

Preface

Medical Assisting: Administrative and Clinical Procedures Including Anatomy and Physiology, fourth edition, is a comprehensive textbook for the medical assisting student. It provides the student with information about all aspects of the medical assisting profession, both administrative and clinical, from the general to the specific, it covers the key concepts, skills, and tasks that medical assistants need to know. The book speaks directly to the student, and its chapter introductions, case studies, procedures, chapter summaries, and chapter reviews are written to engage the students attention and build a sense of positive anticipation about joining the profession of medical assisting.

When referring to patients in the third person, we have alternated between passages that describe a male patient and passages that describe a female patient. Thus, the patient will be referred to as he half the time and as she half the time. The same convention is used to refer to the physician. The medical assistant is consistently addressed as you.

New to This Edition

- 2010 ABHES standards now open each chapter, thus providing the student and instructor with the most current standards of any medical assisting textbook currently in print.
- 2008 CAAHEP standards now open each chapter, providing the student and instructor with the most current standards.
- Media boxes appear at the beginning of each chapter and list all of the media supplements available to support the content presented in the chapter.
- Preparation for Certification Boxes outline the content on the CMA (AAMA), RMA (AMT), and CMAS certification examinations.
- ACTIVSim™ Medical Assisting is an entirely Web-based patient simulator that provides real world cases and a variety of virtual patients. It gives extensive, individualized feedback, providing students with a realistic clinical experience.
- 30+ Electronic Health Record (E.H.R) activities using SpringCharts® from Spring Medical Systems, Inc. are housed in ConnectPlus+ and provide students with activities that simulate real patient encounters.
- LearnSmart™ Medical Assisting aids the student in focusing on the information required to successfully pass certification exams. This diagnostic tool assesses each student's responses to establish a clearly defined learning path that instructors can measure.
- Connect Plus+™ allows students and instructors to access all their course materials including the media-rich textbook in one place. With its unique integrated learning system, Connect Plus™ combines market-leading content, a proven course architecture, and unmatched flexibility to help students apply the principles in the textbook.
- Reflecting on . . . Age Consideration boxes have been added to this edition based on reviewer feedback.
- Competency work products, including sample forms for student practice, are now found in the completely revised workbook.
- Practice Exam Questions now end each chapter of the textbook. New to this edition are multiple-choice questions, which appear at the close of each chapter.
- The coverage in the Administrative section has been vastly improved based on extensive user and reviewer feedback.
- Based on user feedback, the chapters have been re-organized in Part Three of the textbook. Section 1 and Section 2 have been reversed, placing all of the Anatomy and Physiology chapters before the Medical Office Environment Clinical chapters.

Content Correlations

Medical Assisting provides new features that will enhance its usefulness to both students and instructors. We have been careful to ensure that the text and supplements provide ample coverage of topics used to construct 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) Medical Assisting Duty/Task List
- CMA (AAMA) Certification Examination Content Outline

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 competences and curriculum content at a minimum. The opening page of each chapter provides a list of the areas of competence that are covered within the chapter. A complete correlation to both the ABHES Competencies and Curriculum and the CAAHEP Standards and Guidelines appears on pages xxiii–xxxv. In addition, you will 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 the proficiency.

Complete content correlations to the NHA Medical Assisting Duty/Task List, the AAMA (CMA) Occupational Analysis, the AMT (RMA) Task List, and the AMT Certified Medical Administrative Specialists (CMAS) Competencies and Examination Specifications can be found on pages xxxvi–l. To ensure complete coverage as well as ease in use of the *Medical Assisting*, fourth edition, text and supplements package, a new feature titled “Preparation for Certification” has been added to the beginning of each chapter. This feature includes a list of the content that is covered in the chapter from the AMT (RMA) Task List, AMT (CMAS) Competencies and Exam, and the AAMA (CMA) Certification/Recertification Content Outline.

Correlation of Text to CAAHEP Core Curriculum for Medical Assistants

FOUNDATIONS FOR CLINICAL PRACTICE	CHAPTER #
I. C. Cognitive (Knowledge Base)	
I. Anatomy and Physiology	
1. Describe structural organization of the human body	19
2. Identify body systems	19
3. Describe body planes, directional terms, quadrants, and cavities	19
4. List major organs in each body system	19, 47
5. Describe the normal function of each body system	19, 31
6. Identify common pathology related to each body system	29, 30, 31, 32–34, 39, 40
7. Analyze pathology as it relates to the interaction of body systems	19–31, 39, 40
8. Discuss implications for disease and disability when homeostasis is not maintained	19–31, 49, 52, 53
9. Describe implications for treatment related to pathology	19–31, 39, 40, 52, 53
10. Compare body structure and function of the human body across the life span	19–31
11. Identify the classifications of medications, including desired effects, side effects and adverse reactions	50
12. Describe the relationship between anatomy and physiology of all body systems and medications used for treatment in each	19–31, 39, 40, 52, 53
I. P Psychomotor (Skills)	
I. Anatomy and Physiology	
1. Obtain vital signs	37
2. Perform venipuncture	48
3. Perform capillary puncture	48
4. Perform pulmonary function testing	52
5. Perform electrocardiography	52
6. Perform patient screening using established protocols	36
7. Select proper sites for administering parenteral medication	51
8. Administer oral medications	51
9. Administer parenteral (excluding IV) medications	51
10. Assist physician with patient care	38, 39, 40, 41, 42
11. Perform quality control measures	45
12. Perform CLIA waived hematology testing	48
13. Perform CLIA waived chemistry testing	48
14. Perform CLIA waived urinalysis	47
15. Perform CLIA waived immunology testing	48
16. Screen test results	47, 48
I. A. Affective (Behavior)	
I. Anatomy and Physiology	
1. Apply critical thinking skills in performing patient assessment and care	36, 43
2. Use language/verbal skills that enable patients' understanding	36
3. Demonstrate respect for diversity in approaching patients and families	44

(continued)

FOUNDATIONS FOR CLINICAL PRACTICE (continued)	CHAPTER #
II. C. Cognitive (Knowledge Base)	
II. Applied Mathematics	
1. Demonstrate knowledge of basic math computations	51
2. Apply mathematical computations to solve equations	51
3. Identify measurement systems	51
4. Define basic units of measurement in metric, apothecary and household systems	51
5. Convert among measurement systems	51
6. Identify both abbreviations and symbols used in calculating medication dosages	50, 51
7. Analyze charts, graphs and/or tables in the interpretation of healthcare results	37
II. P Psychomotor (Skills)	
II. Applied Mathematics	
1. Prepare proper dosages of medication for administration	51
2. Maintain laboratory test results using flow sheets	47, 48
3. Maintain growth charts	37
II. A Affective (Behavior)	
II. Applied Mathematics	
1. Verify ordered doses/dosages prior to administration	51
2. Distinguish between normal and abnormal test results	47, 48, 52
III. C Cognitive (Knowledge Base)	
III. Applied Microbiology/Infection Control	
1. Describe the infection cycle, including the infectious agent, reservoir, susceptible host, means of transmission, portals of entry, and portals of exit	32
2. Define asepsis	33
3. Discuss infection control procedures	33, 34
4. Identify personal safety precautions as established by the Occupational Safety and Health Administration (OSHA)	33, 34, 37, 51
5. List major types of infectious agents	32, 34, 46
6. Compare different methods of controlling the growth of microorganisms	32
7. Match types and uses of personal protective equipment (PPE)	33
8. Differentiate between medical and surgical asepsis used in ambulatory care setting, identifying when each is appropriate	33, 41
9. Discuss quality control issues related to handling microbiological specimens	45, 46
10. Identify disease processes that are indications for CLIA waived tests	45
11. Describe Standard Precautions, including: <ul style="list-style-type: none"> a. Transmission based precautions b. Purpose c. Activities regulated 	33, 34, 45
12. Discuss the application of Standard Precautions with regard to: <ul style="list-style-type: none"> a. All body fluids, secretions and excretions b. Blood c. Non intact skin d. Mucous membranes 	33, 34, 35
13. Identify the role of the Center for Disease Control (CDC) regulations in healthcare settings.	33, 34

FOUNDATIONS FOR CLINICAL PRACTICE (continued)	CHAPTER #
III. P Psychomotor (Skills)	
III. Applied Microbiology/Infection Control	
1. Participate in training on Standard Precautions	33, 34, 45
2. Practice Standard Precautions	33
3. Select appropriate barrier/personal protective equipment (PPE) for potentially infectious situations	33, 37, 51
4. Perform handwashing	33
5. Prepare items for autoclaving	33
6. Perform sterilization procedures	33
7. Obtain specimens for microbiological testing	46
8. Perform CLIA waived microbiology testing	45, 46
III. A Affective (Behavior)	
III. Applied Microbiology/Infection Control	
1. Display sensitivity to patient rights and feelings in collecting specimens	46
2. Explain the rationale for performance of a procedure to the patient	52
3. Show awareness of patient's concerns regarding their perceptions related to the procedure being performed	34, 52
APPLIED COMMUNICATIONS	CHAPTER #
IV. C. Cognitive (Knowledge Base)	
IV. Concepts of Effective Communication	
1. Identify styles and types of verbal communication	4
2. Identify nonverbal communication	4
3. Recognize communication barriers	4
4. Identify techniques for overcoming communication barriers	4, 36
5. Recognize the elements of oral communication using a sender–receiver process	4, 36
6. Differentiate between subjective and objective information	36
7. Identify resources and adaptations that are required based on individual needs, i.e., culture and environment, developmental life stage, language, and physical threats to communication	4, 14, 36
8. Recognize elements of fundamental writing skills	7
9. Discuss applications of electronic technology in effective communication	4, 6
10. Diagram medical terms, labeling the word parts	19, Appendix I
11. Define both medical terms and abbreviations related to all body systems	19–35
12. Organize technical information and summaries	36
13. Identify the role of self boundaries in the health care environment	4
14. Recognize the role of patient advocacy in the practice of medical assisting	4, 13, 14
15. Discuss the role of assertiveness ineffective professional communication	4
16. Differentiate between adaptive and non–adaptive coping mechanisms	4
IV. P Psychomotor Skills	
IV. Concepts of Effective Communication	
1. Use reflection, restatement and clarification techniques to obtain a patient history	4, 9, 36
2. Report relevant information to others succinctly and accurately	4, 36, 37, 38

(continued)

APPLIED COMMUNICATIONS (continued)	CHAPTER #
3. Use medical terminology, pronouncing medical terms correctly, to communicate information, patient history, data and observations	4, 36
4. Explain general office policies	4
5. Instruct patients according to their needs to promote health maintenance and disease prevention	14, 49
6. Prepare a patient for procedures and/or treatments	14, 38, 39, 40
7. Demonstrate telephone techniques	11, 50
8. Document patient care	9, 51
9. Document patient education	9, 14, 49
10. Compose professional/business letters	7
11. Respond to nonverbal communication	4
12. Develop and maintain a current list of community resources related to patients' healthcare needs	4, 14, 39, 40
13. Advocate on behalf of patients	4, 13
IV. A Affective (Behavior)	
IV. Concepts of Effective Communication	
1. Demonstrate empathy in communicating with patients, family and staff	4, 36
2. Apply active listening skills	4, 36
3. Use appropriate body language and other nonverbal skills in communicating with patients, family and staff	4, 36
4. Demonstrate awareness of the territorial boundaries of the person with whom communicating	4, 36
5. Demonstrate sensitivity appropriate to the message being delivered	4, 36
6. Demonstrate awareness of how an individual's personal appearance affects anticipated responses	4, 36
7. Demonstrate recognition of the patient's level of understanding in communications	4, 36
8. Analyze communications in providing appropriate responses/feedback	4, 36
9. Recognize and protect personal boundaries in communicating with others	4, 36
10. Demonstrate respect for individual diversity, incorporating awareness of one's own biases in areas including gender, race, religion, age and economic status	4, 36, 44
MEDICAL BUSINESS PRACTICES	CHAPTER #
V. C Cognitive (Knowledge Base)	
V. Administrative Functions	
1. Discuss pros and cons of various types of appointment management systems	12
2. Describe scheduling guidelines	12
3. Recognize office policies and protocols for handling appointments	12
4. Identify critical information required for scheduling patient admissions and/or procedures	12
5. Identify systems for organizing medical records	10
6. Describe various types of content maintained in a patient's medical record	9, 10
7. Discuss pros and cons of various filing methods	10
8. Identify both equipment and supplies needed for filing medical records	10
9. Describe indexing rules	10
10. Discuss filing procedures	10
11. Discuss principles of using Electronic Medical Records (EMR)	9

