.10 Bioterrorism 1251

▶ **PROCEDURE 57-1: Stocking the Crash Cart** 1253

▶ **PROCEDURE 57-2: Performing an Emergency Assessment** 1254

▶ **PROCEDURE 57-3: Foreign Body Airway Obstruction in a Responsive Adult or Child** 1254

▶ **PROCEDURE 57-4: Foreign Body Airway Obstruction in a Responsive Infant** 1256

▶ **PROCEDURE 57-5: Controlling Bleeding** 1257

▶ **PROCEDURE 57-6: Cleaning Minor Wounds** 1258

▶ **PROCEDURE 57-7: Caring for a Patient Who Is Vomiting** 1258

▶ **PROCEDURE 57-8: Assisting During a Chemical Disaster** 1259

▶ **BODY ANIMAT3D: Burns** 1261

▶ **PRACTICE MEDICAL OFFICE: Clinical: Privacy and Liability** 1261

CHAPTER 58

Preparing for the World of Work 1262

58.1 Training in Action 1263

58.2 Obtaining Professional Certification 1267

58.3 Preparing to Find a Position 1268

58.4 Interviewing 1274

58.5 On the Job 1278

▶ **PROCEDURE 58-1: Résumé Writing** 1279

▶ **PRACTICE MEDICAL OFFICE: Admin: Check Out – Work Task Proficiencies** 1281

APPENDICES

I Prefixes, Suffixes, and Word Roots in Commonly Used Medical Terms A-1

II Abbreviations and Symbols Commonly Used in Medical Notations A-5

III Diseases and Disorders A-7

Glossary G-1

Index I-1

Procedures

- PROCEDURE 1-1** Obtaining Certification/Registration Information Through the Internet 9
- PROCEDURE 3-1** Self-Evaluation of Professional Behaviors 39
- PROCEDURE 4-1** Communicating with the Anxious Patient 57
- PROCEDURE 4-2** Communicating with the Angry Patient 58
- PROCEDURE 4-3** Communicating with the Assistance of an Interpreter 58
- PROCEDURE 5-1** Obtaining Signature for Receipt of Notice of Privacy Practices and Acknowledgment 88
- PROCEDURE 5-2** Completing a Privacy Violation Complaint Form 88
- PROCEDURE 5-3** Obtaining Authorization to Release Health Information 89
- PROCEDURE 6-1** Aseptic Handwashing 105
- PROCEDURE 6-2** Using an Alcohol-Based Hand Disinfectant 106
- PROCEDURE 6-3** Using a Biohazardous Sharps Container 106
- PROCEDURE 6-4** Disposing of Biohazardous Waste 106
- PROCEDURE 7-1** Handling a Fire Emergency 130
- PROCEDURE 7-2** Maintaining and Using an Eyewash Station 132
- PROCEDURE 7-3** Creating a Pediatric Reception Area 132
- PROCEDURE 7-4** Creating a Reception Area Accessible to Patients with Special Needs 133
- PROCEDURE 7-5** Opening and Closing the Medical Office 133
- PROCEDURE 8-1** Using a Facsimile (Fax) Machine 169
- PROCEDURE 8-2** Using a Photocopier Machine 169
- PROCEDURE 8-3** Using a Postage Meter 170
- PROCEDURE 8-4** Using a Check-Writing Machine 170
- PROCEDURE 8-5** Step-by-Step Overview of Inventory Procedures 171
- PROCEDURE 9-1** Performing Sanitization with an Ultrasonic Cleaner 186
- PROCEDURE 9-2** Guidelines for Disinfecting Exam Room Surfaces 186
- PROCEDURE 10-1** Creating a Professional Letter 213
- PROCEDURE 10-2** Writing an Interoffice Memo 214
- PROCEDURE 10-3** Composing a Professional E-mail Message 214
- PROCEDURE 10-4** Composing an Electronic Patient Letter 215
- PROCEDURE 10-5** Sorting and Opening Mail 215
- PROCEDURE 11-1** Preparing a New Patient Paper Medical Record 239
- PROCEDURE 11-2** Correcting Paper Medical Records 239
- PROCEDURE 11-3** Entering (Adding) Information into a Paper Medical Record 240
- PROCEDURE 12-1** Creating a New Patient Record Using EHR Software 254
- PROCEDURE 12-2** Making an Addition or Addendum (Correction) to an Electronic Health Record 254
- PROCEDURE 12-3** Creating an Appointment Matrix for an Electronic Scheduling System 255
- PROCEDURE 12-4** Scheduling a Patient Appointment Using an Electronic Scheduler 255
- PROCEDURE 13-1** Creating a Filing System for Paper Medical Records 271
- PROCEDURE 13-2** Setting Up an Office Tickler File 272
- PROCEDURE 13-3** Developing a Records Retention Program 272
- PROCEDURE 14-1** Using a Telecommunications Device for the Deaf (TDD) 293
- PROCEDURE 14-2** Renewing a Prescription by Telephone 293
- PROCEDURE 14-3** Screening and Routing Telephone Calls 294
- PROCEDURE 14-4** Handling Emergency Calls 295
- PROCEDURE 14-5** Retrieving Messages from an Answering Service or System 296
- PROCEDURE 15-1** Creating Electronic Patient Instructions 314
- PROCEDURE 15-2** Identifying Community Resources 314
- PROCEDURE 15-3** Locating Credible Patient Education Information on the Internet 315
- PROCEDURE 15-4** Developing a Patient Education Plan 316
- PROCEDURE 15-5** Outpatient Surgery Teaching 316
- PROCEDURE 16-1** Creating an Appointment Matrix 338
- PROCEDURE 16-2** Scheduling Appointments 339
- PROCEDURE 16-3** Completing the Patient Appointment Card 339
- PROCEDURE 16-4** Placing Appointment Confirmation Calls 340
- PROCEDURE 16-5** Scheduling Outpatient Surgical Appointments 340
- PROCEDURE 16-6** Scheduling Inpatient Surgical Appointments 341
- PROCEDURE 17-1** Verifying Workers' Compensation Coverage 376
- PROCEDURE 17-2** Submitting a Request for Prior Authorization 377
- PROCEDURE 17-3** Completing the CMS-1500 Claim Form 377
- PROCEDURE 17-4** Tracking Insurance Claims Submissions 379
- PROCEDURE 18-1** Locating an ICD-10-CM Code 403
- PROCEDURE 18-2** Locating a Health Status (Z) Code 403
- PROCEDURE 18-3** Locating an External Cause Code 404
- PROCEDURE 19-1** Locating a CPT Code 426
- PROCEDURE 19-2** Locating a HCPCS Code 426

- PROCEDURE 19-3** Entering CPT/HCPCS and ICD Codes into an EHR Program 427
- PROCEDURE 20-1** Posting Charges, Payments, and Adjustments 460
- PROCEDURE 20-2** Using the Superbill as Bill/Receipt 461
- PROCEDURE 20-3** Posting a Nonsufficient Funds (NSF) Check 461
- PROCEDURE 20-4** Processing a Payment Resulting in a Credit Balance 462
- PROCEDURE 20-5** Processing Refunds to Patients 462
- PROCEDURE 20-6** Preparing an Age Analysis 462
- PROCEDURE 20-7** Referring an Account to Collection Agency and Posting the Payment from the Agency 463
- PROCEDURE 20-8** Completing a Truth in Lending Statement (Agreement) 464
- PROCEDURE 20-9** Making a Bank Deposit 464
- PROCEDURE 20-10** Reconciling the Bank Statement 465
- PROCEDURE 20-11** Setting Up the Disbursements Journal 466
- PROCEDURE 35-1** Removing Contaminated Gloves 707
- PROCEDURE 35-2** Removing a Contaminated Gown 708
- PROCEDURE 35-3** Wrapping and Labeling Instruments for Sterilization in the Autoclave 708
- PROCEDURE 35-4** Running a Load Through the Autoclave 709
- PROCEDURE 35-5** Notifying State and County Agencies About Reportable Diseases 710
- PROCEDURE 36-1** Using Critical Thinking Skills During an Interview 733
- PROCEDURE 36-2** Using a Progress Note 734
- PROCEDURE 36-3** Obtaining a Medical History 734
- PROCEDURE 37-1** Measuring and Recording Temperature 749
- PROCEDURE 37-2** Measuring and Recording Pulse and Respirations 750
- PROCEDURE 37-3** Taking the Blood Pressure of Adults and Older Children 751
- PROCEDURE 37-4** Measuring Adults and Children 752
- PROCEDURE 38-1** Positioning a Patient for an Exam 767
- PROCEDURE 38-2** Communicating Effectively with Patients from Other Cultures and Meeting Their Needs for Privacy 768
- PROCEDURE 38-3** Transferring a Patient in a Wheelchair for an Exam 769
- PROCEDURE 38-4** Assisting with a General Physical Exam 770
- PROCEDURE 39-1** Assisting with a Gynecological Exam 792
- PROCEDURE 39-2** Assisting During the Exam of a Pregnant Patient 794
- PROCEDURE 39-3** Assisting with a Cervical Biopsy 794
- PROCEDURE 40-1** Measuring Infants 822
- PROCEDURE 40-2** Maintaining Growth Charts 823
- PROCEDURE 40-3** Collecting a Urine Specimen from a Pediatric Patient 825
- PROCEDURE 41-1** Educating Adult Patients About Daily Water Requirements 841
- PROCEDURE 42-1** Assisting with a Scratch Test Examination 862
- PROCEDURE 42-2** Assisting with a Sigmoidoscopy 863
- PROCEDURE 42-3** Assisting with a Needle Biopsy 864
- PROCEDURE 43-1** Preparing the Ophthalmoscope for Use 883
- PROCEDURE 43-2** Performing Vision Screening Tests 883
- PROCEDURE 43-3** Administering Eye Medications 886
- PROCEDURE 43-4** Performing Eye Irrigation 888
- PROCEDURE 43-5** Measuring Auditory Acuity 889
- PROCEDURE 43-6** Administering Eardrops 890
- PROCEDURE 43-7** Performing Ear Irrigation 891
- PROCEDURE 44-1** Creating a Sterile Field 913
- PROCEDURE 44-2** Performing a Surgical Scrub 914
- PROCEDURE 44-3** Donning Sterile Gloves 915
- PROCEDURE 44-4** Assisting as a Floater (Unsterile Assistant) During Minor Surgical Procedures 916
- PROCEDURE 44-5** Assisting as a Sterile Scrub Assistant During Minor Surgical Procedures 917
- PROCEDURE 44-6** Assisting After Minor Surgical Procedures 917
- PROCEDURE 44-7** Suture Removal 918
- PROCEDURE 45-1** Using a Microscope 938
- PROCEDURE 46-1** Obtaining a Throat Culture Specimen 966
- PROCEDURE 46-2** Performing a Quick Strep A Test on a Throat Specimen 967
- PROCEDURE 46-3** Preparing Microbiologic Specimens for Transport to an Outside Laboratory 967
- PROCEDURE 46-4** Preparing a Microbiologic Specimen Smear 968
- PROCEDURE 46-5** Performing a Gram Stain 968
- PROCEDURE 47-1** Collecting a Clean-Catch Mid-Stream Urine Specimen 990
- PROCEDURE 47-2** Collecting a 24-Hour Urine Specimen 991
- PROCEDURE 47-3** Establishing Chain of Custody for a Urine Specimen 992
- PROCEDURE 47-4** Measuring Specific Gravity with a Refractometer 993
- PROCEDURE 47-5** Performing a Reagent Strip Test 993
- PROCEDURE 47-6** Pregnancy Testing Using the EIA Method 994
- PROCEDURE 47-7** Processing a Urine Specimen for Microscopic Examination of Sediment 995
- PROCEDURE 47-8** Fecal Occult Blood Testing Using the Guaiac Testing Method 997
- PROCEDURE 48-1** Quality Control Procedures for Blood Specimen Collection 1024
- PROCEDURE 48-2** Performing Venipuncture Using an Evacuated System 1025
- PROCEDURE 48-3** Performing Capillary Puncture 1027
- PROCEDURE 48-4** Preparing a Blood Smear Slide 1029
- PROCEDURE 48-5** Measuring Hematocrit Percentage After Centrifuge 1030
- PROCEDURE 48-6** Measuring Blood Glucose Using a Handheld Glucometer 1032

