Medical Transcriptionist

Instruction Pack 1 Lessons **1-14**

Explore the possibilities

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Medical Transcription

Instruction Pack 1

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Lesson 1
The Exciting World of Medical Transcription

Step 1 Learning Objectives for Lesson 1

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

- Explain how the course is organized.
- Explain the role of a medical transcriptionist.
- Describe *electronic health records*, *electronic medical records* and *speech recognition technology*.

Step 2 Lesson Preview

❑ What do you think about when you're sitting in the pediatrician's waiting room with your feverish child? It's a silly question, right? Obviously, you want your child to be well. The last thing you want to worry about is the accuracy of your medical information. When your pediatrician examines your son, what do you want her to be thinking about? Do you want her to be wondering whether the information in your son's file is completely up to date and precise? Of course not! You want her to be able to rely on the information in the medical records and focus on your child's well-being without being distracted by doubts. Medical transcriptionists ensure that the medical reports that physicians refer to are accurate and reliable.

Medical transcriptionists help ensure that medical records are accurate and reliable.

Welcome to the U.S. Career Institute Medical Transcription Course! You're one step closer to an exciting and rewarding career as a medical transcriptionist as you learn the ins and outs of the medical transcription industry. Medical transcription provides a crucial service to doctors and their patients—people just like you.

U.S. Career Institute's Medical Transcription Course will introduce you to the medical transcription field, sharpen your listening skills, teach you how to transcribe actual medical reports and show you the correct formatting for reports. In addition, you'll learn the details of the medical field including pharmacology, body systems, pediatrics and neuropsychiatry. You also will learn about medical ethics and the latest in medical transcription technology. Your course concludes with a medical transcription practicum where you'll apply what you've learned.

By studying this course, you'll acquire the skills you need for a new career.

Your course is divided into lessons. Each lesson contains skills you will master and build upon. The lessons are constructed in an easy-to-follow, step-by-step instruction method that makes learning easier and FUN!

After you study the new material in a lesson, you will take a Practice Exercise. This is designed to highlight what is important in the course. Nothing in the course—including the quiz—is designed to trick you. You will remember many of the items on the quiz without looking back at the lesson. But if you don't remember or aren't sure of the answer, go back through the lesson and find the information. All of our quizzes are open-book. We want you to find the right answer, rather than try to memorize everything.

If you have questions about any part of this course, call your school. Help is available to make your trip through this course enjoyable, challenging and rewarding.

Listening is an essential skill for medical transcriptionists. In the next few lessons, we're going to jump right into the heart of the matter and learn about word parts, listening skills, plurals, proper names, abbreviations, acronyms, medical capitalization and punctuation. But before we do, let's follow a day in the life of Jenny, a home-based medical transcriptionist.

Are you ready? Let's get started!

🕮 Step 3 The Medical Transcriptionist Jenny

- ❑ Jenny runs a medical transcription service out of her home office. She has three children under age 14—one in junior high and two in elementary school. This morning, Jenny sends her two younger boys next door to stay with her neighbor, Cassie, because she has an early day. Jenny's eighth-grader has jazz band at 7:30; after Jenny drops her at rehearsal, she heads to the neighborhood coffee shop. Jenny has set up a brief "coffee stop" networking meeting with the office manager and the managing medical doctor (MD) of a new ear, nose and throat clinic opening south of town.

Working at home is just one of the benefits of being a transcriptionist.

As her potential clients sip their mochas and lattes, Jenny briefly explains her experience in medical transcription and outlines how she works with clients. She follows this information with a brochure and business card. After asking a few questions about their practice, Jenny arranges to call them later in the week to follow up and thank them for their time. The meeting is brief because they have patients to see at 8:15, and she has work to do at home.

Jenny stops by Cassie's to be sure that her sons got to school OK and to confirm their afternoon plans—Cassie's son is coming to Jenny's home after school until Cassie gets off her shift.

Jenny logs onto a Web site and downloads six dictated reports from yesterday. Her fingers fly over her computer keyboard, and she completes three of her six reports. Then she proofs them on screen before e-mailing them back to the clinic. She'll transcribe the remaining three reports, proof them and then submit the completed reports to the clinic. After dinner, Jenny will see if there are more dictation files on the site.

🕮 Step 4 From Audio to Paper

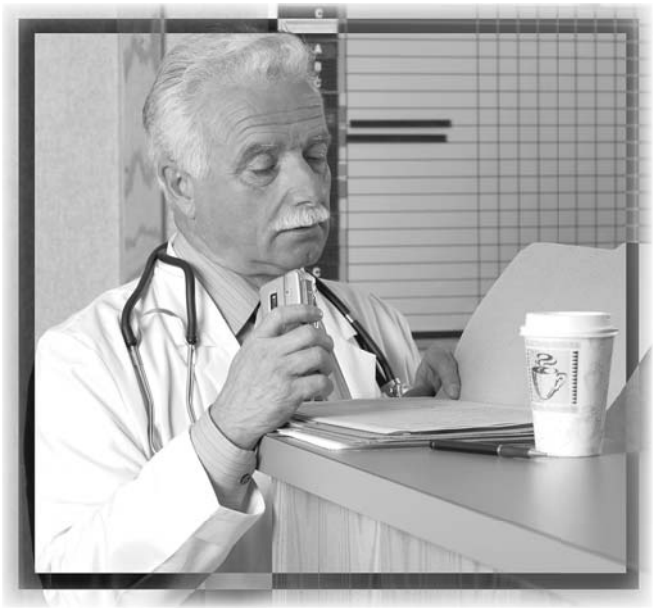
- ❑ Before we go on, here are a few words about technology. As you know, technology is changing the world. It seems that every six months, the "latest and greatest" becomes obsolete. Digital voice recorders that fit into your pocket are available; most likely doctors in your area may use digital recorders, but some offices may use audiotape recorders. Computer-based digital technologies also are becoming more widespread. Just remember—whatever method doctors use, the basic process of adding patient information through medical transcription will probably remain the same.

  As you know from your visits to the doctor, medical visits can be quite thorough. When you are brought "into the back" from the reception area, you often stop to be weighed and measured. Sometimes patients give urine or blood samples. At some point, you might have your blood pressure checked. Almost all of this type of information is written right into the patient's record itself.

  However, once you are in an examination room, medical professionals seek information that can't be jotted down as a number. For example, in a routine physical exam, a doctor may notice that her patient has lost 37 pounds in the last year. When she asks the patient about it, the patient explains that he was divorced within the past year. He seems tired and withdrawn. The doctor then probes to find out if the patient is depressed.

  After the physician completes the patient's checkup, she needs a way to remember this information about this patient. At his next visit—whether it's for a sinus infection, headache or the flu—she needs to be able to take into account that she noticed changes at that visit. Other office personnel, such as the physician's assistant, may examine him at a different time; they need that information as well.

The doctor keeps track of this kind of information in notes she makes after an appointment. Most often, the doctor talks into a small audiotape or digital recorder. She narrates what happened at the visit—basically, she tells the story. However audiotapes or sound files aren't an accessible way to store this information.



Physicians record their notes onto a recorder and the medical transcriptionists type them into reports for the patients' medical records.

Your job as a medical transcriptionist is to take doctors' dictated notes and transcribe them—put them in a form that is accessible to everyone who needs the complete report on the patient's status. Some doctor's offices are "paperless offices," but others still believe it's easy to share information on paper. Most often, you will listen to the doctor's notes and type them into an electronic health record for each patient. However, some facilities still use paper records—either way, you will create an electronic report of the dictation.

