Introduction to Medical Assisting

Instruction Pack 1 Lessons **1-8**

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Introduction to Medical Assisting

Pack 1

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Answer Key

Lesson 1
Welcome to the World of Health Care

▯ Step 1 Learning Objectives for Lesson 1

❑ When you have completed the instruction in this lesson, you will be trained to do the following:

- Describe the duties of a medical assistant.

- Determine common terminology used in a doctor's office.

- Compare and contrast the various types of jobs available to the medical assistant.

- Identify the primary medical specialties and their abbreviations.

- Explain how different types of medical personnel each ensure quality health care.

- Contrast the layout of a large medical practice to that of a small medical practice.

- Describe the desirable character traits of medical assistants.

- Outline the components that contribute to a professional appearance.

- Summarize the medical assistant's code of ethics.

📖 Step 2 Lesson Preview

❑ Chances are that you've been to the doctor's office and maybe even your local hospital a few times in your life (though hopefully not too often!). You've seen doctors, nurses and office administrators hard at work in these settings, but how much do you really know about what they do? Well, in this first lesson, we'll take you behind the scenes at hospitals and doctors' offices.

You'll also see where you, the medical assistant, fit in. You'll learn about your future job duties and see how you will interact with other healthcare professionals. We'll also discuss a few of your many job opportunities. Lastly, we'll cover some important, but often overlooked, information that will help you succeed—professionalism on the job. Whether it's the way you interact with patients, or the way you should dress, you'll find the answers here.

Being an MA will open doors for you as a respected and vital member of the medical team.

Your dream to enter the field of medicine is an important one. Once you learn the technical and administrative skills presented in this course, you'll be one of the most versatile employees in health care today. As a medical assistant (also called an MA), you will have many choices as you grow and mature in your career. You'll be qualified to apply for jobs in hospitals, labs, clinics and many other facilities. You may find that you enjoy both front office and back office duties. This will make you an even more valuable employee. Being an MA will open doors for you as a respected and vital member of the medical team. Everything you need to know to become a successful medical assistant is right here in this course. All you need to do is keep reading!

Step 3   Daily Activities in the Medical Office

❑ To fully understand what a *medical assistant* does, you must first understand how medical office personnel gather information. This information includes patient data, insurance company information and doctors' notes.

To illustrate all of this, let's take a look at a typical day in a medical office, or an *outpatient* setting. (**Outpatient** settings include clinics, physicians' offices, outpatient surgery facilities and hospital emergency rooms. **Inpatient** settings include hospitals—or facilities where patients are admitted for an overnight stay.)

A Day in the Life of a Medical Assistant

Monday morning, 7:45 a.m.

Taylor is a medical assistant for a family medical practice with two doctors, Carla Matthews and Summer Gray. On arrival at the office, she sees the office manager, Margy, pulling today's charts for the scheduled patients. Margy is generally the first person to greet patients, but if she is out sick, Taylor's administrative skills allow her to fulfill Margy's duties. Margy will then print and attach a *superbill*, or *encounter form*, to each file. A **superbill** is a standard form that contains a list of the most common procedures the doctor performs at that office. The files are in order by appointment. Taylor helps Margy work through the stack of files, checking to see that all the appropriate lab and x-ray reports are also attached.

Medical assistants will often check in the patients before they see the doctor.

Margy also has a few new patients coming in so she readies some blank files for them. She will create each patient's medical file by having the patient fill out a few questionnaires. She gives all new patients a **New Patient Questionnaire**, which includes things like their address, where they work, phone numbers, insurance and other information. This information is called the patient's **demographics**. Margy will also have all new patients complete a **Health History Form**, which asks in detail about health history and any medications they are taking. While Margy is handling the phones, Taylor will then enter all of this information on the computer, creating the new patient's **medical record**, a file of all of the patient's medical history related to that doctor and her office.

Margy is also in charge of **delegating**, or assigning duties for the day. She asks Taylor to perform the monthly audit of expiration dates on pharmaceutical samples over the course of this week. Taylor knows how important it is to monitor these drugs. Out-of-date drugs can chemically change or lose their beneficial effects.

By this time, several patients have arrived and checked in with Margy. Taylor or Dr. Gray's medical assistant, Kathy, have shown them to an examination room. Margy informs Taylor that one of Dr. Matthews' patients, Jill, is on her way to the office with possible strep throat. Taylor knows that she will need to get Jill's vital signs upon arrival and prepare the exam room for an exam of Jill's head, ears, neck, nose and throat. She also anticipates that Dr. Matthews will ask her to perform a strep culture of Jill's throat. Taylor prepares the exam room by making sure the otoscope is there and that there are tongue blades and cotton applicators available in the room.

When Jill arrives, Taylor takes her to the exam room and takes her vital signs. She immediately notes that Jill's temperature is elevated at 100.2 °F orally. Her BP, or blood pressure, is 102/70, her pulse is 72 and her respirations are 20. Then Taylor asks about her **symptoms**, or what is wrong. Jill gives a *chief complaint* of sore throat, but also of runny nose (rhinorrhea), left earache (otalgia) and a cough productive of white mucus. Jill's concise statement of why she's seeking treatment is called the **chief complaint**. Because of the cough, Taylor knows that Dr. Matthews will also listen to Jill's lung sounds; so she gives Jill a gown and asks her to remove the clothing on her upper body so that her breath sounds will be clear.

Otoscope

After recording these findings in her file, Taylor closes the chart and places it backwards in the rack outside the door to preserve confidentiality. She then notifies Dr. Matthews that her patient is ready to be examined.

When Dr. Matthews comes out of the exam room, she asks Taylor to go in and perform a throat culture on Jill. She wants Taylor to do a *rapid screen* so that she will know the results immediately and can prescribe the appropriate medication for her, if needed. A **rapid screen** is a test for strep throat that can be performed in the office while the patient is still there.

Taylor gathers the rapid screen test kit and re-enters the exam room. After explaining what she needs to do, Taylor puts on gloves, asks Jill to open her mouth and places a tongue blade on her tongue. At the same time, she uses a sterile, cotton-tipped applicator in her other hand to swab Jill's throat, being careful to include both sides and the center of her throat. Taylor then swabs the material onto the test kit and returns to the lab to interpret the results. She tells Jill that she may get dressed while she waits for the results.

In the lab, Taylor reports to Dr. Matthews that the results are negative; that is, Jill does not have a strep infection of her throat. She records this result on a lab sheet to be placed in Jill's file. Dr. Matthews returns to the exam room to let Jill know the diagnosis—she has a common viral upper respiratory infection. She instructs Jill to use salt water gargles, acetaminophen for her low-grade fever and discomfort, and prescribes an over-the-counter (OTC) medication to help with her runny nose. She is to call if her temperature goes over 102 °F or if she's not feeling better in five days.

After the patient leaves, Taylor hears Dr. Matthews dictating a report of the encounter:

SUBJECTIVE
Patient complains of sore throat, and cough for a few days. She woke up today with an earache on the left and says her nose is running a bit also. She reports that everyone in her office is sick.

OBJECTIVE
Throat is beefy red laterally with no exudate noted; however, there is clear sinus drainage going down the sides of her throat. Right ear is clear; left tympanic membrane is dull but no bulging or erythema (redness) noted. Canal is clear.

Neck is supple, no cervical adenopathy

Nares show some irritation and small amount of clear drainage.

Lungs clear to auscultation.

ASSESSMENT
URI (upper respiratory infection), probably viral.

Rapid strep test is negative.

PLAN
Sudafed, as directed.

Recommended saline gargles, acetaminophen for fever and discomfort.

Call if temp goes over 102 °F or not getting better in 5 days.

As Taylor continues her day, helping out in the front office when Margy's at lunch and assisting Dr. Matthews, she smiles with satisfaction. Not only does she love the feeling of helping people, but she's proud of the difference she makes in people's lives through the skills she's learned.

Let's take a break here to review what you've learned so far. Complete the following Practice Exercise, then we'll move on to the opportunities that await you as a medical assistant!

✍ Step 4   Practice Exercise 1-1

❑ For the following questions, choose the best term to complete each sentence. Not all terms will be used. None of the terms will be used more than once.

nurse	make appointments	exam	see patients at home
billing form	office manager	diagnosis	
make diagnoses	perform throat cultures	prescribe medication	problem
complaint			transcribes
take vital signs	superbill	codes	draw blood

1. The _____ is usually the first person in the doctor's office to see a patient.

2. The encounter form is also called the _____.

3. When the patient tells the doctor what's wrong, this information is called the chief _____.

4. The three steps a doctor follows when seeing a patient include the complaint, _____ and treatment or procedure.

5. The medical assistant can _____ and _____.

⛏ Step 5   Review Practice Exercise 1-1

❑ Review your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 6   Welcome to Your Career as a Medical Assistant!

❑ Medical assistants perform two types of duties: administrative and clinical. They answer phones or administer medications; greet patients and then help them prepare for their exams; arrange hospital admissions, schedule appointments and even perform lab tests. These skills and more are what make medical assistants so valuable in the healthcare industry. Let's take a look at the two roles of medical assistants.

Administrative

Administrative MAs are important members of the healthcare team. Their wide variety of clerical skills keep the office running smoothly. Administrative medical assistants can:

- answer the phones

- set appointments

- handle referrals

- check in patients

- help patients fill out forms

- copy medical records for insurance documentation

- update medical records

- order supplies and equipment

- coordinate outside services, such as labs and radiology

- bill and collect money from insurance companies and patients for the doctor's services

- arrange hospital admissions

- manage all correspondence

- provide patient education

- manage record storage and perform the filing

- conduct the banking for the business

- perform the accounting and bookkeeping

Depending on the size of the office, medical assistants may do several jobs.

Depending on the size of the office, medical assistants may do one, several or all of these jobs. Doctors depend on highly skilled administrative medical assistants to handle these specialized tasks so they can concentrate on treating patients.

You will be learning all of these skills in the lessons ahead, so that if you choose, you can take on this important role in the physician's office.

Clinical

Medical assistants who work in the back office have more clinical duties than administrative. They must not only know their basic clinical skills, but also be on their toes to anticipate their physicians' needs throughout the day. Clinical medical assistants can:

- take measurements and vital signs

- prepare patients for exams

- listen to and handle tasks related to patient complaints

- assist the physician in performing examinations, diagnostics and surgical procedures

- assist with treatments

- perform first-aid and emergency procedures

- draw and test blood

- take body fluid specimens

- care for wounds

- remove sutures

- sterilize equipment

- perform lab tests on bacterial smears and cultures

- phone in prescription refills

- prepare and administer medication

- perform EKGs and x-rays

Digital x-rays allow doctors to evaluate a patient's condition much more quickly.

Of course, many of these clinical skills are practiced on the job, so you should not expect to perform all of these procedures as an entry-level MA.

Patient education is an important part of medical care. You may be called upon to give instructions prior to a procedure, to coach a patient with a diet change or to instruct him on proper medication dosages. Once again, an MA in a large office may specialize in one or a few of these procedures, but if you're working in a small medical practice, you may have the opportunity to do all of these!

No matter where you work—large office or small, front office or back—you will be a part of a team of professionals that strives to offer the best customer service and medical attention possible.

Where Will I Work?

The typical job setting for an MA is a doctor's office. However, the type of office could be a small, one physician practice or a very large clinic with 15 to 20 providers. Some clinics will offer an extravagant décor with furnishings that are quite lavish while others will have a more economical and clinical atmosphere. No matter what the environment, the personnel strive to provide medical care that meets the standards of the state and our society. Let's take a look at the physician's office and some other settings where a medical assistant may work.

Physician's Office

Over half of all medical assistants work in a physician's office. In small practices, medical assistants usually handle both administrative and clinical duties. A large medical clinic may employ several MAs, who all specialize in different aspects of medical care. They may report to an office manager, physician or other health practitioner.[1]

Physician's offices, hospitals and laboratories are some work settings from which a medical assistant may choose.

Laboratory

Many doctors conduct research rather than treat patients. For example, a research scientist may specialize in the study of HIV/AIDS. A medical assistant working in a laboratory can assist the researcher by drawing blood specimens, performing tests on urine samples or handling all the front office duties. Other laboratories specialize in breast cancer, diabetes, infectious diseases and hundreds of other medical problems that our society would like to cure.

Urgent Care Clinic

Urgent care clinics are much like a doctor's office. An MA might still get patients ready for exams, take vital signs, assist with wounds and run tests for employment physicals. However, an urgent care clinic might also require a faster pace, treating patients with urgent or even emergent injuries. Many Worker's Compensation accident victims come to these clinics for treatment. This could be an exciting place to work, but it requires fast work and quick thinking.

Hospital

Have you ever gotten lost trying to find a sick friend or relative in the hospital? Well, you're not alone. A hospital can be huge, with departments ranging from blood donor clinics to billing offices to intensive care units. With all of these services, a hospital can provide many different settings for an MA to work in.

Typically, hospitals use nurses and nurses' assistants to provide bedside care, and hire medical assistants as technicians. An MA who likes working with equipment, such as EKGs and x-ray equipment, would enjoy assisting in radiology or other departments where these tests are run. Other departments, such as the emergency department or the obstetrics unit, would be faster paced, appealing to the MA who prefers to keep on her toes. Still other departments, such as special procedures labs, offer a different kind of work setting. And lastly, many medical assistants work in clerical positions such as hospital admissions, patient billing and medical records.[2]

As you can see, the work settings are as varied as the MA's duties can be. This course will teach you everything you need to know to enter the medical assisting profession. And once you're employed, you'll receive specialized training for the job that you've chosen. If you move across the United States, you might discover that a different set of your medical assisting skills is required in other areas. Be sure to stay informed through a professional organization, such as the American Association of Medical Assistants (www.aama-ntl.org) or American Medical Technologists (www.americanmedicaltech.org), about changes and new opportunities in your career. One or both of these organizations offer publications, seminars, certification, continuing education and other services. In addition, you can qualify for certification from these organizations.

Medical Assistant Professional Organizations

National Healthcareer Association

The NHA supports the allied healthcareer industry with NHA National Certification exams. These include the Certified Medical Administrative Assistant (CMAA) exam, which you are eligible to sit for as soon as you successfully complete the Introduction to Medical Assisting course. After you are employed, and your employer verifies your phlebotomy experience, you will be able to sit for the Certified Clinical Medical Assistant (CCMA) exam.

Address: 7 Ridgedale Avenue, Suite 203
Cedar Knolls, NJ 07927
Phone: (800) 499-9092
Web site: www.nhanow.com

National Center for Competency Testing

The NCCT is an independent agency that validates the competence of candidates in many different fields by examination. The NCCT offers the National Certified Medical Assistant (NCMA) credential. After gaining accreditation by the NCCT, certificants are required to complete a minimum of 14 clock hours of continuing education on an annual basis to maintain active status.

Address: 7007 College Blvd., Suite 705
Overland Park, KS 66221
Phone: (800) 875-4404
Web site: www.ncctinc.com

Medical Assistant Specialists

As you learned above, just as physicians specialize in specific fields of medicine, MAs also have the opportunity to become specialized. The special training may take place on the job, or you may be asked to attend classes or to take a self-study course. You can even earn special certifications in certain fields. The American Society of Podiatric Medical Assistants awards the Podiatric Medical Assistant, Certified credential; and The Joint Commission on Allied Health Personnel in Ophthalmology awards credentials at three levels: Certified Ophthalmic Assistant; Certified Ophthalmic Technician; and Certified Ophthalmic Medical Technologist.

Let's take a look at a few of the many exciting specialties that you can explore.

Podiatry

A **podiatrist**, or **DPM** (doctor of podiatric medicine), specializes in diagnosis and treatment of problems of the feet. If you work for a podiatrist, you might take specialized x-rays, learn and do physical therapy, assist with surgery, make castings and assist with foot taping and binding.

Ophthalmology

An **ophthalmologist** studies the structure, function and diseases of the eye. Working for an ophthalmologist might involve teaching patients contact lens care, helping patients select eye glasses, conducting diagnostic tests, measuring and recording vision, testing eye muscle function, administering eye medications and dressings and assisting in eye surgery.

Dermatology

Dermatology is the science that deals with the skin, its structure, functions, diseases and treatment. As a medical assistant for a dermatologist, you may assist with performing and testing biopsies, assist with surgeries and educating patients on proper skin care.

Finding your way around a hospital can be confusing if you are not sure what specialist you are there to see.

Ear, Nose and Throat (ENT)

As you will discover in upcoming anatomy lessons, problems of the ear, nose and throat often happen at the same time, since all of these body features are so close together. Working for a physician who specializes in the ear, nose and throat (also called an **otolaryngologist**) might involve taking specialty x-rays, assisting with surgeries and scheduling tests.

Obstetrics and Gynecology

A doctor who specializes in obstetrics and gynecology (an **OB/GYN** for short) is called an **obstetrician** or **gynecologist**. OB/GYNs treat women's reproductive systems—when they are pregnant and when they are not. An MA may assist with many procedures such as Pap smears and amniocentesis, educate patients about the importance of monthly self exams and may monitor the doctor's pregnant patients, scheduling their appointments and procedures at the right times throughout their pregnancies.

Urology

A **urologist**, or **Uro**, treats the female urinary tract and the male genitourinary tract. As mentioned above, testing urine specimens may be a duty, as well as taking specialty x-rays, assisting with procedures, testing cultures and scheduling procedures.

Other physician specialties that you may encounter include:

Physician Specialties		
Specialist	Specialty	Abbreviation, if any
Allergist	Diagnosis and treatment of allergies	
Cardiologist	The heart	
Endocrinologist	Gland disorders	
Family Practitioner	Care of patients of all ages	FP
Gastroenterologist	Disorders of the GI tract	GE
Geriatrician	Care of the elderly	Geri
Hematologist	Blood disorders	
Infectious Disease Specialist	Disease trends, chronic wounds	
Internist	Diagnosis and nonsurgical treatment of disease	IM
Nephrologist	Kidney problems	Nephro
Neurologist	Study and treatment of nerve disorders	
Occupational Health Specialist	Management of worker's comp cases, hiring physicals, drug & alcohol testing, respiratory and hearing protection programs	

Physician Specialties		
Specialist	Specialty	Abbreviation, if any
Oncologist	Cancer treatment	
Orthopedist, or Orthopod	Bone and joint disorders	Ortho
Osteopath	Bone alignment to correct diseases	DO
Pain Control Specialist	Management of chronic pain (back pain, headaches, etc.)	
Pathologist	Study of tissue samples to diagnose disorders	
Pediatrician	Infant, child and adolescent care	Peds
Primary Care Physician	Care of patients of all ages, usually an Family Practice or Internal Medicine	FP IM
Psychiatrist	Psychotherapy	Psych
Pulmonologist	The lungs	
Surgeon	Surgery in a variety of fields	

As you can see, there are plenty of opportunities for medical assistants to find the right niche! And because medical assistants are so versatile, the demand for their services has increased dramatically. In fact, according to the U. S. Department of Labor, Bureau of Labor Statistics, employment of medical assistants is projected to be one of the fastest growing occupations over the next several years. The need for medical assistants will consistently grow as the healthcare industry expands because of technological advances in medicine and the growth and aging of the population.

Employment growth will be driven by the increase in the number of group practices, clinics and other healthcare facilities that need a high proportion of support personnel, particularly the flexible medical assistant who can handle both administrative and clinical duties.[3]

The growth of the senior population will increase demands on the healthcare industry.
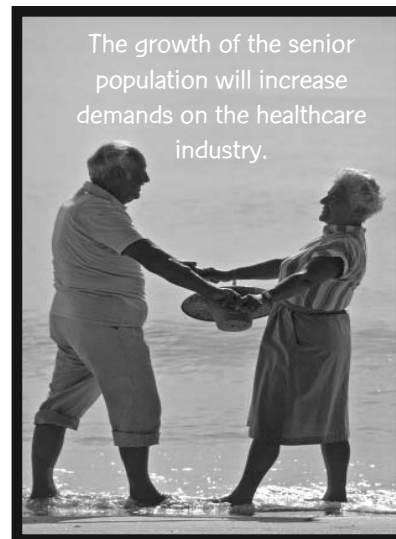
📖 Step 7   A Little Teamwork Goes a Long Way

❑ Now you know how information flows in medical settings. You have a basic understanding of what some healthcare employees, such as office managers and doctors, do in a typical day in a medical office. Now let's take a closer look at all of the key players in hospitals and doctors' offices and talk more about the work they do.

In most professions, teams of people work together to accomplish goals, and this is true of physicians as well. In medicine, doctors certainly do not work alone. Many people work hard, some behind the scenes, others more visibly, to ensure that our healthcare system works properly. When you go to see the doctor, you don't just see the doctor. You might see a number of people, including a receptionist, an office manager and a nurse. Throughout a visit the doctor may talk to several staff people, including the medical assistant. All of these people are essential members of the medical care team.

Physicians

Physicians or medical doctors are the most prominent members of the medical care team. They perform life-saving procedures. They cure the sick and help heal wounds. Becoming a doctor of medicine is one of the most challenging career paths a person can choose. Not only do doctors earn four-year college degrees, but they must also complete medical school and one or more residency assignments. During residency, 85- to 100-hour work weeks are common. Depending on the specialty doctors choose, they spend a minimum of 11 years getting their degree. Because of this huge commitment, doctors deservedly receive much of the attention in the medical field.

Physicians diagnose illnesses and injuries. They prescribe drugs to alleviate symptoms, treat conditions and ease pain. They rely on their training to make quality, accurate decisions. However, as good as physicians are, their staff ultimately supports them as they provide quality treatment. Nurses are one essential part of the medical staff.

Throughout a visit, the doctor may talk to several staff members, including the medical assistant.

Nurses

As professionals who perform a variety of tasks in the medical world, nurses must often follow through with the treatments physicians prescribe. Nurses can observe and record symptoms and progress, assist in surgery and administer medication. It's also true that nurses must often do the thankless jobs—cleaning up exam rooms and organizing supplies.

Without nurses, the number of patients a doctor sees in a day would drop dramatically. Because of their nurses, doctors see more patients and are able to focus on those patients who require the most care.

Nurse and Physician Assistants

Two other categories of personnel in the medical field include nurse and physician assistants. **Nurse assistants**, also known as patient care technicians, help nurses with daily duties, such as paperwork, general organization and taking a patient's temperature, weight and blood pressure. Some nurse assistants also talk to patients and make sure they're comfortable.

Physician assistants, or **PAs**, are normally under the supervision of a doctor. PAs work the same areas as doctors and nurses, and duties might include stitching up a cut, taking a patient history and performing lab work.

Support Staff

Doctors and nurses rely heavily on support staff to keep a medical office, clinic or hospital running smoothly. As you might guess, each of these positions plays an important role in the medical world.

Medical Coding Specialists

A coding specialist typically works in an office or hospital. The **medical coding specialist** translates the doctor's written diagnosis and treatment into codes. Then the coder routes the codes to a *medical billing specialist* who uses the codes to complete insurance claims—bills for the doctor's services.

For example, a medical coder working for a radiologist might have a superbill indicating a patient came in for a broken finger, as well as transcription documenting how the x-ray was performed and the radiologist's reading of the x-ray. The medical coder would apply the correct codes for the diagnosis and the procedure, and the medical billing specialist would then send these codes to the insurance company.

Medical Billing Specialists

Medical billing specialists are a perfect example of how interrelated one job is to the next in a medical office. Remember, coding specialists code what occurs during a patient's medical visit, while **medical billing specialists** use the codes that medical coders assign. Billing specialists then complete the insurance forms necessary to collect payment from insurance companies. These specialists know that the doctor doesn't get paid unless the form is completed and filed correctly. Billing specialists have training in medical terminology, medical records handling, and some basic coding.

Medical Transcriptionists

Do you remember when Dr. Matthews, in our previous example, dictated her SOAP notes about a patient encounter? Well, that dictation went to a **medical transcriptionist** who listened to the doctor's dictation and typed and formatted what she heard. This written record was then added to the patient's folder. By using transcriptionists, doctors save time by speaking their notes.

As a medical assistant, you should be aware of what transcribed reports look like. You will often read and refer to these transcribed reports. Two examples of transcribed reports follow: one for Laura Brown and one for Johnny Cruz. Study these reports so that you have a better understanding of a transcriptionist's role in the medical records process.

Transcribed Report Example One

Name: Laura Brown
#030311

PROBLEM
Upset stomach with vomiting and fever.

SUBJECTIVE
The patient is a 22-year-old female. She went to breakfast with her friends earlier this morning. She ordered a cream-filled pastry with her coffee. She stated that no one else had a pastry. About 4 hours later, she started having an abrupt onset of nausea, vomiting, abdominal cramps, diarrhea, headache and a slightly elevated fever. Since she had the symptoms for over 3 hours, she called her family physician and was able to see him this afternoon.

OBJECTIVE
Physical examination reveals a well-developed, well-nourished female in acute distress. Blood pressure: 125/85. Temperature: 99.6° F. Pulse: 88. Respirations: 24. Chest is clear. Cardiovascular examination: Regular rate and rhythm. Abdomen: Positive bowel sounds. Diffuse tenderness with slight pain. Laboratory results indicated a slightly elevated white blood cell count. Abdominal x-ray: Normal.

ASSESSMENT
Staphylococcus Toxin Gastroenteritis.

PLAN
The patient was sent home and told to get plenty of bed rest and begin clear fluids when nausea and vomiting cease. If the symptoms continue for more than three more hours, she should contact the office.

_____
Robert Snow, MD

D:02-08-20xx
T:02-08-20xx
RS:cjl

Transcribed Report Example Two

Name: Johnny Cruz
#030315

PROBLEM
Sore throat with fever.

SUBJECTIVE
Johnny, a five year old, presents to his pediatrician with a sore throat, fever, loss of appetite and a headache. His mother said that he has been on the couch all morning and refuses to eat or play.

OBJECTIVE
After examining the patient, the doctor reports enlargement of the lymphatic glands and a temperature of 103º F. The oral exam reveals a swollen, bright-red throat. A throat culture is positive for strep throat.

ASSESSMENT
Acute Follicular Pharyngitis (Streptococcal Sore Throat).

PLAN
Take erythromycin as directed. Temperature to be taken frequently. Children's Tylenol every 4-6 hours as needed for fever. Encourage bed rest, modify activities, and increase fluid intake. All citrus juices should be avoided until symptoms subside. Call office if symptoms persist.

_____
Marikit Makabuhay, MD

D:09-15-20xx
T:09-15-20xx
MM:bdd

Medical Record Technologists

Certified **medical record technologists** control the flow of medical records to the various people who need to see those records. These technologists take a certification test that ensures they have the knowledge to determine what records are needed, who is authorized to see the records and how these records are organized. You may find that certified medical record technologists are also called Registered Health Information Technicians or RHITs.

Emergency Personnel

Emergency personnel are yet another group of professionals with the sole responsibility of providing immediate medical assistance and transporting the patient to the hospital for treatment. When someone is hurt and needs an ambulance, these people respond. Police officers, fire fighters and other rescue professionals all have some level of medical training.

EMTs take classes that enable them to stabilize patients who have a wide variety of emergency medical conditions.

You have probably heard of *emergency medical technicians (EMTs)* and *paramedics*. **EMTs** take classes that enable them to stabilize patients who have a wide variety of emergency medical conditions. They are often members of ambulance crews and volunteer fire-fighting organizations. Paramedics have more training than EMTs. **Paramedics** are not only able to stabilize patients, but they can also begin treatments to cure patients, such as administering medication.

Office Professionals

Do you remember Margy, the office manager from our previous example? Margy is an example of an office professional. Without office managers and receptionists, many medical offices would grind to a halt! These people organize schedules, record appointments and answer patient questions. Office staff members have terrific communication and organization skills. They also must make a good first impression. The office manager may be the first person a patient sees upon entering a medical office, and her attitude can mean the difference between a pleasant visit and a nightmare for the patient.

Let's pause here and review what you've learned so far with the following Practice Exercise.

✍ Step 8   Practice Exercise 1-2

❑ For the following questions, choose the best term to complete each sentence. Not all terms will be used. None of the terms will be used more than once.

prepare for an exam	insurance coverage	physician
doctor's office	urologist	feet
temperature	medical transcriptionist	ENT
fill out forms	administrative	EMT
emergency clinic	forget	ophthalmologist
kidneys	clinical	nose
medical coder	anticipate	paramedic
draw blood	coding	eyes
pulse	diagnosing	blood bank
office manager	evaluate	fever
weight	ignore	

1. **The front office MA helps patients _____.**

2. **Vital signs include blood pressure, respirations, _____ and _____.**

3. **The MA needs to _____ the physician's needs.**

4. **A(n) _____ diagnoses illnesses and injuries.**

5. **A doctor who specializes in the treatment of disorders of the eye is known as a(n) _____.**

6. **A podiatrist cares for a person's _____.**

7. **Most medical assistants work in a(n) _____.**

8. **A(n) _____ codes what occurs during a patient's medical visit.**

9. **The MA has two types of duties: _____ and _____.**

10. **A(n) _____ has more training than an EMT and is not only able to stabilize patients but also to begin treatments to cure patients.**

⚷ Step 9   Review Practice Exercise 1-2

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 10   Let's Take a Walk

❑ Now that you've met the team members you'll soon be working with, let's take a walk through the work setting.

A Walk through the Office

Though they might be arranged differently, all medical offices have certain things in common. Each one must be arranged so that patients are comfortable and well attended to. They must also be equipped to handle the variety of tasks performed in the medical office. So, let's begin our tour!

Reception Area and Waiting Room

What's the first thing you notice when you walk into a doctor's office? How many exam rooms are available? What color the doctor's socks are? Probably not. Most likely, you notice the lighting, the noise level, the furniture and how many people are waiting to be seen. The reception area and waiting room are the medical team's first chance to make a good impression on patients. These areas have a strong impact on how comfortable patients feel, and physicians go to great lengths to design and decorate these areas to put patients at ease.

Typically, the waiting room will have ample seating, magazines and beverages. Family practitioners and pediatricians will often have a children's play area to help keep the little ones occupied (and the noise level down). The waiting room is generally located near the front office so the administrative staff is available to assist patients with forms and scheduling.

Front Office

The front office is where all of the patient's information is initially recorded. Employees in this area need to have good computer skills and must be comfortable operating many kinds of office equipment. Each of these individuals works as a liaison between the patient and the medical staff. Excellent customer service skills and a pleasant demeanor help make everything run smoothly!

All front offices have at least one telephone and one computer.

All front offices have at least one telephone and one computer. Multiple-line telephones help reduce the number of actual phone units while allowing the staff to better manage the incoming calls. Computers help the staff process information quickly and accurately.

Exam and Treatment Rooms

Once the patient's information has been entered into the office's computer system, it can be easily retrieved from other computers throughout the building. In the exam and treatment rooms, the medical staff can access an individual's records and history as they care for that person. This helps streamline the information gathering process and can also lessen errors and confusion.

Examination table

The exam and treatment rooms are the heart of the medical practice—this is where the patient receives the most care. Here you'll find medical equipment, such as instruments to measure heart rate and blood pressure, weight scales, adjustable lights and devices to examine ears, noses and throats. There is also an examination table that can be adjusted to allow access to the patient while making him as comfortable as possible.

The high volume of people passing through these rooms requires that the medical staff keep them very clean and well organized. Cabinets and drawers hold sterilized supplies that must be handled and disposed of in an appropriate manner. Proper containers and procedures are used to ensure the safety of everyone in the office. And wash sinks and disinfectant soaps are essential to preventing disease transmission.

Medical Records Storage

As more and more medical practices use the computer as a records management system, less space is set aside for storing the hard copies of a patient's medical file. Originals and copies of documents, such as charts and lab results, can now be stored on the computer. This frees up more space for treating patients and speeds up records access.

Many offices use a combination of electronic and physical filing techniques. Some use the computer to store often-needed information while keeping important original documents in a medical records storage area. After a certain amount of time, a few years usually, these records are considered inactive and they can be moved to a more remote area, such as an offsite storage facility.

You're now familiar with areas that all medical practices, big and small, use to care for their patients. Now, let's take a look at some of the additional areas that larger practices employ to aid them in meeting the needs of a larger clientele.

Laboratory

Generally, smaller medical practices don't have the means to perform diagnostic tests onsite. They must contract with independent **laboratories**, or **labs**, to run these tests. For smaller practices, the delay in receiving the results is offset by the fact that they don't have to invest in the costly equipment and technicians required to perform the tests. However, physicians generally want test results as soon as possible, and those in larger practices can afford to house a lab within the office.

In the lab, you'll find specialized devices and laboratory tools, such as centrifuges and test tubes that are used to perform tests. Once the tests are complete, the information can be added to the computer and then accessed by the appropriate medical staff.

Larger practices can also house a few other areas that smaller ones can't. Let's explore these now.
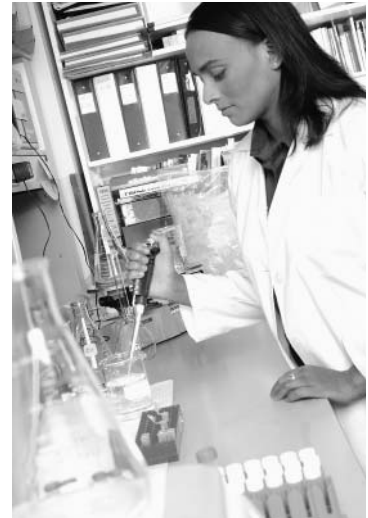
Smaller medical practices usually contract with independent labs to perform most diagnostic tests.

More Treatment Rooms

Patients who once went to the hospital for advanced care can now be treated in the doctor's office, so many practices have increased the number of treatment rooms available.

These additional rooms can be used for longer visits that would otherwise cramp smaller facilities. And more exam rooms mean more patients can be seen at once, so practices can hire larger medical teams to meet the needs of a greater number of patients.

Business Office

The business office allows the support staff to process client information efficiently. Here, the staff can manage a wide range of administrative duties, including records input, billing, coding and filing insurance claims. The office staff uses medical-specific software to check medical coding, create insurance claim forms and invoices and generate financial reports in the business office.

Just imagine how long it used to take to process bills with only a calculator.

Lunch—Break Room

Most practices provide a specific area for employees to relax. Tables and chairs are set up and basic kitchen supplies may be available. A refrigerator and microwave allow the staff to prepare food, and vending machines provide extra convenience. Some form of intercom system is used to keep the front desk receptionist in touch in case the staff members in the break room are needed.

Now that you're familiar with the building's different areas and their purposes, it's time to learn about the characteristics of a successful medical assistant.

📖   Step 11   Personal Qualities of a Successful Medical Assistant

❑ Rhonda has been a patient care technician for many years. She likes the interaction with patients, but she wants a change in her career. She gets along well with her coworkers and keeps up to date about changes in the healthcare field. She'd like to take on more responsibility and learn more about the front office. Her friend Dee, the MA in their office, seems to be involved in everything. Rhonda thinks that medical assisting might offer what she needs.

Rhonda asks Dr. Taylor for some advice about the role of a medical assistant. He tells Rhonda that he depends heavily on Dee to help him provide good patient care. Dee keeps him on schedule—she reminds him to return phone calls and to get to meetings on time. She keeps one step ahead of him in setting up instruments and equipment for each patient. Many of his patients have remarked about Dee's professionalism and warmth.

When Rhonda visits with Dee, she finds out that medical assisting is Dee's second career, too. Dee loves assisting with technical procedures and especially conducting blood tests. She enjoys the variety of skills needed each and every day in a clinic. She can fill in for coworkers in the front or back office, so she's never without something to do.

What makes Dee so successful as an MA? Is she a genius? Is she born with a special healing touch? Well, no she isn't. Many people are born with all the personal skills they need to be a great MA. They just need to know which skills to emphasize, and maybe a few less helpful traits to tone down. You'll find a lot of the skills required are already in your blood!

What Does a Professional Medical Assistant Act Like?

What makes a top notch medical assistant? Let's examine some of the most important character traits of a successful MA.

Curiosity and Drive

Just like Rhonda in the previous scenario, an MA needs to have a true interest in the field of medicine—the constant desire to follow the ever-changing face of medicine. She has a willingness to open her mind to new information in order to learn new skills and change her life. She's willing to take a risk and undergo personal change. Well, we already know you have that—you're taking this course!

Warmth and Confidence

An MA appreciates the satisfaction of caring for others. She constantly interacts with other people—coworkers, doctors, patients and families—so a major factor in her success is a courteous, pleasant manner. She can put a patient at ease by showing warmth and compassion. She is often the one assigned to explain physicians' instructions. She is confident in her abilities and her understanding of the information she's explaining.

Organizational and Professional Skills

A successful MA is a multi-tasker. He can handle several responsibilities at once. He makes lists of things to do so he doesn't forget any of his tasks for the day. He keeps charts and other paperwork organized so that he can find what he needs at a moment's notice. He keeps his work area clean and tidy so there's room to work and so he doesn't lose things. He can prioritize, or decide which duties are more important. "Should I take Mrs. Smith's vitals first, or should I explain to Tommy how to take care of his cast?"

An MA appreciates the satisfaction of caring for others.

As you progress through this course, you'll learn the skills it takes to keep organized and to prioritize.

Professionalism means having the qualities of a highly skilled person. Do you think a person who worked so hard to become good at what she does is going to break the rules, be rude to her employer or spread gossip around the office? Those are all surefire ways to not only ruin her reputation, but also to lose her job! A professional keeps her eyes on the goal ahead—serving her clients, going farther in her career and being the best at what she does. A big part of professionalism in the healthcare world is confidentiality. All medical records, from the patient history form to an x-ray to the doctor's SOAP notes, are **confidential**, or something to be kept secret. The professional medical assistant ALWAYS respects the confidential nature of medical information at all times.

Physical Attributes

Since clinical duties require working with precision instruments, a reasonable level of manual dexterity is required. A medical assistant must be able to wrap small items to sterilize in the autoclave, for example. Along the same lines, good vision is necessary to take readings of vital signs correctly or to measure an infant's head circumference. So an MA keeps her eyewear prescription up to date!

There are other physical attributes of a successful medical assistant that don't have as much to do with what she's doing, but with what her physical appearance is saying.

What Does a Professional Medical Assistant Look Like?

Jane entered the Haber Dash Men's Store to exchange a tie for her husband. As she approached the counter, she saw that two clerks were at either end. She noticed that the younger clerk wore a t-shirt and torn jeans and had a few visible piercings. The other clerk was dressed conservatively in black pants, a starched white shirt and a snazzy bow tie. In a split second, she decided who looked the most helpful. She thought the more conservatively dressed clerk would be more sympathetic to her tie dilemma, so she approached him for assistance.

Has this ever happened to you? Perhaps if Jane wanted advice on which hip hop CD to buy for her son, the other clerk would have appeared more competent. But either way, a judgment was made based on how each employee looked. Of course, no two people look alike, but there are certain factors of appearance that are important in the work setting. This is especially true for a professional healthcare worker.

In a medical setting, patients want to feel that their problems are taken seriously. They feel vulnerable and perhaps a little scared. The more the staff can make patients feel comfortable and cared for, the better patients' treatment will go. And people tend to feel most comfortable with things they're familiar with. Let's examine the parts of a medical assistant's appearance that could help a patient feel either put off or put at ease.

Is that my doctor?!!

A Medical Assistant Has Impeccable Grooming

DO'S:
- Follow the dress code set by your employer and don't test those boundaries. Remember that you represent the physician and the facility.

- Wear clothing that fits—not too big, not too small.

- Dress modestly while on duty—no cleavage or abdomen showing.

- Keep makeup and hairstyles conservative while working.

- Keep jewelry to a minimum while in uniform, for appearance and sanitary reasons.

- Bathe daily and use deodorant.

- Always wear a watch to count pulses, respirations and perform other tests.

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DONT'S:
- Don't wear clothing with stains, holes or wrinkles.

- Don't keep long hair loose. Keep it tied or pulled back so that it doesn't contaminate a sterile field or otherwise get in the way.

- Don't wear perfumes and colognes, which may cause respiratory difficulty in patients.

- Don't wear open-toed shoes—close-toed shoes protect the feet from spills.

- Don't wear dirty or worn-out shoes to work.

A good rule to keep in mind when you're unsure of a particular look or dress is, "Would I wear this to a job interview with my employer?" If the answer is no, then the decision is made for you.

The Medical Assistant's Work Ethic

Everyone has a personal **code of ethics**, how he behaves based on what he thinks is morally right or wrong. When you're performing your duties as a medical assistant, you also need to have a code of ethics to follow. The Code of Ethics and Creed developed by the American Association of Medical Assistants is a good place to start, but it's pretty general. Let's talk about specifics—what are the rules to follow in the medical office? What are you expected to do each and every day to uphold your code of work ethics? Some guidelines are listed below as Do's and Don'ts. Read through the lists and ask yourself why each of these rules can be important to the medical assistant. Then see if you can come up with a few of your own!

DO'S:
- Display your commitment to your career—live a healthy lifestyle yourself.

- Be punctual EVERY DAY.

- Be reliable—the physician should know that you will perform all follow-up with patients, as instructed, and without a reminder.

- Strive to do a complete and accurate job.

- Respect other professionals for their knowledge, just as you expect to be respected.

- Always ask questions if you are unsure of a policy or procedure.

- Be loyal to the physician and other staff members that you work with.

- Keep up-to-date on your skills. Join a professional association to stay informed, take seminars when possible and subscribe to journals about medical assisting.

- Find a trusted, experienced medical professional who can give you advice when you're unsure about what to do.

DONT'S:

- Don't share gossip and personal politics at work.

- Don't share personal problems with your patients.

- Don't expect to be reminded to perform your duties.

- Don't speak poorly of the team that you're a part of, or your patients.

- Don't break the confidence of patients and their health information.

- Don't attempt to "wing it." Wrong decisions can have dire consequences.

- Don't lie to try to cover up a mistake. Honesty will allow the problem to be solved quickly and with the least amount of damage.

Sounds like a person you can count on, right? If you follow these guidelines, you'll not only find success as a medical assistant, but in your personal life, as well!

📖 Step 12   Lesson Summary

❑ You are off and running now! Now you know what your career will be like as you enter the world of medical assisting. Will you be drawn to specialty care? Will you work in a lab or a doctor's office? All of the other medical personnel need your help. There is a place for each medical assistant, nurse, technician and support staff—each needs the others to provide the standard of healthcare that we have become accustomed to receiving in our country.

In Lesson 2, we'll go behind the scenes in the medical front office—the business world of medicine. Then we'll start learning the "language of medicine"—the medical terms that doctors use every day, and soon you will, too! But before you move on, let's review what you've covered in this lesson by completing the following quiz.

✉ Step 13   Mail-in Quiz 1

❑ Follow the steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that this quiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Scanner Answer Sheet included. Use only blue or black ink on your Scanner Answer Sheet.

d. **Important!** Please fill in all information requested on your Scanner Answer Sheet or when submitting your quiz online.

e. Submit your quiz to the school via mail, e-mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 1

For the following questions, choose the best answer from the choices provided. Each question is worth 3.125 points.

1. **An MA can expect to work in any of the following positions EXCEPT _____.**
   a. EKG tech
   b. office manager
   c. nurse
   d. podiatry assistant

2. **A _____ is a file of all of the patient's medical history relating to a doctor and their office.**
   a. medical record
   b. demographic
   c. New Patient Questionnaire
   d. Health History Form

3. **The specialty field that deals with eyes and vision is _____.**
   a. urology
   b. OB/GYN
   c. ophthalmology
   d. dermatology

4. **Podiatry is a specialty that deals with _____.**
   a. skin
   b. diabetes
   c. feet
   d. ears, nose, throat

5. **The National Healthcareer Association offers an exam for the _____ certification.**
   a. Certified Medical Assistant
   b. Certified Healthcare Worker
   c. Certified Medical Administrative Assistant
   d. Registered Medical Team Member

6. **An ENT doctor is a specialist who studies _____.**
   a. eyes, not throats
   b. ears, neck, tonsils
   c. eyes, not tonsils
   d. ears, nose, throat

7. **A physician who cares for patients with disorders of the glands is an _____.**
   a. endocrinologist
   b. internist
   c. anesthesiologist
   d. entomologist

8. **A medical coder uses numbers to _____.**
   a. code patient complaints
   b. assign codes to diseases and procedures
   c. code types of specialists
   d. e-mail message codes to insurance companies

9. **PA stands for _____.**
   a. protein allergy
   b. podiatrist's assistant
   c. payment allowed
   d. physician's assistant

10. **A rapid screen is _____.**
    a. a credit check on new patients
    b. a test for strep throat that can be performed in the office
    c. taking vital signs as fast as you can
    d. the EMT's evaluation of an injured patient

11. **The MA dress code should be _____.**
    a. anything as long as it is clean
    b. fashionable and in your best complementary colors
    c. the dress code outlined by your employer
    d. a white lab coat over slacks

12. **A well-groomed, professional MA makes the patient _____.**
    a. certain that they are being paid too much
    b. confident in their health care
    c. nervous
    d. disinterested

13. **One factor in the increase in demand for medical assistants is _____.**
    a. they are so versatile
    b. they want less work
    c. it looks good on the application
    d. it's similar to CNA

14. **Being willing to work in either the front office or back office demonstrates that the MA is _____.**
    a. restless and distracted
    b. not very good at either
    c. not ambitious
    d. flexible and versatile

15. **Chief complaint means _____.**
    a. what is wrong
    b. the complaint with the most letters in it
    c. how long the patient waited to be seen
    d. what the MA thinks is the worst symptom

16. **Delegating means _____.**
    a. separating items
    b. assigning duties
    c. making deals
    d. doing it yourself

17. **The SOAP format refers to the _____.**
    a. order of dictating that doctors use in recording a patient visit
    b. disinfecting solution for instruments
    c. rule of calculating drug dosages
    d. type of filing system

18. **A code of work ethics is/are _____.**
    a. the rules in the office manual
    b. the code used to bill for the doctor's services
    c. a list of rules that are too general to use every day
    d. how you behave in the workplace based on what you think is morally right or wrong

19. **A medical assistant's work attire should be _____.**
    a. all white
    b. tailored and designer label
    c. clean, wrinkle-free, proper size, professional
    d. whatever style you like best

20. **The reason you have to wear close-toed shoes on duty is _____.**
    a. open-toed shoes are not in style 12 months of the year
    b. to protect your toes from spills, or other dropped items
    c. so athlete's foot germs can't get out
    d. because toes are ugly

21. **You need to wear a watch every day because _____.**
    a. most clinics don't have clocks in the exam rooms
    b. most patients don't wear a watch to the doctor
    c. you will need it to count pulses or respirations
    d. the doctor depends on you to tell her the time regularly

22. **Long hair needs to be pulled back because _____.**
    a. it is a tradition for medical personnel to wear a ponytail or bun
    b. it's the law
    c. that is what is most popular with patients
    d. it can contaminate a sterile field or get in the way of procedures

23. **Demographic information pertains to _____.**
    a. medical history
    b. previous doctor's name and address
    c. name, address, city and phone numbers
    d. education

24. **An oncologist deals with _____.**
    a. cancer
    b. occupational health
    c. orthopedics
    d. otolaryngology

25. **A medical assistant may be certified _____.**
    a. by the NHA or the NCCT
    b. by the NHA or the AMA
    c. before completing any training
    d. to work as an EMT

26. **Physicians who can afford to have a(n) _____ in the medical office save time on diagnostic tests.**
    a. lunch/break room
    b. medical records storage
    c. exam and treatment room
    d. laboratory

27. **The _____ is where you'll find original copies of important documents.**
    a. lunch/break room
    b. medical records storage
    c. exam and treatment room
    d. laboratory

28. **The _____ is where you'll relax when it's time for a break.**
    a. lunch/break room
    b. medical records storage
    c. exam and treatment room
    d. laboratory

29. **The _____ houses medical equipment, an exam table and cabinets for supplies.**
    a. lunch/break room
    b. medical records storage
    c. exam and treatment room
    d. laboratory

30. **Records input, billing, coding and filing claims takes place in the _____.**
    a. front office
    b. business office
    c. reception area and waiting room
    d. emergency department

31. **The _____ should have ample seating, magazines and a children's play area.**
    a. front office
    b. business office
    c. reception area and waiting room
    d. emergency department

32. **Staff in the _____ need to have good computer skills and excellent customer service skills.**
    a. front office
    b. business office
    c. reception area and waiting room
    d. emergency department

Endnotes

[1] http://www.bls.gov/oco/ocos164.html.

[2] http://www.bls.gov/oco/ocos164.html.

[3] http://www.bls.gov/oco/ocos164.html

Congratulations
You've completed Lesson 1.

Don't wait for your quiz results to continue with Lesson 2.

Lesson 2
Work in the Medical Front Office

☐ Step 1   Learning Objectives for Lesson 2

❑ When you have completed the instruction in this lesson, you will be trained to do the following:

- Describe the administrative equipment used in a medical front office.

- Explain front desk responsibilities.

- Illustrate how to schedule appointments.

- Identify the advantages and disadvantages of the various methods of scheduling.

- Describe the process for handling canceled appointments.

- Describe how to handle "walk-ins."

- Discuss how mail is handled in the medical office.

- Explain how to receive, organize, prioritize and transmit mail.

- Describe methods used by a medical assistant in managing a medical office.

- Explain how time management skills and goal-setting will help you manage your responsibilities.

📖 Step 2   Lesson Preview

❑ Let's meet Gina. Gina is the administrative MA for a small, traditional medical practice. Her coworkers are Dr. Howard, Kathleen, the nurse, and Lindsay, the billing specialist. She has worked here for 15 years and feels a strong attachment to the friends and patients she has come to know over the years. The staff is caring and kind to the mostly elderly clientele. Dr. Howard has seen some of these patients all of their lives. He even still makes house calls when one of his more fragile patients needs him. Gina is very valuable to the practice because not only can she handle the front office duties, she can also assist with exams and minor procedures when clinical help is needed.

Gina's day begins at 7:30 a.m. Gina first checks the office's e-mail and phone messages. At 8:20 a.m. the phone begins to ring. Gina fields two calls from patients requesting appointments, so she schedules both of them to see the doctor. Gina then takes a call from a patient who wants Dr. Howard's second opinion on a diagnosis she received from her gerontologist. Gina consults Dr. Howard's schedule and finds some open time later in the week.

It is now 9 a.m. Dr. Howard arrives with a stack of data that must be entered into a spreadsheet format. He also gives Gina several letters to send. Since Gina helps with administrative functions, these are among her many duties. Gina types the letters and puts them on Dr. Howard's desk to be proofread and signed. All the while she is fielding phone calls and greeting patients as they arrive for the day's appointments. She then starts to enter the data from the doctor on the computer. However, an irate patient interrupts her. The patient demands to speak with Dr. Howard, insisting that she was billed incorrectly for a recent visit and procedure and wants her bill fixed immediately. Gina listens and then calmly explains to the woman that the doctor is with a patient, but Lindsay is available to help her. She buzzes Lindsay to let her know that she is bringing the patient back to see her. On the way, she puts the patient at ease by assuring her that the billing specialist will do whatever she can to help her.

Dr. Howard knows Gina will be able to handle the work he brings in for her.

It's 10 a.m., and Gina's day continues like this until 4:30 p.m. During that time she answers phone calls and e-mails, greets patients, enters data and schedules appointments. In the afternoon she calls patients to remind them of their upcoming appointments.

Now that you know what a day in the life of an administrative medical assistant is like, let's discuss what you'll learn in this lesson. We'll begin with review of the equipment you'll find in the medical front office. You'll then learn about the responsibilities in the reception area. You also will learn how to deal with special situations such as angry patients, salespeople and children.

Then we'll move on to appointments. Should you work as an administrative MA, you'll spend much of your time dealing with patients' appointments—making them, canceling them and rescheduling them. You'll learn how to receive patients with and without appointments.

The next section of the lesson will focus on how to handle mail in the office. You'll learn about the different classes of mail, how to handle ingoing and outgoing mail and office e-mail. The last section of the lesson will introduce you to general office management duties.

Are you ready? Let's get started!

📖 Step 3   Administrative Equipment

❑ You probably have a general idea of what kinds of office equipment are used in the medical office. Most likely, you've seen copiers, computers and telephone systems at your doctor's office. Let's review these tools briefly to see how they will aid you in your role as an administrative medical assistant.

Basic Equipment

Basic equipment is just that: basic. These are things that you probably already know how to use. You may even use them in everyday living! Calculators, copiers, fax machines and telephones with answering systems have become so integral to our daily lives that we often consider them necessities. You probably know someone who checks his messages the instant he walks in the house. Only a few decades ago, the first facsimile, or fax machine, was put into commercial use. With the advent of fax machines, transmission of data suddenly became instantaneous, and the possibility of a global economy was born. Now fax machines are so run of the mill that many people have them in their homes. Technology has become an important tool in our lives. Let's take a look at these amazing inventions that we now consider commonplace.

- **Computer**—Administrative staff use computers for almost every function in a medical office—from scheduling and billing patients to sending e-mail appointment confirmations.

- **Calculator**—Medical assistants need to know how to use a calculator to manage a number of different tasks in the medical office, such as figuring medication dosages or calculating a patient's Body Mass Index (BMI). A simple calculator, with 10 number keys, that can perform basic mathematical equations is sufficient for the medical office.

- **Copy Machine**—Administrative staff will use the copier to make copies of insurance cards, encounter forms and other records. You will need to learn how to load the paper, clear paper jams, change the toner and keep the machine clean. There are certain rules and regulations that govern the use of copy machines. Any materials that are copyrighted require that you get permission before you make a duplicate. Make sure that you are copying materials legally. And, of course, your code of work ethics would prevent you from using the copy machine for personal reasons without your employer's consent.

Copy machine

- **Fax Machine**—You'll use a fax machine to send copies of forms and records to other providers, hospitals or insurance companies. The same copyright regulations apply to the fax machine, so be careful not to violate the law. The sensitive nature of some documents requires confidential faxing procedures. It is very important that faxes are not sent to people who are not authorized to view the information. Be sure of what you are faxing and who will be receiving it.

- **Telephone-answering System**—You will use the phone system to store frequently called numbers, direct calls to appropriate personnel, arrange conference calls and use multiple lines to answer more calls at once. There are also functions that allow you to schedule appointments on a daily calendar. Then, the phone can alert you when important meetings are coming up!

- **Answering Machines and Voicemail**—Most medical offices now use voicemail rather than answering machines. The advanced options of voicemail allow the medical office to answer its telephones 24 hours a day, and saves staff time by selecting the correct call recipient without the help of a receptionist.

Specialized Equipment

As you may know, every visit to a healthcare facility results in a medical report. Most healthcare professionals dictate their medical reports on digital recording equipment. Some use a hand-held microcassette tape recorder with a built-in microphone or a standard desktop tape recorder with an attached microphone. Other doctors use a complete digital dictation and transcription system that allows multiple doctors to dictate reports and transcriptionists to access those reports by telephone or computer.

As you can see, there are a wide variety of systems and options available; therefore, it is important for you to have a basic understanding of the different kinds of systems you and your colleagues are likely to encounter in your office.

The computer can store the notes in an electronic medical file after the doctor's recorded notes have been transcribed.

Digital Dictation Equipment

Digital equipment for both dictation and transcription is very popular in today's medical environment. More and more doctors, medical facilities and transcriptionists use this technology, so it's important to have a basic understanding of what it is and how it works.

Digital dictation equipment is based on the same technology that is used for compact discs, or CDs. The voice of the person dictating is **digitized**—that is, the sound is represented digitally—and stored on a computer disk or hard drive instead of on magnetic tape. In practice, digital equipment is very similar to tape equipment. The doctor dictates through a microphone or telephone line into the central system. The transcriptionist works with a transcription unit that looks similar to a tape transcriber, but there is no tape. The unit has a foot pedal and ear phones and is otherwise similar to a tape transcriber. Like a tape transcriber, the digital transcriber unit is connected to the central system, either by phone lines or by wires. Digital equipment is more common in larger facilities, such as hospitals because digital equipment is still generally more expensive than magnetic tape equipment.

Magnetic Tape Dictation Equipment

In the past, doctors used magnetic tape dictation to record patient reports. Magnetic tape dictation equipment evolved from the standard, desktop, tape recorder with a hand-held microphone to the small, microcassette portable recorders (measuring approximately 2 inches by 5 inches and weighing 4 or 5 ounces) that doctors carried with them and used wherever they happen to be.

Your office will probably use digital dictation equipment. In case they don't, you'll want to know how tape dictation works. Doctors dictate their reports into the recorders on microcassettes. The microcassettes then are played back to the medical transcriptionist on a tape-dictation unit.

Microcassette units have useful features, such as voice-activation, which lets doctors dictate reports while they're doing other work with their hands; earphones; external microphones; the option for either battery-powered or outlet-direct operation; and even telephone transmitter adapters, so doctors can send the recording over phone lines to call-in dictation systems.

📖 Step 4   Reception

❑ The front desk of a medical office is often a busy one. Administrative MAs greet patients, answer phones, field patient questions and assist the physician as well as the other office staff. Physicians rely on their medical assistants, especially when they are also responsible for administrative duties. Let's learn about some of the front-office duties in a medical office.

Opening and Closing the Office

The medical assistant may be responsible for opening and closing the office. Usually offices have specific procedures for opening and closing, which are written in a policy and procedures manual along with other office policies. Take a look at the following sample list of duties for opening and closing the office.

Opening the office:

- Unlock doors.
- Check messages from the night before.
- Check e-mail messages.
- Check for lab results.
- Turn on computers and other machines.
- Pull health records for the day's patients.
- Check the fax machine.