- PROCEDURE 48-7** Performing a Rapid Infectious Mononucleosis Test 1032
- PROCEDURE 49-1** Obtaining an ECG 1056
- PROCEDURE 49-2** Holter Monitoring 1057
- PROCEDURE 49-3** Measuring Forced Vital Capacity Using Spirometry 1059
- PROCEDURE 49-4** Obtaining a Peak Expiratory Flow Rate 1060
- PROCEDURE 49-5** Obtaining a Pulse Oximetry Reading 1061
- PROCEDURE 50-1** Assisting with an X-ray Examination 1081
- PROCEDURE 50-2** Documentation and Filing Techniques for X-rays 1081
- PROCEDURE 51-1** Helping the Licensed Practitioner Comply with the Controlled Substances Act of 1970 1104
- PROCEDURE 51-2** Interpreting a Prescription 1104
- PROCEDURE 53-1** Administering Oral Drugs 1139
- PROCEDURE 53-2** Administering Buccal or Sublingual Drugs 1141
- PROCEDURE 53-3** Drawing a Drug from an Ampule 1142
- PROCEDURE 53-4** Reconstituting and Drawing a Drug for Injection 1142
- PROCEDURE 53-5** Giving an Intradermal (ID) Injection 1143
- PROCEDURE 53-6** Giving a Subcutaneous (Subcut) Injection 1144
- PROCEDURE 53-7** Giving an Intramuscular (IM) Injection 1145
- PROCEDURE 53-8** Administering Inhalation Therapy 1146
- PROCEDURE 53-9** Administering and Removing a Transdermal Patch and Providing Patient Instruction 1147
- PROCEDURE 53-10** Assisting with Administration of a Urethral Drug 1148
- PROCEDURE 53-11** Administering a Vaginal Medication 1148
- PROCEDURE 53-12** Administering a Rectal Medication 1149
- PROCEDURE 54-1** Administering Cryotherapy 1169
- PROCEDURE 54-2** Administering Thermotherapy 1170
- PROCEDURE 54-3** Teaching a Patient How to Use a Cane 1171
- PROCEDURE 54-4** Teaching a Patient How to Use a Walker 1172
- PROCEDURE 54-5** Teaching a Patient How to Use Crutches 1172
- PROCEDURE 55-1** Teaching Patients How to Read Food Labels 1198
- PROCEDURE 55-2** Alerting Patients with Food Allergies to the Dangers of Common Foods 1199
- PROCEDURE 56-1** Preparing a Travel Expense Report 1225
- PROCEDURE 56-2** Preparing an Agenda 1226
- PROCEDURE 56-3** Completing an Incident Report 1226
- PROCEDURE 56-4** Generating Payroll 1227
- PROCEDURE 57-1** Stocking the Crash Cart 1253
- PROCEDURE 57-2** Performing an Emergency Assessment 1254
- PROCEDURE 57-3** Foreign Body Airway Obstruction in a Responsive Adult or Child 1254
- PROCEDURE 57-4** Foreign Body Airway Obstruction in a Responsive Infant 1256
- PROCEDURE 57-5** Controlling Bleeding 1257
- PROCEDURE 57-6** Cleaning Minor Wounds 1258
- PROCEDURE 57-7** Caring for a Patient Who Is Vomiting 1258
- PROCEDURE 57-8** Assisting During a Chemical Disaster 1259
- PROCEDURE 58-1** Résumé Writing 1279

Digital Exercises and Activities

ACTIVSim

Christopher Matthews 491, 798, 1108, 1153
Cindy Chen 43, 62, 383, 558, 570, 943, 1203
John Miller 320, 470, 506, 540, 1036, 1121
Ken Washington 244, 524, 664, 692, 973
Mohammad Nassar 219, 584, 737, 1176, 1231
Peter Smith 109, 617, 715, 829, 895
Raja Lautu 408, 626, 775, 1065
Shenya Jones 93, 175
Sylvia Gonzales 299, 345, 649, 922, 1000
Valarie Ramirez 190, 677, 756, 845, 867

Body Animat3D

Acid-Base Balance: Acidosis 589
Acid-Base Balance: Alkalosis 589
Alzheimer's Disease 611, 844
Asthma 591
Basic Chemistry (Organic Molecules) 480
Breast Cancer 636, 797
Burns 499, 1261
Cardiac Cycle 544
Cells and Tissues 484
Concussion 1238
COPD 592
Coronary Artery Disease (CAD) 552, 866
Digestion: Lactose Intolerance 1193
Fluid and Electrolyte Imbalances 482
Food Absorption 656
Hearing Loss: Sensorineural 687, 894
Heart Failure Overview 553
Homeostasis 472
Hypertension 551, 755
Hyperthyroidism 674
Immune Response: Hypersensitivity 579
Inflammation 497, 582
Left-Side Heart Failure 553
Liver Failure 659
Lymph and Lymph Node Circulation 572
Medication Absorption 1088
Medication Distribution 1088
Medication Excretion 1088

Medication Metabolism 1088
Meiosis vs. Mitosis 485, 648
Muscle Contraction 525
Nerve Impulse 601
Obesity 1194
Osteoarthritis vs. Rheumatoid Arthritis 518
Osteoporosis 520
Oxygen Transport and Gas Exchange 589
Pharmacokinetics vs. Pharmacodynamics 1088
Prostate Cancer 632, 797
Protein Synthesis 1179
Renal Function 623
Respiratory Failure 592
Respiratory Tract Infections 592
Right-Side Heart Failure 553
Spinal Cord Injury 606
Strokes 563, 616
Type 1 Diabetes 672
Type 2 Diabetes 672
Wound Healing 898

Electronic Health Records

Adding Vital Signs as Part of an Office Visit 755
Administering Patient Educational Material 319
Blocking Appointment Times 344
Building a Patient's Face Sheet 736
Charting a No Show 344
Correcting Errors in EHR 258
Creating a Patient Letter 218
Creating a Letter to Referring Physician 218
Creating a Patient Referral 382
Creating a Patient's Order Form 1034
Creating a Routing Slip for Billing 382
Creating an Electronic Schedule Matrix 258
Documenting Administration of Patient Educational Material 319
Documenting a Patient Message 298
Documenting a Physical Exam 774
Documenting a Procedure 774
Documenting in a Patient's Progress Note 736
Documenting Medication Administration 1152

Documenting Vital Signs	755
Drafting an Email to a Patient	218
Locating an Existing Appointment	344
Maintaining the CPT Database	429
Maintaining the ICD-10 Database	406
Managing Patient Prescriptions	1152
Ordering a Test	999
Printing a Patient's Face Sheet	736
Processing Test Results	999
Recording Test Results	999
Recording Vital Signs for Pediatric Patients	755
Reminders for Ordering Office Supplies	174
Reviewing a Face Sheet	258
Scheduling a Patient Appointment	258
Scheduling an Appointment for a New Patient	344
Scheduling an Appointment for an Existing Patient	344
Sending and Processing a Patient Message	298
Sending a Patient's Test Report	1034
Task Sequencing	174
Updating a Patient's Chart	243
Updating Patient Demographics	243
Using CPT Codes	429
Using ICD-10 Diagnostic Codes	406
Verifying a Patient's Insurance Coverage	382
Viewing Vital Signs in a Patient's Chart	755
Working with the Task Feature	174

Skills Video

Administering Drugs by Mouth	1129
Aseptic Hand Hygiene	98
Applying Standard Precautions	698
Assisting after Minor Surgical Procedures	913
Assisting with a General Physical Exam	764
Assisting with the Gynecological Exam	779
Caring for a Patient Who Is Vomiting	1245
Cleaning Minor Wounds	1242
Collecting a Clean-Catch Midstream Specimen	976
Communicating with the Anxious Patient	52
Communicating Effectively with Patients from Other Cultures and Meeting Their Needs for Privacy	54, 774
Completing an Incident Report	1216
Controlling Bleeding	1238
Correcting the Patient Medical Record	236
Creating a Sterile Field	905
Donning Sterile Gloves	907
Drawing a Drug from an Ampule	1130
Establishing and Conducting the Supply Inventory and Receiving Supplies	160
Giving an Intradermal Injection	1132
Giving a Subcutaneous Injection	1132
Giving an Intramuscular Injection	1132
Guidelines for Disinfecting Exam Room Surfaces	180
Holter Monitoring	1052
Initiating a Paper-Based Patient Medical Record	227
Interpreting a Prescription	1101
Locating an ICD-10-CM Code	403
Locating a CPT code	424
Manage a Prescription Refill	284, 1106
Measuring Adults and Children	748, 827
Measuring and Recording Pulse and Respirations	744
Measuring and Recording Temperature	742
Measuring Auditory Acuity	880
Measuring Blood Glucose Using a Handheld Glucometer	1022
Measuring Forced Vital Capacity Using Spirometry	1055
Measuring Hematocrit Percentage after Centrifuge	1020
Measuring Infants	814
Obtaining an ECG	1050
Obtaining a Medical History	730
Obtaining a Peak Expiratory Flow Rate	1056
Obtaining a Pulse Oximetry Reading	1056
Obtaining a Throat Culture Specimen	960
Obtaining Information from a Geriatric Patient	835
Obtaining Information from a Patient with a Hearing Aid	879
Performing an Emergency Assessment	1235
Performing a Reagent Strip Test	984
Performing a Surgical Scrub	907
Performing Cardiopulmonary Resuscitation (CPR)	1247
Performing Ear Irrigation	881
Performing Vision Screening Tests	874
Petty Cash	1208
PHI Authorization to Release Health Information	253
Preparing a Blood Smear Slide	1020
Positioning the Patient for an Exam	762
Posting Charges, Payments, and Adjustments	445
Pregnancy Testing Using the EIA Method	783, 986
Quality Control Procedures for Blood Specimen Collection	1002
Reconstituting and Drawing a Drug for Injection	1130
Registering a New Patient	222
Requesting Prior Authorization	362
Scheduling Inpatient Surgical Appointments	336
Scheduling Outpatient Surgical Appointments	335
Suture Removal	913
Taking the Blood Pressure of Adults and Older Children	747
Teaching a Patient How to Use Crutches	1167
Transferring a Patient in a Wheelchair for an Exam	762
Using a Microscope	926
Using Critical Thinking Skills During an Interview	720
Wrapping and Labeling Instruments for Sterilization in an Autoclave	703

Practice Medical Office

Admin: Check In – Interactions 61, 1202

Admin: Check In – Office Operations 108, 174, 298

Admin: Check In – Privacy and Liability 92, 218, 243

Admin: Check In – Work Task Proficiencies 137, 382

Admin: Check Out – Interactions 319

Admin: Check Out – Office Operations 407

Admin: Check Out – Privacy and Liability 258, 714, 972, 1230

Admin: Check Out – Work Task Proficiencies 275, 344, 430,
469, 1281

Clinical - Interactions 736, 774, 797, 828, 844, 866, 894, 999, 1084

Clinical – Office Operations 189, 755

Clinical – Privacy and Liability 942, 1107, 1120, 1261

Clinical – Work Task Proficiencies 894, 921, 1035, 1064, 1175

A Closer Look

Today's medical assistants juggle many tasks in the medical office. McGraw-Hill is committed to helping prepare students to succeed in their educational program and to be successful in their chosen field. Most textbooks begin with a preface and a long list of features and supplements for both instructors and their students. While keeping with this tried-and-true format, it is our intention to give you a snapshot of some of the exciting solutions available with the sixth edition of *Medical Assisting: Administrative and Clinical Procedures with Anatomy and Physiology* for your Medical Assisting course. Instructors across the country have told us how much preparation it takes to teach medical assisting—they juggle as much, maybe more, than their students. To help, we have added more detailed information on how to organize and utilize the features as well as a breakdown of Learning Outcomes and activities that correspond in the Instructor Resources portion of Connect.

The Content—a Note from the Authors

The sixth edition of *Medical Assisting: Administrative and Clinical Procedures with Anatomy and Physiology* has many exciting and noteworthy updates. With insightful feedback from our users and reviewers, we set out to create a one-of-a-kind, dynamic, practical, realistic, and comprehensive set of tools for individuals preparing to become medical assistants.

When you begin the book, you will find it is not just about rote memorization of concepts. *Medical Assisting* immerses you in the world of BWW Associates Clinic, where you learn as you confront new workplace challenges in each chapter. All elements of the book—from the case studies in each chapter and the Soft Skills Success exercises to the Practice Fusion® EHR screenshots and other visuals—immerse the student in a realistic learning environment. Case studies are built around a set of patients who regularly visit BWW Associates Clinic, and you will get to know these patients as well as the employees of BWW Associates Clinic as you move through the chapters. You will also work with most of the patients of BWW Associates when using the Medical Assisting ACTIVSim™ 2.0 program.

Within this framework, we have strived to provide the most up-to-date information about all aspects of the medical assisting profession, with a focus on consistency, authenticity, and accuracy. Along with thousands of minor tweaks and updates, *Medical Assisting*, sixth edition, incorporates the following:

- Dozens of BWW EHR documentation/progress note examples in both clinical and administrative chapters



 **ACTIVSim**

- Soft Skills Success exercises, added to the Chapter Review, test employability skills and link students to related modules in Practice Medical Office, the simulation game.
- More than 25 EHR screenshots of Practice Fusion® software, showcasing basic EHR skills in the context of the BWW Medical Associates Clinic.
- Infection control is now covered in two separate, more comprehensive chapters, with basic infection control in Chapter 7 and advanced infection control practices in Chapter 35.
- Case studies enhanced by the inclusion of more detailed clinical information and by linking the case studies and new Soft Skills Success activities where applicable.
- Revised coverage of ICD coding to focus primarily on ICD-10-CM, including detailed 1500 claim form instructions utilizing the 5010 updates to make the form compliant with ICD-10 requirements.
- Content updates, including important topics such as EHR/practice management systems, Meaningful Use, the medical assistant as a patient navigator, Globally Harmonized System (GHS), assisting in a chemical disaster, OSHA-required training, healthcare-associated infections, and other infection control practices.