MEDICAL BUSINESS PRACTICES (continued)	CHAPTER #
12. Identify types of records common to the healthcare setting	9
13. Identify time management principles	9
14. Discuss the importance of routine maintenance of office equipment	5
V. P Psychomotor (Skills)	
V. Administrative Functions	
1. Manage appointment schedule, using established priorities	12
2. Schedule patient admissions and/or procedures	12
3. Organize a patient's medical record	9, 10
4. File medical records	10
5. Execute data management using electronic healthcare records such as the EMR	9
6. Use office hardware and software to maintain office systems	6
7. Use Internet to access information related to the medical office	6, 9
8. Maintain organization by filing	10
9. Perform routine maintenance of office equipment with documentation	5
10. Perform an office inventory	5
V. A Affective (Behavior)	
V. Administrative Functions	
1. Consider staff needs and limitations in establishment of a filing system	10
2. Implement time management principles to maintain effective office function	1
VI. C Cognitive (Knowledge Base)	
VI. Basic Practice Finances	
1. Explain basic bookkeeping computations	18
2. Differentiate between bookkeeping and accounting	18
3. Describe banking procedures	12, 18
4. Discuss precautions for accepting checks	18
5. Compare types of endorsement	18
6. Differentiate between accounts payable and accounts receivable	18
7. Compare manual and computerized bookkeeping systems used in ambulatory healthcare	18
8. Describe common periodic financial reports	18
9. Explain both billing and payment options	17, 18
10. Identify procedure for preparing patient accounts	18
11. Discuss procedures for collecting outstanding accounts	18
12. Describe the impact of both the Fair Debt Collection Act and the Federal Truth in Lending Act of 1968 as they apply to collections	18
13. Discuss types of adjustments that may be made to a patient's account	17, 18
VI. P Psychomotor (Skills)	
VI. Basic Practice Finances	
1. Prepare a bank deposit	18
2. Perform accounts receivable procedures, including: <ul style="list-style-type: none"> a. Post entries on a daysheet b. Perform billing procedures 	18

(continued)

MEDICAL BUSINESS PRACTICES (continued)	CHAPTER #
c. Perform collection procedures d. Post adjustments e. Process a credit balance f. Process refunds g. Post non-sufficient funds (NSF) checks h. Post collection agency payments	
3. Utilize computerized office billing systems	18
VI. A Affective (Behavior)	
VI. Basic Practice Finances	
1. Demonstrate sensitivity and professionalism in handling accounts receivable activities with clients	18
VII. C Cognitive (Knowledge Base)	
VII. Managed Care/Insurance	
1. Identify types of insurance plans	15
2. Identify models of managed care	15
3. Discuss workers' compensation as it applies to patients	15
4. Describe procedures for implementing both managed care and insurance plans	15
5. Discuss utilization review principles	15
6. Discuss referral process for patients in a managed care program	15
7. Describe how guidelines are used in processing an insurance claims	10, 15
8. Compare processes for filing insurance claims both manually and electronically	17
9. Describe guidelines for third-party claims	17
10. Discuss types of physician fee schedules	17
11. Describe the concept of RBRVS	15
12. Define Diagnosis-Related Groups (DRGs)	15
VII. P Psychomotor (Skills)	
VII. Managed Care/Insurance	
1. Apply both managed care policies and procedures	15
2. Apply third party guidelines	17
3. Complete insurance claim forms	15
4. Obtain precertification, including documentation	15
5. Obtain preauthorization, including documentation	15
6. Verify eligibility for managed care services	15
VII. A Affective (Behavior)	
VII. Managed Care/Insurance	
1. Demonstrate assertive communication with managed care and/or insurance providers	15, 17
2. Demonstrate sensitivity in communicating with both providers and patients	4, 11, 17
3. Communicate in language the patient can understand regarding managed care and insurance plans	4, 11

MEDICAL BUSINESS PRACTICES (continued)	CHAPTER #
VII. C Cognitive (Knowledge Base)	
VII. Procedural and Diagnostic Coding	
1. Describe how to use the most current procedural coding system	16
2. Define upcoding and why it should be avoided	16
3. Describe how to use the most current diagnostic coding classification system	16
4. Describe how to use the most current HCPCS coding	16
VII. P Psychomotor (Skills)	
VIII. Procedural and Diagnostic Coding	
1. Perform procedural coding	16
2. Perform diagnostic coding	16
VIII. P. Psychomotor (Skills)	
VIII. Procedural and Diagnostic Coding	
1. Work with physician to achieve the maximum reimbursement	15, 16
MEDICAL LAW AND ETHICS	CHAPTER #
IX. Cognitive (Knowledge Base)	
IX. Legal Implications	
1. Discuss legal scope of practice for medical assistants	3
2. Explore issue of confidentiality as it applies to the medical assistant	3
3. Describe the implications of HIPAA for the medical assistant in various medical settings	3
4. Summarize the Patient Bill of Rights	3, 36
5. Discuss licensure and certification as it applies to healthcare providers	1, 2
6. Describe liability, professional, personal injury, and third party insurance	3, 17
7. Compare and contrast physician and medical assistant roles in terms of standard of care	2
8. Compare criminal and civil law as it applies to the practicing medical assistant	3
9. Provide an example of tort law as it would apply to a medical assistant	3
10. Explain how the following impact the medical assistant's practice and give examples: a. Negligence b. Malpractice c. Statute of Limitations d. Good Samaritan Act(s) e. Uniform Anatomical Gift Act f. Living will/Advanced directives g. Medical durable power of attorney	3
11. Identify how the Americans with Disabilities Act (ADA) applies to the medical assisting profession	35
12. List and discuss legal and illegal interview questions	36
13. Discuss all levels of governmental legislation and regulation as they apply to medical assisting practice, including FDA and DEA regulations	3, 33, 34, 35, 50
14. Describe the process to follow if an error is made in patient care	3, 9

(continued)

MEDICAL LAW AND ETHICS (continued)	CHAPTER #
IX. P Psychomotor (Skills)	
IX. Legal Implications	
1. Respond to issues of confidentiality	3
2. Perform within scope of practice	1, 2, 3
3. Apply HIPAA rules in regard to privacy/release of information	3
4. Practice within the standard of care for a medical assistant	1
5. Incorporate the Patient's Bill of Rights into personal practices and medical office policies and procedures	3, 36
6. Complete an incident report	9, 45
7. Document accurately in the patient record	9, 36, 38, 39, 40, 49, 51
8. Apply local, state, and federal health care legislation and regulation appropriate to the medical assisting practice setting	1, 3
IX. A Affective (Behavior)	
IX. Legal Implications	
1. Demonstrate sensitivity to patient rights	4, 36
2. Demonstrate awareness of the consequences of not working within the legal scope of practice	3
3. Recognize the importance of local, state and federal legislation and regulations in the practice setting	3
X. C Cognitive (Knowledge Base)	
X. Ethical Considerations	
1. Differentiate between legal, ethical, and moral issues affecting healthcare	3
2. Compare personal, professional and organizational ethics	3
3. Discuss the role of cultural, social and ethnic diversity in ethical performance of medical assisting practice	3
4. Identify where to report illegal and/or unsafe activities and behaviors that affect health, safety and welfare of others	3
5. Identify the effect personal ethics may have on professional performance	3
X. P Psychomotor (Skills)	
X. Ethical Considerations	
1. Report illegal and/or unsafe activities and behaviors that affect health, safety and welfare of others to proper authorities	3, 34
2. Develop a plan for separation of personal and professional ethics	3
X. A. Affective (Behavior)	
X. Ethical Considerations	
1. Apply ethical behaviors, including honesty/integrity in performance of medical assisting practice	3
2. Examine the impact personal ethics and morals may have on the individual's practice	3
3. Demonstrate awareness of diversity in providing patient care	3, 38, 44

SAFETY AND EMERGENCY PRACTICES	CHAPTER #
X. C. Cognitive (Knowledge Base)	
XI. Protective Practices	
1. Describe personal protective equipment	3, 33, 37
2. Identify safety techniques that can be used to prevent accidents and maintain a safe work environment	3, 33
3. Describe the importance of Materials Safety Data Sheets (MSDS) in a healthcare setting	3
4. Identify safety signs, symbols and labels	33
5. State principles and steps of professional/provider CPR	43
6. Describe basic principles of first aid	43
7. Describe fundamental principles for evacuation of a healthcare setting	13, 35
8. Discuss fire safety issues in a healthcare environment	35
9. Discuss requirements for responding to hazardous material disposal	3, 43
10. Identify principles of body mechanics and ergonomics.	10, 38
11. Discuss critical elements of an emergency plan for response to a natural disaster or other emergency	43
12. Identify emergency preparedness plans in your community	43
13. Discuss potential role(s) of the medical assistant in emergency preparedness	43
X. P Psychomotor (Skills)	
XI. Protective Practices	
1. Comply with safety signs, symbols and labels.	33
2. Evaluate the work environment to identify safe vs. unsafe working conditions.	35
3. Develop a personal (patient and employee) safety plan.	43
4. Develop an environmental safety plan.	43
5. Demonstrate the proper use of the following equipment: <ul style="list-style-type: none"> a. Eyewash b. Fire extinguishers c. Sharps disposal containers 	35, 43
6. Participate in a mock environmental exposure event with documentation of steps taken.	43, 45
7. Explain an evacuation plan for a physician's office	13, 35, 43
8. Demonstrate methods of fire prevention in the healthcare setting	35
9. Maintain provider/professional level CPR certification.	43
10. Perform first aid procedures	43
11. Use proper body mechanics	38
12. Maintain a current list of community resources for emergency preparedness	43
X. A Affective (Behavior)	
XI. Protective Practices	
1. Recognize the effects of stress on all persons involved in emergency situations	4, 43
2. Demonstrate self awareness in responding to emergency situations	4, 43

Correlation of Text to ABHES Competencies

1. GENERAL ORIENTATION	CHAPTER #
a. Comprehend the current employment outlook for the medical assistant	1
b. Compare and contrast the allied health professions and understand their relation to medical assisting	1, 2
c. Understand medical assistant credentialing requirements and the process to obtain the credential. Comprehend the importance of credentialing	1
d. Have knowledge of the general responsibilities of the medical assistant	1, 2, 54
e. Define scope of practice for the medical assistant, and comprehend the conditions for practice within the state that the medical assistant is employed	1, 2, 54
2. ANATOMY AND PHYSIOLOGY	CHAPTER #
a. Comprehend and explain to the patient the importance of diet and nutrition. Effectively convey and educate patients regarding the proper diet and nutrition guidelines. Identify categories of patients that require special diets or diet modifications.	14, 44, 49
b. Identify and apply the knowledge of all body systems, their structure and functions, and their common diseases, symptoms and etiologies.	19–34, 39, 40
c. Assist the physician with the regimen of diagnostic and treatment modalities as they relate to each body system	20–31, 37, 38, 39, 40, 41, 42, 43, 51, 52, 53
3. MEDICAL TERMINOLOGY	CHAPTER #
a. Define and use entire basic structure of medical words and be able to accurately identify in the correct context, i.e., root, prefix, suffix, combinations, spelling and definitions	19
b. Build and dissect medical terms from roots/suffixes to understand the word element combinations that create medical terminology	19
c. Understand the various medical terminology for each specialty	19–31, 39, 40
d. Recognize and identify acceptable medical abbreviations	16, 19–31, 36, 47, 48, 50
4. MEDICAL LAW AND ETHICS	CHAPTER #
a. Document accurately	3, 15, 16, 36
b. Institute federal and state guidelines when releasing medical records or information	3, 9, 36, 50
c. Follow established policies when initiating or terminating medical treatment	
d. Understand the importance of maintaining liability coverage once employed in the industry	3
e. Perform risk management procedures	3
f. Comply with federal, state, and local health laws and regulations	3, 15, 16, 18, 50
5. PSYCHOLOGY OF HUMAN RELATIONS	CHAPTER #
a. Define and understand abnormal behavior patterns	4, 36
b. Identify and respond appropriately when working/caring for patients with special needs	4, 36, 38, 39, 40, 44
c. Use empathy when treating terminally ill patients. Identify common stages that terminally ill patients go through and list organizations/support groups that can assist patients and family members of patients struggling with terminal illness	4, 35, 40
d. Identify common stages that terminally ill patients go through and list organizations/support groups that can assist patients and family members of patients struggling with terminal illness	4, 34
e. Advocate on behalf of family/patients, having ability to deal and communicate with family	4, 36, 38