The technical vocabulary and the level of detail in these notes varies depending on the patient, the reason for his visit and the doctor's specialty. But you can see that these types of notes add more to a patient's medical file—they help the doctor treat the whole patient, not just the parts of a person that can be discussed as numbers.

Once in the computer file, the notes can be added to the patient's medical file in a number of different ways, depending on the way the medical office is set up. First, the medical transcriptionist needs to get the patient information back to the client's office somehow. Some medical offices, like Jenny's clients, accept e-mailed files; for other offices, you'd use other ways to transfer the information. The information is then placed in the patient's medical file—printed for the file folder and possibly stored electronically as well.

Transcribing notes accurately and in a timely way is important. Some patients have conditions, such as cancer or another serious illness, that require further urgent medical attention; it is imperative for accurate diagnosis and treatment that each specialist involved have the most up-to-date information. They shouldn't have to wait for a transcription of the previous visit.

Let's take a look at another medical transcriptionist named Jack who works for a transcription company.

Step 5 The Medical Transcriptionist Jack

- Jack has worked as a medical transcriptionist with his company for a few years. The transcription company works with several doctors' offices and medical facilities in different parts of the country—so he's always busy! Jack has seen the change in the medical transcription field, and has moved from transcribing audiotapes from offices in his area to transcribing digital sound files for facilities in other states. Jack works with offices that are paperless while others still use paper medical records. Let's take a look at a typical day for Jack.

Jack wakes up and heads to his home office to begin his day at 9:00 a.m. Jack logs onto the shared drive to which all the transcriptionists have access. The shared drive has folders for the transcription company's clients—various facilities and doctors' offices in different states. The physicians in many of the offices and facilities carry around a digital hand-held device and dictate their information directly into it. These sound files are then loaded onto the shared drive and saved into the corresponding medical facility or doctor's office folders. Jack opens up one of the sound files that he needs to transcribe. He uses a special program that is connected to the patients' electronic health records (EHRs). After Jack is finished typing it, he saves it to the patient's chart on the computer and moves the sound file into a folder for the finished reports. Once the transcribed report is saved in the patient's chart, it goes back to the physician for a signature. The physician opens up the report and signs it electronically. Then Jack is ready to start another report!

Sound files for transcription can be downloaded from a shared drive.

Some of Jack's facilities use speech recognition technology—which we'll discuss in a moment—to help transcribe reports. The program takes the physician's dictation and creates a report. Jack listens to the dictation and follows along with the report to make sure it was dictated correctly. Additionally, Jack edits as necessary and puts the report in the correct format.

Jack appreciates this technology because he doesn't have to type all of the physician's notes. Most of the time, Jack only has to alter portions of the report. However, Jack often edits the notes to check for accuracy—especially spelling. Sometimes the medical assistants or physicians overlook their spelling errors. Jack also appreciates the time the technology saves; he doesn't have to go pick up tapes from all the different doctors' offices and medical facilities. In the same way, Jack doesn't have to drop off reports; this could be tricky seeing as Jack transcribes reports for medical facilities in different states. Instead, everything is done electronically!

If an office uses paper charts rather than electronic health records, Jack and his transcription company use the sound files to transcribe, but then the office prints a copy of the report for the patient's paper chart.

Step 6 Technology and Medical Transcription

- Technology plays an important role in many medical transcription businesses. Some hospitals and doctors' offices are paperless because they use electronic imaging for data storage. Electronic documents allow information to flow between transcriptionists, coders and other staff members. Additionally, staff members can access records remotely from any location. Transcriptionists use an electronic signature to edit and sign their transcribed reports. Then the reports are available to be viewed electronically by care providers.

Speech Recognition Technology

Another technology that is improving the efficiency of medical transcription is speech recognition. **Speech recognition technology** does what its title implies—it recognizes speech. Speech recognition transcribes dictation into a draft report. Then the medical transcriptionist follows along with the draft report and listens to the dictation. This way the transcriptionist can edit as she goes. Pronunciation, accents and difficult words make speech recognition challenging, so a medical transcriptionist needs to check the draft report for mistakes.

When speech recognition technology surfaced, some transcriptionists were curious about its impact on their jobs. But speech recognition has enhanced the medical transcription field. Speech recognition technology allows transcriptionists to be more productive. Instead of spending time typing, transcriptionists can correct and complete more reports. In addition, medical transcriptionists learn the newest technology in their profession. Speech recognition technology also gives medical transcriptionists some variety in their positions because they alternate between transcribing and editing. Keep in mind that speech recognition technology is not yet widely used; however, it's a technology that you can look forward to learning more about in the future.

Although speech recognition technology can be helpful, sometimes the speech can be hard to decipher.

A drawback to speech recognition technology is that the speech can be hard to recognize. For example, if you have a physician that mumbles on his dictation, it's hard for the speech recognition program to decipher what the physician is saying. Another problem is if the physician talks too fast for the speech recognition program to transcribe.

Technology is so important to the medical transcription field, that some companies will actually provide the computer, foot pedal, high-speed Internet connection and other equipment for their transcriptionists. Other companies will rent equipment to the transcriptionist or require a deposit for borrowed equipment. This way the company can get their equipment back if the transcriptionist quits.

Electronic Health Records

Other types of technology also impact the medical transcription field. You were introduced to the Electronic Health Record (EHR) in the example of Jack, the medical transcriptionist for a transcription company. **Electronic health records (EHRs)** or **electronic medical records (EMRs)** are made up of entire medical files in electronic systems that are used to transmit, receive, store, retrieve and link healthcare data.[1] An EHR simply might be a scanned-in version of a paper medical record. In many offices, all documentation from a patient's visit is entered into the computer. For example, a patient's report isn't printed; instead the chart note is saved in the patient's medical record and electronically signed by the physician. Though these medical records are entirely electronic, many healthcare facilities still keep paper copies of medical records, and some facilities only use paper-based records.

Technology continues to enhance the medical transcription field.

Every facility is different, so you'll encounter different technology in the medical transcription field. It's an exciting time to be a medical transcriptionist, and technology will continue to enhance medical transcription.

Now that you've been introduced to some of the technology in the medical transcription field, let's take a Practice Exercise and apply what you've learned so far!

✍ Step 7 Practice Exercise 1-1

❑ For questions 1 through 12, fill in the blanks with the correct answer. Remember, on all of the Practice Exercises and Quizzes throughout the course, you are allowed—encouraged—to check your answers with the course material.

1. **The Medical Transcription Course is in an easy-to-follow, _____ format.**

2. **If you can't find the answer to a Practice Exercise or quiz question, you can look it up because the course is _____.**

3. **As a medical transcriptionist, you take doctors' dictated notes and _____ them.**

4. **It's important to transcribe notes _____ and in a timely manner.**

5. **_____ allow information to flow between transcriptionists and other staff, records to be accessed remotely from any location and reports to be viewed electronically.**

6. **_____ transcribes dictation into a draft report and allows medical transcriptionists to follow along with the draft report and listen to the dictation.**

7. **Transcription companies may pay for a computer, high-speed Internet access or other equipment, or they'll charge you _____.**

8. **Jack transcribed reports using _____ that were saved in folders on a shared drive.**

9. **EHR stands for _____.**

10. **Disadvantages to speech recognition technology are if the physician _____ it makes it difficult to decipher.**

11. **Transcriptionists and physicians can use a(n) _____ to sign transcribed reports.**

12. **An EHR also is known as a(n) _____.**

For questions 13 through 15, write your answer in the spaces provided.