A more detailed list of chapter changes is covered in the next section.

Key Chapter-by-Chapter Changes

The following chapter-by-chapter list includes the essential changes and updates made to the book. A full list of changes is available in the transition guide provided in the Instructor Resources on Connect.

Chapter 1	The medical assistant as a patient navigator, scope of practice vs. standard of care		claim form updated to 5010 standards with new instructions
Chapter 2	Affordable Care Act and Patient Centered Medical Care Home	Chapter 18	Updated codes primarily to ICD-10-CM, added key terms combination codes and laterality
Chapter 3	Professional use of personal electronic devices and social media, customer service as professionalism	Chapter 19	Changed title to <i>Procedural Coding</i> , updated to 2015 codes throughout
Chapter 4	Difference between empathy and sympathy; introduced documentation and respecting culture differences	Chapter 20	Merged chapters 20 and 21, new title <i>Patient Collections and Financial Management</i> ; new sections, including In-Office Transactions, Payments After the Patient Visit, and Returned Checks, new terms added: <i>accounts receivable (A/R)</i> , <i>accounts payable (A/P)</i>
Chapter 5	Genetic Information Nondiscrimination Act; updated FDA regulatory functions, including the Comprehensive Drug Abuse Prevention and Control Act	Chapter 21	Previous edition Chapter 22; defined microvilli, added key terms word root, prefix, and suffix
Chapter 6	Changed title and content to <i>Infection Control Fundamentals</i> ; transmission-based precautions and OSHA education and training requirements for ambulatory care	Chapter 22	Previous edition Chapter 23; added acne to pathophysiology section, changed follicle description
Chapter 7	Changed title to <i>Safety and Patient Reception</i> ; medical office safety plan, Globally Harmonized System of Classification and Labeling Chemicals (GHS), and Safety Data Sheets (SDS)	Chapter 23	Previous edition Chapter 24; added new table The Spinal Column; defined ossification, joint junctions, and dislocation; added joint replacements and fractures to content
Chapter 8	Computer networks and encryption, monitoring of professional e-mails, computer security	Chapter 24	Previous edition Chapter 25; new figures of muscle types, botulism, and tetanus
Chapter 9	ADA Amendments Act of 2008, mixing 10% bleach solution	Chapter 25	Previous edition Chapter 26; new image of heart valves; added coronary circulation section
Chapter 10	Changed title to <i>Written and Electronic Communication</i> ; delivery notification, invoice vs. statement, using “rules” for e-mail management	Chapter 26	Previous edition Chapter 27; added key terms <i>hemoglobin (Hgb)</i> , <i>hematocrit (Hct)</i> , <i>albumins</i>
Chapter 11	Records release rules, changed the terminology from chart to health record	Chapter 27	Previous edition Chapter 28; new table to summarize lymphatic organs, new figure of thymus and spleen; key terms <i>lymph node</i> , <i>spleen</i> , <i>thymus</i> , and <i>tonsils</i> ; added celiac disease
Chapter 12	Meaningful Use, expanded coverage of shared data, general guidelines for using an EHR program, practice management systems	Chapter 28	Previous edition Chapter 29; added nasal conchae parts and purposes; added parts of the pharynx
Chapter 13	Previous edition Chapter 15; now includes Retaining Files in the Office section, updated content related to filing to reflect modern office standards	Chapter 29	Previous edition Chapter 30; new figures of Schwann cells, movement of nerve impulse, gray and white matter and central canals
Chapter 14	Previous edition Chapter 13; added automated voice response information, active listening, wireless headsets, electronic telephone messaging. Deleted information on patient courtesy phone	Chapter 30	Previous edition Chapter 31; new term <i>metabolic wastes</i>
Chapter 15	Previous edition Chapter 14; defined modeling vs. return demonstration; sample e-newsletter, patient information form, and physician information figures added	Chapter 31	Previous edition Chapter 32; APGAR information with new table
Chapter 16	Electronic scheduler, examples of wave scheduling and modified wave scheduling	Chapter 32	Previous edition Chapter 33; minor revisions to improve clarity
Chapter 17	Precertification, patient-centered medical homes (PCMH) concept, Medicare tax and salary requirement updates, Insurance 1500	Chapter 33	Previous edition Chapter 34; minor revisions to improve clarity
		Chapter 34	Previous edition Chapter 35; new figure of refractions, gustatory cortex
		Chapter 35	New chapter <i>Infection Control Practices</i> ; new content, including healthcare-associated infections, injection safety, respiratory hygiene/cough etiquette, infection control related to medical equipment, surgical site infections (SSIs), and CDC reporting requirements for infectious diseases

Chapter 36	Updated descriptions of mirroring, verbalizing, and restatement	Chapter 47	Added urine transfer straws and urine culture and sensitivity
Chapter 37	Clarified the role of pain assessment; updated image of radial pulse; key terms <i>hyperventilation</i> , <i>dyspnea</i> , and <i>rhonchi</i> added	Chapter 48	Reorganized information for clarity and added new learning outcome, new information about ESR, performing blood collection, added requisition form to chapter
Chapter 38	Improved figures of patient positions; added key term <i>body mechanics</i>	Chapter 49	Updated content and photos to include MUSE Cardiology Information system; new key terms <i>rhythm strip</i> , <i>artifact</i> , and <i>peak expiratory flow rate (PEFR)</i>
Chapter 39	Revised pelvic exam section; added better explanation of preeclampsia	Chapter 50	New image of stereotactic breast biopsy; added DXA section
Chapter 40	Added pediatric dietary guidelines table, PKU, <i>growth chart</i> as key term; new vaccine information and catch-up schedule, amblyopia added; added asthma to pathophysiology section	Chapter 51	Updated information on vaccines, recordkeeping, and Rx, new key terms <i>adverse effects</i> and <i>side effects</i>
Chapter 41	New figure of kyphosis; added osteomalacia and sleep apnea to Table 41-1; sleep disorder feature; added adaptations and assistive devices information	Chapter 52	Revised image of metric steps; updated images and revised the formula method explanation
Chapter 42	Added chondrosarcomas to Table 42-1; updated several images; added chemical and nuclear stress tests information	Chapter 53	New images of calibrated spoons and oral syringes; additional information about needle selection
Chapter 43	Revised types of vision test and included contrast sensitivity and functional acuity tests; new figure with anatomy of the ear; added Weber and Rhine hearing tests with images	Chapter 54	New images of crutch gates to improve understanding
Chapter 44	Added key term <i>abscess</i> ; added information about loading and unloading scalpel, suture materials, and transport bags	Chapter 55	New images of nutrients; added celiac and non-celiac gluten sensitivity, allergy treatments, preventing obesity
Chapter 45	Revised content about microscope, CLIA Certificate of Waiver, and calibration and control samples	Chapter 56	Replenishing petty cash; new key terms, including <i>FICA</i> , <i>gross earnings</i> , <i>utilization review</i> , <i>quality assurance</i> , <i>risk management</i> , <i>diversity</i>
Chapter 46	Revised content related to viruses and disease, replaced multiple images	Chapter 57	Multiple sections revised for improved understanding of content; added information about cystic duct blockage
		Chapter 58	Revised information on resume types to improve understanding

A Guided Tour

Learning Outcomes, Key Terms, and Textbook Organization

Every learning outcome in *Medical Assisting*, sixth edition, is aligned with a level I heading. McGraw-Hill has made it even easier for students and instructors to find, learn, and review critical information. The chapter organization of the sixth edition is organized to promote learning based on what a medical assistant does in practice. The chapters build on one another to ensure student understanding of the many tasks they will be expected to perform. The chapters can be easily grouped together to create larger topics or units for the students to learn. For ease of understanding, content can be organized as follows:

- Unit One Medical Assisting as a Career—Chapters 1 to 5
- Unit Two Safety and the Environment—Chapters 6 to 9
- Unit Three Communication—Chapters 10 to 14
- Unit Four Administrative Practices—Chapters 15 to 20
- Unit Five Applied Anatomy and Physiology—Chapters 21 to 34
- Unit Six Infection Control and Clinical Practices—Chapters 35 to 44
- Unit Seven Assisting with Diagnostics—Chapters 45 to 50
- Unit Eight Assisting in Therapeutics—Chapters 51 to 55
- Unit Nine Medical Assisting Practice—Chapters 56 to 58

Key terms are called out at the beginning of each chapter and are set in bold throughout the text to further promote the mastery of learning outcomes.

LEARNING OUTCOMES	KEY TERMS
11.1 Explain the importance of patient medical records.	audit
11.2 Identify the documents that constitute a patient medical record.	CHEDDAR
11.3 Compare SOMR, POMR, SOAP, and CHEDDAR medical record formats.	demographic documentation
11.4 Recall the six Cs of charting, giving an example of each.	noncompliant objective
11.5 Describe the need for neatness, timeliness, accuracy, and professional tone in patient records.	patient record/chart
11.6 Illustrate the correct procedure for correcting and updating a medical record.	problem-oriented medical record (POMR)
11.7 Describe the steps in responding to a written request for release of medical records.	review of systems
	sign
	Subjective, Objective, Assessment, Plan (SOAP)
	source-oriented medical record (SOMR)
	subjective symptom transcription

Content Correlations

Medical Assisting, sixth edition, also provides a correlation structure that will enhance its usefulness to both students and instructors. We have been careful to ensure that the text and supplements provide coverage of topics crucial to all of the following:

- CAAHEP (Commission on Accreditation of Allied Health Education Programs) Standards and Guidelines for Medical Assisting Education Programs

- ABHES (Accrediting Bureau of Health Education Schools) Competencies and Curriculum
- AAMA (American Association of Medical Assistants) CMA (Certified Medical Assistant) Occupational Analysis
- AMT (American Medical Technologists) RMA (Registered Medical Assistant) Task List
- AMT CMAS (Certified Medical Assistant Specialist) Competencies and Examination Specifications
- NHA (National Healthcareer Association) Certified Clinical Medical Assistant (CCMA)
- NHA (National Healthcareer Association) Certified Medical Administrative Assistant (CMAAA)
- CMA (AAMA) Certification Examination Content Outline
- NCCT (National Center for Competency Testing) NCMA (National Certified Medical Assistant) Detailed Test Plan
- CAHIIM (Commission on Accreditation for Health Informatics and Information Management Education)

Correlations to these are included with the instructor resources located on Connect (see later pages for information about Connect™). In addition, CAAHEP requires that all medical assistants be proficient in the 71 entry-level areas of competence when they begin medical assisting work. ABHES requires proficiency in the competencies and curriculum content at a minimum. The opening pages of each chapter provide a list of the areas of competence that are covered within the chapter.

MEDICAL ASSISTING COMPETENCIES	
CAAHEP	ABHES
V.P.1 Use feedback techniques to obtain patient information including: (a) reflection (b) restatement (c) clarification	3. Medical Terminology d. Define and use medical abbreviations when appropriate and acceptable
V.P.11 Report relevant information concisely and accurately	4. Medical Law and Ethics a. Follow documentation guidelines b. Institute federal and state guidelines when releasing medical records or information
VI.C.4 Define types of information contained in the patient's medical record	7. Records Management c. Comply with federal, state, and local laws relating to exchange of information and describe elements of meaningful use and reports generated
VI.C.5 Identify methods of organizing the patient's medical record based on: (a) problem-oriented medical record (POMR) (b) source-oriented medical record (SOMR)	8. Administrative Procedures a. Gather and process documents f. Display professionalism through written and verbal communications
VI.C.6 Identify equipment and supplies needed for medical records in order to: (a) Create	

You will also find that each procedure is correlated to the ABHES and CAAHEP competencies within the workbook on the procedure sheets. These sheets can be easily pulled out of the workbook and placed in the student file to document proficiency.

Chapter Features

Each chapter opens with material that includes the Case Study, the learning outcomes, a list of key terms, the ABHES and CAAHEP medical assisting competencies covered in the chapter, and an introduction. Since the learning outcomes represent each of the level I headings in the chapter, they serve as the chapter outline. Chapters are organized into topics that move from the general to the specific. Updated color photographs, anatomical and technical drawings, tables, charts, and text features help educate the student about various aspects of medical assisting. The text features include the following:

- **Case Studies** are provided at the beginning of all chapters. They represent situations similar to those that the medical assistant may encounter in daily practice. The case studies include pictures of each of the patients who come to BWW Associates for care. Students will work with these patients in the ACTIVSim 2.0 program. Students are encouraged to consider the case study as they read each chapter. Case Study Questions in the end-of-chapter review check students' understanding and application of chapter content.

CASE STUDY

PATIENT INFORMATION	Patient Name	DOB	Allergies
	Mohammad Nassar	5/17/20XX	NKA
PATIENT INFORMATION	Attending	MRN	Other Information
	Elizabeth H. Williams, MD	423-90-687	Patient recently became sexually active.

mother has brought him to the appointment, but Mohammad has asked that she remain in the reception area during his appointment. She does give you a list of Mohammad's current asthma medications and the previously completed new patient documents.