5. PSYCHOLOGY OF HUMAN RELATIONS (continued)	CHAPTER #
f. Identify and discuss developmental stages of life	4
g. Analyze the effect of hereditary, cultural, and environmental influences	4, 44
6. PHARMACOLOGY	CHAPTER #
a. Demonstrate accurate occupational math and metric conversions for proper medication administration	51
b. Properly utilize PDR, drug handbook and other drug references to identify a drug's classification, usual dosage, usual side effects, and contraindications	50
c. Identify and define common abbreviations that are <i>accepted</i> in prescription writing	50
d. Understand legal aspects of writing prescriptions, including federal and state laws.	3, 50
e. Comply with federal, state, and local health laws and regulations	50
7. BASIC KEYBOARDING/COMPUTER CONCEPTS	CHAPTER #
a. Perform basic keyboarding skills including: 1. Locating the keys on a keyboard 2. Typing medical correspondence and basic reports	7, 9
b. Identify and properly utilize office machines, computerized systems and medical software such as: 1. Efficiently maintain and understand different types of medical correspondence and medical reports 2. Apply computer application skills using variety of different electronic programs including both practice management software and EMR software	6, 7, 9, 10, 36
8. MEDICAL OFFICE BUSINESS PROCEDURES MANAGEMENT	CHAPTER #
a. Perform basic clerical functions	7
b. Prepare and maintain medical records	9, 10
c. Schedule and manage appointments	12
d. Apply concepts for office procedures	7, 8, 9, 10
e. Locate resources and information for patients and employers	13
f. Schedule in patient and outpatient admissions	12
g. Prepare and reconcile a bank statement and deposit record	18
h. Post entries on a day sheet	18
i. Perform billing and collection procedures	17
j. Perform accounts payable procedures	18
k. Perform accounts receivable procedures	18
l. Establish and maintain a petty cash fund	18
m. Post adjustments	18
n. Process credit balance	17
o. Process refunds	18
p. Post non-sufficient funds (NSF)	18
q. Post collection agency payments	18
r. Apply third party guidelines	17, 18
s. Obtain managed care referrals and pre-certification	15
t. Perform diagnostic and procedural coding	16
u. Prepare and submit insurance claims	15
v. Use physician fee schedule	15
w. Use manual or computerized bookkeeping systems	18

(continued)

8. MEDICAL OFFICE BUSINESS PROCEDURES MANAGEMENT (<i>continued</i>)	CHAPTER #
x. Maintain medical facility	13
y. Perform routine maintenance of administrative and clinical equipment	5, 7, 37, 52, 53
z. Maintain inventory equipment and supplies	8
aa. [Graduates] Are attentive, listen and learn	4, 36
bb. [Graduates] Are impartial and show empathy when dealing with patients	36, 44
cc. Communicate on the recipient's level of comprehension	1, 4, 36
dd. Serve as liaison between physician and others	4, 12, 14, 38
ee. Use proper telephone techniques	11, 15, 17, 50
ff. Interview effectively	36
gg. Use pertinent medical terminology	36, 50
hh. Receive, organize, prioritize, and transmit information expediently	11, 13, 14, 15, 16, 17, 18, 36, 38
ii. Recognize and respond to verbal and non-verbal communication	4, 36
jj. Perform fundamental writing skills including correct grammar, spelling, and formatting techniques when writing prescriptions, documenting medical records, etc.	7, 36, 50
kk. Adapt to individualized needs	6, 36, 37, 44
ll. Apply electronic technology	6, 36, 37, 52, 53
9. MEDICAL OFFICE CLINICAL PROCEDURES	CHAPTER #
a. Obtain chief complaint, recording patient history	36
b. Apply principles of aseptic techniques and infection control	33, 35, 37, 41, 52, 53
c. Take vital signs	37
d. Recognize and understand various treatment protocols	38, 39, 40
e. Recognize emergencies and treatments and minor office surgical procedures	41, 43
f. Screen and follow up patient test results	46, 47, 48, 52, 53
g. Maintain medication and immunization records	50
h. Wrap items for autoclaving	33
i. Use standard precautions	33, 34, 37
j. Prepare and administer oral and parenteral medications as directed by physicians	51
k. Prepare and maintain examination and treatment area	35, 38
l. Prepare patient for examinations and treatments	38, 41
m. Assist physician with routine and specialty examinations and treatments	38, 39, 40
n. Assist physician with minor office surgical procedures	41
o. Perform: <ul style="list-style-type: none"> 1. Electrocardiograms 2. Respiratory testing 3. Telephone and in-person screening 4. Sterilization techniques 5. First aid and CPR 	32, 41, 43, 50, 52, 53
p. Advise patients of office policies and procedures	4, 36, 38, 39, 40
q. Instruct patients with special needs	14, 34, 38, 39, 40, 41, 42, 43, 47, 48
r. Teach patients methods of health promotion and disease prevention	14, 44, 49,

10. MEDICAL LABORATORY PROCEDURES	CHAPTER #
a. Practice quality control	45, 46, 47, 48
b. Perform selected CLIA–waived tests that assist with diagnosis and treatment <ul style="list-style-type: none"> 1. Urinalysis 2. Hematology testing 3. Chemistry testing 4. Immunology testing 5. Microbiology testing 6. Kit testing <ul style="list-style-type: none"> a. Pregnancy b. Quick strep c. Dip sticks 	46, 47, 48
c. Dispose of Biohazardous materials	33, 34, 35, 41, 45, 46, 47, 48
d. Collect, label, and process specimens <ul style="list-style-type: none"> 1. Perform venipuncture 2. Perform capillary puncture 3. Perform wound collection procedures 4. Obtain throat specimens for microbiologic testing 	47, 48
e. Instruct patients in the collection of a clean–catch mid–stream urine specimen	47
f. Instruct patients in the collection of a fecal specimen	46
11. CAREER DEVELOPMENT	CHAPTER #
a. Perform the essential requirements for employment such as resume writing, effective interviewing, dressing professionally and following up appropriately	54
b. Demonstrate professionalism by: <ul style="list-style-type: none"> 1. Exhibiting dependability, punctuality, and a positive work ethic 2. Exhibiting a positive attitude and a sense of responsibility 3. Maintaining confidentiality at all times 4. Being cognizant of ethical boundaries 5. Exhibiting initiative 6. Adapting to change 7. Expressing a responsible attitude 8. Being courteous and diplomatic 9. Conducting work within scope of education, training, and ability 	1–18, 54

Correlation of Text to National Healthcareer Association (NHA) Medical Assisting Duty/Task List

DUTY A: DISPLAY PROFESSIONALISM	CHAPTER #
A. 01 Project a Positive Attitude	1, 4, 54
A. 02 Demonstrate Ethical Behavior	1, 4, 54
A. 03 Practice Within the Scope of Education, Training and Personal Capabilities	45, 46, 47, 48, 54
A. 04 Maintain Confidentiality	4, 15, 54
A. 05 Work as a Team Member	4, 54
A. 06 Conduct Oneself in a Courteous and Diplomatic Manner	4, 54
A. 07 Adapt to Change	4, 54
A. 08 Show Initiative and Responsibility	4, 54
A. 09 Promote the Profession	4, 54
A. 10 Apply Critical Thinking Skills to Workplace Situations	4, 36, 54
A. 11 Manage Stress	4, 54
DUTY B: APPLY COMMUNICATION SKILLS	CHAPTER #
B. 01 Listen and Observe	4, 36, 54
B. 02 Treat all Patients with Empathy and Impartiality	4, 36, 44, 54
B. 03 Adapt Communication to Individual's Abilities to Understand	4, 39, 40, 54
B. 04 Recognize and Respond to Verbal and Nonverbal Communication	4, 11, 54
B. 05 Serve as Liaison Between Physicians and Others	4, 11, 14, 54
B. 06 Evaluate Understanding of Communication	4, 54
B. 07 Receive, Organize, Prioritize and Transmit Information	4, 50, 54
B. 08 Use Proper Telephone Technique	11, 50, 54
B. 09 Interview Effectively	4, 9, 11, 36, 54
B. 10 Use Medical Terminology Appropriately	7, 54
B. 11 Compose Written Communication Using Correct Grammar, Spelling and Format	7, 54
DUTY C: DEMONSTRATE KEYBOARDING SKILL AND COMPUTER AWARENESS	CHAPTER #
C. 01 Perform Keyboarding by Touch on a Microcomputer	6
C. 02 Use Basic Terminology Common in the Computer Industry	6
C. 03 Demonstrate Care and Routine Maintenance of Computer Systems	6
C. 04 Identify the Types and Functions of Hardware and Peripheral Components	6
C. 05 Identify the Types of Operating Systems	6
C. 06 Define Differences in the Application of Microcomputer Software	6

DUTY D: PERFORM BUSINESS SOFTWARE APPLICATIONS	CHAPTER #
D. 01 Explain the Characteristics and Components of Word Processing	6
D. 02 Start Up Word Processing Software	6
D. 03 Produce and Format Common Business Documents Such as Letters, Memos, and Reports	6, 7
D. 04 Edit a Document	7
D. 05 Print a Document	7
D. 06 Retrieve a Document	7
D. 07 Enhance a Document	7
D. 08 Utilize Software Reference/ Documentation	6
D. 09 Explain the Use of Database Management Concepts and Applications	6
DUTY F: PERFORM ADMINISTRATIVE DUTIES	CHAPTER #
F. 01 Perform Records Management	3, 10
F. 02 Use and Maintain Office Equipment	5
F. 03 Handle Incoming Mail	7
F. 04 Schedule and Monitor Appointments	12
F. 05 Prepare and Maintain Medical Records	9, 10
F. 08 Information for Patients and Employers	15
F. 09 Manage Calendar/Itineraries	13, 14
F. 10 Organize Meetings and Presentations	12
DUTY G: PERFORM CLINICAL DUTIES	CHAPTER #
G. 01 Apply Principles of Aseptic Technique	33
G. 02 Apply Principles of Infection Control	33, 34
G. 03 Vital Signs	37
G. 04 Recognize Emergencies	43
G. 05 Perform First-Aid and CPR	43
G. 06 Prepare and Maintain Examination and Treatment Area	35
G. 07 Interview and Take Patient History	4, 36
G. 08 Prepare Patients for Procedures	4, 14, 38, 39, 40, 52, 53
G. 09 Assist Physician with Examinations and Treatments	36, 38, 39, 40, 41, 42
G. 10 Use Quality Control	45, 46, 47, 48
G. 11 Collect and Process Specimens	46, 47, 48
G. 12 Perform Selected Tests That Assist with Diagnosis and Treatment	46
G. 13 Perform Immunological Tests and Record Results	9, 48
G. 14 Perform Microbiological Tests and Record Results	9, 46
G. 15 Perform Tuberculosis Screen and Record Results	9

(continued)

DUTY G: PERFORM CLINICAL DUTIES (continued)	CHAPTER #
G. 16 Run an Electrocardiogram and Record Results	9, 52
G. 17 Perform Vision Testing and Record Results	9, 31, 38
G. 18 Screen and Follow Up Patient Test Results	47, 48
G. 19 Prepare and Administer Medications as Directed by Physician	51
G. 20 Maintain Medication Records	50, 51
G. 21 Utilize Proper Body Mechanics	6, 38
G. 22 Apply Basic Math to Medically Related Problems	51
G. 23 Use Formulas and Equations to Solve Health-Related Math Problems	51
G. 24 Transfer and Transport Patients With or Without Assistive Devices Using Proper Body Mechanics	42
DUTY H: APPLY LEGAL, ETHICAL, AND CONFIDENTIALITY CONCEPTS	CHAPTER #
H. 01 Document Accurately	3, 9, 36, 49, 51, 52
H. 02 Determine Needs for Documentation and Reporting	34, 36, 49, 51, 52
H. 03 Use Appropriate Guidelines When Releasing Records or Information	34
H. 04 Follow Established Policy in Initiating, Withdrawing, Withholding, or Terminating Medical Treatment	3
H. 05 Dispose of Controlled Substances in Compliance with Government Regulations	3, 50
H. 06 Maintain Licenses and Certification	54
H. 07 Monitor Legislation Related to Current Health Care and Practice	3
H. 08 Perform Within Ethical Boundaries	3, 54
DUTY I: MANAGE THE OFFICE	CHAPTER #
I. 01 Maintain the Physical Plant	13, 35
I. 02 Operate and Maintain Facilities and Equipment Safely	13, 35, 45, 46, 47, 48
I. 03 Maintain and Operate Medical Equipment	35, 45, 46, 47, 48
I. 04 Observe Safety Precautions in the Office	35
I. 05 Inventory Equipment and Supplies	5, 35
I. 06 Identify Supply Resources	5, 35
I. 07 Evaluate and Recommend Equipment and Supplies	5
I. 08 Maintain Liability Coverage	4
I. 09 Maintain Documentation of Continuing Education	1
I. 10 Exercise Efficient Time Management	4