Closing the office:

- Ensure that the day's mail is ready to go.
- Shut down computers and other machines.
- File health records and other paperwork from the day.

- Print a list of appointments and reminders for your boss for the next day.
- Count payments for the day and prepare a bank deposit.
- Lock doors.

Interactions with Patients

As a medical assistant, you'll constantly interact with patients whether it's in person, over the phone or via e-mail. Let's learn some skills to effectively interact with patients.

Greeting Patients

When patients open the door to your medical office, you might be the first person they see. Every medical office is different, so while some might have medical office managers, other offices might have several people who staff the front desk—including a medical assistant. Often patients check in for their appointment at the front desk and receive paperwork to fill out. Patients might need to provide insurance information, update their personal information or complete new-patient questionnaires. In any event, you will help patients with their paperwork, gather forms that they need to fill out and answer questions that they might have.

Remember, you are essentially representing your medical office, and your professionalism is a reflection of the quality of your medical office. Some people have anxiety about visiting the doctor, so welcome the patients, help them feel comfortable and assist them with their questions.

In addition to greeting patients, a medical office is a business and will receive visitors. Other visitors could include physicians, pharmaceutical representatives, medical sales representatives, former patients, relatives of patients and employees' family members. All of these visitors should be greeted politely.

As you greet patients, you may have to face special situations with patients—let's learn more!

Handling Special Situations

Medical assistants must demonstrate another important quality in addition to those we've discussed in this course—they must genuinely like people. Most of the people you meet in your job will be pleasant. However, a few may present difficult or challenging situations. Use your intuition, professionalism and respect for people to choose the right solution when problems arise. Let's examine some of the more common special situations that medical assistants encounter.

International Patients

The United States has been called the "great melting pot." People of all cultures and races live in communities small and large. Many use a different language or speak with a heavy accent. Even the smallest medical clinic will sometimes encounter a patient from another country who may not speak English. Find out what language skills the office employees have—several may be bilingual in various languages, and will be able to translate should the need arise. Simple patience and tolerance, as well as taking the time to speak slowly and clearly, are helpful. And watch nonverbal cues—they are the universal language!

Disabled Patients

You may encounter patients who have slight hearing or visual impairments, or who are deaf, blind or wheelchair-bound. Treat everyone naturally, without making a fuss. Indicate where a disabled person might comfortably sit, or move a chair so there is a safe place for a wheelchair.

Children

Cooped up in an office, even for a short period of time, can provoke the wiggles in any child. You can distract a child who is rowdy, nervous, tired or bored by having a few children's books or magazines (in various reading levels), some crayons and scratch paper, and some simple toys on hand. You can bet that everyone—the children, their parents, your coworkers and other patients—will appreciate it.

Quiet children help maintain a professional environment in the office.

Unsolicited Salespeople

Some sales representatives will be welcome at your office. Salespeople—such as pharmaceutical representatives—provide information about current products, services, prices, delivery schedules and technical data to your office. Find out your medical facility's policies on salespeople.

However, you may have to turn away a salesperson whose products are not needed or wanted. Some salespeople can be pushy and insistent—remember, this is their livelihood—but calmly repeat your apology until the person tires of your answer and leaves. Sometimes it helps to recommend a more appropriate place or organization that the salesperson might try.

Angry or Rude Patients

The most difficult situation you may have to face as a medical assistant is the angry patient. Displaying grace under pressure is a highly valued skill, and remaining professional with an irate patient is the first step toward calming him or her down. There might or might not be a good reason for the person's behavior. In any case, your ultimate challenge will be to turn an uncooperative patient into a cooperative one.

Blaming the patient for the problem or the situation, even if unintentionally implied, can add to the tension.

Here are some tips for dealing with difficult patients:

- Remain calm. Your anger or frustration will only stoke the flames of an upset patient's fire.

- Find a private place to discuss the dilemma.

- Let the patient know you're trying to help. Ask questions that will help you solve the problem.

- Listen carefully to what the person is saying and what is behind the words. Listen to the entire story whenever possible.

- Don't criticize or be defensive. Remember, the person is probably not upset with you—you happen to be the nearest office employee available.

- In the rare instance that a patient seems highly aggressive, intoxicated or abusive, call security or a colleague to help and to act as a witness.

Keep these strategies in mind as you deal with the many types of patients you'll encounter as a medical assistant.

It's difficult—but important—to keep your cool when dealing with hotheads.

Another important responsibility of the front desk staff is answering the phone, so let's keep studying!

Effective Phone Skills

We can't mention the front desk without mentioning the telephone. You'll learn telephone professionalism in the supplement, *Develop a Professional Medical Phone Personality,* but we'll briefly discuss the importance of your telephone skills. In today's extremely competitive workplace environment, every contact with patients and coworkers needs to be a positive one— every first impression a favorable one. The first 10 seconds of each call can leave a lasting—or the last—impression of you and your organization. Whether you work for a large hospital or a small medical office, your primary goal should be to create a positive impression.

When you answer the phone, you represent your medical office, and your professionalism is a reflection of the quality of your organization. This is a huge responsibility. After all, a caller may easily detect irritation or an insincere desire to be helpful. Calls need to be answered quickly, or the patient may take his business elsewhere.

The two fundamentals of effective phone skills include **warm confidence** and **genuine concern**. Used together, these traits will help you:

- Deal with patient-service challenges effectively.

- Handle difficult callers with self-assurance.

- Reduce stress and maintain composure, even during a chaotic day.

- Improve marketing skills.

- Make a favorable impression on patients and coworkers.

- Create a sense of trust and preference for your organization in patients.

Let's face it. We've all tried calling organizations only to be frustrated by endless rings, being placed on hold seemingly forever (did they forget?), confusing voicemail systems and rude receptionists with few answers and little help. You don't want your callers to feel frustrated, so when the phone rings, treat the caller as you wish to be treated.

Now that you've learned about how to handle yourself on the phone, let's look at an important phone task—scheduling.

📖 Step 5   Scheduling

❑ If you work as a medical assistant, there are times when you'll schedule **appointments**, or prescheduled meetings, for many patients—it is an important part of a medical office. The most common method of managing time in the medical world is through the appointment. Appointments keep work flowing and give patients and your medical facility the opportunity to meet, discuss, interview, review, sell and teach. You will have to make, change and cancel appointments that patients, other healthcare professionals or salespeople make with your organization, or that your supervisors make with others.

There's more to scheduling appointments than you might think. For instance, the doctors who you work for might have different schedules. One doctor prefers to have the mornings open, so you must schedule all of her appointments in the afternoon. The other doctor prefers to have all of his appointments in the morning so he can have his afternoons open to meet with associates and pharmaceutical salespeople.

As the medical assistant, you'll need to use good judgment when scheduling appointments.

Proper scheduling tests your abilities at multi-tasking.

There are three basic considerations:

1. Your boss's preferences. Does he want Mondays and Fridays free of appointments? Will he see patients between noon and 2 p.m.?

2. Which appointments should be given priority? How are emergencies and urgent issues handled?

3. How much time should be given to each appointment, and how many minutes should be scheduled between appointments? Do appointment times vary, depending on the reason for the visit?

Gathering Information

In order to schedule appointments, you must gather accurate information. Make sure you get the following information before you hang up the phone or let that person leave the office:

- **Name**—Be sure the name is complete, correctly spelled and as the patient would like it written. Write pronunciation symbols next to the entry if this will help you or your supervisor later.

- **Telephone Number**—Record the area code and the phone number of a daytime telephone for each patient. Having the number handy saves you time and effort when you need to cancel or rearrange appointments. If necessary, record a pager, extension number or a cell phone number.

- **Reason for Appointment**—Some offices write the reason out completely while others use code numbers or letters for this purpose; still others use specific phrases.

- **Referral Source**—It is important to know how a patient was referred to a healthcare organization. Your office can study this information to see what kind of advertising works. Some medical professionals like to know who referred a patient, so they might mention it in the first appointment. ("I understand that a patient referred you.") Many physicians routinely send a thank you note to each patient or medical professional who referred a new patient to them.

Recording Information

When recording an appointment, offer the patient a choice of days and times, when possible. Then enter the information into the computer or neatly in pencil if your office uses a paper-based appointment system—you may need to erase it later. Remember to include the patient's phone number or other time-saving information.

Be thorough when recording an appointment.

Before you go home each day, print a list of appointments and reminders for your boss for the next day. The person who is responsible for pulling patient files will read this list or the appointment book early the next morning.

If a patient cancels or changes an appointment, the old entry is erased. If a patient is a no-show, this is noted in the appointment system.

Some medical offices allow for a certain amount of time in the morning and afternoon for emergency or urgent appointments—these are known as **buffer periods**. For example, in many medical and dental offices, the medical assistant has to decide if the needs of a patient justify scheduling an appointment during one of the buffer periods in a doctor's calendar.

Creating a Schedule of Appointments for a Doctor

When you make a schedule of appointments for a supervisor, follow these general suggestions:

- Understand your supervisor's preferences, such as when and how appointments should be made and what kind of reminder he prefers. You can say, "How would you like me to remind the pharmaceutical salespeople of the meetings we've scheduled?"

- Place a copy of the day's schedule on the doctor's desk or other designated location. Have your boss or supervisor review the day's calendar for accuracy.

- Enter appointments into the computer or onto the calendar clearly.

- According to office protocol, avoid scheduling appointments too early or too late—before 9 a.m. or after 4 p.m., for example.

- Schedule appointments in blocks, if you can, instead of scattered throughout the day.

- Keep the doctor's appointment schedule lighter than usual a few days before and a few days after a business trip or vacation.

- Allow enough time for appointments—consider travel time when meetings are out of the office.

- Unless it's a lunch meeting, avoid scheduling appointments during the lunch hour.

- Do not make an appointment if you suspect the doctor does not wish to meet with this person. You can say, "I am only making appointments at Dr. Solvang's request for next week because of his schedule. Please let me call you back after I speak with him."

- Record future appointments and events on the appropriate calendars or in the computer as soon as they are made.

- Place a reminder of critical due dates and anniversaries or birthdays on your calendar one week early.

- Record any necessary or new information on the calendar or in the computer along with the appointment.

- Keep your appointment books, computer files and calendars (for use as a tax history) for at least one full fiscal year (the office's 12-month financial reporting period), depending on the doctor's needs.

- When you start a new calendar, begin by recording the usual recurring events, such as due dates or annual medical conventions.

Now that you have the background information on how to set appointments, let's take a look at the different types of appointment systems.

Keep everyone updated on schedule changes.

Types of Appointment Systems

There are different systems for making appointments. You will see that the success of a system depends on how it fits with your office environment. For example, scheduled appointment systems work well for medical offices. Patients come into the office at a particular time for an appointment. This way, they have time to see the medical professional.

The success of an appointment system also depends on how well it is used. If the system isn't kept current, it won't work as a time-management tool. For example, medical office managers must check appointment schedules regularly, taking care to note appointments made by other office staff. If appointments are disregarded or double booked, the system fails. The best way to balance a day's workload is to choose an appropriate scheduling system and use it efficiently. Let's take a closer look at some appointment systems.

Open Office Hours

Open office hours means a person can walk into an office without an appointment. Open office hours don't usually work well in the average medical office unless it is a designated urgent care clinic that is prepared to handle walk-ins.

Scheduled Appointment Systems

Many offices use scheduled appointment systems—especially medical offices. If Brit has an ear ache for a week, she calls her doctor's office and schedules an appointment at a particular time.

Offices that use scheduled appointment systems may make appointments every five minutes on a computer. These offices expect some people to be early, some to be late, some to be on time and some not to show up at all. People without appointments line up for service—they may have a long or short wait depending on the work flow of the day.

There are several different types of scheduled appointment systems. Let's examine a few of the most common ones.

Time-specified Appointments

In a **time-specified system**, each patient gets an assigned appointment time. The time units can be as little as 10 minutes or as much as an hour, depending on need. For example, in a dentist's office that uses 20-minute units, a dentist might request the medical office manager put a patient down for two units, or 40 minutes, for an appointment that week.

Usually, no one else has the same time-specified appointment. The advantages to this system are that a patient who arrives on time for an appointment won't have to wait long, and a patient's file or other pertinent information can be prepared in advance. Also, the patient receives the full attention of the caregiver she's seeing.

TUESDAY		MARCH 28, 20XX	
7:00^{AM}		1:00	
7:15		1:15	Bruce J. Bell (924-2378)
7:30		1:30	(Cap)
7:45		1:45	
8:00		2:00	Jolene Ramsey (752-2222)
8:15		2:15	(Exam & Clean)
8:30		2:30	Jimmy Ramsey (")
8:45		2:45	(Ch. Exam & Clean)
9:00	Ronald J. Simpson (727-3480)	3:00	BREAK/BUFFER
9:15	(Exam & Clean)	3:15	
9:30	Jane L. Owens (752-2626)	3:30	Ramon Garcia (368-5252)
9:45	(Exam & Clean)	3:45	(Crown/Partial)
10:00	Linda Martinez (368-4555)	4:00	
10:15	(Root Canal)	4:15	
10:30		4:30	(BUFFER)
10:45		4:45	
11:00	James Watts (727-3211)	5:00	
11:15	(Crown)	5:15	
11:30		5:30	
11:45		5:45	
12:00^{PM}	LUNCH	6:00	
12:15		6:15	
12:30		6:30	
12:45		6:45	
EVENING		NOTES	
7:00			
8:00			

The time-specified system assigns a block of time to each visitor.

The main disadvantage to this system is that there is no room for error. If a patient arrives late or an appointment is canceled, time is wasted, and the schedule is thrown off. To avoid wasted time, some offices **double book appointments**, or schedule two appointments at the same time, though this is not common in medical settings.

The disadvantage to double booking is that when two patients show up at the same time, one patient is kept waiting. If there are few no-show patients on a certain day, the office quickly falls behind schedule. With double booking, a medical office might fall behind for the entire day. Further, each visit becomes more rushed and impersonal as the doctor tries to make up time.

Wave-Scheduling Appointments

The **wave-scheduling system** bases appointments on the average length of a routine visit. For example, consider a medical clinic that sees an average of four people an hour for about 15 minutes each. Using the wave system, four patients are told to come to the clinic each hour, usually on the hour, and they are seen in the order of their arrival.

The wave system makes it easy for an office to adjust when patients aren't on time. The patients do the waiting instead of the staff, and every hour the staff begins again with a new group of patients. However, patients might feel that the clinic always runs behind schedule or that it's to their advantage to arrive late. Look at the following example.

MAY APRIL 10

	1:00
	1:15
	1:30
	1:45
Louise Mitchell, Barbara Jones, Eileen Boyd 2:15, Renee Larson	2:00
	2:15
	2:30
	2:45
John Wilson, Kyle Martin, Terry Spaulding, Ken Manning	3:00
	3:15
	3:30
	3:45
Mike Long, Harry Jeffries, Sheila James, Dan Patterson	4:00
	4:15
	4:30
	4:45
	5:00
	5:15
	5:30
	5:45

Client Sign-In Sheet
Please Sign In

NAME	TIME
Louise	1:55
Barbara	2:00
Eileen	2:15
Renee	2:40

Using the wave system, several people are told to arrive at the same time.

Note that Louise, Barbara, Eileen and Renee were all scheduled to arrive at 2 p.m. However, you see that Renee arrived 40 minutes late. If each preceding appointment took 15 minutes, she only had to wait five minutes. She actually benefits from arriving late!

Managing Walk-ins

While some organizations cater to walk-ins, nearly every office will sooner or later have to deal with pedestrian visitors. No matter if walk-ins are common in your medical office, each patient is a customer and should be taken care of.

Greet the Walk-in Visitor

Give the walk-in the same courtesy as the visitor with an appointment.

Greet him and ask the purpose of his visit.

Give him your undivided attention.

Don't let the visitor leave your desk "empty-handed." Give something to each person you greet: the correct answer to a question, a needed form, directions to another department within the hospital and so on.

Visits by family members, salespeople and repair people are treated differently by each office, so you'll need to refer to your office's policy and procedures manual and apply them with professionalism.

Appointment Scheduling Supplies and Equipment

To schedule appointments you may use a medical appointment calendar, a typed list, appointment cards and reminder postcards. You might do all of your office's scheduling on a computer. As an MA, the tools you use depend on employee and employer preferences as well as your own personal preferences.

Visitor's Log

Both to stay organized and for security reasons, many medical settings utilize a *visitor's log*. A **visitor's log** is a simple record of all patients and non-employees who visit the office. The log notes when the visitor arrived, left, and why she came. Note that Health Insurance Portability and Accountability Act (HIPAA) regulations—which you'll learn about in a later lesson—require this log to be kept out of sight of other patients and specify that only the first names of patients be used.

Appointment Book or Computer Program

There are many kinds of appointment books and computer programs for appointment scheduling. Most contain pages to record appointments for an entire year. Daily appointment books or computer programs have one or two pages per day, and the pages might be color coded. The divisions of units or time can be anywhere from 10 minutes to an hour or more each. You'll learn to schedule appointments using a computer later in this course.

Weekly appointment books are designed to display one full week when open. Some books or programs divide each day into two or more columns, and each column is assigned to a different staff member, so several schedules can be maintained and read at once.

Appointment Cards

Have you ever been to the dentist or eye doctor and following your checkup, scheduled your next appointment six months or a year in advance? It can be hard to remember an appointment so far away! Perhaps to help you remember, the medical office manager gave you an **appointment card** with the date and time of the appointment written on it, so you could keep it in your wallet or remember to write it on your calendar. Or maybe a few weeks before your appointment you received a reminder postcard in the mail. These are two techniques offices use to refresh patient memories.

APPOINTMENT

For _____

                                                    A.M.
On _____ **At** _____ **P.M.**

HERBERT E. ZANDERVAN, MD

850 W. OXFORD ST., SUITE 373   TELEPHONE

CAMBRIDGE, COLORADO 80210   303-555-1234

As you can see, use of a scheduling system can go a long way in budgeting your time. When you work as a medical assistant, you may use some or all of the systems we've discussed. But remember, the type of appointment system you use will depend on the medical setting in which you work. And no system will be a success if it is not used well.

Rescheduling

When someone calls to cancel an appointment, offer to reschedule the patient at that time. Be sure the appointment is available, and repeat the new date and time for the patient. If the patient doesn't know when he can reschedule, be sure that you note this. Find out from your supervisor if you are responsible for rescheduling canceled appointments at a future date.

Sometimes doctors go out of town for medical conferences—some even leave the office on short notice to consult with other doctors or to attend to a family emergency. If you need to cancel an appointment for a doctor, call the scheduled patient as soon as possible.

Use these guidelines when canceling an appointment.

1. Express regret on your boss's behalf, but don't dwell on the apology. Do not mention confidential or private reasons:

   WRONG: "Dr. Rudolph has decided to go to her sister's wedding after all." Or "I am so sorry Dr. Rudolph cannot make it. That puts you in a terrible bind, doesn't it?"

   RIGHT: "I am sorry that Dr. Rudolph will not be able to keep your appointment. She will be out of town."

2. Say that the appointment must be changed and shift to a positive alternative:

   WRONG: "I don't see how she'll be able to fit you in with her busy schedule next week."

   RIGHT: "She is expected back in town Monday. Shall I set up another appointment for you early the following week?"

Now, before we move on, take a few moments to review what you've learned with the following Practice Exercise.

✍ Step 6 Practice Exercise 2-1

❑ For questions 1 through 12, choose the best answer from the choices provided.

1. You'll use a _____ to perform basic mathematical functions.
   a. copier
   b. fax machine
   c. multi-line phone
   d. calculator

2. The copier is used in the front office to _____.
   a. make photocopies of insurance cards
   b. calculate dosages of medication
   c. forward calls to the transcriptionist
   d. send copies of records to other physicians

3. A _____ allows you to listen to a recording of the doctor's notes and type them into a computer.
   a. dictation machine
   b. medical transcriber
   c. voicemail system
   d. microfilmer

4. **Often medical offices have specific procedures that are written in a(n) _____ along with other office policies. This way the medical office staff can refer to this for specific instructions on how to open the office or handle visitors.**
   a. employee training manual
   b. transcription
   c. policy and procedures manual
   d. medical assistant list of duties

5. **When you open the office, be sure to _____.**
   a. start the coffee
   b. call the physician to tell her you're there
   c. pull health records for the day's patients
   d. print a list of appointments for the next day

6. **Closing the office for the day includes _____.**
   a. checking the fax machine
   b. turning on the computers
   c. pulling health records and charts for the next day's patients
   d. counting payments for the day and preparing a bank deposit

7. **If you're in charge of greeting patients when they arrive, be sure to welcome them, make them feel comfortable and _____.**
   a. help them schedule their next appointment
   b. answer any questions they may have
   c. tell them to fill out their forms as quickly as possible
   d. find a magazine they would like

8. **If you have a patient who doesn't speak English very well, speak _____ and watch for nonverbal cues.**
   a. loudly and clearly
   b. slowly and spell each word
   c. to a staff member about getting an interpreter
   d. slowly and clearly

9. **The _____ appointment system allows a patient to walk into an office without an appointment.**
   a. open office hours
   b. time-specified
   c. walk-in
   d. wave

10. **Your medical office makes appointments every five minutes on the computer. What type of appointment system does your office use? _____**

    a. The walk-in system

    b. Time-specified system

    c. Open office hours

    d. Scheduled appointment system

11. **A medical office might do all of the following to remind a patient of an appointment EXCEPT _____.**

    a. send the patient a reminder postcard

    b. give the patient an appointment card

    c. do nothing; patients are responsible for remembering their appointments

    d. call the patient to remind him of his appointment

12. **The _____ system bases appointments on the average length of a routine visit.**

    a. wave-scheduling

    b. double-booked appointment

    c. time-specified

    d. open office hours

Step 7   Review Practice Exercise 2-1

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 8   Managing Mail and Office Correspondence

❑ As you can imagine, medical offices receive plenty of mail. In addition, people in a medical office have to send out letters, packages and postcards. As a medical assistant, you may be in charge of managing the mail. Let's learn how to effectively handle mail and office correspondence.

Managing Ingoing and Outgoing Office Mail

In practices large and small, an administrative MA is usually in charge of receiving all the different types of incoming mail and posting all the outgoing mail. Larger companies typically have their own mail departments or mailroom for sorting incoming mail for the whole company. Even so, mail handling skills and knowledge are indispensable for a medical assistant.

Let's follow Barbara, office assistant for Carson Medical Center, as she takes care of her office's mail.

Incoming Mail

Barbara sorts and distributes the incoming mail for two different departments. She sorts it first, then opens and date-stamps it. Then she places it in each employee's mailbox.

Properly processing the mail keeps the entire office running smoothly.

Receiving Mail

First-class letters are not the only kind of mail that arrives at Carson Medical Center. Barbara also sorts packages, journals, catalogs, magazines, brochures and even e-mails and faxes. Some items are delivered by the United States Postal Service (USPS), and some are brought by private carriers such as UPS. Pat, the regular USPS carrier, brings the mail about 10 a.m. each morning, but private messengers and carriers stop by the office throughout the day to drop off and pick up letters and packages. Barbara ensures that all the incoming mail makes it to the right employee and that all the outgoing mail is given to the correct carrier.

Sorting Mail

This morning, Barbara sorted and opened about 40 pieces of mail. With a large quantity, staying organized is critical. First, she divides the mail into separate stacks as follows:

1. *Preference*

2. *First-Class* and *Priority Mail*

3. *Interoffice*

4. Presorted Standard (Bulk)

Preference Mail

Preference mail includes Express Mail, certified or registered mail and, in some cases, letters marked *personal* or *confidential*. Generally, these are materials that are needed immediately.

In addition to the USPS's one-day Express Mail, other private carriers specialize in overnight delivery across the country or across the world. These include Federal Express, U.S. Express, DHL and Airborne.

First-class and Priority Mail

First-class mail includes letters, orders and bills weighing 13 ounces or less. **Priority mail** refers to mail and packages sent first-class weighing more than 13 ounces but less than 70 pounds. First-class and priority mail is important, but it doesn't have as high a priority as the preference mail. Usually overnight services would not be used for these items.

Interoffice Mail

Memos, copies to be filed and directives (letters or notices sent out to everyone within the company) are in the category of *interoffice mail*. Although these items may need to be delivered quickly, handling them is easier because no outside mail service is involved.

Pre-sorted Standard Mail (Bulk)

Much of the mail a business receives is standard mail. This mail used to be called bulk mail and is used primarily by retailers and other advertisers to promote products and services. When items weighing more than 16 ounces (such as books, catalogs and parcels) are mailed, standard mail is used. Parcel post, media mail and bound printed matter are all subclasses of standard mail.

Opening Mail

After sorting the mail, Barbara opens each item and *date-stamps* it. She used to do this by hand, but the company just bought a machine that automates that process for her.

Barbara never opens an envelope labeled *personal* or *confidential*, unless it is addressed to her. After non-confidential envelopes are opened, she removes the contents and clips the envelope and any enclosures to the letter.

While some companies throw away the envelopes of incoming mail, other companies—like Carson Medical Center—ask that the envelope be kept. This preserves the postmark with its cancellation date and return address.

Date-stamping

Date-stamping, which sometimes records the hour and minute as well as the date, is important for verifying receipt of a potentially important item, such as payment of a bill. It also acts as a reminder for the person in charge of an incoming item, since it helps ensure that customer complaints and problems are acted upon quickly. Barbara always stamps the mail in the same place. This way anyone looking for the date stamp will know where to look on each piece of mail.

Mail Registers

Barbara uses a **mail register** to keep track of incoming and outgoing packages. She notes if they are registered, certified or insured, as well as the name of the carrier. Mail registers—also called mail logs—help her keep track of items that arrive in different packages at different times. This way nothing is lost or forgotten.

Some offices still use multiple hand stamps to help traffic the mail.

Distributing Mail

Barbara's final responsibility with incoming mail is to distribute it as soon as possible. While her last company had her deliver mail to everyone's desk, Carson Medical Center has a centralized wall of employee mailboxes. Barbara arranges each pile of mail with the highest priority items on top, down to the lowest priority—the standard mail items—on the bottom.

Forwarding Mail

Some mail is inevitably sent to the wrong address. Barbara helps put these items back on track by forwarding it—re-mailing it with an explanatory note for the post office. This service is free.

There are several reasons to forward mail:

1. If mail is addressed to a former employee or one who has been transferred, cross out the given address, and write the updated address next to it:

   "Please forward to 4415 Murietta Ave., Sherman Oaks, CA 91423."

2. If mail is addressed to previous building owners or tenants, and you don't have their new addresses, write:

   "Addressee no longer at this address—no forwarding address available" or *"Please return to sender—addressee no longer here."*

3. If mail is addressed to someone you don't know, check to be sure this isn't a new employee or a visiting consultant. If it isn't write: *"Addressee unknown."*

Outgoing Mail

At Carson Medical Center, Barbara is also responsible for all outgoing mail. Not only must she see that each item to be mailed is sent with the right carrier, she must check to see that each item is addressed correctly and that it is sent in the right class of mail with the appropriate service, if applicable.

Packages need special attention.

First she prepares all the letters and packages for mailing, then she sorts them by mailing class, depending on how fast each needs to arrive and at what cost. After that she fills out the paperwork for any extra services, like using registered or certified mail, and applies the postage.

Preparing Letters and Packages for Mailing

The best way to prevent loss or damage of mail items is to address them correctly. Barbara follows the tips given by the USPS.

The Address

All mail needs a mailing address and should have a return address. For both, include the following:

Name, if any

Business, if any

Street address, including apartment or post office box or rural route number

City, state abbreviation and ZIP code

Using ZIP Codes

The five digit _ZIP code_ is very important in the processing and delivery of mail. The **ZIP code** identifies the item's destination or origin. You can find out a ZIP code from a ZIP code directory or from your local post office.

The first digit of a ZIP code represents a group of states. Each group is then divided into an average of ten smaller areas; each smaller area is represented by the second and third digits of your ZIP code. The fourth and fifth digits of your code identify your post office.

In 1983, the USPS began using an expanded _ZIP+4 code_. The additional four digits identify your city block or office building. The **ZIP+4 code** looks like this: 91001-3240. The longer code is even more helpful to the postal service and can speed up the processing of your mail.

Most offices deal with several different types of mail.

Always write or type any abbreviations using capital letters.

Addressing with Barcodes

A service that allows speedier reading and sorting of mail is called **barcoding**. Carson Medical Center has barcoding equipment that applies a coded bar to each piece of mail. The coded bar is printed on the lower right-hand corner of the envelope and represents the ZIP code + 4 numbers of the receiver's address. Today, word processing software can automatically add the barcode to an envelope.

Because the mail is already barcoded, the post office can sort it automatically. Not only does this save time and money for the post office, but Carson Medical Center gets a discount rate on mailings of at least 250 pieces. Plus, delivery is more accurate and turnaround is speedier.

Classes of Business Mail

Barbara divides the outgoing mail into **classes**. Each has a different speed of delivery and cost. (For more information on different classes of mail, check out the United States Postal Service Web site at www.usps.com, or visit your local post office.)

Express Mail

If you have mail that must get to its destination in a hurry, *express mail* is an option. **Express mail** arrives the next day by noon or 3:00 p.m. to most addresses in the United States. This includes Sundays and holidays. Express mail is delivered 365 days a year and is automatically insured for $100 against loss or damage. Also, it provides a signature proof of delivery upon request, as well as tracking information. However, express mail items must be mailed by a certain time. Check with your local post office for details.

First Class and Priority Mail

Most business mail travels first class. (Whenever Barbara sends material that isn't business-letter size, she stamps it "first class.") Generally, first class is delivered overnight within a city and within two days inside a state. For distances greater than 600 miles, mail service should take three days but can take more.

Standard Mail

Companies that do large mailings generally use **standard mail**. By presorting, barcoding and arranging their mail, these companies can take advantage of discounts offered by the USPS. Carson Medical Center uses standard mail to send out their *Health News* monthly newsletter and other mass mailings.

Since standard mail is slower than first class, it is typically used for mail that does not need to meet a tight deadline. Check with your local post office for delivery times, bulk-mailing rules and discount prices.

Extra Mailing Services

Sometimes speed and cost are not the only concerns with outgoing mail. With many of the items that Barbara sends out at Carson Medical Center, she needs to know that the addressee received the letter and when, or she needs insurance on a valuable package. The following are different services provided by the USPS to meet these needs.

Since most mail travels by plane these days, "air mail" is seldom specified.

Registered Mail: Registered mail provides thorough security and insurance for articles up to $25,000. It comes with a mailing receipt and access to online tracking of the delivery status.

Certificate of Mailing: This gives proof that an item was mailed.

Collect on Delivery (**COD**): While COD usually isn't used between offices, many companies use it as a way to send merchandise. The mailer collects the price of goods and postage upon delivery, which may not exceed $1,000.

Delivery Confirmation: Delivery confirmation shows the date and time of delivery or all of the attempted deliveries.

Insured Mail: For protection against mail being lost or damaged while it is in transit, the USPS offers insurance depending on the class and value of the item being mailed.

Restricted Delivery: With restricted delivery, the mailer will only deliver an item to the addressee or addressee's authorized agent. This is useful for confidential and very personal mail items.

Return Receipt: If you need proof of delivery, a return receipt is recommended.

Signature Confirmation: With signature confirmation, the addressee must sign as proof of delivery. The time and date are also noted. It is more expensive than a plain return receipt, but it is also more thorough.

Special Handling: While this is not a form of insurance, mail items with Special Handling are given preferential treatment. This is great for goods like perishables.

Stop by your local post office and examine all the receipts of the different mailing services. Some of them can be combined—like registered mail and signature confirmation—to tailor your mailing needs to each item.

Applying Postage to Letters and Packages

Barbara checks each piece of mail to be sure it has the correct postage. For this she uses a postal scale and a postage meter to save time and money.

Postal Scales

Postal scales weigh letters and packages so postage can be calculated accurately. Some electronic scales are even designed to compute the least expensive rates for items. These scales cut costs considerably by the precise weighing of items and by the accurate calculation of rates by zones.

Postage Meters

A **postage meter** is a machine that imprints an accurate amount of postage on a mail item. Many businesses use a postage meter for convenience and speed. The meter has many advantages. You'll find the postage meter will:

- Ensure accurate postage

- Reduce time spent in manual stamping

- Produce stamps of any value so there is no need to keep various denominations of stamps on hand

- Print a high-quality stamp image

- Speed mail delivery, since items are pre-cancelled by meter

- Protect the business against unauthorized use of stamps

Postage meter

To use the postage meter, Barbara weighs each item on the postal scale, then inserts each letter into the meter where the postage, postmark and date are imprinted. For items too big for the meter, the machine prints a sticker that Barbara applies to the package.

The post office maintains Carson Medical Center's active postage meter account and leases them the meter. Barbara monitors the amount of postage in the account and buys more from the post office when the firm runs low.

Handling E-mail

Barbara receives numerous e-mails throughout the day and must organize and distribute them as well. E-mail programs have simplified her e-mail responsibilities.

When she opens her e-mail account—which acts as both her mailbox and filing cabinet, all in one—she has a directory of folders to choose from: *inbox*, *outbox*, *drafts* and *junk mail*. (While different e-mail programs use different names and formats, all of them share these basic features.)

All incoming mail is saved in the **inbox** in the order it was received. Because e-mails that haven't been opened are highlighted, Barbara can tell at a glance which mail is new and which is old. Just like a normal mailbox, e-mail accounts receive junk mail, called **spam**. You can automatically set up spam to be diverted into a special junk mail folder. This helps Barbara from losing an important e-mail in a pile of unwanted ones.

E-mail has become vital to many businesses.

When she sends out an e-mail, Barbara saves her letters in the **outbox**. This folder allows her to keep track of her outgoing mail. With her busy schedule, sometimes Barbara needs more than one sitting to finish important or long e-mails. Using the **draft** folder in her e-mail account, she can save e-mails that she isn't finished writing.

There is yet another handy feature to help organize e-mail. When she receives a lot of e-mail on one topic, Barbara creates a new folder in her e-mail account to store all those messages in one, convenient place.

Responding to Web Inquiries

Many medical facilities such as hospitals and physician practices have Web sites. Potential patients can learn more about the facility and ask questions. In a larger facility, someone might be designated to address these inquiries, but typically a medical assistant or office manager will respond. Inquiries can vary from questions about hours to whether or not you accept a particular insurance. If you don't know the information that is being requested, you can either talk to someone in the office, research it yourself or you can forward the inquiry directly to another person. Either way, respond in a timely and professional manner. The inquiries are coming from your patients or potential patients and your contact with them reflects on the practice.

You've learned some important information about how to effectively manage mail and correspondence. Now let's talk about how to run an office!

📖 Step 9   General Office Management

❑ In addition to managing health records, administrative medical assistants have some other responsibilities as well such as ordering supplies, using time effectively, establishing policies and procedures and educating patients.

Replenishing Supplies

Can't find a pen? Ran out of copier toner? Running out of basic office supplies is frustrating for you and the patient and would reflect poorly on your medical office. Keep an inventory of your office's supplies and order when they get low, so you never run out completely.

You can choose from many different office supply companies, but find out if your office prefers a particular company. Most likely, you can order by mail, fax, phone or the Internet.

Policies and Procedures

You were introduced to the policy and procedures manual earlier in the lesson. As a medical assistant, you may need to help develop the manual or update it. Basically, a **policy manual** is a binder or booklet that holds written policies and procedures for your office. It is a reference for all of the office's employees as well as a manual for training new employees.

Here are some policy topics that could be included:

- Overtime

- Health insurance

- Vacation time/sick leave

- Work breaks

- Timekeeping

- Terminations

Procedures are step-by-step lists of how to perform particular tasks. These serve as an educational tool and reduce confusion about procedures. Every staff member should be able to offer ideas about the procedures in the manual. Each procedure should include the date that it was established so that if a new procedure is written, the old procedure can be recognized and removed.

Here are some procedure topics that could be included in a manual:

- Physical measurements, vital signs—temperature, pulse, respiration, weight and height

- Medical history and physical examinations

- Collecting and handling specimens

- Common emergencies and first aid

Time and Task Management

Medical assistants' days are busy, and effective time management is important. Sometimes you might feel like there's never enough time available to complete all the projects and tasks you have to do. However, here are a few tips that will help you make the most of your time.

Time-management Tips

1. Write down your ideas for saving time. For example, if you know that the busiest times at the post office are early in the morning, later in the day or at lunchtime, make the post office run in the mid-morning or mid-afternoon. That way you miss the rush and don't waste time standing in line.

2. Invest the first 10 minutes of the morning planning your day. Invest the last 10 minutes of the day writing your goals, priorities and "Things to Do" list for tomorrow.

3. Though it may be difficult to do if you have to answer phones and greet patients, try to block out time to work undisturbed on important projects whenever possible.

4. Assign yourself deadlines to keep yourself focused on important projects.

5. Identify your prime times—those times when you are most alert and productive. If you are a morning person, plan your most important work for the morning hours. Plan your easiest tasks during your slower, less productive times.

6. Learn to say no or to delegate jobs to others when appropriate. (When you delegate, you are transferring and entrusting your power or work to someone else.) For example, Dolce is an MA with two large assignments to be completed by the end of the morning—not enough time to do both jobs well. She asks her supervisor which task should be given higher priority, and suggests possible ways that the other project can be completed on time as well.

Once you get familiar with your medical assistant position, your time-management skills will strengthen with practice and creative thinking. However, with so many different responsibilities you may wonder how MAs stay on task. One way is through the use of goals—let's learn more!

Setting Goals

Setting *goals* can also help you manage projects and time. **Goals** are objectives that you want to achieve. To take control of your time, consider these steps to ensure successful goal-setting. You must set long- and short-range goals. For example, you may want to complete a Medical Assistant Course; this might be a long-range goal—it will take you some time to achieve. However, a first step—a short-range goal that you can achieve in relatively little time—might be to enroll in the course.

Research shows that an individual often reaches a long-range goal of four or five years in only half the time—once an individual becomes dedicated to a goal. Moreover, people make better employees when they set goals and make the most of their time.

> Steps to Successful Goal Setting:
>
> 1. Set challenging goals whenever possible.
>
> 2. Set realistic goals.
>
> 3. Set goals that work for YOU.
>
> 4. Set specific goals.
>
> 5. Set a variety of goals.
>
> 6. Set goals that will provide pleasure.
>
> 7. Be flexible when setting goals.

📖 Step 10 Patient Education

❑ All MAs have the opportunity to educate their patients. An informed patient is more relaxed and cooperative than an uninformed patient. For example, a patient injured his knee skiing earlier in the day and just finished his appointment with the doctor. The doctor recommended that he go to another office for an MRI on his knee. The patient is a little uneasy about the test. The medical assistant provides him with a pamphlet about the MRI and answers his questions. The patient now has a better understanding about the test's purpose and procedure.

What kind of education do medical assistants provide? All kinds! As an MA, you can provide information about medical care facilities, health and wellness, therapeutic agencies and social services. In addition, you can answer administrative questions about policies or procedures. This knowledge can ease your patients' minds and increase their confidence in your medical facility.

✍ Step 11 Practice Exercise 2-2

❑ For questions 1 through 14, choose the best answer from the choices provided.

1. **Express mail, certified or registered mail and letters marked Personal or Confidential are examples of _____ mail.**
   a. preference
   b first-class
   c. priority
   d. standard

2. **Your average, everyday letter with a stamp travels by _____ mail.**
   a. express
   b. first-class
   c. priority
   d. standard

3. **Memos and directives should be sorted as _____ mail.**
   a. preference
   b. priority
   c. interoffice
   d. standard

4. **_____ records the day and time an item was received in the mail.**
   a. The post office
   b. Date-stamping
   c. Mail-tracking
   d. A postage meter

5. **Mail sent to the wrong address should be _____.**
   a. thrown away
   b. placed in the "wrong address" file
   c. opened
   d. forwarded

6. **The best way to prevent loss or damage of mail items is to _____.**
   a. deliver them yourself
   b. address them correctly
   c. insure them
   d. certify them

7. **The first digit of a ZIP code represents a _____.**
   a. country
   b. group of countries
   c. state
   d. group of states

8. **The second and third digits of a ZIP code represent a(n) _____.**
   a. area
   b. county
   c. city
   d. specific post office

9. **The fourth and fifth digits of a ZIP code represent a _____.**
   a. city block
   b. specific post office
   c. street
   d. county

10. **For next day delivery to most addresses in the United States, use _____ mail.**
    a. express
    b. first class
    c. priority
    d. standard

11. **Presorting, _____ and arranging large mailings are methods for earning discounts from the USPS.**
    a. registering
    b. certifying
    c. insuring
    d. barcoding

12. **_____ weigh letters and packages so their postage can be calculated accurately.**
    a. Postal scales
    b. Postage meters
    c. Postal scanners
    d. Postage vendors

13. **_____ imprint an accurate amount of postage on a mail item.**
    a. Postal scales
    b. Postage meters
    c. Postal scanners
    d. Postage vendors

14. **Incoming e-mails are automatically saved in your _____.**
    a. inbox
    b. outbox
    c. spam folder
    d. draft folder

For questions 15 through 23, match the following mail services with their descriptions.

15. _____ **Registered mail**

16. _____ **Certificate of mailing**

17. _____ **Collect on delivery (COD)**

18. _____ **Delivery confirmation**

19. _____ **Insured mail**

20. _____ **Restricted delivery**

21. _____ **Return receipt**

22. _____ **Signature confirmation**

23. _____ **Special handling**

a. Protects against loss or damage of an item while it's being mailed

b. Allows the mailer to collect the price and postage of items being sent

c. Gives delicate items preferential treatment

d. Shows the date and time of delivery and attempted deliveries

e. Shows proof of delivery with a receipt

f. Shows proof of delivery with a signature and notes the date and time

g. Gives proof that an item was mailed

h. Tells the mailer to only give the item to the addressee

i. Provides thorough security and insurance, as well as a mailing receipt and online tracking

For questions 24 and 25, choose the best answer from the choices provided.

24. **_____ are step-by-step lists of how to perform specific tasks.**
    a. Policies
    b. Goals
    c. Procedures
    d. Tasks

25. **Which of the following is not a time-management tip? _____**
    a. Assign yourself deadlines.
    b. Don't answer the phone.
    c. Learn to delegate jobs when appropriate.
    d. Set aside the first 10 minutes of each day to plan your day.

⚷ Step 12   Review Practice Exercise 2-2

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 13   Lesson Summary

❑ This lesson has introduced you to the important responsibilities of an administrative MA. You may greet patients, answer questions and handle the phone. You have also gained a strong understanding of mail handling and scheduling appointments.

Use time and task management skills to help you keep organized, and use goal-setting to keep growing in your career!

Let's apply what you've learned in this lesson in the following Mail-in Quiz.

✉ Step 14   Mail-in Quiz 2

❑ Follow the steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that this quiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Scanner Answer Sheet included. Use only blue or black ink on your Scanner Answer Sheet.

d. **Important!** Please fill in all information requested on your Scanner Answer Sheet or when submitting your quiz online.

e. Submit your quiz to the school via mail, e-mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 2

For questions 1 through 4, match the piece of equipment on the left to its use on the right. Each question is worth 3.33 points.

1. _____ **Fax machine**

2. _____ **Voicemail**

3. _____ **Calculator**

4. _____ **Digital transcriber unit**

a. Answer and transfer calls without a receptionist

b. Connects to central unit to obtain dictation

c. Send copies of documents to other providers

d. Assists with figuring medication dosages

For questions 5 through 16, choose the best answer from the choices provided. Each question is worth 3.33 points.

5. **Digitized sound _____.**
   a. produces copies that can be read easily
   b. can automatically fax documents directly from a computer
   c. is stored on a computer or hard drive
   d. provides good security because document retrieval is difficult

6. **It's your first day on the job, and the office manager tells you you'll be opening the office in the morning; however, he doesn't explain what you need to do. What should you do? _____**
   a. Ask another staff member.
   b. Consult the policy and procedures manual.
   c. Tell the office manager you can't do it.
   d. Do what you think is best; someone will fix whatever you've done wrong.

7. **The most effective way to deal with an angry patient is to _____.**
   a. remain calm
   b. tell the patient he must calm down before you can help
   c. point out the patient's errors
   d. call security as soon as the patient gets upset

8. **The most effective way to deal with an unsolicited salesperson is to _____.**
   a. ask the office manager to talk to her
   b. call security if she gets pushy
   c. take her brochures and tell her to come back when the doctor is on a break
   d. turn the person away, then keep repeating your apology until she leaves

9. **Little Tommy is bored to tears, and his young mom forgot to bring anything for him to play with. What can you do to quiet Tommy down?** _____
   a. Give him some scratch paper and crayons.
   b. Ask the mom to keep her child quiet.
   c. Sit in the waiting room and play with him until it's time for his appointment.
   d. Place him in an exam room where no one can hear him.

10. **Joani, the billing specialist, is bilingual—she speaks English and Spanish fluently. Why might this skill be important?** _____
    a. She's able to prepare insurance claims in both languages.
    b. Joani can market the doctor's practice to Spanish-speaking friends.
    c. Joani can teach Spanish to the rest of the staff.
    d. When Spanish-speaking patients come for an appointment, Joani can interpret.

11. **The two fundamentals of effective phone skills are _____.**
    a. to pick up on the first ring and to market the practice to the caller
    b. to make a favorable impression in the first ten seconds and never put callers on hold
    c. warm confidence and genuine concern
    d. professionalism and composure

12. **Ruth is answering the phones for the practice this morning because the receptionist is out sick. She has five lines to answer. When the phone rings, she greets the caller, then places him on hold while she answers the next call. When she has all five lines on hold, she then goes back to Caller 1 and asks who he needs to speak with. By this time, he's angry and frustrated. What did Ruth do wrong and how can she correct it?** _____
    a. Ruth kept the callers on hold too long. She should have transferred each call as it came in, and only put callers on hold if they required more assistance. She then should have gone back to these calls in the order they were received and apologized for the wait.
    b. Ruth put a caller on hold, which you should never do. Phone calls should be handled in the order they come in, so Ruth should have let the second line ring while she helped Caller 1 with his question.
    c. Ruth answered too many lines at once. Since Ruth didn't know how to handle the phones, she should have taken Lines 2 through 5 off the hook so they wouldn't ring.
    d. Ruth put callers on hold, which you should never do. Ruth should have transferred each call as it came in, apologized to those who needed more assistance, then asked them to call back later.

13. **Why do appointments work better in the medical office than allowing walk-ins?** _____
    a. Appointments can be scheduled when the patient walks in the door.
    b. Walk-ins don't allow the practice to have forms filled out beforehand.
    c. Patients who set appointments can be prescreened to ensure that they can pay the bill.
    d. Appointments keep work flowing and allow patients the time they need to discuss their problems.

14. **There are three basic things you should consider when setting appointments. They are: The boss's preferences, time given to each appointment and _____.**
    a. amount of time in between each appointment
    b. whether appointment times should vary
    c. which types of appointments should be given priority
    d. when the doctor takes his lunch

15. **Maggie is making an appointment for Mr. Rogers. She has his name, phone number and name of the referring physician. As she hangs up, she realizes she forgot one piece of information. What was it?** _____
    a. Mr. Rogers' address, so she can send him a reminder postcard
    b. The reason Mr. Rogers needs to see the doctor
    c. The name of his insurance company
    d. Mr. Rogers' address, so she can mail the new patient questionnaire to him

16. **Dr. Martin wants you to schedule a buffer period at 3 p.m. each day. What types of patients can you schedule during the buffer period?** _____
    a. Old patients
    b. New patients
    c. Patients who need a follow-up appointment
    d. Patients with an urgent or emergent problem

For questions 17 through 20, match the type of appointment system on the left with its advantages on the right. Each question is worth 3.33 points.

17. _____ **Open office hours**

18. _____ **Scheduled appointment system**

19. _____ **Time-specified appointments**

20. _____ **Wave-scheduled appointments**

a. Easy for an office to adjust when patients are late

b. Patients with the most urgent need can be seen first

c. Patients who arrive on time don't have to wait and files are prepared in advance

d. Can accommodate patients who are early, on time, late or don't come at all

For questions 21 through 24, read each sentence and decide if it is an appropriate response to a patient when explaining a canceled appointment. Place an "a" by the responses that are appropriate; place a "b" by the responses that are not appropriate. Each question is worth 3.33 points.

21. _____ **"I'm sorry, but Dr. Akbar is unable to meet with you today. May I reschedule your appointment?"**

22. _____ **"I can't reschedule you until next Friday, but Dr. Moore usually goes skiing on Fridays, so I'll have to ask her if she wants to see you."**

23. _____ **"Dr. Martinez has left town for an emergency, but he will be back next Monday. Can I reschedule your appointment on Monday?"**

24. _____ **"Dr. Chang forgot she had a medical conference next week. Do you mind if we reschedule?"**

For questions 25 through 30, choose the best answer from the choices provided. Each question is worth 3.33 points.

25. **A young man arrives at the office with a sprained ankle. He doesn't have an appointment. What should you do?** _____
    a. Tell him where the nearest emergency department is.
    b. Greet him and ask what the problem is. Determine if the injury is an emergency. If not, and you have a buffer period soon, schedule him for that time. If it is an emergency, help him locate the nearest urgent care clinic.
    c. Greet him and determine if the sprain is an emergency. If it is, ask the patient to wait in the nearest open exam room. Explain the situation to the doctor and ask if she can see him before the next scheduled patient or during her lunch hour.
    d. Give the patient a brochure on how to care for a sprain and ask him to make an appointment when the doctor can see him.

26. **After sorting the morning mail, Gretchen then _____.**
    a. delivers it to the correct departments
    b. date-stamps it and makes a copy
    c. enters each piece in a mail register
    d. opens and date-stamps it

27. **The best way to prevent loss or damage of outgoing mail is to _____.**
    a. send it by express mail
    b. use the ZIP+4 code
    c. address it correctly
    d. ensure that it has the correct postage

28. **The best time to order supplies is when _____.**
    a. supply is getting low
    b. supply is still high
    c. the items have run out
    d. you have time to do it

29. **When a medical office is putting together a policy and procedures manual, _____.**
    a. every staff member should be able to offer input
    b. only the medical office manager and physician should write the policies and procedures
    c. the policies and procedures cannot be revised
    d. the less detailed, the better

30. **Successful goal setting involves all of these EXCEPT _____.**
    a. setting specific goals, so you can measure how well you're doing
    b. setting a variety of goals, so you don't get too focused on one thing
    c. being flexible, so when the situation changes, you can revise the goal
    d. making goals unrealistic, so they are more challenging

Endnotes

[1] Johns, M.L. (2002). Health Information Management Technology: An Applied Approach. American Health Information Management Association: Chicago.

[2] Eggers, De A. & Anne M. Conway. Front Office Skills for the Medical Assistant. St. Louis, MO: Mosby, Inc., 2000.

Congratulations

You've completed Lesson 2.

Don't wait for your quiz results to continue with Lesson 3.

Lesson 3
Introduction to Medical Terminology—Word Parts

⎘ Step 1   Learning Objectives for Lesson 3

❑ When you have completed the instruction in this lesson, you will be trained to do the following:

- Explain word parts.

- Define root word, and describe how the term is used.

- Form terms with prefixes, suffixes and root words and provide their meanings.

📖 Step 2   Lesson Preview

❑ In the first two lessons, you learned about the day-to-day procedures in healthcare settings. You saw how medical professionals work together as a team. You also became familiar with medical records, insurance and the role both will play in your new career. Hopefully the first two lessons taught you that medicine is a very rewarding field. You will experience its satisfactions and live up to its challenges every day that you work as a medical assistant. And you know that skilled medical assistants are in high demand. Doctors, hospitals and clinics all need qualified medical assistants. In fact, many such positions remain unfilled due to a lack of qualified candidates. Most employers look for assistants who have schooling and experience, and with the training you receive in this course, you can count on learning the skills you need to find an entry-level position in this medical field!

In the next three lessons, we're going to focus on one very important part of medicine—its language. Doctors, nurses and other healthcare personnel, including medical assistants, communicate in specialized terms that, at first, might sound like a foreign language. You've no doubt overheard medical conversations in your own visits to the doctor. As a medical assistant, you'll hear medical terminology in daily conversation.

With the training you receive in this course, finding the position you want should be easy!

More importantly, you'll use this knowledge as you review medical records for diagnoses and procedures. Just think—you'll soon be a medical terminology guru! What used to sound foreign will someday become as familiar as your everyday conversation.

Fear not, though, learning medical terminology is much easier than learning a foreign language. Medical terms can be broken down into easy-to-understand parts. In this lesson, we will introduce you to your new language—the language of medicine. In these next few steps, you'll learn the building blocks you'll need so that you can learn how to break down any medical term. We'll discuss *root words*, *prefixes* and *suffixes*, and explain how these word parts come together to form medical terms. Throughout the lesson, have your flashcards handy as you study the following material, complete the Practice Exercises and take the Mail-in Quiz. Let's get started!

📖 Step 3   Word Parts

❑ Words are all around us. We use them every day to communicate. We use long words and short words, complex words and simple words. And there will always be words that are new to you. As a medical assistant, you will often be faced with medical terms. These terms might seem complex at times, but you can simplify them. In every sentence we speak, every letter we write, the words are constructed of parts. These parts give us clues to the words' meanings. Because you know this, you can break words down and figure out their meaning from their word parts.

Look at these words you already know:

telephone	microscope
microwave	telescope
television	

It's easy to split these words into parts:

telephone = tele + phone	microscope = micro + scope
microwave = micro + wave	telescope = tele + scope
television = tele + vision	

You see that some of these words contain some of the same parts. *Tele/* is in three of the words. *Telescope* and *microscope* both have the word part */scope*.

So you see, words can be divided into smaller parts called **word parts**, and they are very important in learning medical terminology. Word parts are like building blocks. A child can take a dozen building blocks and make many different things, combining the blocks in different ways. The same is true of word parts. Many different words can be formed from a few word parts.

📖 Step 4   Root Words

❑   The foundation for all words is the root word. The **root word** is the basic component of the terms we use to communicate. Many simple words contain only a root word without any other word parts:

book	cook
read	drive
joy	

We use word parts together with root words to make new and different words. This is usually done by adding either a prefix or a suffix. A **prefix** is a word part added to the beginning of a root word. Conversely, a **suffix** is a word part added to the end of a root word.

When other word parts are added to root words, a new word is formed and this new word means something slightly different. Below are some new words that were formed from the root words we just mentioned. A prefix or suffix has been added to each root word. Remember, a prefix is a word beginning. A suffix is a word ending.

booklet	a little book
reread	to read again
joyful	having the quality of joy
cooked	to cook sometime in the past
driver	a person who drives

In addition to prefixes and suffixes, different root words come together to form new words. Words made up of two or more root words are called **compound words**. Here are some examples:

book + shelf = bookshelf

drive + way = driveway

news + paper = newspaper

Understanding word parts helps us understand new words—even long and complicated words.

You may not know the word *recalculate*. But if you know what *calculate* means, and you know what the prefix *re/* means, then you know that *recalculate* means *to calculate again*.

In fact, you have probably made up some new words yourself just by making new combinations of word parts.

Let's review the word parts we've discussed. Think of these word parts as the building blocks of medical terms.

Word Parts	
Root Word	The root word is the foundation or cornerstone of the word.
Prefix	A prefix is attached to the beginning of a root word to change its meaning.
Suffix	A suffix is attached to the end of a root word to change its word form or meaning.

Now let's take the basic concept of word parts and apply it to medical terms.

📖 Step 5 Medical Terms

❑ Medical terms may appear to be long and complicated, but even the longest medical term can be broken down into small, easy-to-understand parts. Once you become familiar with the individual word parts, medical terminology becomes easy. Try to look at medical terms like little puzzles. You're putting together different pieces (root words, prefixes and suffixes) to form complete words.

Understanding some essential word parts will help you recognize medical terms. In your medical assisting career, you will use these word parts to look up terms in a medical dictionary. You'll soon find that your medical dictionary will become as well-worn as a beloved teddy bear, as you'll use it to confirm correct spellings and meanings. You will learn about each of these word parts, one at a time, in a simple, logical, easy-to-understand sequence. This will make it very easy for you to spell and understand even the longest and most complicated terms.

The Combining Vowel

Many medical terms contain a fourth word part that we have not yet discussed—the *combining vowel*. The **combining vowel** joins a root word to other word parts.

Here is an example of how the combining vowel is used. As you can see, not all terms have all four parts.

Medical Term	Root Word	Combining Vowel	Suffix
dermatology	dermat/	o	/logy
	means *skin*		means *the study of*
Dermatology means the study of skin.			

On the following page are two more medical terms that show examples of word parts. These are compound words because they contain more than one root word.

Medical Term	Prefix	Root Word	Combining Vowel	Root Word	Suffix
neonatologist	neo/	nat/	o	log/	/ist
	means *new*	means *birth or born*		means *the study of*	means *one* who specializes in
A neonatologist is one who specializes in the study of the newborn.					

If you use a different prefix, you will have the following term:

Medical Term	Prefix	Root Word	Combining Vowel	Root Word	Suffix
Perinatologist	peri/	nat/	o	log/	/ist
	means *around*	means *birth or born*		means *the study of*	means *one* who specializes in
A perinatologist is someone who specializes in the study of the fetus and newborn (the time around the birth).					

These are two types of doctors you may find yourself working for as a medical assistant!