Keep Mohammad (and his mother) in mind as you study this chapter. There will be questions at the end of the chapter based on the case study. The information in the chapter will help you answer these questions.

Mohammad Nassar is a 16-year-old male who is new to the practice and comes to the office today for his annual physical examination. He has a known past medical history of asthma, which has been relatively stable until recently. He states when he arrives that he has been experiencing an increasing need for his rescue inhaler in the last several days. His

CASE STUDY CRITICAL THINKING

Recall Mohammad from the beginning of the chapter. Now that you have completed the chapter, answer the following questions regarding his case.

- As a new patient, which documents should be completed prior to Mohammad being seen by the physician? What documents should he have brought with him, if available?
- Your office uses a SOAP format for medical records. After Dr. Williams completes her exam, explain where each of the new documents or pieces of information obtained during Mohammad's exam will be filed using the SOAP format.

- **Procedures** give step-by-step instructions on how to perform specific administrative or clinical tasks that a medical assistant will be required to perform. The procedures are referenced within the content when discussed. Each of the procedures is found at the end of the chapter. New figures are included with many of the procedures. In the workbook, the tearable procedure sheets that mirror the exact procedures in the book allow for easy practice and assessment. Critical procedures can also be studied in skills video exercises on Connect.

PROCEDURE 11-1 Preparing a New Patient Paper Medical Record

WORK // DOC

Procedure Goal: To assemble a new patient paper medical record

OSHA Guidelines: This procedure does not involve exposure to blood, body fluids, or tissue.

Materials: File folder, labels as appropriate (alphabet, numbers, dates, insurance, allergies, etc.), forms (patient registration, medical history, advance directives, physician progress notes, laboratory forms), and a hole punch

Method:

- Carefully create a chart label according to practice policy. This label may include the patient's last name followed by the first name, or it may be a medical record number for those offices that utilize numeric or alphanumeric filing.

RATIONALE: The label must be correct to avoid filing errors.
- Place the chart label on the right edge of the folder, extending the label the length of the tab on the folder.

- Place the date label on the top edge of the folder, updating the date according to practice policy. (The date is usually updated annually, if the patient has come into the office within the last year.)

RATIONALE: This makes it easy to identify current patient records for retrieval and identify records for purging if the patient has not been seen for a specified amount of time (often, 3 years).
- If alpha or numeric filing labels are utilized, place a patient name label on the chart according to practice policy.
- Punch holes in the appropriate forms for placement within the patient's medical record.
- Place all the forms in appropriate sections of the patient's medical record.

RATIONALE: Consistency in document placement assures that items can be found quickly when required.

- **Points on Practice** feature boxes provide guidelines on keeping the medical office running smoothly and efficiently.
- **Educating the Patient** feature boxes focus on ways to instruct patients about caring for themselves outside the medical office.
- **Caution: Handle with Care** feature boxes cover the precautions to be taken in certain situations or when performing certain tasks.

CAUTION: HANDLE WITH CARE

Maintaining Standards of Cleanliness in the Reception Area

Cleanliness is (and should be) one of a medical office's hallmarks. Not only is cleanliness required in the examination and testing rooms, it is also expected in the patient reception area. A messy patient reception area reflects badly on the practice. Patients may think, "If they don't care about this, what else do they not care about?" Maintaining standards of cleanliness helps ensure that the reception area is presentable and inviting at all times.

As a medical assistant, you may be involved—along with the physician, office manager, and other staff members—in setting the office's cleanliness standards. Standards are general guidelines. In addition to setting standards, you will need to specify the tasks required to meet each standard. You also may want to create a checklist of the tasks required to meet all of these standards.

The following list outlines standards you may want to consider. Specific housekeeping tasks for meeting those standards are included in parentheses.

- Keep everything in its place. (Complete a daily visual check for out-of-place items. Return all magazines to racks. Push chairs back into place.)
- Dispose of all trash. (Empty trash cans. Pick up trash on the floor or on furniture.)
- Prevent dust and dirt from accumulating on surfaces. (Wipe or dust furniture, lamps, and artificial plants. Polish doorknobs. Clean mirrors, wall hangings, and pictures.)

- Spot-clean areas that become dirty. (Remove scuffmarks. Clean upholstery stains.)
- Disinfect areas of the reception area if they have been exposed to body fluids. (Immediately clean and disinfect all soiled areas.)
- Remove items with care. (Take precautions when carrying potentially messy or breakable items. Do not carry too much at once.)

After the standards have been established, type and post them in a prominent place for the office staff (but not the patients) to see. The cleaning activities checklist may be posted, but the person responsible for cleaning the office also should keep a copy. It is everyone's duty to keep the office looking clean and presentable.

A schedule of specific daily and weekly cleaning activities also should be posted. Less frequent housekeeping duties, like laundering drapes, shampooing the carpet, and cleaning windows and blinds, can be noted in a tickler file so that they will be performed on a regular basis.

It is always a good idea to have a second staff member responsible for periodically working with the medical assistant on housekeeping responsibilities. That person also may be responsible for handling cleaning duties when the medical assistant is away from the office.

- **Pathophysiology** is featured in each of the chapters on anatomy and physiology. These sections provide students with details of the most common diseases and disorders of each body system and include information on the causes, common signs and symptoms, treatment, and, where possible, the prevention of each disease.

PATHOPHYSIOLOGY

LO 23.11

Common Diseases and Disorders of the Skeletal System

Arthritis is a general term meaning "joint inflammation." Although there are more than 100 types of arthritis, we will discuss the two most common types: osteoarthritis and rheumatoid arthritis.

OSTEOARTHRITIS, also known as *degenerative joint disease (DJD)*, is the most common type of joint disorder, affecting nearly everyone to some degree by the age of 70. DJD primarily affects the weight-bearing joints of the hips and knees, and the cartilage between the bones and the bones themselves begin to break down.

Causes. Research points to inflammatory processes or metabolic disorders as the etiology of DJD.

Signs and Symptoms. These include joint stiffness, aching, and pain, especially with weather changes. There is often fluid around the joint and grating noises with joint movement.

Treatment. Anti-inflammatory drugs, including aspirin and nonsteroidal anti-inflammatory drugs (NSAIDs) like naproxen and Feldene[®], may be used. Intra-articular steroid injections

may be tried for severe cases. In some cases, a series of injections of hyaluronic acid-containing medications is used when other treatments do not work. These injections serve as joint fluid replacement. Some success has been found with transplanting harvested cartilage cells from the patient's healthy knee cartilage, which are then grown in the lab and reinserted into the patient's diseased joint. Surgical scraping of the joint may also be done to remove deteriorated bone fragments. As a last resort, joint replacement may be recommended.

Joint replacement prostheses can be metal, plastic, or a combination of both. The physician can surgically replace part of the joint (partial) or the entire joint (total). An example of a partial hip replacement is the Birmingham Hip Resurfacing prosthesis. In this procedure the head of the femur is replaced by an all-metal prosthesis (see Figure 23.14). One of the advantages of partial joint replacement is that it conserves more bone than conventional total joint replacement. Conserving bone is important if additional surgery is needed in the future. The surgeon will have more natural bone to work with if a revision or new prosthesis is required.

Each chapter closes with a summary of the Learning Outcomes. The summary is followed by an end-of-chapter review with questions related to the case study, as well as 10 multiple-choice exam-style questions.


- **Soft Skills Success** practice scenarios emphasize employability skills and critical thinking in complex situations. These new exercise features are included in most non-A&P chapters and are correlated to Practice Medical Office where applicable.

SUMMARY OF LEARNING OUTCOMES	
LEARNING OUTCOMES	KEY POINTS
2.1 Discuss healthcare trends and their relationship to medical assistant practice.	Medical assistants typically work in ambulatory care settings using EHR. They can expect to work with many older patients and should practice and assist patients with preventive care.
2.2 Identify medical specialties and specialists certified by the American Board of Medical Specialties (ABMS).	The ABMS certifies 24 major medical specialties and subspecialties. Medical specialties range from cardiology to oncology. As new medical advances occur, a demand for more specialty areas may emerge.
2.3 Recognize the duties of various allied health professionals with whom medical assistants may work.	Medical assistants are members of a healthcare team. The healthcare team includes physicians, nurses, physical therapists, other allied health professionals, and patients. Understanding the duties of other healthcare professionals will assist you as a professional medical assistant. Even if you do not work with some of the team members directly, you may have to contact them through telephone, written, or electronic communication.
2.4 Compare specialty careers that a medical assistant may choose for advancement.	A variety of medical specialty careers are available for the practicing administrative or clinical medical assistant. These careers require additional training or education and/or other certifications.
2.5 Differentiate professional associations that relate to healthcare and explain their relationship to the medical assisting profession.	Being a member of a professional association is essential to medical assisting practice. Knowledge of other healthcare and medical organizations allows the practicing medical assistant to function successfully within his or her profession.

- **Medical Terminology** practice exercises have been added to all the anatomy and physiology chapters.

S O F T S K I L L S S U C C E S S

A 35-year-old male patient is scheduled for a vasectomy tomorrow. It is within your scope of practice to provide preoperative instruction and you feel confident in performing this task. When you introduce yourself and explain what you are going to do, the first words out of the patient's mouth are "How do you know what this is all about? I am the one who is getting things cut!" How would you respond to this patient?

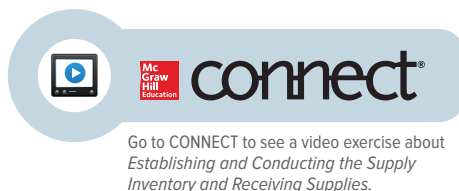


Go to PRACTICE MEDICAL OFFICE and complete the module Admin: Check Out - Interactions.

The book also includes a glossary and three appendices for use as reference tools. The glossary lists all the words presented as key terms in each chapter, along with a pronunciation guide and the definition of each term. The appendices present a list of common medical terminology, including prefixes, root words, and suffixes, as well as medical abbreviations and symbols. A Diseases and Disorders appendix provides a quick reference point for patient conditions that the student may encounter.

Digital Materials for *Medical Assisting*

For the sixth edition, we enhanced the integration between the textbook and our digital study materials and expanded our offerings to better cover all aspects of medical assisting. Links between the textbook and the key study resources are highlighted by eye-catching icons divided by resource type. Digital study resources with icons include ACTIVSim™ 2.0, BodyANIMAT3D, Practice Fusion® EHR exercises, skills videos, and Practice Medical Office.



These different types of icons are then used to call out specific activities and exercises by name. For example, above you can see an icon for Connect skills videos (the resource) about Establishing and Conducting Supply Inventory and Receiving Supplies (the exercise name).

McGraw-Hill Connect® Medical Assisting

A number of our key resources for *Medical Assisting*, 6e—including BodyANIMAT3D activities, skills video exercises, and Practice Fusion® electronic health records simulations—are part of our Connect offering for Medical Assisting.

Here is more on what you can expect to find in Connect for *Medical Assisting*, 6e specifically:

- Pre- and Post- Tests
- End-of-Chapter Exercises
- Interactive Exercises
- Administrative and Clinical Skills Video Exercises*
- BodyANIMAT3D Exercises*
- UPDATED! EHR Exercises *
 - Utilizing both video and images, students will practice proper usage of a simulated EHR environment using Practice Fusion, the #1 cloud-based electronic health record platform. www.practicefusion.com
- NEW! Forms Exercises*
 - Utilizing common forms from a medical office, students can practice entering in the proper information from scenarios using a driver's license, an insurance form, a patient registration form, or sometimes all three. Forms include Patient Medical History, Superbill, and CMS 1500.
- NEW! Coding Exercises*
 - Utilizing scenarios developed by the authors, students can practice identifying and inputting the proper ICD-10 codes.
- NEW! Medical Terminology Practice*
 - A refresher area for the body systems chapters with Word Part exercises on select terms as well as audio terms with associated spelling practice.
- A completely revised and updated Test Bank (also available through the Instructor Resources)

*in applicable chapters

As part of Connect for Medical Assisting, we also offer SmartBook's adaptive reading experience, which is powered by LearnSmart, the most widely used adaptive learning resource.

For more information on Connect—the teaching and learning platform used with all McGraw-Hill Education products—and SmartBook look for the section *Connect, Required=Results*.

Simulations and Games for Medical Assisting

We offer two separate medical assisting study products for purchase to supplement Connect—ACTIVSim and Practice Medical Office—both of which are fully incorporated into the *Medical Assisting*, 6e learning experience.

ACTIVSim 2.0 Medical Assisting Clinical Simulator is made up of two parts: 10 Patient Case Clinical Simulators and 15 Clinical Skills Simulators. The Patient Case Clinical Simulators introduce students to nonacute medical assisting patient case scenarios, procedure simulators and quick e-learning exercises. A large portion of core clinical competencies can be simulated on virtual patients, where the learner can interact with a patient and practice the different tasks that a medical assistant performs in physicians' offices. The focus of ACTIVSim is on vital signs and obtaining patient data, including a chart feature, so that the learner can document vital signs and make notes about observations that the medical assistant can brief the doctor about. For seamless training, these patients are also used in the textbook case studies. ACTIVSim gives extensive, individualized feedback, providing students with a realistic clinical experience.