DUTY J: PROVIDE PATIENT INSTRUCTION	CHAPTER #
J. 01 Orient Patients to Office Policies and Procedures	13, 14, 49
J. 02 Instruct Patients With Special Needs	4, 14, 38, 39, 42, 47
J. 03 Teach Patients Methods of Health Promotion and Disease Prevention	14, 33, 33, 49
J. 04 Provide Verbal and Written Information	4, 33, 42, 47
J. 05 Orient and Train Personnel	4
DUTY K: MANAGE PRACTICE FINANCES	CHAPTER #
K. 01 Use Bookkeeping Systems	18
K. 02 Implement Current Diagnostic/Procedural Coding Systems (CPT and ICD-9-CM coding)	16
K. 03 Analyze and Use Current Third-Party Guidelines for Reimbursement	17
K. 04 Manage Accounts Receivables	18
K. 05 Manage Accounts Payable	18
K. 06 Maintain Records for Accounting and Banking Purposes	18

Correlation of Text to Occupational Analysis of the CMA (AAMA)

GENERAL SKILLS	CHAPTER #
Communication	
• Recognize and respect cultural diversity	4, 14, 44, 54
• Adapt communication to individual's understanding	4, 36, 38, 54
• Employ professional telephone and interpersonal techniques	11, 50, 54
• Recognize and respond effectively to verbal, nonverbal, and written communications	1, 4, 11, 36, 37, 38, 54
• Utilize and apply medical terminology appropriately	19, 36, 52, 53
• Receive, organize, prioritize, store and maintain transmittable information utilizing electronic technology	6, 36
• Serve as "communication liaison" between the physician and patient	1, 4, 39, 49, 54
• Serve as patient advocate professional and health coach in a team approach in health care	13, 14, 54
• Identify basics of office emergency preparedness	11, 35, 43, 54
Legal Concepts	
• Perform within legal (including federal and state statutes, regulations, opinions, and rulings) and ethical boundaries	3, 15, 16, 17, 18, 33, 34, 38, 39, 40, 51, 54
• Document patient communication and clinical treatments accurately and appropriately	3, 9, 37, 51, 52
• Maintain medical records	9, 10
• Follow employer's established policies dealing with the health care contract	3
• Comply with established risk management and safety procedures	3, 45
• Recognize professional credentialing criteria	1, 2, 54
• Identify and respond to issues of confidentiality	3, 54
Instruction	
• Function as a health care advocate to meet individual's needs	4, 14, 49, 54
• Education individuals in office policies and procedures	4, 10, 40
• Educate the patient within the scope of practice and as directed by supervising physician in health maintenance, disease prevention, and compliance with patient's treatment plan	4, 14, 33, 38, 39, 40, 42
• Identify community resources for health maintenance and disease prevention to meet individual patient needs	4, 14, 34, 38, 39
• Maintain current list of community resources, including those for emergency preparedness and other patient care needs	4, 14, 38, 39, 43
• Collaborate with local community resources for emergency preparedness	14, 43
• Educate patients in their responsibilities relating to third-party reimbursement	15, 17, 44
Operational Functions	
• Perform inventory of supplies and equipment	5, 7, 35
• Perform routine maintenance of administrative and clinical equipment	5, 8, 35, 37, 45, 52, 53
• Apply computer and other electronic equipment techniques to support office operations	5, 6
• Perform methods of quality control	3, 45

CLINICAL SKILLS	CHAPTER #
Fundamental Principles	
• Identify the roles and responsibilities of the medical assistant in the clinical setting	32, 33, 45
• Identify the roles and responsibilities of other team members in the medical office	2
• Apply principles of aseptic technique and infection control	32, 33
• Practice Standard Precautions, including handwashing and biohazardous materials	33, 37, 52, 53
• Perform sterilization techniques	33
• Comply with quality assurance practices	45
Diagnostic Procedures	
• Collect and Process Specimens	46, 47, 48
• Perform CLIA-waived tests	46, 47, 48
• Perform electrocardiography and respiratory testing	52
• Perform phlebotomy, including Venipuncture and capillary puncture	48
• Utilize knowledge of principles of radiology	53
Patient Care	
• Perform initial-response screening following protocols approved by supervising physician	12, 36, 37
• Obtain, evaluate, and record patient history employing critical thinking skills	4, 9, 10, 36
• Obtain vital signs	37
• Prepare and maintain examination and treatment areas	35
• Prepare patient for examinations, procedures, and treatments	38, 39
• Assist with examinations, procedures, and treatments	38, 39, 40, 41, 42
• Maintain examination/treatment rooms, including inventory of supplies and equipment	35, 41, 45
• Prepare and administer oral and parenteral (excluding IV) medications and immunizations (<i>as directed by supervising physician and as permitted by state law</i>)	50, 51
• Utilize knowledge of principles of IV therapy	51
• Maintain medication and immunization records	50, 51
• Screen and follow up test results	47, 48, 52
• Recognize and respond to emergencies	35, 43
ADMINISTRATIVE SKILLS	CHAPTER #
• Schedule, coordinate, and monitor appointments	12
• Schedule inpatient/outpatient admissions and procedures	12
• Apply third-party and managed care policies, procedures and guidelines	15
• Establish, organize, and maintain patient medical record	9, 10
• File medical records appropriately	10
PRACTICE FINANCES	CHAPTER #
• Perform procedural and diagnostic coding for reimbursement	16
• Perform billing and collection procedures	17
• Perform administrative functions, including book-keeping and financial procedures	18
• Prepare submittable (“clean”) insurance forms	15

Correlation of Text to RMA (AMT) Task List

I. GENERAL MEDICAL ASSISTING KNOWLEDGE	CHAPTER #
A. Anatomy and Physiology	
1. Identify structure and function of body systems	19, 31, 52
2. Identify and define disorders and diseases of the body	19, 31, 32, 39, 40
B. Medical Terminology	
1. Identify word parts	19, Appendix I
2. Define medical terms	19, Appendix I
3. Identify common abbreviations and symbols	19, 36, 50, Appendix I
4. Accurately spell medical terms	19, Appendix I
C. Medical Law	
1. Identify and understand the application of medical law	3
2. Identify licensure, certification, and registration regulations	3
D. Medical Ethics	
1. Identify and employ principles of medical ethics	2, 3, 9
2. Recognize and apply ethical conduct	2, 3, 9
3. Recognize and apply professional development	1, 2, 3, 9
E. Human Relations	
1. Understand and employ group specific responses in patient relations	2, 4, 9, 36, 37, 44
2. Employ appropriate interpersonal skills	4, 5, 9
3. Observe and respect cultural diversity	4, 44
F. Patient Education	
1. Identify and apply proper communication methods in patient instruction	4, 49
2. Develop, assemble, and maintain patient resource materials	49, 51
II. ADMINISTRATIVE MEDICAL ASSISTING	CHAPTER #
A. Insurance	
1. Identify and apply insurance related terminology	15, 16, 17
2. Identify and understand application of various insurance plans	15, 16, 17
3. Complete and file claim forms	15
4. Understand and perform electronic insurance claims	15, 16, 17
5. ICD–9/CPT Coding applications	16, 17
6. Identify and apply HIPAA mandated coding systems	16
7. Understand proper financial applications of medical insurance	18
B. Financial Bookkeeping	
1. Understand terminology associated with medical financial book keeping	18
2. Maintain and employ proper patient billing procedures	17, 18
3. Understand and perform proper collection procedures	18
4. Perform appropriate fundamental medical office accounting procedures	18
5. Understand and perform office banking duties	18

II. ADMINISTRATIVE MEDICAL ASSISTING (continued)	CHAPTER #
6. Understand and prepare employee payroll	18
7. Apply appropriate financial calculations and accounting procedures	18
C. Medical Secretarial-Receptionist	
1. Understand and correctly apply terminology associated with receptionist duties	9, 10, 11, 12
2. Understand and perform general reception of patients and visitors	9, 10, 11, 12
3. Employ appointment scheduling system	12
4. Understand and employ appropriate oral and written communication	4, 7, 9
5. Understand and perform appropriate medical records management	9, 10
6. Understand and apply appropriate charting guidelines and regulations	9
7. Protect, store, and retain medical records according to HIPAA regulations	3, 9, 10
8. Understand and perform electronic insurance claims	15, 16
9. Understand preparation and release of protected health information adhering to HIPAA regulations	3, 6, 9, 10
10. Perform accurate transcription of dictation	5, 9
11. Employ supplies and equipment management	8
12. Identify and understand medical office computer applications	6
13. Employ procedures in compliance with OSHA guidelines and regulations of office safety	10, 13, 14
III. CLINICAL MEDICAL ASSISTING	CHAPTER #
A. Asepsis	
1. Understand and apply appropriate medical terminology	19, 32, 33, 34
2. Identify and understand state and federal universal blood borne pathogen and body fluid precautions	32, 33, 34, 37,
3. Identify and employ proper medical/surgical asepsis procedure	33, 35, 41
B. Sterilization	
1. Understand and employ appropriate terminology associated with sterilization	33
2. Identify procedures for sanitization	33
3. Identify procedures for disinfection	33
4. Identify procedures for sterilization	33
5. Identify and employ proper record keeping procedures	9, 33, 34
C. Instruments	
1. Identify common and specialty instrument parts	41, 45
2. Define the use of common instruments	41, 45
3. Understand procedures in the care and handling of disposable and re-usable instruments	41, 45
D. Vital Signs/Mensurations	
1. Identify and perform blood pressure measurement	37
2. Identify and perform pulse measurement	37
3. Identify and perform respiration measurement	37
4. Identify and perform height, weight and circumference measurements	37
5. Identify and perform temperature measurement	37
6. Recognize normal and abnormal measurement results	37

(continued)

III. CLINICAL MEDICAL ASSISTING (continued)	CHAPTER #
E. Physical Examinations	
1. Obtain patient history information, employing proper charting procedures	9, 36
2. Identify patient positions for examination	38
3. Define and understand methods of examination	38
4. Identify procedures in specialty examinations	39, 40
5. Identify and perform visual acuity measurements	38
6. Identify and perform allergy testing procedure	40
7. Identify normal and deviations from normal results	36, 37, 38, 52
F. Clinical Pharmacology	
1. Define and apply terminology associated with pharmacology	50, 51
2. Identify and define commonly used drugs and their categories	50
3. Identify and describe routes of medication administration	51
4. Identify and properly perform parenteral administration medications (Subcutaneous, Intramuscular, Intradermal, Z-Tract)	51
5. Identify and understand drug schedules and legal prescriptions requirements for each	50
6. Understand Drug Enforcement Agency regulations for ordering, dispensing, storage, and documentation of medication use	3, 50
7. Understand use of drug reference books	50
G. Minor Surgery	
1. Identify commonly used surgical supplies and instruments	41
2. Identify and employ asepsis in surgical procedures	41
3. Identify surgical tray preparation and sterile field respect	41
4. Identify procedures which prevent transmission of pathogens	41
5. Perform patient preparation procedures	
6. Understand surgical assistant and circulating duties in minor surgery	41
7. Perform dressing and bandaging techniques	41
8. Perform suture and staple removal	41
9. Identify biohazard waste disposal procedures	41
10. Understand and instruct patient in pre- and post-surgical care	41
H. Therapeutic Modalities	
1. Identify various standard therapeutic modalities	42
2. Identify and define alternative/complementary therapies	44
3. Instruct patient in assistive devices, body mechanics and home care	42
I. Laboratory Procedures	
1. Identify and comply with OSHA safety guidelines in the laboratory	45, 46, 47, 48
2. Understand and employ quality control and assessment regulations	45, 46, 47, 48
3. Identify and properly operate laboratory equipment	45, 46, 47, 48
4. Perform CLIA waived laboratory testing procedures	45, 47, 48
5. Perform proper capillary, dermal and Venipuncture procedures	48
6. Identify and perform proper procedures for all specimen collection such as: (urine, throat, vaginal, wound cultures–stool, sputum)	46, 47, 48
7. Understand proper specimen handling and preparation	46, 47, 48