13. **Explain the basic responsibilities of the medical transcriptionist.**

_____

_____

_____

_____

14. **Explain speech recognition technology.**

_____

_____

15. **Why are you taking this course?**

_____

_____

_____

_____

Step 8 Review Practice Exercise 1-1

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

Step 9 Lesson Summary

- ❑ This lesson introduced you to medical transcription—both the career and your course. You followed two medical transcriptionists and got a feel for their daily responsibilities. Jenny's medical transcription responsibilities involved picking up tapes from doctors' offices, transcribing the dictation into reports and e-mailing the reports back to the doctor's office. Jack's medical transcription responsibilities were slightly different than Jenny's. Instead of picking up tapes like Jenny, Jack logs onto a shared drive from home to access digital files of doctors' dictation. After Jack is finished typing and editing the reports, he saves it to the patient's EHR and it goes back to the physician for a signature. The physician opens up the report and signs it electronically.

  In addition to learning about careers in medical transcription, you also learned about some technology that's changing the medical transcription field. Speech recognition technology transcribes dictation into a draft report that medical transcriptionists edit for errors. The medical transcription field continues to evolve as technology enters the field. So the medical transcription field moves forward, which is exciting. There is always something new to learn!

  In the next lesson, we'll dive right into medical transcription skills. You'll build your transcription knowledge by learning about root words and word parts.

Endnotes

[1] Murphy, G.F., Hanken, M.A. and Waters, K. *Electronic Health Records, Changing the Vision*. Philadelphia: W.B. Saunders Company, 1999.

CONGRATULATIONS!

You've completed Lesson 1.

Lesson 2
Root Words and Word Parts

Step 1 Learning Objectives for Lesson 2

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Differentiate among root words, combining vowels, prefixes and suffixes.
  - Pronounce, write and spell root words.
  - Explain medical root word meanings.
  - Define combining forms and compound words.

Step 2 Lesson Preview

- ❑ Congratulations on completing Lesson 1! You're one step closer to your new career as a medical transcriptionist. In Lesson 1, you learned about the daily routine of a couple home-based medical transcriptionists. In this lesson, let's focus on an office-based transcriptionist named Joann. Joann serves as the part-time transcriptionist for Mountain View Clinic, a busy family medical clinic.

  After getting her kids off to school and running a few morning errands, Joann arrives at Mountain View to start her day. Joann begins transcribing notes from the doctor's sound files from the previous afternoon. She types the information as she listens to the dictation, proofs her reports and makes corrections. Joann is responsible for accurately typing up the doctor's notes, proofing the reports and completing these tasks in a timely manner. Delays on Joann's end can cause a backlog in the flow of information in the doctor's office and can affect a patient's ongoing care. That's why Joann carefully proofs her work and makes sure it is promptly completed. After Joann submits her reports to the doctors, they review and sign the reports. The doctors at Mountain View Clinic are legally responsible for the patients' reports.

  Once the reports are completed, they'll go into the office manager's "To be Updated" basket. Once Barbara, the office manager, files the reports, they'll be part of the patient's permanent medical files.

Now that you have an idea of what an office-based transcriptionist does on a daily basis, let's begin your training for the medical transcription field! In this lesson, you'll learn how to break medical terminology into pieces so you can decipher terms. We'll first discuss word parts and then move on to root words.

🕮 Step 3 Learning about Word Parts

- ❑ Medical terms may appear to be long and complicated, but they actually consist of small word parts. Even the longest medical term can be broken down into small parts that are easily understood. Once you become familiar with the individual word parts, medical terminology becomes easier.

  Understanding the various word parts will help you recognize medical terms. It will help you look up the terms in a medical dictionary to confirm correct spellings and meanings.

  You will learn about each of these word parts, one at a time, in a simple, logical and easy-to-understand sequence. This will make it easier for you to spell and understand the longest and most complicated terms.

  In this lesson, you will learn the name of each type of word part used in medical terminology.

Word Parts

We use word parts every day to communicate with others.

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 always will be words that are new to you. As a medical transcriptionist, you will often be faced with medical terms—both familiar and unfamiliar. Soon you'll be able to understand and use 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. **Word parts** are words divided into smaller parts, and they are very important in learning medical terminology.

Learning word parts prevents you from having to memorize the thousands of medical terms and definitions that healthcare professionals use. Simply break down an unfamiliar term into its word parts, and you'll have the word's meaning.

There are four types of word parts that are used to make up medical terms: *root words, combining vowels, prefixes* and *suffixes.* Think of these word parts as the building blocks of medical terms.

Root Word	The root word is the foundation or cornerstone of the medical term.
Combining Vowel	A combining vowel is used to join a root word to a suffix or another root word.
Prefix	A prefix is attached to the beginning of a root word to change the meaning of the medical term.
Suffix	A suffix is attached to the end of a root word to change the meaning or form of the medical term.

Below are some medical terms so you can see examples of each type of word part in a medical term. Not all terms have all four parts.

Term	Prefix	Root Word	Suffix
Transcription (pronounced tran-scrip-shun)	trans	script	ion
Means	across	writing	the act of

Transcription means the act of writing across (from one form to another).

Note: The "s" at the end of "trans" is dropped when the word parts are combined since there is an "s" at the beginning of script.

If you add another suffix to the word transcription, you will have the following term.

Term	Prefix	Root Word	Suffix	Suffix
Transcriptionist	trans	script	ion	ist
Means	across	writing	the act of	one who does or specializes in

A **transcriptionist** is someone who specializes in transcription or the act of writing across. That's you!

Now look at another example of each of the types of word parts.

Term	Root Word	Combining Vowel	Suffix
Biology	bi	o	logy
Means	living things		the study of

Biology means the study of living things.

As you can see, word parts are like building blocks. A child can take a dozen building blocks and make many different structures, combining the blocks in different ways. The same is true of word parts. A few word parts form many different words.

Now let's practice what we've learned so far.

✍ Step 4 Practice Exercise 2-1

❑ For questions 1 through 12, fill in the blanks with the correct answer. Remember, on all of the Practice Exercises and Quizzes throughout the course, you are allowed—encouraged—to check your answers with the course material.

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 a suffix 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 root word and a(n) _____.**
10. **In the term trans/script/ion/ist, the word part /ist is a(n) _____.**
11. **In the term trans/script/ion, the word part trans/ is a(n) _____.**
12. **In the term bi/o/logy, the word part /o/ is called a(n) _____.**

When you are satisfied with your answers, go on to the next step.

🔑 Step 5 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 6 Learn about Root Words

❑ The foundation of all words, including medical terms, 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.

There are three interesting facts about root words.

- Root words are the foundation of a medical term.
- The root word names the body part or body function that the term represents.
- Nearly every medical term has at least one root word.

Look at some examples of root words.

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

These root words are 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. Don't worry if you cannot pronounce the whole word right now; you will learn to pronounce full terms later.

"Cardi" is a common root word that means heart.