For a demo of ACTIVSim, please go to www.mhhe.com/activsim, click on Courses in the top menu, then on Health Professions in the list provided, where you'll find Medical Assisting and the option to "Try a Patient Module." An instructor's manual for ACTIVSim, updated to the sixth edition, is available in your Instructor Resources on Connect.

In **Practice Medical Office (PMO)**, the student takes on the role of a new Medical Assistant in a 3D, immersive game focused on teaching the six key skills important to working in a medical office—professionalism, soft skills, office procedures, application of medical knowledge, and application of privacy and liability regulation. Practice Medical Office features twelve engaging and challenging modules representing the functional areas of a medical practice: administrative check-in interactions, clinical interactions, and administrative check-out interactions. As the players progress through each module, they will be faced with realistic situations and learning events that will test their mastery of critical job readiness skills, in a fun, engaging learning experience. PMO is accessible through a widget in Connect for *Medical Assisting*, 6e.

For a demo of Practice Medical Office, please go to http://www.mhpractice.com/products/Practice_Medical_Office and click on "Play the Demo." An instructor's manual for PMO, correlated to ABHES and CAAHEP standards by learning event, is available in your Instructor Resources on Connect.

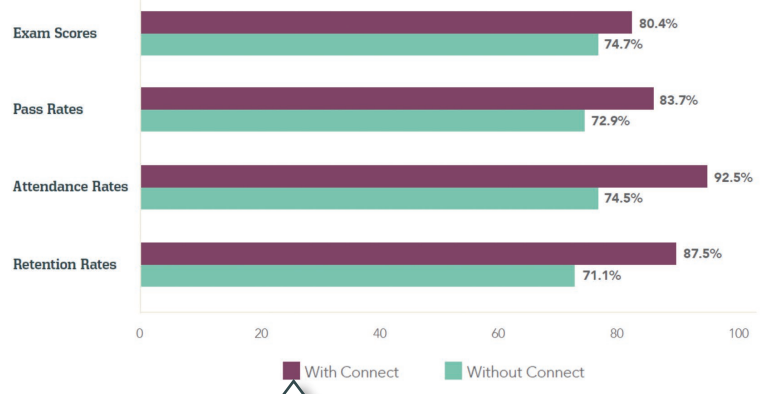


McGraw-Hill Connect® Learn Without Limits

Connect is a teaching and learning platform that is proven to deliver better results for students and instructors.

Connect empowers students by continually adapting to deliver precisely what they need, when they need it, and how they need it, so your class time is more engaging and effective.

Course outcomes improve with Connect.



Using **Connect** improves passing rates by **10.8%** and retention by **16.4%**.

88% of instructors who use **Connect** require it; instructor satisfaction increases by 38% when **Connect** is required.

Analytics

Connect Insight®

Connect Insight is Connect's new one-of-a-kind visual analytics dashboard—now available for both instructors and students—that provides at-a-glance information regarding student performance, which is immediately actionable. By presenting assignment, assessment, and topical performance results together with a time metric that is easily visible for aggregate or individual results, Connect Insight gives the user the ability to take a just-in-time approach to teaching and learning, which was never before available. Connect Insight presents data that empowers students and helps instructors improve class performance in a way that is efficient and effective.

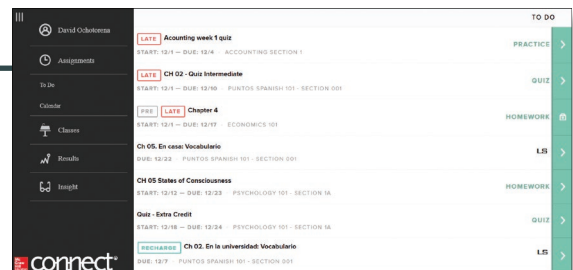
Connect helps students achieve better grades



Students can view their results for any **Connect** course.

Mobile

Connect's new, intuitive mobile interface gives students and instructors flexible and convenient, anytime-anywhere access to all components of the Connect platform.



Adaptive



More students earn **A's** and **B's** when they use McGraw-Hill Education **Adaptive** products.

SmartBook®

Proven to help students improve grades and study more efficiently, SmartBook contains the same content within the print book, but actively tailors that content to the needs of the individual. SmartBook's adaptive technology provides precise, personalized instruction on what the student should do next, guiding the student to master and remember key concepts, targeting gaps in knowledge and offering customized feedback, and driving the student toward comprehension and retention of the subject matter. Available on smartphones and tablets, SmartBook puts learning at the student's fingertips—anywhere, anytime.

Over **4 billion** questions have been answered, making McGraw-Hill Education products more intelligent, reliable, and precise.

**THE FIRST AND ONLY
ADAPTIVE READING
EXPERIENCE DESIGNED
TO TRANSFORM THE
WAY STUDENTS READ**

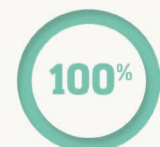
STUDENTS WANT
McGraw-Hill Education **SMARTBOOK®**



of students reported **SmartBook** to be a more effective way of reading material



of students want to use the Practice Quiz feature available within **SmartBook** to help them study



of students reported having reliable access to off-campus wifi



of students say they would purchase **SmartBook** over print alone



reported that **SmartBook** would impact their study skills in a positive way

Mc
Graw
Hill
Education

*Findings based on a 2015 focus group survey at Pellissippi State Community College administered by McGraw-Hill Education

Additional Supplementary Materials

Student Workbook for Use with Medical Assisting, 6e—in print and full color (ISBN: 0-07-75258-8)

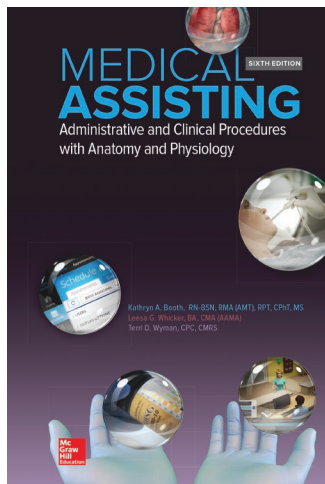
The Student Workbook provides an opportunity for the student to review and practice the material and skills presented in the textbook. Divided into parts and presented by chapter, the first part provides the following:

- Vocabulary review exercises, which test knowledge of key terms in the chapter
- Content review exercises, which test the student's knowledge of key concepts in the chapter
- Critical thinking exercises, which test the student's understanding of key concepts in the chapter
- Application exercises, which include figures and practice forms and test mastery of specific skills
- Case studies, which apply the chapter material to real-life situations or problems

Each section, Clinical and/or Administrative, contains the appropriate procedures, presented in the order in which they are shown in the student textbook. These have been revised for ease of use and include correlations to the ABHES and CAAHEP competencies mastered with the successful completion of each procedure. Accompanying Work Product Documentation (work/doc) provides blank forms for many of the procedures that require a specific type of document to complete the procedure. These documentation forms are used when completing many of the application activities as well as procedure competencies. Over 100 procedures as well as multiple application activities in the workbook include correlated work docs.

Pocket Guide for Use with Medical Assisting, 6e (ISBN: 0-07-752585-X)

The Pocket Guide is a quick and handy reference to use while working as a medical assistant or during training. It includes critical procedure steps, bulleted lists, and brief information all medical assistants should know. Information is sorted by Administrative, Clinical, Laboratory, and General content.



Instructor Resources

Medical Assisting also comes with the instructor resources you've come to expect, all of which can be found through the Instructor Resources section in Connect.

- An **Instructor's Manual** that contains everything to organize your course, complete with lecture outlines (with PowerPoint slide references), discussion points, learning activities, and case studies. Also included are the answer keys to the book and workbook.
- **Correlation Guides** map the standards of many accreditation bureaus, including The Accrediting Bureau of Health Education Schools (ABHES) Medical Assisting competencies and curriculum; The Commission on Accreditation of Allied Health Education Programs (CAAHEP) Standards and Guidelines for Medical Assisting Education Programs competencies; American Association of Medical Assistants (AAMA) Occupational Analysis; The Association of Medical Technologists (AMT) Registered Medical Assistant (RMA) Certified Exam Topics; The National Healthcareer Association (NHA) Medical Assisting Duty/Task List; the Commission for Accreditation on Health Informatics and Information Management Education (CAHIIM); and The Secretary's Commission on Achieving Necessary Skills (SCANS) areas of competence, as well as others.
- **PowerPoint Presentations** have been fully updated to include the latest figures and content and to mirror the design of the book. Teaching notes offer suggestions—in addition to those in the Instructor's Manual—to keep your class running smoothly. We have also taken steps to make our PowerPoints more accessible, including adding alt tags for images and tables and ensuring that our slides are organized to be easily read by screen readers
- An **Asset Map** breaks down all of the resources available through the book and Connect by chapter and by learning outcome, to help you identify *what* you want to include in your course and *where* to find it.
- A **Testbank**, completely revised, with over 5,000 questions, complete with tags for learning outcomes; ABHES and CAAHEP; and Bloom's taxonomy and others to organize or modify questions to meet your course needs.
- A **Transition Guide** to help users of earlier editions make the leap to this new edition, with thorough details outlined by the authors about changes big and small.

Check out the instructor resources area on Connect for additional resources, including an image library, sample syllabi, printable procedure checklists and work documents, and more!

Acknowledgments

The task of putting together a textbook and all of its supplements, both written and digital, takes a vast amount of cumulative effort and coordination among multiple individuals and companies. To acknowledge each of them here individually would take far too long. However, we would like start by acknowledging McGraw-Hill and all of the individuals that are listed on page iv in the front of this book for their continued assistance, encouragement, and support. A special thanks for those who are so close to this edition, including Michelle, Chipper, April, Katie, Bill, Srdj, Lori, and Lorraine. Without McGraw-Hill and its valued employees, there would be no need for this acknowledgment to be written.

We would also like to distinguish some individuals who worked tirelessly and directly with us, ensuring a completely improved product: Jodie Bernard, for helping us continue the work of updating all of the figures for this edition, to keep them current, accurate, and visually appealing; Florida State University College of Medicine, Family Medicine Residency Program at Lee Memorial Health System in Fort Myers, Fort Myers Eye Associates, and Pima Heart of Arizona (specifically, David I. Lapan, MD, Claudia Rasnake, MD, and Sharlene Villanueva), for welcoming us into their institutions, allowing us to shoot more current procedural photos, and

assisting us along the way. Thanks also to Jody James for picking up the pieces on numerous aspects of the project. Her attention to detail and willingness to help with whatever we needed for this edition have provided us the ability to focus on updating and reorganizing the essential content to make the 6e the best edition ever. We humbly thank each and everyone involved with this *Medical Assisting*, sixth edition.

Leesa and Terri would like to give a special thanks to Kathy Booth. Without her tireless work, team spirit and dedication to this project we would not be able to “keep the balls in the air.” Her grasp of the big picture and her constant happy nature are an inspiration to us both. It is a pleasure and an honor to work with her.

Contributors and Reviewers

We, along with McGraw-Hill, would like to thank the reviewers and contributors for their assistance in developing content, offering suggestions, and shaping this revision. We appreciate you. Many of the additions, improvements, and changes are due directly to and because of their feedback. We appreciate their insight and commitment to helping us provide information that is relevant and valuable to medical assisting students.