Before we move on, let's take a moment to look up one of the new terms you learned in your medical dictionary. Basically, a medical dictionary works much the same way a regular dictionary does—you simply use it to look up the spellings and definitions of medical terms. For example, if you came across the term dermatology and wanted to know what it meant, you'd thumb through your medical dictionary until you found the term. There is the definition—the science that deals with the skin. If you find yourself having a hard time understanding how to use your medical dictionary, feel free to call your instructor for guidance.

TIP If you have access to a computer and the World Wide Web, you can use an online medical dictionary to look up terms. An online medical dictionary can be found at http://www.online-medical-dictionary.org/. Feel free to check it out!

Let's review what you've learned so far with the following Practice Exercise.

✍ Step 6   Practice Exercise 3-1

❑ For the following questions, complete the sentence using the space provided.

1. **The foundation word part of a medical term is called a(n) _____ _____.**

2. **The word part that is attached to the end of a term is a(n) _____.**

3. In a medical term, a prefix is found at the _____.

4. The word part that joins a root word and another word part is a(n) _____.

5. The word part that is attached to the beginning of a term is a(n)
   _____ _____.

6. In a medical term, a suffix is found at the _____.

7. A suffix is attached to the word part called the _____ _____.

8. A prefix is attached to the word part called the _____ _____.

9. A combining vowel combines a word part and a(n) _____ _____.

10. In the term *dermat/o/logy*, the word part */o/* is called a(n) _____
    _____.

⚷ Step 7   Review Practice Exercise 3-1

❏ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 8   Root Words

❏ As you previously learned in this lesson, word parts are the building blocks for all words, including medical terms. Up to this point, we have described word parts in a general manner. Now we will take a closer look at root words—the foundation of all words.

You will find many familiar root words in this lesson because they are used in everyday English as well as in medical terminology. The words we cover in this lesson are the most common of all medical root words.

You may have wondered why medical terms are so long and complicated. Well, it's because these terms have very definite meanings. In medicine, one complicated word takes the place of four or five common words so that doctors can communicate exactly what they mean to other health workers. This prevents misunderstandings that can interfere with the patient's care. For example, the words abdomen and stomach may mean the same thing to you, but they have different meanings to a doctor. Because of this, doctors use different words for the *stomach* and the *abdomen*. You will learn the root words for these and other parts of the body in this lesson and in lessons to come.

Doctors and other healthcare workers use special medical terms because they are professionals, and they know it's important to communicate precise information about a patient's condition. As you learn to build words, you will be building your professional skills. You will be an important link in the healthcare team.

The Functions of Root Words

There are three interesting facts about root words.

Facts About Root Words

Root words are the foundation of a medical term.

Root words name body parts or body functions that the terms represent.

Most medical terms have at least one root word.

Look at these examples of root words:

Root Word	English Meaning
neur/	nerve
gastr/	stomach
scop/	examine
log/	study of
cardi/	heart
path/	disease

You can see these root words in the medical terms that follow. Even though you may not know the meaning of the medical term, you know the meaning of the root word you saw just a moment ago.

Medical Term	Meaning
neuritis	inflammation of nerves
gastritis	inflammation of the stomach
microscope	an instrument to examine small things
logic	a method of studying an area of thought
cardiac	relating to the heart
pathology	the process of the study of disease

Compound Words as Root Words

Some terms have two or more root words in them. They are called **compound words**. In the examples below, we will use the same root words we used previously.

Compound Word	Meaning
neuropathy	a disease process of nerves
gastroscope	an instrument to examine the stomach

Compound Word	Meaning
cardiologist	one who studies the heart
pathologist	one who studies disease

Notice that the combining vowel /o/ was used to join the root words.

Combining Forms of Root Words

Root words are sometimes awkward to pronounce. That is why you may see the combining vowel—usually the letter /o/—between the root word and other word parts. The combination of the root word and the combining vowel is the **combining form**. Look at the combining forms for the root words you saw previously.

Root Word	Combining Form	English Meaning
neur/	neur/o	nerve
gastr/	gastr/o	stomach
scop/	scop/o	examine
log/	log/o	study of
cardi/	cardi/o	heart
path/	path/o	disease

In this course, each new root word you learn will be in its combining form.

Root Word + Combining Vowel = Combining Form

Now that you know the basics about root words, we're going to move ahead and learn more about medical terms. First, you will practice pronouncing root words using the following exercise.

📖 Step 9   Pronounce Root Words

❑ Follow these steps to learn how to pronounce root words.

a. Take your Quick-Learn Tutor and Set 1 flashcards out of your Quick-Learn Kit. Each flashcard contains many flashterms.

b. Find the first flashcard. It begins with Flashterm 1-1. Insert the card into the lower part of Side A of your Quick-Learn Tutor. Push the card up until Flashterm 1-1 appears in the left window.

c. Take out the pronunciation CD and put it in your CD player.

d. Listen to a root word as it is pronounced on the CD. After you hear a root word, put the CD player on pause.

e. Look at the root word in the left window of your Quick-Learn Tutor. Practice pronouncing it out loud several times until you can pronounce it correctly and easily. Push the flashcard up until the meaning of the root word appears in the right window. Read the meaning of the root word.

f. Repeat steps d and e, continuing with all the flashterms on Flashcard 1.

g. When you have completed Flashcard 1, turn the card over for Flashcard 2. Proceed until you have pronounced all the root words for Set 1.

h. Next, begin with Flashcard 1 and play the CD again. This time, pronounce each root word in order but do not stop the CD player after each term.

i. As you pronounce each root word, look at it on the flashcard. Listen to your own pronunciation of each root word. If you mispronounce one, put a check mark next to it with your pencil.

j. Next, practice the root words you mispronounced by listening to the CD again. Be sure you can pronounce each root word clearly and easily.

After you have finished pronouncing all of the root words for this lesson, move on to the next exercise—learning to write root words.

✍ Step 10   Write Root Words

❑ Follow these steps to learn how to write root words.

a. Insert Flashcard 1 into Side A of your Quick-Learn Tutor.

b. Look at each root word as it appears in the window and say it out loud. Write each root word on blank paper. Be sure to put a slash (/) between the root word and the combining vowel, just as you see it on the flashcard.

c. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning beside the root word. Writing these root words and meanings will help you learn them more easily. Here is an example of the first flashterm.

   aden/o   gland

d. Do this for each flashterm for this set.

Finally, after you have pronounced and written each term, learn the meanings of these root words in the next exercise.

📖 Step 11   Meanings of Root Words

❑ Follow these steps to learn the meanings of root words.

a. Again insert the flashcard for Set 1 into Side A of your Quick-Learn Tutor. Beginning with Flashterm 1-1, pronounce each root word out loud. Before you look at the meaning, see if you can remember it. Check yourself by pushing the flashcard up until you can see the meaning in the right window. Do this for each flashterm for this set.

b. Now insert Flashcard 1 into Side B of your Quick-Learn Tutor. Push the card up until you see the meaning of Flashterm 1-1 in the right window. Read each meaning out loud. Before you look, see if you can remember the word part that goes with that meaning. Check yourself by pushing the flashcard up until you can see the root word in the left window. Do this for each flashterm for this set.

c. Practice with the flashcards several times until you are familiar with the root words and their meanings. It's not necessary to memorize all the terms now. You will find that you begin to memorize medical terms as you use them throughout this course.

You may use your flashcards for all Practice Exercises and Quizzes. However, the time you spend reviewing the flashterms now will mean less time spent looking them up later.

> **TIP** After you have finished your activities with a set of flashcards, return the flashcards, in order, to your Quick-Learn Kit. You can easily refer to them later, as needed, throughout the course.

✎ Step 12   Practice Exercise 3-2

Part I

❑ For each root word listed below, write the meaning. Define all the terms you know first. Then use your flashcards for terms that you don't know. Circle the terms you looked up on the flashcards.

	Root Word	*Meaning*
1.	**append/o, appendic/o**	_____
2.	**arthr/o**	_____
3.	**derm/o**	_____
4.	**muc/o**	_____
5.	**hydr/o**	_____
6.	**norm/o**	_____
7.	**neur/o**	_____
8.	**lith/o**	_____
9.	**therm/o**	_____
10.	**path/o**	_____

Part II

For each meaning listed below, write the correct root word. Be sure to include the slash and the combining vowel. List all the terms you know first. Then use your flashcards for terms that you don't know. Circle the terms you looked up on the flashcards.

Meaning	*Root Word*
11. lung	_____
12. small intestine	_____
13. life	_____
14. liver	_____
15. giving rise to	_____
16. muscle	_____
17. pressure	_____
18. cut into	_____
19. kidney	_____
20. blood	_____

⚷ Step 13   Review Practice Exercise 3-2

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to terms circled in the Practice Exercise.

📖 Step 14   Prefixes

❑ If you consider the root word to be the boxcar on a train, the prefix is the engine and the suffix is the caboose. You know that prefixes are added in front of root words while suffixes are added at the end of root words.

A prefix changes the meaning of a medical term. While the root word names a body part or body function, the prefix gives additional information about the medical term.

Facts About Prefixes

- A prefix gives additional information about a medical term.

- A prefix usually tells *where*, *when* or *how*.

Let's take a look at some examples of prefixes and their meanings. Notice that prefixes do not have combining vowels.

Prefix	Meaning
peri/	surrounding
brady/	slow
tachy/	fast
micro/	small, tiny
a/	without, absent

Now let's learn more about prefixes.

Facts About Prefixes

A prefix does not change the meaning of a root word, but a prefix *does* change the meaning of the whole medical term.

In the following list, you see medical terms made from some of the root words you studied earlier. Notice that the prefix does not change the meaning of the root word. (Don't worry about the vowel endings on the root words for now. This will be explained in Step 20.)

Medical Term	Meaning
renal	relating to the kidney
peri/renal	relating to surrounding the kidney
cardia	heart
brady/cardia	slow heart
tachy/cardia	fast heart

glossa	tongue
macro/glossa	large tongue
gastric	relating to the stomach
hypo/gastric	relating to below the stomach
leukocytosis	condition of white cells
a/leukocytosis	condition of absence of white cells

Facts About Prefixes

Many terms do not begin with a prefix.

A prefix is attached to the root word. If there is no prefix, the first word part you will see is the root word. Look at these examples.

peri/renal	starts with prefix
renal	starts with root word

Remember, a prefix only tells *where*, *when* or *how*. A root word tells *what*.

How do you tell if the beginning of the word is a prefix or a root? Well, one way is to see what happens when you remove the first word part. Look at the following example. You saw these terms a moment ago. The root word here means heart.

Medical Term	Meaning
cardia	heart
bradycardia	slow heart

When you take the prefix brady/ away, the meaning of the term changes from slow heart to heart. However, the meaning of the root, heart, doesn't change, so you know that brady/ is a prefix.

Facts About Prefixes and Root Words

- If you take away a prefix, you take away only the *where*, *when* or *how*.

- If you take away a root word, you have taken away the *what*—the basic meaning of the term.

Look at the next example. This term is a compound word. The "what" is a white cell. A white cell is one kind of cell—it is not a red cell or a liver cell. Look what happens to the meaning of the term when we remove one of the two root words that make up the compound word.

Medical Term	Meaning
leuk/o/cyt/osis	condition of white cells
cyt/osis	condition of cells

When the root word leuk/o is removed, the meaning of the term changes from white cells to simply cells. The term cyt/osis means a condition of any kind of cells: red cells, white cells, liver cells and so on. The "what" of the term changed from white cells to cells. Therefore, leuk/o is a root word.

For now, all the prefixes you learn are followed by a slash. Look at these examples.

brady/   micro/   peri/

All the root words you learn have a slash between the root and the combining vowel. Look at these examples.

cardi/o   leuk/o   cyt/o

📖 Step 15   Pronounce Prefixes

❑   Follow these steps to learn how to pronounce prefixes.

a.   Take your Quick-Learn Tutor and your Set 2 flashcards out of your Quick-Learn Kit.

b.   Find the first flashcard for Set 2. Insert the card into Side A of your Quick-Learn Tutor. Push the card up until the first prefix appears in the left window.

c.   Put your pronunciation CD in your CD player. Advance the CD to Flashcard Set 2.

d.   Listen to each prefix as it is pronounced on the CD. After you hear a prefix, put the CD player on pause.

e.   Look at the prefix in the left window of your Quick-Learn Tutor. Practice pronouncing it out loud several times until you can pronounce it correctly and easily. Push the flashcard up until the meaning of the prefix appears in the right window. Read the meaning of the prefix.

f.   Repeat steps d and e, continuing with all the flashterms on the flashcard.

g.   When you have completed the flashcard, turn the card over. Proceed until you have pronounced all the prefixes for Set 2.

h.   Next, begin again with the first flashcard and play the CD. This time, pronounce each prefix in order but do not stop the CD player after each term.

i.   As you pronounce each prefix, look at it on the flashcard. Listen to your own pronunciation of each prefix. If you mispronounce one, put a check mark next to it with your pencil.

j. Next, practice the prefixes you mispronounced by listening to the CD again. Be sure you can pronounce each prefix clearly and easily.

After you have finished pronouncing all the prefixes in this set, move on to the next exercise—learning to write the prefixes.

✍ Step 16   Write Prefixes

❑ Follow these steps to learn how to write prefixes.

a. Insert the first flashcard for Set 2 into Side A of your Quick-Learn Tutor.

b. Look at each prefix as it appears in the window and say it out loud. Write each prefix on blank paper. Remember to include the slash.

c. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning beside the prefix.

d. Do this for each prefix for this set.

Finally, after you have pronounced and written each term, learn the meanings of these prefixes in the next exercise.

📖 Step 17   Meanings of Prefixes

❑ Follow these steps to learn the meanings of prefixes.

a. Again insert the flashcard into Side A of your Quick-Learn Tutor. Pronounce each prefix out loud and then say the meaning. Check yourself by pushing the flashcard up until you can see the meaning in the right window.

b. Now insert the flashcard into Side B of your Quick-Learn Tutor. Push the card up until you see the meaning of the first flashterm in the right window. Read each meaning out loud and then say the prefix. Check yourself by pushing the flashcard up until you can see the prefix in the left window. Do this for each flashterm for this set.

> **TIP** Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily.

c. Practice with the flashcards several times until you are familiar with the prefixes and their meanings. Don't struggle to memorize them. The more times you review your flashcards, the more familiar they will be to you.

A quick way to review flashcards from your lessons is to read down the flashcard without using the Quick-Learn Tutor. Let's do some review.

✍ Step 18   Practice Exercise 3-3

Part I

❑ For each prefix listed below, write the meaning. Define all the terms you know first. Then use your flashcards for terms that you don't know. Circle the terms you looked up on the flashcards.

	Prefix	*Meaning*
1.	a/	_____
2.	ec/, ecto/	_____
3.	infra/	_____
4.	peri/	_____
5.	hypo/	_____
6.	micro/	_____
7.	dia/	_____
8.	epi/	_____
9.	hyper/	_____
10.	intra/	_____

Part II

For each meaning listed below, write the correct prefix. Be sure to include the slash. List all the terms you know first. Then use your flashcards for terms that you don't know. Circle the terms you looked up on the flashcards.

	Meaning	*Prefix*
11.	under, inferior to	_____
12.	half	_____
13.	against, opposed	_____
14.	all, every	_____
15.	away from	_____

16. **between** _____

17. **slower than usual** _____

18. **gross, large** _____

19. **again, back** _____

20. **behind, back** _____

⚷ Step 19   Review Practice Exercise 3-3

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to terms circled in the Practice Exercise.

📖 Step 20   Suffixes

❑ A **suffix** is the word part that is attached to the end of a root word.

Why do we use suffixes? A suffix can change the word form or the meaning of a term. The **word form** tells you how the word functions in the sentence. Word forms are also referred to as parts of speech.

Two important parts of speech are the *noun* and the *adjective*.

A **noun** is the name of a person, place or thing. An **adjective** is a word that describes a noun. Here's an example.

The   green   candle   has   a   distinct   smell.
       adjective   **noun**   **adjective**   **noun**

The words *candle* and *smell* are nouns because they name a person, place or thing. The words *green* and *distinct* are adjectives because they describe nouns.

Some root words can function as both nouns and adjectives. All you have to do is change the suffix. Here's an example.

Noun   **Adjective**

courage   courageous

Compare these two sentences:

Courage *is an important quality for a soldier to have.*

The ***courageous*** *man saved the boy's life.*

In the first sentence, *courage* is a noun. It is a thing, a quality. In the second sentence, the word *man* is the noun, and the word *courageous* describes the man, making *courageous* an adjective.

> Some words can be either a noun or an adjective:
>
> *a comedy*
>
> *a comedy show*

Look at these examples of medical terms that can be changed from nouns to adjectives just by changing the suffix.

Noun	Adjective
cardi/a	cardi/ac
gastr/ia	gastr/ic
muc/us	muc/ous
neur/osis	neur/al

Facts About Suffixes

A suffix can change a root word to a noun or an adjective.

The suffix determines whether a word is a noun or an adjective. Suffixes that make a word a noun are called **noun suffixes**. Suffixes that make a word an adjective are called **adjective suffixes**. No matter what root word they are joined to, a noun suffix always changes the word into a noun, and an adjective suffix makes the word an adjective.

Here is a table of some common medical suffixes. Notice that some of the suffixes are noun suffixes and some are adjective suffixes. Many noun suffixes don't really have a meaning. They are just used to show that the word is a noun.

Suffix	Noun or Adjective	Meaning
/y	noun	the process of
/a	noun	(no meaning)
/ia	noun	condition
/us	noun	(no meaning)
/osis	noun	condition
/ac	adjective	relating to
/ic	adjective	relating to
/ous	adjective	relating to
/al	adjective	relating to

When you learn suffixes later in this lesson, the flashcard will tell you which are noun suffixes and which are adjective suffixes.

Did you notice that many of the suffixes have the same meaning? If they have the same meaning, how do you know which one to use? Well only certain suffixes and certain root words can be combined. For example, each root word generally can be combined with only one adjective ending. Cardi/o is joined with /ac to form cardiac. Cardi/o is never joined with /ic, /al or /ous. The words cardiic, cardial and cardious do not exist.

To help you learn which suffixes go with which root words, we have taken many root words and combined them with the correct suffix. This will help you remember which suffixes go with which roots.

In the next few lessons, you will not only be learning individual word parts but also complete medical terms—both nouns and adjectives.

Often a *root word + suffix* combination can itself be used as a word ending. You can think of this as a **combined suffix**. For example:

path/o + /y = /pathy

The combined suffix /*pathy* can be joined to many other words.

cardiopathy   myopathy   neuropathy

These combined suffixes will be written on your flashcards as regular suffixes, but if you look closely, you'll be able to see the *root word + suffix* combination. Look at these examples.

Root Word	+	Suffix	=	Combined Suffix	Meaning
path/o	+	/y	=	/pathy	process of disease (noun)
path/o	+	/ic	=	/pathic	relating to a disease (adjective)
megal/o	+	/y	=	/megaly	process of enlargement (noun)
megal/o	+	/ic	=	/megalic	relating to enlargement (adjective)
cardi/o	+	/a	=	/cardia	heart (noun)
cardi/o	+	/ac	=	/cardiac	relating to the heart (adjective)

Before we move on, let's pretend for a moment that you know the term cardiopathy, which means heart disease, but you aren't sure if cardiopathy is in fact the correct spelling—you suspect it may be spelled cardiapathy instead. So what should you do? Well, simply look in your medical dictionary, following the terms until you find the correct spelling. In your dictionary you see that you were right the first time. The term is spelled cardiopathy!

Facts About Suffixes and Root Words

Most root words need either a noun suffix or an adjective suffix at the end of them.

Most root words can't stand alone as complete words—they need a suffix at the end of them. But like everything else in life, there are exceptions. For some root words, you don't need a suffix of any kind to form a complete word. These roots already are complete words. By dropping the combining vowel, these root words stand alone. They also work as suffixes themselves.

Listed are three examples of root words that don't need a suffix.

Root Word	Suffix (Noun)	Meaning
gram/o	/gram	picture, record, tracing
graph/o	/graph	machine that creates a tracing or recording
derm/o	/derm	skin

In this course, you will be given more noun and adjective suffixes. Whenever you learn a new term, look to see which suffixes are used with which roots. That way you will begin to recognize which roots and suffixes belong together.

Now let's learn how to pronounce suffixes.

📖 Step 21 Pronounce Suffixes

❑ Follow these steps to learn how to pronounce suffixes.

a. Take your Quick-Learn Tutor and your Set 3 flashcards out of your Quick-Learn Kit.

b. Insert the first flashcard for Set 3 into Side A of your Quick-Learn Tutor. Push the card up until the first flashterm appears in the left window.

c. Put your pronunciation CD in your CD player. Advance the CD to Flashcard Set 3.

d. Listen to a suffix as it is pronounced on the CD. After you hear a suffix, put the CD player on pause.

e. Look at the suffix in the left window of your Quick-Learn Tutor. Practice pronouncing it out loud several times until you can pronounce it correctly and easily. Push the flashcard up until the meaning of the suffix appears in the right window. Read the meaning of the suffix.

f. When you have completed the flashcard, turn it over for the next flashcard for this lesson. Proceed until you have pronounced all the suffixes for Set 3.

g. Next, begin again with the first flashcard and play the CD again. This time, pronounce each suffix in order but do not stop the CD player after each term.

h. As you pronounce each suffix, look at it on the flashcard. Listen to your own pronunciation of each suffix. If you mispronounce one, put a check mark next to it with your pencil.

i. Next, practice the suffixes you mispronounced by listening to the CD again. Be sure you can pronounce each suffix clearly and easily.

After you have finished pronouncing all the suffixes for this set, move on to the next exercise—learning to write the suffixes.

✍ Step 22   Write Suffixes

❑ Follow these steps to learn how to write suffixes.

a. Insert the first flashcard for Set 3 into Side A of your Quick-Learn Tutor.

b. Look at each suffix as it appears in the window and say it out loud. Write each suffix on blank paper.

c. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning beside the suffix.

d. Do this for each suffix for this lesson.

Finally, after you have pronounced and written each term, learn the meanings of these suffixes in the next exercise.

📖 Step 23   Meanings of Suffixes

❑ Follow these steps to learn the meanings of suffixes.

a. Again insert the first flashcard for Set 3 into Side A of your Quick-Learn Tutor. Pronounce each suffix out loud. Before you look at the meaning, see if you can remember it. Check yourself by pushing the flashcard up until you can see the meaning in the right window.

b. Now insert the flashcard into Side B of your Quick-Learn Tutor. Push the card up until you see the meaning of the first flashterm in the right window. Read each meaning out loud. Before looking, see if you can remember the suffix that goes with that meaning. Check yourself by pushing the flashcard up until you can see the suffix in the left window.

c. Practice with the flashcards several times until you are familiar with the suffixes and their meanings. You may use your flashcards for all Practice Exercises and the Mail-in Quizzes. Let's have a quick review.

✍ Step 24   Practice Exercise 3-4

Part I

❑ For each suffix listed below, write the meaning. Define all the terms you know first. Then use your flashcards for terms that you don't know. Circle the terms you looked up on the flashcards.

Suffix	*Meaning*
1. /ectomy	_____
2. /gram	_____
3. /logy	_____
4. /ist	_____
5. /megaly	_____
6. /stasis	_____
7. /ac	_____
8. /meter	_____
9. /ism	_____
10. /oid	_____

Part II

For each meaning listed below, write the correct suffix. Be sure to include the slash. List all the terms you know first. Then use your flashcards for terms that you don't know. Circle the terms you looked up on the flashcards.

Meaning	*Suffix*
11. condition	_____
12. inflammation	_____
13. pathologic condition	_____
14. disease process	_____
15. pain	_____
16. look at	_____
17. withdrawing fluid	_____
18. go	_____
19. instrument to see with	_____
20. throughout the blood	_____

☞➚ Step 25   Review Practice Exercise 3-4

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to terms circled in the Practice Exercise.

🕮   Step 26   Lesson Summary

❑ Understanding how to "decipher" medical terminology is a special link to becoming an effective medical assistant. Although medical terms might seem complex, you now know that you can simplify them by breaking them down into word parts and then figuring out the meanings of the parts. Word parts are like building blocks because many different words can be formed from a few word parts.

The foundation for all words is the *root word*, the basic component of terms. The root word names the body part or body function that the term represents. Most medical terms have at least one root word.

We use word parts together with root words to make new and different words. This is usually done by adding either a *prefix* or a *suffix*. *Prefixes* are word parts added to the beginning of a root word. A prefix gives additional information about a medical term, and a prefix usually tells *where*, *when* or *how*. A prefix does not change the meaning of a root word—but a prefix *does* change the meaning of the whole medical term. A *suffix* is a word part added to the end of a root word. The suffix determines whether a word is a noun or an adjective. Most root words need either a noun suffix or an adjective suffix at the end of them. *Combining vowels* are word parts that join a root word to another word part. Combining vowels make terms easier to pronounce.

It's important that you understand word parts as a medical assistant. While this lesson may have strained your brain a little more than the previous ones, you've now learned about the building blocks you'll need to "build" many medical terms! And don't forget, you may consult a medical dictionary if you're having a hard time finding the spelling or meaning of a medical term. The Practice Exercises in this lesson are important. If you skipped any or struggled to complete some of them, take a few moments to go back and work on them again. Doing so will prepare you for the quiz and build upon your medical foundation of knowledge.

✉ Step 27   Mail-in Quiz 3

❑ Follow the steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that this quiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Scanner Answer Sheet included. Use only blue or black ink on your Scanner Answer Sheet.

d. **Important!** Please fill in all information requested on your Scanner Answer Sheet or when submitting your quiz online.

e. Submit your quiz to the school via mail, e-mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 3

For the following questions, choose the best answer from the choices provided. Use your flashcards to answer these questions. Each question is worth 5 points.

1. **Words are often made up of smaller _____.**
   a. prefixes
   b. word parts
   c. medical terms
   d. sentences

2. **The foundation of a word is called a _____.**
   a. root word
   b. word's base
   c. suffix
   d. prefix

3. **Word parts can be called the _____ of words.**
   a. ladders
   b. building blocks
   c. root words
   d. grammar

4. **A word part that is attached to the end of a word is a _____.**
   a. box car
   b. prefix
   c. combining vowel
   d. suffix

5. **A prefix is found at the _____ of a word.**
   a. end
   b. middle
   c. beginning
   d. none of the above

6. **In many medical terms, the _____ joins a root word to a suffix.**
   a. prefix
   b. apostrophe
   c. locomotive
   d. combining vowel

7. **If driver means a person who drives, what does swimmer mean? _____**
   a. To swim again
   b. To swim past
   c. A person who swims
   d. A person who drives and swims

8. **Which of the following is a compound word? _____**
   a. Bookshelf
   b. Love
   c. Booklet
   d. Trust

9. **A suffix is attached to the word part called the _____.**
   a. end
   b. root word
   c. prefix
   d. adjective

10. **A word that is made up of two or more root words is called a _____.**
    a. combining vowel
    b. compound word
    c. double root
    d. none of the above

11. **In the term neo/nat/o/log/ist, the word part nat/ is a _____.**
    a. suffix
    b. prefix
    c. combining vowel
    d. root word

12. **In the term neo/nat/o/log/ist, the word part neo/ is a _____.**
    a. prefix
    b. root word
    c. combining vowel
    d. suffix

13. **In the term dermat/o/logy, the word part /o/ is called a _____.**
    a. suffix
    b. prefix
    c. combining vowel
    d. root word

14. **If reread means to read again, what does review mean? _____**
    a. To view again
    b. To view backwards
    c. To view sometime in the past
    d. To view and read together

15. **_____ is the correct spelling of the term that means any disease of the muscles.**
    a. Myapathey
    b. Myopathey
    c. Myopathy
    d. Myapathy

For items 16 through 20, select the correct root word for each meaning.

16. **skull** _____
    a. criani/o
    b. crani/o
    c. neur/o
    d. cardi/o

17. **liver** _____
    a. lith/o
    b. hepat/o
    c. duct/o
    d. hist/o

18. **kidney** _____
    a. ren/o
    b. tens/o
    c. col/o
    d. enter/o

19. **clot** _____
    a. therm/o
    b. muc/o
    c. thromb/o
    d. myel/o

20. **stomach** _____
    a. enter/o
    b. hydr/o
    c. arthr/o
    d. gastr/o

Congratulations
You've completed Lesson 3.

Now it's time for a bit of fun before you continue.
Don't wait for your quiz results to continue with Lesson 4.

Just for Fun

After a long day of helping people, most health professionals take a break to smile and have fun. Having fun after working hard has four benefits.

- It relieves stress.
- It exercises your face muscles.
- It isn't fattening.
- It's free.

If anything else in this world gave you these four benefits, you'd take as much of it as you could get. So every once in a while we'll take a fun break—just like this.

Some Just for Fun pages are for enjoyment. Some will tell you interesting things about language and the medical field. Some will give you a warm smile.

Most people use words that come from Greek and Latin every day. Here are some examples.

Greek	Latin
telephone	plumber
chemistry	alibi
therapy	medium
skeleton	honor

The English language has more ways to say something than any other language. That's because it contains words from so many languages. In fact, there are a lot of words in English that come from French. Here are some examples.

French

humility   liberty   image

The English language also uses words that are Anglo-Saxon. They are usually three or four letters long. When you use a "four-letter word," you are probably using an Anglo-Saxon word.

Look at these examples of common three- and four-letter words.

Anglo-Saxon

cat   dog   free

Medicine has been around a long time. The word parts you are learning come from Greek and Latin.

A long time ago, no one in England spoke English. The peasants spoke Anglo-Saxon. Peasants couldn't read or write. They could only speak their language. It was very simple. Speaking Anglo-Saxon meant you hadn't been to school and didn't have much in the way of gold and diamonds, or even food, for that matter. Anglo-Saxon words became our everyday words.

The only people who were educated were the clergy. They read and wrote Latin. They studied Greek when they wanted to do something really exciting. Therefore, anyone who spoke Latin or Greek was considered educated. As science developed, scientists used Latin and Greek so everyone would know they were educated. Greek and Latin words became our professional terms.

A long time ago, no one in England spoke English. The peasants spoke Anglo-Saxon but couldn't read or write.

In 1066, the French invaded England. The French ruled England and owned the land. The French language gained importance. Eventually French words became our elegant words.

After many years, the English language grew from these roots. That's why in English today, there are usually three words (at least) for everything. If you consider where the different words come from, you can see why different words for the same thing may sound everyday, scientific or elegant. Look at these examples.

Anglo-Saxon	Latin or Greek	French
fire	conflagration	blaze
job	profession	affair
happy	felicitous	joyous
behind	posterior	derriere

Today, by choosing different words, English can still sound everyday, professional or elegant. Don't be afraid of long words. You will soon learn easy, step-by-step ways of breaking them down to the building blocks you have learned. In this section, you are learning the building blocks. In future sections, you will learn what the terms mean. Soon you will be using medical terms like a professional, because you will be a professional.

Lesson 4
Medical Terminology—Dividing and Combining Terms

🗋 Step 1   Learning Objectives for Lesson 4

❑ When you have completed the instruction in this lesson, you will be trained to do the following:

- Divide common medical terms into parts and provide the meaning of each part.

- Properly combine prefixes, root words and/or suffixes to form medical terms that describe certain diagnoses and procedures.

- Explain and define common terms used in the medical field.

📖 Step 2   Lesson Preview

❑ Previously, you learned that word parts fit together to form medical terms: prefixes, root words and suffixes. In this lesson you'll learn how to take complete terms and divide them. You'll also learn how to combine word parts correctly to create new terms.

You may recall the train example in the last lesson—the root word is the boxcar, the prefix is the engine and the caboose is the suffix. When you divide medical terms, you can look at the entire train and determine the prefix, suffix and root word. This is important because you will sometimes be faced with unfamiliar terms. If you can look at an unfamiliar word and divide it properly, you can then determine its meaning based on the word parts.

As a medical assistant, you might review medical records that don't have the correct medical term spelled out for you. This lesson shows you how to take these "plain English" descriptions and combine word parts to form the correct medical term. As you read this lesson, keep in mind that you are learning both the meanings of words and how to assemble them.

Throughout the lesson, be sure to have your flashcards and medical dictionary handy as you will need to consult them as you study the following material, do the Practice Exercises and take the quiz. Your knowledge of medical terms will make you a valuable resource in the medical field—you will be able to communicate effectively with other healthcare providers, hospitals and insurance companies. Now, let's get started!

📖 Step 3   Dividing Medical Terms

❑ You have learned about word parts—the building blocks of medical terms—and you can identify these building blocks in medical terms. By dividing medical terms into their word parts, you can recognize new or complicated medical terms. Then you can look them up in a dictionary more easily and spell them correctly.

Fact About Dividing Words

When you are looking for the word parts in a medical term, read from the end of the term to the beginning. This simple technique lets you "see" word parts more easily.

Let's look at the following example.

thermometer

If you read from the end of the word, the first word part you see is the suffix *meter*. Draw a slash to the left of *meter*.

thermo/meter

Continue reading from right to left. Next you see an *o*. This may be a combining vowel. Put in another slash. Continue reading from right to left. You see the root word *therm*.

therm/o/meter

Now give the meaning of thermometer starting with the suffix.

Word Part Starting with End of Word	Meaning
/meter	instrument to measure
o	(combining vowels have no meaning)
therm/	heat

• A thermometer is an instrument to measure heat.

The following two examples further show you how to divide a medical term, reading from end to beginning, to find the meaning.

Word Part Starting with End of Word	Meaning
/genesis	creating
o	(combining vowels have no meaning)
carcin/	cancer of gland tissue

• Carcinogenesis means creating cancer of gland tissue.

Word Part Starting with End of Word	Meaning
/plasty	restore through surgery
o	(combining vowels have no meaning)
maxill/	upper jaw

- Maxilloplasty means restoring the upper jaw through surgery.

Of course, whenever you are pronouncing a term, you should read from the beginning of the term to the end, just as you would read any new word in English.

Consonants, Vowels and the Role They Play

When you divide medical terms it is important to remember that a **consonant** is any letter of the alphabet except *a*, *e*, *i*, *o*, *u* and, for the purposes of working with medical terms, *y*.

Fact About Dividing Medical Terms

When a suffix begins with a consonant, there is a combining vowel between the root word and the suffix.

Let's take a look at a few examples.

Term with Suffix Beginning with Consonant	Meaning
cardi/o/ + gram	tracing of the heart
thromb/o/ + plasty	surgical repair of blood clot
thorac/o/ + centesis	withdrawing fluid from the chest
gastr/o/ + megaly	enlargement of the stomach

Because all the suffixes in these examples begin with a consonant, the combining vowel is used. (Did you notice in these examples that dividing slashes (/) were placed between each word part?)

Fact About Dividing Words

When the suffix begins with a vowel, there is no combining vowel between the root word and the suffix.

You already learned that **vowels** are the letters *a*, *e*, *i*, *o* and *u*. Also, *y* is considered a vowel when working with medical terms. Let's look at some examples.

Term with Suffix Beginning with Vowel	Meaning
arthr/ + algia	pain in joints
bi/ + opsy	look at living (tissue)

cardi/ + ac	relating to the heart
hemat/ + oma	blood tumor (lump)
cardi/o/path/ + y	disease of the heart

As you can see, the combining vowel was not used in the terms above before the suffix. The last term, *cardiopathy*, ends with the suffix /y. The suffix /y follows this vowel rule because it acts like a vowel here.

Fact About Dividing Words

There is a combining vowel between two root words in a compound word.

As you learned in Lesson 3, a compound word has two or more root words in it. Look at these examples. Notice the combining vowel between the root words. Also notice that the combining vowel remains even if the second root word begins with a vowel.

Compound Word with Combining Vowel	Meaning
cardi/o/log/ist	heart specialist
gastr/o/enter/o/logy	study of the stomach and bowels
therm/o/meter	instrument to measure heat

A Little Practice

Let's get a little practice in dividing medical terms. Look for word parts in the examples that follow. Read each term from the end of the term—from right to left. Put in slashes between word parts. Pay special attention to whether or not a combining vowel is present. Be careful. Not every *o* is a combining vowel, so use your flashcards if you need help.

Breaking things down to manageable sizes makes them easier to handle.

perirenal

hemostasis

neuritis

hepatitis

cranium

pararenal

appendectomy

paraneural

cardiology

hepatomegaly

Here is how you should divide these terms. Either way is correct as the combined suffix does not always need to be divided.

peri/ren/al

hem/o/stasis

neur/itis

hepat/itis

crani/um

para/ren/al

append/ectomy   or   append/ec/tom/y

para/neur/al

cardi/o/logy   or   cardi/o/log/y

hepat/o/megaly   or   hepat/o/megal/y

Now give the meaning of these terms. Start at the end of the term and work to the left. Write the meaning in the blank lines. (The meaning you give doesn't have to be exactly the same as the one provided. We will use the meanings from your flashcards.)

peri/ren/al   _____

hem/o/stasis   _____

neur/itis   _____

hepat/itis   _____

crani/um   _____

para/ren/al   _____

append/ectomy   _____

para/neur/al   _____

cardi/o/logy   _____

hepat/o/megaly   _____

The meanings for each of the previous terms are listed here:

peri/ren/al	relating to around (surrounding) the kidney
hem/o/stasis	control (hold in) blood
neur/itis	inflammation of nerve(s)
hepat/itis	inflammation of the liver
crani/um	(structure of the) skull
para/ren/al	relating to beside (beyond) the kidney
append/ectomy	(the process of) removal of the appendix
para/neur/al	relating to beside a nerve
cardi/o/logy	(the process of) the study of the heart
hepat/o/megaly	(the process of) enlargement of the liver

The words "the process of" are enclosed in parentheses because they usually are left off when the word is defined in common speech. For example, *hepatomegaly* is commonly defined as enlargement of the liver, not *the process of enlargement of the liver*.

Word Meanings

People who work in the medical field often use shorter and simpler meanings of words to save time. As you become more familiar with medical terms, you probably will use simpler meanings also. Sometimes a simpler meaning of a word can be formed by reading the word from beginning to end.

Compare these simpler meanings that were given by an experienced medical assistant to the meanings derived from word parts.

Term	Meaning Derived from Word Parts	Simpler Meaning
thermometer	instrument to measure heat	heat-measuring instrument
paraneural	relating to beside a nerve	next to a nerve
cardiology	(the process of) the study of the heart	heart specialty
hepatomegaly	(the process of) enlargement of the liver	liver enlargement

For now, simply start at the end of a word that is new to you. This will help you look for word parts that you recognize and help you give meanings for word parts. This is the easiest way to find word parts and give meanings. As you become more familiar with various word parts, feel free to use simpler meanings.

Now let's examine a few word parts and their meanings. Remember, you may use your flashcards to find word part meanings, and as you learn more word parts, dividing medical terms will become easier!

Word Part	Meaning
bi/	two
/malacia	softening
syn/, sym/	together with
gynec/o	female
sarc/o	nongland tissue, flesh
vit/o	living, alive
chem/o	chemical, drug
meta/	change, beyond
maxill/o	upper jaw
nect/o	bind
/oma	tumor, mass

Before we move on to our first Practice Exercise, examine the following two boxes. The boxes list common prefixes and suffixes and their meanings. These boxes will help you as you divide and combine terms.

Prefix	Meaning
a-, an-	absence of, without, no, not
ac-, af-, ag-, al-, an-, ap-, ar-, as-, at-	toward, increasing
alb-	white
ambi-	both
ante	before
bio-	life
circum-	around
col-, com-, con-, cor-	together, with
contra	opposite, against
dia-	across, apart, complete knowledge, through
dis-	apart, separate
em-, en-	in
endo-	within, in, inner
e-, ex-	out, away
il-, im-, in-, ir-	not
juxta-	near, beside
milli-	one-thousandth
mono-	one, single
non-	not
post	after
primi-	first
pro-, pros-	before, forward, in front of
re-	back, behind
rube-	red
sub-	under, below
trans-	across, through, over, beyond
uni-	one

Suffix	Meaning
-ad	toward
-al	relating to, pertaining to
-algia	pain
-desis	binding
-ectomy	removal, excision
-emesis	vomit
-form	resembling, like
-genetic, -genic	beginning, originating, producing
-gnosis	about the patient's condition
-gram	recording, picture
-iasis	condition, formation of
-iatric	pertaining to medical treatment
-iatry	study or field of medicine
-ic	relating to, pertaining to
-ical	pertaining to
-itis	inflammation
-logist	specialist in the study of
-logy	study of
-ory	pertaining to
-osis	abnormal condition
-philia	attraction
-rrhexis	rupture
-scopy	process of visual examination

✍ Step 4   Practice Exercise 4-1

Part I

❑ Divide each medical term listed below by putting slashes between the word parts, including between root words and combining vowels. Remember, you don't have to divide a combined suffix. For example, cardi/o/logy and cardi/o/log/y are both correct. Do all the items you know first. Then use your flashcards for items that you don't know. Circle the items you had to look up on the flashcards. The first word is divided for you.

Part II

For each medical term listed below, write the meaning. Do all the items you know first. Then use your flashcards for items that you don't know. Circle the items you had to look up on the flashcards. We gave you the first answer to get you started.

     Divide   *Meaning*

1. **cardi/o/megaly**   <u>enlargement of the heart</u>

2. **acromegaly**   _____

3. **macroglossia**   _____

4. **histology**   _____

5. **arthritis**   _____

6. **splenomegaly**   _____

7. **aleukocytosis**   _____

8. **thoracocentesis**   _____

9. **gastrectomy**   _____

10. **pulmonary**   _____

�//✏ Step 5   Review Practice Exercise 4-1

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to items circled in the Practice Exercise.

📖 Step 6   Pronounce Word Parts

❑ Now that you know the basics about dividing medical terms, follow these steps to learn how to pronounce word parts.

   a. Take your Quick-Learn Tutor and your Set 4 flashcards out of your Quick-Learn Kit. Insert the first flashcard for Set 4 into Side A of the Tutor.

   b. Put your pronunciation CD in your CD player. Advance the CD to Flashcard Set 4.

   c. Listen to a word part as it is pronounced on the CD. After you hear a word part, put the CD player on pause.

   d. Look at the word part in the left window of your Quick-Learn Tutor and practice pronouncing it out loud several times until you can pronounce it correctly and easily. Push the flashcard up and read the meaning of the word part.

   e. Continue this process for all the flashcards for this set.

   f. Next, put the flashcards in order and play the CD again. This time, pronounce each word part in order but do not stop the CD player.

   g. As you pronounce each word part, look at it on the flashcard. Listen to your own pronunciation of each word part. If you mispronounce one, put a check mark next to that flashterm.

   h. Next, practice the word parts you mispronounced by listening to the CD again. Be sure you can pronounce each word part clearly and easily.

✍ Step 7   Write Word Parts

❑ Follow these steps to learn how to write word parts.

   a. Insert the first flashcard for Set 4 into Side A of your Quick-Learn Tutor.

   b. Look at each word part as it appears in the window and say it out loud. Write each word part on blank paper. Remember to include the slash.

   c. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning beside the word part.

   d. Do this for each flashterm for this set.

📖 Step 8   Meanings of Word Parts

❑ Follow these steps to learn the meanings of word parts.

   a. Again insert the first flashcard for Set 4 into Side A of your Quick-Learn Tutor. Pronounce each word part out loud and then say the meaning. Check yourself by pushing the flashcard up until you can see the meaning in the right window.

b. Now insert the flashcard into Side B of your Quick-Learn Tutor. Push the card up until you see the meaning of the first flashterm in the right window. Read each meaning out loud. Before you look, see if you can remember the word part that goes with that meaning. Check yourself by pushing the flashcard up until you can see the word part in the left window. Do this for each flashterm for this set.

c. Practice with the flashcards several times until you are familiar with the word parts and their meanings. You may use the flashcards for the Practice Exercises and the Mail-in Quizzes.

✍ Step 9   Practice Exercise 4-2

Part I

❑ For each word part listed below, write the meaning. Do all the items you know first. Then use your flashcards for items that you don't know. Circle the items you had to look up on the flashcards.

Word Part	*Meaning*
1. carcin/o	_____
2. ox/o	_____
3. laryng/o	_____
4. cerebr/o	_____
5. /genesis	_____
6. axill/o	_____
7. /penia	_____
8. /tome	_____
9. /tomy	_____
10. /oma	_____

Part II

For each meaning listed, give the proper word part. Be sure to include the slash. Do all the items you know first. Then use your flashcards for items that you don't know. Circle the items you looked up on the flashcards.

Meaning	*Word Part*
11. self	_____
12. run	_____
13. chemical, drug	_____
14. with	_____
15. change, beyond	_____
16. rib	_____
17. female	_____
18. lower jaw	_____
19. brain	_____
20. many	_____

☞ Step 10   Review Practice Exercise 4-2

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to items circled in the Practice Exercise.

✍ Step 11   Practice Exercise 4-3

Part I

❏ Divide each medical term listed below by putting slashes between the word parts, including between root words and combining vowels. Remember, you don't have to divide a combined suffix. For example, cardi/o/logy and cardi/o/log/y are both correct. Do all the items you know first. Then use your flashcards for items that you don't know. Circle the items you had to look up on the flashcards. The first word is divided for you.

Part II

For each medical term listed, write the meaning. Do all the items you know first. Then use your flashcards for items that you don't know. Circle the items you had to look up on the flashcards. We gave you the first answer to get you started.

Divide	*Meaning*
1. oste/o/malacia	softening of bone
2. sarcoma	_____
3. carcinoma	_____
4. connect	_____
5. maxillary	_____
6. laryngitis	_____
7. vital	_____
8. costal	_____
9. craniotome	_____
10. chemotherapy	_____

⚷ Step 12   Review Practice Exercise 4-3

❏ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to items circled in the Practice Exercise.

📖 Step 13   Combining Medical Terms

❑ Combining word parts to form medical terms is just the reverse of dividing medical terms into word parts.

When you learned to divide medical terms, you gained the skill of recognizing long or complicated terms by dividing them into their word parts. Sometimes when doctors fill out bills and charts, they may use a term unclearly or incorrectly. If you know how to combine word parts, you can put together the correct medical term from its everyday English meaning. This is the reason for learning how to combine medical terms.

Knowing just a few word parts allows you to combine them into many different medical terms. Look at this example of the number of new terms you can form each time you add a new word part to your list.

Word Parts Learned	Terms You Can Form			
Root Words:	gastr/o	cyst/o	splen/o	
Suffixes:				
/ic	gastric	cystic	splenic	gastrosplenic
/itis	gastritis	cystitis	splenitis	
/ectomy	gastrectomy	cystectomy	splenectomy	
Prefixes:				
epi/	epigastric	epicystitis	episplenitis	
peri/	perigastric	pericystic	perisplenitis	pericystitis

Let's see now. You only needed to learn eight word parts to build 16 medical terms! Not bad. Just stick to the steps and before you know it, you will have learned many word parts the easy way. Word parts, like nickels and dimes, add up fast.

Consonants, Vowels and the Role They Play

Let's go over the important things to remember when combining medical terms. These rules will help you when combining most Latin terms.

Fact About Combining Word Parts

Use a combining vowel between a root word and a suffix that begins with a consonant.

Look at these examples of terms built from their English meanings. Each suffix begins with a consonant. That's why the combining vowel was used.

Meaning	Term with Suffix Beginning with Consonant	Combined Term
tracing of the heart	cardi/o/ + gram	cardi/o/gram
surgical repair of a blood clot	thromb/o/ + plasty	thromb/o/plasty
to cut into the stomach	gastr/o/ + tomy	gastr/o/tomy

Facts About Combining Word Parts

* Do not use a combining vowel between a root word and a suffix that begins with a vowel.

* Do not use a combining vowel between a prefix and a root word.

Look at these examples. The combining vowel is not used.

Meaning Beginning with Vowel	Term with Suffix	Combined Term
blood tumor (lump)	hemat/o/ + oma	hemat/oma
look at living (tissue)	bi/o/ + opsy	bi/opsy
relating to the heart	cardi/o/ + ac	cardi/ac

Fact About Combining Word Parts

Use a combining vowel between two root words in a compound word even when the second root word begins with a vowel.

Look at the following examples. The combining vowel is used between two root words. All of the root words are in boldface type.

Meaning	Compound Word	Combined Term
heart specialist	**cardi**/o/**log**/ist	cardiologist
instrument to measure heat	**therm**/o/**meter**	thermometer
study of the stomach and intestines	**gastr**/o/**enter**/o/**log**/y	gastroenterology
relating to water electrical activity	**hydr**/o/**electr**/ic	hydroelectric

When dividing and combining terms in this course, it's helpful to identify the prefixes and suffixes in addition to the root words. For example:

Meaning	Prefix	Root(s)	Suffix	Medical Term
control blood		hem/o	/stasis	hemostasis
relating to around the kidney	peri/	ren/o/	al	perirenal
enlargement of the liver		hepat/o	/megaly	hepatomegaly
inflammation of vessels		angi/o	/it is	angiitis
removal of the spleen		splen/o	/ectomy	splenectomy

Read from the beginning of the term to the end when you are pronouncing a term you have created. And remember, read from the end of the term to the beginning when you check the meaning of a term you have created.

Now, let's reinforce what you've learned so far with a few Practice Exercises.

✍ Step 14   Practice Exercise 4-4

❑ For each set of word parts, combine the parts into a medical term using the rules you learned in this lesson. Write the medical term and the meaning in the blank spaces below.

Word Parts	*Medical Term*	*Meaning*
1. gastr/o/enter/o /logy	_____	_____
2. oste/o /malacia	_____	_____
3. laryng/o /scope	_____	_____
4. carcin/o /oma	_____	_____
5. sarc/o /oid	_____	_____
6. muc/o /ous	_____	_____
7. thromb/o /osis	_____	_____
8. hepat/o /ic	_____	_____
9. peri/ col/o /itis	_____	_____
10. pulmon/o /ic	_____	_____

⚷➙ Step 15   Review Practice Exercise 4-4

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

✍ Step 16   Practice Exercise 4-5

❑ In this Practice Exercise, you will divide the terms and give their meanings. Follow these steps:

a. Using a pencil, make slashes to divide the terms into word parts. Like this: cardi/o/log/ist

b. Write the meaning of the word in the blank space on the right.
Like this: cardi/o/log/ist one who specializes in studying the heart

c. You may refer to your flashcards if you need to.

Divide   Meaning

1. chemist   _____

2. craniotomy   _____

3. laryngectomy   _____

4. endoderm   _____

5. perihepatic   _____

6. polygastria   _____

7. thrombitis   _____

8. subhepatic   _____

9. retrogastric   _____

10. myeloid   _____

11. myopathy   _____

12. venous   _____

13. natal   _____

14. kleptomania   _____

15. **neurosis**   _____

16. **electric**   _____

17. **arterial**   _____

18. **cystic**   _____

⌘╼ Step 17 Review Practice Exercise 4-5

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to any items circled in the Practice Exercise.

📖 Step 18 Pronounce Word Parts

❑ Follow these steps to learn how to pronounce word parts.

a. Take your Quick-Learn Tutor and your Set 5 flashcards out of your Quick-Learn Kit. Insert the first flashcard for Set 5 into Side A of the Tutor.

b. Put your pronunciation CD in your CD player. Advance the CD to Flashcard Set 5.

c. Listen to a word part as it is pronounced on the CD. After you hear a word part, put the CD player on pause.

d. Look at the word part in the left window of your Quick-Learn Tutor and practice pronouncing it out loud several times until you can pronounce it correctly and easily. Push the flashcard up and read the meaning of the word part. Continue this process for all the flashcards for this set.

e. Next, put the flashcards in order and play the CD again. This time, pronounce each word part in order but do not stop the CD player.

f. As you pronounce each word part, look at it on the flashcard. Listen to your own pronunciation of each word part. If you mispronounce one, put a check mark next to that flashterm.

g. Next, practice the word parts you mispronounced by listening to the CD again. Be sure you can pronounce each word part clearly and easily.

✍ Step 19   Write Word Parts

❑ Follow these steps to learn how to write word parts.

   a. Insert the first flashcard for Set 5 into Side A of your Quick-Learn Tutor.

   b. Look at each word part as it appears in the window and say it out loud. Write each word part on blank paper. Be sure to include the slash.

   c. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning beside each word part.

   d. Do this for each flashterm for this set.

📖 Step 20   Meanings of Word Parts

❑ Follow these steps to learn the meanings of word parts:

   a. Again insert the first flashcard for Set 5 into Side A of your Quick-Learn Tutor. Pronounce each word part and then say the meaning. Check yourself by pushing the flashcard up until you can see the meaning in the right window.

   b. Now insert the flashcard into Side B of your Quick-Learn Tutor. Push the card up until you see the meaning of the first flashterm in the right window. Read each meaning out loud, and then say the word part. Again, check yourself by pushing the flashcard up until you can see the term in the left window.

   c. Practice with the flashcards several times until you are familiar with the words and their meanings.

   d. When you feel comfortable with the spelling, pronunciation and meaning of each word part, go on to the next step.

✍ Step 21   Practice Exercise 4-6

Part I

❑ Write the meaning for each word part listed below. Use your flashcards for items that you don't know. Circle any items you looked up on the flashcards.

Word Part	*Meaning*
1. lapar/o	_____
2. pneum/o	_____
3. ana/	_____

4. /physis _____

5. /pnea _____

6. bronch/o _____

7. cutane/o _____

8. mort/o _____

9. psych/o _____

10. phob/o _____

Part II

Write the correct word part for each meaning given below. Be sure to include the slash. Use your flashcards for items that you don't know. Circle any items you looked up on the flashcards.

Meaning	*Word Part*
11. **break down, dissolve**	_____
12. **bad, labored**	_____
13. **nose**	_____
14. **bear**	_____
15. **secrete**	_____
16. **ear**	_____
17. **eye**	_____
18. **kidney**	_____
19. **tonsils**	_____
20. **flow**	_____

⌨ Step 22   Review Practice Exercise 4-6

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Review your flashterms again, giving extra attention to any items circled in the Practice Exercise.

📖 Step 23   Lesson Summary

❑ In Lesson 3, you saw that medical terms are constructed of root words, prefixes and suffixes. By learning these word parts, you can divide a medical term into its word parts and derive its meaning. You can take an unfamiliar medical term, separate its root word from any prefixes or suffixes and determine what that word means. This is important because you cannot—and should not—memorize every single medical term healthcare providers use. But you can learn to divide and combine medical terms, and this skill will enable you to become a competent, professional medical assistant. You'll be able to break up unfamiliar medical terms so that you can look them up in your medical dictionary to determine the correct spelling and meaning.

Now don't get discouraged if you found this lesson a little challenging. The Practice Exercises in this lesson are important. If you skipped any or struggled to complete some of them, go back and work on them again. Doing so will help you with the upcoming quiz. U.S. Career Institute has successfully graduated thousands of men and women from its programs, and we want you to be one of the success stories! If you need a helping hand, call your instructor. And remember that we offer support even after you graduate and as you advance in your new career.

✉ Step 24   Mail-in Quiz 4

❑ Follow the steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that thisquiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Scanner Answer Sheet included. Use only blue or black ink on your Scanner Answer Sheet.

d. **Important!** Please fill in all information requested on your Scanner Answer Sheet or when submitting your quiz online.

e. Submit your quiz to the school via mail, e-mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 4

For the following questions, choose the best answer from the choices provided. Remember, you may use your flashcards and/or your medical dictionary to answer these questions. Each question is worth 4 points.

1. **Complicated medical terms can be analyzed by breaking them down into _____.**
   a. vowels
   b. consonants
   c. word parts
   d. word roots

2. **A word with two or more root words in it is called a _____.**
   a. compound word
   b. complex word
   c. combined word
   d. compound vowel

3. **When you are looking for word parts in an unfamiliar medical term, you read from the end of the term to the _____.**
   a. beginning
   b. right
   c. middle
   d. pronoun

4. **The correct way to divide the word thermometer is _____.**
   a. ther/mom/eter
   b. therm/ometer
   c. therm/o/me/ter
   d. therm/o/meter

5. **People who work in the medical field often use _____ and simpler meanings of words to save time.**
   a. longer
   b. shorter
   c. more complex
   d. more comprehensive

6. **Knowing just a few word parts allows you to _____.**
   a. combine them into just a few medical terms
   b. skip this entire lesson
   c. combine them into many medical terms
   d. all of the above

7. **The rules you learned in this lesson will help you when combining most _____ terms.**
   a. Greek
   b. Arabic
   c. Latin
   d. Prussian

8. When a suffix begins with a _____, there is a combining vowel between the root word and the suffix.
   a. prefix
   b. compound word
   c. vowel
   d. consonant

9. When the suffix begins with a vowel, there is no combining vowel between the _____ and the suffix.
   a. prefix
   b. consonant
   c. root word
   d. compound word

10. Do not use a combining vowel between a _____ and a root word.
    a. compound word
    b. root word
    c. suffix that begins with a consonant
    d. prefix

11. The correct way to divide gastroenterology is _____.
    a. gastro/enterology
    b. gastroenter/o/logy
    c. gastro/enter/ology
    d. gastr/o/enter/o/logy

12. The meaning of the term splenology is the study of the _____.
    a. spleen
    b. stomach
    c. gallbladder and spleen
    d. gallbladder

13. Axill/o means _____.
    a. opposite
    b. upper jaw
    c. armpit
    d. secondary

14. **Nect/o means _____.**

   a. many
   b. bind
   c. rib
   d. neck

15. **The prefix that means opposite, against is _____.**

   a. con/
   b. meta/
   c. contra/
   d. ante/

16. **The correct spelling of the term formed from the word parts acr/o + arthr/o + /itis is _____.**

   a. acrarthritis
   b. acroarthroitis
   c. acarthritis
   d. acroarthritis

17. **The meaning of the term in Question 16 is _____.**

   a. pain in the extremities
   b. inflammation of joints in extremities
   c. inflammation of the near joints
   d. inflammation of the extremities

18. **The term that means "before delivery" is _____.**

   a. antipartum
   b. postpartum
   c. retropartum
   d. antepartum

19. **A patient diagnosed with hepatomegaly has _____.**

   a. enlargement of the liver
   b. enlargement of the blood vessels
   c. inflammation of the liver
   d. inflammation of the blood vessels

20. **Combine word parts correctly for a term meaning "disease of the heart." _____**
    a. Cardipathy
    b. Cardiotomy
    c. Cardiopathy
    d. Cardectomy

21. **Hyperemesis refers to _____.**
    a. excessive sweating
    b. high blood pressure
    c. excessive bleeding
    d. excessive vomiting

22. **The term used to describe "toward the head" is _____.**
    a. cephalad
    b. cephaloid
    c. cephalopenia
    d. encephalad

23. **The term that means "pertaining to the treatment of children" is _____.**
    a. natologist
    b. pedologist
    c. pediatrics
    d. pedoscopy

24. **A doctor who specializes in "microscopy" is _____.**
    a. interested in bacteria
    b. viewing tiny objects with a scope
    c. using an instrument that requires a microphone
    d. viewing large objects with a microscope

25. **An organism that is toxigenic _____.**
    a. is producing poisons
    b. was created by a toxin
    c. is similar to a toxin
    d. is a damaged organism

Congratulations

You've completed Lesson 4.