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, which are called **compound words**. In the examples that follow, we will use the same root words we used previously.

neuropathy	a disease process of nerves
gastroscope	an instrument to examine the stomach
cardiologist	one who studies the heart
pathologist	one who studies disease

In the examples, the combining vowel "o" was used to join the two root words.

Combining Forms of Root Words

Root words sometimes can be 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 called the **combining form**. Look at the combining forms for the root words you saw previously.

Root Word	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

When studying root words, you have three goals.

- Remember what the root word sounds like. When you are transcribing, you hear words, but you do not see them. Be sure you remember what a root word sounds like on a sound file.
- Pronounce and spell the root word correctly. Look at how the combining form is divided. What letter is the combining vowel? (It will usually be an /o/.)
- Learn the meaning of the root word.

🕮 Step 7 Flashcards

❑ Each flashcard contains a number of flashterms. Find Flashcard 1 that begins with flashterm 1-1. Place this card into Side A of your Quick-learn Tutor. Insert the card into the bottom of the Tutor. Push the card up until flashterm 1-1 appears in the left window. Now it's time to begin learning some common medical root words.

Step 8 Pronounce New Root Words

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

Audio Exercise

a. Take out your Quick-learn Tutor and Lesson 2 flashterms.

b. Access the audio for Lesson 2. Listen to each root word as it is pronounced. After you hear each root word, pause the audio player.

c. 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. Continue with all the flashterms on Flashcard 1. When you have completed Flashcard 1, turn the card over for Flashcard 2. Proceed until you have pronounced all the terms for Lesson 2.

d. Next, listen to the audio track again and practice any root words you mispronounced. Be sure you can pronounce each root word clearly and easily. After you have finished pronouncing all of the root words for Lesson 2, move on to the next exercise.

Step 9 Write New Root Words

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

a. Insert Flashcard 1 into Side A of your Quick-learn Tutor. 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 like you see it on the flashcard.

b. 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. Do this for each flashcard for Lesson 2. After you have pronounced and written each root word, learn the meanings of these word parts in the next exercise.

Writing your terms will help you remember them for your new career.

🕮 Step 10 Learn Root Word Meanings

❑ Follow these steps to learn root word meanings.

a. Again insert Flashcard 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 lesson.

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 looking, 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 lesson.

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 root words now. You will find that you begin to memorize medical terms as you use them throughout this course. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 11 Practice Exercise 2-2

❑ For the following questions, write or type the meaning for each root word listed below. 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.

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** _____

11. **pulmon/o** _____

12. **enter/o** _____

13. **bi/o** _____

14. **hepat/o** _____

15. **gen/o** _____

16. **my/o** _____

17. **tens/o** _____

18. **secti/o** _____

19. **ren/o** _____

20. **hem/o; hemat/o** _____

Step 12 Review Practice Exercise 2-2

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

Step 13 Lesson Summary

- ❑ Understanding how to decipher medical terms is a key to becoming an effective medical transcriptionist. Although medical terms might seem complex, you now know that you can simplify them by breaking them down into word parts and 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, which is the basic component of terms. Always remember that 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. Combining vowels are word parts that join a root word to another word part and make terms easier to pronounce.

  The Practice Exercises in this lesson are important. If you skipped any questions 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 upcoming quiz and build upon your foundation of medical knowledge.

In addition, you may want to review your flashcards one more time to prepare for your quiz. First, go through the flashcards with the root word side up, saying the meaning for each root word. Then, go through the flashcards with the meaning side up, saying the root word for each meaning. Give extra attention to any items circled in the Practice Exercise. Finally, review word parts and compound words from earlier in the lesson.

A Note about Flashcards

You will use the flashcards from each lesson throughout this course and in the later courses. Save them after you finish each lesson or course. Take good care of them because you'll use them in your career.

✉ Step 14 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 answers to the school via mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 1

For questions 1 through 40, choose the best answer from the choices provided.

1. Words are often made up of smaller _____.

a. prefixes
b. word parts
c. medical terms

2. The foundation for a word is called a _____.

a. root word
b. word base
c. suffix

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

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

5. **A prefix is found at the _____ of a word.**
   a. end
   b. middle
   c. beginning

6. **The word part that joins a root word to a suffix in many medical terms is a _____.**
   a. prefix
   b. combining vowel
   c. conjunction

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

8. **Which of the following is a compound word? _____**
   a. bookshelf
   b. love
   c. booklet

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

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

11. In the term tran/script/ion, the word part script/ is a _____.

a. root word
b. prefix
c. combining vowel

12. In the term tran/ script/ ion, the word part tran/ is a _____.

a. root word
b. prefix
c. combining vowel

13. In the term bi/ o/ logy, the word part o/ is called a _____.

a. suffix
b. prefix
c. combining vowel

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

15. Which of the following words would mean to play sometime in the past? _____

a. Replay
b. Played
c. Player

16. A medical term containing two root words is called a _____.

a. combined term
b. combining form
c. compound word

17. A combining form is made up of a root word plus a _____.

a. compound word
b. combining vowel
c. suffix

18. leuk/ o _____

a. stone
b. white
c. carry

19. enter/ o _____
a. bone marrow
b. skin
c. small intestine

20. cardi/ o _____
a. heart
b. chest
c. artery

21. bi/ o _____
a. cut into
b. kidney
c. life

22. arteri/ o _____
a. artery
b. joint
c. pressure

23. cyst/ o _____
a. cell
b. tongue
c. bladder

24. derm/ o _____
a. skin
b. muscle
c. heat

25. thorac/ o _____
a. heart
b. chest
c. clot

26. ven/ o _____
a. artery
b. vessel
c. vein

27. pulmon/ o _____
a. stomach
b. bladder
c. lung

28. oste/ o _____
a. joint
b. sugar
c. bone

29. ped/ o _____
a. child
b. disease
c. vein

30. cyt/ o _____
a. cell
b. colon
c. skull

31. duct/ o _____
a. sac of fluid
b. carry
c. tissue

32. crani/ o _____
a. nerve
b. head
c. skull

33. arthr/ o _____
a. clot
b. joint
c. bone

34. aden/ o _____
a. gland
b. appendix
c. joint

35. myel/ o _____

a. liver
b. lung
c. spinal cord

36. the/ o _____

a. living thing
b. carry
c. put

37. skull _____

a. craini/ o
b. crani/ o
c. neur/ o

38. water _____

a. leuk/ o
b. spen/ o
c. hydr/ o

39. spleen _____

a. splen/ o
b. spleen/ o
c. hepat/ o

40. vein _____

a. hem/ o
b. vein/ o
c. ven/ o

Just for Fun

This page is for your enjoyment. You will not be tested on the material, but you may find it interesting.

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. (Well, that's better than nothing.)
- It isn't fattening.
- It is free. (We're not talking about Disneyland here.)

If anything else in this world gave you these four benefits, you'd take as much of it as you could get. So after every quiz, 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 transcription. Some will give you a warm smile.

You may have wondered why medical terms are so long and complicated. This is because these terms have very definite meanings.

In medicine, one complicated word is used in place of four or five common words so that doctors can communicate exactly what they mean to other health workers. This is to prevent misunderstandings that can interfere with the patient's care. In addition, many doctors use the most sophisticated terms they know because it looks and sounds more professional.

As you learn to build words, you will be building your professional skills.

You will be a very important link in the healthcare team. The most important thing that a patient wants from the doctor is results: results of a test, an x-ray, a physical examination or a treatment. The results are recorded in the form of a written report.