Reviewers (Book, Workbook, LearnSmart or ActivSim)

Nick Davis, *Southern Careers Institute*
Karlene Jaggan, BIT, PN, NRCAHA
Centura College
Shauna Phillips, RMA, CCMA, AHI *Fortis College – Phoenix*
David Martinez, MHSA, RMA *Vista College*
Kristynna Foster, MA, LVN *Charter College*
Wendy Schmerse, CPC-A, CMRS *Southern California Health Institute*
Henry Gomez, MD *ASA College*
Rebecca Ventura, RN, MSN, RMA *Davenport University – Saginaw*
Stephanie Bernard, MBA, CMA *Sanford-Brown College*
Kristy Royea, MBA, BS, CMA (AAMA), EMT-B *Mildred Elley College—Albany*
Lisa Wright, CMA (AAMA), MT, SH *Bristol Community College*
Barbara Marchelletta, CMA (AAMA), RHIT, CPC, CPT, AHI *Beal College*
Marion Odom, RMA, NCMA, CPCT, CPT, CEKG *Illinois School of Health Careers*

Melinda Wray, MA, CMA (AAMA), RMA *ECPI University*
Gerry Gordon, BA, CPC, CPB *Daytona College*
Kathleen McCall, MLT (ASCP), NCMA *DCI Career Institute*
Laura Melendez, BS, RMA, RT, BMO *Keiser University*
Adrian Rios, EMT, RMA, NCMA, MA, CPT-1 *Newbridge College*
Marlene Schmidt, MT (ASCP), DVM *Bryant & Stratton College*
Marilyn Dalton, BS, RHIT, CCS-P, CPMSM *Northeast Alabama Community College*
Mary Marks *Mitchell Community College*
Angela LeuVoy, AASMA, CMA, CBCS, CPT *Fortis College*
Luis Cedeno, BS, LPN, CPI *Miami Dade College*
Joshua Farquharson *San Joaquin Valley College – Visalia*
Marta Lopez, MD, RMA, BMO *Miami Dade College – Medical Campus*
Michelle Crissman, JD, MS, RN, CMA (AAMA) *Colorado Technical University*

Carrie Hammond, CMA (AAMA), RPT, AAS *Eagle Gate College – Murray*
Jennifer A. Leach, CCMA-NHA, BS, M.Ed *McCann School of Business and Technology*
Jean Mosley, BS, AAS, AAS, CMA (AAMA) *Surry Community College*
Jehad Ouri, CMA(AAMA) *Ohio Business College – Sheffield Village*
Kaye Bathe, CMA, BSAH *Tri-County Technical College*
Karmon Kingsley, CMA (AAMA), BS *Cleveland State Community College*
Melinda Hughes-Parnell, MSN, RN *Northwest Louisiana Technical College – Minden*
Stacey Wolfe, CMA *Community Care College*
Leeann Yurchenko, CMA (AAMA), RMA, CPC *Stautzenberger College – South*
Petra York, BS, CMA (AAMA), CPT, CET, CMAA, AHI, CPhT *Western Tech*
Lori Andrews, MSEd, RN, CMA (AAMA) *Ivy Tech Community College – Indianapolis*

Cherika de Jesus, CMA *National American University*
Leon Deutsch, MA Ed., RMA *Keiser University*
Joann Fisher, CMA (AAMA) *Elmira Business Institute (Retired)*
Rachel Houston, CMA (AAMA), AS *Cabarrus College of Health Sciences*
Beth Laurenz, BMA, BS, AAS, CMA (AAMA) *Valley View Medical Training Center*
Lynnae Lockett, RN, RMA, CMRS, MSN *Bryant & Stratton College*
Pamela McNutt, MA, RMA *National American University*
Michael Melvin, RPh, BS Pharmacy *South-ern Crescent Technical College – Griffin*
Helen Mills, RN, MSN, RMA, LXMO, AHI *Keiser University*
Joanitt Montano, MD *Blue Cliff College*
Robyn Moore-Ball, RMA, AHI *Everest College – Bedford Park*
Jennifer Morrill, CMA (AAMA), RMA *North Central Michigan College*
Kim Munson, MA, CMA (AAMA), RMA (AMT) *International College of Business*
Debra Paul, BA, CMA (AAMA) *Ivy Tech Community College*
Kathleen Michael J. Perrine, MHA, RMA, NCMA, EMT *National American University*
Donna Riley, CMA (NCCT), AAS *Elmira Business Institute*
Bruno Salazar-Perea, RMA, MD *Kaplan University*
Jennifer Spencer, CMA (AAMA) *Elmira Business Institute*
Christina Steele, BS, AAGS, RMA *Dorsey Business School*
Joseph H. Balatbat, MD, RMA, RPT, CPhT, AHI *Swedish Institute College of Health Sciences*
Patti Finney, CMA (AAMA) *Ridley Lowell Business and Technical Institute*
Marissa M. Fordunski *Plaza College*
Rosemarie Scaringella, CBCS, CMAAC *Hunter Business College—Levittown*
Dawn Surridge, CMA (AAMA), AS, CPI (NCCT), CPT (NCCT) *Ridley Lowell Business and Technical Institute*
Telcida C. Dolcine, BBA, EMT-B, RMA, RPT *New York Methodist Hospital – Center for Allied Health Education*

Constantine Hatzis, MD *Mildred Elley—NYC Metro Campus*
Muhammad Khan *St. Paul’s School of Nursing—Queens*
Jodi Anderson, LVN *Newbridge College*

Sixth Edition Page Proof Accuracy Checking Panel

Stephanie Bernard, BMA, CMA *Sanford-Brown College*
Kristynna M. Yateman-Foster *Charter College*
Sharon W. Breeding *Bluegrass Community and Technical College*
Carrie Mack *Premier Education Group / Branford Hall*
Tracy G. Crawford *Hinds Community College*
Melinda Wray, MA, CMA (AAMA), RMA *ECPI University*
Gerry Gordon BA, CPC, CPB *Daytona College*
Jennifer Spencer CMA (AAMA) *Elmira Business Institute*
Kristiana D. Routh, RMA *Institute of Medical and Business Careers*
Carrie Hammond, CMA (AAMA), RPT, AAS *Eagle Gate College – Murray*
Carole Zeglin, MS, BS, MT, RMA *Westmoreland County Community College*
Laura Melendez, BS, RMA, RT, BMO *Keiser University*
Angela M.B. Oliva, BSHA, CMRS, CCMA *ICDC College and OSC Computer Training*
Henry Gomez, MD *ASA College*
Debra Glover, RN, BSN *Goodwin College*

Subject Matter Expert Summit Attendees

Denise Garrow-Pruitt, Ed.D. *Middlesex Community College*
Carrie Mack *Premier Education Group / Branford Hall*
Angela M.B. Oliva, BSHA, CMRS, CCMA *ICDC College and OSC Computer Training*
Jocelyn Lewis, PT, DPT, MS *Community College of Philadelphia*
Lorna J. Cassano, MSPT, BA *Arcadia University and Bucks County Community College*
Kevin Chakos, PharmD *American National University*
Kerry Miller, CMA, EMT-B *Globe University*

Lori Andrews, MSED, RN, CMA (AAMA) *Ivy Tech Community College – Indianapolis*
Judith Karls, RN, BSN, MSE *Madison Area Technical College*
Mirella G. Pardee MSN, MA, RN *University of Toledo*

LearnSmart Contributors

Danielle Wilken, Ed.D, MT (ASCP) *Goodwin College*
Tammy Vannatter, BHSA, CMA (AAMA), RMA, CPC *Baker College*

Connect Practice Fusion Electronic Health Record Exercise Contributor

Amy Ensign, BHSA, CMA (AAMA), RMA (AMT) *Baker College of Clinton Township*

Connect Forms Exercise Contributor

Kerry Miller, CMA, EMT-B *Globe University*

Practice Medical Office Contributors

Suzee G. Gay, LPN
Sue Coleman, LPN, AS, RMA (AMT) *American National University*
Mario Cesar Villegas, MD *Southwest University at El Paso*
David J Holden, CMA (AAMA), RN, MSN *Bryant & Stratton College*
Dr. Marta Lopez, MD, RMA, BMO *Miami Dade College- Medical Campus*
Danielle Wilken, Ed.D, MT (ASCP) *Goodwin College*
William Hoover II, MD *Bunker Hill Community College*
Lori Andrews, MSED, RN, CMA (AAMA) *Ivy Tech Community College – Indianapolis*
Daria M Garcia, AAS, RMA, NCMA *Kaplan College*
Helen Mills, RN, MSN, RMA, AHI, LXMO *Keiser University*
Dr. Barbara Worley, BS, DPM, RMA (AMT) *King’s College*

ActivSim Instructor’s Manual Contributor

Danielle Wilken, Ed.D, MT (ASCP) *Goodwin College*

PowerPoint Contributor

Yvonne Alles BS, MBA, DHA, STAR *Davenport University*

Introduction to Medical Assisting

CASE STUDY

EMPLOYEE INFORMATION	Employee Name	Position	Credentials
	Sandro Peso	Student	In Training
	Supervisor	Date of Hire	Other Information
	Malik Katahri, CMM	10/11/20XX	Assigned to Dr. Paul F. Buckwalter

Sandro Peso is a 33-year-old father of four who lost his job at a local factory. He is a medical assistant-in-training and is currently working at BWW Associates. He will be working in the administrative, clinical, and laboratory sections of the office. He wants to decide which area he likes best and where he might like to work when he finishes his training. It will not be



© Ryan McVay/Getty Images RF

long until he graduates and needs to take the test to become credentialed. He is nervous about the exam but really wants to do well to get the best job he can to help support his family.

Keep Mr. Peso in mind as you study this chapter. There will be questions at the end of the chapter based on the case study. The information in the chapter will help you answer these questions.

LEARNING OUTCOMES

After completing Chapter 1, you will be able to:

- 1.1 Recognize the duties and responsibilities of a medical assistant.
- 1.2 Distinguish various organizations related to the medical assisting profession.
- 1.3 Explain the need for and importance of the medical assistant credentials.
- 1.4 Identify the training needed to become a professional medical assistant.
- 1.5 Discuss professional development as it relates to medical assisting education.

KEY TERMS

- | | |
|--|---|
| accreditation | continuing education |
| Accrediting Bureau of Health Education Schools (ABHES) | cross-training |
| American Association of Medical Assistants (AAMA) | Health Insurance Portability and Accountability Act (HIPAA) |
| American Medical Technologists (AMT) | licensed practitioner |
| certification | multiskilled healthcare professional (MSHP) |
| Certified Medical Assistant (CMA) | Occupational Safety and Health Administration (OSHA) |
| Clinical Laboratory Improvement Amendments of 1988 (CLIA '88) | patient navigator |
| Commission on Accreditation of Allied Health Education Programs (CAAHEP) | professional development |
| | Registered Medical Assistant (RMA) |
| | registration |
| | résumé |
| | scope of practice |
| | standard of care |

- V.C.12 Define patient navigator
- V.C.13 Describe the role of the medical assistant as a patient navigator
- X.C.1 Differentiate between the scope of practice and standards of care for medical assistants
- X.C.5 Discuss licensure and certification as they apply to healthcare providers
- X.P.1 Locate a state’s legal scope of practice for medical assistants

1. General Orientation

- a. Describe the current employment outlook for the medical assistant
- c. Describe medical assistant credentialing requirements and the process to obtain the credential. Comprehend the importance of credentialing
- d. List the general responsibilities & skills of the medical assistant

4. Medical Law and Ethics

- f. Comply with federal, state, and local health laws and regulations as they relate to healthcare settings
 - (1) Define scope of practice for the medical assistant within the state that the medical assistant is employed
 - (2) Describe what procedures can and cannot be delegated to the medical assistant and by whom within various employment settings

11. Career Development

- b. Demonstrate professional behavior

▶ Introduction

Healthcare is changing at a rapid rate. Advanced technology, implementation of cost-effective medicine, and the aging population are all factors that have caused growth in the healthcare services industry. As the healthcare services industry expands, the US Department of Labor projects that medical assisting will grow 29% between 2012 and 2022, which is much faster than the average for all occupations. The growth in the number of physicians’ group practices and other healthcare practices that use support personnel will in turn continue to drive up demand for medical assistants. Medical assisting is the perfect complement to the changing healthcare industry.

Medical assistants have the training to perform a variety of duties, which qualify them to fill many different job openings in the healthcare industry. This chapter provides an introduction to the medical assisting profession. It presents a general description of your future duties, credentials, and needed training. Some basic facts about professional associations, organizations, and development related to medical assisting are also discussed. All of this will help you begin your career as a medical assistant.

▶ Responsibilities of the Medical Assistant

LO 1.1

Your specific responsibilities as a medical assistant will depend on the type, location, and size of the facility, as well as its medical specialties. General tasks performed by most

medical assistants include working and communicating with patients throughout the healthcare experience. In fact, medical assistants often perform the role of **patient navigator**. They help patients find their way through the sometimes complex healthcare system, helping them overcome any barriers they may encounter to help ensure that they get the diagnosis and treatment they need in a timely manner.

Medical assistants work in an administrative, clinical, and/or laboratory capacity. As an administrative medical assistant, you may handle the payroll for the office staff (or supervise a payroll service), obtain equipment and supplies, and serve as the link between the physician or other **licensed practitioner** and representatives of pharmaceutical and medical supply companies. As a clinical medical assistant, you will be the physician’s or other licensed practitioner’s right arm by maintaining an efficient office, preparing and maintaining medical records, assisting the practitioner during examinations, and keeping examination rooms in order. Note that a licensed practitioner in healthcare means an individual other than a physician who is licensed or otherwise authorized by the state to provide healthcare services. Your laboratory duties as a medical assistant may include performing basic laboratory tests and maintaining laboratory equipment. In small practices, you may handle all duties. In larger practices, you may specialize in a particular duty. As you grow in your profession, advanced duties may be required. The lists of duties in Table 1-1 are provided to help you better understand what you will be doing when you practice as a medical assistant.