III. CLINICAL MEDICAL ASSISTING (continued)	CHAPTER #
8. Maintain laboratory records according to state and federal guidelines	9, 46, 47, 48
9. Know and adhere to the MA Scope of Practice in the laboratory	45, 46, 47, 48
J. Electrocardiography	
1. Identify and perform Standard, 12 Lead ECG Testing	52
2. Understand and perform mounting techniques for permanent record	52
3. Identify rhythm strip ECG monitoring on Lead II	52
K. First Aid	
1. Recognize emergencies and employ proper First Aid procedures	43
2. Maintain emergency crash cart supplies	43
3. Understand legal responsibilities as a first responder	43

American Medical Technologists Certified Medical Administrative Specialists (CMAS) Competencies and Examination Specifications

I. MEDICAL ASSISTING FOUNDATIONS (13% OF EXAMINATION)	CHAPTER #
A. Medical Terminology	
• Use and spell basic medical terms appropriately	19
• Identify root words, prefixes, and suffixes	19
• Define basic medical terms	19
B. Anatomy and Physiology	
• Know basic structures and functions of body systems	19–31
• Know various disorders of the body (diseases, conditions, syndromes)	19–31
C. Legal and Ethical Considerations	
• Apply principles of medical law and ethics to the health care setting	3, 54
• Recognize legal responsibilities of, and know scope of practice for the medical administrative specialist	3
• Know basic laws pertaining to medical practice	3
• Know and observe disclosure laws (patient privacy, minors, confidentiality)	3
• Know the principles of medical ethics established by the AMA	3
• Recognize unethical practices and identify ethical responses for situations in the medical office	3
D. Professionalism	
• Employ human relations skills appropriate to health care setting	4, 12, 13, 14, 36, 54
• Display behaviors of a professional medical administrative specialist	1, 2, 54
• Participate in appropriate continuing education	1, 2
II. BASIC CLINICAL MEDICAL OFFICE ASSISTING (8% OF EXAMINATION)	CHAPTER #
A. Basic Health History Interview	
• Obtain preliminary health histories from patients	4, 36
B. Basic Charting	
• Chart patient information	4, 9, 36, 37, 46, 47, 48
C. Vital Signs and Measurements	
• Measure vital signs (temperature, pulse, respiration, and blood pressure)	37
• Obtain other vital measurements (weight, height)	37
D. Asepsis in the Medical Office	
• Understand concepts of asepsis, sanitizations, disinfection, and sterilization	32, 33
• Understand prevention of disease transmission	32, 33, 34
• Observe Standard Precautions	3, 4, 33, 34, 37, 51
E. Examination Preparation	
• Prepare patients for clinical examination	36, 38, 39, 40

II. BASIC CLINICAL MEDICAL OFFICE ASSISTING (8% OF EXAMINATION) (continued)		CHAPTER #
F. Medical Office Emergencies		
• Recognize and respond to medical emergencies		43
• Employ First aid and CPR appropriately		43
• Report emergencies as required by law		43
G. Pharmacology		
• Understand basic pharmacological concepts and terminology		50, 51
III. MEDICAL OFFICE CLERICAL ASSISTING (10% OF EXAMINATION)		CHAPTER #
A. Appointment Management and Scheduling		
• Schedule and monitor patient and visitor appointments		12
• Address cancellations and missed appointments		12
• Prepare information for referrals and preauthorizations		12
• Arrange hospital admissions and surgery, and schedule patients for out-patient diagnostic tests		12
• Manage recall system and file		10, 12
B. Reception		
• Receive and process patients and visitors		4, 13, 14
• Screen visitors and vendors requesting to see physician		4
• Coordinate patient flow into examining rooms		4, 12
C. Communication		
• Employ effective written and oral communication		7, 36, 54
• Address and process incoming telephone calls from outside providers, pharmacies, and vendors		11, 50
• Employ appropriate telephone etiquette when screening patient calls and addressing office business		11
• Recognize and employ proper protocols for telephone emergencies		11
• Format business documents and correspondence appropriately		7
• Process incoming and outgoing mail		7
D. Patient Information and Community Resources		
• Order and organize patient informational materials		14
• Maintain list of community referral resources		14
IV. MEDICAL RECORDS MANAGEMENT (14% OF EXAMINATION)		CHAPTER #
A. Systems		
• Demonstrate knowledge of, and manage patient medical records systems		9, 10
• Manage documents and patient charts using paper methods		9
• Manage documents and patient charts using computerized methods		9
B. Procedures		
• File records alphabetically, numerically, by subject, and by color		10
• Employ rules of indexing		10

(continued)

IV. MEDICAL RECORDS MANAGEMENT (14% OF EXAMINATION) (continued)	CHAPTER #
• Arrange contents of patient charts in appropriate order	10
• Document and file laboratory results and patient communication in charts	10, 52, 53
• Perform corrections and additions to records	9
• Store, protect, retain, and destroy records appropriately	10
• Transfer files	10
• Perform daily chart management	9
• Prepare charts for external review and audits	9
C. Confidentiality	
• Observe and maintain confidentiality of records, charts, and test results	4, 5, 9, 10, 34, 35, 46, 47, 48, 54
• Observe special regulations regarding the confidentiality of protected information	3, 5, 6, 9, 10, 15, 34, 35, 46, 47, 48, 54
V. HEALTH CARE INSURANCE PROCESSING, CODING, AND BILLING (17% OF EXAMINATION)	CHAPTER #
A. Insurance Processing	
• Understand private/commercial health care insurance plans (PPO, HMO, traditional indemnity)	15
• Understand government health care insurance plans (Medicare, Medicaid, Veteran's Administration, CHAMPUS, Tricare, use of Advance Beneficiary Notices)	15
• Process patient claims using appropriate forms (including superbills) and time frames	17
• Process Workers' Compensation/disability reports and forms	17
• Submit claims for third-party reimbursements including the use of electronic transmission methods	17
B. Coding	
• Understand procedure and diagnosis coding	16
• Employ Current Procedural Terminology (CPT) and Evaluation and Management codes appropriately	16
• Employ International Classification of Diseases 9 (ICD9) codes appropriately	16
• Employ Health Care Financing Administration Common Procedure coding System (HCPCS) codes appropriately	16
C. Insurance Billing and Finances	
• Understand health care insurance terminology (deductible, copayment, preauthroizations, capitation, coinsurance)	15, 16, 17
• Understand billing requirements for health care insurance plans	15, 17
• Process insurance payments	15, 17
• Track unpaid claims, and file and track appeals	17
• Understand fraud and abuse regulations	17
VI. MEDICAL OFFICE FINANCIAL MANAGEMENT (17% OF EXAMINATION)	CHAPTER #
A. Fundamental Financial Management	
• Understand basic principles of accounting	18
• Perform bookkeeping procedures including balancing accounts	18
• Perform financial computations	18

VI. MEDICAL OFFICE FINANCIAL MANAGEMENT (17% OF EXAMINATION) (continued)	CHAPTER #
• Manage accounts payable	18
• Manage accounts receivable	18
• Prepare monthly trial balance (reports)	18
• Understand basic audit controls	18
• Understand professional fee structures	15, 18
• Understand physician/practice owner compensation provisions	18
• Understand credit arrangements	17, 18
• Manage other financial aspects of office management	18
B. Patient Accounts	
• Manage patient accounts/ledgers	17, 18
• Manage patient billing (methods, cycle billing procedures)	17, 18
• Manage collections in compliance with state and federal regulations	17
C. Banking	
• Understand banking services and procedures (accounts, lines of credit, checking endorsements, deposits, reconciliations, and statements)	17
• Manage petty cash	18
D. Payroll	
• Prepare employee payroll and reports	18
• Maintain payroll tax deduction procedures and records	18
VII. MEDICAL OFFICE INFORMATION PROCESSING (7% OF EXAMINATION)	CHAPTER #
A. Fundamentals of Computing	
• Possess fundamental knowledge of computing in the medical office including keyboarding, data entry, and retrieval	5, 6, 7
• Possess fundamental knowledge of PC-based environment	6
• Possess fundamental knowledge of word processing, spreadsheet, database, and presentation graphics applications	7
• Employ procedures for ensuring the integrity and confidentiality of computer-stored information	6, 7, 9, 10
B. Medical Office Computer Applications	
• Employ medical office software applications	6, 7
• Use computer for billing and financial transactions	17
• Employ e-mail applications	6
VIII. MEDICAL OFFICE MANAGEMENT* (14% OF EXAMINATION)	CHAPTER #
A. Office Communications*	
• Facilitate staff meetings and in-service, and ensure communication of essential information to staff	10
B. Business Organization Management*	
• Manage medical office business functions	10
• Manage office mailing and shipping services	10
• Manage outside vendors and supplies	10, 11

(continued)

VIII. MEDICAL OFFICE MANAGEMENT* (14% OF EXAMINATION) (continued)	CHAPTER #
• Manage contracts and relationships with associated health care providers	10
• Comply with licensure and accreditation requirements	1
C. Human Resources*	
• Manage/supervise medical office staff	10
• Conduct performance reviews and disciplinary action	10
• Maintain office policy manual	10
• Manage staff payroll and scheduling	18
• Manage staff recruiting in compliance with state and federal laws	10
• Orient and train new staff	10
• Manage employee benefits	10
D. Safety	
• Maintain office safety, maintain office safety manual, and post emergency instructions	10, 13, 35, 43, 45
• Observe emergency safety requirements	3, 13, 43, 45
• Maintain records of biohazardous waste, hazardous chemicals, (Material Safety Data Sheets), and safety conditions	3, 33, 43, 45
• Comply with Occupational Safety and Health Act (OSHA) guidelines and regulations	3, 33, 43, 45
E. Supplies and Equipment	
• Manage medical and office supply inventories and order supplies	8
• Maintain office equipment and arrange for (and maintain records of) equipment maintenance and repair	8, 35, 45
F. Physical Office Plant	
• Maintain office facilities and environment	13, 35
G. Risk Management and Quality Assurance	
• Understand and employ risk management and quality assurance concepts	3, 45

*Note: Asterisked areas addressed by the Medical Office Management job function may or may not be performed by the Certified Medical Administrative Specialist at entry-level practice. Nevertheless, the competent Specialist should have sound knowledge of these management functions at certification level.

Content Highlights

In this book we focus particularly on patient education and on the role of the medical assistant in encouraging patients to be active participants in their own health care. It is always desirable for patients to be as knowledgeable as possible about their health. Patients who do not understand what is expected of them may become confused, frightened, angry, and uncooperative; educated patients are better able to understand why compliance is important.

Chapter 14 is devoted entirely to patient education. Other chapters cover various aspects of patient interaction such as Chapter 4, on communicating with the patient, and Chapter 36, on interviewing the patient. Throughout the book, we provide the medical assistant with the information needed to educate patients so that they can participate fully in their health care.

We have also made a consistent effort to discuss patients with special needs. Several chapters in Part 2, Administrative Medical Assisting, and in Part 3, Clinical Medical Assisting, contain special sections of text devoted to the particular concerns of certain patient groups. These groups include the following:

- **Pregnant women.** Pregnancy has profound effects on every aspect of health, all of which must be taken into account when working with pregnant patients. Where appropriate, we have addressed special concerns for pregnant patients, such as positioning them for an examination, recommending changes in diet, and taking care to avoid harming the fetus with drugs or procedures that would ordinarily pose little or no risk to the patient. Chapter 38, on the general physical examination, includes a separate procedure for meeting the needs of the pregnant patient during an examination.
- **Elderly patients.** Special care is often required with elderly patients. The body undergoes many changes with age, and patients may have difficulty adjusting to their changing physical needs. Several chapters deal with the special needs of elderly patients, such as Chapter 35, which includes an Educating the Patient feature on preventing falls of the elderly. Our expanded feature “Reflecting on . . . Geriatrics” makes the information easy for the student to read and understand.
- **Children.** The special needs of children are complex, because not only their bodies but also their minds and social situations are very different from those of adults. Dealing with children usually means dealing with their parents as well, and medical assistants must hone their communication skills to meet the needs of both patient and parent when working with children. One chapter that focuses on children is Chapter 13, which includes a special text section and a procedure for designing a patient reception area to accommodate children.
- **Patients with disabilities.** Many different diseases and disabilities require extra effort or consideration on the part of the medical assistant. Patients in wheelchairs and patients with diabetes, hemophilia, or visual or

hearing impairments all require specific accommodations. For example, Chapter 35 addresses the needs of such patients; it includes a section that discusses the Americans With Disabilities Act and a procedure for making the examination room safe for patients with visual impairments.