Don't wait for your quiz results to continue with Lesson 5.

Lesson 5 Medical Terminology—Abbreviations, Symbols and Special Terms

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🗒 Step 1 Learning Objectives for Lesson 5

❑ When you have completed the instruction in this lesson, you will be trained to do the following:

• Recognize common medical abbreviations and slang.

• Explain common symbols.

• Describe eponyms and acronyms.

• Differentiate between terms that sound alike.

• Determine terms that are opposites.

• Convert singular medical terms to plurals and recognize medical plurals.

📖 Step 2 Lesson Preview

❑ Imagine you run into a good friend who has a hard time keeping in touch with his family. When you ask him, "Did you write that e-mail to your brother?" he shakes his head no. Now look closely at the question you asked. The sentence, "Did you write that e-mail to your brother?" illustrates the complexity of the English language.

Your question contained three *sound-alikes*—the words *you*, *write* and *to* sound the same as other words (*ewe*, *right* or *rite* and *too* or *two*). *Sound-alikes*, *medical plurals* and *opposites* are just three types of medical terms we'll cover in this lesson. *You* (not *ewe*) will also learn some common medical *abbreviations* and *symbols*.

As a medical assistant, you will often encounter terms that may sound or look alike, such as hypertension and hypotension. Not only do these terms sound alike, but they're also opposites. Hypertension refers to high blood pressure, and hypotension refers to low blood pressure. It will be your job to determine if the term you see is, indeed, the correct term. Additionally, as you'll soon find out, healthcare providers use many abbreviations and symbols. It seems only natural since many medical terms are long and complex! If you are familiar with these abbreviations and symbols, you'll easily be able to convert them into the correct medical terms.

It's amazing how much you already know about medical terminology from the previous two lessons. This knowledge will allow you to understand the language used in your new career in medical assisting. Healthcare providers will appreciate your knowledge. So let's get started with this lesson about special terms!

📖 Step 3   Abbreviations

❑ Doctors frequently use shortened versions of longer words or phrases. These shortened versions of words and phrases are called **abbreviations**. Abbreviations are extremely useful to a doctor because they save valuable time. However, abbreviations are not helpful unless you, the medical assistant, can understand and assist in the procedures the doctor will perform. Because it is important to be completely accurate, doctors and hospitals get together and produce lists of approved abbreviations—abbreviations they all agree on and understand.

Abbreviations in Hospitals

Hospitals are required by The Joint Commission (formerly known as JCAHO) to keep a list of acceptable abbreviations. Only the accepted abbreviations may be used in the medical records for that hospital.

Here are some common abbreviations used in hospitals:

Abbreviation	Meaning
CCU	Coronary care unit
ECU	Emergency care unit
ED	Emergency department
ICU	Intensive care unit
IP	Inpatient
OP	Outpatient
OR	Operating room
PAR	Postanesthetic recovery
postop	Postoperative
preop	Preoperative
RTC	Return to clinic
RTO	Return to office
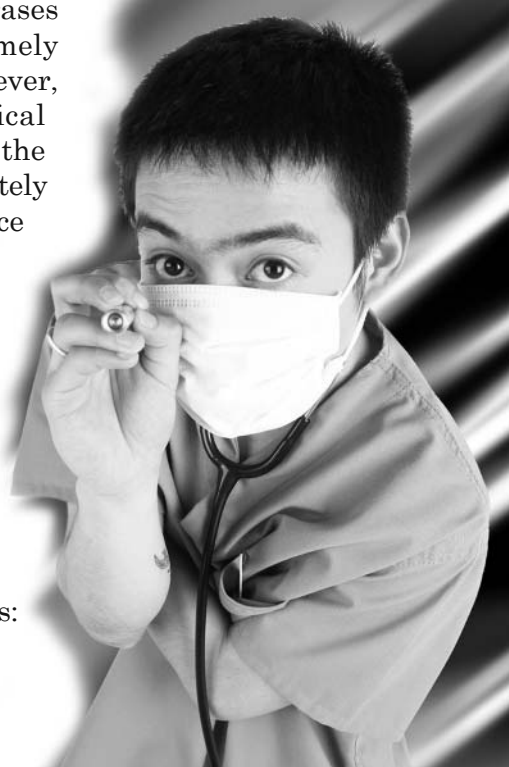
Office Records

The rules for abbreviations are more relaxed for the records in individual offices. However, any bills or insurance forms that are typed must follow the hospital's list of abbreviations.

The following table lists common abbreviations used in office records:

Abbreviation	Meaning
BP	Blood pressure
C	Celsius, centigrade
c/o	Complains of
CP	Chest pain
Dx	Diagnosis
F	Fahrenheit
H&P	History and physical
Ht	Height
Hx	History
L	Left
L&W	Living and well
P	Pulse
PE or Px	Physical examination
pH	Hydrogen concentration (acidity/alkalinity)
PI	Present illness
PMH	Past medical history
pt	Patient
R	Right
R/O	Rule out
T	Temperature
Tr or Tx	Treatment
VS	Vital signs
Wt	Weight
WDWN	Well-developed and well-nourished
y.o. or YO	years old

Doctors

Doctors sometimes have their own personal abbreviations. As a medical assistant, you will need to learn these personal abbreviations. This will help you communicate more effectively with your clients or employer.

Pharmacies

Lists of medications and treatments that a pharmacy prepares are included in the medical record, and they appear on the insurance forms filed by the doctor's office or hospital. Usually Latin abbreviations are used for these medications and treatments.

On your flashcards, beside each Latin lower case abbreviation you will see the full Latin phrase. You will not need to learn the Latin words—just the punctuation and the everyday meaning.

✍ Step 4   Learn Abbreviations

❑ It's important to be familiar with common medical abbreviations, so take some time to practice saying and writing medical abbreviations using the following exercise. Because pronunciation is not an issue with abbreviations, there is no CD to go with this flashcard set.

   a. Take your Quick-Learn Tutor and your Set 6 flashcards out of your Quick-Learn Kit. Insert the first flashcard into Side A of the Tutor.

   b. Look at each abbreviation as it appears in the window and say it out loud. Write each abbreviation on blank paper.

   c. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning beside each abbreviation.

   d. Do this for each flashterm for this set.

📖 Step 5   Meanings of Abbreviations

❑ Follow the instructions to learn the meanings of abbreviations.

   a. Again insert the first flashcard for Set 6 into Side A of your Quick-Learn Tutor. Pronounce each abbreviation and look at how it is spelled. Then say the meaning. Check yourself by pushing the flashcard up until you can see the meaning in the right window.

   b. Now insert the flashcard into Side B of your Quick-Learn Tutor. Push the card up until you see the meaning of the first flashterm in the right window. Read each meaning out loud and then say the abbreviation. Again, check yourself by pushing the flashcard up until you can see the meaning in the left window.

   c. Practice with the flashcards several times until you are familiar with the abbreviations and their meanings. Don't struggle to memorize them. You may always look up abbreviations.

✍ Step 6   Practice Exercise 5-1

❑ For each abbreviation or acronym listed below, write the meaning. Do all the items you know first. Then use your flashcards for items that you don't know. Circle the items you had to look up on the flashcards.

Abbreviation/Acronym   Meaning

1. CO_2 _____

2. mg   _____

3. O_2 _____

4. n.p.o.   _____

5. NBS   _____

6. EBV   _____

7. kg   _____

8. TPR   _____

9. IM   _____

10. q.n.s.   _____

11. b.i.d.   _____

12. DOB   _____

13. Dx   _____

14. IV   _____

15. stat   _____

16. q.a.m.   _____

17. GB   _____

18. Sx   _____

19. Rx   _____

20. FUO   _____

⌐⊶ Step 7   Review Practice Exercise 5-1

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made. Pay particular attention to any items you have circled.

📖 Step 8   Slang

❑ There are two types of *slang* you may encounter in the medical field—medical slang and English slang.

Medical Slang

Medical slang words are informal abbreviations for longer medical terms. For example, *sedimentation rate* is called *sed rate*. The *laboratory* is the *lab*. Doctors use medical slang frequently for the same reason they use abbreviations—to save time.

> ### Fact About Medical Slang
>
> If you encounter slang in the doctor's notes, use the full term the slang represents. For example: If the doctor wrote, "The patient was prepped for appy," you would know to write appendectomy.

Some medical slang terms are used so frequently that they become accepted medical terms. *Exam* and *prep* are two examples of this.

English Slang

English slang words are highly informal words not often used in professional writing.

> ### Facts About English Slang
>
> Obscene or offensive statements are never put in any medical report, including patient files, insurance forms and patient charts, unless the patient is being quoted (in this case, use quotation marks around the quoted statement). If the patient is not being quoted, the offensive or obscene statement would be deleted.
>
> • Correct: The patient said, "I fell down and hurt my ass."
>
> • Incorrect: The patient is a pain in the ass. (Leave out this entire sentence.)

✍ Step 9   Slang Terms

❑ Follow the instructions to learn how to read and write slang terms.

a. Take out your Quick-Learn Tutor and your Set 7 flashcards. Insert the first flash-card into Side A of your Quick-Learn Tutor.

b. Look at each slang term as it appears in the window and say it out loud. Write the slang term on blank paper.

c. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning beside each slang term.

d. Do this for each flashterm for this set.

📖 Step 10   Meanings of Slang Terms

❑ Follow the instructions to learn the meanings of slang terms.

a. Again insert the first flashcard for Set 7 into Side A of your Quick-Learn Tutor. Pronounce each slang term and then say the meaning. Check yourself by pushing the flashcard up until you can see the meaning in the right window.

b. Now insert the flashcard into Side B of your Quick-Learn Tutor. Push the card up until you see the meaning of the first flashterm in the right window. Read each meaning out loud; then say the slang term. Again, check yourself by pushing the flashcard up until you can see the meaning in the left window.

c. Practice with the flashcards several times until you are familiar with the words and their meanings.

✍ Step 11 Practice Exercise 5-2

❑ Match the slang words with the medical terms they stand for.

1. **sibs** _____

2. **prep** _____

3. **meds** _____

4. **ab** _____

5. **exam** _____

6. **path** _____

7. **appy** _____

8. **primip** _____

9. **nullip** _____

10. **temp** _____

a. medications

b. nullipara, woman with no deliveries

c. pathology

d. siblings, brothers and sisters

e. abortion

f. primipara, woman with one previous birth

g. temperature

h. prepare, preparation

i. appendectomy, appendicitis

j. examination

⚷ Step 12 Review Practice Exercise 5-2

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 13 Symbols

❑ The **symbols** used in medicine are no different from those used in everyday life. When you use symbols, you must be sure the symbol is well known. To give you a better understanding of which symbols are acceptable, we will go through the main rules you need to remember.

> ### Facts About Using Symbols
>
> • When you use symbols, do not leave a space between the symbol and the numeral.
>
> • However, *do* leave a space between a numeral and the symbol x. This symbol means "by" in dimensions, as in *6 x 9*.

Let's take a look at the following list of symbols, what they mean and how they are used.

Symbol	Meaning	Example
°C	degrees Celsius	32° C
°F	degrees Fahrenheit	98.6° F
&	and (between capital letters only)	D&C
x	times, by	x 3 days, 2 x 3 x 5
+	plus (urine; reflexes)	3+
:	ratio; ___ to ___	1:2
/	per, vision test	2/day; 20/20
/	over (blood pressure)	120/80
–	minus, ___ to ___ (range), through	–2, 4–5, II–XII
-	suture size	3-0 (000) silk
#	number	#16 Fr, #3-0 silk

✎ Step 14   Practice Exercise 5-3

❑ Fill in the appropriate symbol used with each term below. You may refer to the list of symbols in Step 13.

1. _____   **temperature (Celsius or Fahrenheit)**

2. _____   **number**

3. _____   **suture size**

4. _____   **over (blood pressure)**

5. _____   **and (between capitals)**

6. _____   **minus**

7. _____   **vision**

8. _____   **ratio**

⚷⌐ Step 15   Review Practice Exercise 5-3

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 16   Special Terms

❑ In medical terminology, as in the rest of the English language, there are *special terms* that have specific rules. These **special terms** include proper nouns and other capitalized words, sound-alikes and opposites. Now we're going to talk about which words require special treatment, such as capitalization. You also will learn about two special classes of terms: *eponyms* and *acronyms*.

Eponyms

In addition to the medical terms you learned to combine and divide in previous lessons, medical reports contain other information, such as laboratory test results, special medical abbreviations and the names of medical equipment and procedures. Often these words include **proper names**—that is, brand names or the names of people. You must capitalize proper names.

It was the custom in the past to use a person's name to identify his or her medical inventions or discoveries. The kinds of things named for people include:

- a new disease; a symptom or sign of disease

- an anatomical structure

- a new instrument, test or examination method

An **eponym** is a term that is formed from a person's name. The person's name is given to the name of his or her discovery or invention to indicate that person did the research and made the discovery. One example is *Bell's palsy*.

Fact About Eponyms

An eponym has two parts:

1. The person's name as an adjective.

2. The type of invention or discovery as a noun.

Eponym Adjective	Eponym Noun	Meaning
Bell's	palsy	facial paralysis
Pott's	clamp	surgical instrument
Chiba	needle	long biopsy needle
McBurney's	point	examination location for the appendix
Kaposi's	sarcoma	unusual skin cancer

Because an eponym includes a person's name, you won't be able to divide it into medical word parts. You do, however, capitalize the proper name in the term, but not the noun.

If you use an eponym frequently enough, you will probably memorize how it is spelled. Otherwise, you will have to look in your medical dictionary for the proper spelling of eponyms.

Luckily, most eponyms can easily be found in the dictionary because they are listed under the noun part of the phrase. Look at these examples of some medical dictionary listings.

Eponym	Listed in Medical Dictionary Under
Bell's palsy	palsy
Kaposi's sarcoma	sarcoma
McBurney's point	point

Because it is difficult to remember the meanings of eponyms, it is becoming less common for medical discoveries or inventions to be named for people. It is now considered more professional to use a properly combined medical term rather than an eponym. Nonetheless, doctors use eponyms frequently.

Brand Names

In the past, an eponym told you the name of the person who took credit for a discovery or an invention. Some names of medical products indicate that a company owns the patent for an invention or discovery. **Brand names** are like eponyms because they demonstrate who discovered the procedure, diagnosis or disease. The kinds of new brand name eponyms you see today are for the following:

- a genetic cell line or tissue culture product

- equipment or instruments

- drugs or therapy methods

Look at these examples: General Electric CT scanner, Pen.Vee K penicillin and Phillips' milk of magnesia.

Don't worry if you can't pronounce some eponyms. Like your own name, there are usually a number of different ways to pronounce them. All you need to be able to do is to find the correct spelling in the dictionary. Before we move on to *acronyms*, let's take one more look at some common eponyms.

Common Eponyms

Babkin reflex
Cantor tube
Charcot's syndrome
Colles' fracture
Cooley's anemia
Epstein-Barr virus
Erb's palsy
Gordon's reflex
Halsted suture
Hodgkin's disease
Hodgkin's sarcoma
Kaposi's sarcoma
Laennec's cirrhosis
Legg's disease
McBurney's point
Miller-Abbott tube
Pauley's point
West Nile virus

Mosquitos are known to spread West Nile virus.

Acronyms

An **acronym** is a word formed using the initials from a group of words or from word parts. Here are some acronyms you probably already know:

Acronym	Stands for
IRS	Internal Revenue Service
USA	United States of America
DMV	Department of Motor Vehicles

Acronyms are a special kind of abbreviation. Doctors use acronyms because they save time. Instead of writing the very long names of some diseases and procedures, the doctor simply uses the acronym. Here are some examples of some common medical term acronyms.

Medical Term or Phrase	Acronym
cardiopulmonary resuscitation	CPR
complete blood count	CBC

Acronyms are formed by taking the first letter of each word in a phrase or by taking the first letter of the word parts. For example, FTD stands for **F**lorist **T**elegraph **D**elivery, and NG stands for **n**aso**g**astric. Not every word in the phrase has to be represented in the acronym. Small, nonessential words are usually omitted. For example, EENT stands for eye, ear, nose and throat.

Acronyms are usually pronounced by saying the letters one by one. However, if the letters of the acronym spell a word or can be pronounced as a word, then the acronym may be pronounced as if it were a word. Let's take a look at a few examples.

Acronym	Pronounced
EEG	Say the letters—Ee-ee-gee
ELISA	Pronounce the word—El-ee-sah

In fact, some acronyms that are pronounced like words actually become words if they are used often enough. The word laser began as an acronym for the phrase Light Amplification by Stimulated Emission of Radiation. No one bothers to say the whole phrase any more because laser is an accepted word. The same is true of the word scuba, which stands for self-contained underwater breathing apparatus.

Fact About Acronyms

Write acronyms in capital letters with no periods or spaces between the letters. For example, CBC stands for complete blood count and NSVD stands for normal spontaneous vaginal delivery.

When you hear a new acronym, be sure to look it up and find out what it stands for. This helps you write, type and spell acronyms correctly. Most common acronyms can be found in a medical dictionary.

📖 Step 17   Pronounce Acronyms

❑ Follow the instructions to learn how to pronounce acronyms.

a. Put the pronunciation CD in the CD player. Advance the audio CD to Flashcard Set 8.

b. Put the first flashcard for Set 8 into Side A of your Quick-Learn Tutor.

c. Listen to each acronym as it is pronounced. Put the CD player on pause after each acronym.

d. Practice pronouncing each acronym until you can pronounce it clearly and easily. You do not need to memorize the meaning of an acronym—only be able to form it and look up its meaning on the flashcard.

e. Do this for each flashcard for this set.

✍ Step 18   Practice Exercise 5-4

❑ Let's practice forming acronyms. Listed are complete medical phrases. Write the correct acronym for each phrase. Notice how the acronym is formed by taking the initials of the words or word parts in the phrase.

Medical Phrase	Acronym
1. blood urea nitrogen	_____
2. white blood count	_____
3. Venereal Disease Research Laboratory	_____
4. rheumatoid arthritis	_____
5. human immunodeficiency virus	_____
6. Physician's Desk Reference	_____
7. (The) pupils (are) equal, round (and) reactive (to) light (and) accommodation	_____
8. electr/o/encephal/o/gram	_____
9. eye, ear, nose (and) throat	_____
10. intra/muscular	_____

☛ Step 19   Review Practice Exercise 5-4

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 20   Sound-alikes and Opposites

❑ Two types of word pairs may occasionally present challenges for the medical assistant. They are *homophones* and *antonyms*.

Homophones (Sound-alikes)

At the beginning of this lesson, we called the words "to" and "too" sound-alikes. Well, the more technical term for words that sound alike is **homophone**. These words are not spelled alike, and they have different meanings, but when homophones are pronounced, they sound the same. The English language is full of homophones.

Look at these examples:

- principle—principal
- seen—scene
- two—too
- meddle—medal

As you can see, each of these four pairs of words looks different, but they sound the same. As you work with medical records, doctors, insurance companies and others, be careful that you distinguish between homophones when you hear information. You certainly wouldn't want to meddle in the business's principle scene when you really needed to know if the principal had seen the medal. Okay, so that's a stretch, but you get the idea!

Antonyms (Opposites)

Antonyms are words or word parts that have opposite meanings. Sometimes these words sound similar to each other, which can cause problems for someone with no training. Let's take a look at these two antonyms:

- hypotension (low blood pressure)
- hypertension (high blood pressure)

In your work as a medical assistant, make sure the terms you use make sense. Did the doctor mean what she wrote?

Consider the following situation. If you know that normal blood pressure is 120/80, which term below is correct?

- The patient has *hypertension* with a blood pressure of 90/60.
- The patient has *hypotension* with a blood pressure of 90/60.

In this context, *hypotension* is correct because 90/60 is lower than 120/80.

✍ Step 21   Practice Exercise 5-5

❑ Some of the more common antonym pairs are listed below. You already practiced their meanings with your flashcards. Write the meaning of each term in the blank space. Refer back to your flashcards if you need to do so.

1. **micro/** _____
   macro/ _____

2. **ante/** _____
   retro/ _____

3. **pre/** _____
   post/ _____

4. **hypo/** _____
   hyper/ _____

5. **eu/** _____
   dys/ _____

6. **inter/** _____
   intra/ _____

7. **con/** _____
   contra/ _____

8. **tachy/** _____
   brady/ _____

9. **ana/** _____
   cata/ _____

10. **ab/** _____
    ad/ _____

11. **infra/** _____
    supra/ _____

12. **/malacia** _____
    /sclerosis _____

13. **a/** _____
    (*not using this prefix is the antonym*)

14. **endo/** _____
    ecto/ _____

🔑 Step 22   Review Practice Exercise 5-5

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 23   Medical Plurals

❑ Many medical terms follow special medical plural rules. Some medical words even have two plural forms, one that follows the normal English rule and one that follows the medical rule. When there are two ways to make a medical term plural, generally doctors use English rules when dictating reports for patients or other non-medical people, and they use medical rules when reports go to other doctors or into the medical chart. Since medical plurals and English plurals sound very different, it will be easy for you to tell which rule the doctor is following.

Rules for Medical Plurals

In some cases, medical plurals are formed by changing suffixes. In other cases, letters in the root word must be changed in addition to changes in the suffix. The following chart shows you how to form medical plurals. Follow this chart to form medical plurals.

Ending With	Change To	Example
/um	/a	medi/um—medi/a (mee-dee-uh)
/us	/i	calcul/us—calcul/i (cal-cue-lie)
/a	/ae	lamin/a—lamin/ae (lam-in-ee)
/is	/es	diagnos/is—diagnos/es (dy-ag-no-seez)
/itis	/itid/es	arthr/itis—arthr/itid/es (ar-thrit-a-deez)
i/on	i/a	criteri/on—criteri/a (cry-teer-ee-ah)
ax	ac/es	thorax—thorac/es (thore-a-seez)
ix	ic/es	cervix—cervic/es (serv-eh-seez)
ex	ic/es	index—indic/es (in-deh-seez)
yx	yc/es	calyx—calyc/es (kay-luh-seez)

✍ Step 24   Practice Exercise 5-6

❑ In this exercise, let's practice forming plurals using the medical rules you just learned and some of the terms you used previously in this course. All of the terms in this Practice Exercise follow the medical plural rules we gave you. You do not need a dictionary to do this exercise.

Look at each word and write the medical plural of each word in the blank space on the right.

Singular	Medical Plural
1. **synthesis**	_____
2. **centrum**	_____
3. **vena**	_____
4. **nervus**	_____
5. **ganglion**	_____

☞ Step 25   Review Practice Exercise 5-6

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 26   Lesson Summary

❑ Congratulations! You've almost completed the last of three lessons that have introduced you to the language of medicine—medical terminology you need to effectively and professionally perform your job as a medical assistant. You learned about word parts (root words, prefixes and suffixes), and how to divide and combine a medical term and derive its meaning using its word parts. In this lesson, we talked about how to use abbreviations and symbols in your work. This lesson also presented information about such special medical terms as eponyms, acronyms, homophones (sound-alikes), antonyms (opposites) and plurals.

Now that you have learned the essential building blocks of medical terminology, you're one step closer to a successful medical career. All of this knowledge will make your job that much easier. You'll be able to figure out and research complex or unfamiliar medical terms, abbreviations and symbols.

Are you ready to move forward? Take a few moments to review your lesson, and good luck on the quiz!

✉ Step 27   Mail-in Quiz 5

❑ Follow these steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that this quiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Scanner Answer Sheet included. Use only blue or black ink on your Scanner Answer Sheet.

d. **Important!** Please fill in all information requested on your Scanner Answer Sheet or when submitting your quiz online.

e. Submit your quiz to the school via mail, e-mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 5

For questions 1 through 13, choose the best answer from the choices provided. Remember, you may use your flashcards and/or your medical dictionary to answer these questions. Each question is worth 4 points.

1. **Shortened versions of phrases are called _____.**
    a. eponyms
    b. abbreviations
    c. antonyms
    d. opposites

2. **_____ are required to keep a list of acceptable abbreviations.**
    a. Hospitals
    b. Insurance forms
    c. Billing services
    d. None of the above

3. **CCU is the abbreviation for _____.**
    a. intensive care unit
    b. critical care unit
    c. cubic centimeter units
    d. coronary care unit

4. **The term postop means _____.**
   a. postoperative
   b. postopportunity
   c. postanesthetic operation
   d. preoperative

5. **An H&P is a _____.**
   a. head and palate exam
   b. history and prognosis
   c. history and physical
   d. height and pulse exam

6. **Hx is an abbreviation for _____.**
   a. history
   b. height
   c. initial diagnosis
   d. health treatment

7. **A physical examination can be abbreviated as _____.**
   a. Rx
   b. Px
   c. Px or PE
   d. health treatment

8. **DOB is the abbreviation for _____.**
   a. date of billing
   b. doctor of birthing
   c. date of birth
   d. two times a day

9. **The correct abbreviation for "diagnosis" is _____.**
   a. dg
   b. Dx
   c. Dgs
   d. ds

10. **There are two types of slang you may encounter: _____ slang and English slang.**
    a. uncommon
    b. insurance
    c. medical
    d. offensive

11. **What medical slang terms are now accepted as medical terms? _____**
    a. Exam
    b. Prep
    c. Hypo
    d. Both a and b are accepted.

12. **When using the *times* or *by* symbol (×), you _____ leave a space between the symbol and the numeral.**
    a. do
    b. do not

13. ***Primip* is slang for _____.**
    a. a premature infant
    b. premenopausal
    c. primipara, woman with one previous birth
    d. premenstrual

For items 14 through 17, match the symbol with its meaning. Each question is worth 4 points.

14. _____   °C   a. degrees Fahrenheit
                          b. times, by
15. _____   °F
                          c. and
16. _____   ×   d. degrees Celsius

17. _____   &

For items 18 through 21, match the symbol with its meaning. Each question is worth 4 points.

18. _____   /   a. per; over
                          b. number
19. _____   :
                          c. ratio
20. _____   #   d. plus

21. _____   +

For questions 22 through 25, choose the best answer from the choices provided.

22. **When a person's name or a brand name is included in a medical term, that term is called an _____.**
    a. egonym
    b. eponym
    c. acronym
    d. imposter

23. **_____ are formed by taking the first letter of each word in a phrase or by taking the first letter of the word parts.**
    a. Acronyms
    b. Eponyms
    c. Opposites
    d. Homonyms

24. **Which of the following acronyms is not paired correctly with its term? _____**
    a. IRS—Internal Revenue Service
    b. EKG—electrocardiogram
    c. CBC—complete brain cortex
    d. USA—United States of America

25. **You _____ capitalize the proper name part of an eponym.**
    a. do
    b. do not

Congratulations
You've completed Lesson 5.

Don't wait for your quiz results to continue with Lesson 6.

Lesson 6
What Is a Medical Record?

☐ Step 1   Learning Objectives for Lesson 6

❑ When you have completed this lesson, you will be trained to do the following:

- Describe the *medical record* and its importance in the healthcare fields.

- Describe the information included in a medical record.

- Differentiate between subjective and objective information.

- Explain the importance of documentation in medical records.

- Contrast different basic filing methods.

- Summarize HIPAA regulations.

📖 Step 2   Lesson Preview

❑ The last thing Janelle remembered as she sat down to study in her community college library was feeling slightly woozy. And that was it. When she regained consciousness, she was lying on a stretcher in the emergency room of the community hospital, staring at the overhead lights. "You passed out," said the nurse's aide. "When the EMTs got there, they pulled your health record and found out that you're diabetic. Good thing—we'd have thought you were drunk," she added with a wink at Janelle. "Don't worry, you'll be fine," the nurse's aide said reassuringly.

Up-to-date health records can save lives in emergencies.

Miraculous? Maybe—and maybe not. What is this mysterious health record that was mentioned, and what information does it contain? Why do we have them, who uses them and who owns them? We'll explore all of these questions in this lesson. You'll also learn how to manage and store medical records and the regulations that protect them. Let's get started!

📖 Step 3   It's All in the Name

❑ The terms health record, medical record, patient record and healthcare record tend to be used interchangeably in the health profession. For this course, we'll use the terms medical record and health record most often. Before we get ahead of ourselves, let's define medical record.

The **medical record** or **health record** is a document that is a legal and business record of any healthcare services provided to a person in any part of the healthcare system. In Janelle's case, the nurse's aide refers to an *electronic health record* that's available to EMTs in the field. While the day that EMTs can simply pull up a person's health record from an ambulance computer isn't quite here yet, it's not far off either. An **electronic health record** is simply a health record that is in electronic form, in a computer system. Electronic health records have existed in a number of different forms for many years, but a single health record for each person isn't yet universally available electronically to everyone, everywhere. We'll discuss the electronic health record in greater detail later in this course.

Why Keep Health Records?

Do you get the oil changed in your car? Do you rotate the tires? Do you take it in for maintenance when it reaches a certain mileage as the manufacturer suggests? What do you do with those records about your car maintenance? Many people simply stick them in the glove box without too much thought. However, if your battery fails and you suspect it's still under warranty, wouldn't it be nice to have all your service information stored in an organized way? Then you could efficiently retrieve the information you need and determine who will pay for that new battery!

As you might suspect, humans are far more complicated than cars. This makes it that much more important to have a comprehensive record of health care! There are many reasons why we keep medical records. With an accurate medical record, you can:

- identify the patient
- record results of tests and treatments
- justify diagnoses and treatments
- offer information to all providers involved in the patient's care
- detail the patient's previous care for future providers
- maintain a record of services for billing third-party payers
- provide the healthcare facility with a legal business record
- provide tools for evaluating patient care
- provide documentation for study and research
- give healthcare providers data for planning delivery of services and marketing

You may be asking, "Why is it so important to keep such detailed records?" Because the main purpose of the health record is to help ensure **continuity of care**—health care that takes into account all the health care that a patient received in the past and is receiving from other healthcare providers. A healthcare record gives the people treating a patient the information they need to make decisions about any additional care or treatment. The record serves as a way for healthcare providers to communicate with each other about the patient. It documents what has happened in the past and helps providers, in conjunction with the patient, plan the future. For example, if you go to the doctor with severe stomach pains, it would be important for the doctor to know that you already had your appendix removed, so she wouldn't consider an appendectomy!

There are other good reasons, not directly related to the patient, for maintaining healthcare records, including:

Continuity of care means that all previous treatments and medications have been taken into consideration when planning a new treatment.

- to provide reimbursement information to insurance companies and other third-party payers

- to provide legal information to support the interests of the patient, care providers and the facility

- to evaluate the quality of care that the patient receives after the fact

- to provide data for other purposes, such as research, education, public policy, planning and epidemiological studies (studies dealing with epidemics of diseases)

The information in the health record can be used for personal reasons, such as when someone wants to evaluate the care that a specific patient received. It can also be used impersonally; sometimes researchers request a random selection of health records for study.

Who Uses the Record?

Now that you know the many reasons for keeping health records, you can take a guess as to many of the people who use health records. Here are only some of the people who use health records and the possible reasons that these people use information from a health record.

- **The patient**—to forward to a new physician

- **The primary care physician**—to compare this year's cholesterol level to last year's level

- **Nurses or other medical staff in the physician's office**—to confirm which antibiotic upset the patient's stomach and which antibiotic is preferable

Health records have a variety of uses in the medical office.

- **Administrative staff in the physician's office**—to confirm which pharmacy to call the prescription refill in to, as well as to confirm the last time the patient requested a refill

- **A third-party payer**—to reimburse the physician for health care provided

- **A government epidemiologist**—to research the relationship between people of a certain age, gender and weight and the incidence of certain types of health problems, including susceptibility to influenza

- **A staff member in the office of a U.S. Congresswoman**—to run a preliminary study of gender differences in requests for Medicare to reimburse the costs of certain prescription drugs

Notice that the people who use information from the health record may or may not need access to the entire record. Some people who need health information only need some of the information, not necessarily access to the entire record.

Who Owns the Record?

Lots of people need information from the health record and use it for many reasons, but who owns the record, anyway?

The answer may come as a surprise to you. In spite of the fact that the record contains information about you—very personal, private information about your medical history—you do not own the record. The provider of care (your healthcare facility) owns the record about you. However, you have the right to see the record, and federal and state laws protect that right.

> When you review your health record, you may find information that you believe to be inaccurate. You may request that the entity providing health care to you amend the record to correct that inaccuracy. However, the healthcare provider may choose not to change the record. In that case, you have the right to make a written statement clarifying the information and have that statement filed in the health record.

Owning the health record means that the provider is responsible for following federal and state regulations about how long to keep records, where to store them, and in what form to store them—such as on a CD-ROM or other electronic means.

📖 Step 4   What Is in the Medical Record?

❑ You now know a lot about health records—why we keep them, who might want to see them and who owns the information in them. But exactly what is in the health record? Why is it so useful? Part of the information in a health record is administrative; part is clinical.

Administrative Data

You can probably take a guess at the administrative data, or information, included in a health record—it's the information you usually update each time you visit a physician. The two purposes of this administrative, or **demographic data**, is to uniquely identify the patient and to help the staff in the healthcare facility process the record efficiently. Administrative data includes:

- name, such as last name, first name, middle name, married names and previous names

- date of birth

- a unique identifier—often, a social security number that, used with the date of birth, matches the rest of the information in the record to only one person

- driver's license number

- gender

- race and ethnicity

- address or residence

- marital status

- spouse's name and work information, if applicable

- living arrangements

- a contact in case of emergency

- years of schooling

- insurance carrier information, including phone number, address and identification number

- relationship of patient to person enrolled in a third-party payer program (insurance program)

- occupation, employer, work address and phone number

Aside from helping staff efficiency and ensuring that the correct person is receiving treatment, administrative data is useful for many other reasons. Research studies examine types of treatment and how effective that treatment is. In recent years, researchers are discovering that men and women contract some diseases, such as heart disease, at different times and respond to treatment in different ways. Race and ethnicity data is similarly useful.

The information about the number of years a person has been in school is used as an informal way to measure a patient's socioeconomic status—information that researchers and public policymakers can use to track the equality of medical care. Even the occupation listed helps researchers track job-related injuries that may not be reported at a workplace, such as carpal tunnel syndrome.

Changes in patients' personal information—such as address, marital status or insurance coverage—must be reflected in their health records.

Also, demographic data gives medical staff valuable information about the type of treatment that may be the most appropriate for a particular patient. The information about residence, marital status and living arrangements tells a physician how many people are available to care for a patient. For example, a widow living alone might require daily home health care, while a widow whose daughter lives with her may require only weekly or twice-weekly care.

Clinical Data

In addition to demographic data, the physician also needs to know the patient's personal, medical and family history. However, it's not always the same information at each healthcare facility you use. For example, your primary care physician probably keeps a record of your allergies and childhood immunizations. If you have your wisdom teeth extracted, the oral surgeon needs to know about the allergies, but she doesn't need information about your chicken pox vaccine. Because each facility is different, the health record is different—so we'll look at a standard health record for a physician's office.

What Does a Health Record Look Like?

When you look at a standard health record, you'll find the following basic forms inside:

- Patient Questionnaire
- Patient History Form
- History and Physical Examination Report
- Physician's Orders
- Diagnostic Orders
- Consent Forms

If the patient must enter the hospital, you'll find these forms as well:

- Progress Notes
- Diagnostic Reports

- Consultation Reports
- Operative Reports
- Discharge Summary
- Patient Instructions

In addition, you may find these less common forms:

- Genogram
- Past Medical History
- Personal/Sociocultural History
- Usual Childhood Diseases
- Advanced Directives

Let's examine these forms in more detail by following Sierra Martinez, a single, Hispanic, 25-year-old, as she goes to her family physician. Sierra lives at her childhood home with her mother, works full-time and goes to community college part-time.

Sierra called the office this morning to make an appointment with Dr. Mora because she suspects that she may have a respiratory tract infection. About two weeks ago, she had what she thought was a cold and toughed it out, taking over-the-counter medication for about a week. At that point, she felt well enough that she knew she didn't have a cold anymore, but she never

The patient's history provides valuable information to the physician.

quite got rid of her cough and never felt 100 percent herself. Since then, she's felt increasingly run down and has continued coughing. Sometimes she feels feverish. She's missed a couple of classes and called in sick to work once, which she can't afford to do.

Because Sierra's symptoms have lasted so long, the receptionist scheduled Sierra for one of their buffer periods before lunch.

Patient Questionnaire

When Sierra arrives for her appointment with Dr. Mora, she receives a *patient questionnaire*. The **patient questionnaire** is a preprinted or customized form that asks for information about the patient. Usually, three patient questionnaires are provided—one for demographic information, another for personal history and still another for the patient's medical history. The patient completes the forms in the waiting room and returns them to the person at the front desk. In some practices, the patient questionnaires are provided to the patient to complete prior to the appointment. See Figure 6-1 for an example of the patient questionnaire.

The alternate method for gathering patient information is through an oral interview. The **oral interview** consists of asking the patient questions and filling out the form for her. Privacy is important during the oral interview. The interviewer may handwrite the information or type it into a computer system.

PATIENT INFORMATION

Please complete this form.
NAME: __Sierra Martinez__
ADDRESS: __1810 Bluegrass Drive__
__Springtown, CO 80002__
HOME PHONE: __970-555-9041__
WORK PHONE: __970-555-6001__
DATE OF BIRTH: __5/4/87__ AGE: __25__
SEX: Male _____ Female __X__
MARITAL STATUS: Married _____ Single __X__
Separated _____ Divorced _____
Widowed _____
PERSON TO CONTACT IN EMERGENCY AND PHONE:
__Mrs. Juana Martinez   970-555-9041__
EMPLOYED: Full Time __X__ Part Time _____
Retired _____ Not Employed _____

EMPLOYER: __Big Box Discount Store__
COMPANY ADDRESS: __1924 Main Street__
__Springtown, CO 80002__
PHONE: __970-555-6001__
STUDENT STATUS: Full Time _____
Part Time __X__
INSURANCE COMPANY: __HSI__
Insured's ID: __560-00-1113__
Group Number: __208__
Address: __PO Box 324__
__Springtown, CO 80002__
Name of Insured: __Sierra__
Date of Birth: _____
Employer: _____
Patient's Relationship
to Insured: __Self__

OTHER INSURANCE: __Tricare Extra__
Insured's ID: __635-00-7213__
Group Number: _____
Address: __4500 Cherry Creek Dr South, Box 64__
__Denver, CO 80222__
Name of Insured: __Erik Martinez__
Date of Birth: __September 15, 1961__
Employer: __USAF - Retired, deceased__
Patient's Relationship
to Insured: __daughter__

Figure 6-1: Sample patient questionnaire

Patient History Form

Sierra may also complete a *patient history form* (Figure 6-2). The **patient history form** includes her personal, medical and family history. Sierra's **personal history** includes her occupation, marital status and diet and exercise routine. Her **medical history** consists of hospitalizations, surgeries, injuries, medical problems and illnesses.

Sierra's **family history** includes the ages, state of health, diseases and death of family members. The purpose of this section is to look for hereditary etiologies and risk factors for disease. Hereditary diseases include heart disease, diabetes, cancer or mental illness. Current infectious diseases within the family are also listed. Specific questions about your relatives may give you and the physician valuable medical information, such as whether breast cancer runs in your family. Dr. Mora is familiar with Sierra's family history. Dr. Mora treated Sierra's father, who died of a heart attack five years ago. He was 44. She asks Sierra other questions about any recent changes in her mother's health.

Other questions Dr. Mora asks Sierra will be more general. For example, she asks Sierra if she enjoys living with her mother and how her mother is coping with her father's death. The physician remarks that Sierra has a very busy life and asks what coursework she's taking at the community college.

The History and Physical Examination Report

The next form that is created for the medical record is the *History and Physical Examination Report*. The **History and Physical Examination Report** documents all information about the patient's visit. This report is divided into two sections: *History* and *Physical Examination*.

History

The **history** records the patient's *chief complaint*, *history of the present illness* and *review of systems*. The **chief complaint** is the reason for the patient's visit. It should include any conditions, signs or *symptoms* that the patient is experiencing. **Symptoms** are the evidence of disease or the patient's condition. Sierra's chief complaint is coughing, occasional fever and fatigue.

The history section also includes the **History of Present Illness** (**HPI**)—the chronology of the onset of the chief complaint and any previous medical evaluation and treatment for the problem. Sierra explains the history of her illness to Dr. Mora.

The physician's questions may seem like small talk, but they can actually give her a general sense of your overall health and wellbeing.

COMPREHENSIVE MEDICAL HISTORY

This important information is confidential. No one other than your healthcare provider will have access or knowledge of this information without your express written consent. Thank you for taking the time to fill out this lengthy form. Completion of this history allows us to provide you the most complete medical care possible. This form will be reviewed with you during your visit.

General Information:
Patient Name: _Sierra Martinez_   DOB: _5/4/87_ SS# _555-50-5000_
Date of your last complete physical exam: _2/9/xx_   Date of last chest x-ray: _NA_
Date of your last cholesterol screening: _2/9/xx_   Date of your last dental exam: _12/10/xx_
Date of your last eye exam: _6/24/xx_   Date of your last sigmoidoscopy: _NA_
Women: **Men:**
Date of last mammogram: _NA_   Date of last PSA: _____
Date of last pap smear: _2/9/xx_   Date of last rectal/prostate exam: _____

Immunizations:
Measles/Mumps/Rubella Date: _1992_   Pneumonia Date: _None_   Hepatitis B: _1998_
Tetanus/Diphtheria/Polio Date: _1994_   Influenza Date: _11/xx_   Varicella Zoster: _2000_

Past Medical History: (check those that apply)

AIDS or HIV:	☐Yes ☑No	Chicken pox:	☐Yes ☑No	Measles:	☐Yes ☑No
Mumps:	☐Yes ☑No	Polio:	☐Yes ☑No	Epilepsy:	☐Yes ☑No
Cancer:	☐Yes ☑No	Rheumatic fever:	☐Yes ☑No		
Whooping cough:	☐Yes ☑No	Infectious mononucleosis:	☐Yes ☑No		
Scarlet fever:	☐Yes ☑No	Blood or plasma transfusions:	☐Yes ☑No		

Hospital/Surgical History:
Illness or operation: Date:
None

Allergies:
Please list and drug, food, contact or environmental substances to which you have had an allergic or bad reaction.
None

Medications:
Please list any prescription medications, over the counter medications, vitamins, herbs or nutritional supplements that you are now taking. Please include the dosage amount and the times a day you take them.
Loestrin
Multivitamin

Social History:
Occupation: _Clerk_   Marital status: _S_   Children: _0_

Do you currently smoke or chew tobacco? ☑Yes ☐No   If no, have you in the past? ☐Yes ☐No
How many packs per day? _½_

Do you drink alcohol, beer or wine? ☐Yes ☑No   If no, have you in the past? ☐Yes ☑No
How many drinks per week? _____

Do you currently drink coffee and/or tea? ☑Yes ☐No   If yes, how many cups per day? _____

Do you exercise daily/weekly? ☑Yes ☐No   How often? _3 times a week_

Do you use seatbelts while driving? ☑Yes ☐No

Do you wear a helmet while riding a bike? ☑Yes ☐No

Do you use illicit drugs? ☐Yes ☑No   If yes, how often/how much? _____

Do you have any risk factors for HIV infection? ☐Yes ☑No

Have you ever been exposed to anyone with tuberculosis? ☐Yes ☑No

Have you had excessive exposure to sun due to work or recreation? ☐Yes ☑No

Are you currently experiencing unusual stress? ☐Yes ☑No   Explain: _____

Are there any environmental risks involved in your job or home environment? ☐Yes ☑No Explain: _____

Figure 6-2: Sample patient history form

Family History

			Age (or age at death)	List serious illnesses
Mother	☑Yes	☐No	47	High cholesterol
Father	☑Yes	☐No	44	Heart disease (deceased)
Sisters	☐Yes	☐No		
	☐Yes	☐No	NA	
	☐Yes	☐No		
Brothers	☐Yes	☐No	NA	
	☐Yes	☐No		
	☐Yes	☐No		

Women only:

Date of first menstrual period: _1991_ Date last period began: _3/15/XX_ Regular? ☑Yes ☐No

Age at menopause: _NA_ Difficulty with periods? ☐Yes ☑No Specify: _____

No. of children born: Alive: _NA_ Cesarean: _____ Premature: _____ Stillborn: _____ Miscarriage: _____

Describe any complications: _____

Which of the following conditions are you currently being treated or have been treated for in the past (please check)

☐Heart disease/Murmur/Angina	☐Shortness of breath	☐Eye disorder/Glaucoma	☐Diabetes
☐High cholesterol	☐Asthma	☐Seizures	☐Kidney/Bladder problems
☐High blood pressure	☐Lung problems/cough	☐Stroke	☐Liver problems/Hepatitis
☐Low blood pressure	☐Sinus problems	☐Headaches/Migraines	☐Arthritis
☐Heartburn (reflux)	☐Seasonal allergies	☐Neurological problems	☐Cancer
☐Anemia or blood problems	☐Tonsillitis	☐Depression/Anxiety	☐Ulcers/Colitis
☐Swollen ankles	☐Ear problems	☐Psychiatric care	☐Thyroid problems

By signing below, I hereby certify that to the best of my knowledge all the information I have furnished on this form is complete, true and accurate.

Patient/Guardian signature: _Tierra Martinez_ Date: _3/29/XX_

Provider Notes:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Provider Signature: _Sonja Moss_ Date: _3/29/XX_
_____

Figure 6-2: Sample patient history form, page 2

Review of Systems

Next is the **Review of Systems** (**ROS**), which is the record of any signs or symptoms in the organ systems of the body. This will help to pick up any abnormality that was overlooked in the HPI section. The information in this section is from the patient's own description, not the doctor's hands-on physical examination. Again, Sierra reported a lingering cough, fever and fatigue, which the doctor will record.

The following areas are usually included in the Review of Systems:

- Constitutional
- Eyes
- Ears, Nose, Mouth, Throat
- Cardiovascular
- Respiratory
- Gastrointestinal
- Genitourinary

- Musculoskeletal
- Integumentary
- Neurological
- Psychiatric
- Endocrine
- Hematologic/Lymphatic
- Allergic/Immunologic

Physical Examination

The physical examination is the physician's hands-on examination of the patient and includes the physician's findings from this examination. An examination can cover the following organ systems and body areas.

Organ systems:

- Constitutional
- Eyes
- Ears, Nose, Mouth, Throat
- Cardiovascular
- Respiratory

- Gastrointestinal
- Genitourinary
- Skin
- Musculoskeletal
- Neurological/Psychiatric
- Hematologic/Lymphatic/Immunologic

Body Areas:

- Head, Face
- Neck
- Chest, Breast, Axilla

- Abdomen
- Genitialia, Groin, Buttock
- Back, Spine
- Each Extremity

Dr. Mora looks at Sierra's eyes and examines her face, ears, nose, throat and neck. While doing so, she asks Sierra about smoking Sierra admits that she started smoking again recently after having quit for two years. She continues her examination, listening to Sierra's heart and chest and asking her to cough. She feels her lymph nodes. Sierra had been into the office for a general physical examination just four months earlier, so Dr. Mora checks the results of her blood work from that examination.

The information from the medical history and the physical examination report give the physician the foundation for forming a *diagnosis*. A **diagnosis** is the doctor's opinion as to what's wrong with a patient. In Sierra's case, Dr. Mora formed a diagnosis, agreeing with Sierra's suspicion that she probably has a respiratory tract infection.

Physician's Orders

Now that Dr. Mora has decided on Sierra's diagnosis, it's time to figure out what to do about it—what procedure to take, or the **physician's orders**. She prescribes a course of antibiotics, and after conferring with Sierra and checking her medical history to find out what has worked best for her in the past and to be sure she has no drug allergies, she selects a penicillin-related antibiotic.

Dr. Mora also discusses with Sierra the dangers of smoking, especially given Sierra's father's death at an early age from heart disease. Sierra is also taking oral contraception, and smoking while on oral contraception can be problematic. Dr. Mora strongly recommends that Sierra stop smoking and gives her information about quitting. Because she successfully quit for two years, she advises her to try again without using any nicotine aids, such as a patch.

All medications prescribed by the doctor should be noted in the patient's health record.

If the physician hadn't been able to arrive at a diagnosis, this section of the medical report could have included **diagnostic orders**, such as a blood test or an x-ray. If she suspected Sierra had a more serious medical condition, her orders could have included a referral. Physicians must also order admission or discharge from hospitals or other healthcare facilities, as well as treatments, such as radiation therapy.

Progress Notes

If Sierra had been admitted to the hospital on her physician's order, the healthcare professionals treating her would provide *progress notes*. **Progress notes** document how the patient responds to treatment. The notes are written at intervals into the patient's record.

For example, Sierra's aunt, Melissa, was admitted to the hospital because she was coughing up blood and was too weak to walk. Her physician ordered diagnostic tests that revealed severe pneumonia and put her on high-powered antibiotics and various intravenous fluids. After two days, Melissa could sit up in bed and was eating soft foods. After four days, Melissa was walking. The nurses and her physician noted these responses to treatment in progress notes in her health record.

Let's learn about a few more types of reports that are included in a health record.

Progress notes keep the medical team informed about the patient's progress.

Diagnostic, Consultation, and Operative Reports

Depending on the circumstances, a health record may include other types of reports. **Diagnostic reports** include the results of tests the physician ordered for the patient, such as a radiologist's report on an x-ray.

The physician may call another healthcare professional, such as a pharmacist, a specialist or an occupational therapist, for a consultation. These professionals assess the patient and add their **consultation reports** to the health record. For instance, a physical or occupational therapist may determine whether a patient who has undergone back surgery is ready for assistance in sitting, standing and walking.

Having surgery adds many reports to a health record. For example, the anesthesiologist writes a report detailing what medications were given before the operation, along with their effect; the anesthetic agent used during the procedure, the amount, and its effects; and the patient's condition throughout the procedure.

After surgery is complete, the patient spends time in the recovery room. A separate form is added to the record. This form describes the patient's condition upon arrival in the recovery room, the patient's progress as she comes out of the anesthetic and her condition on release to a regular room.

The operation itself is also reported on, and that report is included in the health record. The **operative report** includes the names of the surgeons and assistants; the date, duration, and name of the procedure; preoperative diagnosis and postoperative diagnosis; the description of the surgical approach and findings; and a host of other details—including the number of sponges used in the procedure!

If the surgeon removed tissue as part of the operation, that tissue may be sent to a pathologist—who then generates a report. Pathologists report about tissues removed during biopsies and other types of surgeries. They also report on autopsies after a patient has died.

Other special types of reports that may be added into a health record include obstetric data, a labor and delivery record, descriptions of physical therapy and diagnostic results like EKG reports.

Discharge Summaries and Patient Instructions

When a patient is released from a health care facility—remember, on the order of a physician—a _discharge summary_ is added to the health record. A **discharge summary** is a concise statement of the reason for admission, a list of the findings from examinations and tests, procedures and therapies and the patient's responses to these procedures and therapies. The patient's condition on discharge is also part of this report.

The **patient instructions** specify the amount of activity the patient should pursue; the types of medications prescribed and instructions for taking these medications; the patient's diet; other information that healthcare professionals have given, such as how to care for a wound; and expectations for follow-up visits. Usually, this is way too much information for the patient, or even the responsible family member, to remember. That's one of the best reasons that instructions are put in writing.

A patient's medical record is often the size of a large book by the time the patient leaves the hospital.

Consent Forms

You may associate the terms _consent_ and _informed consent_ with hospitals. Well, it's true that hospitals require a special consent to authorize any procedure—whether the procedure will be used as a diagnosis or as a type of therapy—that isn't routine. For example, you give consent for x-rays (which are diagnostic) and for surgeries (which are forms of therapy, or cures).

Consent forms must include the procedure, explained in language the patient can understand; the risks of the procedures; any alternatives available; and the information or treatment that the procedure will (hopefully) provide. The patient, or parent or guardian, if the patient is a minor, must sign the consent form before the procedure can be performed.

You may have signed other consent forms without really being aware of it. All healthcare settings—even a physician's office—receive written consent from patients (or parents or guardians) for treatment, though emergency situations have special legal considerations. You've probably also signed a form that gives your physician permission to share information about you with people who have a need to know it—usually, insurance companies or other third-party payers. Another form lists the rights of the patient while under care at the facility; the patient must be informed of her rights and sign a form indicating she has been informed of them.

Other Types of Documentation

Let's go over a few other types of forms that you may see in the medical office.

Encounter Form or Superbill

The **encounter form**, also called a **superbill**, is a standard form that contains a list of the most common procedures and procedure codes the doctor performs at that office. During the patient visit, the doctor will circle the procedure codes for the procedures she performed. The encounter form is then forwarded to the medical biller, who will use it to file a claim with the patient's insurance company.

Genogram

A **genogram** maps out relationships and traits that may otherwise be missed. It resembles a family tree, but it also includes additional relationships among individuals.
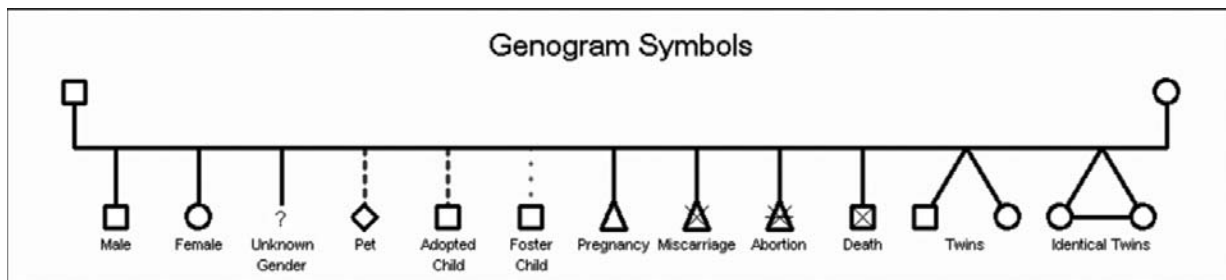
A genogram allows the physician and patient to quickly identify and understand patterns in family history.

Past Medical History

The doctor lists all prior diseases, accidents, surgeries or conditions on the **Past Medical History** form.

Personal/Sociocultural History

The **Personal/Sociocultural History** form includes the patient's occupation, hobbies or recreation, foreign travel, marital status and environment. The purpose of this topic is to list the patient's exposure to etiologic agents, such as chemical toxins, infectious agents and risk factors for disease.

Usual Childhood Diseases (UCHD)

Any childhood diseases such as chicken pox that the patient had as a child are listed on the **Usual Childhood Diseases**, or **UCHD**. Some other types of childhood diseases which are now preventable are measles, mumps, rubella, diphtheria, tetanus, pertussis, Haemophilus influenza type B and polio.

Advanced Directives

Advanced directives are instructions to medical providers in special medical situations. Living wills and durable powers of attorney are examples of advanced directives. Although law doesn't require that patients provide these directives in the health record, patients must be informed of their right to include these instructions if they wish.

All of the reports and types of information that you have reviewed have different purposes. Some reports such as the patient and medical history report are common to all medical records, while specialized reports like the genogram are not always necessary. The physician or nurse will tell you which forms you'll need for each patient.

✍ Step 5   Practice Exercise 6-1

❑ For questions 1 through 13, choose the best answer from the choices provided.