TABLE 1-1 Daily Duties of Medical Assistants

Duty Type	Entry-Level Duties	Advanced Duties
<p>General</p>  <p>© ERproductions Ltd/Blend Images LLC RF</p>	<ul style="list-style-type: none"> • Recognizing and responding effectively to verbal, nonverbal, and written communications • Explaining treatment procedures to patients • Providing patient education within scope of practice • Facilitating treatment for patients from diverse cultural backgrounds and for patients with hearing or vision impairments, or physical or mental disabilities • Acting as a patient navigator and advocate • Maintaining medical records 	<p>None</p>
<p>Administrative</p>  <p>© JGI/Daniel Grill/Blend Images/Getty Images RF</p>	<ul style="list-style-type: none"> • Greeting patients • Handling correspondence • Scheduling appointments • Answering telephones • Creating and maintaining patient medical records • Handling billing, bookkeeping, and insurance processing • Performing medical transcription • Arranging for hospital admissions 	<ul style="list-style-type: none"> • Developing and conducting public outreach programs to market the licensed practitioner's professional services • Negotiating leases of equipment and supply contracts • Negotiating nonrisk and risk managed care contracts • Managing business and professional insurance • Developing and maintaining fee schedules • Participating in practice analysis • Coordinating plans for practice enhancement, expansion, consolidation, and closure • Performing as a HIPAA compliance officer • Providing personnel supervision and employment practices • Providing information systems management
<p>Clinical</p>  <p>© Anderson Ross/Photolibary RF</p>	<ul style="list-style-type: none"> • Assisting the licensed practitioner during examinations • Assisting with asepsis and infection control • Performing diagnostic tests, such as spirometry and ECGs • Giving injections, where allowed • Phlebotomy, including venipuncture and capillary puncture • Disposing of soiled or stained supplies • Performing first aid and cardiopulmonary resuscitation (CPR) • Preparing patients for examinations • Preparing and administering medications as directed by the licensed practitioner, and following state laws for invasive procedures • Recording vital signs and medical histories • Removing sutures or changing dressings on wounds • Sterilizing medical instruments • Instructing patients about medication and special diets, authorizing drug refills as directed by the licensed practitioner, and calling pharmacies to order prescriptions • Assisting with minor surgery • Teaching patients about special procedures before laboratory tests, surgery, X-rays, or ECGs 	<ul style="list-style-type: none"> • Initiating an IV and administering IV medications with appropriate training, and as permitted by state law • Reporting diagnostic study results • Assisting patients in the completion of advance directives and living wills • Assisting with clinical trials
<p>Laboratory</p>  <p>© Adam Gault/Getty Images RF</p>	<ul style="list-style-type: none"> • Performing Clinical Laboratory Improvement Amendments (CLIA)–waived tests, such as a urine pregnancy test, on the premises • Collecting, preparing, and transmitting laboratory specimens • Teaching patients to collect specific specimens properly • Arranging laboratory services • Meeting safety standards (OSHA guidelines) and fire protection mandates 	<ul style="list-style-type: none"> • Performing as an OSHA compliance officer • Performing moderately complex laboratory testing with appropriate training and certification

You may also choose to specialize in a specific area of healthcare. For example, podiatric medical assistants make castings of feet, expose and develop X-rays, and assist podiatrists in surgery. Ophthalmic medical assistants help ophthalmologists (doctors who provide eye care) by administering diagnostic tests, measuring and recording vision, testing the functioning of eyes and eye muscles, and performing other duties. A discussion of medical specialties is found in the chapter *Healthcare and the Healthcare Team*. For specific information about medical assistant duties within medical specialty practice, review the following chapters: *Assisting in Reproductive and Urinary Specialties*, *Assisting in Pediatrics*, *Assisting in Geriatrics*, *Assisting in Other Medical Specialties*, and *Assisting with Eye and Ear Care*.

▶ Medical Assisting Organizations LO 1.2

Many organizations guide the profession of medical assisting. These include professional associations such as the American Association of Medical Assistants (AAMA) and the American Medical Technologists (AMT), as well as accrediting and other organizations. As a future medical assistant, knowledge of these organizations will help you make critical decisions about your career.

Professional associations set high standards for quality and performance in a profession. They define the tasks and functions of an occupation, and they provide members with the opportunity to communicate and network with one another. Becoming a member of a professional association helps you achieve career goals and furthers the profession of medical assisting. Joining as a student is encouraged and some associations even offer discounted rates to students for a specified amount of time after graduation.

American Association of Medical Assistants

The idea for a national association of medical assistants—later to be called the **American Association of Medical Assistants (AAMA)**—was suggested at the 1955 annual state convention of the Kansas Medical Assistants Society. The next year, at an American Medical Association (AMA) meeting, the AAMA was officially created. In 1978, the US Department of Health, Education, and Welfare declared medical assisting as an allied health profession.

AAMA's Purpose The AAMA works to raise standards of medical assisting to a more professional level. It is the only professional association devoted exclusively to the medical assisting profession.

AAMA Occupational Analysis In 1996, the AAMA formed a committee whose goal was to revise and update its standards for the **accreditation** of programs that teach medical assisting. The committee's findings were published in 1997 as the "AAMA Role Delineation Study: Occupational Analysis of the Medical Assistant Profession." The study included a Role Delineation Chart that outlined the areas of competence to be mastered as an entry-level medical assistant. The Role Delineation Chart of the CMA (AAMA) was updated in 2003 to include additional

competencies. In 2009, and again in 2013, it was updated and named the Occupational Analysis of the CMA (AAMA).

The Occupational Analysis provides the basis for medical assisting education and evaluation. Mastery of the areas of competence listed in the Occupational Analysis is required for all students in accredited medical assisting programs. The Occupational Analysis includes three areas of competence: administrative, clinical, and general. Each of these three areas is divided into narrower areas, for a total of 10 specific areas of competence. Within each area, a bulleted list of statements describes the medical assistant's role.

According to the AAMA, the Occupational Analysis may be used to

- Describe the field of medical assisting to other healthcare professionals.
- Identify entry-level areas of competence for medical assistants.
- Help practitioners assess their own current competence in the field.
- Aid in the development of **continuing education** programs.
- Prepare appropriate types of materials for home study.

Professional Support for CMAs (AAMA) When you become a member of the AAMA, you will have a large support group of active medical assistants. Membership benefits include

- Professional publications, such as *CMA Today*.
- A large variety of educational opportunities, such as chapter-sponsored seminars and workshops about the latest administrative, clinical, and management topics.
- Group insurance.
- Legal information.
- Local, state, and national activities that include professional networking and multiple continuing education opportunities.
- Legislative monitoring to protect your right to practice as a medical assistant.
- Access to the website at <http://www.aama-ntl.org>.

American Medical Technologists (AMT)

American Medical Technologists (AMT) is a nonprofit certification agency and professional membership association representing over 45,000 individuals in allied healthcare. Established in 1939, AMT began a program to register medical assistants at accredited schools in the early 1970s. The AMT provides allied health professionals with professional certification services and membership programs to enhance their professional and personal growth. Upon certification, individuals automatically become members of AMT and start to receive benefits. You will read more about the benefits of joining a professional organization later in the chapter. The AMT provides many certifications, including the Registered Medical Assistant RMA (AMT) credential and the Certified Medical Assistant Specialist CMAS (AMT) credential.

Professional Support for RMA (AMT) The AMT offers many benefits for RMA (AMT). These include

- Professional publications.
- Membership in the AMT Institute for Education.
- Group insurance programs—liability, health, and life.
- State chapter activities.
- Legal representation in health legislative matters.
- Annual meetings and educational seminars.
- Student membership.
- Access to the website at <http://www.americanmedtech.org>.

Other Medical Assisting Organizations

In addition to the AAMA, which provides the CMA credential, and the AMT, which provides the RMA and CMAS credentials, many organizations provide certification testing and medical assisting credentials. Specific information about medical assisting credentials is discussed later in this chapter.

National Healthcareer Association (NHA) This organization was established in 1989 as an information resource and network for today’s active healthcare professionals. NHA provides certification and continuing education services for healthcare professionals and curriculum development for educational institutions. It offers a variety of certification exams, including Billing and Coding Specialist (CBCS), Medical Administrative Assistant (CMAA), and Clinical Medical Assistant (CCMA). Some of the NHA’s programs and services include

- Certification development and implementation.
- Continuing education curriculum development and implementation.
- Program development for unions, hospitals, and schools.
- Educational, career advancement, and networking services for members.
- Registry of certified professionals.

Healthcare educators working in their various fields of study develop the National Healthcare Association certification exams. The NHA is a member of the National Organization of Competency Assurance (NOCA).

National Center for Competency Testing (NCCT)

This is an independent agency that certifies the validity of competency and knowledge of the medical profession through examination. Medical assistants and medical office assistants receive the designation of National Certified Medical Assistant (NCMA) and National Certified Medical Office Assistant (NCMOA) after passing the certification examination. The NCCT avoids any allegiance to a specific organization or association.

The National Association for Health Professionals

(NAHP) NAHP (<http://www.nahpusa.com>) offers multiple credentials for healthcare professionals. The organization, which has been in existence for 30 years, prides itself

in making the process of obtaining a credential an accessible, affordable, and obtainable goal for individuals who wish to show commitment to their chosen profession. Having multiple credentials with one agency makes maintaining continuing education easier for practicing healthcare professionals. The NAHP offers many credentials, including the Medical Assistant, Phlebotomy Technician, EKG Technician, Coding Specialist, Administrative Health Assistant, Patient Care Technician, Dental Assistant, Pharmacy Technician, and Surgical Technician credentials.

With the growth of the medical assisting field, new organizations have developed to serve professionals. For example, the American Medical Certification Association (AMCA), founded in 2010, provides certification for clinical and/or administrative medical assistants. The American Registry of Medical Assistants (ARMA) is also one of many national certifying organizations, which certifies/registers medical assistants. Prospective medical assistants should be knowledgeable about the agency they will use to obtain their medical assisting credential.

▶ Medical Assistant Credentials LO 1.3

Certification is confirmation by an organization that an individual is qualified to perform a job to professional standards. **Registration**, on the other hand, does not guarantee an individual’s competence. Instead, registration is the granting of a title or license by a board that gives permission to practice in a chosen profession. Once credentialed, you earn the right to wear a pin that is obtained through the credentialing organization (Figure 1-1).

Medical assisting credentials such as certification and registration are not always required to practice as a medical assistant. However, employers today are aggressively recruiting medical assistants who are credentialed in their field. Small physician practices are being consolidated or merged into larger providers of healthcare, such as hospitals, to decrease operating expenses. Human resource directors of these larger organizations place great importance on professional credentials for their employees.



FIGURE 1-1 Wearing one of these pins indicates you have obtained a credential in medical assisting. Medical assistants registered by the American Medical Technologists must pass the RMA exam to be certified and can wear the pin on the left. Members of the American Association of Medical Assistants who pass the CMA exam wear the pin on the right.

© Total Care Programming, Inc.

An accredited medical assisting program is competency based; this means that standards are set by an accrediting body for skill and proficiency in administrative and clinical tasks. Accrediting bodies are discussed later in this chapter. It is the educational institution's duty to ensure that medical assisting students learn all medical assisting competencies and that evidence is clearly documented for each student. Periodic evaluations are performed by the accrediting agencies to ensure the effectiveness of the program.

Competencies and proficiency assessments are parts of the CMA (AAMA) examination. For example, administering medications is a competency required of accredited medical assisting programs and is a component of the CMA (AAMA) examination. The CMA (AAMA) credential and the affiliation with a professional organization demonstrate competence and provide evidence of training. They also lessen the likelihood of a legal challenge to the quality of a medical assistant's work. Basically, there is less chance of malpractice if employees are credentialed through AAMA or AMT. School accreditation and credentials will be discussed in more detail later in this chapter.

State and Federal Regulations

Certain provisions of the **Occupational Safety and Health Administration (OSHA)** and the **Clinical Laboratory Improvement Amendments of 1988 (CLIA '88)** are making mandatory credentialing for medical assistants a logical step in the hiring process. OSHA and CLIA '88 regulate health-care but presently do not require that medical assistants be credentialed. However, various components of these statutes can be met by demonstrating that medical assistants are certified. For example, some physician offices perform moderately complex laboratory testing on-site. The medical assistant can perform moderately complex tests if she or he has the appropriate training and skills.

AAMA Credential

The **Certified Medical Assistant (CMA)** credential is awarded by the Certifying Board of the AAMA. The AAMA's certification examination evaluates mastery of medical assisting competencies based on the Occupational Analysis of the CMA (AAMA), which is available at <http://www.aama-ntl.org/resources/library/OA.pdf>. The National Board of Medical Examiners (NBME) also provides technical assistance in developing the tests.

CMAs (AAMA) must recertify the credential every 5 years. To be recertified as a CMA (AAMA), 60 contact hours must be accumulated during the 5-year period: 10 in the administrative area, 10 in the clinical area, and 10 in the general area, with 30 additional hours in any of the three categories. In addition, 30 of these contact hours must be from an approved AAMA program. The AAMA also requires you to hold a current CPR card.

The recertification mandate requires you to learn about new medical developments through education courses or participation in an examination. Hundreds of continuing education courses are sponsored by local, state, and national AAMA groups. The AAMA also offers self-study courses through its continuing education department.

Only students who have completed medical assisting programs accredited by CAAHEP and ABHES are eligible to take the certification examination. The AAMA offers the Candidate's Guide to the Certification Examination to help applicants prepare for the examination. This guide explains the test format and test-taking strategies. It also includes a sample examination with answers and information about study references. Some schools have also incorporated test preparation reviews into their programs.

The CMA (AAMA) examination is a computerized test that may be taken any time at a designated testing site in your area. You may search the Internet for an application and test review materials. Once you have successfully passed the CMA (AAMA) examination, you have earned the right to add that credential to your name, such as Miguel A. Perez, CMA (AAMA).