- **Patients from other cultures.** Communicating with patients from other cultures, especially when language barriers are involved, poses a special challenge for the medical assistant. In addition, patients from other cultures may have attitudes about medicine or about social interaction that differ sharply from those of the medical assistants culture. Chapter 4 is one chapter that deals in depth with patients from other cultures. It contains a text section and a Reflecting on . . . Cultural Issues feature about different cultures attitudes toward medicine.

Because safety is a primary concern for both the patient and the medical assistant, we have emphasized this aspect of medical assisting work. Every clinical procedure includes appropriate icons, discussed in Chapter 33, for safety precautions required by the Occupational Safety and Health Administration (OSHA) guidelines. These icons for the OSHA guidelines appear in order of use within each procedure. If hand washing is necessary more than once, the hand washing icon appears twice. If biohazardous waste is generated during the procedure, the biohazardous waste container icon will appear, and so on.

Organization of the Text

Medical Assisting: Administrative and Clinical Procedures Including Anatomy and Physiology, fourth edition, is divided into three parts.

Part One provides a basic explanation of the role of the medical assistant in a medical practice. It includes an overview of the profession and covers the different types of medical practices, legal, and ethical issues including important information on HIPAA (Health Information Portability and Accountability Act) regulations and communication with patients, their families, and coworkers.

Part Two explores the administrative duties of the medical assistant, including basic office work, patient interaction, and the financial responsibilities of a medical practice.

Part Three covers the clinical duties of the medical assistant and includes an overview of the anatomy and physiology of body systems; it also provides information on patient assistance; specialty examinations and medical emergencies; and laboratory and other specialized procedures. Chapter 54 provides the medical assisting student with information about the externship process and how to prepare to find a position as a medical assistant.

The ordering of chapters within each part allows the student and the instructor to build a knowledge base starting with the fundamentals and working toward an understanding of highly specialized tasks. Part Two introduces the

basics of working with office equipment before covering the details of maintaining patient records, scheduling appointments, and processing insurance. Part Three begins with a grounding in principles of asepsis, a concept that is crucial to all clinical procedures. Subsequent chapters lead the student through the anatomy and physiology of body systems, through general and specialized physical examinations, and eventually into the technical details of laboratory testing, drug administration, electrocardiography, and radiology.

Chapters are also grouped into sections when their subjects relate to a broader topic or area of skills. Each section is set apart and the section opener includes the list of chapters within that section.

Each chapter opens with a page of material that includes the ABHES and CAAHEP medical assisting competencies covered in the chapter, a list of key terms, a list of media supplements available to support the content of the chapter, the chapter outline, the preparation for certification feature, and the learning outcomes the student can expect to achieve after completing the chapter. The main text of each chapter begins with an overview of chapter content and includes a case study for students to consider as they read the chapter. Chapters are organized into topics that move from the general to the specific. Updated color photographs, anatomic and technical drawings, tables, charts, and text features help educate the student about various aspects of medical assisting. The text features, set off in boxes within the text, 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. 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.
- **Procedures** give step-by-step instructions on how to perform specific administrative or clinical tasks that a medical assistant will be required to perform. A list of the procedures, which follows the Contents, details the procedures found in each chapter.
- **Points on Practice** boxes provide guidelines on keeping the medical office running smoothly and efficiently.
- **Educating the Patient** boxes focus on ways to instruct patients about caring for themselves outside the medical office.
- **Reflecting on . . .** boxes provide specialized information about legal and ethical issues, communication issues, cultural issues, professionalism, age considerations, and HIPAA.
- **Caution: Handle with Care** boxes cover the precautions to be taken in certain situations or when performing certain tasks.
- **Career Opportunities** boxes provide the student with information on various specialized medical professions or duties related to the medical assistant's role within the health-care team.

- **Pathophysiology** boxes, a feature found in each of the chapters on anatomy and physiology, provide students with a list of the most common diseases and disorders of each body system and includes information on the causes, common signs and symptoms, treatment, and, where possible, the prevention of each disease.

Each chapter closes with a summary of the chapter material that focuses on the role of the medical assistant. The summary is followed by an end-of-chapter review that consists of the following elements:

- Case Study Questions
- Multiple-Choice Questions
- Discussion Questions
- Critical Thinking Questions
- Application Activities
- Virtual Fieldtrip

A list of further readings, including related books and journal articles, will be provided for each chapter within the Instructor's Manual and on McGraw-Hill's *Medical Assisting* Online Learning Center. The end-of-chapter questions and activities, as well as the additional online resources, provide supplementary information about the subjects presented in the chapter and allow students to practice specific skills.

The book also includes a glossary and two appendixes 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 appendixes include a list of common medical terminology including prefixes, root words, and suffixes as well as medical abbreviations and symbols.

Digital Supplements

Student CD-ROM. The Student CD-ROM provides a comprehensive learning program that is correlated to each chapter of the text and reinforces competencies required to become a medical assistant. Short video clips and pictures introduce skills and case studies for application. In addition, numerous interactive exercises and applications are provided for every chapter in the text. The Student CD, included with each student textbook and updated to include new administrative and clinical practice activities, provides the following menu choices:

- 1 Day in the Life Critical Thinking
- Administrative Practice Activities
- Clinical Practice Activities
- Anatomy and Physiology Review
- Games: Spin the Wheel, Key Term Concentration, and Medical Assisting Challenge
- Interactive Review
- Audio Glossary
- Progress Report (can be saved, printed, and e-mailed to the instructor)
- Online Learning Center

Online Learning Center. The Online Learning Center (OLC) is a text-specific website that offers an extensive array of learning and teaching tools, including chapter quizzes with immediate feedback, news-feeds, links to relevant websites, and many more study resources. Log on at www.mhhe.com/medicalassisting4e.

Instructor Productivity CD-ROM. The Instructor Productivity CD-ROM provides easy-to-use resources for class preparation. The Instructor Productivity CD-ROM includes the following:

- EZTest test generator with over 5,000 questions and answer rationales and correlations to AAMA competencies PowerPointfi Presentations
- Correlations to AAMA-CMA, AMT-RMA, NHA, CAAHEP, ABHES, and AMT-CMAS Standards
- Course syllabi
- Figure browser
- Video clip library
- Lesson plans
- Course management allows you to monitor and record student progress on the student CD activities
- Ability to modify the interactive questions on the CD

Print Supplements

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, Part One provides:

- Vocabulary review exercises, which test knowledge of key terms in the chapter
- Content review exercises, which test the students knowledge of key concepts in the chapter
- Critical thinking exercises, which test the students 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

Part Two includes procedure checklists, presented in the order in which they are presented in the student textbook. These checklists have been revised for each of use, and include correlations to the ABHES and CAAHEP competencies mastered with the successful completion of each procedure.

Part Three, Work Product Documentation, provides blank charting forms for many of the procedures that include a work product. These forms can be used to practice and test the procedure competencies.

The *Instructor's Resource Binder* provides the instructor with materials to help organize lessons and classroom interactions. It includes:

- A list of learning outcomes, the chapter outline, a complete lesson plan for each chapter, including an

introduction to the lesson, teaching strategies, alternate teaching strategies, case studies, assessment, chapter close, resources, and an answer key to the student textbook

- An answer key to the *Student Workbook*
- Charts that show the location in the student textbook, the *Student Workbook*, and the *Instructor's Resource Binder* of material that correlates with the following:
 - The 2008 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 National Occupational Competency Testing Institute (NOCTI) Job Ready Sample Assessment competencies and skills
 - The Commission on Accreditation of Allied Health Education Programs (CAAHEP) Standards and Guidelines for Medical Assisting Education Programs competencies
 - The Secretarys Commission on Achieving Necessary Skills (SCANS) areas of competence
 - The Accrediting Bureau of Health Education Schools (ABHES) Medical Assisting competencies and curriculum
- PowerPoint Presentations on the Instructor Productivity CD-ROM
- The EZ Test generator with over 5,000 questions to use or modify to meet your course needs
- Computer software for the student and instructor is also available. The Student CD-ROM is packaged with.

The *Pocket Guide to Accompany Medical Assisting, 4e* 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, and General content.

Together, the Student Edition, the *Student Workbook*, and the *Instructor's Resource Binder* form a complete teaching and learning package. The *Medical Assisting* course will prepare students to enter the medical assisting field with all the knowledge and skills needed to be a useful resource to patients, a valued asset to employers, and a credit to the medical assisting profession.

Acknowledgments

The publisher and authors would like to thank the reviewers and contributors for their assistance in shaping this revision. We appreciate their suggestions, insights, and commitment to providing information that is relevant and valuable to medical assisting students.

In addition, many people and organizations provided invaluable assistance in the process of illustrating the highly technical and detailed topics covered in the text. Their contributions helped ensure the accuracy, timelines, and authenticity of the illustrations in the book.

We would like to thank the following organizations for providing source materials and technical advice: the American Association of Medical Assistants, Chicago, Illinois; Becton Dickinson Microbiology Systems, Sparks, Maryland; Becton Dickinson VACUTAINER Systems, Franklin Lakes, New Jersey; Bibbero Systems, Petaluma, California; Burdick, Schaumburg, Illinois; the Corel Corporation, Ottawa, Ontario, Canada; Hamilton Media, Hamilton, New Jersey; Nassau Ear, Nose, and Throat, Princeton, New Jersey; Princeton Allergy and Asthma Associates, Princeton, New Jersey; Richmond International, Boca Raton, Florida; and Winfield Medical, San Diego, California.

We would like to express our appreciation to the following New Jersey physicians and medical facilities for allowing us to photograph a variety of procedures and procedural settings at their facilities: the Eric B. Chandler Medical Center, New Brunswick; Helene Fuld School of Nursing of New Jersey, Trenton; Mercer Medical Center, Trenton; Mercer County Vocational-Technical Health Occupations Center, Trenton; Plainfield Health Center, Plainfield; Princeton Allergy and Asthma Associates, Princeton; the Princeton Medical Group, Princeton; Robert Wood Johnson University Hospital, New Brunswick; Robert Wood Johnson University Hospital at Hamilton, Hamilton; St. Francis Medical Center, Trenton; St. Peters Medical Center, New Brunswick; Dr. Edward von der Schmidt, neurosurgeon, Princeton; Wound Care Center/Curative Network, New Brunswick.

We would also like to thank the following facilities and educational institutions for graciously allowing us to photograph procedures and other technical aspects related to the profession of medical assisting: Total Care Programming, Henrico, North Carolina; Wildwood Medical Clinic, Henrico, North Carolina; Central Piedmont Community College, Charlotte, North Carolina; Daytona Beach Community College, Daytona Beach, Florida; Roanoke Rapids Clinic, Roanoke Rapids, Virginia; and Everest University, Jacksonville, Florida.

Thanks also to Lynn Egler and Susan Findley for their assistance with various aspects of the project. A special thank you to Tiffany Heath for her content review.

Reviewers

Every area of the text was reviewed by practitioners and educators in the field. Their insights helped shape the direction of the book.

Medical Advisory Board

Gerry A. Brasin, AS, CMA (AAMA), CPC
Premier Education Group

Dr. Marina Klebanov, BDS, MSPH
Mandl College of Allied Health

Tabitha L. Lyons, NCMA, AS
Corporate Program Manager-Medical Assisting
Anthem Education Group

Barry Newman, MD
Lincoln Educational Services

Diane Peavy
Fortis Colleges

Adrienne Predko, M.A. Ed.
National Director of Education
MedVance Institute

Dr. Gary Zuckerman
Washington University School of Medicine

CONNECT Contributors

Dolly R. Horton, CMA(AAMA), BS, M.Ed.
Asheville Buncombe Technical Community College

Sepanta Jalali, M.D.
Columbus State

Merideth Sellars, M.S.
Columbus State Community College

Sherry Stanfield, RN, BSN, MSHPE
Miller-Motte Technical College

Nerissa Tucker, MHA, CPC
Kaplan University School of Health Sciences

Dr. Wendy Vermillion DVM
Columbus State Community College

Mindy Wray, BS, CMA (AAMA), RMA
ECPI College of Technology

Byron Hamilton, BA, MA
Australian College of Advanced Education

Digital Symposium Attendees

Courtney M. Conrad, MBA, MPH, CMA
Robert Morris University Illinois

Bonnie J. Crist, BS, CMA, AAS, (AAMA)
Harrison College

Patrick J. Debold, Vice President of Academic Affairs
Concorde Career Colleges, Inc.