1. **The healthcare record is also called a(n) _____.**
    a. employee record
    b. doctor's report
    c. patient care record
    d. health record

2. **An accurate medical record can do all of the following EXCEPT _____.**
    a. provide documentation for study and research
    b. identify the patient
    c. list the amount the patient owes
    d. justify diagnoses and treatments

3. **Who owns the medical record? _____**
    a. The patient
    b. The doctor's office
    c. The insurance company
    d. The patient's family

4. **A patient's _____ data can include her full name, date of birth, gender and home address.**
    a. subjective
    b. demographic
    c. objective
    d. history

5. _____ history includes a patient's social habits and employment information.
   a. Personal
   b. Patient
   c. Medical
   d. Past

6. Under _____, the doctor will list all prior diseases, accidents, surgeries or conditions.
   a. History of Present Illness
   b. Genogram
   c. Family History
   d. Past Medical History

7. _____ includes the ages, state of health, diseases and death of family members.
   a. Symptoms
   b. Past Medical History
   c. Family History
   d. Personal/Sociocultural History

8. The _____ History includes the patient's past medical history including family health, hospitalizations, surgeries, injuries, medical problems and illnesses.
   a. Personal
   b. Patient
   c. Medical
   d. Past

9. A radiologist's report on the patient's x-ray will appear on a(n) _____.
   a. consultation report
   b. operative report
   c. review of systems
   d. diagnostic report

10. If you need to go to the hospital, your doctor will submit a _____.
    a. consent form
    b. diagnostic order
    c. progress note
    d. physician's order

11. A form used in the hospital to document how the patient is responding to treatment is called a _____.

    a. consent form

    b. diagnostic order

    c. progress note

    d. physician's order

12. Your boss, a surgeon, had a nightmare that he left a scalpel in Mrs. White's abdomen. He asks you to pull the medical record to check the instrument count. Where will you find this information? _____

    a. On the progress notes

    b. In the operative report

    c. On the discharge summary

    d. On the patient's advanced directives

13. The doctor suspects her patient may have malaria. She wants to find out if the patient has travelled to an area where the disease is common. Which report should you give her? _____

    a. Past Medical History

    b. Patient Questionnaire

    c. Personal/Sociocultural History

    d. History and Physical Examination Report

☛ Step 6   Review Practice Exercise 6-1

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 7   How Are Medical Records Organized?

❑ Do you file your receipts every month as you pay bills or do you toss papers into a drawer until income tax time? Do you balance your checkbook by hand or use the computer? Either choice is a type of filing system, but one may work better for you than the other.

Just as you can choose any number of filing systems for your own information, health records can also be organized in different ways. Let's take a look at some of the different formats used to organize a health record.

Source-Oriented Record

The traditional way to keep a health record is to organize the information in it according to the source of the information in a **source-oriented record**. Source in this context refers to the role of the person who's adding the information.

For example, in a source-oriented record that a hospital keeps, the physician's notes are added to the Medical section. Nursing staff notes are added in the Nursing section. Radiology reports are separate from pathology reports, but both are also part of the Medical section. The most recent additions to each section are usually kept as the top page of that section. Because the report is separated into sections, it's easy to find some kinds

All of the radiologist's reports will be filed in one section of the medical record.

of information. A physician who wonders about lab results looks in the Laboratory section of the report; the most recent lab results would be on top. Perhaps you can see why the source-oriented record is a popular format!

But not so fast! Integrating information relating to a particular diagnosis can become a problem. For example, if a physician wanted to see all of the information relating to swelling in a patient's legs, she would have to search through all the sections to see what tests had been ordered, what treatments had been tried and how effective those treatments had been.

Problem-Oriented Record

The *problem-oriented record* was developed, in part, to address some of the limitations of the source-oriented record. The **problem-oriented record**, which documents the medical treatment based on a logical and organized plan, has four parts:

- **Database**—a list of data collected about every patient, including chief complaint, current condition, medical history, physical examination and baseline laboratory data. This database serves as the equivalent to the medical history and clinical examination.

- **Problem list**—a list of titles, numbers and dates of particular problems. The list serves as a guide to the information in the rest of the record. This can be a collection of symptoms or a fully formed diagnosis. A problem can be social (a person needs daily care but has no support system to provide it), financial (a person has no insurance to cover medical supplies, such as gauze and catheters) or medical (a person has an eye infection). A problem list can also document past problems, such as a history of recurring eye infections or glaucoma due to diabetes.

- **Initial plan**—a preliminary way to address each problem, whether it's more investigation; treatment of some kind, such as medication; or patient education.

- **Progress notes**—using the special *SOAP report* structure, these notes document what has happened to the patient.

SOAP Report

The contents of the SOAP report are:

S   Subjective

O   Objective

A   Assessment

P   Plan

S—Subjective

The patient's reason for seeing the doctor is the **subjective** complaint. To obtain the subjective complaint, ask the patient detailed questions such as:

- What caused you to seek treatment today?

- What symptoms do you have?

- How long have you felt this way?

- Have you had this problem before?

O—Objective

Objective findings are based on the physician's observations during the patient's exam, diagnostic tests and further care. Here are some examples of objective information:

- Physical measurements

- Physical examination findings

- Diagnostic reports

This objective information, or data, comes from several sources.

Data Sources

Primary sources of information about a patient documents the care provided to the patient. It includes direct observation of the patient by the medical practitioner, x-rays, scans and similar documents. Information from **secondary sources** includes data selected from these primary sources and put into another form, such as a cancer registry or committee minutes.

Let's look at an example of these two sources of data.

Carl is an inpatient at a behavioral health center. He was admitted for observation by his psychiatrist because Carl is experiencing problems with his medication for schizophrenia. As aides, counselors and physician assistants care for Carl, they record clinical information in Carl's health record. The psychiatrists on staff add progress reports. In addition, the facility's medical staff holds a daily meeting to review the progress of each patient. All observations of Carl's condition are recorded in the meeting minutes. The minutes of these meetings are also included in Carl's health record.

Physical exams reveal many hidden health problems.

In Carl's case, the reports about his progress from the psychiatrist, aides, counselors and other staff are primary sources of information. The meeting minutes containing medical staff observations are secondary sources.

A—Assessment

The **assessment** is the healthcare provider's evaluation of the problem. This is her judgment, opinion or estimation. She might state, "The patient has a migraine headache."

P—Plan

The **plan** is the provider's procedure to resolve the problem, whether the next steps are diagnostic, therapeutic or educational. A doctor might state, "The patient will keep a log of diet, stress and exercise for the next three weeks to look for a pattern," or, "The patient will take over-the-counter pain reliever as needed."

As you can see, the problem-oriented record is quite detailed and includes a wealth of information. It links each piece of documentation to a specific problem and provides a view of the whole patient. On the other hand, because it is so detailed, filling out the reports can be time-consuming and healthcare practitioners need special training to use this system.

Integrated Record

An integrated record tries to overcome some of the limitations of both the source-oriented record and the problem-oriented record.

The **integrated record** format files reports chronologically—in reverse order, with the most recent reports on top—with less division by source. Some hospitals integrate reports completely; others integrate physician notes with notes from additional services, such as physical therapy, and keeps progress reports separated by discipline.

Like the source-oriented record, an integrated record is fairly easy to use and not as time-consuming as a problem-oriented record. It also keeps all the information on one particular patient

Sometimes it is necessary to compare information from several different types of records.

episode together, just as the problem-oriented record does. However, as is true with the problem-oriented record, it's hard to compare one type of information quickly. For example, to find laboratory results, you have to flip through the record chronologically.

📖   Step 8   What Is Documentation?

❑ You know that medical records serve as a valuable source of communication. In addition, medical records act as an important resource for legal protection, financial reimbursement, education, quality assurance and medical research. But if the records are inaccurate or incomplete, the physician can't prove that his treatment, or even his diagnosis, was justified. That is why *documentation* is the key component of medical records.

Documentation is the written record of the services that the provider performs. When the physician dictates the diagnosis and procedure for the medical records, these eventually end up on the medical bill, courtesy of the medical transcriptionist and medical billing specialist. Patients are charged for services received based on what the physician documents.

A physician's dictation substantiates the charges on the medical bill. Because dictation records diagnoses and procedures, it contains a lot of the same information that ends up on medical bills.

Look at the following example of dictation that notes the diagnosis and procedure of Becky Johnson's physician visit.

Problem
Patient was walking down stairs to front door landing at her home. She slipped on the carpeted stairs, fell and heard a snapping sound in her right ankle. The ankle reveals swelling with discoloration due to bruising. She complains of pain and tenderness with movement and touch.

Intervention
Three-view ankle x-ray is reviewed. X-ray reveals medial malleolus fracture. The ankle was immobilized using a boot cast.

Evaluation
Patient is diagnosed with a medial malleolus fracture. She is to keep the foot elevated and apply ice packs prn for swelling. Darvocet-N 50 q.4h. prn for pain.

Don't worry if you didn't understand everything in the previous example. Just familiarize yourself with the way a physician's dictation looks because you'll see it often working as a medical assistant.

Physician documentation has another important function; it represents a database for reimbursement decisions for Medicare, Medicaid, third-party insurance coverage, workers' compensation and pension payments. If services are provided but not documented, the healthcare provider will not be reimbursed. In other words, if it's not documented, it didn't happen. Let's take a look at a quick example.

Dr. Anderson *biopsies* a skin lesion on a patient's face and removes two skin tags. A **biopsy** means to remove and examine a living tissue sample. Dr. Anderson documents the biopsy but fails to document the removal of the skin tags. The insurance company receives a claim indicating both procedures and then requests the medical record to confirm the procedures performed. But remember, the doctor only documented the biopsy. Because Dr. Anderson failed to document the removal of the skin tags, the insurance company will only reimburse for the biopsy procedure. Not a pleasant outcome for the patient or the doctor!

Let's look at another example—this one also illustrates the importance of documentation.

A new patient comes to a local clinic with a complaint of ear pain. The physician takes the patient's history, and she then performs an exam. She circles the level of service on the encounter form and discharges the patient with a prescription for antibiotics. After the patient leaves, the doctor dictates the service; however, she is interrupted and ends the dictation after documenting the patient's history.

This dictation goes to the medical transcriptionist. She transcribes the dictation and then gives this document to the medical coder. The coder reads the dictation and notes that the level of service that the physician circled on the encounter form does not match the transcriber's notes. In this case, the coder may contact the medical billing specialist to bill the service at the documented level or contact the physician to correct this error.

So you can see how important the accuracy of documentation—written and verbal—is to everyone working in the healthcare field. Now let's move on to study the quality of medical records.

Step 9 How do Providers Ensure Quality of Medical Records?

❑ With so many different parts and organization methods for medical records, how do medical facilities keep the records consistent? Thankfully there are organizations and government regulations that require and enforce medical record standards. One such organization is The Joint Commission. The Joint Commission has information management standards for hospitals, long-term care facilities, physicians' offices and other medical facilities. In order for a medical facility to be accredited by The Joint Commission, they must follow the commission's standards.

The government also has medical record regulations. For example, in order to participate in the Medicare program, healthcare providers need to meet federal regulations, which are known as the **Conditions of Participation** or **CoP**. The Conditions of Participation have specific standards such as:

- Medical record entries must be legible, complete and authenticated and dated.

- Records must be retained for at least five years.

- Those who enter information into a medical record must be identified and authenticate their entry.

- Hospitals need to make sure the nurses keep a nursing care plan for each patient.[1]

When providers follow the guidelines provided by The Joint Commission and Medicare CoP, they can be certain that the documentation they provide for medical claims will be acceptable to insurers, and therefore, they will be paid!

📖 Step 10   Managing Medical Records

❑ In one afternoon, three residents of a long-term care facility started coughing, sneezing and showing other signs of a respiratory illness. The next day, two more had fevers and coughs. At that point, the head nurse performed a head count of all residents showing signs of respiratory illness, and of the 120 residents, 20 had developed symptoms within that week. The medical staff then began a further, detailed analysis of health records to determine whether the illness marked the arrival of the normal cold and flu season or if something else was at work.

A physician ordered tests of laboratory specimens from the ill patients; after an initial false negative result, the culprit was found to be Legionnaire's Disease—a sometimes fatal respiratory disease. The facility was quarantined. Eventually, the rooftop air conditioning system was found to harbor the bacterium, which meant that the entire neighborhood had been put at risk.

Older patients can be more susceptible to some ailments.

If you think this is the plot of a movie, think again. A similar incident happened in Toronto in 2005.

You already know that health information can help protect public health. The medical professionals in this scenario relied on information in health records as part of their strategy to analyze and combat a serious problem. Finding and fixing the problem required a lot of human intelligence.

At a far more mundane level, controlling the outbreak also required a good filing system. Filing? Ordinary paperwork? You bet. If you can't find the healthcare information you need when you need it, it might as well not exist.

Many healthcare facilities rely on paper-based records or some combination of paper and computer records. In either case, the records must be stored so that the appropriate information can be located. Through the years, medical professionals have developed several systems for storing records, each with advantages and disadvantages. You'll learn about them in this section.

File Management—What Is That?

A few file management terms allow everyone to communicate effectively. Understanding this vocabulary is the first step toward mastering filing.

Record: A record is a document or an item to be filed or a file itself. Records can take many forms, such as paper, CDs, cassette tapes, computer printouts, computer files, e-mails, cards, microfilm, charts, maps, photographs and optical disks.

Caption: Also called the title, a caption is the heading under which a record is filed. The caption is printed or typed on a file folder, index card or whatever container holds the record. As you'll see on the examples below, the typical caption on a medical file is the patient's name or an assigned patient number.

> #4456-B Hiza, Sarah A. (Filed numerically)
>
> Stone, Howard P. (Filed by surname)

Unit: A unit consists of each part of the caption that is used to arrange the name in filing order. For example, Lee Wherry Brainerd has three units; (The) Sound (of) Music has two units since small, unimportant words are not used for filing purposes and are put in parentheses. Also, commas or slashes are used between units.

Indexing: Indexing means deciding what is the most important part of a name or caption. Then that word or words are brought to the beginning of the filing label, if necessary. Take a look at some examples of indexing.

Original Order of Words	Words in Indexing Order
James R. Michelson	Michelson, James R.
Sara A. Hiza, patient #4456-B	#4456-B Hiza, Sarah A.

Divisions/Subdivisions: The large and small classifications under which records are filed. For example, you can examine how the business entries in a phone book are divided into types of businesses. These are also called headings and subheadings.

Chronological: This means the order of occurrence (date and time). The most recent record is usually put at the front of a file. The oldest records will be at the back of the file.

Cross-referencing: This is a note indicating other places within a filing system where a record may be located. Records should be filed under the most logical, important classification, then cross-referenced under other possible classifications. For example, if the record you're filing has the caption "Nagel, Whitman & Freidman, Pediatricians," you'd file it under "Nagel," and add cross-referencing notes under "Whitman," "Freidman," and "Pediatricians." This makes it easier for anyone to find any file. Cross-referencing cards are usually kept in a card-file box. Sometimes, a cross-reference sheet is placed in a file as the first page.

Now that you're familiar with file management terminology, let's take a look at one method to manage files—numerically.

It's All in the Number

When we talk about assigning a patient number to a patient health record, we're giving a patient a unique identifier—a number associated only with that patient. But assigning a patient a unique identifier is only one step in managing patients' health records. After the patient has a number, the record must be updated with the correct information and organized in a particular manner. Although many health records have computer-based components, they still rely on paper-based filing systems, too.

But to backtrack for a moment, not all healthcare facilities use numbers. Smaller offices that see a limited number of patients often skip assigning a patient number completely and simply identify patients by their names.

Although you may think that numbering health records should be easy, remember that you can't just slap a number on a record and stick it into a filing cabinet. The purpose of maintaining health records in the first place

Some filing systems can seem pretty daunting at first glance.

is so that you can find information in them later. The systems that medical professionals have developed are efforts to make retrieving that information relatively easy. Now, let's look at some numeric systems in depth.

Serial Numbering

A **serial numbering system** is similar to counting on your fingers. Every time a facility treats a person, whether it's a small doctor's office or a large hospital chain, the patient is assigned a new number, and a new health record is created.

If you're treated in the emergency department one night and sent home, but you return the next afternoon, you will receive two different numbers. Your patient records will be stored in two different places in the records system. In a paper-based system, that might mean two separate filing cabinets; in a computer-based system, it's two separate records in a database. When your physician asks for your health records related to this problem, the records department has to pull all the records from their separate locations.

This system tends to be popular in healthcare facilities that don't have computer software that makes it easy to find a previous number for a patient. After all, simply assigning a new one for each encounter doesn't require any kind of special equipment. On the other hand, having records in separate folders in different locations makes it more time-consuming to give a physician all of a patient's records.

Unit Numbering

Another way to number a health record is to give the patient the same number each time she is treated at the facility. Each encounter is stored in a record in the same physical folder (or is related in the computer software) in the same location—this is a **unit numbering system**.

For example, Jill was scheduled for knee surgery and was assigned a number the first time she went to the hospital for her pre-surgery evaluation. The day of her surgery, she was reassigned that number. When she returned to the hospital for physical therapy, she was given the same number again.

Serial-unit Numbering

A blend of the serial numbering system with the unit numbering system, called a *serial-unit numbering system*, overcomes some of the limitations of both of those systems.

Jill kept the same patient ID number from evaluation through recovery therapy.

In **serial-unit numbering**, a patient gets a new number each time she is admitted to a healthcare facility, as in the serial system. However, all the patient's previous records are given this new number and physically located in the new file, and a cross-reference note in the old file shows where the records currently exist.

So, for example, when Jill (who had knee surgery) shows up for her post-surgery physical therapy appointment, she still receives a third patient number for her three visits related to one particular surgery. However, the records from her pre-surgery consultation and the surgery itself are renumbered and put with her new physical therapy records.

This system makes it easy to assign numbers and keeps all of a patient's records together.

📖 Step 11 Filing

❑ Have you ever searched for a book at the library, put your cancelled checks in order, alphabetized your recipe cards or looked up a number in the phone book? If so, then you have experience with some or all of the four primary methods of filing covered in this lesson. Medical offices all over the world use these filing methods.

An office's filing system is its memory. This can range from a small Rolodex of business cards to many cabinets of thick files—like all the patients' records at a doctor's office. With technology today, you'll find electronic filing systems are similar to the paper filing systems you'll learn about in this lesson.

However an office manages its documents—and it often uses multiple systems—knowing how and where to store information and how to retrieve it is an important skill on the resume of a medical office manager. A sign of an effective administrative medical assistant is the ability to find a piece of information the first time—especially when others cannot. Even though filing systems vary among offices, virtually all offices follow basic rules of filing.

Using Filing in the Office

Now that you're familiar with the basic terms of filing, let's follow Angie, a medical assistant for a doctor, as she walks us through the four steps to filing: inspecting, indexing/coding, sorting and storing.

Inspecting

"At the end of the day, I make sure the files for all the day's patients are put back correctly. Alan, the doctor, sometimes wants some of the files left out because the patient is coming back the next day, or he is still looking them over. The rest, though, are ready to return to storage. Each file has a chart. When I pull out a file for an incoming patient, I note the date on the chart. When he's finished with a file, Alan signs the chart. That tells me the file is ready to be filed. So, my first filing step is checking for that signature. The last office where I worked used a date stamp instead of a signature, but the idea's the same."

Effective medical assistants can find the file the first time.

Indexing/Coding

"Since our files are patient records, we file by name. Whenever I have new documents to add to a patient's file—like x-rays or invoices—I always put the patient's name on the document just like it is on the file—last name first. I always put it in the same place on the document, so I always know where it is. Also, I've found that paper clips tend to get stuck on other documents, so I use staples instead."

Sorting

"To save time and to make sure everything is filed accurately, first I do a rough sort where I divide the files into two piles—the first half of the alphabet and the second half. Then I do a fine sort and alphabetize each pile."

Storing

"The last step is, of course, putting the files away in the row of file cabinets we have. If I've done a good job inspecting, indexing and sorting, then this is easy. I make sure to file them in the correct place and face them all the same way. It's a good idea not to overcrowd file drawers. I leave at least four inches of unused space in each drawer so taking out and refiling records is easier."

Now let's learn about the different types of filing systems.

The Different Kinds of Filing Systems

As we touched on earlier, there are several primary filing systems. For instance, Angie looks up a patient's medical records, which are filed alphabetically. However, to find information about the event center where the office had their last convention, Andrew would look in his subject filing system.

Each medical office manager uses one of the four common filing systems: alphabetic, geographic, numeric and subject. Although a medical office may not use some of these systems, it's important to be familiar with all of them. A successful system—no matter which you use—should meet the following qualifications:

- Files should be easy and logical to find.

- The information in the file should be up-to-date and accurate.

- The system and the process of filing should be cost-effective.

- The filing system should have room to grow.

Let's look at each of these systems more closely.

Color-coded files can often be very helpful.

Alphabetic Filing

The alphabet is a convenient basis for filing systems because almost everyone knows the alphabet. In fact, the alphabetic filing system accounts for more than 80 percent of all filing done in today's offices. The **alphabetic filing system** uses the patient's last name, first name and middle name or initial to file records. Basic alphabetic filing is fairly straight-forward. You arrange the files starting with the first letter of the patient's last name, first name then middle name. If the patient uses an initial for the first or middle name, use that.

Unalphabetized

Nelson, Geraldine R.

Nelson, N. Anne

Martinez, Rafael E.

Martinez, Rafael A.

Martinez, Angela

Martinez, K. Edwina

Martineau, Dorothy Edna

Martin, Albert E.

When alphabetized, these names become:

Alphabetized

Martin, Albert E.

Martineau, Dorothy Edna

Martinez, Angela

Martinez, K. Edwina

Martinez, Rafael A.

Martinez, Rafael E.

Nelson, Geraldine R.

Nelson, N. Anne

Names aren't always standard, and special situations always occur. These situations require some kind of standard or policy. Books about editing specify how entries in a book index should be alphabetized. Similarly, the Association of Records Managers and Administrators has guidelines for special name situations.

For example, some healthcare facilities group all the names starting with either Mc or Mac together. The following list is alphabetized correctly:

MacAdams

MacDonald

McDonald

McPherson

MacTavish

Other prefixes that are part of a last name are simply included as the name. The following list is alphabetized correctly:

Casper, Lynda R.

CDeBaca, Mauricio

Cleveland, Lamar R.

Cleveland, LaToya A.

Cleveland, Lavonne A.

El-Alamin, Benjamin

L'Amour, Louis F.

Lavercombe, Tanya

The alphabetic filing system has many obvious advantages.

- It's easy to learn, and training is minimal.

- Retrieving records is easy and fast.

- It doesn't require keeping a master patient index that matches a patient name to a unique identification number.

The alphabetic system also has some disadvantages. First, obviously, proper spelling of patient names is crucial. If a name is misspelled, the record is lost unless you can figure out how someone might have misspelled the name! A name change requires a new record and a cross-reference in the old record. Also, anyone who knows a patient's name can easily find that patient's file if the opportunity arises.

Another consideration relates to the physical space in which the filing system is located. Files don't expand at the same rate throughout the entire alphabet. More patients will have last names starting with T than X, Y or Z, so the system plan needs to allow extra shelf space for those letters. An influx of patients named Johnson or Martinez or Smith would require records later in the alphabet to be shifted.

Numeric Filing

When health records are **numerically filed**, typically they are categorized first by number and then by an alphabetical cross-reference. The number could be an account number that is assigned by the office's billing system. An advantage to numeric filing is that the files can expand without rearranging the files. In addition, there is clear identification between patients with similar or identical names. Remember, every office is different and may use a different type of numerical filing. Usually hospitals, large clinics or group practices use numeric filing.[2]

Let's pause now for a quick review of what you've learned in this section with the following Practice Exercise.

✍ Step 12   Practice Exercise 6-2

❑ For questions 1 through 10, use the word bank below to complete the sentences in the space provided. Not all of the terms will be used.

source-oriented	problem-oriented	plan	American Medical Association
integrated	The Joint Commission	primary source	Conditions of Participation
objective	SOAP report	assessment	secondary source
documentation	subjective	Medicare	

1. **Direct observation of a patient is considered a(n) _____ _____ of information.**

2. **A(n) _____ record files reports chronologically with less division by source.**

3. **A(n) _____ is used as a format for progress notes.**

4. **The statement, "I fell and twisted my ankle this morning," is an example of a(n) _____ complaint.**

5. **The statement, "Patient's right ankle is swollen. There are signs of contusion and venous hemorrhage." is an example of a(n) _____ finding.**

6. **A(n) _____ record has four sections: the database, the problem list, the initial plan and progress notes.**

7. **Data collected from x-rays and other diagnostic tests that is put in a summary report is a(n) _____ of information.**

8. **The _____ is the written record based on the doctor's notes that substantiate the charges on an insurance claim or medical bill.**

9. **A(n) _____ record is organized according to who the information came from.**

10. **Organizations such as _____ and _____ require and enforce standards for medical records.**

For questions 11 through 21, match the file management term on the left with its definition on the right.

11. _____ **Record**

12. _____ **Caption**

13. _____ **Unit**

14. _____ **Indexing**

15. _____ **Divisions/ Subdivisions**

16. _____ **Chronological**

17. _____ **Cross-referencing**

18. _____ **Serial numbering system**

19. _____ **Unit numbering system**

20. _____ **Alphabetic filing system**

21. _____ **Numeric filing system**

a. A note indicating other places within a filing system where a record can be found

b. Files categorized by number, then cross-referenced alphabetically

c. Bringing the most important words to the beginning of the filing label

d. Uses the patient's last name, first name and middle name or initial to file records

e. A document or an item to be filed, or the file itself

f. The order of occurrence determined by date and time

g. Each part of a caption that is used to arrange the record name in filing order

h. System that assigns and uses only one number for each patient every time he is treated

i. The large and small classifications under which records are filed

j. System that assigns numbers to patients in the order that they are treated

k. The heading under which a record is filed

⚷ Step 13 Review Practice Exercise 6-2

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

Let's now broaden our viewpoint from management of the medical record to protection of the medical record. One of the most important ways you can protect the medical record is by following *HIPAA* guidelines.

📖 Step 14 What Is HIPAA?

❑ Congress enacted the **Health Insurance Portability and Accountability Act**, or **HIPAA**, in 1996. This bill has two main objectives. The first objective is to ensure the continuation of health insurance coverage for workers and their families during times of job change or loss (**portability**). The second (**accountability**) is to increase the effectiveness of the healthcare system while protecting health data integrity, confidentiality and availability and preventing fraud and abuse.

Many experts believe that HIPAA is the most sweeping healthcare legislation in the last 30 years. Its provisions will touch nearly all who work in the healthcare field. Providers, payers, medical billers, clearinghouses—anyone who deals with electronic healthcare transactions and confidential patient information has been affected.

HIPAA consists of five **titles** or **sections** that place various legal requirements on the healthcare industry.

Of these five titles of HIPAA, **Administrative Simplification—Title II, Subtitle F**—has probably had the greatest impact on most healthcare practices. The goal of the Administrative Simplification portion of HIPAA is to simplify healthcare jobs.

Keeping track of the many different requirements, codes, attachments and claim forms that various private and government-sponsored healthcare plans call for can be difficult for a medical claims and billing specialist. Then there are the other administrative matters, such as determining eligibility, checking on referral authorizations and tracking paper claims that can consume a high percentage of a provider's resources.

People in the healthcare industry have long recognized the problems that arise from variations in how its segments do business. The HIPAA Administrative Simplification legislation was enacted to address this lack of consistency.

Administrative Simplification (HIPAA Title II, Subtitle F) sets up nationally consistent regulations in four main areas:

- Privacy Standards Rule

- Electronic Transaction Standards Rule

- Security and Electronic Signature Standards Rule

- Standard Identifiers Rule

The Privacy Standards Rule

Every neighborhood has one—the person who knows everybody else's business and shares it at any opportunity. You may have enough common sense, or hard-won experience, to keep private information about your life from this busybody. But you may know people who aren't as sensible as you are. Thanks to the neighborhood gossip, their information is common knowledge in your cul-de-sac. Privacy is impossible when information isn't kept *confidential*.

Information about your health care is stored in various forms at every facility at which you receive care. As you've seen, lots of different groups of people want access to healthcare records for many legitimate reasons. So who's protecting you—and your health record?

HIPAA is—that's who! HIPAA's Privacy Standards Rule is federal legislation that protects your healthcare information. Many regulations developed from this act determine who can see your medical information and under what circumstances.

con·fi·den·tial (adjective):
carried out or revealed in the expectation that anything done or revealed will be kept private[3]

Through HIPAA, legal procedures regarding medical information have been defined, put into place and enforced. Any information exchanged between you and a healthcare provider, such as a physician or nurse's aide, is considered private information—in legal terms, the information is **privileged**. It is your right, as the patient, to have privileged information about you kept confidential.

Confidentiality refers to the way in which information is protected from being distributed. It's your right to have your medical information kept confidential, which means that the healthcare provider can't release medical information about you to anyone without your express consent, except in certain legal situations and for legally defined reporting purposes.

Legally and morally, the medical assistant must protect the privacy and confidentiality of any interactions between the physician and the patient.

Here are some examples of how you can protect your patients.

- Patient information should be shared privately with staff members.

- Be sure that you can't be overheard when ordering prescriptions.

- Never discuss a patient's information outside of the office.

- Keep charts and other patient information out of view from other patients and office visitors.

- Protect the patient from inappropriate or unnecessary physical exposure.[4]

Let's take a moment to look at some examples of how you protect the confidentiality of the patient's medical record.

Is privacy needed here?

Protecting the Medical Record

When you handle a patient's medical information, think of it as the actual patient. Just as you would close the door and provide drapes to protect the patient's privacy, use common sense to protect the patient's medical record. Some situations may seem very innocent, but your first responsibility is to maintain the patient's privacy. Here are a couple of different situations that you may encounter.

> **Problem:** A patient is sitting in the waiting room as another patient leaves. The patient in the waiting room asks you, "Was that Jenny Smith? I lost track of her and would like to catch up. Could you give me her phone number?"
>
> **Solution:** Be careful to avoid mentioning the patient's name and, of course, keep her phone number confidential. You can reply, "I'm sorry, I can't give out anyone's phone number," or "I know you wouldn't want me to give your phone number to anyone without your permission."

Another awkward scene that could have been prevented:

> **Problem:** Two coworkers use the same physician. By chance, they both had appointments at different times on the same day. John's morning appointment was to discuss the findings of a recent biopsy. She was devastated to learn that she has breast cancer. Amber came in at lunchtime, and saw John's name on the sign-in sheet. Later that day at work, Amber mentioned to John, "Hey, I saw you went to see Dr. Zonk this morning. What were you there for?"
>
> **Solution:** This blunder could easily have been avoided if patients were told to enter only a first name on the sign-in sheet.

Still another danger lies in two medical professionals discussing a case outside of the office. The grocery store aisle is not an appropriate place for a sharing session. Anyone could be around the corner or on the next aisle—including the patient!

A different situation where you'll need to protect patient information is in the release of records. Patient records are never released without signed consent forms from the patient or the patient's representative. The consent form is usually placed in the patient's medical record.

Now let's talk about the Electronic Transaction Standards Rule and how it affects your team members who work with medical claims and bills.

The Electronic Transaction Standards Rule

Did you know that until 1996, there were about 400 different formats for healthcare claims in use? That's right! Before HIPAA's Electronic Transaction Standards Rule took effect, the health plan payer system was composed of a multitude of private companies and government agencies, each with its own preferred methods of receiving and paying claims. Certain forms required some data here, different data there—the claims process became cumbersome and unwieldy for both providers and patients. No wonder healthcare professionals sometimes got confused. No wonder claims were returned and payments delayed or denied. (The actual wonder is that the claims system worked as well as it did, given its problems!)

Under HIPAA's **Electronic Transaction Standards Rule**, the 400 different formats that existed for healthcare claims have been replaced with one (Yes, one!) common format. Providing information to payers is much simpler now and less expensive. As of the HIPAA compliance date, all healthcare businesses use the same format for the same type of electronic transaction. So, regardless of who the provider or payer is, one single format has been developed for all electronic claims, one format for all electronic referrals and authorizations and one for all electronic payments. In all, ten standard electronic formats are used to cover ten types of transactions in the healthcare industry.

There is no more wondering whether a particular carrier requires certain information—the information on an electronic claim is the same for all carriers. If you are concerned with the proper format, don't be. As long as you use HIPAA-compliant software, your program will automatically submit your claims in the proper electronic format.

This is exciting, no doubt about it! HIPAA's Electronic Transaction Standards Rule is to medicine what Noah Webster was to American English. By standardizing the spellings and meanings of words, Webster enabled people in the United States to talk to each other with a common understanding of the meaning of each word. The goal of HIPAA is for all healthcare workers to have similar ease and efficiency in their own communications.

Who Must Comply?

HIPAA's Electronic Transaction Standards Rule affects virtually everyone working in the healthcare field. Any provider who transmits healthcare information in electronic form must be compliant with HIPAA rules. HIPAA also covers all health plans and healthcare clearinghouses. These three main groups—providers that transmit health information electronically, health plans and healthcare clearinghouses—are known as **covered entities**.

HIPAA's regulations also extend by contract to those doing business with covered entities. Billing agencies, service organizations and all other business associates of covered entities must be HIPAA-compliant. For example, if you work as a medical assistant for a doctor and file claims electronically, you are a business associate of that doctor and must abide by the HIPAA electronic transaction regulations.

Who Must Comply?

Covered Entities

- Providers, including hospitals, nursing homes, physicians and laboratories that transmit healthcare information electronically

- Health plans, including traditional insurance, managed care, government programs and other healthcare payers

- Business associates of any covered entity

HIPAA considers this medical assistant to be a covered entity.

As of October 16, 2003, Medicare required providers with more than 25 full-time employees to submit claims electronically. Providers with fewer than 25 full-time employees are not required to submit electronically and claims to private insurance companies do not have this requirement.

How Do I Comply with the Electronic Transaction Standards Rule?

If you assist with claims and billing in your office, there are some specific things you'll need to keep in mind when transmitting electronic claims to comply with HIPAA regulations. First, let's look at how HIPAA defines *electronic* and *transaction*.

What Is Electronic?

According to the Electronic Transaction Standards Rule, a transaction is **electronic** if it is transmitted using an electronic medium, including the Internet, Extranet, leased lines, dial-up lines and private networks. Information physically moved from one location to another using storage media, such as magnetic tapes, disks or CDs, is also considered an electronic transaction. Telephone voice response and faxback systems, however, are not considered electronic and thus HIPAA standards do not cover them.

What Is a Transaction?

According to HIPAA, a **transaction** is the transmission of information between two parties to carry out financial or administrative activities related to health care. That essentially covers all types of activities that go on in a medical facility or office other than those related to treatment.

The basics that the healthcare professional needs to know haven't changed. HIPAA's Electronic Transaction Standards Rule has been enacted to improve and simplify the way we complete electronic claim submissions.

Are There Benefits?

If you work with medical claims and bills, you will benefit tremendously from the Electronic Transaction Standards Rule. As we've discussed, prior to HIPAA implementation, healthcare providers were required to submit transactions according to the format and data content that the receiving healthcare plan specified. Now, if you file electronically using the proper format and data content, HIPAA states that any carrier must accept the claim. A carrier can no longer set its own particular requirements for filling out a claim form.

Remember that HIPAA does not require that all providers submit transactions electronically; it only requires that those transactions that are transmitted electronically use the electronic transaction standards. So if a provider you work for chooses to submit paper claims, you will complete insurance forms to submit them. However, any electronic claim must be in the X12 837 format. You will not need to learn the format, though, as translation software or a clearinghouse takes care of the specific formatting requirements for you.

Security and Electronic Signature Standards Rule

The **Security and Electronic Signature Standards Rule** became effective on April 20, 2005. This rule spells out measures and methods to safeguard health information privacy and to keep the information secure. Under this rule *all* health information, not just protected health information, that is electronically transmitted or maintained must be kept secure.

Standard Identifiers Rule

The **Standard Identifiers Rule** sets a standard for unique identifiers for three entities—providers, health plans and employers. **Identifiers** are unique numbers assigned to each business that help transfer information. Each business entity is given a National Payer ID. These standard identifiers simplify paperwork required by healthcare entities so they can spend less time filling out forms.

Want More Information?

- If you'd like to read more about HIPAA, you can refer to your supplement, *HIPAA Basics—Understanding the Federal Regulations* and visit www.cms.gov/HIPAA.

Let's pause here for a brief review of the information you've learned in this section. Then we'll summarize the lesson and you'll be ready for the quiz.

✍ Step 15   Practice Exercise 6-3

❑ For questions 1 through 4, answer the question or complete the sentence using the space provided.

1. **The two main objectives of the HIPAA legislation were** _____ **and** _____.

2. **HIPAA's** _____ **protects your healthcare information.**

3. **You can protect your patients' privacy by keeping charts and other patient information** _____ **from other patients and office visitors.**

4. **Before the Electronic Transaction Standards Rule, there were** _____ **different types of healthcare claims. Now there is/are** _____.

For questions 5 through 9, choose the best answer from the choices provided.

5. **HIPAA rules and regulations affect** _____.
   a. anyone who deals with electronic healthcare transactions and confidential patient information
   b. medical offices that have converted their files to electronic health records
   c. only staff members who process claims and bills
   d. only doctors, who must be careful to maintain patient confidentiality

6. **Hey, there's your coworker Janie, approaching you from the end of the grocery aisle. She's upset that her patient, Mr. Heedless, won't consent to a biopsy on a suspicious mole on his leg. She wants to know if you have any ideas for getting him to change his mind. You will** _____.
   a. give Janie any ideas you can think of, in a quiet voice
   b. report Janie to the doctor on Monday and ask him to fire her
   c. tell Janie that you can't talk in a grocery store, but invite her to the coffee shop next door to discuss it
   d. politely inform Janie that she's breaking HIPAA privacy rules by talking about a patient in public

7. **When determining who must comply with HIPAA's Electronic Transaction Standards Rule, providers that transmit health information electronically, health plans and healthcare clearinghouses are considered _____.**

    a. compliant

    b. covered organizations

    c. covered entities

    d. regulatory participants

8. **A transaction is electronic if it is transmitted using _____.**

    a. faxback systems

    b. an electronic medium

    c. a voice response system

    d. an overnight delivery service

9. **A National Payer ID system was set up under the _____ rule.**

    a. Security and Electronic Signature Standards

    b. Electronic Transaction Standards

    c. Standard Identifiers

    d. Privacy Standards

For questions 10 through 14, place a checkmark next to the information that you WILL find in an electronic health record.

10. _____ **Progress notes**

11. _____ **A medical claim**

12. _____ **The patient's insurance ID number**

13. _____ **An evaluation of the patient's dialysis treatments**

14. _____ **The doctor's chart notes**

Step 16   Review Practice Exercise 6-3

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 17 Lesson Summary

❑ You have learned a lot about health records in this lesson—everything from why we have them and who uses them to what's in them and how that information is organized. Understanding the organization of health records and the information included in them means that you can quickly access important health information to assist your patients.

You have also gained a strong understanding of file management, and you can jump confidently into any filing system—whether it's organized alphabetically or numerically.

You've probably heard the phrase, "Work smarter, not harder." HIPAA's electronic transaction standards helps you do just that by standardizing the electronic transmission of certain administrative and financial transactions. Thanks to this legislation, all health plans accept a standard claim format, which makes your job as a healthcare professional easier.

The health record is one of the most important components of our medical system. It provides the continuity of care that all patients deserve, and that keeps us all healthier and safer!

It's time to show us what you've learned in this lesson! You'll then jump into Lesson 7, where you'll encounter emergency situations, practice hands-on procedures and learn the answer to this question—"How do I respond to emergencies in the medical office?"

Good luck on the quiz!

✉ Step 18 Mail-in Quiz 6

❑ Follow the steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that this quiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Scanner Answer Sheet included. Use only blue or black ink on your Scanner Answer Sheet.

d. **Important!** Please fill in all information requested on your Scanner Answer Sheet or when submitting your quiz online.

e. Submit your quiz to the school via mail, e-mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 6

For questions 1 through 25, choose the best answer from the choices provided. Each question is worth 4 points.

1. **Which of the following is NOT a good reason for maintaining healthcare records? _____**
   a. To make sure everyone's health information is accessible to anyone who wants it
   b. To provide reimbursement information to insurance companies and other third-party payers
   c. To evaluate the quality of care that the patient receives after the fact
   d. To provide legal information to support the interests of the patient, care providers and the facility

2. **The primary care physician might use a health record to _____.**
   a. show his neighbor an example of a patient who smokes too much
   b. run a preliminary study of gender differences in requests for Medicare to reimburse the costs of certain prescription drugs
   c. compare the patient's current weight to the patient's weight a year before
   d. reimburse himself for all of his hard work

3. **There are two types of information in a health record—some is _____ and some is _____.**
   a. demographic, psycho/social
   b. administrative, clinical
   c. administrative, demographic
   d. public, private

4. **The two purposes of demographic data are _____ and _____.**
   a. to help the staff process the record, to help the staff refile the record
   b. to justify the charges on a medical bill, to help the staff complete the medical claim
   c. to identify the patient, to ensure continuity of care
   d. to identify the patient, to help the staff process the record

5. **Your clinical data is _____ your doctor's office and your dentist's office.**
   a. the same at
   b. different at
   c. copied for
   d. not allowed at

6. **The form that contains personal, medical and family history is called the _____.**
   a. patient history form
   b. medical history form
   c. personal history form
   d. patient questionnaire

7. **A patient's _____ is important because it can give clues to hereditary conditions and risk factors the doctor should watch for in the patient.**
   a. physical examination
   b. chief complaint
   c. family history
   d. medical history

8. **The report that documents all information about the patient's visit should contain _____ and _____.**
   a. medical, family
   b. review of systems, physical examination
   c. history, physical examination
   d. the patient's chief complaint, review of systems

9. **Which of the following statements would be considered a chief complaint? _____**
   a. "The patient appears fatigued and has a fever of 102 degrees."
   b. "Patient responded well to antibiotics and bedrest."
   c. "Patient states that a pregnancy test was positive."
   d. "A urine sample was taken to confirm pregnancy."

10. **"Patient presents with rapid breathing, complains of shortness of breath and muscle aches." Where will this appear on the History and Physical Examination Report? _____**
    a. Only the Respiratory section of the Physical Examination
    b. In the Respiratory and Musculoskeletal sections of the Physical Examination
    c. Only in the Review of Symptoms section
    d. In History as the chief complaint

11. **Which of the following statements would be considered the doctor's diagnosis? _____**

    a. "Patient states that a pregnancy test was positive."

    b. "A urine sample was taken to confirm pregnancy."

    c. "Ultrasound reveals a swollen uterus."

    d. "The patient is pregnant."

12. **"Patient was referred to OB/GYN for long-term prenatal care." This statement is an example of a _____.**

    a. diagnosis

    b. diagnostic order

    c. progress note

    d. consultation report

13. **The OB/GYN emails the following report to the family doctor: "Urine sample and ultrasound are positive for pregnancy. Fetal age appears to be 21 days." This statement is an example of a _____.**

    a. diagnosis

    b. diagnostic order

    c. progress note

    d. consultation report

14. **_____ report about tissues removed during biopsies, as well as full-blown surgeries; they also report on autopsies after a patient has died.**

    a. Anesthesiologists

    b. Physiologists

    c. Physicians

    d. Pathologists

15. **"Mother and newborn may be released subject to weekly appointments at my office." This statement might appear on a _____.**

    a. discharge report

    b. discharge summary

    c. diagnostic summary

    d. diagnostic report

16. **"Patient may resume normal activities." This statement would be found on the _____.**
    a. discharge report
    b. physician instructions
    c. patient instructions
    d. discharge summary

17. **_____ are forms that give healthcare providers instructions in special medical situations—living wills and durable powers of attorney are examples.**
    a. Advanced directives
    b. Consent forms
    c. Patient instructions
    d. Physician instructions

18. **An encounter form or superbill lists the procedure codes for the most common procedures that doctors in the office perform. What is the purpose of the encounter form? _____**
    a. The superbill helps the doctor remember what procedures she performed.
    b. The encounter form documents the procedures performed so the medical biller can create an insurance claim.
    c. A superbill is used in court as evidence if there's a problem with the patient's care.
    d. An encounter form is only for the patient's use, so she can remember what treatments she received.

19. **One disadvantage of a source-oriented record is that _____.**
    a. it is too time-consuming and confusing to keep up with all the different types of reports
    b. you have to flip through the file chronologically to find each type of report
    c. it's hard to find all the information related to one problem
    d. it can't be transferred to an EHR

20. **Medical staff complain that a problem-oriented record _____.**
    a. is too time-consuming and confusing to keep up with all the different types of reports
    b. is arranged so you have to flip through the file chronologically to find each type of report
    c. is too hard to find all the information related to one problem
    d. can't be transferred to an EHR

21. **Progress notes are often formatted as a _____.**
    a. primary source
    b. problem list
    c. secondary source
    d. SOAP report

22. **Dr. Williams dictated the notes for little Tammy's recent well-child check-up. She recorded Tammy's physical exam, review of immunizations and gave her a flu vaccine. She circled these three procedures on the encounter form, but forgot to mention the flu shot in her notes. How will she get reimbursed? _____**
    a. She will be reimbursed for all of the procedures—the encounter form takes precedence over the notes.
    b. She won't get reimbursed for the flu shot. If it's not documented, it didn't happen.
    c. She will be reimbursed for all three procedures—a flu shot is considered mandatory during any well-child checkup.
    d. Most likely, Dr. Williams's medical coder will notice the mistake and will make the necessary corrections to the record.

23. **Dr. Leaman asked you to set up a filing system to help her keep track of the medical conferences she attends each year. She wants to be given two month's notice before each conference. What type of filing system do you think would work best? _____**
    a. Since the name of the conference is the most important consideration for this filing system, alphabetical filing would be best.
    b. Since the cost of each conference is the most important consideration, the files should be numerically filed, using the price as the number, from highest cost to lowest cost.
    c. Because confidentiality is the highest priority, each conference file should be cross-referenced to a unique number, and then filed numerically.
    d. Since the date the conferences occur is the most important consideration, the conferences should be filed chronologically.

24. **HIPAA's Privacy Standards Rule was written to _____.**
    a. require all healthcare facilities to give copies of medical records to their patients
    b. standardize claims forms
    c. protect patient confidentiality
    d. exempt covered entities from the new electronic transactions rules

25. **The following are examples of covered entities who must comply to HIPAA Standards. _____**

    a. Providers with fewer than 25 full-time employees

    b. Providers with more than 25 patients

    c. Family members of providers

    d. Hospitals that transmit healthcare information electronically

Endnotes

[1] Johns, M.L. (2002). *Health Information Management Technology: An Applied Approach*. American Health Information Management Association: Chicago.

[2] Eggers, De A. & Anne M. Conway. Front Office Skills for the Medical Assistant. St. Louis, MO: Mosby, Inc. 2000.

[3] Eggers & Conway. Front Office Skills for the Medical Assistant. 2000.

[4] Eggers & Conway. Front Office Skills for the Medical Assistant. 2000.

[5] http://healthit.hhs.gov "HITECH Priority Grants Program: Health Information Extension Program, Facts-At-A-Glance"

Congratulations
You've completed Lesson 6.

Don't wait for your quiz results to continue with Lesson 7.

Lesson 7
Emergencies in the Medical Office

📋 Step 1   Learning Objectives for Lesson 7

❑ When you have completed the instruction in this lesson, you will be trained to do the following:

- Define the terms medical emergency and first-aid.

- Explain the purpose of triage in today's medical office.

- Describe how to properly wash and glove using the virtual lab.

- Explain the purpose of the universal emergency medical identification tag.

- Summarize how to perform a surgical wash and sterile gloving.

- Determine the provisions that a medical office should have in its emergency kit.

- Explain how to document an emergency procedure.

- Explain the importance of an office emergency policy manual.

- Explain how to distinguish the severity of a medical emergency.

- Describe the symptoms and course of action to treat the ten most common emergencies in the medical office.

📖 Step 2   Lesson Preview

❑ Tina is a medical assistant who works at her small town's community hospital. On her way to work one morning, she bumps into her neighbor, Mrs. Geary. Normally an energetic person, today Mrs. Geary seems confused and is sweating heavily. While Tina talks to Mrs. Geary, she tries to figure out if something is wrong. Without warning Mrs. Geary drops her bag of groceries and collapses to the ground. Quickly Tina checks her breathing—she is, and pulse—there is one—and then looks for a medical ID tag. There's one on Mrs. Geary's wrist, and it identifies her as a diabetic. Tina hastily looks through Mrs. Geary's groceries and finds a can of frozen punch. She places a small amount under Mrs. Geary's tongue, and she soon revives.

How did Tina know what to do when her neighbor collapsed? Could you have responded this speedily? Well, by the time you finish this lesson and take two certification courses—Basic Life Support (BLS) and First Aid by the Red Cross or the American Heart Association—you will have the knowledge and skills to react as promptly and effectively in an emergency situation as Tina did.

Individuals working in health care expect to encounter these types of emergencies. Like Tina, you may be witness to an incident in your community or in the medical office. Oftentimes, you will assist a walk-in patient experiencing a medical crisis, and almost certainly you will respond to phone calls concerning an injury or sudden illness. When anything happens within your family or immediate neighborhood, your relatives and neighbors will probably expect you to be the "resident authority" because you are a medical assistant. It is important for you to acquire first-aid skills and have a working knowledge of appropriate actions to take in common accident or illness situations. It is your responsibility to maintain current certification to provide *Basic Life Support* measures involving an obstructed airway, commonly known as *CPR*.

Important Note: In 2010, The American Heart Association made a change in the sequence of steps for CPR. This means that anyone who has taken a CPR course must be retrained using the new method.

When you are working in a physician's office, you must always be ready to react to an emergency situation. This can involve a patient already in the office or one who is brought in experiencing problems. A patient receiving a medication or injection may have a severe reaction and quickly present an emergency. Someone may be injured just outside the office and brought in for treatment. Patients may bring in very ill or injured family members. Knowing how to respond and how to assist the physician in treating the individual is very important. Swift and appropriate action can affect the outcome of the situation.

📖 Step 3   First Things First

❑ Before we dive into the subject of medical emergencies, let's go over your first clinical procedures—Proper Hand Washing and Proper Gloving. In this step, you will be able to experience your first Virtual Lab.

Proper Hand Washing

Hand washing is considered the single most important means of preventing the spread of infection. There are many germs on your hands, and they can cause diseases if infection controls are not in place. Proper hand washing is an easy and effective way to reduce the transmission of disease.

Hand washing is the most effective way to prevent the transmission of disease.

Virtual Lab 7-1   Proper Hand Washing

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the First-aid lab. This will take you to the First-aid Lab menu.

3. Next, select Proper Hand Washing. This will bring up the instructional video on how to wash your hands for medical situations.

4. Follow along with Virtual Lab 7-1 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Practice this procedure and watch the virtual lab until you can perform the procedure without reading the steps or watching the lab.

The steps to hand washing are slightly different if you are preparing to assist with surgery.

Steps to Take 7-1—Proper Surgical Hand Washing

1. Turn to Steps to Take 7-1 in your Procedure Guide 1.

2. Read the Steps to Take for proper surgical hand washing.

3. Practice this method several times until you can do it without reading the steps.

Proper Gloving

Wearing gloves offers additional protection from germs for both you and the patient. Wear gloves whenever you expect to be in contact with any body fluids, a contaminated surface, open wounds or whenever performing any kind of procedure involving blood or any other body fluids. The latex glove is the norm in the healthcare field; however, you can also use vinyl gloves if you find that you are allergic to latex.

🖱 Virtual Lab 7-2   Proper Gloving

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the First-aid lab. This will take you to the First-aid Lab menu.

3. Next, select Proper Gloving. This will bring up the instructional video on how to put on gloves in the medical situation.

4. Follow along with Virtual Lab 7-2 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Practice this procedure and watch the virtual lab until you can perform the procedure without reading the steps or watching the lab.

Steps to Take 7-2—Proper Sterile Gloving

1. Turn to Steps to Take 7-2 in your Procedure Guide 1.

   2. Read the Steps to Take for proper sterile gloving.

      3. Practice this method several times until you can do it without reading the steps.

Steps to Take 7-3—Remove Gloves

1. Turn to Steps to Take 7-3 in your Procedure Guide 1.

   2. Read the Steps to Take to remove contaminated gloves.

      3. Practice this method several times until you can do it without reading the steps.

The more you practice your Virtual Lab and Steps to Take procedures, the sooner they will become second nature to you as you perform your duties as a medical assistant. Now, let's explore medical emergencies.

TIP If you encounter an emergency, you may not have access to a sink, water or antibacterial soap. You may have to rely on a hand sanitizing lotion or some other method. Do the best you can using what you have to try to maintain a sterile environment for the victim. For this reason, the procedure steps in this lesson will not include hand washing and gloving. *Remember to always wash your hands in the most appropriate manner for your situation, and wear gloves, if possible.*

📖 Step 4   What Is a Medical Emergency?

❑ An **emergency** is considered any instance in which someone becomes ill suddenly and requires immediate attention. When you encounter a situation like Tina's, you, the medical assistant, will be able to respond. In this lesson, you will learn how skilled medical personnel provide **emergency medical care**, which is the immediate care given to a sick or injured person. When properly applied, it can mean the difference between life and death, or a quick recovery instead of a long hospital stay. If an emergency occurs in your medical office, it will be the responsibility of your team of healthcare professionals to help the patient recover or to care for the patient until an ambulance or rescue squad arrives.

This is a lot of responsibility, but don't worry! When you have completed this course and your CPR certification, you will be ready to assist with a medical emergency. So let's get started on this exciting journey by taking a look at the steps emergency personnel follow to respond to an emergency.

Understanding the nature of an emergency situation is the first step toward solving the problem.

What Is the Emergency?

Before making any decisions about how to respond to an emergency, medical staff will assess the nature of the situation. Does it include respiratory or circulatory failure, severe bleeding, burns, poisoning or severe allergic reaction? For example, if you are dealing with a car accident with multiple injuries, your response will be quite different than if several family members enter the clinic with symptoms of food poisoning. In either situation, you will use the concept of *triage*.

📖 Step 5   Patient Triage

❑ **Triage** is a decision-making system used by medical and emergency personnel to give medical care when there are more injured people needing care than there are resources available. The goal of triage is to care for as many patients as possible, and this works by giving medical care to the most seriously injured patients first. First, you need to divide patients into three categories as follows:

- Patients with minor injuries who can wait for treatment

- Patients with such severe injuries that they require prompt treatment to survive

- Patients whose injuries are so severe that they probably will not survive

Triage is probably most important in the hospital emergency room.

For example, if two patients arrive at the same time—one with a cut that needs stitches and the other for a cold, the patient who needs stitches will be seen and treated first.

Two common triage systems in use today are *simple triage* and *advanced triage*.

Triage Systems

You may hear the acronym *START* when someone is talking about triage systems. **START** stands for **simple triage and rapid treatment**. Usually emergency personnel use this triage system in emergencies before the patient is seen by medical staff members.

Simple triage separates the injured into four groups: **deceased**, victims who are beyond help; **immediate**, victims who are injured but can be helped by transportation; **delayed**, patients whose injuries won't be worsened by delayed transport and those with **minor** injuries—the walking wounded who need help less urgently.

If medical staff is applying START, this is how they'd approach patients:

- **Deceased**—They're left where they are found and covered if necessary. In the START system, a person is not triaged "DECEASED" unless she is not breathing and an effort to reposition her airway has been unsuccessful.

- **Immediate**—Patients are taken by ambulance for medical care immediately.

- **Delayed**—Patients are transported after the immediate patients have been transported.

- **Minor**—After the immediate and delayed patients are transported, the minor patients are transported for care. Usually patients with minor injuries don't need advanced medical care for at least several hours.

Like simple triage, advanced triage is used in emergencies but has different classifications. **Advanced triage** is a decision-making system that ranks patients into five categories rather than four. Advanced triage is usually used by emergency medical personnel or by medical staff in emergency rooms during a disaster. Let's look at the five categories.

- **Blue/Expectant**—The patient is so severely injured that he will soon die of his injuries. Examples of injuries include large second or third degree burns, severe trauma, cardiac arrest or lethal poisoning.

- **Red/Immediate**—The patient requires immediate surgery or other life-saving intervention. This patient is given first priority for surgical teams or transport to advanced facilities. This patient is likely to survive with immediate treatment.

- **Yellow/Observation**—The patient's condition is stable for the moment, but requires medical staff to watch for any deterioration of his condition. The patient will need hospital care and would receive immediate priority care under normal circumstances.

- **Green/Wait**—The patient will require a doctor's care in several hours or days, but not immediately. Patients may wait for a number of hours or be told to go home and come back the next day if the facility is involved in a disaster with many higher priority patients. Examples of injuries include broken bones without compound fractures or soft tissue injuries.

- **White/Dismiss**—The patient has minor injuries. Usually first aid and home care are sufficient and a doctor's care is not required.

This triage system is complex, and only emergency personnel or a physician should determine which group a patient is in. No matter which type of triage system is used, it is a continuous process and categories should be checked regularly. Patients' conditions can change, which alters their priority classification.

Triage techniques are used in emergency and non-emergency cases. In non-emergency cases, use triage techniques to determine if the patient needs to see a physician. In addition, you can use triage techniques to determine if a patient should be seen immediately, wait for the next available appointment or head to the emergency department.

If a patient has an emergency, remember to assess the patient's CAB, or Chest compressions, Airway, Breathing. You'll learn about this later in the lesson, but for now just remember that if the patient is conscious, or you're speaking with the patient over the phone, ask him questions to determine his condition. If the patient is unresponsive, you'll have to check the patient's CAB yourself.

Telephone Triage

Patients may call your office with an immediate medical problem. In this case, a medical professional will perform *telephone triage*. **Telephone triage** is assessing the severity of the patient's medical condition over the telephone. Keep in mind that you may not be able to telephone triage patients as a medical assistant. Nurses and physicians might be the only staff authorized to do this, but it's helpful to be aware of the steps involved.