Your skills will provide what patients want. In this course, you will learn those skills in a logical, step-by-step manner.

CONGRATULATIONS!

You've completed Lesson 2.

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

Lesson 3
Prefixes and Suffixes

Step 1 Learning Objectives for Lesson 3

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Pronounce and spell prefixes.
  - Explain prefix rules.
  - Explain the meaning of many common prefixes.
  - Pronounce and spell suffixes.
  - Explain rules for suffixes.
  - Explain the meaning of many common suffixes.

Step 2 Lesson Preview

- ❑ In the previous lesson, we briefly introduced you to prefixes. Now we're going to build upon what you already know. As you read the following content, you'll become familiar with many common prefixes used in medical terminology. We'll explain when and why certain prefixes are attached to root words, and you'll learn to pronounce and write these word parts. In this lesson, we'll also tackle the last word part—suffixes.

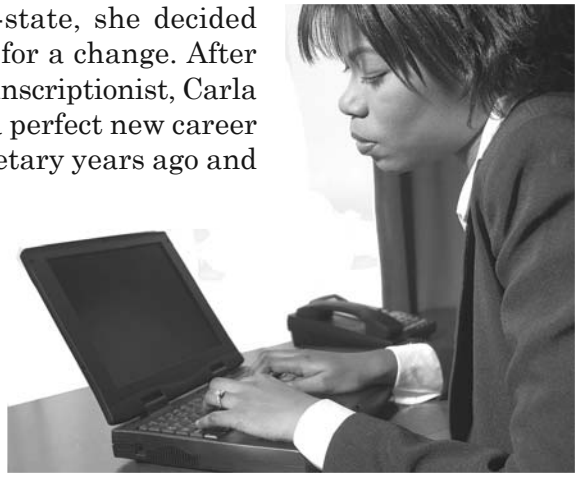
  As you work through this lesson, you'll encounter a couple of Practice Exercises. These exercises are designed to help you expand your knowledge of medical terminology and ensure you understand proper usage of prefixes. Therefore, it is important that you don't forgo this practice.

  Now, let's begin by discussing prefixes.

This lesson will introduce you to common prefixes.

Step 3 Carla's Career in Medical Transcription

- When Carla's company decided to move out-of-state, she decided not to make the move with them and was ready for a change. After talking to a friend who is a home-based medical transcriptionist, Carla determined that medical transcription would be a perfect new career for her. Carla worked as an emergency room secretary years ago and was familiar with the medical field.



Carla worked hard to build her medical transcription business.

Carla completed her training, passed the test with a national transcription company and began working. At first her days were long and her line counts weren't as high as she would've liked. With time, Carla gained knowledge and experience and her medical transcription skills improved. After working for three and a half years as a medical transcriptionist, Carla is producing respectable line counts and making $17 an hour from home. Carla enjoys her flexible schedule and challenging work. She wakes up every morning anxious for work!

Now that you know a little more about your career options as a medical transcriptionist, let's learn about prefixes. Medical terminology is the core of medical transcription and will improve your transcription skills.

Step 4 Learn Prefixes

- Now that you've learned about root words, let's learn about another word part—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 to the front of root words, while suffixes are added to the end of root words.

A **prefix** changes the meaning of a medical term. A prefix usually tells where, when or how. Look at some examples of prefixes and their meanings.

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

Notice that prefixes do not have combining vowels. A combining vowel only comes at the end of a root word. There is never a combining vowel between a prefix and a root word.

Now let's learn more about prefixes.

- Hint—A prefix changes the meaning of the whole medical term. A prefix does not change the meaning of a root word.

In the list below, you will see a medical term made from some of the root words you studied in Lesson 2. Notice that adding a prefix changes the meaning of the whole medical term but does not change the meaning of the root word.

Term	Meaning
renal	relating to the kidney
perirenal	relating to surrounding the kidney
cardia	heart
bradycardia	slow heart
tachycardia	fast heart
cephalic	relating to the head
microcephalic	relating to a small head
febrile	having a fever
afebrile	without a fever
leukocytosis	condition of white cells
aleukocytosis	condition of absence of white cells

- Hint—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.

perirenal—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? One way to tell is to see what happens when you take away the first word part. Look at the example below. You saw these terms a moment ago. The root here means "heart."

Term	**Meaning**
brady/cardi/a	slow heart
cardi/a	heart

When the prefix brady/ was taken away, the meaning of the term changed from "slow heart" to "heart." However, the meaning of the root, "heart," didn't change. Therefore, brady/ is a prefix.

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" or the basic meaning of the term.

Look at the next example below. 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 you take away a root word.

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

When the root word leuk/o was taken away, the meaning of the term changed from "white cells" to just "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.

If you add a prefix "leuko" to the word "cytosis," you change the meaning to "condition of white cells."

For now, we will make it easy for you. All the prefixes you will learn have a slash at the end of the prefix. Look at these examples.

brady/ micro/ peri/

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

cardi/o leuk/o cyt/o

When you study prefixes, you have three goals.

1. Remember what the prefix sounds like. When you hear a prefix, try to visualize what it looks like.
2. Pronounce and spell the prefix correctly.
3. Learn the meaning of the prefix.

Step 5 Pronounce New Prefixes

❑ Follow these steps to learn how to pronounce prefixes.

Audio Exercise

a. Take out your Lesson 3 Prefixes flashcards and Quick-learn Tutor. Find the first flashcard.

b. Access the audio for Lesson 3. Listen to each prefix as it is pronounced. After you hear each prefix, pause the audio player.

c. Look at the prefix and practice pronouncing it out loud several times until you can pronounce it correctly and easily. 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. If necessary, turn the card over for the remaining flashterms. Proceed until you have pronounced all the prefix terms for Lesson 3.

d. Next, begin with the Lesson 3 flashcards and play the audio track again. This time, pronounce each prefix in order but do not stop the player after each term. 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.

e. Next, listen again and practice the prefixes you mispronounced. Be sure you can pronounce each prefix clearly and easily. After you have finished pronouncing all of the prefixes for Lesson 3, move on to the next exercise.

🕮 Step 6 Write New Prefixes

❑ Follow these steps to learn how to write prefixes.

a. Insert your flashcard for Lesson 3 into Side A of your Quick-learn Tutor. Look at each prefix as it appears in the window and say it out loud. Write each prefix on blank paper. Be sure to put a slash (/) when you write the term, just like you see it on the flashcard.

b. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning on your blank paper, beside the prefix. Writing these prefixes and meanings will help you learn them more easily. Do this for each flashcard for Lesson 3. After you have pronounced and written each prefix, learn the meanings of these word parts in the next exercise.

🕮 Step 7 Learn Prefix Meanings

❑ Follow these steps to learn prefix meanings.

a. Again, insert the first flashcard into Side A of your Quick-learn Tutor. Pronounce each prefix out loud. Before you look at the meaning, see if you can remember it. Check yourself by turning the flashcard over to see the meaning. Do this for each flashterm.

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

c. Practice with the flashcards several times until you are familiar with the prefixes and their meanings. It's not necessary to memorize all the prefixes now. You will find that you begin to memorize medical terms as you use them throughout this course. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 8 Practice Exercise 3-1

❑ For questions 1 through 20, write or type the meaning of each prefix in the spaces provided. 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.