Robert Delaney
Chair, Allied Health
Brookline College

Alice Macomber, RN, RMA, AHI, RPT, CPI, BXO
Keiser University, Port Saint Lucie Campus

Barry Newman, MD
Kathleen Olewinski, MS, RHIA, NHA, FACHE
Medical Assisting Program Director
Bryant & Stratton College—Milwaukee Market

Mickie Roy, LPN, CCMA
Delta College of Arts & Technology

Lisa M. Smith, B.S., RMA(AMT), BXMO
Medical Assisting Program & Externship Coordinator
Keiser University

Michael Weinand
Kaplan Higher Education

Dr. Barbara Worley, DPM, BS, RMA
Program Manager, Medical Assisting
King's College
Patti Zint, M.A., N.C.H.I.
Apollo College

Reviewers

Hooshiyar Ahmadi, MD, DC
Remington College
Diana Alagna, RN, RMA (AMT)
Branford Hall Career Institute
Yvonne Beth Alles, MBA
Davenport University
Ramona Atilas, LPN
Allied Health Program Chair
Career Institute of Health and Technology
Vanessa J. Austin, RMA (AMT), CAHI, BS
Clarian Health Sciences Education Center
Dr. Joseph H. Balatbat, MD
Sanford-Brown Institute
Katie Barton, BA, LPN
Savannah River College
Suzanne Bitters, RMA (AMT)-NCPT/NCICS
Harris Business School
Alecia C. Blake, MD
Medical Careers Institute at ECPI College of
Technology
Kathleen Bode, MS
Flint Hills Technical College
Cynthia Boles, CMA (AAMA)
Bradford School
Cindi Brassington, MS, CMA (AAMA)
Quinebaug Valley Community College
Robin K. Choate, LPN, CHI
Pennsylvania Institute of Technology
Stephen M. Coleman, NCMA
Central Florida Institute
Sheronda Cooper, BSD, BSN, MSFN, RMA (AMT),
NRCPT(NAHP)
Director of Medical Assisting
Bradford School of Business
Janet H. Davis, BSN, MS, MBA, PhD
Robert Morris College
Linda Demain, LPN, BS, MS
Wichita Technical Institute
Carol Dew, MAT, CMA-AC (AAMA)
Baker College
James R. Dickerson, AAS
Remington College
Cheryl Lacey Donovan, CMA (AAMA)
Academy of Health Care Professions
Patricia Dudek, RN
McCann School of Business and Technology

Jane W. Dumas, MSN
Remington College
Tamara Epperson Mottler, BA, CMA (AAMA)
Daytona Beach College
Rhonda K. Epps, AS
National College of Business and Technology
Dr. Herbert J. Feitelberg, D.P.M.
King's College
Suzanne S. Fielding, BS
Daytona Beach College
Walter E. Flowers
Medical Director
Lamson Institute
Martina T. Forte Brown, CCMA (AAMA),
CPT, CET
Brookstone College of Business
Janette Gallegos, RMA (AMT)
ECPI College of Technology
Christine Goldwater, NCMOA, AA
Campus Director
Ross Medical Education Center
Darlene S. Grayson Harmon, BS
Remington College
Gay Grubbs, MEd
Griffin Technical College
Tiffany Heath, CMA (AAMA)
Porter and Chester Institute
Lisa M. Herrera
Concorde Career College
Claudia N. Hewlett, AS
Remington College
Elizabeth Hoffman, MA Ed., CMA,
(AAMA), CPT (ASPT)
Baker College
Adriane Holliman
Westwood College ATM
Joanna L. Holly, MS, RN, CMA (AAMA)
Midstate College
Deborah Honstad, MA, RHIA
San Juan College
Susan Horn, AAS CMA (AAMA)
Indiana Business College
Janet Hunter, Ph.D.
Northland Pioneer College
Dara A. Indish, CMA (AAMA), EMT
Alpena Community College
Carol Lee Jarrell, MLT, AHI
Brown Mackie College
Shara-Leigh Kauffman, RN
University of Northwestern Ohio
Jody Kirk
Cambria-Rowe Business College
Doris Klein, BA
Concorde Career College

Pam Kowalski, MA
Ross Medical Education Center

Linda E. LaGrange, NCMA
Remington College

Amy L. Lake, RMA (AMT)
Wright Career College

Paul Lucas, CMA (AAMA), CPbt, PN, AS
Brown Mackie College

Alice Macomber, RN, RMA (AMT)
Keiser University

Gregory Martinez, BS, MS
Wichita Technical Institute

Wilsetta McClain, MBA, ABD
Baker College of Auburn Hills

Diana K. McWilliams
Remington College

Nancy Measell, BS, CMA (AAMA)
IVY Tech Community College

Maureen Messier, AS, BA
Branford Hall Career Institute

Helen Mills, RN
MA Instructor
Keiser University

Edward Moreno
STVT

Diane Morlock, BA, CMA (AAMA)
Owens Community College

Roger K. Oatman, DC
Logan Chiropractic College

Thomas O'Brien, AS CCT CST
Central Florida Institute

Londa L. Ogden, RN, BSN
Keiser University E-Campus

Everlee O'Nan, RMA (AMT)
National College

Janet S. Pandzik, BA, CMT, RMA (AMT)
Hallmark College of Technology

June M. Petillo
Capital Community College

Alisa J. Petree, MHSM, MT (ASCP)
McLennan Community College

Robert Plick, BA, BS
Alta/Westwood College

Angela N. Resnick, RMA (AMT)
School of Health Careers

Diane Roche Benson, CMA (AAMA), MSA, BS
Wake Technical Community College,
University of Phoenix

Rebecca Rodenbaugh, CMA (AAMA)
Baker College of Cadillac

Janette Rodriguez, RN
Wood Tobe Coburn

Pratima Sampat-Mar, M. Ed.
Pima Medical Institute

Judy Scire, BS
Stone Academy

Noreen T. Semanski, AS, LPN
McCann School of Business

Lynn G. Slack, BS CMA (AAMA)
Kaplan Career Institute

Robin Snider-Flohr, EdD, RN, CMA (AAMA)
Jefferson Community College

Sherry A. Stanfield, RN, BSN, MSHPE
Miller-Motte Tech College

Judith D. Symons
McCann School of Business

Tricia Taylor
Kaplan College

Catherine A. Teel, AST, RMA (AMT), CMA (AAMA)
McCann School of Business and Technology

Lynne A. Thomas, BS
Clarita Career College

Cindy Thompson, RN, RMA (AMT), MA, BS
Davenport University

Carlota Zuniga Tienda, AS
San Joaquin Valley College

Drew D. Totten, CLT, NRCMA
Charter College

Nerissa C. Tucker, BS, MHA
ECPI College of Technology

Marilyn M. Turner, R.N., C.M.A. (AAMA)
Ogeechee Technical College

Sally Vrooman, MA Ed.
Career Quest Learning Centers, Inc.

Judy K. Ward, BS
Ivy Tech Community College

Marsha Lynn Wilson, MA, BS, MS (ABT)
Clarian Health Sciences Education Center

Stacey F. Wilson, BS, MHA
Cabarrus College of Health Sciences

Constance M. Winter, MPH, RN
Bossier Parish Community College

Dr. Barbara Worley
Program Manager,
Medical Assisting Program
King's College

Mindy Wray, BS, CMA (AAMA), RMA (AMT)
ECPI College of Technology

Will L. Wright, BS
Atlanta Medical Academy

Carole A. Zeglin, MS, BS, RMA (AMT)
Westmoreland County Community College

Susan K. Zolvinski, BS, MBA
Brown Mackie College

Previous Edition Reviewers

Roxane M. Abbott, MBA
Sarasota County Technical Institute

Dr. Linda G. Alford, Ed.D.
Reid State Technical College

Suzanne S. Allen
Sanford Brown Institute

Ann L. Aron, Ed.D.
Aims Community College

Emil Asdurian, MD
Bramson ORT College

Rhonda Asher, MT, ASCP, CMA
Pitt Community College

Adelina H. Azfar, DPM
Total Technical Institute

Joseph H. Balatbat, MD, RMA, RPT, CPT
Sanford Brown Institute

Mary Barko, CMA, MA Ed
Ohio Institute of Health Careers

Katie Barton, LPN, BA
Savannah River College

Kelli C. Batten, NCMA, LMT
Medical Assisting Department Chair
Career Technical College

Nina Beaman, MS, RNC, CMA
Bryant and Stratton College

Kay E. Biggs, BS, CMA
Columbus State Community College

Norma Bird, M.Ed., BS, CMA
Medical Assisting Program Director/
Master Instructor

Kathleen Bode, RN, MS
Flint Hills Technical College

Natasha Bratton, BSN
Beta Tech

Karen Brown, RN, BC, Ed.D.
Kirtland Community College

Kimberly D. Brown, BSHS, CHES, CMA
Swainsboro Technical College

Nancy A. Browne, MS, BS
Washington High School

Teresa A. Bruno, BA
EduTek College

Marion I. Bucci, BA
Delaware Technical and Community College

Michelle Buchman, BSN, RNC
Springfield College

Michelle L. Carfagna, RMA, ST, BMO, RHE
Brevard Community College

Carmen Carpenter, RN, MS, CMA
South University

Pamela C. Chapman, RN, MSN
Caldwell Community College and Technical Institute

Patricia A. Chappell, MA, BS
Director, Clinical Laboratory Science
Camden County College

Phyllis Cox, MA Ed, BS, MT(ASCP)
Arkansas Tech University

Stephanie Cox, BS, LPN
York Technical Institute

Christine Cusano, CMA, CPhT
Clark University CCI

Glynn Day, M.Ed
Dean of Education
Academy of Professional Careers

Anita Denson, BS
National College of Business and Technology

Leon Deutsch, RMA, BA, MA Ed
Keiser College

Walter R. English, MA, MT(AAB)
Akron Institute

Dennis J. Ernst, MT(ASCP)
Center for Phlebotomy Education

C.S. Farabee, MBA, MSISE
High-Tech Institute Inc.

Deborah Fazio, CMAS, RMA
Sanford Brown Institute Cleveland

William C. Fiala, BS, MA
University of Akron

Cathy Flores, BHS
Central Piedmont Community College

Brenda K. Frerichs, MS, MA, BS
Colorado Technical University

Michael Gallucci, PT, MS
Assistant Professor of Practice,
Program in Physical Therapy,
School of Public Health,
New York Medical College

Susan C. Gessner, RN, BSN, M Ed
Laurel Business Institute

Bonnie J. Ginman, CMA
Branford Hall Career Institute

Robyn Gohsman, RMA, CMAS
Medical Career Institute

Cheri Goretti, MA, MT(ASCP), CMA
Quinebaug Valley Community College

Marilyn Graham, LPN
Moore Norman Technology Center

Jodee Gratiot, CCA
Rocky Mountain Business Academy

Donna E. Guisado, AA
North-West College

Debra K. Hadfield, BSN, MSN
Baker College of Jackson

Carrie A. Hammond, CMA, LPRT
Utah Career College

Kris A. Hardy, CMA, RHE, CDF
Brevard Community College

Toni R. Hartley, BS
Laurel Business Institute

Brenda K. Hartson, MS, MA, BS
Colorado Technical University

Marsha Perkins Hemby, BA, RN, CMA
Pitt Community College

Linda Henningsen, RN, MS, BSN
Brown Mackie College

Carol Hinricher, MA
University of Montana College
of Technology

Elizabeth A. Hoffman, MA Ed., CMA
Baker College of Clinton Township

Gwen C. Hornsey, BS
Medical Assistant Instructor
Tulsa Technology Center, Lemley Campus