The telephone triage has six basic steps:

1. **Introduce yourself to the patient.** This will open communication lines between the nurse and the patient. The trust gained during the initial communication encourages the caller to reveal information, thus allowing the nurse to make informed decisions about the patient's health.

2. **Interview and assess the patient.** The interview with the patient should gather the patient's demographic information and symptoms. The assessment relies on the nurse's ability to listen and interpret the caller. She will listen to what the caller is saying, what the caller is not saying and be alert for verbal cues such as pauses in sentences and breathing. She may have to ask the caller to bring the phone to the patient and listen carefully for signs and symptoms such as coughing, wheezing, congestion, a muffled voice, shortness of breath, pain, fear and other signs of a problem.

Take a look at the following box for some sample questions.

> How long have you had your symptoms?
>
> Does the patient have a fever?
>
> What happened?
>
> Is the patient breathing? Having difficulty breathing?
>
> What is the patient's temperature?

3. **Make a triage decision using an established protocol or guideline.** Once the nurse has assessed the caller, a decision is made based on a computer system, reference books or a manual. Then she advises the caller on what to do next. Although she's giving advice to the caller, the decision regarding care rests with the caller.

4. **Tell the advice to the patient or caller.** When the nurse advises the patient or caller, she will make sure he understands by having him repeat the information back to her.

5. **Conclude the call and follow up as needed.** The nurse will tell the patient or caller to call back if he needs further assistance. In addition, she will call the patient to follow up later.

6. **Document the call.** Your medical office will have forms to fill out in order to document telephone triage calls.[14] This form will be filed in the patient's medical record.

Active listening skills are key to successful phone triage.

When you are talking to a patient on the telephone, remember to keep his information private and protect his identity. If possible, go to another room in the medical office where your conversation can't be overheard.

Face-to-face Triage

The same steps that are used in telephone triage can be used in face-to-face triage. However, assessing the patient face to face will be easier because you don't have to rely on cues over the phone.

You or another staff member will begin with an introduction to the patient and then move into some questions that will help assess the patient's ailment. If the patient is conscious, ask for personal identification and the name of a close relative or friend. Try to obtain as much information as possible about the symptoms that the patient is experiencing so you can identify the problem. If the patient is unconscious, a good place to start, after you've responded to obvious physical signs of distress, is by looking for a *medical identification tag*.

The Universal Emergency Medical Identification Tag

A **universal medical identification tag** is a small tag worn on a bracelet, neck chain, or on the clothing. The tag has the *universal emergency medical identification symbol* printed on it to make it immediately recognizable and it identifies the wearer's medical condition. The purpose of the tag is to alert anyone of the person's medical condition even if the wearer is unconscious or is not old enough to explain. Some people prefer to carry a wallet card with the same information. In addition to mention of a condition, the tag may have a telephone number that medical personnel can call for more information, such as the patient's physician.

A universal emergency medical ID symbol

When explaining an emergency to other medical staff, use the following terms so your description will be as accurate as possible.

Table 7-1: Levels of Emergency Severity		
Term	**Definition**	**Examples**
Chronic	Long and drawn out, not acute. Some diseases have a slow chronic phase but can quickly change into an acute episode.	Chronic obstructive pulmonary disease (COPD), leukemia, arthritis
Insidious	Hidden and not apparent, treacherous. Often disease conditions have a slow, hidden beginning, and then quickly develop symptoms.	Kidney failure, liver disease
Urgent	A situation requiring intervention as soon as it can be arranged.	A ureter blocked by a kidney stone, a gallstone, an ulcer
Sudden	Occurs quickly and without any warning.	Headache, allergy
Severe	Very extensive and advanced. Requires immediate medical attention.	Head injury, burn, frostbite, broken bone
Life threatening	Could cause death.	Head injury, shock, heart attack, stroke, internal bleeding

Most injuries or illnesses could be **manifested**, or show symptoms, in one of the above classifications. After determining the severity of the emergency, you can respond appropriately. Remember that these terms apply only to an emergency in this discussion, but you won't respond only to emergencies. A child's scraped knee still requires some medical attention, but it is not considered an emergency.

How severe is the emergency?

What Should I Do When an Emergency Occurs in the Office?

Learn to respond quickly to emergencies.

More than likely, you already know the drill for getting yourself and your family out of your house safely if it is on fire. You crawl through the house to avoid breathing the fumes, you know your alternate exits and you call 911 from a neighbor's house—not your own. You could probably think through the steps while the house is burning, but by then your house may be gone! The knowledge must be there already so you can react quickly and appropriately. You don't have time to think about the procedure, you just do it. The same is true for an emergency in the medical office. There's no time to debate who should assess the patient, when to perform CPR and who should call 911.

Every medical office has a procedure for handling emergencies that occasionally arise. From the doctor to the receptionist, many staff members have a role in assisting the patient during such a crisis, and it is critical that each person knows what her job is. First you'll learn about the equipment used in an emergency and then you'll practice the steps you, as a medical assistant, will perform in an emergency!

The Emergency Cart or Kit

Your doctor's office will have an **emergency kit** or **emergency crash cart** with all the supplies and equipment necessary to handle any emergency that might come your way. The crash cart should be kept in a prominent location where all office employees can easily access it. All medical staff should be very familiar with the contents and their use.

Equipment, supplies and medications on the emergency crash cart include at least the following:[1]

General Supplies:

- Adhesive and hypoallergenic tape
- Alcohol wipes
- Bandage material
- Gloves
- Hot and cold packs
- Intravenous extension tubing and T-connectors
- Needles, both intraosseous and intravenous
- Paper and pen
- Personal protective equipment (PPE)—mask, gloves, protective eyewear, long sleeved protective gown
- Resuscitation tape
- Sterile dressings
- Sterile water
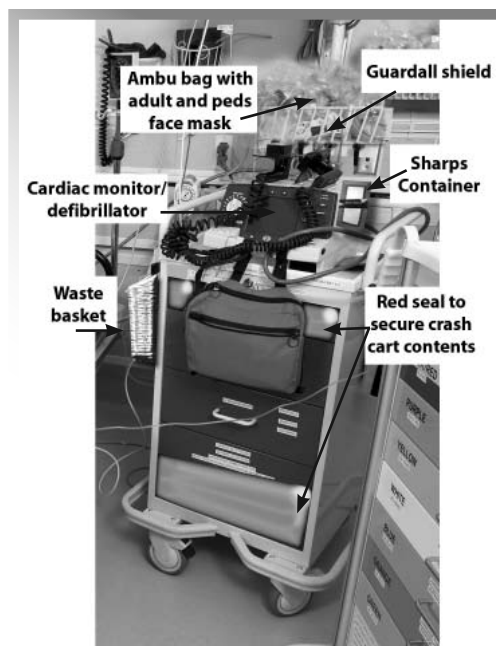
A typical crash cart

Equipment:

- Ambu bag
- Bandage scissors
- Blood pressure cuff (three sizes: standard, pediatric and large)
- Bulb syringe
- Defibrillator
- Glucose meter
- Nasal airways
- Nasogastric tubes
- Nebulizer or metered dose inhaler spacer and facemasks
- Non-rebreather (three sizes)
- Obstetric delivery supplies—clamp, scissors
- Oxygen tank, flow meter, mask
- Penlight with extra batteries
- Pulse oximeter, both adult and pediatric
- Stethoscope
- Tourniquet

The Ambu bag assists with a patient's breathing.

Emergency Medications:

- Acetaminophen (rectal suppositories)
- Activated charcoal
- Albutrerol
- Aspirin
- Atropine
- Ceftriaxone (Rocephin)
- Corticosteroids, parenteral
- Dextrose 25%
- Diazepam, parenteral (Valium)
- Diphenhydramine, oral and parenteral (Benadryl)
- Dopamine
- Epinephrine (1:1,000, 1:10,000)
- Flumazenil (Romazicon)
- Glucagon
- Insulin
- Lidocaine
- Lorazepam, sublingual (Ativan)
- Morphine (MS Contin)
- Naloxone (Narcan)
- Nitroglycerin tablets, patches and spray
- Phenobarbital
- Saline solution
- Verapamil
- Xylocaine and Marcaine

Don't worry if you're not familiar with most of the items on these lists. As you progress in the course, you'll learn all about the equipment, supplies and medications on these lists, and even how to use them! By the time you graduate, you'll be a pro!

The Office Emergency Policy Manual

The **office emergency policy manual** is a useful reference when your office is experiencing an emergency. It will contain an emergency plan with assigned responsibilities for all employees. So when an emergency occurs, everyone will know immediately just what to do. You and the other staff members should know and be able to perform first-aid and CPR.

The office manual doesn't need to be large to be complete.

See Table 7-2 for an example of the assigned roles that will be outlined in your office's emergency policy manual:

Table 7-2: Roles of Medical Staff During an Office Emergency[2]	
Staff Member	**Role**
Office Staff	Identify patients in need of emergency assistance as they arrive
	Regularly observe waiting room for distressed patients
	Advise waiting patients when a delay might occur
	When necessary, dial 911 and give location and description of emergency
	Keep the flow of patients moving out of the office
Medical Assistant	Transfer ill patient to designated treatment room
	Alert doctors and nurses of the emergency and the patient's location
	Bring emergency crash cart to the designated treatment room
	Measure patient's vital signs
	Start oxygen by face mask if oxygen saturation is less than 93 percent
	Assist with treatment as directed by doctors and nurses
Nurse	Assist doctor with medications and treatment
Doctors	Respond to emergency call
	First physician acts as code team leader
	Second physician controls airway
	Third physician assists in resuscitation, treatment

The emergency manual may also detail when to call emergency services and how to document an emergency procedure.

When to Call Emergency Services

Most communities have a 911 system for telephone access to report emergencies. The communications operator at a local emergency medical services (EMS) provider will answer the call, take the information and alert the EMS, fire or police departments as needed. In localities without the 911 system, emergency calls are usually directed to the local ambulance, fire or police department. The information is then routed to the appropriate agency. You should know which emergency system your community uses. The telephone numbers should be prominently displayed by all telephones in the medical office.

Some communities have what is called an enhanced 911 system. This system automatically identifies the caller's telephone number and location. If the telephone is disconnected or the patient loses consciousness, the communications operator will still be able to send emergency personnel to the scene.

If you are responsible for making the 911 call, make sure that you describe the emergency situation to the communications operator when you make the initial call. The operator will then know what level of emergency personnel and rescue equipment to send.

How to Document an Emergency Procedure

After the emergency has been handled, you'll then need to record the detailed information regarding the emergency situation and its handling. The emergency manual will outline who is in charge of the documentation. This report is called either an **accident** or an **incident report**. This becomes part of a patient's record, and all patient records can be used in court, so the form must be complete and accurate. This is just as important for an employee accident as it is for a patient.

The information necessary on an incident report is:

- Full name of injured or ill party
- Date and time of accident or emergency
- Address and phone number of injured party
- Notation as to whether the individual is a patient, visitor or office staff member
- Location of where incident occurred
- Name, address and signature of any witnesses to the accident
- Detailed description of the incident and conditions surrounding it
- Description of action taken, medications given, physician who examined the injured person and the statement of the patient
- Signature of person preparing report, with date and time of day

A printed form should be available with the previous information, which both the physician and her liability insurance company have approved. After the incident report is completed, follow the guidelines in the office emergency policy manual to route it to the appropriate personnel.

Are you getting an idea of the amazing variety of situations that you can be a part of as an MA? There will be some quiet days in the office helping patients during their visits, while other days may present emergency situations and the need to think on your toes. Some days will be a combination of both. But you can be assured that no two days will be the same! And regardless of the type of day you encounter, as a successful medical assistant you will be prepared to respond effectively and with confidence.

Let's pause here to review what you've learned so far with the following Practice Exercise.

✐ Step 6   Practice Exercise 7-1

❑ For the following questions, choose the best answer from the choices provided.

1. **A(n) _____ is considered any instance in which someone becomes suddenly ill and requires immediate attention.**
    a. emergency
    b. emergency medical care
    c. injury
    d. life-threatening

2. **The goal of triage is to _____.**
    a. treat as many people as possible
    b. treat only those patients who need immediate attention
    c. move emergency patients to the hospital as quickly as possible
    d. divide patients into three categories

3. **When you hear a medical team member say "START" you know that means _____.**
    a. "turn on the computers"
    b. "run and get the crash cart"
    c. "simple triage and rapid treatment"
    d. "stay there and restrain the patient"

4. **One disadvantage of the advanced triage system is that _____.**
    a. it is so complex that physicians and EMTs must attend special trainings to learn how to use it
    b. it is so complex that only physicians and EMTs can determine which group a patient is in
    c. only physicians are allowed to use it
    d. it doesn't tell you what to do when the patient has minor injuries

5. A(n) _____ is a small tag worn on a bracelet, neck chain or on the clothing bearing a message that the wearer has an important medical condition that might require immediate attention.

    a. universal medical identification tag

    b. medical tag

    c. ID tag

    d. bracelet

6. All of the supplies, equipment and medications your office needs for an emergency are kept on the _____.

    a. front desk

    b. counter in the designated treatment room

    c. table in the waiting room

    d. emergency crash cart

7. The office's emergency policy manual may have all of the following in it EXCEPT _____.

    a. a list of all staff members and their roles in an emergency

    b. procedures to follow to document an emergency

    c. the steps to perform an emergency tracheotomy

    d. when to call emergency services

8. It's important to accurately and completely document emergencies because _____.

    a. more than likely, your office will be sued by the patient

    b. it becomes part of the patient's medical record

    c. all incident reports are reviewed by the local board of physicians

    d. the doctor will lose her liability insurance if the documentation is wrong

9. In communities without a 911 system, call _____ when you need emergency services.

    a. the police department

    b. your doctor's pager

    c. the ambulance

    d. either a or c

10. **Every office must record the detailed information regarding an emergency situation and its handling. This report is called the _____.**
    a. demographics
    b. incident report
    c. documentation
    d. emergency policy form

11. **An enhanced 911 system will _____.**
    a. assist you in determining a diagnosis for the patient
    b. automatically send an ambulance
    c. automatically identify the caller's phone number and location
    d. automatically identify your location and send an ambulance, even if you can't explain the emergency

☗ Step 7   Review Practice Exercise 7-1

❑ Review your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 8   Basic Life Support (BLS) Measures

Basic Life Support (**BLS**) measures help a person who is at risk for respiratory arrest, cardiac arrest or both. It includes methods such as *CPR*. **CPR**, which stands for cardiopulmonary resuscitation, is the primary method used to support blood flow to the heart and brain in cardiac arrest victims. BLS is used to keep a person alive until advanced medical assistance arrives. It is NOT a substitute for a doctor's care. The steps of BLS are abbreviated CAB. You may have heard of the ABC's of an emergency; however, in 2010, the American Heart Association updated their guidelines in the BLS sequence. The old method of the ABC's—Airway, Breathing, Chest compressions—focused on providing rescue breathing. The new method, CAB—Chest compressions, Airway, Breathing—focuses on giving the victim chest compressions first and foremost.

In this lesson, you'll study how to provide emergency medical care.

The CAB steps of an emergency are as follows:

- **C** is for Chest compressions

- **A** is for Airway

- **B** is for Breathing

The reason for the change from A-B-C to C-A-B is that chest compressions were often delayed while the responder opened the victim's airway to administer mouth-to-mouth. The change to C-A-B allows chest compressions to be administered much sooner, with minor delay of ventilation. This immediate administration of chest compressions provides rapid blood flow to the heart and brain.

Let's look at a step-by-step process of how to perform CPR using the new C-A-B method:

1. Call 911 or ask another person to call.

2. Attempt to get the victim to respond. If he doesn't, roll the victim on his back.

3. Begin chest compressions. Place the heel of your hand in the center of the victim's chest. Place your other hand on top of the first one with your fingers interlaced.

4. Press down so you compress the chest at least two inches in adults and children and 1.5 inches in infants. The AHA states the most effective rate for chest compressions is 100 compressions per minute—the same rhythm as the beat of the Bee Gees' song, "Stayin' Alive."

5. If you've had CPR training, you can next open the airway by tilting the victim's head and lifting his chin.

6. Pinch the victim's nose closed. Take a normal breath. Next, cover the victim's mouth with yours to create an airtight seal, and then give two, one-second breaths as you watch for the chest to rise.

7. Continue with 30 compressions and two breaths until help arrives.[1]

Training Programs

There are many types of training programs available to teach you how to react in case of an emergency. However, the two main training programs that you need to take are first aid and CPR. Again, even if you've taken a CPR class in the past, you must retake this training to learn the updated CAB sequence. Both are available at hospitals, the YMCA and community colleges. Most healthcare facilities require CPR certification and first aid training as a condition for employment. Regardless of where you get your training, the courses must be approved by the American Red Cross (ARC).

First aid and CPR training is available through many community programs.

First aid classes cover the principles of providing care to an injured or sick person until advanced medical help arrives. It also covers basic emergency care, or BLS, techniques such as rescue breathing and giving supportive medications. This is considered essential knowledge for anyone working in the healthcare environment.

Respiratory and Choking Emergencies

In these situations, you may need to perform CPR, which we discussed earlier in the lesson. As you know, the American Heart Association updated the CPR sequence to C-A-B, which stands for Compressions, Airway, Breathing. In the past, CPR training has emphasized the ABCs of CPR, which instructed people to open a victim's airway by tilting their head back, pinching the nose and breathing into the victim's mouth, and only then giving chest compressions. This approach was causing significant delays in starting chest compressions, which are essential for keeping oxygen-rich blood circulating through the body. Changing the sequence from A-B-C to C-A-B for adults and children allows all rescuers to begin chest compressions right away.[2]

The American Heart Association stresses the following guidelines:[3]

- During CPR, rescuers should give chest compressions a little faster, at a rate of at least 100 times a minute.

- Rescuers should push deeper on the chest, compressing at least two inches in adults and children and 1.5 inches in infants.

- Between each compression, rescuers should avoid leaning on the chest to allow it to return to its starting position.

- Rescuers should avoid stopping chest compressions and avoid excessive ventilation.

- All 9-1-1 centers should assertively provide instructions over the telephone to get chest compressions started when cardiac arrest is suspected.

In some emergencies, you may need to provide _artificial breathing_. **Artificial breathing** is a technique where you blow air into the victim's mouth in order to breathe for the victim until she can breathe on her own again. Keep in mind that the American Heart Association encourages untrained bystanders to use the hands-only CPR, that is CPR without breaths, unless the rescuer has proper CPR training. If you do not have proper training, dial 911, and push hard and fast on the center of the victim's chest until professional help or an automated electronic defibrillator (AED) arrives.

Let's review all of the steps involved in the CPR process, including the recommended way to administer breaths to the victim.

Steps for Adult CPR—Remember CAB

Based on 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care[4]

1. Make sure the victim is in a safe place.

2. Shake the victim's shoulders and shout to see if he responds.

3. If the victim does not respond, and the victim is not breathing or not breathing normally, yell for someone to call 9-1-1 and get an automated electronic defibrillator (AED), if available.

   • If you're alone, call 9-1-1 and get an AED if available. Follow the AED's voice prompts.

   • If no AED is available, immediately start CPR, beginning with compressions.

C—COMPRESSIONS

4. Push hard and fast on the center of the chest 30 times, at a rate of at least 100 compressions a minute. Push down as hard and as fast as you can, at least 2 inches with each compression. If you haven't been trained in CPR, continue to give compressions until an AED arrives or trained help takes over.

A—AIRWAY

5. If you have been trained in CPR, continue CPR by opening the airway with a head tilt-chin lift.

B—BREATHING

6. Pinch the victim's nose closed. Take a normal breath. Cover the victim's mouth with your mouth, creating an airtight seal. Give two breaths (one second each). Watch for chest rise as you give each breath.

7. Keep giving sets of 30 compressions and two breaths until the AED arrives or trained help takes over.

Keep in mind that CPR is only intended for a person whose heart and breathing has stopped. If the victim moves or pushes you away, you should stop performing CPR.[5] Remember to modify the techniques you'll learn in this lesson with the new recommendations, and if you haven't already, sign up for a CPR class. It may save a life.

Blocked Airway

One emergency you may encounter is a blocked airway. Common problems with the airway involve blockage by the tongue, vomit or a foreign object. First, carefully tilt the head back with one hand on the forehead while lifting the jaw with the other hand. Do not move his head if you are concerned that the victim may have a spinal, neck or head injury. Instead, use the **jaw-thrust maneuver**: Kneel near the top of the victim's head, grasping the angles of the patient's lower jaw and lift with both hands, one on each side. This will displace the **mandible** (jawbone) forward while tilting the head backward. If the lips close, retract the lower lip with your thumb. If mouth-to-mouth breathing is necessary, close the nostrils by placing your cheek tightly against them.

A blocked airway must be cleared.

Swipe inside the mouth to find the blockage. If the patient is still not breathing and you cannot see the blockage, you will clear the blocked airway by doing something similar to the following:

Blocked Airway

1. Place the victim in a **supine** (lying on the back with face upwards) position.

2. Use head tilt-chin lift maneuver to move the tongue from back of throat. Listen for air exchange at mouth and nose and sense for exhaled air on rescuer's cheek.

3. Check for mouth obstruction.

4. Check for air exchange.

5. Sit astride the victim's thighs.

6. With fingers pointed towards the head, place the heel of one hand flat on the victim's abdomen, slightly above the navel.

7. Place your other hand in a like position over the first.

8. With your elbows straight, press inward and upward with quick thrusts to dislodge the block.

You will practice this procedure several times during your CPR and first aid training classes. **Do not attempt the procedure until you have completed your training.**

Choking

Another common cause of a blocked airway in adults is *choking*. **Choking** is most often caused by food caught in an air pocket while eating. This occurs when someone sucks partially chewed food into the windpipe when talking, laughing or coughing while eating. Children, on the other hand, can get toys, toy parts, buttons or candy and a variety of other objects caught in their throats and obstruct their airway. Pieces of food are also a problem for children—especially raw carrots and hot dogs. Other common causes of choking in children include filmy plastic bags and latex balloons.

Symptoms of choking:

- Clutching the throat

- Inability to speak, cough or breathe

A common cause of choking in children is latex balloons.

The **Heimlich maneuver** is an abdominal thrust to relieve a blocked airway due to a foreign body in a conscious person. **Again, it is important that you learn the Heimlich maneuver in an approved BLS class before actually performing the procedure.** If done incorrectly, you could break a patient's rib or puncture a lung. The following will give you a good idea of how the Heimlich maneuver works.

The first action to take in adults and children who are choking is the *Heimlich maneuver*.

Heimlich Maneuver

1. While standing behind the victim, reach around the waist.

2. Clench one hand to make a fist, and grasp your fist with the other hand.

3. Place the thumb side of the fist against the midline of the victim's abdomen between the waist and the rib cage.

4. Thrust fist inward and upward in quick, firm movements to move air out of the lungs with enough force to dislodge the block.

If a patient is in an advanced stage of pregnancy or is very obese, abdominal thrusting will not be possible. Instead of the standard Heimlich maneuver, you must use a chest thrust to dislodge the material.

The Heimlich maneuver is used to clear foreign objects from blocked airways.

Steps to Take 7-6—The Chest Thrust

1. Turn to Steps to Take 18-9 in your Procedure Guide Supplement 4.

2. Read the Steps to Take to perform the chest thrust to clear a blocked airway in a pregnant or obese person.

3. Practice this procedure several times until you can do it without reading the steps.

✍ Step 9   Practice Exercise 7-2

❑ For the following items, fill in the blanks or write a short answer as directed.

1. **The technique in which you blow air into the victim's mouth in order to breathe for the victim is termed _____.**

2. **In which technique would you kneel near the victim's head and grasp the angles of the victim's lower jaw with both hands and lift with both hands?**

   _____

3. **When an abdominal thrust is used to relieve a blocked airway due to a foreign body, it is called the _____.**

4. **Outline the steps to perform the Heimlich maneuver.**

   _____

   _____

   _____

   _____

✂ Step 10   Review Practice Exercise 7-2

❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 11   The Top Ten List

Before you begin your emergency training, let's review the top ten emergencies you may encounter in the medical office. Drum roll, please! The top ten emergencies are:[3]

1. Anaphylaxis
2. Asthma Complications
3. Cardiac Arrest
4. Diabetic Emergencies
5. Drug Overdose
6. Impaired Consciousness
7. Poisoning
8. Psychiatric Disorder
9. Seizure
10. Shock

We'll cover all ten of these emergencies—what they are, how to recognize them, and what you can do when they occur.

1. Anaphylaxis

Anaphylaxis is a rapid, severe immune reaction to an *allergen* that can quickly lead to death. An **allergen** is any substance that enters the body and causes a sensitive reaction by the immune system. The immune system considers the allergen to be a foreign body and reacts by attacking it. The attack is what causes the symptoms of an allergic reaction. An allergen can be a food, insect venom, medications or pollen. An allergen can also enter the body in any manner—by ingestion, inhalation, injection or absorption through the skin or mucous membranes. A normal allergic response to many of these irritants is very common.

However, when the immune system overreacts to the allergen, anaphylaxis occurs and the attack is especially severe. Anaphylaxis can lead to airway obstruction, *anaphylactic shock*, cardiovascular collapse and death. Immediate attention is important as soon as symptoms appear.

Anaphylactic shock is the most dangerous form of anaphylaxis. This is an acute generalized allergic reaction that occurs within minutes to hours after the body has been exposed to a foreign substance to which it is oversensitive.

Symptoms:

Allergic reaction:

- Itching
- Rash
- Redness
- Tightness in chest or throat
- Unexplained warmth

Anaphylaxis:

All of the above, plus:

- Anxiety
- Choking
- Congestion
- Coughing
- **Diaphoresis** (profuse sweating commonly associated with shock and other medical emergency conditions)
- Dizziness, fainting or loss of consciousness
- Dry, pale or blue skin
- Headache
- Hives
- Hypotension (low blood pressure)
- Itchy, red or watery eyes
- Low pulse rate
- Nausea, vomiting or diarrhea
- Shortness of breath
- Swelling
- Tachycardia (rapid heart beat)

What to Do:

1. Call 911 immediately.
2. If a physician is present, she may treat the patient with epinephrine to facilitate breathing and circulation, an antihistamine to reduce swelling or a steroid to minimize the immune system's reaction.

2. Asthma Complications

Asthma is a chronic inflammation of the airways in the lungs. Asthma can become severe in reaction to allergens or other irritants, or when combined with other respiratory or gastrointestinal conditions. Complications can also occur in response to stresses like exercise, old age or pregnancy.

Symptoms:

- Coughing
- Shortness of breath
- Tightness in chest
- Wheezing
- Labored breathing
- Blue skin
- Peak flow meter reading of 50 percent or less of personal best

What to do:

1. Ask the patient if she has an inhaler, and if she has not used it, do so now.
2. Take a peak flow reading—if peak flow is 50 percent or less, continue with emergency treatment.
3. If there is no doctor present, call 911.
4. Administer oxygen.
5. Help to calm the patient.
6. Monitor vital signs.
7. If a doctor is present, she may wish to administer epinephrine, prednisone, leukotriene inhibitors or other medications.
8. A mechanical ventilator may be required to keep the patient alive.

3. Cardiac Arrest

Cardiac arrest, or **heart attack**, is a serious, sudden heart condition usually characterized by varying degrees of chest pain or discomfort, weakness, sweating, nausea, vomiting and **arrhythmia** (without rhythm), sometimes causing loss of consciousness. It occurs when the blood supply to a part of the heart is interrupted, causing scarring and death of the local heart tissue. Since the area affected may be large or small, the severity of heart attacks vary, but they are often a life-threatening medical emergency which demand both immediate attention and a call to EMS.

In the case of a severe heart attack, a defibrillator might be needed to get the heart beating again.

Symptoms:

- Tightness of the chest
- Pain radiating down one or both arms
- Pain radiating into the left shoulder and jaw
- Rapid and weak pulse
- Diaphoresis
- Agitation

Time is critical, so prompt, appropriate treatment within the first hour of an attack can save the patient's life and reduce damage.

What to Do:

> ### Steps to Take 7-10—Cardiac Arrest
>
> 1. Turn to Steps to Take 7-10 in your Procedure Guide 1.
>
> 2. Read the Steps to Take to assist a physician in treating a patient experiencing a heart attack.
>
> 3. Practice this procedure several times until you can do it without reading the steps.

4. Diabetic Emergencies

Diabetes is a disease in which blood glucose levels are above normal. Most of the food we eat is turned into glucose, or sugar, for our bodies to use for energy. The pancreas, an organ that lies near the stomach, makes a hormone called insulin to help glucose get into the cells of our bodies. When you have diabetes, your body either doesn't make enough insulin or can't use its own insulin as well as it should. This causes sugar to build up in your blood.

Diabetes can cause serious health complications including heart disease, blindness, kidney failure and lower-extremity amputations. Diabetes is the sixth leading cause of death in the United States.

Frequent fatigue may be an indication of diabetes.

Symptoms:

People who think they might have diabetes must visit a physician for diagnosis. They might have SOME or NONE of the following symptoms:

- Frequent urination
- Excessive thirst
- Unexplained weight loss
- Extreme hunger
- Sudden vision changes
- Tingling or numbness in hands or feet
- Frequent fatigue
- Very dry skin
- Sores that are slow to heal
- More infections than usual

Nausea, vomiting or stomach pains may accompany some of these symptoms in the abrupt onset of insulin-dependent diabetes.

Diabetic patients may present emergency situations by becoming *hyperglycemic* or *hypoglycemic*. You will need to know how to respond to both situations.

Hyperglycemia

Hyperglycemia is caused by an increased amount of sugar in the blood. Eating too many carbohydrates, infection, fever, emotional stress or failing to take adequate insulin may trigger this response. If the condition remains untreated, the patient will fall into a **diabetic coma**. Before falling into a coma, the patient might experience the following symptoms:

Symptoms
- Confusion
- Excessive hunger or thirst
- Dizziness
- Frequent urination
- Weakness
- Nausea or vomiting
- Rapid pulse
- Deep, rapid breathing
- Dry, warm skin
- Very strong sweet, fruity breath odor
- Gradual onset of symptoms

What to Do:

> ### Steps to Take 7-11—Alerts of Hyperglycemia or Hypoglycemia
>
> 1. Turn to Steps to Take 7-11 in your Procedure Guide 1.
>
>   2. Read the Steps to Take to determine if a patient is hyperglycemic or hypoglycemic.
>
>   3. Review this procedure several times so that you can do it without reading the steps.

If the patient lapses into unconsciousness, he may die if not treated quickly. Follow the steps outlined in the next procedure.

What to Do:

> ### Steps to Take 7-12—Hyperglycemia
>
> 1. Turn to Steps to Take 7-12 in your Procedure Guide 1.
>
>   2. Read the Steps to Take to assist a patient who is hyperglycemic.
>
>   3. Practice this procedure several times until you can do it without reading the steps.

<u>*Hypoglycemia*</u>

Hypoglycemia may occur from an excess amount of insulin in the body. This can happen if the patient has not eaten in regularly measured amounts, if he vomits after taking insulin, if he is engaging in excessive exercise or if he takes too much insulin. Left untreated, the patient will eventually experience **insulin shock**, which is characterized by fainting, seizure or coma.

Symptoms:

- Muscle weakness
- Headache
- Anxiety
- Dizziness
- Mental confusion
- Pounding heartbeat

- Shallow, rapid breathing
- Excessive hunger
- Diaphoresis
- Cold, pale and moist skin
- Unconsciousness, with or without seizures
- Rapid onset of symptoms

What to Do:

> ## Steps to Take 7-13—Hypoglycemia
>
> 1. Turn to Steps to Take 7-13 in your Procedure Guide 1.
>
>   2. Read the Steps to Take to assist a patient who is hypoglycemic.
>
>   3. Practice this procedure several times until you can do it without reading the steps.

5. Drug Overdose

A drug overdose can be intentional or accidental. Taking too much of a prescribed medication or taking the wrong medication can cause a **drug overdose**. Overuse of recreational drugs or attempts of suicide are considered intentional overdose. No matter the cause, a drug overdose is potentially life-threatening, so your quick actions can make all the difference! Symptoms will vary according to the type of drug taken, but there are some general signs you can watch for:

Symptoms:

- Unusual or absent vital signs
- Chest or abdominal pain
- Diarrhea, nausea or vomiting
- Shortness of breath
- Confusion or sleepiness
- Coma
- Unusual skin condition—either too cold or too hot, moist or dry

What to do:

1. Call 911.

2. If possible, find out what the patient took, how much and when. If the patient has the bottle, keep it and give to EMTs when they arrive.

3. Treatment varies according to type of drug ingested. Possible treatments include stomach pumping, administration of activated charcoal or if one is available, an **antidote**—another medication that can offset the effects of the overdosed drug. These treatments should be given by trained emergency doctors.

4. If you suspect that the patient may hurt himself or others he may need to be physically restrained. Get help from other staff members.

5. If a physician is present, he may administer a sedative to calm the patient until help arrives.

6. Impaired Consciousness

Consciousness, or being aware of your surroundings, can be **impaired**, or harmed, by several different conditions. The three most common causes of impaired consciousness are fainting, diabetic coma and shock.

When you are assessing an unconscious patient, it's helpful to have some guidelines to go by. You can remember the acronym, **AVPU**, to help you remember how to assess the patient's level of consciousness:

A = Awake and alert

V = responds to voice

P = responds only to pain

U = unconscious; no response

You're probably familiar with unconsciousness in the form of *fainting*.

Fainting

Fainting, or **syncope**, occurs when the patient loses consciousness and there isn't enough blood supply to the brain. If a patient in the office or clinic "feels faint," she is probably feeling lightheaded and weak. Fainting in itself is not a dangerous condition, but it may indicate that there is something more serious going on.

Symptoms:
- Pale, perspiring, cold or clammy skin
- Nausea
- Lack of balance

What to Do:

Steps to Take 7-14—Fainting

1. Turn to Steps to Take 7-14 in your Procedure Guide 1.

2. Read the Steps to Take to assist a patient who has fainted.

3. Practice this procedure several times until you can do it without reading the steps.

You're already familiar with the symptoms and treatment for diabetic coma. We'll look at impaired consciousness as a result of shock in Emergency number 10.

7. Poisoning

Poison is a substance that causes injury, illness or death, especially by chemical means. It can be eaten, drunk, inhaled, injected or absorbed through the skin. The table below outlines the various causes and symptoms of poisoning.

Common Types of Poisoning		
Cause	Possible Substances	Symptoms
Food poisoning	Spoiled food, such as meat, eggs, seafood, prepared dishes	Vomiting, diarrhea
Carbon monoxide	Cigarette smoke, gas heaters, exhaust pipes from car	Headaches, dizziness, vomiting, chest pain, blurred vision, loss of consciousness
Bee sting	Wasp, bee or yellow jacket bee sting	Difficulty breathing, swelling, high blood pressure

What to Do:

Steps to Take 7-15—General First-aid for Poisoning

1. Turn to Steps to Take 7-15 in your Procedure Guide 1.

    2. Read the Steps to Take to assist a victim of poisoning.

        3. Review this procedure several times until you can do it without reading the steps.

8. Psychiatric Disorder

A **psychiatric disorder** is a recurring thought process or behavior that causes harm to the individual and is not considered normal. Psychiatric disorders can include many different conditions, including depression, bipolar disorder and schizophrenia. Often these conditions don't develop until a person reaches his late teens to early twenties. Researchers don't know why these disorders develop, but they can be triggered by a **stressor**, a life-changing event such as losing your job, parents' divorce or even a positive change such as going to college. Alcohol and drugs can also trigger a mental disorder.[4]

Psychiatric conditions can develop over time or can occur suddenly, creating a *psychiatric emergency* in your office. A **psychiatric emergency** is any behavior by a patient or other visitor that has the potential to cause harm to himself or others. A patient who suddenly begins throwing equipment and instruments in the treatment room because you advised him to get a flu shot would be considered a psychiatric emergency. Another example might be a patient who begins mumbling incoherently and doesn't respond to your voice. It can be a scary situation for you, but there are signs you can watch for in patients to find out if a psychiatric emergency is happening in your office.

Symptoms:

- Confusion
- Difficulty concentrating
- Sudden change in mood
- Violent behavior
- Inability to function
- Hallucinations
- Paranoia
- Unreasonable anger or sadness
- Recurrent thoughts of death or suicide
- Increase in risky behavior
- Hearing voices

What to Do:

1. Notify the physician and staff immediately.
2. Call 911 as directed.
3. Try to calm the patient and any family members present.
4. Take the patient's vital signs if possible.
5. Document the patient's behavior.

9. Seizure

A **seizure** is an episode of **spasms** (involuntary muscle contractions), fainting and loss of motor control due to abnormal activity in the brain. Seizures may occur when the patient has high body temperature, head injuries, brain disease or a brain disorder, such as epilepsy. A **Grand Mal seizure** is a severe involuntary contraction of muscles that first causes the patient to become rigid and then to have uncontrollable movements. The patient becomes unconscious and may be injured during the seizure.

Symptoms:

- Skin of the face and lips appears bluish due to lack of oxygen
- No breathing
- Loss of bladder and bowel control
- Tongue biting

When the seizure has stopped:

- Confusion
- Complaint of headache and exhaustion

A **Petit Mal seizure** is less dramatic but still a significant event.

Symptoms:

- Inability to respond (but not loss of consciousness)
- Staring
- Tremors or somewhat less obvious rigidity and movements

What to Do:

Steps to Take 7-16—Seizure

1. Turn to Steps to Take 7-16 in your Procedure Guide 1.

2. Read the Steps to Take to assist a patient who is having a seizure.

3. Practice this procedure several times until you can do it without reading the steps.

---

10. Shock

A lack of oxygen to the individual cells of the body causes **shock**, which is an immediate response by the body tissues when they aren't receiving oxygen.

The body initially adjusts for shock by increasing the strength of contractions of the heart, increasing the heart rate and constricting the blood vessels. As shock progresses, the body has difficulty trying to adjust and eventually tissues and body organs will sustain such severe damage that the shock becomes irreversible.

Types of Shock

Shock is one of the leading causes of death in a critically ill person. There are several types of shock, and can be caused by various factors.

- The loss of blood or other body fluids causes **hypovolemic shock**. If hypovolemic shock occurs due to blood loss it can also be called **hemorrhagic shock**. Dehydration caused by diarrhea, vomiting or heavy sweating can also lead to hypovolemic shock.

Observing the patient's pupils is a good way to check for shock.

- **Cardiogenic shock** is the most extreme form of heart failure, occurring when the function of the left ventricle is so compromised that the heart can no longer adequately pump blood to body tissues.

- **Neurogenic shock** is caused by a dysfunction of the nervous system. The diameter of the blood vessels in the body can no longer be controlled, which leads to dilation. Once the blood vessels are dilated, there is not enough blood in the circulation to supply the body with oxygen, thus causing shock.

- **Anaphylactic shock** is an acute generalized allergic reaction that occurs within minutes to hours after the body has been exposed to a foreign substance to which it is oversensitive.

- **Septic shock** is caused by a generalized infection of the bloodstream in which the patient appears seriously ill. It may be associated with an infection such as pneumonia or meningitis, or it may occur without an apparent source of infection, especially in infants and children. The patient may have become ill suddenly, or the illness may have developed over several days.

Symptoms:

- Sudden drop in blood pressure
- Pale or discolored, cold, clammy skin
- Weak or rapid pulse
- Irregular, shallow or rapid breathing
- General weakness
- Dilated pupils
- Anxiety or confusion
- Reduced urination
- Loss of consciousness

What to Do:

Steps to Take 7-17—Management of the Patient in Shock

1. Turn to Steps to Take 7-17 in your Procedure Guide 1.

2. Read the Steps to Take to assist a patient who is in shock.

3. Practice this procedure several times until you can do it without reading the steps.

Before we wrap up this lesson, let's review the material you've learned about the "Top Ten Emergencies" you'll encounter in the medical office with the following Practice Exercise.

✍ Step 12   Practice Exercise 7-3

❑ For questions 1 through 10, match the emergency on the left with its description on the right.

1. _____ **Anaphylaxis**

2. _____ **Asthma Complications**

3. _____ **Cardiac Arrest**

4. _____ **Drug Overdose**

5. _____ **Diabetic Emergencies**

6. _____ **Impaired Consciousness**

7. _____ **Poisoning**

8. _____ **Psychiatric Disorder**

9. _____ **Seizure**

10. _____ **Shock**

a. Sudden arrhythmia caused by blockage of blood supply to the heart

b. Ingesting a substance that causes injury, illness or death

c. A severe case of chronic inflammation of the airways in the lungs

d. A lack of oxygen to the body's cells

e. Having too much sugar or insulin in the blood

f. A rapid, severe immune reaction to an allergen that can quickly lead to death

g. An episode of spasms, syncope and loss of motor control due to abnormal activity in the brain

h. Loss of awareness of your surroundings as with syncope

i. A recurring thought process or behavior that causes harm to the individual and is not considered normal

j. Taking too much of a prescribed medication or recreational drug

For questions 11 through 19, choose the best answer from the choices provided.

11. **The body's immune system considers a(n) _____ to be a foreign body and reacts by attacking it.**
    a. anaphylaxis
    b. allergen
    c. vaccine
    d. white blood cell

12. **Complications such as exercise, old age or pregnancy can lead to a(n) _____.**
    a. occurrence of hypoglycemia
    b. episode of anaphylactic shock
    c. seizure
    d. asthma emergency

13. **Signs of drug overdose include all of the following, EXCEPT _____.**
    a. unusual or absent vital signs
    b. diarrhea, nausea or vomiting
    c. seizures
    d. an unusual skin condition—either too cold or too hot, moist or dry

14. **_____, if left untreated, can lead to diabetic coma.**
    a. Hyperglycemia
    b. Hypoglycemia
    c. Insulin shock
    d. Diaphoresis

15. **When there isn't enough blood supply to the brain _____ can occur.**
    a. hyperglycemia
    b. insulin shock
    c. syncope
    d. cardiac arrest

16. **If a patient has been poisoned by _____, the symptoms will probably be headaches, dizziness and vomiting.**
    a. food
    b. carbon monoxide
    c. carbon dioxide
    d. insect venom

17. **Often, psychiatric disorders such as depression, bipolar disorder and schizophrenia don't develop until _____.**
    a. puberty
    b. a stressor triggers it
    c. a person reaches his late teens to early twenties
    d. middle age

18. **Mr. Clark arrived today for his biopsy results. After Dr. Patterson informed him that the brain tumor was malignant and can't be removed, Mr. Clark began crying and asked you to call his wife. Is this a psychiatric emergency? _____**
    a. Yes, Mr. Clark has depression and should be medicated.
    b. No, this is a normal reaction to hearing devastating news.
    c. Yes, crying in the doctor's office isn't normal, and Mr. Clark should be sent to the hospital.
    d. No, Mr. Clark has severe depression, which isn't considered a psychiatric disorder.

19. **When the body increases heart rate and constricts blood vessels in response to a lack of oxygen, this condition is called _____.**

    a. a Grand Mal seizure

    b. spasms

    c. cardiac arrest

    d. shock

For question 20, fill in the blanks to define the acronym AVPU, which helps you remember how to assess a patient's level of consciousness:

20.

  A = _____ and _____

  V = _____ to _____

  P = _____ only to _____

  U = _____ or _____

🔑 Step 13   Review Practice Exercise 7-3

❑ Review your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 14   Lesson Summary

❑ Wow! We've covered a lot in this lesson—your first taste of the life-saving procedures you'll be a part of as a medical assistant. These basic techniques will provide a solid foundation for you to work from in upcoming lessons and in your career! From a fainting spell to a heart attack, you now have the knowledge to act with confidence, speed and accuracy until emergency help arrives. Be sure to study your supplement, "First Aid Manual" that contains many more first-aid techniques for a variety of emergencies. This is a handy guide to keep with you at all times.

In the next lesson, we will explore the many types of medical equipment and supplies that you will use to care for your patients. But take a moment now to call your local Red Cross chapter or hospital to find out where to enroll in an American Heart Association first-aid and CPR program. This is the next step in your training to become a medical assistant! And remember, you should recertify at least every two years to keep your skills up to date.

When you've reviewed your lesson and procedure guide and you feel comfortable with the material, test your knowledge with the following quiz.

✉ Step 15   Mail-in Quiz 7

❑ Follow the steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that this quiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Quiz Cover Sheet. Use only blue or black ink.

d. **Important!** Please fill in all information requested on your Quiz Cover Sheet or when submitting your quiz via e-mail.

e. Submit your quiz to the school via mail, e-mail or fax.

Mail-in Quiz 7

For questions 1 through 8, choose the best answer from the choices provided. Each question is worth 3 points.

1. **While fainting is typically not serious in itself, _____ should be monitored since the problem may be indicative of a more complex medical condition.**
   a. seizures
   b. vital signs
   c. sleep symptoms
   d. circulation

2. **_____ can be ingested, absorbed, inhaled, injected or acquired from bites and stings.**
   a. Pathogens
   b. Drugs
   c. Poison
   d. Insulin

3. **The American Heart Association updated the steps in an emergency to CAB. The "A" stands for _____.**
   a. asphyxia
   b. action
   c. airway
   d. altitude

4. **Which of the following shows the key steps for assisting a patient in shock?** _____
   a. Call 911; check the CABs; control any bleeding.
   b. Let the patient sleep; call 911 only if conditions worsen.
   c. Let the patient sleep; check the CABs every 24 hours.
   d. Move the patient quickly to a seated position; control any bleeding.

5. **The CAB method allows the rescuer to provide chest compressions to the victim immediately. This _____.**
   a. guarantees the victim will regain consciousness
   b. opens the airway
   c. provides rapid blood flow to the heart and brain
   d. allows more time to focus on rescue breathing

6. **_____ is considered the single most important way you can prevent the spread of infection.**
   a. Using sterile gloves
   b. Using gloves
   c. Hand washing
   d. Using a disinfectant

7. **When you wash your hands, be sure to _____.**
   a. wet hands and apply soap using a circular motion and friction
   b. remove all jewelry, including your plain wedding band
   c. use a nail brush on your nails every time you wash
   d. hold hands pointed upward under the water to rinse them

8. **The difference between hand washing and surgical hand washing is _____.**
   a. a regular hand wash requires you to rinse with hands up, a surgical hand wash requires you to hold hands down
   b. with surgical hand washing, you should use a cuticle stick and wash up to the elbows
   c. with regular hand washing, you should wash twice between each patient
   d. surgical hand washing requires you to scrub for ten minutes, while regular hand washing requires a five minute scrub

For questions 9 through 19, choose the best term to complete each sentence. Not all terms will be used. None of the terms will be used more than once. Each question is worth 3 points.

white/dismiss	emergency crash cart	chronic	allergic reaction
breaths	minor	asthma	diabetes
anaphylaxis	water or milk	blue/expectant	carbon monoxide

9. _____ patients are taken care of after the immediate and delayed patients because their injuries typically do not require care for several hours.

10. _____ patients are so severely injured that they are expected to die soon.

11. _____ patients have minor injuries that can be treated with first aid.

12. COPD, leukemia and arthritis are examples of _____ illnesses.

13. You will likely find an ambu bag in a(n) _____.

14. Preschool children average 20-30 _____ per minute.

15. Anxiety, choking, congestion, coughing and diaphoresis are some symptoms of _____.

16. Coughing, shortness of breath, wheezing and labored breathing are some of the symptoms of _____.

17. When you have _____, your body may not be able to make enough insulin or is unable to use its own insulin.

18. Gas heaters and car exhaust are possible sources of _____.

19. If poison is ingested, dilute the poison with large amounts of warm _____.

For questions 20 through 23, choose the best answer from the choices provided. Each question is worth 3 points.

20. **The advanced triage system is used only by physicians and emergency personnel because _____.**
    a. it is so complex
    b. patients' conditions can change rapidly
    c. it is cumbersome and confusing
    d. it is not used very often

21. **This morning you were answering the phones while the receptionist was taking a break. You answered a call to discover a distraught patient on the line. Her speech was slurred and she seemed confused. You immediately _____.**
    a. introduced yourself
    b. asked her if this was an emergency
    c. gave the phone to the nearest nurse or physician
    d. dialed 911 on the other line

22. **Your physician always counsels his patients who are diabetic, asthmatic or who have a heart condition to wear a(n) _____.**
    a. cell phone
    b. bluetooth headset for their cell phone
    c. insurance card pinned to their shirt
    d. universal medical identification tag

23. **Chronic, insidious, urgent, sudden, severe and life threatening are ways to describe _____.**
    a. the severity of a poisoning
    b. levels of emergency severity
    c. levels of triage assessment
    d. the severity of a cardiac arrest

A patient in the waiting room suddenly collapses on the floor. Dr. Morris calls a Code Blue. For questions 24 through 29, list the personnel who will probably do the following tasks in the space provided. Each question is worth 3 points.

24. _____ **Transfer the ill patient to the treatment room.**

25. _____ **Dial 911 and give the location and description of the emergency.**

26. _____ **Bring the emergency crash cart to the treatment room.**

27. _____ **Assist the doctor with medications and treatment.**

28. _____ **Act as code team leader.**

29. _____ **Measure patient's vital signs**

For questions 30 through 33, choose the best answer from the choices provided. Each question is worth 3 points.

30. **When you're performing the Heimlich maneuver, you'll place the thumb side of the fist against the midline of the victim's abdomen _____.**
    a. at the waist
    b. over the ribcage
    c. between the waist and the ribcage
    d. over the chest

31. **To perform the jaw-thrust maneuver, you will _____.**
    a. lift the patient's upper jaw while tilting the head forward
    b. lift the patient's lower jaw while tilting the head forward
    c. lower the patient's upper jaw while tilting the head back
    d. lift the patient's lower jaw while tilting the head back

32. **Following a seizure, you should _____.**
    a. restrain the patient's movement
    b. turn the head to the side to prevent choking
    c. do not force any object between the patient's teeth
    d. always give artificial respiration

33. **Hallucinations, paranoia and unreasonable anger or sadness are all possible symptoms of _____.**

   a. depression

   b. epilepsy

   c. a psychiatric disorder

   d. a terminal illness

Endnotes

[1]   Toback, Seth L., MD. Medical Emergency Preparedness in Office Practice. American Family Physician. June, 2007.

[2]   Toback, Seth L., MD. Medical Emergency Preparedness in Office Practice. American Family Physician. June, 2007.

[3]   Toback, Seth L., MD. Medical Emergency Preparedness in Office Practice. American Family Physician. June, 2007.

[4]   Kosmix. RightHealth. The Real World: Recognizing Mental Illness in Young Adults. http://www.righthealth.com/topic/Bipolar_Case_Studies/overview/healthology20?fdid=healthology_6daeb89b17809f64fb9575e862069993 <25 November, 2009>

Introduction to Medical Assisting
Mail-in Quiz 7

1. Fill in your **student ID** and your **course code** below.

_____
STUDENT ID NUMBER   COURSE CODE

2. Be sure your **name** and **address** are filled in below.

3. **Transfer your answers** to this cover sheet.

U.S. Career Institute   MA-02
2001 Lowe Street
Fort Collins, CO 80525

_____
NAME
_____
ADDRESS
_____
CITY   STATE   ZIP

- -

This Space for Instructor Use

↑ Fold on dotted line

Transfer your answers from the quiz pages to this Answer Sheet.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29 _____

30. _____

31. _____

32. _____

33. _____

Congratulations
You've completed Lesson 7.

Don't wait for your quiz results to continue with Lesson 8.

Lesson 8
Medical Equipment and Supplies

📋 Step 1   Learning Objectives for Lesson 8

❑ When you have completed the instruction in this lesson, you will be trained to do the following:

- Identify common treatment room supplies.

- Identify common surgical instruments.

- Maintain a supply inventory.

- Evaluate and recommend equipment and supplies.

- Identify preparation steps, the principles of operation and the purpose of each of the following equipment:

◆ audiometer	◆ oxygen	◆ autoclave/sterilizer
◆ mobility devices	◆ cast equipment/materials	◆ scale
◆ electrocardiograph	◆ sigmoidoscope	◆ electronic thermometer
◆ sphygmomanometer	◆ examination tables	◆ spirometer
◆ microscope	◆ stethoscope	◆ nebulizer
◆ wheelchair	◆ ophthalmoscope	◆ x-ray equipment
◆ otoscope		

- Discuss indications for mobility devices.

- Discuss safety at home for those who need mobility assistance.

- Illustrate how to properly perform the following procedures:

  ◆ Apply an arm sling.
  ◆ Assist patient with use of a cane.
  ◆ Assist patient with use of crutches.
  ◆ Assist patient with use of a walker.
  ◆ Assist patient from wheelchair to examination table.
  ◆ Assist patient from examination table to wheelchair.

📖 Step 2   Lesson Preview

Scenario #1

❑ Betsy works in the office of a plastic surgeon, Dr. Barclay. Dr. Barclay hired her to order supplies for the office, to keep them in order and to maintain them. She is so busy with this work that she doesn't really have time to assist him when he is doing procedures.

At 8:00 on Monday morning, Betsy arrives at work. She finishes the coffee she picked up on her way to work while she talks with the receptionist about their weekends. Dr. Barclay doesn't mind. He knows Betsy is a good worker.

At 8:10, she starts going through the minor surgical trays that Dr. Barclay will need this week. She set up today's trays last Friday. Today, she will set up trays for other surgeries this week.

As she puts gauze on the trays, she realizes she is running low. She will need to order more today. She also needs to order several other supplies. Betsy is smart—she keeps a checklist, so that she can just check off the type of supply she needs, which company she gets it from and the order number of the item. This makes ordering simple and easy.

In the afternoon, she orders the supplies. She also meets with a sales representative from a new medical supply company. The rep gives Betsy samples from some product lines that the company carries. She promises the rep that they will try the new products in the office. Betsy is always looking for products that Dr. Barclay might like to use.

Talking with coworkers will strengthen teamwork and provide a way to relax throughout the day.

It's time for Betsy to sterilize instruments from the day's procedures. Then, she'll head home to relax with her family. Since she's had such a busy day, maybe the family will order in pizza.

Scenario #2

Mitchell assists two doctors in an urgent care facility. It is a very busy place—patients are in and out all day. He spends most of his time assisting Drs. Smith and McGuire.

Mitchell is the one who first meets with patients. Jerry Munson comes in at 9:00 a.m. Last night, he had a temperature of 103.5° F. Jerry is no doctor, but he knows this is a very high temperature for an adult. Also, he feels miserable.

Mitchell meets Jerry in the waiting room. The first thing he does is weigh Jerry, then he takes his vital signs. Mitchell escorts him into the examination room and shows Jerry where he can sit. Mitchell asks Jerry about his symptoms and learns that Jerry has had a sore throat for two days and is achy.

Mitchell asks about any medications that Jerry is currently taking. Jerry has taken a painkiller for his sore muscles and a night time flu/cold remedy at night. Other than that, he regularly takes a medication to lower his cholesterol.

Mitchell then asks Jerry to wait; the doctor will be in shortly. Mitchell leaves the information for Dr. Smith and goes back to the waiting room to help the next patient in line.

Introduction

Imagine yourself as Betsy or Mitchell. You might work in a doctor's office, clinic or urgent care center. If you work in a doctor's office, you may work for an ophthalmologist, an ENT or an oral surgeon—the options are endless.

This lesson is about the instruments that you'll use in many workplaces. Some things, such as scales to weigh patients and measure their height, you will use in any office.

Other instruments will be special. You will use different instruments depending on where you work. If you work for a plastic surgeon, you will order supplies and prepare instruments that he needs for plastic surgeries. If you work for an ophthalmologist, you will use instruments such as occluders and Ishihara tests.

Let's begin the lesson by discussing general procedures that you'll perform in any medical setting. Then, later in the lesson, you will learn about special instruments. Special instruments are only needed in certain situations.

📖 Step 3 Common Treatment Room Instruments

❑ Part of your job as an MA is to make sure that you and the doctor have the supplies you need, where and when you need them. This is convenient, saves time and keeps the patient from waiting too long.

Examination Room Supplies

Keep every examination room stocked with these supplies:

- Three waste containers: a regular wastebasket; a hard plastic wastebasket that can hold sharp items such as needles and a wastebasket for biohazardous materials such as blood

- Blood pressure cuff and gauge (**sphygmomanometer**)

It's easier to receive patients when the exam room is stocked and ready.

- *Otoscope/ophthalmoscope* with disposable earpieces

- Glass or metal containers to hold Band-Aids, tongue blades, gauze, alcohol wipes and cotton swabs

- Patient gowns

- Drape sheets (to cover the patient)

- Exam table paper

- A scale if weighing is done in the examination rooms

Examination rooms *should not* contain the following items:

- Syringes

- Needles

- Medication samples

- Cleaning supplies

- Chemical solutions

Any of these items can be dangerous to patients, especially young children.

If you work for a doctor who specializes in a certain type of patient or illness, then you may need other supplies specific to that field of medicine.

A pediatrician's examination rooms will have books and toys so that children can entertain themselves. These items also help the doctor to monitor children's motor skills. If a child is very clumsy for his age, for example, it could suggest that the child has a problem.

The table used to hold instruments is called a **Mayo stand**. This is an adjustable height table with a tray top that can be removed. You have probably seen something like this in the dentist's office when you've had your teeth cleaned or a cavity filled.

The Mayo stand helps to keep tools organized and within reach.

The stand can be placed beside the patient or over the patient's legs. It should be positioned so that you and the doctor can reach the instruments easily and quickly. A light source should also be positioned over the tray and the patient.