	Prefix	Meaning
1.	**a/**	_____
2.	**ad/**	_____
3.	**ec/, ex/, ecto/, exo/**	_____
4.	**infra/**	_____
5.	**micro/**	_____
6.	**peri/**	_____
7.	**retro/**	_____
8.	**hypo/**	_____
9.	**dia/**	_____
10.	**tachy/**	_____
11.	**sub/**	_____
12.	**pre/**	_____
13.	**hemi/**	_____
14.	**anti/**	_____
15.	**en/, endo/**	_____

16. **macro/** _____

17. **pan/** _____

18. **ab/** _____

19. **post/** _____

20. **de/** _____

Step 9 Review Practice Exercise 3-1

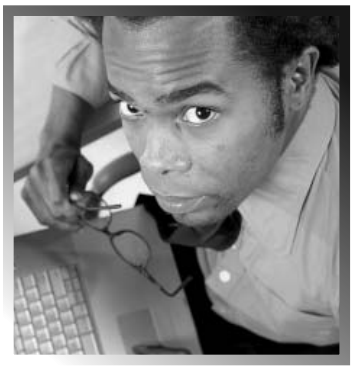
- ❑ Check your answers with the Answer Key in the back of this instruction pack. Correct any mistakes you may have made.

  Now that you're familiar with prefixes, let's learn about suffixes.

Step 10 Introduction to Suffixes

- ❑ Jason, an on-site medical transcriptionist for a local heart center, tries to decipher a term on a physician's note. Background conversation and the physician's mumbling are making it difficult for Jason to correctly identify the term. He pauses and replays the sound clip several times trying to catch the word.

  After replaying the sound file a couple more times, Jason catches the last part of the word, "centesis." "Hmm," he thinks to himself. "I still can't catch the first part; what is the physician saying?" Jason thinks back to learning about prefixes, root words and suffixes in his medical transcription training.



Jason keeps listening to a physician's sound file but doesn't seem to catch a particular word.

  "Maybe I can figure out the word based on the word parts and the context," he thinks. Jason reads the few sentences before the unknown word and discovers that the physician is discussing a heart procedure. From his training, he knows that "cardi/o" means heart. Jason wonders if the muffled word is "cardiocentesis." He looks up the word in a medical dictionary and determines the word means "surgical puncture of the heart."

  Jason plays the sound clip one more time to see if he found the correct word. "That's it!" Jason exclaims. He flags the word for the physician to review because Jason doesn't want to assume he has the correct word. Then Jason continues to transcribe the rest of the report.

  Sometimes medical transcription involves a bit of detective work, as you'll discover in later lessons. In this example, Jason's knowledge of word parts helped him solve the mystery of the unknown word. Knowing word parts will help you break down medical terminology and may help you decipher unknown words.

In this section, we'll tackle the last word part—suffixes. Let's get started!

🕮 Step 11 Learn about Suffixes

- ❑ A **suffix** is a word part that is attached to the end of a root word. We use suffixes because they 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**.

  Let's look at an example.

Noun	Adjective
cardi/a	cardi/ac

  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.

  - Hint—A suffix can tell you whether a word is a noun or an adjective.

  Here's an example.

  The new student wants a good career.

  adjective noun adjective noun

  The words "student" and "career" are nouns because they are a person, place or thing. The words "new" and "good" are adjectives because they describe nouns.

  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

  A suffix can change a root word to 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 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. When you use your flashcards later in this lesson, the flashcards will tell you which suffixes are noun suffixes and which are adjective suffixes.

Suffix	Noun or Adjective	Meaning
/y	noun	the process of
/a	noun	(no meaning)

Suffix	Noun or Adjective	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

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.

In this course, you will learn many more noun and adjective suffixes. Whenever you are introduced to a new term, look to see which suffixes are used with which root words. In doing so, you will begin to recognize which root words and suffixes belong together.

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

cardiopathy myopathy neuropathy

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

If suffixes have the same meaning, how do you know which one to use?

Only certain suffixes and certain root words can be combined. To help you with this decision, many of the suffixes we will teach you contain the root word already combined with the correct suffix. This will help you remember which suffixes go with which root words. 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 process (adjective)
megal/o	+	/y	=	/megaly	process of enlargement (noun)
megal/o	+	/ic	=	/megalic	relating to enlargement (adjective)
cardi/o	+	/ac	=	/cardiac	relating to the heart (adjective)
cardi/o	+	/a	=	/cardia	heart (noun)

As you can see, /ac combines with cardi/o but not with megal/o. The suffix /ic combines with megal/o and path/o, but not with cardi/o.

When combined suffixes are used, you may find some medical terms that don't appear to have root words. This is because the root word is hidden in the combined suffix. You will see some examples of these types of terms in later lessons.

Most root words can't stand alone as complete words—they need either a noun suffix or an adjective 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 are already complete words. By dropping the combining vowel, these root words stand alone. They also work as suffixes themselves.

Listed below are three examples of root words that don't need a noun suffix to be a combined suffix.

Root Word	Combined Suffix (noun)	Meaning
gram/o	/gram	picture, record, tracing
graph/o	/graph	machine that makes a tracing
derm/o	/derm	skin

Did you notice that we did not add a suffix to these root words to make them noun suffixes? They are already in noun form without any suffix.

Did you also wonder what happened to the "o" in each of the root words? Remember: The combining vowel is not used when there is nothing to combine. Combining vowels are used only between two word parts, never at the end of a term.

In this section, we will concentrate on noun and adjective suffixes. Whenever you learn a new term, look to see which suffix is used with the root. That way you will begin to recognize which roots and suffixes belong together.

When you study suffixes, you have three goals.

- Remember what the suffix sounds like.
- Pronounce and spell the suffix correctly.
- Learn the meaning of the suffix. Is the suffix a noun ending or an adjective ending?

Now let's get a little practice using suffixes.

Step 12 Pronounce New Suffixes

❑ Follow these steps to learn how to pronounce suffixes.

Audio Exercise

a. Take out your Lesson 3 Suffixes flashcards and Quick-learn Tutor. Find the first flashcard.

b. Access the audio for Lesson 3. Listen to a suffix as it is pronounced. After you hear each suffix, pause the audio track.

c. 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. If necessary, turn the card over for the remaining flashterms. Proceed until you have pronounced all the suffixes for Lesson 3.

d. Next, begin with the Lesson 3 flashcards and play the audio track again. This time, pronounce each suffix in order but do not stop the player after each term. 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.

e. Next, listen again and practice the suffixes you mispronounced. Be sure you can pronounce each suffix clearly and easily. After you have finished pronouncing all of the terms for Lesson 3, move on to the next exercise.

🕮 Step 13 Write New Suffixes

❑ Follow these steps to learn how to write suffixes.

a. Insert your flashcard for Lesson 3 into Side A of your Quick-learn Tutor. Look at each suffix as it appears in the window and say it out loud. Write each suffix on blank paper. Be sure to put a slash (/) when you write the term, just like you see it on the flashcard.

b. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning on your blank paper, beside the suffix. Writing the suffixes and meanings will help you learn them more easily. Do this for each flashcard for Lesson 3. After you have pronounced and written each suffix, learn the meanings of these word parts in the next exercise.