AMT Credentials

The American Medical Technologists (AMT) organization credentials medical assistants as **Registered Medical Assistants (RMA)** or Certified Medical Assistant Specialists (CMAS). Although this section focuses on the RMA credential, you can find more about the CMAS credential on the AMT website at <http://www.amt1.org>.

Requirements for the RMA (AMT) credential include

- Graduation from a medical assistant program that is accredited by ABHES or CAAHEP, or is accredited by a regional accrediting commission, by a national accrediting organization approved by the US Department of Education, or by a formal medical services training program of the US Armed Forces.
- Alternatively, employment in the medical assisting profession for a minimum of 5 years, no more than 2 years of which may have been as an instructor in the postsecondary medical assistant program.
- Passing the AMT examination for RMA (AMT) certification.

RMAs (AMT) must accumulate 30 contact hours for continuing education units (CEUs) every 3 years if they were certified after 2006. RMAs (AMT) who were certified before this date are expected to keep abreast of all the changes and practices in their field through educational programs, workshops, or seminars. However, there are no specific continuing education requirements. Once a medical assistant has passed the AMT exam, she has earned the right to add RMA (AMT) to her name: Kaylyn R. Haddix, RMA (AMT).

The RMA (AMT) and CMA (AAMA) Examinations

The RMA (AMT) and CMA (AAMA) qualifying examinations are rigorous. Participation in an accredited program will help you learn what you need to know. The examinations cover several distinct areas of knowledge, including

- General medical knowledge, including terminology, anatomy, physiology, behavioral science, medical law, and ethics.

- Administrative knowledge, including medical records management, collections, insurance processing, and the **Health Insurance Portability and Accountability Act (HIPAA)**. HIPAA is a set of government regulations that help ensure continuity and privacy of healthcare, among other things.
- Clinical knowledge, including examination room techniques, medication preparation and administration, pharmacology, and specimen collection.

Each certification examination is based on a specific content outline created by the certifying organization. You should research the Internet to gain additional information regarding any of these certifications. See Procedure 1-1, Obtaining Certification/Registration Information Through the Internet.

▶ Training Programs

LO 1.4

With continuous changes in healthcare today, the role of the medical assistant has become dynamic and wide ranging. These changes have expanded the expectations for medical assistants. The knowledge base of the modern medical assistant includes

- Administrative and clinical skills.
- Patient insurance product knowledge (specific to the workers' geographic locations).
- Compliance with healthcare-regulating organizations.
- Exceptional customer service.
- Practice management.
- Current patient treatments and education.

The medical assisting profession requires a commitment to self-directed, lifelong learning. Healthcare is changing rapidly because of new technology, new healthcare delivery systems, and new approaches to facilitating cost-efficient, high-quality healthcare. A medical assistant who can adapt to change and is continually learning will be in high demand.

Formal programs in medical assisting are offered in a variety of educational settings, including vocational-technical high schools, postsecondary vocational schools, community and junior colleges, and 4-year colleges and universities. Vocational school programs usually last 9 months to 1 year and award a certificate or diploma. Community and junior college programs are usually 2-year associate's degree programs. Training can be obtained through traditional classroom as well as online settings.

Program Accreditation

Accreditation is the process by which programs are officially authorized. The US Department of Education recognizes two national entities that accredit medical assisting educational programs:

- **Commission on Accreditation of Allied Health Education Programs (CAAHEP)**. CAAHEP works directly with the Medical Assisting Educational Review Board (MAERB) of Medical Assistants Endowments to ensure that all accredited schools provide a competency-based education. CAAHEP accredits medical assisting programs in both

public and private postsecondary institutions throughout the United States that prepare individuals for entry into the medical assisting profession.

- **Accrediting Bureau of Health Education Schools (ABHES)**. ABHES accredits private postsecondary institutions and programs that prepare individuals for entry into the medical assisting profession.

Accredited programs must cover the following topics:

- Anatomy and physiology
- Medical terminology
- Medical law and ethics
- Psychology
- Oral and written communications
- Laboratory procedures
- Clinical and administrative procedures

High school students may prepare for these courses by studying mathematics, health, biology, office skills, book-keeping, and information technology. You may obtain current information about accreditation standards for medical assisting programs from the AAMA.

Medical assisting programs must also include a practicum (externship) or work experience. This applied training is for a specified length of time in an ambulatory care setting, such as a physician's office, hospital, or other healthcare facility. Additionally, the AAMA lists its minimum standards for accredited programs. This list of standards ensures that all personnel—administrators and faculty alike—are qualified to perform their jobs. These standards also ensure that financial and physical resources are available at accredited programs.

Graduation from an accredited program helps your career in three ways. First, it shows that you have completed a program that meets nationally accepted standards. Second, it provides recognition of your education by professional peers. Third, it makes you eligible for registration or certification. Students who graduate from an ABHES- or CAAHEP-accredited medical assisting program are eligible to take the CMA (AAMA) or RMA (AMT) immediately.

Work Experience

Your practicum (externship) or work experience is mandatory in accredited schools. The length of your experience will vary, depending on your particular program, so familiarize yourself with the program requirements as soon as possible. Since this is a required part of the program, no matter how good your grades are in class, if the work experience is not completed, you will not graduate from the program.

Your practicum (externship) or work experience is an extension of your classroom learning experience. You will apply skills learned in the classroom in an actual medical office or other healthcare facility. You also earn the right to include this applied training experience on your résumé under job experience, as long as you title it as "Medical Assistant Practicum, Externship, or Work Experience." The *Preparing for the World of Work* chapter will further explain your practical work experience.

► Professional Development

LO 1.5

Professional development refers to skills and knowledge attained for both personal development and career advancement. During your training, you should strive to improve your knowledge and skills. This will help you transition into your first job with ease. You can also gain valuable knowledge and skills through volunteering prior to or in addition to work experience obtained as a student.

Once you have entered the world of work as a medical assistant, you will want to continue to develop in your profession. You can do this through additional training, **cross-training**, and other forms of continuing education.

Volunteer Programs

Volunteering is a rewarding experience. Before you even begin a medical assisting program, you can gain experience in a healthcare profession through volunteer work. As a volunteer, you will get hands-on training and learn what it is like to assist patients who are ill, disabled, or frightened.

You may volunteer as an aide in a hospital, clinic, nursing home, or doctor's office, or as a typist or filing clerk in a medical office or medical record room. Some visiting nurse associations and hospices (home-like medical settings that provide medical care and emotional support to terminally ill patients and their families) also offer volunteer opportunities. These experiences may help you decide if you want to pursue a career as a medical assistant.

The American Red Cross also offers volunteer opportunities for student medical assistants. The Red Cross needs volunteers for its disaster relief programs locally, statewide, nationally, and abroad. As part of a disaster relief team at the site of a hurricane, tornado, storm, flood, earthquake, or fire, volunteers learn first-aid and emergency triage skills. Red Cross volunteers gain valuable work experience that may help them obtain a job.

Because volunteers are not paid, it is usually easy to find work opportunities. Just because you are not paid for volunteer work, however, does not mean the experience is not useful for meeting your career goals.

Include information about any volunteer work on your **résumé**—a document that summarizes your employment and educational history. Be sure to note specific duties, responsibilities, and skills you developed during the volunteer experience. Refer to the *Preparing for the World of Work* chapter for examples of résumés.

Multiskilled Healthcare Professionals

Many hospitals and healthcare practices are embracing the idea of a **multiskilled healthcare professional (MSHP)**. An MSHP is a cross-trained team member who is able to handle many different duties.

Reducing Healthcare Costs By hiring multiskilled healthcare professionals, healthcare organizations can reduce personnel costs. MSHPs can perform the functions of two or more people, so they are cost-effective employees and are in high demand.

Expanding Your Career Opportunities Career opportunities are vast if you are self-motivated and willing to learn new skills. Following are some examples of positions for medical assistants with additional experience and certifications:

- Medical office manager
- Medical biller and coder
- Medical assisting instructor (with a specified amount of experience and education)
- ECG technician
- Sterilization technician
- Patient care technician

If you are multiskilled, you will have an advantage when job hunting. Employers are eager to hire multiskilled medical assistants and may even create positions for them.

You can gain multiskill training by showing initiative and a willingness to learn every aspect of the medical facility in which you are working. When you begin working in a medical facility, establish goals regarding your career path and discuss them with your immediate supervisor. Indicate to your supervisor that you would like cross-training in every aspect of the medical facility. Begin in the department in which you are currently working and branch out to other departments once you master the skills needed for your current position. This will demonstrate a commitment to your profession and a strong work ethic. Cross-training is a valuable marketing tool to include on your résumé.

Scope of Practice

Professional development includes knowing your **scope of practice** and working within it. Medical assistants are not “licensed” healthcare professionals and most often work under a licensed healthcare provider, such as a nurse practitioner or physician. Licensed healthcare professionals may delegate certain duties to a medical assistant, providing he or she has had the appropriate training through an accredited medical assisting program or through on-the-job training provided by the medical facility or physician.

Questions often arise regarding the kinds of duties a medical assistant can perform. There is no universal answer to these questions. There is no single national definition of a medical assistant's scope of practice, so the medical assistant must research the state in which he or she works to learn about the scope of practice. You can find this information online by entering “medical assistant scope of practice” and the name of your state in any major search engine. In general, a medical assistant may not perform procedures for which he or she was not educated or trained. Examples of procedures medical assistants may not perform include administering intravenous medications (without advanced training), diagnosing patients or informing patients of a diagnosis, and giving any advice to a patient unless permitted by a facility's standard policies and procedures. The AAMA and AMT are good resources to assist you in your research. The AAMA Occupational Analysis is also a helpful reference source that identifies the procedures that medical assistants are educated to perform.

Do not confuse the terms *scope of practice* and *standard of care*. A medical assistant's scope of practice is the set of procedures that can be performed and the actions that can be taken under the terms of his or her professional license and training. **Standard of care** is a legal term that refers to the care that would ordinarily be provided by an average, prudent healthcare provider in a given situation.

Networking

Networking is building alliances—socially and professionally. It starts long before your job search. By attending professional association meetings, conferences, or other functions, medical assistants generate opportunities for employment and personal and professional growth. Networking, through continuing education conferences throughout your career, keeps the doors open to employment advancement.

PROCEDURE 1-1 Obtaining Certification/Registration Information Through the Internet

Procedure Goal: To obtain information from the Internet regarding professional credentialing

OSHA Guidelines: This procedure does not involve exposure to blood, body fluids, or tissue.

Materials: Computer with Internet access and printer

Method:

1. Open your Internet browser and use a search engine to search for the credential you would like to pursue—for example, Certified Medical Assistant or Registered Medical Assistant. If you are unsure of the credential you would like to pursue, you may just want to search for “Medical Assisting Credentials.”
2. Select the site for the credential you are pursuing. Avoid sponsored links. These links are paid for and typically will not take you to the site of a credentialing organization.
3. To navigate to the home page:
 - For the CMA (AAMA) credential, enter the site <http://www.aama-ntl.org>.



**AMERICAN ASSOCIATION
OF MEDICAL ASSISTANTS**

Reprinted with permission from American Association of Medical Assistants.

- For the RMA (AMT) or CMAS (AMT) credential, enter the site <http://www.americanmedtech.org>.



AMT
American Medical Technologists
Certifying Excellence in Allied Health

Reprinted with permission from American Medical Technologists.

4. Determine the steps you must take to obtain the selected credential.
 - For CMA (AAMA), go to the drop-down menu “CMA (AAMA) Exam” and select the link “About the Exam.”
 - For RMA (AMT), go to the drop-down menu “Get Certified” and select the link “Eligibility.”

5. Print or write down the qualifications you must obtain.
RATIONALE: *Maintaining a record of needed qualifications will be a reference as you pursue your chosen credential.*
6. Once you have met the qualifications, you will need to apply for the examination or certification. Download the application and the application instructions for the RMA (AMT) or the CMAS (AMT) or the candidate application and handbook for the CMA (AAMA).
7. To view or print these instructions, you may need to download Adobe Reader. You can click on a link to download Adobe Reader after you click on the “Apply Online” link for AMT or “Apply for the Exam” for AAMA.
8. Before or after you apply for the examination, you will need to prepare for the examination. Select the link “Study for the Exam” on the AAMA site or the “Prepare for Exam” link under the “Get Certified” drop-down menu on the AMT site.
9. Prepare for the exam by reviewing the content outline, obtaining additional study resources, or taking a practice exam online.
10. Print or save downloaded information in a file folder on your desktop labeled “Credentials” or another name you can recognize. To print, click the printer icon found at the bottom of the web page or click the printer icon in your browser.
11. Return to the appropriate site if you have additional questions. For the CMA (AAMA) site, you may want to check the “FAQs on CMA (AAMA) Certification” link. On the AMT site for RMA or CMAS, find the link “Take the Exam” and download the FAQs regarding the testing process.
12. Any questions you have that are not addressed on the sites can be e-mailed to the organizations. For RMA, send an e-mail to mail@americanmedtech.org. On the AAMA site for the CMA credential, click the “Contact” link on the top right-hand side of the screen and follow the instructions to send an e-mail.