Instrument Parts

As a medical assistant, you should be familiar with the parts of instruments. Parts include handles, *rachets* or *locks*, *serrations* and *teeth*.

Types of handles include *thumb handles* and *ring handles*. **Thumb handles** are those that you squeeze in between your thumb and finger. **Ring handles** are ones in which you insert a thumb in one ring and a finger in another ring. Common household scissors are an example of a ring handled instrument.

Rachets or **locks** are located between the rings of a handle; they lock the handles to keep them closed. Rachets allow you to close the instrument at different degrees of tightness.

In order to provide a more secure grip, some tools have **serrations**. They are on the tips of the instrument that touches the patient and they provide a secure grip on slippery tissues. They are found on the tips or jaws of *hemostats,* some *forceps* and *needle holders*. Serrations hold the skin without breaking or puncturing it.

If you do need to puncture tissue, you use an instrument with teeth. **Teeth** are set together like human teeth; they are sharp and are used for puncturing tissue. The instrument may have a few teeth or many teeth, but the teeth should always fit together tightly to provide a strong and secure "bite."

Instrument Categories

There are three categories of instruments:

- Cutting

- Grasping and Clamping

- Dilating and Probing

Cutting Instruments

The category of instruments called **cutting instruments** includes scissors and scalpels. A doctor may use scissors to cut material such as sutures or to cut skin.

> **TIP** Scissors have two blades, so you will always use the plural to refer to them. You say scissors, not scissor.

Most cutting instruments are *scissors*. **Scissors** are cutting instruments with ring handles and two blades. They come in many shapes and sizes, each specialized to perform a unique type of procedure. Types used most often include:

- *Bandage scissors* (*Lister* and *finger*)

- *Operating scissors*

- *Mayo dissecting scissors*

- *Iris scissors*

- *Suture scissors*

Bandage scissors have one rounded tip that can be inserted under a bandage. The rounded tip is placed next to the patient's skin and helps guarantee that the person's skin will not be cut. Two types of bandage scissors are used more often than others—**Listor bandage scissors**, an all-purpose dressing scissors, and **finger bandage scissors**, which are used on smaller and more delicate bandaging.

Operating scissors have very sharp blades that are used to cut tissue. Even though the blades are sharp, they come with many variations. The blades of operating scissors may be curved or straight. The tips may be sharp, blunt or a combination of both. Sharp-tipped scissors are called sharp/sharp (s/s); blunt-tipped scissors are called blunt/blunt (b/b); combination scissors are called sharp/blunt (s/b). Why aren't blunt scissors just called blunt instead of blunt/blunt? It's because scissors have two blades and two tips. You have to describe each of the two tips.

Each tool has a specific purpose.

Mayo dissecting scissors are usually curved, although they may be straight. The Mayo scissors' tips are slightly rounded with beveled or angled edges.

Iris scissors have delicate blades. These blades can be either straight or curved. Iris scissors are so delicate that they are used for eye surgery. Now other surgeons use them as well.

Suture scissors are made for cutting sutures. They may also be called **stitch** or **stitch removal scissors**. One of the blades has a notch on the end that makes it possible to reach under the sutures.

Scalpels are knives that are used to cut skin. The scalpel is attached to a handle. Together the two are called a **surgical knife** or **surgical scalpel**. Surgical knives may also be disposable. If you've seen a man use an old-fashioned razor blade and strap to shave, you know what a scalpel looks like.

Scalpels come in many different sizes. The most commonly used sizes of blades are #10, #11 and #15. People refer to #11 as a "**stab blade**" because it has such a sharp point.

Scalpel handles also come in many different sizes. The most common ones are #3, which is very strong; the #3L (L refers to long); and the #7, which is a delicate handle.

The doctor you work for will tell you which scalpels and handles she prefers to use.

Grasping and Clamping Instruments

Grasping and clamping instruments are a large group of diverse instruments used to hold, pull, compress and otherwise manipulate tissues or other instruments. These include **towel clamps**, **towel clips**, **needle holders** and **forceps**. Forceps, in particular, have become very specialized.

Some forceps are:

- Hemostatic forceps (also called hemostats)
- Mosquito hemostatic forceps
- Kelly hemostats
- Allis tissue forceps
- Thumb forceps (also known as pick-ups)
- Tissue forceps
- Dressing forceps, plain
- Adson forceps
- Lucae bayonet-type forceps
- Hartman ear forceps
- Duckbill ear alligator-type forceps
- Hartman nasal dressing forceps
- Splinter forceps
- Splinter forceps, plain
- Walter forceps
- Virtus forceps
- Sponge forceps
- Uterine sponge forceps

Forceps belong in the grasping and clamping category of medical instruments.

TIP Forceps, like scissors, are always plural.

You use **towel clamps** or **towel clips** to attach surgical drapes to each other. **Surgical drapes** are large sheets of fabric that cover the patient during an examination or surgery.

They are similar to the gowns you wear when you go to a doctor for a physical. Sometimes towel clamps are used to hold two pieces of tissue together. For example, during a vasectomy, a **Backhaus towel clamp** holds the *vas deferens*. The **vas deferens** is a narrow muscular tube that transfers sperm from the testicles to the urethra.

Needle holders are similar to hemostats. **Needle holders** have ratchets and are wider and sturdier than hemostats. They may also be called **needle drivers**. Holders or drivers hold the needle tightly while the doctor is suturing tissue. The **Crile-Wood needle holder** has a special groove that you can put the needle into. Needle holders come in different sizes. Some have a cutting edge, which is convenient. Needle holders with a cutting edge allow the doctor to use just the one tool instead of a needle holder and scissors.

Dilating and Probing Instruments

The **dilating and probing category** of tools includes *specula*, *scopes*, *probes*, *retractors* and *dilators*.

Specula are used to enlarge and explore openings in the body, such as the mouth, ear, rectum and vagina. A speculum opens the orifice wider so that the doctor can see inside more easily.

> **TIP** Specula is a plural word. You would not say speculas. If you want to use the singular, you say speculum.

A **vaginal speculum** is available in many lengths and widths. It may be made of metal or plastic. A disposable speculum is thrown away after one use.

The **Vienna nasal speculum** is used to enlarge the nostril. It is used with **Lucae bayonet forceps** when a doctor wants to perform a procedure inside the nose.

Scopes are instruments with lights on the ends that are used to view inside the body. A doctor uses an **otoscope** to look inside the ear canal and eardrum. This instrument may be disposable or you may be able to reuse it after sterilization.

A **proctoscope** is used to view the rectum. An **anoscope** is used to view the anus. A rigid **sigmoidoscope** is used to view the sigmoid part of the large intestine. These scopes have **obturators** shaped like smooth shovels on the ends so that insertion is easier and less painful.

Otoscopes are used to view the inside of the ear canal and the nasal passage.

Although the scope usually has its own light, protoscopes and anoscopes are different. They are used with a separate lamp. You will not be able to sterilize these lights, but you can disinfect them. The speculum that is inserted is made either of metal that is sterilized and reused or plastic that is discarded after each use. The obturator can also be sterilized and used again.

Some scopes are long and flexible. They are involved in more complicated procedures than the exploration done by the scopes we have already discussed. **Fiber-optic scopes** use fiber-optic light sources. Fiber-optic scopes must be sterilized between every use.

Probes are used to explore areas of the body that cannot be easily seen. A doctor might use a probe to examine a hidden body area, a cavity or a wound. A doctor may probe a wound, for example, to determine its depth and texture.

Sounds are a type of probe. **Sounds** are long, slender instruments used to determine the size and shape of a body cavity. Sounds are also used to search for foreign bodies that can't be seen. In the case of a wound, a doctor may use a sound to see if there is glass in the wound. Sounds may measure in inches or centimeters. This means that the doctor can gauge the depth of a wound or body cavity using either unit of measurement.

Retractors are often called skin hooks. **Retractors** grab and pull back (that is, retract) the edges of a wound. Skin hooks have delicate tips. When you sanitize retractors, be careful that you do not damage these delicate tips. Retractors are often used in outpatient and office surgeries.

Dilators are also included in the category of dilating and probing instruments. **Dilators** have two metal rods with smooth, rounded tips. After the doctor has inserted a dilator into a narrow or tight cavity, she will adjust the dilator to slowly enlarge the area.

Hegar uterine dilators dilate or open the cervix so the doctor can reach inside the uterus. If you have ever had a Pap smear, you know what a dilator is. An **esophageal dilator** stretches out the esophagus. This is often done to dislodge something that is narrowing the esophagus. The blockage could even be caused by something like a piece of food. **Urethral dilators** are used to open up blockages in a man's urethra.

Fiber-optic wires are sometimes used as light sources for medical probes.

Specialty Instruments

There is one other category of instruments in addition to the three major categories we have just discussed. These instruments are called **specialty instruments** and are used for special procedures. A gynecologist, for example, uses some instruments with long handles that do not fit into any of the three categories we have discussed.
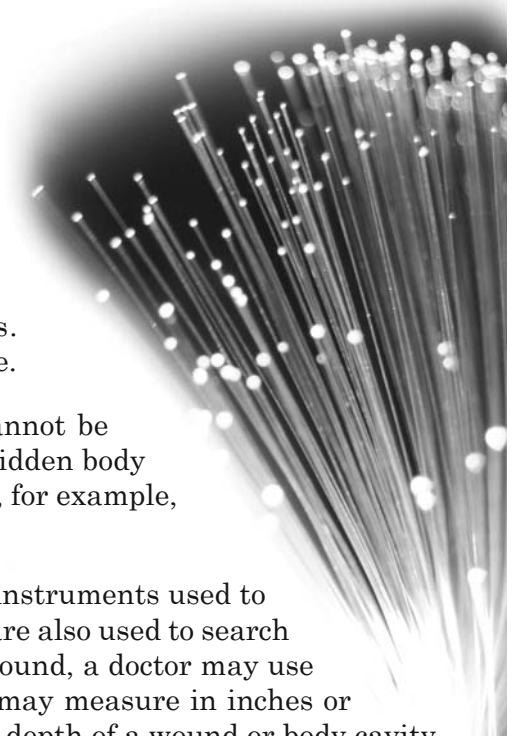
📖 Step 4 Medical Supply Inventory

❑ As a medical assistant, you will probably be responsible for ordering supplies. You will keep a list of these supplies in a notebook, on a set of cards or on a computer file. A list of supplies is known as a **supply inventory**. It is handy to group supplies in one of two ways: either by type of supply or by the company you order the supplies from. If you group supplies by type, you might include all bandages together on the same page, for example.

A busy office will go through many supplies. Order as many as you can fit into your storage space. You will usually get a better price on supplies if you order more, but you can only buy as much as you can store.

It's very important to come up with a good system to keep track of supplies.

In order to know which supplies you have enough of and which supplies you need more of, you need to develop a good storage system. You know how it is when your kitchen cupboards are a mess. You think you need to buy pasta for dinner, and then a few days later you find a package of pasta in the back of a cupboard.

It's very important to come up with a good system to keep track of supplies so you don't run out of anything. Imagine having a surgery scheduled and then telling the doctor he can't perform the surgery because you don't have the supplies.

Your office will probably already have a system so you won't have to develop a new one. But you can probably modify the system to fit your needs.

A good supply list will include several pieces of information. This information includes the following:

- Item name

- Specific size

- Usual supplier

- Cost of a certain quantity

- *Reorder point*

- Quantity ordered each time you order

Let's take one supply for an example: disposable patient gowns. Your supplier is Patient Supply Medical. The item number for disposable patient gowns is #PG3342. Your cost is $19.95 for one package of 50 gowns. You have made a note to yourself to reorder when there are two packages of gowns left. This is your **reorder point**—the lowest amount of supplies you want to have on hand before you reorder. The quantity you want to reorder is two packages.

Offices usually order supplies each month. You will run through some supplies so quickly that you will know you need to reorder them every month. Other supplies will not run out so quickly. You can just order them when you need them.

When you are reordering, go through supplies and make sure they haven't expired. It's smart to stock items from back to front. This means that newer items are placed in the back of the shelf or cabinet. Older items are moved to the front of the shelf or cabinet. That way you will use older supplies before they expire.

Double-check your order list to make sure that you order the correct amount of each supply.

You should *restock* the examination rooms daily. **Restocking** means moving supplies from your main storage area into the cabinets and drawers in the exam rooms. Make sure that the exam rooms have all of the supplies you'll need for the next day's procedures.

After you've decided which supplies to order, check which supplier or suppliers you need to order from. You may order your gowns and cover sheets from Patient Medical Supply, but order your medications from XYZ Pharmacy Supply.

Double-check your order list to make sure that you're ordering the correct amount of each supply. You may need to check other things, too. When ordering gowns or bandages, for example, pay attention to what sizes you need to order. You may want someone else in the office to check your list.

You may order by phone or fax, but more and more people are ordering through Web sites. If you use a fax, call the supplier to make sure they received the order. Make notes of what you have ordered so you and everyone else in the office knows that you have ordered the supply.

Step 5   Care and Handling of Common Surgical Instruments

Caring for Instruments

❑ Surgical instruments are very expensive and should not have to be replaced often. When you are cleaning instruments, be careful with them so they are not damaged. A damaged surgical tool will not sanitize properly and could hurt a patient. Thoroughly examine tools every time you clean and sanitize them for signs of damage or overuse.

Steps to Take 8-1––Proper Surgical Instrument Cleaning

1. Turn to Steps to Take 8-1 in your Procedure Guide 1.

   2. Read the Steps to Take to properly clean surgical instruments.

      3. Review this method several times until you can describe the procedure without reading the steps.

You should also be careful because many instruments are sharp and can poke or cut you. Watch the instrument cleaning procedure on your Virtual Lab CD. We'll talk more about the autoclave later in the lesson.

Virtual Lab 8-1   Use an Autoclave

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Use an Autoclave. This will bring up the instructional video on how to sanitize and then sterilize surgical instruments using the autoclave.

4. Follow along with Virtual Lab 8-1 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

Ultrasonic Cleaning

Some surgical instruments are cleaned with *ultrasonic cleaning*. **Ultrasonic cleaning** uses sound waves to shake loose dirt, blood and body fluids. You must use a special cleaning solution in an ultrasonic cleaner.

The contaminants will come off more easily if you put instruments with rachets or hinges into the cleaner in an open position. When you take the instruments out of the cleaner, rinse, dry and wrap them for sterilization. Ultrasonic cleaning is useful for all instruments, but especially for delicate ones. Also, you do not have to clean instruments by hand, so an ultrasonic cleaner is safer for you.

To use an ultrasonic cleaner, follow these steps:

Steps to Take 8-2––Ultrasonic Cleaning

1. Turn to Steps to Take 8-2 in your Procedure Guide 1.

2. Read the Steps to Take to use an ultrasonic cleaner.

3. Review this method several times until you can describe the procedure without reading the steps.

Chemical "Cold" Sterilization

Cold sterilization is used on very delicate instruments and on heat-based instruments such as endoscopes. The instruments are placed in a cold chemical solution which sanitizes the instruments. They are not put through a heated cycle. Be sure to follow the manufacturer's recommendations about how long to leave the instruments in the solution. They will not become sterile if you do not leave them in for the recommended amount of time.

☐ Step 6   Surgical Supply Inventory

❑ Some of the surgical supplies that are used most often include the following:

- Sponges and wicks

- Solutions/creams/ointments

- Dressings and bandages

- Anesthetics

These are supplies that you should always have on hand. Most of them are disposable and are thrown away after each use.

The supply companies that you order from sometimes offer product samples. If you are not happy with how a product is performing, ask for samples of other products. For example, if you think your sponges are not soaking up fluids well enough, then ask for samples of other brands of sponges.

Sponges and Wicks

Sponges are squares of folded gauze used in surgery. They come pre-packaged to keep them sterile. Sponges soak up blood and other body fluids.

Gauze sponges are used for many purposes in a medical setting.

Gauze sponges are used to clean wounds and to prepare the skin for some other procedure. For instance, you may rub alcohol on the skin with a gauze sponge to sterilize the skin before the doctor cuts into it. They are also used to absorb fluids during surgery and as dressings, coverings and padding.

If you've ever had blood drawn, you understand how gauze can be used as a dressing or covering. After the syringe is removed, the technician covers the needle mark with gauze and a Band-aid to keep the gauze in place. When you take off the gauze, you'll usually see a little spot of blood. The gauze made the wound stop bleeding and prevented blood from getting on you.

Sponges are usually referred to by their size. A gauze square that measures 4 inches by 4 inches is called a 4 × 4 (pronounced *four by four*.) Other sizes that are used most often are the 3 × 3 and the 2 × 2. Keep all common sizes on hand.

Sponges come in either packages of two or in sterile bulk packages of 100. The individual packages are more expensive, but they are convenient and easy to keep sterile. The larger packages are less expensive but you have to sterilize them in an autoclave.

Most sponges are made only of gauze. Some of them, though, have an extra absorbent layer of cotton or rayon. You and your doctor will have types of sponges that you like better than others.

Surgical wicks are put into infected wounds to keep them open so that they can drain. Wicks are made of gauze rolled into small glass tubes. The gauze then "wicks" or soaks up the fluids produced from the infection.

The wicks are sterile and come in bottles that contain several wicks. Be very careful to not contaminate the wicks when you remove one. Open the bottle using a **sterile technique**— reach into the bottle with sterile dressing forceps to grab hold of the gauze. Use sterile scissors to cut off the length of gauze that you need and immediately replace the lid so that the other wicks do not become contaminated.

Solutions/Creams/Ointments

Soaps and **solutions** are used to clean the skin, for medical personnel to scrub before operations and as paints, soaks and antiseptics. Some of the better-known solutions are:

- Betadine

- Hibiclens

- Isopropyl alcohol

- Hydrogen peroxide

Antibacterial creams and **ointments** are used to prevent the spread of bacteria that may keep a wound from healing. Creams are usually white, nongreasy and water based. Ointments are usually clear and oil based. Apply the cream or ointment thickly so that the bandage covering doesn't soak up all of it. Silvadene is a well-known brand of sterile cream.

There are many types of fluids used to keep wounds clean.

Dressings and Bandages

Dressings are sterile material, such as gauze, that is applied over a wound surface or site of a surgery. Be sure to use the proper size and thickness of gauze to soak up fluids. The gauze should completely cover the wound.

Athletes often use gauze and bandages to keep wounds clean during play.

Bandages are applied on top of dressings to keep the dressings in place. They also provide protection and extra padding for the wound. Bandages do not need to be sterile, although they should be clean.

There are many types of bandages. Bandages may be a layer of gauze wrapped around the wound area, then covered with a stronger wrap such as an elastic bandage. There are also triangular bandages, slings, braces and splints. A **tubular gauze bandage** covers tubular body parts such as fingers, arms, toes and legs.

Anesthetics

Anesthetics cause loss of feeling in nerve endings. They are necessary for many medical procedures. You wouldn't want to feel a doctor cut your skin, remove a wart or perform some other painful procedure. There are two main categories of anesthesia:

- Injectable

- Topical spray

Anesthetics may be inhaled, applied to the skin (**topical**), injected into a vein (**intravenous**) or the spinal column (**intrathecal**) or placed under the skin (**subcutaneous**). Even ice may be used as an anesthetic. Extreme cold causes the nerve endings to temporarily become deadened to feeling.

Injectable Anesthetics

Most anesthetics used in a doctor's office will be *local* and will be injected subcutaneously. Remember, subcutaneously means under the skin. **Local** means that the deadening of the nerves happens in a specific area instead of throughout the body. The anesthetic deadens or at least lessens the pain the patient will feel. Some of the most common anesthetics injected subcutaneously are:

- Xylocaine (also called lidocaine)

- Novocain (also called procaine)

- Marcaine

- Carbocaine

Notice how the names of all of these anesthetics end in "*caine*." Any drug ending with the suffix -caine has local anesthetic properties.

Local anesthetics come in single doses or larger vials of 10 milliliters (mL). Because they are cheaper, most doctors prefer to buy vials containing 30 to 50 mL. Local anesthetics come in different strengths. Usually these are 0.5 percent, 1 percent and 2 percent.

The stress hormone, *epinephrine*, is also a component of some local anesthetics. **Epinephrine** is a vasoconstrictor, meaning it tightens the blood vessels causing reduced blood flow. This diminished blood circulation allows the anesthetic to work longer. However, epinephrine has many other effects on the body, the most serious being cardiac stimulation and possible dysfunction. Epinephrine must be administered cautiously, and only by an experienced medical professional.

As an MA, you may be responsible for filling syringes with epinephrine. You must strictly follow the doctor's **dosage instructions**—the amount of a drug to give the patient. Bring the bottle that you withdrew the medicine from into the procedure room. Set the bottle on the counter in plain sight so the doctor can check to make sure the medicine came from the right bottle.

Do not use anesthetics with epinephrine on areas that normally don't have much blood flow. These areas include fingers, toes, noses and earlobes. Some patients, such as diabetics, may have problems with restricted blood flow. Adding a vasoconstrictor such as ephinephrine could cause serious complications. Your doctor will give you explicit instructions, but you should be aware of these issues.

When using injectable anesthetics, you should be familiar with *drawing techniques*. **Drawing techniques** refer to how you fill and handle a syringe. A doctor may decide to inject the anesthetic before she puts on sterile gloves. If that is the case, then you may be the one who fills the syringe. Place the filled syringe to the side of the sterile field. If you place a non-sterile syringe on a sterile field, then you will have contaminated the field.

Dosage measurements are shown on the side of the syringe.

After the patient is under the influence of the anesthesia, the doctor will go through the sterile procedure of washing her hands and applying sterile gloves. She will then begin the surgery.

In some cases, the doctor may inject the patient *after* she puts on sterile gloves. In that case, the syringe may be placed on the sterile field. You may have already filled the syringe or the doctor may fill it at this point. One person will hold and fill the syringe while another person holds the non-sterile vial of anesthesia. Then, the filled syringe is either placed on to the sterile field or is handed to a person who has gone through sterilization preparation.

Topical Spray Anesthetics

Some anesthetics are applied directly to the skin. As you may remember, this is called a topical application of medicine. These topical anesthetics may come in liquid or spray form. **Ethyl chloride** is the topical anesthetic that is most commonly used. It freezes the skin to deaden sensation. It lasts for only a few minutes, so it is useful for short and minor procedures.

📖 Step 7   Evaluating Equipment and Supplies

❑ As you know, when you are evaluating equipment you must look carefully for tarnished spots, cracks, broken places, sharp edges and other defects. Not only do these blemishes make instruments unsanitary, but they can also be harmful to patients, the doctor and you.

When you are evaluating supplies, make sure you have enough in stock. Try to strike a balance, but overall it is better to have too many supplies than too few.

Many instruments and supplies are a matter of personal preference, so order the kinds of instruments and supplies that your doctor prefers. Ask suppliers for samples of other products if your doctor or you do not like a particular supply.

When evaluating equipment and supplies, keep at least three things in mind: safety, sanitation and quantity. Your supplies need to be safe and sanitary, and you need to have enough in store.

Let's take a break here and review what you've learned so far with the following Practice Exercise.

✍ Step 8   Practice Exercise 8-1

❑ For the following questions, choose the best answer from the choices provided.

1. **Every examination room should contain _____.**
   a. three waste containers
   b. a blood pressure cuff
   c. drape sheets
   d. all of the above

2. **Examination rooms *should not* contain _____.**
   a. syringes
   b. drape sheets
   c. gauze
   d. an otoscope

3. _____ handle instruments are ones in which you insert a thumb in one ring and a finger in another ring.
    a. Thumb
    b. Ring
    c. Mayo
    d. Serrated

4. _____ instruments include towel clamps, towel clips, needle holders and forceps.
    a. Cutting
    b. Dilating and probing
    c. Grasping and clamping
    d. Specialty

5. _____ are squares of folded gauze used in surgery.
    a. Surgical wicks
    b. Sponges
    c. Bandages
    d. Anesthetics

⚷ Step 9   Review Practice Exercise 8-1

❑ Review your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 10   Common Medical Equipment

Audiometer

❑ An **audiometer** is a tool used to perform an auditory test which measures how well someone hears. The audiometer is located in the same room that you will be conducting the test in. Usually, an audiologist will use the audiometer. It is possible, though, that as an MA you may be asked to perform a hearing test so you need to know how to use one.

In order for the test to be accurate, you will need a quiet room. Your patient will be seated facing away from you. Place the earphones of the audiometer over his ears. Tell the patient to raise his hand when he hears a sound.

An audiometer has two dials. One dial is for wavelengths, and the other is for wave intensity. Both of these are measured with the audiometry test. You will start with the dial set at the lowest *pitch*. **Pitch** refers to how high or low a tone is. Somebody with good hearing can hear high and low tones. A person who is beginning to lose his hearing not be able to hear the highest or lowest tones.

Raise the level of the pitch until the patient can hear it. You will know how well the patient can hear by how high you have to turn the pitch before he can hear it. The pitch level that must be reached in order to obtain a response from the patient is called the **threshold**.

Make sure that you don't develop a predictable pattern. Alternate the ears in a random fashion so that the patient cannot guess how to react. It's not about tricking the patient. It's about getting an accurate reading.

Now you will follow the steps on your Virtual Lab CD to put your knowledge into action.

⌒ Virtual Lab 8-2   Use an Audiometer

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Use an Audiometer. This will bring up the instructional video on how to test hearing using the audiometer.

4. Follow along with Virtual Lab 8-2 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

Autoclave/Sterilizer

You can think of an **autoclave** as a type of pressure cooker that you use to sterilize instruments. It cleans instruments of microorganisms and spores by using steam at very high pressure. Steam reaches a higher temperature than boiling water does. An autoclave is usually located in a special room dedicated to sterilizing and storing instruments.

The autoclave has two compartments, one inside the other. The outside container is a metal jacket. The metal jacket surrounds an inner compartment where the sterilizing takes place. You put water between the metal jacket and the inner compartment. After you put in water, you close and secure the door. Then, you turn on the autoclave.

The steam in the autoclave needs to be between 250° F and 254° F in order to sterilize instruments. Some tools that you place in the autoclave are unwrapped, some are wrapped loosely and some are wrapped tightly.

Tools that are unwrapped need to stay in the autoclave for 20 minutes. Instruments that are wrapped loosely need to stay in for 30 minutes. Tightly wrapped instruments should stay in for a minimum of 40 minutes. The company that made the autoclave will provide instructions on how long to sterilize instruments. The instruments will only become sterile if you follow the process properly. If you do not follow the proper process, pathogens can remain on the instruments and spread to other patients.

Use only distilled water in the autoclave. Before you use the autoclave, check the water level to make sure the autoclave has enough. The water should reach the fill line, which will be marked on the autoclave. The autoclave can be damaged if you allow it to dry out.

It is very important that you clean and maintain the autoclave often. Follow the Steps to Take to properly clean an autoclave.

Steps to Take 8-3––Daily and Weekly Cleaning of the Autoclave

1. Turn to Steps to Take 8-3 in your Procedure Guide Supplement 1.

2. Read the Steps to Take for cleaning the autoclave.

3. Review this method several times until you can describe it without reading the steps.

You will need to run regular tests to make sure that your autoclave is sterilizing properly. You will also need to run *culture tests* to ensure that you do not have bacteria growing in the autoclave. There are several ways of testing to make sure your autoclave is clean, but the two most common ways are by using:

- *sterilization strips* and

- *culture tests*.

Sterilization strips contain a *thermolabile dye*. **Thermolabile dye** responds to temperature by changing shades. Wrap the strip in the center of a wrapped article, and when you steam the article at the appropriate temperature and pressure, the strip will darken. If it does not darken, then the autoclave is not sterilizing instruments properly.

Culture tests also come in the form of a strip. A **culture test** contains heat-resistant *spores* that will show if the autoclave has bacteria in it. The **spores** are bacteria. If you run the autoclave properly, the spores will die. If you don't run it properly, the spores will grow. Place the strip in the middle of a wrapped article. Run the autoclave just as you usually do, making sure it is fully loaded.

When you take the article from the auto-clave, you will unwrap it and put the strip in a *culture medium*. A **culture medium** is usually a jelly-like substance in which bacteria will grow. If the strip has bacteria from the autoclave, it will grow in the culture medium.
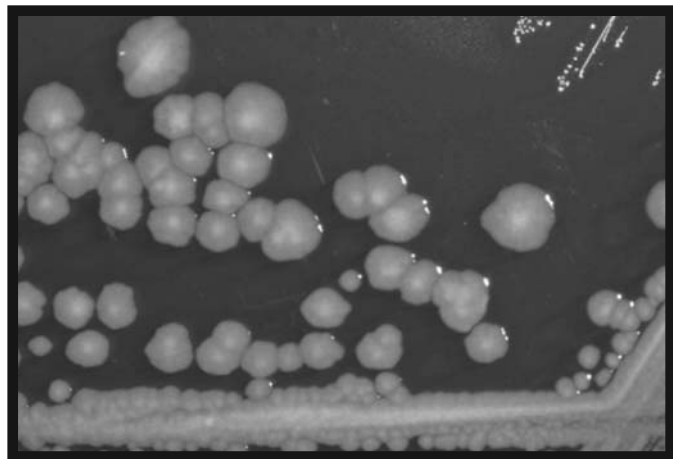
An example of bacterial growth in the growth medium on a Petri dish, in this case *Proteus mirabilis.*

Wrap or package instruments before you put them in the autoclave. If you do this, they will stay sterile up to six months. This is especially convenient if you do not use the instruments often.

You must sanitize, rinse and dry instruments before you wrap them. There are several materials you may use to wrap instruments. These are:

- *Muslin*
- *Paper sterilization wrapping squares*
- *Sterilization pouches* or *bags* (either plastic, paper or a combination of both)

Muslin is a type of cloth. It is inexpensive and can be purchased in different sizes and colors. Several instruments may be wrapped in a single piece of muslin. Then your instruments are in a set, and ready for a specific procedure, which is very convenient.

There are several things you need to consider when using muslin. First, you can't see which instruments are inside. Second, you have to look often to see if the muslin has holes, tears or worn patches. You have to throw away the muslin if it has any of these problems. Third, you need to wrap instruments in a particular way. Finally, you have to use special tape to seal the packages.

Paper sterilization wrapping squares are, obviously, made of paper and are also available in different sizes. Throw each square away after one use. You must use a paper square every time you sterilize items.

Wrapping squares have some of the same advantages and disadvantages as muslin. As with muslin, you can wrap packages of instruments. But, as is also true with muslin, you cannot see the instruments inside. You also need to use special sealing tape. And, you need room to wrap the packages.

The third type of material is a pouch or bag. The **sterilization pouch** or **bag** is made of plastic, paper or plastic and paper combined. These bags have a lot of advantages:

- Fairly inexpensive
- Easy to use
- Take little space
- Items are visible
- Bags can be cut to fit instruments

However, there are drawbacks as well. When you cut the bag to the size you want it to be, both ends of the bag will be open. This means that you have to seal both ends with tape. Having two ends open can be awkward. Be careful to keep the instrument sterile while you remove it from the package. If you don't seal the bag well, one end could open and the instrument could slip out.

Another option is individual bags that come sealed on one end. The seal peels apart when you are ready to remove the instrument. Put the instrument in the bag through the unsealed end, then seal it. Sterilize the article as you would any other. When you are ready to remove the instrument, you simply open the pre-sealed end.

There are two disadvantages to these pre-sealed bags. One is that they are expensive. The second disadvantage is that you cannot cut them to make the size of package that you want, so you must buy different sizes.

The tape you use to seal muslin, wrapping squares or bags is called **autoclave tape**. Autoclave tape develops a striped pattern when it is exposed to heat. This tape does not guarantee that your wrapped instruments are sterile. But, it does indicate that the autoclave is heating your packages.

Place items properly in the autoclave. If they are positioned carelessly or too close together, the instruments will not steam properly and will not be sterilized.

Do not pack the instruments tightly; pack them loosely. Leave at least 1 to 3 inches between the packs and between the packs and the sides of the autoclave. Without this space, the items will not sterilize.

If you use muslin or squares, you will need to learn to wrap instruments properly. Surgical instruments are wrapped in two layers of packaging. There are two basic techniques that you can use for wrapping.

The first method is to place two layers of wrapping material together. In other words, you lay one piece of gauze within another. You then wrap the instrument in the two layers of gauze or other wrapping material.

The second and probably better way of doing this is the *wrap twice* method. In the **wrap twice** method, you wrap the instrument in one layer of cloth. Then you wrap that package in another piece of cloth.

Label the contents of the package on the outside. On your label, list the following:

- Names of the instruments in the package

- Date you sterilized the instruments

- Initials of who wrapped the instruments

Write the exact name of the instrument or instruments in the package. If you are using muslin or paper wrappings, you will not be able to see into the package. You will only know what is inside by your label. When you sterilize a set of instruments that are going to be used for one procedure, make sure that you label the instruments for that procedure. So if Dr. Jones is going to do a facelift, you'll know that the package labeled "face lift surgery" will contain all the instruments needed for that procedure.

It is important to write the date of sterilization on the label. Instruments only stay sterilized for a certain amount of time. If they have not been used by that time, you must re-sterilize them.

Include the initials of the person who wrapped the instruments just in case they weren't wrapped correctly and it creates a problem. The person must be retrained in the correct wrapping method so that the problem doesn't occur again.

Write your labels with a fine-point permanent marker. Don't use an ordinary ballpoint pen because the steam will make it smear and then you won't be able to read the label. Write the label on the autoclave tape and be sure you don't puncture the package when you label it.

Cast Equipment/Materials

As a medical assistant, you will set up supplies for putting on and removing casts. You will assist the doctor during the procedure and you will tell the patient how to care for the cast. The supplies you need for applying and removing casts will probably be kept in a supply room. You will bring out the supplies as you need them.

In a doctor's office, you will usually see closed fractures. As you learned in the last lesson, closed fractures are those in which bone does not come through the skin. These fractures can occur in the wrist, forearm, fingers, lower legs and upper arms.

There are several types of materials used to make casts. These are:

- Plaster

- Synthetic

- Air

Plaster casts are made from wet bandage rolls soaked in calcium sulfate. They mold to the body part, taking its shape.

Synthetic casts are made of tapes that have a polyester/cotton combination, fiberglass or plastic resin in them.

Air casts are inflatable and form an air pocket around the injured body part. They are used for sprains or when a patient is ready to go without a cast but still needs some support.

The type of cast the doctor chooses will depend on preference and on which material is most suitable for the injury. Synthetic casts have the advantage of being lightweight, strong and water resistant.

You will probably see four types of casts in a doctor's office:

- Short arm cast

- Long arm cast

- Short leg casts

- Long leg casts

As a medical assistant, you will set up supplies for putting on and removing casts.

A **short arm cast** (**SAC**) is put on from the fingers to just below the elbow. It is used for a fracture or a dislocation of the wrist and forearm.

A **long arm cast** (**LAC**) is put on from the fingers to the underarm. It has a bend at the elbow. The LAC is used for a fracture of the upper arm.

A **short leg cast** (**SLC**) fits from below the knee to the toes. It usually has a reinforced heel that some pressure can be applied to.

A **long leg cast** (**LLC**) is applied from the thigh to the toes.

There are several important things you should teach a patient so that he can take care of his cast.

- Keep the cast uncovered even at night to help it dry.

- Raise the body part with the cast to reduce swelling and pain.

- Watch your fingers or toes for changes in color or temperature, loss of feeling, decreased sensation to pain or tingling. Any of these changes may indicate the cast is too tight. This can cause permanent damage.

- Do not put things in the cast to scratch the skin even if it itches.

- Do not get the cast wet.

- Clean the cast with a damp cloth.

- Use only water-soluble paints or marking pens to decorate the cast.

- Do not cut or trim the cast in any way. If the cast develops a sharp edge, you can gently file it with a finger file or put masking tape over the sharp edge.

- Tell the physician if you notice a bad odor, numbness, tingling, severe pain, difficulty moving, severe swelling, cold fingers or toes, a burning sensation over a bony area or bleeding under the cast (the cast may turn pink to red from absorbing blood).

Now use Procedure Guide Supplement I to learn how a cast is applied and removed.

Steps to Take 8-4––Apply and Remove a Fiberglass Cast

1. Turn to Steps to Take 8-4 in your Procedure Guide Supplement 1.

    2. Read the Steps to Take to apply and remove a fiberglass cast.

        3. Review this information several times until you can describe it without reading the steps.

Electrocardiograph

An **electrocardiograph** (**EKG**) measures the electrical activity in the heart and how long it takes for an electrical impulse to travel through the heart during the gap between each heartbeat.

The doctor you work for may do *ECGs* on patients over 40 years of age. ECGs are also useful for patients who have family histories of heart disease or patients who have had chest pain. An ECG is a safe and painless test to judge the heart's health.
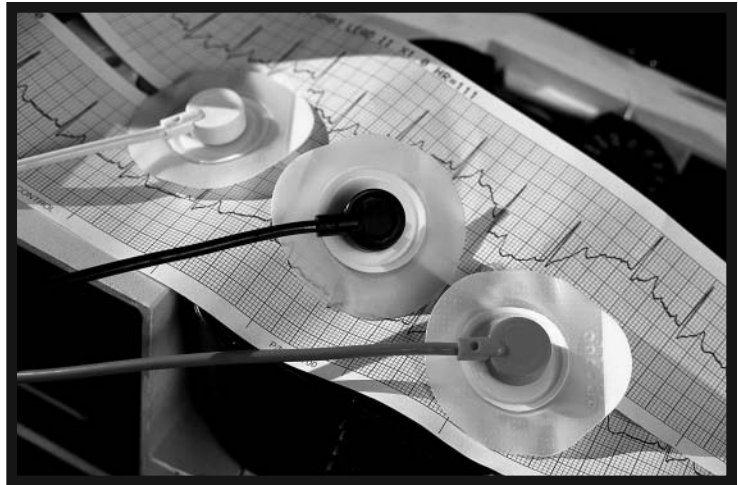
An EKG can show irregularities in a patient's heart rhythm.

The test done with the EKG is called an **electrocardiography** (**ECG**). Although an ECG cannot detect heart or cardiovascular disease, it is useful for many things. A doctor may order an ECG to:

- Detect *myocardial ischemia*

- Estimate damage to the myocardium caused by a *myocardial infarction*

- Detect and evaluate cardiac *arrhythmia*

- Assess the effects of cardiac medication

- Detect an *electrolyte* imbalance

Just as you saw in this list, you'll run across many unfamiliar terms. Don't worry, though. You'll learn more about any terms you need to know in lessons to come. So you have an idea of what these words mean, though, let's define them briefly. **Myocardial ischemia** is defined as a decrease in blood supply to the heart of over 70 percent. This leads to heart disease, the number one cause of death in the United States.

Myocardial infarction is the medical term used for what is commonly called a *heart attack*. As you recall from Lesson 7, a **heart attack** happens when blood supply is cut off from a part of the heart.

Arrhythmia is an irregular heartbeat. It can be too fast, too slow or can miss a beat or beats.

Electrolytes are minerals and other body fluids that carry electricity. The heart needs electrolytes to function properly. Athletes take electrolytes, for example, when they sweat a lot and are low on liquids.
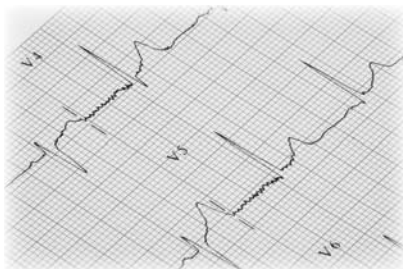
EKG Printout

EKG is a voltmeter. It records electrical voltages generated by electrical activity in the myocardium. Electrical activity within the heart can be observed by means of electrodes connected by cables to an EKG machine.

Electrodes are disposable disks that contain conductive media. The gel conducts the skin surface voltage changes through color-coded leads connected to a cardiac monitor.

Chest Leads are leads V1, V2, V3, V4, V5 and V6.

Limb Leads are RA (right arm), LA (left arm), RL (right leg) and LL (left leg).

EKG Paper is graph paper made up of small and larger heavily lined squares. The smallest squares are one mm wide and one mm high. There are five small squares between the heavier lines.

Chest leads

- Width of each small box = 0.4 seconds
- Width of each large box = 0.20 seconds
- Five large boxes (each consisting of five small squares) = one second
- Fifteen large boxes = three seconds
- Thirty large boxes = six seconds

Terminology

Let's take a moment to review some important terms related to the ECG test. You may hear some of these terms when a doctor performs an ECG using the EKG equipment.

Waveform: This term indicates that the line seen on the EKG is moving away from the baseline. This can be a positive or negative movement (either above or below the baseline on the graph). Several waveforms that occur together are known as a complex.

Segment: A segment is the portion of the line between waveforms.

Interval: A waveform and a segment form an interval.

Polarization: During the polarization period, no electrical activity is occurring. The inside of the cardiac (heart) cell has a negative charge, while the charge outside is positive.

Depolarization: During depolarization, electrical charges allow movement of ions and the spread of electrical impulses. The cardiac cell is stimulated, and the inside of the cell becomes more positive due to the influx of sodium.

Repolarization: The movement of sodium in to the cell is halted, and potassium is able to move out of the cell. The cell is now in a recovery phase.

During the ECG test, there are several different phases occurring that you will see on the EKG monitor. The following descriptions refer to these different phases, or components, of the ECG.

P Wave: The P wave occurs during atrial depolarization. This is the first waveform in the cardiac cycle. A normal P wave is upright, round and symmetrical.

QRS Complex: The QRS complex occurs during ventricular depolarization. This phase follows a P wave and includes the Q, R and S waves. It lasts 0.06-0.10 seconds in length. The Q wave is the first downward (negative) deflection. The R wave is the first upward (positive) deflection following the P wave; it always stays positive. The S wave is the negative waveform following the R wave, and it always stays negative.

T Wave: The T wave indicates ventricular repolarization. The T wave occurs after the QRS complex and varies in size and shape.

Isoelectric Line: This is the flat line between waves in which there is no electrical activity.

PR Segment: The PR segment occurs during the delay at the AV node, and includes the isoelectric line between the P wave and the start of the QRS complex.

PR Interval: The PR interval includes the P wave plus the PR segment. It lasts between 0.12-0.20 seconds.

ST Segment: The ST segment is the portion of the ECG test tracing between the QRS complex and the T wave. It begins with the end of the QRS complex and ends with the onset of the T wave. It is normally an isoelectric (flat) line.

Artifact: Finally, an artifact is a distortion of an ECG test tracing by electrical activity that is not cardiac in origin—in other words, its origin is outside of the heart's function. It may be caused by loose electrodes, broken EKG cables or wires, muscle tremors and patient movement.[1]

When you have gained some on-the-job experience as a medical assistant, it is very likely that you will record the results of an ECG test. In order to do this, you need to know how to prepare the patient, operate the EKG, how to eliminate *artifacts*, how to mount and label the ECG test paper and how to maintain and care for the EKG machine. **Artifacts** are disturbances that may interfere with an accurate test reading.

Accuracy is the most important issue in an ECG test. Everything you do should contribute to an accurate reading.

You will need the following equipment and supplies:

- Examination or ECG table with pillow and sheet or blanket

- Patient gown that opens in front

- Automated electrocardiograph with cable wires that attach to the patient

- Alligator clips

- Electropads (sensors)

- EKG paper

- Alcohol

- Gauze squares

- Mounting form or card

- Razor

You will need to follow many steps carefully to produce an accurate ECG test reading.

Let's watch the Virtual Lab to learn these steps.

🖰 Virtual Lab 8-3   Electrocardiograph

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Electrocardiograph. This will bring up the instructional video on how to perform an ECG.

4. Follow along with Virtual Lab 8-3 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

Thermometers

A **thermometer** is used to measure a patient's temperature. It will be located in the examination room. There are several types of thermometers:

- Disposable

- Digital

- Electronic

- *Tympanic*

- *Glass Galinstan* (filled with either gallium or alcohol)

- Mercury

- *Temporal artery*

Mercury-based thermometers, such as this one, are no longer used.

With the exception of the tympanic and temporal artery thermometers, all of these thermometers can be used **orally**, (in the mouth), **rectally**, (in the rectum) and for **axillary**, (under the arm) measurement.

The glass mercury thermometer was considered a safe and accurate means of measuring body temperature for many years. It is now being phased out in the United States due to the danger of inhaling mercury fumes should the glass thermometer break.

Disposable thermometers are used once and thrown away. Each one is wrapped in its own separate package. Each one has heat-sensitive dots that change color as you measure the patient's temperature. Some disposable thermometers are meant to be used orally. Others are to be used on the forehead.

Electronic thermometers are used a lot, and they have many advantages. **Electronic thermometers** get their energy from electricity—either batteries or an electrical outlet and they have screens that are easy to read. The results appear in about 10 seconds.

Electronic thermometers measure in either degrees Fahrenheit or Celsius. A blue cover slips over an oral thermometer, while a red cover is used for a rectal thermometer. The slips are removed after every use and thrown away. This protects each patient from the germs of previous patients.

Tympanic thermometers are used in the ear. In fact, the **tympanic membrane** is the eardrum. They are very convenient and popular because they are fast (2 seconds), accurate, and they are comfortable unless the patient has an ear infection. Tympanic thermometers are typically used on children.

The thermometer has a probe that you insert into the ear securely. Make sure that the thermometer creates a seal in the ear in order to get an accurate reading. The reading can be inaccurate if the patient has a plug of wax in his ear.

Glass thermometers are filled with alcohol or glass gallium, also called **Galinstan**. This substance is non-toxic, so it is a good substitute for mercury. Glass thermometers with Galinstan are expensive though, so you probably will not be using one.

Temporal artery thermometers (TA) are fairly new. Doctors like them because they are comfortable for patients and they are accurate. You may use it on adults and children.

The **TA** measures temperature through the **temporal artery**, which is a major blood vessel in the head. The TA sits on the forehead and its sensors measure the patient's temperature through heat given off by the artery. Simply slide the sensor over the patient's forehead. It can also be used behind the ears.

You'll learn the procedure for taking patients' temperatures in an upcoming lesson, but now let's move on to some of the other equipment in the medical office.

Examination Tables

Every examination room should have an examination table. Examination tables can be adjusted into many different positions. When you enter the doctor's office, the table is usually flat. The patient sits at the end of the table with her knees hanging over the edge. The table can be raised or lowered, have the back raised, the footstep raised and so on. Many exam tables are adjusted electrically with a button. The table is covered with paper that is changed between every patient.

The table is adjustable so that the doctor can perform different procedures while minimizing the patient's discomfort. For example, when the doctor listens to the patient's heart with a stethoscope, the patient sits up. When the doctor performs a Pap smear, the patient must be lying down, with her head on a pillow for comfort, and her feet placed in the adjustable stirrups.

Examination tables have supply drawers or cabinets on the sides where you can keep supplies. You can keep patient gowns, drape sheets and extra rolls of exam-table paper in these drawers and cabinets. Drawers at the end of the table are a handy place to keep supplies that will be needed during the exam.

Microscopes

Professionals in laboratories use *microscopes* to see things that are not visible to the naked eye. In fact, **micro** means small. So, a **microscope** is a viewing device that magnifies tiny objects. These include bacteria and other microorganisms.

You will not have a microscope in an exam room. Instead, it will usually be kept in a central lab available only to medical staff. The microscope most often used is called a *compound microscope*. Other types of microscopes are made for specific purposes.

As an MA, it will be one of your duties to take care of microscopes. As with most medical equipment, microscopes are very expensive, so you must be careful with them and take good care of them by following the manufacturer's and any other special instructions that your clinic gives you.

However, there are basic guidelines for taking care of any microscope. Let's take a look at these:

- Keep the microscope covered when someone is not using it.

- Clean the lenses with special lens paper and lens cleaner. Do not use any other tissue or cleaner because they will scratch the lens.

- If you must move a microscope, carry it with one of your hands under the base and use your other hand to hold the arm of the microscope. It is generally recommended that a microscope remain stationary as much as possible.

- Use oil and no other fluid with oil-immersion lenses.

A compound microscope

Eyepiece Lens

Revolving Nosepiece

Objective Lenses

Arm

Stage with Stage Clips

Course Focus

Fine Focus

Illuminator

Base
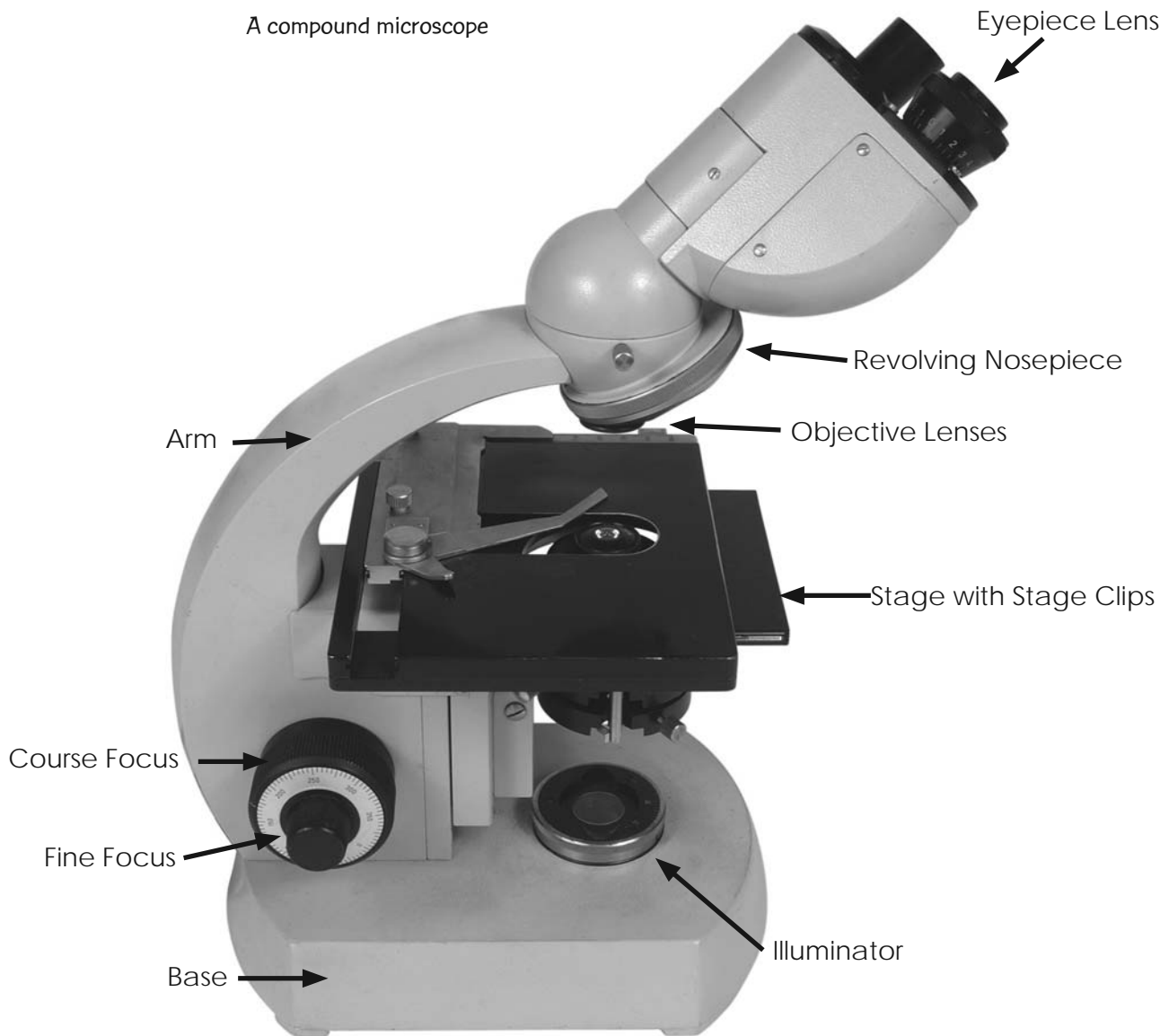
Turn to the Procedure Guide to learn more about using and caring for a microscope.

Steps to Take 8-5––Use a Microscope

1. Turn to Steps to Take 8-5 in your Procedure Guide Supplement 1.

2. Read the Steps to Take for using, caring for and viewing a slide through a microscope.

3. Review this information several times until you can describe it without reading the steps.

Nebulizer

A **nebulizer** delivers liquid medicines as a wet mist to the lungs. This wet mist is an aerosol, like hairspray or shaving cream. You may have seen people with asthma using portable nebulizers, or **inhalers**, as people often call them.

The solution in a nebulizer must be sterile so that the patient does not come into contact with any pathogens as he breathes the mist into his *tracheobronchial tree*. The **tracheobronchial tree** is the network of tubes that transfer oxygen to and from your lungs. It really looks like a tree, doesn't it?

Trachea

Dome (apex)

Cartilaginous ring

Right upper lobe (RUL)

Left bronchus (main-stem, primary)

Right bronchus (main-stem, primary)

Left upper lobe (LUL)

Right middle lobe (RML)

Secondary bronchus (one for each lobe)

Right lower lobe (RLL)

Lingula

Left lower lobe (LLL)

Base

Terminal respiratory unit (alveoli, terminal bronchiole)

The tracheobronchial tree is the network of tubes that transfer oxygen to and from your lungs.

If the nebulizer has a mouthpiece, tell the patient to brush his teeth before using it and to rinse his mouth afterwards. This will help prevent him from getting a sore mouth from the medication.

It's time to watch a demonstration on how to use a nebulizer.

⌂ Virtual Lab 8-4   Use a Nebulizer

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Use a Nebulizer. This will bring up the instructional video on how to use a nebulizer.

4. Follow along with Virtual Lab 8-4 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

Ophthalmoscope

As a medical assistant, you may be responsible for two tasks related to eye exams. The first task is to help the ophthalmologist perform exams and tests to determine how well the patient can see.

Tests and exams can show whether people have eye diseases such as *glaucoma*. **Glaucoma** occurs when the pressure in the eye increases to the point that it can damage the eye. Blindness results if it is left untreated. The instrument used to find diseases such as glaucoma is called an *ophthalmoscope*. The **ophthalmoscope** is a lighted instrument that reveals the inside of the eye.

One test you may perform is a color test to see if the patient is colorblind. Often, it doesn't matter if someone is colorblind, but there are times when it does matter. Truck drivers, pilots and salespeople, for example, need to be able to see colors in order to complete their jobs safely and properly.

To perform this color test, you will need an *Ishihara test*. The **Ishihara** is a book with pages, or **plates**, that have circles of different colors and sizes. The circles contain lines that can be traced.

Turn to your Procedure Guide to learn the Steps to Take to perform this exam.

Steps to Take 8-6––Perform the Ishihara Test

1. Turn to Steps to Take 8-6 in your Procedure Guide Supplement 1.

2. Read the Steps to Take to perform the Ishihara test on a patient.

3. Review this information several times until you can describe it without reading the steps.

Otoscope

An **otoscope** is a tool used to look at the inside of the ear. It looks somewhat like a hammer, but shorter and squatter. If you work for an ENT, you will become very familiar with this tool. Almost any type of doctor, though, will use an otoscope. It is a tool used so often, one will be kept in each examination room.
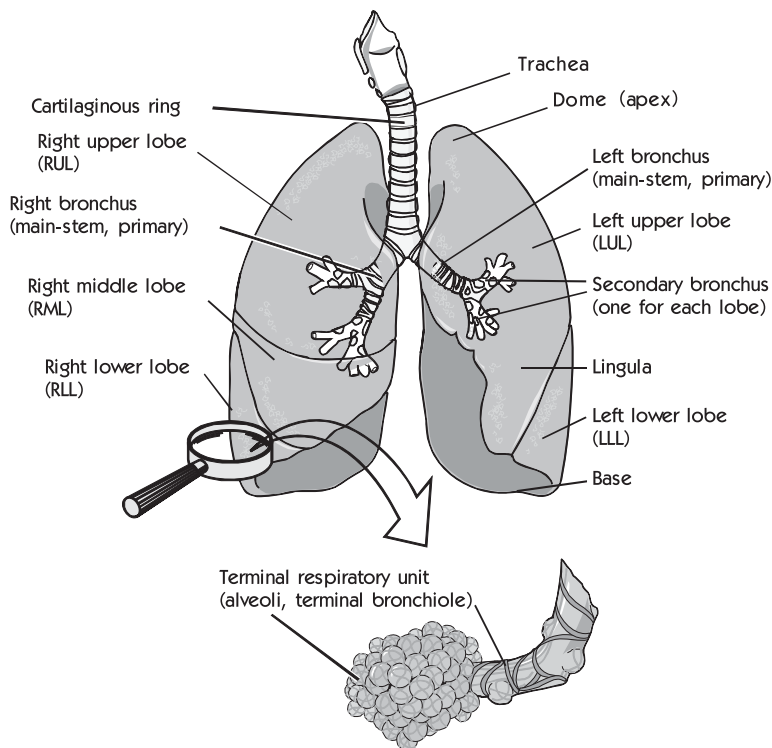
> ### Steps to Take 8-7––Use an Otoscope
>
> 1. Turn to Steps to Take 8-7 in your Procedure Guide Supplement 1.
>
>   2. Read the Steps to Take to use an otoscope.
>
>   3. Review this information several times until you can describe it without reading the steps.

Oxygen

Oxygen is a drug, so a physician must write a prescription for patients who require oxygen therapy. As an MA, though, you should know how to provide oxygen to patients. Oxygen is kept in the back of the office for emergencies. Because it is a prescription drug, patients should not have access to it. There are three ways to administer oxygen:

- Nasal cannula

- Nasal catheter

- Mask

A **nasal cannula** is a plastic tube with two prongs that fit into the patient's nose. The plastic tubing fits over the patient's head to hold the cannula in place. It is simple to use and good for delivering lower amounts of oxygen. Be careful that you don't place the cannula directly against the patient's *nasal mucosa*. **Nasal mucosa** are the moist tissues that line the nose. If you put the cannula right against the mucosa, they will dry out and develop sores.