🕮 Step 14 Learn Suffix Meanings

❑ Follow these steps to learn suffix meanings.

a. Again insert the flashcard for this lesson into Side A of your Quick-learn Tutor. Beginning with 1-75, 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. Do this for each flashterm for this lesson.

b. Now insert your flashcards into Side B of your Quick-learn Tutor. Push the card up until you see the meaning of flashterm 1-75 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. Do this for each flashterm for this lesson.

c. Practice with the flashcards several times until you are familiar with the suffixes 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. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 15 Practice Exercise 3-2

❑ For questions 1 through 20, write the suffix meaning in the spaces provided. 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.

Suffix	Meaning
1. /ectomy	_____
2. /gram	_____
3. /logy	_____
4. /ist	_____
5. /megaly	_____
6. /stasis	_____
7. /ic; /al; /ary; /tic; /ous; /ar; /eal; /iac; /ior; /ac	_____
8. /ium, /um	_____
9. /meter	_____
10. /grade	_____
11. /scope	_____
12. /oid	_____
13. /emia, /hemia	_____
14. /centesis	_____

15. **/opsy** _____

16. **/algia** _____

17. **/pathy** _____

18. **/osis *** _____

19. **/itis** _____

20. **/ia** _____

* The suffixes /osis and /sis usually refer to a pathologic or disease condition, but they can be used to refer to any condition in general.

Step 16 Review Practice Exercise 3-2

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

Step 17 Lesson Summary

❑ You learned about word parts and root words in the previous lesson. This lesson wrapped up your knowledge on word parts with information on prefixes and suffixes. As you know, a prefix is a word part added at the beginning of a word, and a suffix is a word part added to the end of a root word. A prefix changes the meaning of a medical term and tells where, when or how. 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.

Remember, give extra attention to any items circled in the Practice Exercise before you move on to the next lesson. You'll put your knowledge about word parts to use in the next lesson. You'll learn how to divide medical terms.

Step 18 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 answers to the school via mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 2

For questions 1 through 20, select the correct meaning for each prefix.

1. intra/ _____
a. toward, inner
b. within
c. half

2. ecto/, exo/ _____
a. outside, outer
b. inside, inner
c. upon, addition

3. tachy/ _____
a. faster than usual
b. slower than usual
c. heart

4. hypo/ _____
a. increased, above
b. pressure
c. decreased, below

5. inter/ _____
a. toward, inner
b. within
c. between

6. cata/ _____
a. around, surrounding
b. negative, down
c. decreased, below

7. micro/ _____
a. gross, large
b. inferior to, below
c. small, tiny

8. hyper/ _____
a. increased, above
b. pressure
c. decreased, below

9. epi/ _____
a. half
b. before
c. upon, in addition

10. per/ _____
a. through
b. center
c. before

11. re/ _____
a. again, back
b. before
c. after, past

12. retro/ _____
a. under, inferior to
b. behind, back
c. after, past

13. ab/ _____

a. lessened, removed
b. stomach
c. away from

14. ac/ _____

a. within
b. against, opposed
c. toward, near

15. peri/ _____

a. all, every
b. around, surrounding
c. before

16. macro/ _____

a. gross, large
b. small, tiny
c. side-by-side

17. post/ _____

a. during
b. after, past
c. before

18. a/, an/ _____

a. away from
b. without, absent
c. in addition to

19. dia/ _____

a. outside, outer
b. increased, above
c. through

20. para/ _____

a. above
b. beside, beyond
c. below

For questions 21 through 24, choose the best answer from the choices provided.

21. A prefix does not change the meaning of the _____.

a. medical term
b. noun
c. root word

22. You can change a noun to an adjective by changing the _____.

a. suffix
b. prefix
c. root word

23. A noun names a _____.

a. body part
b. person, place or thing
c. disease

24. An adjective is a word that describes a _____.

a. suffix
b. root word
c. noun

For questions 25 through 40, select the correct meaning of each word part. Remember, you may use your flashcards to answer these questions.

25. tachy/ _____

a. increased
b. down
c. faster than usual

26. micro/ _____

a. large
b. small
c. below

27. /logy _____

a. look at
b. condition
c. study of

28. pan/ _____

a. all, every
b. around
c. before

29. peri/ _____

a. around, surrounding
b. before
c. again

30. /pathy _____

a. picture
b. disease process
c. pathologic condition

31. /graph _____

a. structure
b. instrument to see with
c. instrument that creates a picture or recording

32. ecto/ _____

a. outside, outer
b. within
c. behind

33. brady/ _____

a. decreased
b. through
c. slower than usual

34. hyper/ _____

a. decreased
b. increased, above
c. under

35. in/ _____

a. into; not
b. outer
c. through

36. retro/ _____

a. past
b. half
c. behind, back

37. /ist _____

a. one who does
b. condition
c. process

38. /megaly _____

a. distance
b. control
c. enlargement

39. /emia _____

a. throughout the blood
b. removal
c. pain

40. /ic; /ac; /ous _____

a. like
b. relating to
c. structure

CONGRATULATIONS!

You've completed Lesson 3.

Don't wait for your quiz results to continue with Lesson 4.

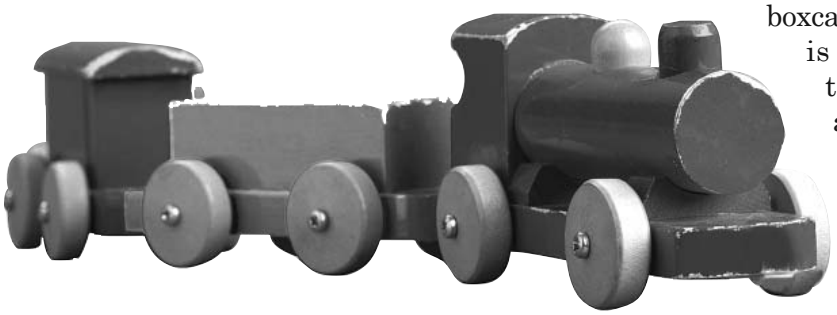
Lesson 4
Divide Medical Terms

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 medical terms between word parts.
  - Derive word meanings from word parts.

Step 2 Lesson Preview

- ❑ So far in this course, you have learned the word parts that fit together to form medical terms: root words, prefixes and suffixes. In this lesson you'll learn how to take complete terms and divide them.



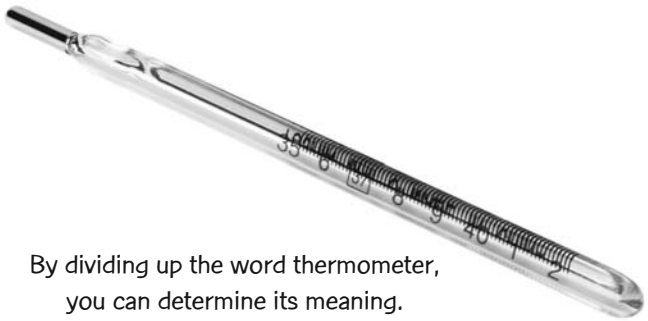
Think of the root word as the boxcar, the prefix as the engine and the caboose as the suffix.

Think of a word as a train—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. As a medical transcriptionist, this is important because you will face 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.

Don't forget that as you read this lesson, your flashcards are a valuable resource. They will assist you as you study the following material and complete the Practice Exercises. As you read, remember you are building knowledge of medical terms that will make you a valuable resource as a medical transcriptionist.

Step 3 Hints for Dividing Medical Terms

- Now that you have learned a number of word parts or building blocks, you are ready to look for these building blocks in medical terms. By dividing medical terms into their word parts, you will be able to recognize new or complicated medical terms. You will be able to look them up in a dictionary more easily and spell them correctly.