Helen J. Houser, MSHA, RN, RMA
Phoenix College

Melody S. Irvine, CCS-P, CPC, CMBS
Institute of Business and Medical Careers

Kathie Ivester, MPA, CMA(AAMA), CLS(NCA)
North Georgia Technical College

Josephine Jackyra, CMA
The Technical Institute of Camden County

Deborah Jones, BS, MA
High-Tech Institute

Karl A. Kahley, CHE, BS
Instructor, Medical Assisting
Ogeechee Technical College

Barbara Kalfin Kalish
City College, Palm Beach Community College

Cheri D. Keenan, MA Instructor, EMT-B
Remington College

Barbara E. Kennedy, RN, CPhT
Blair College

Tammy C. Killough, RN, BSN
Texas Careers Vocational Nursing
Program Director

Jimmy Kinney, AAS
Virginia College at Huntsville

Karen A. Kittle, CMA, CPT, CHUC
Oakland Community College

Diane M. Klieger, RN, MBA, CMA
Pinellas Technical Education Centers

Mary E. Larsen, CMT, RMA
Academy of Professional Careers

Nancy L. Last, RN
Eagle Gate College

Holly Roth Levine, NCICS, NCRMA, BA, BSN, RN
Keiser College

Christine Malone, BS
Everett Community College

Janice Manning
Baker College

Loretta Mattio-Hamilton, AS, CMA, RPT, CCA, NCICS
Herzing College

Gayle Mazzocco, BSN, RN, CMA
Oakland Community College

Patti McCormick, RN, PHD
President, Institute of Holistic Leadership

Stephanie R. McGahee, AATH
Augusta Technical College

Heidi M. McLean, CMA, RMA, BS, RPT, CAHI
Anne Arundel Community College

Tanya Mercer, BS, RN, RMA
KAPLAN Higher Education Corporation

Sandra J. Metzger, RN, BSN, MS. Ed
Red Rocks Community College

Joyce A. Minton, BS, CMA, RMA
Wilkes Community College

Grace Moodt, RN, BSN
Wallace Community College

Sherry L. Mulhollen, BS, CMA
Elmira Business Institute

Deborah M. Mullen, CPC, NCMA
Sanford Brown Institute

Michael Murphy, CMA
Berdan Institute @ The Summit
Medical Group

Lisa S. Nagle, CMA, BS.Ed
Augusta Technical College

Peggy Newton, BSN, RN
Galen Health Institute

Brigitte Niedzwiecki, RN, MSN
Chippewa Valley Technical College

Thomas E. O'Brien, MBA, BBA, AS, CCT
Central Florida Institute

Linda Oliver, MA
Vista Adult School

Linda L. Oprean, BSN
ACT College

Holly J. Paul, MSN, FNP
Baker College of Jackson

Shirley Perkins, MD, BSE
Everest College

Kristina Perry, BPA
Heritage College

James H. Phillips, BS, CMA, RMA
Central Florida College

Carol Putkamer, RHIA, MS
Alpena Community College

Mary Rahr, MS, RN, CMA-C
Northeast Wisconsin Technical College

David Rice, AA, BA, MA
Career College of Northern Nevada

Dana M. Roessler, RN, BSN
Southeastern Technical College

Cindy Rosburg, MA
Wisconsin Indian Technical College

Deborah D. Rossi, MA, CMA
Community College of Philadelphia

Donna Rust, BA
American Commercial College

Ona Schulz, CMA
Lake Washington Technical College

Amy E. Semenchuk, RN, BSN
Rockford Business College

David Lee Sessoms, Jr., M.Ed., CMA
Miller-Motte Technical College

Susan Shorey, BA, MA
Valley Career College

Lynn G. Slack, BS
ICM School of Business and Medical Careers

Patricia L. Slusher, MT(ASCP), CMA
Ivy Tech State College

Deborah H. Smith, RN, CNOR
Southeastern Technical College

Kristi Sopp, AA
MTI College

Nona K. Stinemetz, Practical Nurse
Vatterott College

Patricia Ann Stoddard, MS, RT(R), MT, CMA
Western Business College

Sylvia Taylor, BS, CMA, CPC-A
Cleveland State Community College

Cynthia H. Thompson, RN, MA
Davenport University

Geiselle Thompson, M. Div.
The Learning Curve Plus NC

Barbara Tietsort, M. Ed.
University of Cincinnati, Raymond Walters

Karen A. Trompke, RN
Virginia College at Pensacola

Marilyn M. Turner, RN, CMA
Ogeechee Technical College

L. Joleen VanBibber, AS
Davis Applied Technology College

Lynette M. Veach, AAS
Columbus State Community College

Antonio C. Wallace, BS
Sanford Brown Institute

Jim Wallace, MHSA
Maric College

Denise Wallen, CPC
Academy of Professional Careers

Mary Jo Whitacre, MSN, RN
Lord Fairfax Community College

Donna R. Williams, LPN, RMA
Tennessee Technology Center

Marsha Lynn Wilson, BS, MS (ABT)
Clarian Health Sciences Education Center

Linda V. Wirt, CMA
Cecil Community College

Dr. MaryAnn Woods, PhD, RN
Prof. Emeritus,
Fresno City College

Bettie Wright, MBA, CMA
Umpqua Community College

Mark D. Young, DMD, BS
West Kentucky Community and
Technical College

Cynthia M. Zumbrun, MEd, RHIT, CCS-P
Allegany College of Maryland

Guided Tour

Case Studies

represent situations similar to those that the medical assistant may encounter in daily practice.

CHAPTER 35

Preparing the Exam and Treatment Areas

LEARNING OUTCOMES

- After completing Chapter 35, you will be able to:
- 35.1 Explain the medical assistant's role in preparing the exam room.
 - 35.2 Describe the layout and features of a typical exam room.
 - 35.3 Describe steps to prevent the spread of infection in the exam room.
 - 35.4 Explain how and when to disinfect exam room surfaces.
 - 35.5 Describe the importance of such factors as temperature, lighting, and ventilation in the exam room.
 - 35.6 Identify instruments and supplies used in a general physical exam, and tell how to arrange and prepare them.
 - 35.7 Explain how to eliminate hazards to

MEDICAL ASSISTING COMPETENCIES

- CAAHEP**
- III. C (12) Discuss the application of Standard Precautions
 - IX. C (11) Identify how the Americans with Disabilities Act (ADA) applies to the medical assisting profession
 - IX. C (13) Discuss all levels of governmental legislation and regulation as they apply to medical assisting practice, including FDA and DEA regulations
 - XI. C (7) Describe fundamental principles for evacuation of a health-care setting
 - XI. C (8) Discuss fire safety issues in a health-care environment
 - XI. P (2) Evaluate the work environment to identify safe versus unsafe working conditions
 - XI. P (5) Demonstrate the proper use of equipment
 - XI. P (7) Explain an evacuation plan for a physician's office
 - XI. P (8) Demonstrate methods of fire prevention in the health-care setting
- ABHES**
9. Medical Office Clinical Procedures
 - Apply principles of aseptic techniques and infection control

MEDICAL ASSISTING MEDIA

connect Connect Plus™
Electronic Health Records (E.H.R.) SpringCharts®
eBook

LearnSmart LearnSmart™
www.mhhe.com/learnsmart Complete Learning Preparing the Exam Treatment Areas

Student CD-ROM

Learning Center Online Learning Center™
www.mhhe.com/medicalassisting4e

KEY TERMS

accessibility
consumable
fixative

general physical exam
lubricant
ocult blood

transcutaneous
absorption

CHAPTER OUTLINE

- The Medical Assistant's Role in Preparing the Exam Room
- The Exam Room
- Cleanliness in the Exam Room
- Room Temperature, Lighting, and Ventilation
- Medical Instruments and Supplies
- Physical Safety in the Exam Room

Chapter Openers include the CAAHEP and ABHES competencies covered in the chapter, a list of learning outcomes, a list of the media supplements available to accompany the chapter, a list of key terms, the chapter outline, and the new Preparation for Certification feature boxes.

Procedure boxes Specific administrative or clinical tasks are illustrated in a step-by-step format. A new work product icon denotes the need for documentation to successfully complete the procedure, which can be found and completed in the Student Workbook.

CAUTION Handle with Care boxes cover precautions to be taken when performing certain tasks.

CASE STUDY

A 71-year-old female patient has a routine follow-up appointment with the physician regarding her medications. Her appointment is at 9:00 A.M. and lasts about 15 minutes. As the patient is checking out at the reception desk, she trips and falls, hitting her head on the corner of the reception desk. There is a bleeding wound on her forehead, and she complains of a headache. The physician and another medical assistant obtain a stretcher and move the patient to an exam room to assess her injuries. It is expected that this emergency schedule for this morning and has already worked in a couple of additional appointment times for patients who need to be seen this morning for acute problems.

The next scheduled appointment is for a 24-year-old male who needs an employment physical for a new job he is to start next week. He must have the physical performed prior to his first day. His appointment is scheduled for 9:15 A.M. and is expected to last 30 minutes. At 9:45 A.M., two patients are scheduled for the same 15-minute appointment. One has a sore throat and the other is scheduled for a wound check. The afternoon schedule has two appointment openings: the first at 2:00 P.M., which is for 15 minutes, and the second at 4:15 P.M., also for 15 minutes.

- As you read this chapter, consider the following questions:
1. How would you adjust the schedule to allow for the emergency?
 2. If it is necessary to reschedule patients, who should be rescheduled and when?
 3. Would you explain anything to the patients in the waiting room about the emergency? If so, what would you say?

The Appointment Book


Time is a treasured commodity for both physicians and patients. Scheduling appointments shows respect for everyone's time and helps to ensure a smooth patient flow.

PROCEDURE 48-3 WORK//PRODUCT

Performing Capillary Puncture

Procedure Goal: To collect a capillary blood sample using the finger puncture method

OSHA Guidelines



Materials: Capillary puncture device (safety lancet or automatic puncture device), alcohol or antiseptic, sterile adhesive bandage, sterile slides

Figure 48-14. Hold the lancet or automatic puncture device at a right angle to the patient's fingerprint.

CAUTION Handle with Care

Storing Biohazardous Materials

During a general physical exam, the physician may ask you to collect various types of specimens from the patient for testing in the laboratory. These specimens must be handled and stored properly because they have the potential to be biohazards. Exposure that can spread disease may occur through the following routes:

- Inhalation (breathing)
- Ingestion (swallowing)
- Transcutaneous absorption (absorption through a cut or crack in the skin)

Occupational Safety and Health Administration (OSHA) regulations require storing biohazardous materials separately from food and beverages. You must not place food and beverages in refrigerators, freezers, or cabinets where blood or other potentially infectious materials are present or put specimens in a refrigerator that is otherwise used to store food and beverages. There are several reasons why it is dangerous to put food or beverages in the laboratory refrigerator. If a biohazardous substance is not clearly labeled and you are in a hurry, you might accidentally ingest it. There is always the possibility that containers of biohazardous substances might leak or spill or that residue from the hazardous material might not have been thoroughly cleaned from the outside of containers. This residue could lead to contamination of food or beverages.

OSHA regulations require that a warning label clearly posted on the outside of refrigerators, freezers, and cabinets where biohazardous materials are stored. The government also recommends keeping the laboratory refrigerator and the refrigerator for employees' personal use in separate rooms. These measures help prevent employees from accidentally putting food and beverages in the wrong place. OSHA regulations also prohibit medical personnel from doing any of the following activities in a room where potentially infectious materials are present:

- Eating
- Drinking
- Smoking
- Chewing gum
- Applying cosmetics
- Handling contact lenses
- Chewing pencils or pens
- Rubbing eyes

These work practice controls, like all OSHA regulations, represent safeguards to protect workers against the health hazards of bloodborne pathogens.

CAUTION Handle with Care

Refrigerator Temperature Control

Health inspectors visit medical facilities periodically to check that health and safety standards are being upheld. One of the first things they check is the operation of refrigerators. To prevent spoilage of the stored materials, the temperature of the laboratory refrigerator should be maintained between 36°F and 46°F (2°C and 8°C). Keep a thermometer in the laboratory refrigerator to monitor the temperature.

Similar guidelines apply to the refrigerator in the employee area. Food spoils quickly in a refrigerator if the temperature is not low enough. The temperature of the food refrigerator should be maintained between 32°F and 40°F (0°C and 4.4°C). In addition to monitoring the temperature, make sure that food is not stored

in the refrigerator too long. All food containers—including brown bags containing lunches—should be dated and thrown out when their freshness has expired. You can prevent the growth of bacteria by wiping up food spills immediately and cleaning the interior and exterior of the refrigerator and cleaning the proper maintenance of the refrigerator and for the contents while the refrigerators' interiors are cleaned. Specimens, for example, must be kept at a specific temperature at all times. For documentation purposes, keep a log of dates when the laboratory refrigerator is cleaned.