A **nasal catheter** is a plastic tube with small holes where you insert the plastic tubing into the nose. This instrument isn't used much because it irritates the nasal mucosa and you have to change it every 8 hours. The nasal cannula is more comfortable for the patient, so it is better to use.

A nasal cannula delivers lower dosages of oxygen.

Similar to a Halloween mask, the medical **mask** fully or partially covers your face. It can be made of plastic, cloth or some other fabric. There are several types of medical masks that are used to deliver oxygen to patients. These are:

- Plastic disposable

- Partial rebreather

- Nonrebreather

- Venturi

You will use a mask when the patient needs humidity mixed with the oxygen. A mask delivers a specified amount of oxygen more accurately than the cannula.

As is always true, you will need to educate the patient about oxygen usage. Safety is especially important when a patient is using oxygen. Oxygen encourages things to catch on fire. A patient using oxygen should not be close to cigarettes, lighters, candles or any other item that has a flame or that gives off smoke. To be safe, the patient should wear clothing made of natural fabrics such as cotton. Clothing that creates static cling can catch on fire.

Virtual Lab 8-5   Use Oxygen

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Use Oxygen. This will bring up the instructional video on how to administer oxygen and educate the patient.

4. Follow along with Virtual Lab 8-5 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

Scales

Normally the balance beam scale in a medical setting is equipped to measure both the patient's weight and height. Measure and write down the patient's weight and height before every appointment. It doesn't matter whether the appointment is for a routine physical, a visit for an illness or a follow-up visit, you take the patient's weight.

 Virtual Lab 8-6   Use a Balance Beam Scale with a Measuring Bar

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Use a Balance Beam Scale with a Measuring Bar. This will bring up the instructional video on how to measure the patient's weight and height.

4. Follow along with Virtual Lab 8-6 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

Sigmoidoscope

A *sigmoidoscope* is used to perform a *sigmoidoscopy*. A **sigmoidoscope** is a disposable metal or plastic instrument that has a light and a magnifying lens. These help the doctor see inside the patient. The instrument can be rigid or plastic. Usually, physicians use a flexible sigmoidoscope.

The **sigmoidoscopy** is a test that allows the doctor to see inside the sigmoid colon. It can help diagnose cancer of the colon, ulcers, polyps, tumors, internal bleeding and other problems in the lower intestine.

When the doctor performs a sigmoidoscopy, he will first insert a tool called an *obturator* so that the scope can be inserted. The **obturator** is an instrument used to block and open up a body cavity—in this case, the rectum.

The obturator tip and scope are lubricated so that they slide as easily as possible into the rectum. As you can imagine, most patients still find the procedure uncomfortable. Be very patient with the person having a sigmoidoscopy and help him understand what is happening during the procedure.

The scope may also have an inflation bulb, which is attached to the scope with tubing. This introduces air into the colon to help the doctor situate the light. This can be uncomfortable and even painful for the patient. Finally, the doctor may use suction to remove mucus, blood or feces that are blocking a good view of the colon.

As a medical assistant, you may prepare patients for the procedure. Hopefully, the better you prepare the patient, the less unpleasant the experience will be for him.

> ### Steps to Take 8-8––Assist with a Sigmoidoscopy
>
> 1. Turn to Steps to Take 8-8 in your Procedure Guide Supplement 1.
>
> 2. Read the Steps to Take to prepare the patient and to assist the physician during a sigmoidoscopy.
>
> 3. Review this information several times until you can describe it without reading the steps.

Proctoscope

In order to diagnose hemorrhoids, fissures and ulcerations, the physician will use a tool called a *proctoscope*. The light at the end of the scope is called a **lumen**. A **proctoscope** is used to examine the anus and the inside of the rectum. Doctors use this tool when they want to take a *biopsy* of the sigmoid colon. A **biopsy** is the removal of a piece of tissue which is examined or tested in order to establish or confirm a diagnosis.

As the medical assistant, you should have all of the equipment for the procedure ready and at hand. You will also be responsible for helping the patient. Ask the patient to tell you if he bleeds or has discharge, swelling or suffers any discomfort after the procedure.

After the doctor completes the biopsy, store the removed tissue in a container with a *formaldehyde solution* in it. The **formaldehyde solution** preserves the sample until the lab can test it. You will also complete a laboratory request form to tell the lab what you need done with the sample.

Colonoscope

A **colonoscope** is a flexible, fiberoptic scope with a light that the doctor uses to view the inside of the colon. This procedure can be done in a doctor's office. The doctor may give the patient a muscle relaxant or tranquilizer so that he can relax his muscles during the procedure. During the colonoscopy, the doctor will probably perform a biopsy with a snare-like instrument. You will store the sample in a container with formaldehyde solution and fill out a lab report.

Again, your responsibility is to help the patient, provide the proper equipment to the doctor and begin the biopsy testing procedure.

Sphygmomanometer

A **sphygmomanometer** is a gauge that measures blood pressure. It is used along with a *stethoscope*. You are probably already familiar with the sphygmomanometer, better known as a **blood pressure cuff**. These are normally found in every examination room. Three types of sphygmomanometers are used in most doctors' offices. They are:

- Mercury sphygmomanometers
- Manual (also called Aneroid) sphygmomanometers
- Digital (electronic) sphygmomanometers

Although you may use a mercury sphygmomanometer (called a *manometer* for short), they are becoming less and less common. As with the mercury thermometer, the mercury in the sphygmomanometer is too dangerous a substance to risk using in the medical office.

However, since they are still in use you should know how to use one. The **mercury manometer** has a cuff that contains a rubber bladder. A rubber tube attaches the bladder to a glass column filled with mercury. The mercury falls as you measure the blood pressure. Much like you watch the bubble of a level when you're hanging a picture, you read the blood pressure at the bubble of the mercury.

Obviously, given how dangerous mercury is, you should be especially careful to avoid breaking the mercury thermometer's glass when handling it. In addition, make sure that air bubbles and dirt don't get in the column that contains the mercury.

An **aneroid manometer** also has a bladder, but it is attached to a dial. The dial contains a needle that moves as you take the patient's blood pressure. You can tell what the patient's blood pressure is by listening and looking at where the needle falls within the dial.

The aneroid manometer can easily lose its *calibrations* if you do not handle and store it correctly. **Calibrations** mean how accurately the manometer measures. You will need to calibrate the aneroid manometer regularly. In contrast, mercury monometers never go out of calibration.

You are probably already familiar with the sphygmomanometer, better known as a blood pressure cuff.

Mercury and aneroid manometers come in different sizes. The size you use will depend on your patient's size. A cuff that is too small will make the patient's blood pressure appear higher than it really is. A cuff that is too large will make the blood pressure appear lower than it is.

The cuff of the manometer should cover a certain width and *circumference* of the arm. **Circumference** is the distance around the patient's arm. An adult cuff should be one-third larger than the circumference of a patient's arm. The bladder's length should cover about 80 percent of the patient's upper arm.

Fitting a cuff on a child or a very small person is slightly different. A cuff on a child should be two-thirds larger than the child's arm circumference. Use the appropriate size of cuff based on the patient's size rather than his age.

The third type of sphygmomanometer is the **digital manometer**. This manometer is electronic and measures average arterial pressure by calculating systolic and diastolic values. Because it doesn't actually measure blood pressure, the digital manometer may give inaccurate readings.

Now turn to your Procedure Guide to learn how to use the sphygmomanometer.

Steps to Take 8-9––Use a Sphygmomanometer

1. Turn to Steps to Take 8-9 in your Procedure Guide Supplement 1.

  2. Read the Steps to Take to take a patient's blood pressure.

   3. Review this information several times until you can describe it without reading the steps.

Spirometer

A **spirometer** is a tool, usually computerized, that measures *lung capacity*. **Lung capacity** is how much oxygen the lungs can hold and how efficiently the air goes in and out. A **spirometry test** can help a doctor recognize signs of pulmonary disease. **Pulmonary diseases** are diseases of the lungs. A spirometry test is one of many tests that measure airflow, volume and the capacity of oxygen in the lungs. These tests are all called **pulmonary function tests** (PFTs). Now take out your Virtual Lab CD to learn the procedure.

Virtual Lab 8-7   Use a Spirometer

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Use a Spirometer. This will bring up the instructional video on how to test pulmonary function using a spirometer.

4. Follow along with Virtual Lab 8-7 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

Stethoscope

The **stethoscope** is used to listen to body sounds and to measure a patient's blood pressure. You have probably seen one around the neck of your family doctor or MA. The stethoscope has two rubber tubes with a bell, or flat diaphragm, at one end that you put to the patient's chest or other body part. This piece transmits sounds through earpieces connected to the other end of the rubber tubes. You may store a stethoscope in each examination room or you may carry one around your neck.

Virtual Lab 8-8   Use a Stethoscope

1. Take out your Virtual Lab CD 1 and place it in the CD drive of your computer. (Most libraries offer free use of computers if you do not have one.)

2. At the Main Menu, select the Medical Equipment and Supplies lab. This will take you to the Medical Equipment and Supplies Lab menu.

3. Next, select Use a Stethoscope. This will bring up the instructional video on how to listen to body sounds using a stethoscope.

4. Follow along with Virtual Lab 8-8 in your Procedure Guide Supplement 1 as you watch the video. Note that the text in the Procedure Guide often provides additional information than is shown in the virtual lab.

5. Review this procedure and watch the virtual lab until you can describe the procedure without reading the steps or watching the lab.

X-ray Equipment

You will not work with x-rays, or **radiology equipment**, when you first start working as a medical assistant. That will come later with more training. X-rays involve many safety concerns, so you will need extra training and education. This section will be the beginning of that education by helping you understand the basics of x-rays.

An x-ray machine has three parts:

*   The *x-ray table*

*   The *x-ray tube*

*   The *control panel*

The patient lies on the **x-ray table**, which moves in many different directions. This allows the x-rays to film very specific parts of the body.

Soft tissue, such as a kidney, liver or the brain, does not absorb x-ray beams as well as bones.

The **x-ray tube** is where the x-rays actually film the body. Lead surrounds the tube completely, except where the x-ray beams must escape to photograph the patient's body part.

The **control panel** is behind a lead wall, which offers protection to the person filming the patient.

You will place film beneath the patient's body if she is lying down. If the patient is standing up, place the film behind the patient. Shooting x-ray beams through the patient onto the film creates the pictures. The film has to be processed before you can see the image.

Soft tissue such as a kidney, liver or the brain does not absorb x-ray beams as well as bones, so to visualize soft tissue, the patient ingests a substance to make soft tissue show up. These substances are called **contrast media**. These media include:

- Barium sulfate

- Iodine compounds

- Air

- Carbon dioxide

The doctor will tell the patient what substance to use based on certain criteria, but here are some things to keep in mind.

Barium sulfate must be flushed from the body afterwards by drinking a large quantity of water.

Iodine compounds, or **salts**, cause allergies in some people, so patients must be asked if they are allergic to any foods that contain iodine, such as seafood.

Your role in the x-ray or radiology exam is to schedule procedures and to prepare patients for the procedure by explaining what to expect. This is a very important role—you can make the difference between the patient having a good experience or a bad experience.

Give the patient both written and verbal instructions. Patients may be frightened of having x-rays, so they may not pay careful attention to what you tell them. If they forget, they can look over the written instructions you have given them.

Let's review what you've learned so far with the following Practice Exercise before we continue with the last section of this lesson.

✍ Step 11 Practice Exercise 8-2

❑ For the following questions, choose the best answer from the choices provided.

1. **You may think of an _____ as a type of pressure cooker that you can use to sterilize instruments.**
   a. autoclave
   b. autoclave tape
   c. electrocardiograph
   d. otoscope

2. **A(n) _____ is used to measure a patient's temperature.**
   a. electrocardiograph
   b. thermometer
   c. microscope
   d. nebulizer

3. **The Ishihara test is used in ophthalmology exams to test for _____**

    a. depth perception
    b. cataracts
    c. colorblindness
    d. glaucoma

4. **A(n) _____ is a light on the end of a scope.**

    a. lumen
    b. obturator
    c. inflation bulb
    d. aneroid

5. **A(n) _____ is a listening tool that measures blood pressure.**

    a. scale
    b. otoscope
    c. aneroid sphygmomanometer
    d. spirometer

☞ Step 12   Review Practice Exercise 8-2

❑ Review your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

📖 Step 13   Mobility Devices

❑ **Mobility devices** help a person get around. There may be several reasons why a patient needs to use a mobility device. A teenager snowboarding may run into a tree and break a leg. An older person may have weakness in his legs. Another person may have become a quadriplegic from a diving accident. As you can see, there are many reasons to use mobility devices. Some are permanent conditions and some are temporary. It may be up to you to educate the patient about how to use these mobility devices safely.

Arm Slings

An **arm sling** provides support for injured or mildly fractured arms. It has a band that goes behind the neck. The arm is supported by a type of cuff. The cuff loosely holds the arm.

To make a sling, simply fold a large muslin cloth into a triangle and place it under the injured arm on the patient's chest with one tip of the cloth over the shoulder and around the patient's neck. Half the cloth should be above the arm, and half below, with one tip hanging down. The third tip of the cloth is at the elbow of the injured arm. Support the arm while you pull the cloth below up to the opposite shoulder so that the two tips of the cloth meet on the side of the neck. Adjust the cloth so it is supporting the arm and wrist, with the hand slightly elevated to reduce swelling. Be careful not to pull the shoulder or wrist out of alignment when adjusting. Check for comfort and support.

An arm sling provides support for injured or mildly fractured arms.

Canes

There are two types of canes. These are:

- A standard cane

- A quad cane

A **standard cane** has one "foot" and is made of wood or aluminum. Either type should be made or adjusted to fit the height of the person using it. A rubber tip covers the bottom so that the cane does not slip on the floor.

A **quad cane** has four feet on the floor. Because it has four feet it is more stable and secure. However, a disadvantage to this cane is that it is heavier. Most are made from aluminum and have rubber tips on each foot.

Cane height is adjusted so that the top of the cane is even with the patient's hip. The patient holds the cane opposite of the side with the problem.

Now turn to your Procedure Guide to learn how to teach a patient how to use a cane.

Steps to Take 8-10––Use a Cane

1. Turn to Steps to Take 8-10 in your Procedure Guide Supplement 1.

2. Read the Steps to Take to teach the patient how to use a cane.

3. Review this information several times until you can describe it without reading the steps.

Crutches

Crutches are usually used in pairs. They are made of aluminum or wood and have handgrips. There are three types of crutches. They are:

- Axillary

- Forearm

- Platform

Axillary crutches are crutches that sit under the axilla or armpit. The handgrips are further down the crutch. These crutches are made of aluminum or wood. Like all crutches, axillary crutches are adjustable to fit the patient's height.

Crutches are generally good for people who have overall strength and stability, but who have a specific and temporary injury. Someone with a broken leg might use axillary crutches. It takes quite a bit of balance to use axillary crutches.

Forearm crutches, also called **Canadian** or **Lofstrand crutches**, are held in the hands and have a metal cuff that fits around the forearm. These provide more support than axillary crutches. Forearm crutches are good for people who have less balance. They are adjustable and are made of aluminum.

Platform crutches are useful for people with weak arms. They provide support for the forearms by distributing weight more evenly than other crutches. **Platform crutches** have a type of shelf and straps that support the forearms and handgrips.

There are five types of walks or gaits that can be used with crutches. These are the:

- Four-point gait

- Three-point gait

- Two-point gait

- Swing-to gait

- Swing-through gait

The gait you teach the patient will depend on what the patient needs and what he is physically capable of doing. The doctor will help you decide which gait is appropriate for the particular patient. The gait you teach depends on whether the patient can put any weight on the leg.
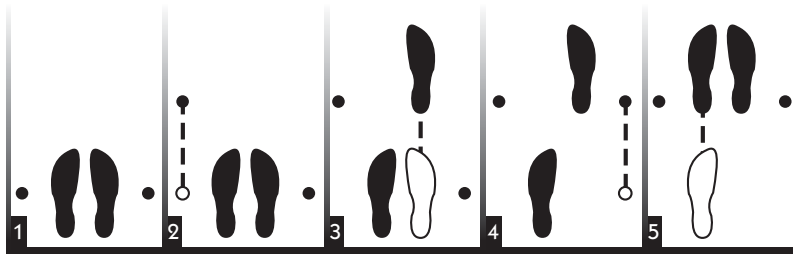
In a **four-point gait**, each crutch and leg moves separately. This means that each leg and each point of the crutch touch the ground one at a time. It's like walking with four legs instead of two. This is a good gait to teach people when both legs need support.
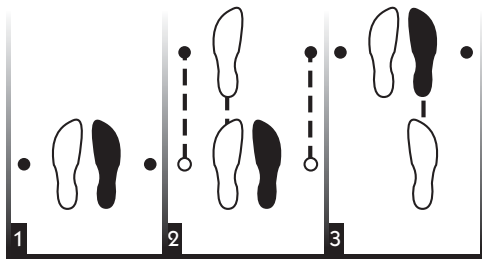
In the **three-point gait**, both crutches are moved at the same time as the weak or damaged leg. This is a good gait to teach people who can only put some or no weight on the damaged leg.
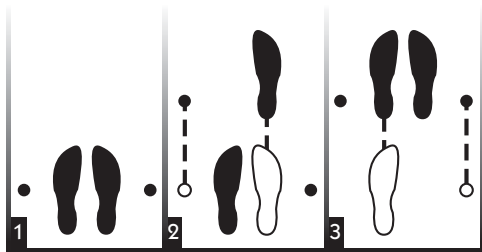
In the **two-point gait**, each leg is moved as the opposite crutch is moved. The two-point gait is a fast way of moving, but it is harder to use. The two-point gait can be used when both legs need support.
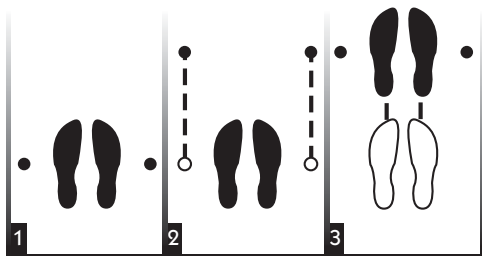
In the **swing-to gait**, the patient moves both crutches at one time and then swings her legs forward to meet the crutches.
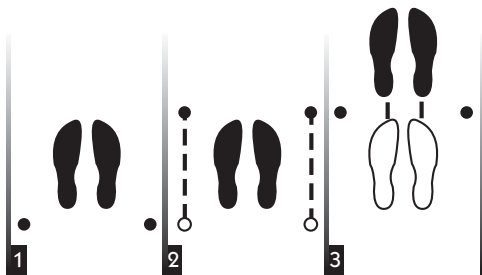
In the **swing-through gait**, the patient moves both crutches forward and then swings both legs through or ahead of the crutches.

The patient can only use the swing-to and swing-through gaits if she can put weight on both legs.

Teach the patient who is using crutches how to go up and down stairs. When going upstairs, the patient should put her crutches under one arm and hold the handrail. Or she can use both crutches by moving the strong leg up first, then following with the crutches and the weak leg.

When going downstairs, the person should move her crutches first and then follow with the strong leg.

> ### Steps to Take 8-11—Use Crutches
>
> 1. Turn to Steps to Take 8-11 in your Procedure Guide Supplement 1.
>
>   2. Read the Steps to Take to teach the patient how to use crutches.
>
>   3. Review this information several times until you can describe it without reading the steps.

Tell the patient how to use crutches safely. When patients are using axillary crutches, they need to put their weight on their hands, not their armpits, which can damage the axillary nerve. Also tell patients using crutches the following:

- Wear flat shoes that have a sole that will not skid.

- Remove throw rugs from home and workspaces.

- Check that the wing nuts on the crutches are tight.

- Check the rubber crutch tips for damage.

- Check to make sure there are no tears in the handgrips or armpit rests.

Walkers

Walkers provide the most support of the mobility devices. They are good for the weakest and least stable patients.

Walkers have either two wheels or two feet covered with rubber in the front and two feet in the back. The front wheels or feet are spaced two feet apart. The back feet are slightly wider. The top of the walker has either a bar or two handgrips to hold onto.

Walkers are made of aluminum and most of them are adjustable. As with crutches, the person using the walker should have a slight bend (about 20 to 30 degrees) in the elbow.

Helping a patient to walk with a walker instead of sitting or lying in bed improves her circulation, helps prevent bedsores and promotes a better sense of well-being. If the patient can move about with the walker by herself, it helps her to feel more independent. A standard walker is for patients who can bear partial weight and have sufficient arm strength to pick it up to walk. For patients who do not have sufficient arm strength, roller walkers with two or four wheels can be used.

The patient picks up the rear legs of the walker and rolls the front wheels forward. Or, the patient picks up all four legs and places it forward. She should move the walker about 18 inches to 2 feet ahead of herself. Holding the hand bar or grips, she then steps up to the walker.

You can teach a patient how to use a walker by following the steps outlined in your Procedure Guide. This procedure involves the use of proper body mechanics to prevent injury to yourself while maintaining the safety of the patient while she is being transferred and assisted with her ambulation.

Steps to Take 8-12—Use a Walker

1. Turn to Steps to Take 8-12 in your Procedure Guide Supplement 1.

   2. Read the Steps to Take to teach the patient how to use a walker.

      3. Review this information several times until you can describe it without reading the steps.

Wheelchairs

People with a limited ability to walk must use a **wheelchair**—a moveable chair mounted on wheels. Its mobility can be powered by a person or an electric motor. Wheelchairs are useful for people who have little control over their bodies. Wheelchairs offer **paraplegics** (a person who is paralyzed in two limbs) and **quadriplegics** (a person who is paralyzed in four limbs) some amount of mobility and independence.

Advances are being made in assisting the wheelchair bound to live their lives more independently and with greater lifestyle choices. Have you heard of wheelchair tri-athletes? Well, there are wheelchairs that allow people to play sports. Maybe you've read about a wheelchair marathon. Many car makers have made adaptations to their vehicles so that people in wheelchairs can drive them.

Although independence is good, safety is important as well. Make sure that a patient using a wheelchair knows the basic safety rules regarding wheelchairs. Tell the patient that if someone else is pushing them, that person must:

- Lock the brakes when transferring the patient into and out of the wheelchair

- Lock the brakes if the patient will be alone for a while

Advances are being made in assisting the wheelchair bound to live their lives with greater lifestyle choices.

- Place the patient's feet on the footrests when the wheelchair is being pushed

- Make sure the person feels safe

- Back into and out of elevators

- Stay to the right in hallways (just like driving a car)

- Back down slanted ramps

Steps to Take 8-13––Use a Wheelchair

1. Turn to Steps to Take 8-13 in your Procedure Guide Supplement 1.

2. Read the Steps to Take to safely move a patient in a wheelchair.

3. Review this information several times until you can describe it without reading the steps.

Assist a Patient from Wheelchair to Examination Table

You need to observe many precautions when you transfer a patient from a wheelchair to an exam table. You need to make sure that both you and the patient are safe.

You may need to help transfer many types of patients. Some people have back pain, some are paralyzed. Some are older adults who may easily get broken bones and bruising if you do not move them very carefully.

Always take the following steps when transferring a patient:

Steps to Take 8-14––Assisting Patient from Wheelchair to Examination Table

1. Turn to Steps to Take 8-14 in your Procedure Guide Supplement 1.

2. Read the Steps to Take to assist a patient from the wheelchair to the exam table. You will learn both the one person transfer and the two person transfer methods.

3. Review this information several times until you can describe it without reading the steps.

Assist a Patient from Examination Table to Wheelchair

To assist a patient from the examination table to a wheelchair, follow the same safety considerations that you observed when you transferred the patient from the wheelchair to the examination table.

Turn to your Procedure Guide to review the steps.

Steps to Take 8-15––Assisting Patient from Examination Table to Wheelchair

1. Turn to Steps to Take 8-15 in your Procedure Guide Supplement 1.

    2. Read the Steps to Take to assist a patient from the exam table to the wheelchair.

        3. Review this information several times until you can describe it without reading the steps.

📖 Step 14   Lesson Summary

❑ This lesson had a lot of information! You learned all about the medical equipment, instruments and materials you'll use as a professional medical assistant. Don't worry about memorizing all of this—you have your handy *Medical Equipment, Instruments and Materials Quick Reference Guide* to look up any items that you need to know more about on the job.

Are you enjoying getting some visual training in the Virtual Labs? We hope that you're practicing the procedures that can be done at home on family or friends. This helps so much to keep the knowledge in your head, and it's a lot more fun than just reading and memorizing!

Now that you've learned some of the nitty gritty basics of medical assisting in Pack 1, things will get a lot more exciting. In Pack 2 you'll learn how to talk to doctors about patients' bodies. You'll also learn to recognize symptoms in patients that there may be something wrong; and take vital signs such as temperature, blood pressure, pulse and respiration. Next you'll learn more about office emergencies and how to handle them, as well as infection control procedures. You'll even learn how to use a fire extinguisher!

Do you ever have trouble talking to people about things they might find uncomfortable, or even downright difficult, to talk about? Your upcoming communications lesson will cover all the skills you'll need to interact with patients and other staff—even during those difficult discussions!

Let's finish up Pack 1 with the following quiz, and you'll be ready to move on to the next adventure! Good luck!

✉ Step 15   Mail-in Quiz 8

❑ Follow the steps to complete the quiz.

a. Be sure you've mastered the instruction and the Practice Exercises that this quiz covers.

b. Mark your answers on your quiz. Remember to check your answers with the lesson content.

c. When you've finished, transfer your answers to the Scanner Answer Sheet included. Use only blue or black ink on your Scanner Answer Sheet.

d. **Important!** Please fill in all information requested on your Scanner Answer Sheet or when submitting your quiz online.

e. Submit your quiz to the school via mail, e-mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 8

For the following questions, choose the best answer from the choices provided. Each question is worth 2.5 points.

1. **The table that is used to hold instruments is called a(n) _____ stand.**
    a. c
    b. a-frame
    c. Mayo
    d. tool

2. **Syringes and medication samples are examples of items that you _____ keep stocked in an examination room.**
    a. should
    b. should not

3. **_____ handles are those that you squeeze in between your thumb and finger.**
    a. Index finger
    b. Thumb
    c. Ring finger
    d. Squeeze

4. **_____ handles are ones in which you insert a thumb in one ring and a finger in another ring.**
    a. Ring
    b. Index finger
    c. Thumb
    d. Toe

5. **Rachets are also called _____.**
   a. teeth
   b. handles
   c. keyholes
   d. locks

6. **In order to provide a more secure grip, some tools have _____.**
   a. handles
   b. holders
   c. grippers
   d. serrations

7. **_____ are sharp and are used for puncturing tissue.**
   a. Teeth
   b. Clamps
   c. Grippers
   d. Handles

8. **_____ are long and slender instruments that are a type of probe.**
   a. Sounds
   b. Injectors
   c. Teeth
   d. Tweezers

9. **_____ grab and pull back the edges of a wound.**
   a. Grabbers
   b. Retractors
   c. Refractors
   d. Teeth

10. **_____ are used to slowly enlarge narrow or tight places in the body.**
   a. Regulators
   b. Clamps
   c. Dilators
   d. Enlargers

11. **The category of instruments called _____ instruments includes scalpels and scissors.**
    a. cutting
    b. slicing
    c. clamping
    d. sharp

12. **A list of supplies is known as a(n) _____.**
    a. order list
    b. supply order
    c. supply inventory
    d. document list

13. **The lowest amount of supplies you want to have on hand before you reorder is called the _____.**
    a. supply point
    b. inventory
    c. point list
    d. reorder point

14. **_____ scissors have one rounded tip that can be inserted under a bandage.**
    a. Round
    b. Bandage
    c. Operating
    d. Sharp

15. **_____ scissors have very sharp blades that are used to cut tissue.**
    a. Operating
    b. Tissue
    c. Lister bandage
    d. Iris

16. **_____ scissors are used for eye surgeries.**
    a. Suture
    b. Operating
    c. Iris
    d. Bandage

17. Suture scissors may also be called _____ scissors or stitch removal scissors.
    a. notch
    b. stitch
    c. operating
    d. bandage

18. _____ are knives that are used to cut skin.
    a. Scalpels
    b. Scissors
    c. Serrations
    d. Sutures

19. _____ cleaning uses sound waves to shake loose dirt, blood and body fluids.
    a. Sonic
    b. Ultrasonic
    c. Ultrasound
    d. Sound

20. _____ is used on very delicate instruments and on heat-based instruments such as endoscopes.
    a. Ultrasonic cleaning
    b. Sound-wave cleaning
    c. Heat sterilization
    d. Cold sterilization

21. _____ are squares of folded gauze used in surgery.
    a. Slings
    b. Sponges
    c. Gauzes
    d. Folds

22. Gauze bandages are referred to by their _____.
    a. size
    b. density
    c. color
    d. cleanliness

23. _____ are put into infected wounds to keep them open so they can drain.
   a. Bandages
   b. Drainage wicks
   c. Surgical wicks
   d. Probes

24. _____ are used to clean the skin, for medical personnel to scrub before operations and as paints, soaks and antiseptics.
   a. Soaps and solutions
   b. Creams
   c. Ointments
   d. Wicks

25. _____ and ointments are used to prevent the spread of bacteria that may keep a wound from healing.
   a. Soaps
   b. Solutions
   c. Antibacterial creams
   d. Paints

26. _____ are sterile material, such as gauze, that are applied over a wound surface or site of a surgery.
   a. Slings
   b. Bandages
   c. Coverings
   d. Dressings

27. _____ are applied on top of dressings to keep the dressings in place.
   a. Dressings
   b. Bandages
   c. Coverings
   d. Sterile materials

28. _____ cause loss of feeling in nerve endings.
   a. Anesthetics
   b. Solutions
   c. Gels
   d. Dressings

29. _____ instructions are the amount of a drug the doctor will tell you to give the patient.
    a. Ordering
    b. Dosage
    c. Quantity
    d. Prescription

30. A(n) _____ thermometer measures body temperature in the armpit.
    a. oral
    b. tympanic
    c. axillary
    d. rectal

31. A(n) _____ is a type of pressure cooker that you use to sterilize instruments.
    a. autoclave
    b. steamer
    c. audiometer
    d. sterilizer

32. A(n) _____ is a magnifier used to see little things.
    a. otoscope
    b. endoscope
    c. scope
    d. microscope

33. _____ tape indicates that the autoclave is heating your packages.
    a. Packing
    b. Scotch
    c. Masking
    d. Autoclave

34. The _____ is used to listen to body sounds and to measure a patient's blood pressure.
    a. manometer
    b. otoscope
    c. stethoscope
    d. EKG

35. A(n) _____ test contains heat-resistant spores that will show if the autoclave has bacteria in it.

    a. culture

    b. spore

    c. exam

    d. autoclave

36. _____ must be flushed from the body afterwards by drinking a large quantity of water.

    a. Cultures

    b. Barium sulfate

    c. Spores

    d. Thermolabile dye

37. Some people may be allergic to _____.

    a. iodine compounds

    b. barium

    c. radiographs

    d. tympanic thermometers

38. A(n) _____ provides support for an injured or mildly fractured arm.

    a. cast

    b. bandage

    c. arm sling

    d. crutch

39. _____ have either two wheels or two feet covered with rubber in the front and two feet in the back.

    a. Crutches

    b. Canes

    c. Walkers

    d. Wheelchairs

40. A(n) _____ has one "foot" and is made of wood or aluminum.

    a. quad cane

    b. walker

    c. axillary crutch

    d. standard cane

Endnote

[1] Adapted from *ECGs Made Easy* by Barbara Aehlert.

Congratulations

You've completed Pack 1!

Congratulations are in order! You've finished the first pack of lessons and are that much closer to your new career as a medical assistant. You've already learned a lot. You have a great understanding of day-to-day life in medical facilities, and you know the roles that many of the other healthcare professionals will play in your work. Together with those professionals, you'll be part of an important team dedicated to helping people. This pack also taught you the basics of first-aid and the importance of maintaining the equipment and supplies in the medical office. And don't forget all of that medical terminology you learned!

You're probably eager to start your next pack of lessons, where you'll learn about anatomy, communication skills and medical insurance. You'll even get your first taste of clinical work, learning the steps in taking patients' vital signs and learning about safety in the medical office.

But before you jump into that next pack, take a moment to relax. Give yourself a pat on the back, and be sure to tell your friends and family what you've already accomplished! As you take this break between packs, feel free to daydream about your new career. When you complete this course, will you work in a doctor's office or hospital alongside nurses and doctors? Or would you rather work in the fast paced atmosphere of an urgent care clinic? Whatever your answer, the best part is that this choice is yours!

The knowledge you gain in this course will provide the foundation and confidence you'll need to begin your new career. And remember, medical assistants are in demand! According to the U.S. Bureau of Labor Statistics, medical assisting is one of the fastest-growing allied health occupations. Doctors and hospitals are busier today than ever before, and they need skilled medical assistants like you to ensure that they give their patients the best care possible.

Now, are you ready to start the next pack? Go for it!

Answer Key
Introduction to Medical Assisting, Pack 1, Lessons 1-8

Answer Key Lesson 1

Practice Exercise 1-1

1. The **office manager** is usually the first person in the doctor's office to see a patient.

2. The encounter form is also called the **superbill**.

3. When the patient tells the doctor what's wrong, this information is called the chief **complaint**.

4. The three steps a doctor follows when seeing a patient include the complaint, **diagnosis** and treatment or procedure.

5. The medical assistant can **take vital signs** and **perform throat cultures**.

Practice Exercise 1-2

1. The front office MA helps patients **fill out forms**.

2. Vital signs include blood pressure, respirations, **temperature** and **pulse**.

3. The MA needs to **anticipate** the physician's needs.

4. A **physician** diagnoses illnesses and injuries.

5. A doctor who specializes in the treatment of disorders of the eye is known as a(n) **ophthalmologist**.

6. A podiatrist cares for a person's **feet**.

7. Most medical assistants work in a **doctor's office**.

8. A **medical coder** codes what occurs during a patient's medical visit.

9. The MA has two types of duties: **administrative** and **clinical**.

10. A **paramedic** has more training than an EMT and is not only able to stabilize patients but also to begin treatments to cure patients.

Answer Key Lesson 2

Practice Exercise 2-1

1. You'll use a **d. calculator** to perform basic mathematical functions.

2. The copier is used in the front office to **a. make photocopies of insurance cards**.

3. A **b. medical transcriber** allows you to listen to a recording of the doctor's notes and type them into a computer.

4. Often medical offices have specific procedures that are written in a(n) **c. policy and procedures manual** along with other office policies. This way the medical office staff can refer to this for specific instructions on how to open the office or handle visitors.

5. When you open the office, be sure to **c. pull health records for the day's patients**.

6. Closing the office for the day includes **d. counting payments for the day and preparing a bank deposit**.

7. If you're in charge of greeting patients when they arrive, be sure to welcome them, make them feel comfortable and **b. answer any questions they may have**.

8. If you have a patient who doesn't speak English very well, speak **d. slowly and clearly** and watch for nonverbal cues.

9. The **a. open office hours** appointment system allows a patient to walk into an office without an appointment**.**

10. Your medical office makes appointments every five minutes on the computer. What type of appointment system does your office use? **d. Scheduled appointment system**

11. A medical office might do all of the following to remind a patient of an appointment EXCEPT **c. do nothing; patients are responsible for remembering their appointments**.

12. The **a. wave-scheduling** system bases appointments on the average length of a routine visit.

Practice Exercise 2-2

1. Express mail, certified or registered mail and letters marked Personal or Confidential are examples of **a. preference** mail.

2. Your average, everyday letter with a stamp travels by **b. first-class** mail.

3. Memos and directives should be sorted as **c. interoffice** mail.

4. **b. Date-stamping** records the day and time an item was received in the mail.

5. Mail sent to the wrong address should be **d. forwarded**.

6. The best way to prevent loss or damage of mail items is to **b. address them correctly**.

7. The first digit of a ZIP code represents a **d. group of states**.

8. The second and third digits of a ZIP code represent a(n) **a. area**.

9. The fourth and fifth digits of a ZIP code represent a **b. specific post office**.

10. For next day delivery to most addresses in the United States, use **a. express** mail.

11. Presorting, **d. barcoding** and arranging large mailings are methods for earning discounts from the USPS.

12. **a. Postal scales** weigh letters and packages so their postage can be calculated accurately.

13. **b. Postage meters** imprint an accurate amount of postage on a mail item.

14. Incoming e-mails are automatically saved in your **a. inbox**.

15. Registered mail **i. Provides thorough security and insurance, as well as a mailing receipt and online tracking**

16. Certificate of mailing **g. Gives proof that an item was mailed**

17. Collect on delivery COD **b. Allows the mailer to collect the price and postage of items being sent**

18. d. Delivery confirmation **d. Shows the date and time of delivery and attempted deliveries**

19. Insured mail **a. Protects against loss or damage of an item while it's being mailed**

20. Restricted delivery **h.Tells the mailer to only give the item to the addressee**

21. Return receipt **e. Shows proof of delivery with a receipt**

22. Signature confirmation **f. Shows proof of delivery with a signature and notes the date and time**

23. Special handling **c. Gives delicate items preferential treatment**

24. **c. Procedures** are step-by-step lists of how to perform specific tasks.

25. Which of the following is NOT a time-management tip? **b. Don't answer the phone**.

Answer Key Lesson 3

Practice Exercise 3-1

1. The foundation word part of a medical term is called a **root word**.

2. The word part that is attached to the end of a term is a **suffix**.

3. In a medical term, a prefix is found at the **beginning**.

4. The word part that joins a root word and another word part is a **combining vowel**.

5. The word part that is attached to the beginning of a term is a **prefix**.

6. In a medical term, a suffix is found at the **end**.

7. A suffix is attached to the word part called the **root word**.

8. A prefix is attached to the word part called the **root word**.

9. A combining vowel combines a word part and a **root word**.

10. In the term *dermat/o/logy*, the word part /o/ is called a **combining vowel**.

Practice Exercise 3-2

Part I

Root Word	*Meaning*
1. append/o, appendic/o	**appendix**
2. arthr/o	**joint**
3. derm/o	**skin**
4. muc/o	**mucus**
5. hydr/o	**water, fluid**
6. norm/o	**proper, rule**
7. neur/o	**nerve**
8. lith/o	**stone**
9. therm/o	**heat**
10. path/o	**disease**

Part II

Meaning	*Root Word*
11. lung	**pulmon/o**
12. small intestine	**enter/o**
13. life	**bi/o**
14. liver	**hepat/o**
15. giving rise to	**gen/o**
16. muscle	**my/o**
17. pressure	**tens/o**
18. cut into	**secti/o**
19. kidney	**ren/o**
20. blood	**hem/o, hemat/o**

Practice Exercise 3-3

Part I

Prefix	*Meaning*
1. a/	**without, absent**
2. ec/, ecto/	**outside, outer**
3. infra/	**inferior to, below**
4. peri/	**around, surrounding**
5. hypo/	**decreased, below**
6. micro/	**small, tiny**
7. dia/	**through**
8. epi/	**upon, in addition**
9. hyper/	**increased, above**
10. intra/	**within**

Part II

Meaning	*Prefix*
11. under, inferior to	**sub/ or infra/**
12. half	**hemi/**
13. against, opposed	**anti/**
14. all, every	**pan/**
15. away from	**ab/**
16. between	**inter/**
17. slower than usual	**brady/**
18. gross, large	**macro/**
19. again, back	**re/**
20. behind, back	**retro/**

Practice Exercise 3-4

Part I

Suffix	*Meaning*
1. /ectomy	**removal**
2. /gram	**picture, record, tracing**
3. /logy	**study of**
4. /ist	**one who does**
5. /megaly	**enlargement**
6. /stasis	**control, hold in**
7. /ac	**relating to**
8. /meter	**distance measure, instrument to measure**
9. /ism	**situation, process, condition**
10. /oid	**like**

Part II

Meaning	*Suffix*
11. condition	**/ia**
12. inflammation	**/itis, /itic**
13. pathologic condition	**/osis**
14. disease process	**/pathy**
15. pain	**/algia**
16. look at	**/opsy**
17. withdrawing fluid	**/centesis**
18. go	**/grade**
19. instrument to see with	**/scope**
20. throughout the blood	**/emia, /hemia**

Answer Key Lesson 4

Practice Exercise 4-1

Divide   *Meaning*

1. cardi/o/megaly.............................**enlargement of the heart**

2. acr/o/megaly..........**enlargement of the extremities (tips)**

3. macro/gloss/ia ....**large (gross) tongue**

4. hist/o/logy...**study of tissue**

5. arthr/itis....................................**inflammation of the joint**

6. splen/o/megaly ....**enlargement of the spleen**

7. a/leuk/o/cyt/osis.....**condition of the absence of white cells**

8. thorac/o/centesis ....**withdrawing fluid from the chest**

9. gastr/ectomy..................................**removal of the stomach**

10. pulmon/ary...**relating to the lung**

Practice Exercise 4-2

Part I

Word Part	_Meaning_
1. carcin/o	**cancer**
2. ox/o	**oxygen**
3. laryng/o	**voicebox, larynx**
4. cerebr/o	**brain**
5. /genesis	**creating**
6. axill/o	**armpit**
7. /penia	**lack of, decrease, poor**
8. /tome	**cutting instrument**
9. /tomy	**cut into or slice**
10. /oma	**tumor, mass**

Part II

Meaning	_Word Part_
11. self	**auto/**
12. run	**/drome**
13. chemical, drug	**chem/o**
14. with	**con/**
15. change, beyond	**meta/**
16. rib	**cost/o**
17. female	**gynec/o**
18. lower jaw	**mandibul/o**
19. brain	**cerebr/o**
20. many	**poly/**

Practice Exercise 4-3

Divide	*Meaning*
1. oste/o/malacia	**softening of bone**
2. sarc/oma	**tumor or mass of nongland tissue**
3. carcin/oma	**cancer tumor or mass of gland tissue**
4. con/nect	**bind with**
5. maxill/ary	**relating to the upper jaw**
6. laryng/itis	**inflammation of the voicebox**
7. vit/al	**relating to living, alive**
8. cost/al	**relating to the rib(s)**
9. crani/o/tome	**cutting instrument for the skull**
10. chem/o/therapy	**treatment with chemicals**

Practice Exercise 4-4

Word Parts	*Medical Term*	*Meaning*
1. gastr/o/enter/o/logy	**gastroenterology**	**study of the stomach and small intestine or bowels**
2. oste/o/malacia	**osteomalacia**	**softening of the bone**
3. laryng/o/scope	**laryngoscope**	**instrument used to see the voicebox**
4. carcin/o/oma	**carcinoma**	**cancer tumor or mass of gland tissue**
5. sarc/o/oid	**sarcoid**	**like nongland tissue**
6. muc/o/ous	**mucous**	**relating to mucus**
7. thromb/o/osis	**thrombosis**	**condition of having a clot**
8. hepat/o/ic	**hepatic**	**relating to the liver**
9. peri/col/o/itis	**pericolitis**	**inflammation of the tissue surrounding the colon**
10. pulmon/o/ic	**pulmonic**	**relating to the lung**

Practice Exercise 4-5

Divide	*Meaning*
1. chem/ist	**one who specializes in chemicals**
2. crani/o/tomy	**cut into the skull**
3. laryng/ectomy	**removal of the voicebox**
4. endo/derm	**within the skin or inside tissue**
5. peri/hepat/ic	**relating to around the liver**
6. poly/gastr/ia	**condition of many stomachs**
7. thromb/itis	**inflammation of a clot**
8. sub/hepat/ic	**relating to under the liver**
9. retro/gastr/ic	**relating to behind the stomach**
10. myel/oid	**like the marrow or spinal cord**
11. my/o/pathy	**muscle disease**
12. ven/ous	**relating to a vein or the veins**
13. nat/al	**relating to birth**
14. klept/o/mania	**obsession with stealing**
15. neur/osis	**condition of the nerves**
16. electr/ic	**relating to electrical activity**
17. arteri/al	**relating to an artery**
18. cyst/ic	**relating to a sac of fluid or bladder**

Practice Exercise 4-6

Part I

Word Part	*Meaning*
1. lapar/o	**abdomen**
2. pneum/o	**air, gas, lung air sacs**
3. ana/	**positive, up**
4. /physis	**grow**
5. /pnea	**breathing**
6. bronch/o	**airway tubes in lung**
7. cutane/o	**skin surface**
8. mort/o	**death**
9. psych/o	**mind**
10. phob/o	**fear**

Part II

Meaning	*Word Part*
11. break down, dissolve	**/lysis, lytic**
12. bad, labored	**dys/**
13. nose	**rhin/o**
14. bear	**/phoria**
15. secrete	**/crine, crin/o**
16. ear	**ot/o**
17. eye	**ophthalm/o**
18. kidney	**nephr/o**
19. tonsils	**tonsill/o**
20. flow	**/rrhea**

Answer Key Lesson 5

Practice Exercise 5-1

Abbreviation   *Meaning*

1. CO_2 .... **carbon dioxide**

2. mg..**milligram**

3. O_2...**oxygen (gas)**

4. n.p.o...**nothing by mouth**

5. NBS ....**normal bowel sounds**

6. EBV .... **Epstein-Barr virus**

7. kg...**kilogram**

8. TPR ....**temperature, pulse and respiration**

9. IM .... **intramuscular**

10. q.n.s. .... **quantity not sufficient**

11. b.i.d...**two times a day**

12. DOB..**date of birth**

13. Dx ....**diagnosis**

14. IV...**intravenous**

15. stat ....**at once**

16. q.a.m..**every morning**

17. GB ....**gallbladder**

18. Sx... **symptoms**

19. Rx ....**treatment, prescribe**

20. FUO..**fever of unknown origin**

Practice Exercise 5-2

1. sibs **d. siblings, brothers and sisters**

2. prep **h. prepare, preparation**

3. meds **a. medication**s

4. ab **e. abortion**

5. exam **j. examination**

6. path **c. pathology**

7. appy **i. appendectomy, appendicitis**

8. primip **f. primipara, woman with one previous birth**

9. nullip **b. nullipara, woman with no deliveries**

10. temp **g. temperature**

Practice Exercise 5-3

1. ° **temperature (Celsius or Fahrenheit)**

2. # **number**

3. - **suture size**

4. / **over (blood pressure)**

5. & **and (between capitals)**

6. – **minus**

7. / **vision**

8. : **ratio**

Practice Exercise 5-4

Medical Phrase	*Acronym*
1. blood urea nitrogen	**BUN**
2. white blood count	**WBC**
3. Venereal Disease Research Laboratory	**VDRL**
4. rheumatoid arthritis	**RA**
5. human immunodeficiency virus	**HIV**
6. Physician's Desk Reference	**PDR**
7. (The) pupils (are) equal, round (and) reactive (to) light (and) accommodation	**PERRLA**
8. electr/o/encephal/o/gram	**EEG**
9. eye, ear, nose (and) throat	**EENT**
10. intra/muscular	**IM**

Practice Exercise 5-5

1. micro/	**small, tiny**
macro/	**gross, large**
2. ante/	**before**
retro/	**behind, back**
3. pre/	**before**
post/	**after, past**
4. hypo/	**decreased, below**
hyper/	**increased, above**
5. eu/	**normal, even, good**
dys/	**bad, labored**
6. inter/	**between**
intra/	**within**

7. con/ ....**with**
   contra/ ....**opposite, against**

8. tachy/...**faster than usual**
   brady/ ....**slower than usual**

9. ana/...**positive, up**
   cata/..**negative, down**

10. ab/...**away from**
    ad/... **toward, near**

11. infra/..**inferior to, below**
    supra/ ....**above, superior to**

12. /malacia...**softening**
    /sclerosis...**hardening**

13. a/... **without, absent**
    (not using this prefix is the antonym)

14. endo/..**within**
    ecto/ .... **outside, outer**

Practice Exercise 5-6

Singular Medical	*Plural*
1. synthesis	**syntheses**
2. centrum	**centra**
3. vena	**venae**
4. nervus	**nervi**
5. ganglion	**ganglia**

Answer Key Lesson 6

Practice Exercise 6-1

1. The healthcare record is also called a(n) **d. health record**.

2. An accurate medical record can do all of the following EXCEPT **c. list the amount the patient owes**.

3. Who owns the medical record? **b. The doctor's office**

4. A patient's **b. demographic** data can include her full name, date of birth, gender and home address.

5. **a. Personal** history includes a patient's social habits and family history.

6. Under **d. Past Medical History**, the doctor will list all prior diseases, accidents, surgeries or conditions.

7. **c. Family History** includes the ages, state of health, diseases and death of family members.

8. The **c. Medical** History includes the patient's past medical history including family health, hospitalizations, surgeries, injures, medical problems and illnesses.

9. A radiologist's report on the patient's x-ray will appear on a(n) **d. diagnostic report**.

10. If you need to go to the hospital, your doctor will submit a **b. diagnostic order**.

11. A form used in the hospital to document how the patient is responding to treatment is called a **c. progress note**.

12. Your boss, a surgeon, had a nightmare that he left a scalpel in Mrs. White's abdomen. He asks you to pull the medical record to check the instrument count. Where will you find this information? **b. In the operative report**

13. The doctor suspects her patient may have malaria. She wants to find out if the patient has travelled to an area where the disease is common. Which report should you give her? **c. Personal/Sociocultural History**

Practice Exercise 6-2

1. Direct observation of a patient is considered a(n) **primary source** of information.

2. A(n) **integrated** record files reports chronologically with less division by source.

3. A(n) **SOAP report** is used as a format for progress notes.

4. The statement, "I fell and twisted my ankle this morning," is an example of a(n) **subjective** complaint.

5. The statement, "Patient's right ankle is swollen. There are signs of contusion and venous hemorrhage." is an example of a(n) **objective** finding.

6. A(n) **problem-oriented** record has four sections: the database, the problem list, the initial plan and progress notes.

7. Data collected from x-rays and other diagnostic tests that is put in a summary report is a **secondary source** of information.

8. The **documentation** is the written record based on the doctor's notes that substantiate the charges on an insurance claim or medical bill.

9. A(n) **source-oriented** record is organized according to who the information came from.

10. Organizations such as **The Joint Commission** and **Medicare** require and enforce standards for medical records.

11. **e. A document or an item to be filed, or the file itself** Record

12. **k. The heading under which a record is filed** Caption

13. **g. Each part of a caption that is used to arrange the record name in filing order** Unit

14. **c. Bringing the most important words to the beginning of the filing label** Indexing

15. **i. The large and small classifications under which records are filed** Divisions/Subdivisions

16. **f. The order of occurrence determined by date and time** Chronological

17. **a. A note indicating other places within a filing system where a record can be found** Cross-referencing

18. **j. System that assigns numbers to patients in the order that they are treated** Serial numbering system

19. **h. System that assigns and uses only one number for each patient every time he is treated** Unit numbering system

20. **d. Uses the patient's last name, first name and middle name or initial to file records** Alphabetic filing system

21. **b. Files categorized by number, then cross-referenced alphabetically** Numeric filing system

Practice Exercise 6-3

1. The two main objectives of the HIPAA legislation were **portability** and **accountability**.

2. HIPAA's **Privacy Standards Rul**e protects your healthcare information.

3. You can protect your patients' privacy by keeping charts and other patient information **out of view** from other patients and office visitors.

4. Before the Electronic Transaction Standards Rule, there were **400** different types of healthcare claims. Now there is/are **1**.

5. HIPAA rules and regulations affect **a. anyone who deals with electronic healthcare transactions and confidential patient information**.

6. Hey, there's your coworker Janie, approaching you from the end of the grocery aisle. She's upset that her patient, Mr. Heedless, won't consent to a biopsy on a suspicious mole on his leg. She wants to know if you have any ideas for getting him to change his mind. You will **d. politely inform Janie that she's breaking HIPAA privacy rules by talking about a patient in public**.

7. When determining who must comply with HIPAA's Electronic Transaction Standards Rule, providers that transmit health information electronically, health plans and healthcare clearinghouses are considered **c. covered entities**.

8. A transaction is electronic if it is transmitted using **b. an electronic medium**.

9. A National Payer ID system was set up under the **c. Standard Identifiers** rule.

10. ✔ **Progress notes**

11. ✔ **A medical claim**

12. ✔ **The patient's insurance ID number**

13. ✔ **An evaluation of the patient's dialysis treatments**

14. ✔ **The doctor's chart notes**

Answer Key Lesson 7

Practice Exercise 7-1

1. A(n) **a. emergency** is considered any instance in which someone becomes suddenly ill and requires immediate attention.

2. The goal of triage is to **a. treat as many people as possible**.

3. When you hear a medical team member say "START" you know that means **c. "simple triage and rapid treatment."**

4. One disadvantage of the advanced triage system is that **b. it is so complex that only physicians and EMTs can determine which group a patient is in**.

5. A(n) **a. universal medical identification tag** is a small tag worn on a bracelet, neck chain, or on the clothing bearing a message that the wearer has an important medical condition that might require immediate attention.

6. All of the supplies, equipment and medications your office needs for an emergency are kept on the **d. emergency crash cart**.

7. The office's emergency policy manual may have all of the following in it EXCEPT **c. the steps to perform an emergency tracheotomy**.

8. It's important to accurately and completely document emergencies because **b. it becomes part of the patient's medical record**.

9. In communities without a 911 system, call **d. either a or c** when you need emergency services.

10. Every office must record the detailed information regarding an emergency situation and its handling. This report is called the **b. incident report**.

11. An enhanced 911 system will **c. automatically identify the caller's phone number and location**.

Practice Exercise 7-2

1. The technique in which you blow air into the victim's mouth in order to breathe for the victim is termed **artificial breathing**.

2. In which technique would you kneel near the victim's head and grasp the angles of the victim's lower jaw with both hands and lift with both hands? **Jaw-thrust maneuver**.

3. When an abdominal thrust is used to relieve a blocked airway due to a foreign body, it is called the **Heimlich maneuver**.

4. Outline the steps to perform the Heimlich maneuver.

    a. **While standing behind the victim, reach around the waist.**

    b. **Clench one hand to make a fist, and grasp your fist with the other hand.**

    c. **Place the thumb side of the fist against the midline of the victim's abdomen between the waist and the rib cage.**

    d. **Thrust first inward and upward in quick, firm movements to move air out of the lungs with enough force to dislodge the block.**

Practice Exercise 7-3

1. **f. A rapid, severe immune reaction to an allergen that can quickly lead to death** Anaphylaxis

2. **c. A severe case of chronic inflammation of the airways in the lungs** Asthma Complications

3. **a. Sudden arrhythmia caused by blockage of blood supply to the heart** Cardiac Arrest

4. **j. Taking too much of a prescribed medication or recreational drug** Drug Overdose

5. **e. Having too much sugar or insulin in the blood** Diabetic Emergencies

6. **h. Loss of awareness of your surroundings as with syncope** Impaired Consciousness

7. **b. Ingesting a substance that causes injury, illness or death** Poisoning

8. **i. A recurring thought process or behavior that causes harm to the individual and is not considered normal** Psychiatric Disorder

9. **g. An episode of spasms, syncope and loss of motor control due to abnormal activity in the brain** Seizure

10. **d. A lack of oxygen to the body's cells** Shock

11. The body's immune system considers a(n) **b. allergen** to be a foreign body and reacts by attacking it.

12. Complications such as exercise, old age or pregnancy can lead to a(n) **d. asthma emergency**.

13. Signs of drug overdose include all of the following, EXCEPT **c. seizures**.

14. **a. Hyperglycemia**, if left untreated, can lead to diabetic coma.

15. When there isn't enough blood supply to the brain **c. syncope** can occur.

16. If a patient has been poisoned by **b. carbon monoxide**, the symptoms will probably be headaches, dizziness and vomiting.

17. Often, psychiatric disorders such as depression, bipolar disorder and schizophrenia don't develop until **c. a person reaches his late teens to early twenties**.

18. Mr. Clark arrived today for his biopsy results. After Dr. Patterson informed him that the brain tumor was malignant and can't be removed, Mr. Clark began crying and asked you to call his wife. Is this a psychiatric emergency? **b. No, this is a normal reaction to hearing devastating news**.

19. When the body increases heart rate and constricts blood vessels in response to a lack of oxygen, this condition is called **d. shock**.

20. A = **Awake** and **alert**

    V = **Responds** to **voice**

    P = **Responds** only to **pain**

    U = **Unconscious** or **no response**

Answer Key Lesson 8

Practice Exercise 8-1

1. Every examination room should contain **d. all of the above**.

2. Examination rooms *should not* contain **a. syringes**.

3. **b. Ring** handle instruments are ones in which you insert a thumb in one ring and a finger in another ring.

4. **c. Grasping and clamping** instruments include towel clamps, towel clips, needle holders and forceps.

5. **b. Sponges** are squares of folded gauze used in surgery.

Practice Exercise 8-2

1. You may think of an **a. autoclave** as a type of pressure cooker that you can use to sterilize instruments.

2. A(n) **b. thermometer** is used to measure a patient's temperature.

3. The Ishihara test is used in opthalmology exams to test for **c. colorblindness**.

4. A **a. lumen** is a light on the end of a scope.

5. A **c. aneroid sphygmomanometer** is a listening tool that measures blood pressure.