By dividing up the word thermometer, you can determine its meaning.

When you look 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 dividing 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 dividing 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 three 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/	prefix meaning cancer

Carcinogenesis means the origin, production or development of cancer, including carcinomas and other malignant neoplasm.

Word Part Starting with End of Word	Meaning
/partum	childbirth
post/	after

Postpartum means after childbirth.

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 pronounce a term, it's important for you to read from the beginning of the term to the end, just as you would read any new word in English.

Consonants, Vowels and the Roles 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*.

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 a blood clot
thorac/o/centesis	surgical puncture into the chest
gastr/o/tomy	incision into the stomach

Because all the suffixes in these examples begin with a consonant, the combining vowel was used.

When the suffix begins with a vowel, there is usually 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
hemat/oma	blood tumor (lump)
bi/opsy	look at living (tissue)
cardi/ac	relating to the heart
cardi/o/path/y	disease of the heart

As you can see, in these examples the suffixes all began with a vowel. The combining vowel was not used. Even though *y* is a consonant, the suffix /y follows this vowel rule since it sounds like the vowel *i*.

cardi/o/log/y (the process of) the study of the heart

Notice that in this example, we did not use the combining vowel since the suffix /y sounds like the vowel *i*. There is a combining vowel between two root words in a compound word.

As you learned in Lesson 2, a compound word has two or more root words in it. Look at the examples below.

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

Time for Some Practice

Let's practice dividing some word terms. Look for word parts in the examples below. Read the terms below from the end of the term, from right to left. Put in slashes between word parts.

appendectomy
cardiology
hepatomegaly

Here is how we divided these terms. Did you divide the words above the way we have below? Note that these words could be divided more than one way.

append/ectomy	or	append/ec/tom/y
cardi/o/logy	or	cardi/o/log/y
hepat/o/megaly	or	hepat/o/megal/y

Practice dividing word terms will help you learn.

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 space on the right. We will use the meanings from your flashcards.

append/ectomy _____
cardi/o/logy _____
hepat/o/megaly _____

The meanings for each term are listed below.

append/ectomy	removal of the appendix
cardi/o/logy	the study of the heart
hepat/o/megaly	enlargement of the liver

Step 4 Word Meanings

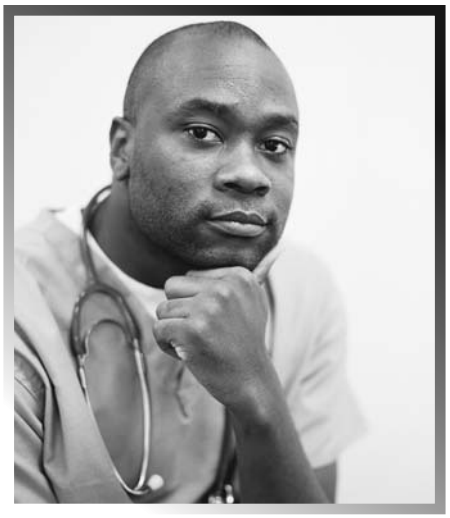
- People who work in the medical field often use shorter and simpler meanings of words to save time. As you become more familiar with medical terms, you probably will use simpler meanings as well. Sometimes a simpler meaning of a word can be formed by reading the word from beginning to end.

  Compare these simpler meanings that an experienced medical transcriptionist gave 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 study of the heart	heart specialty
hepatomegaly	enlargement of the liver	liver enlargement

The easiest way to find word parts and give meanings is to start at the end of a word that is new to you. This will help you look for word parts that you recognize and give meanings to these word parts. 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.



The divided term cardi/o/log/ist means heart specialist.

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 a Practice Exercise, examine the two boxes that follow. The boxes list common prefixes and suffixes and their meanings. These boxes will help you as you divide terms. In addition, you can use these boxes to assist you as you learn to combine medical terms in the next lesson.

Prefix	Meaning
a-, an-	absence of, without, no, not
ante	before
con	with
contra	opposite, against
dia-	across, apart, complete knowledge, through
endo-	within, in, inner
post	after
pro-, pros-	before, forward, in front of
re-	back, behind
sub-	under, below
trans-	across, through, over, beyond

Suffix	Meaning
-al	relating to, pertaining to
-algia	pain
-ectomy	removal, excision
-gnosis	about the patient's condition
-gram	recording, picture
-ic	relating to, pertaining to
-itis	inflammation
-logy	study of
-osis	abnormal condition
-scopy	process of visual examination

✍ Step 5 Practice Exercise 4-1

❑ Follow these steps.

a. Divide the following medical terms by putting slashes between word parts, including between root words and combining vowels.

b. If you have learned a root word-suffix combination, you don't have to divide that root and its suffix. You may use your flashcards if you need them.

c. Write the meaning of the term in the blank space. We have given you the first answer to get you started.

	Divide	Meaning
1.	**cardi/o/megaly**	**enlargement of the heart**
2.	**acromegaly**	_____
3.	**macroglossia**	_____
4.	**histology**	_____
5.	**pararenal**	_____
6.	**perirenal**	_____
7.	**aleukocytosis**	_____
8.	**thoracocentesis**	_____
9.	**gastrectomy**	_____

10. **hemihepatectomy** _____
11. **hemostasis** _____
12. **neuritis** _____
13. **appendicitis** _____
14. **hepatitis** _____
15. **thermometer** _____
16. **biopsy** _____
17. **cranium** _____

Step 6 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.

Step 7 Pronounce New Medical Terms

❑ Follow these steps to learn how to pronounce new medical terms.

Audio Exercise

a. Take out your Lesson 4 flashcards and Quick-learn Tutor.

b. Access the audio for Lesson 4. Listen to a word part as it is pronounced. After you hear a word part, pause the player.

c. Look at the word part 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 word part appears in the right window. Read the meaning of the word part. If necessary, turn the card over for the remaining flashterms. Proceed until you have pronounced all the terms for Lesson 4.

d. Next, begin with the Lesson 4 flashcards and play the audio track again. This time, pronounce each word part in order but do not stop the player after each term. 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 it.

e. Next, listen to the audio track again and practice the word parts you mispronounced. Be sure you can pronounce each word part clearly and easily. After you have finished pronouncing all of the terms for Lesson 4, move on to the next exercise.

🕮 Step 8 Write New Medical Terms

❑ Follow these steps to learn to write new medical terms.

a. Insert your flashcard for Lesson 4 into Side A of your Quick-learn Tutor. 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 put a slash (/) when you write the term, just like you see it on the flashcard.

b. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning on your blank paper, beside the word part. Writing these word parts and meanings will help you learn them more easily. Do this for each flashcard for Lesson 4. After you have pronounced and written each word part, learn the meanings of these word parts in the next exercise.

🕮 Step 9 Learn Medical Term Meanings

❑ Follow these steps to learn medical term meanings.

a. Again insert the first flashcard for this lesson into Side A of your Quick-learn Tutor. Beginning with 1-110, pronounce each word part 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 lesson.

b. Now insert your flashcards into Side B of your Quick-learn Tutor. Push the card up until you see the meaning of flashterm 1-110 in the right window. Read each meaning out loud. Before looking, 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 lesson.

c. Practice with the flashcards several times until you are familiar with the word parts 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. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 10 Practice Exercise 4-2

❑ For each word part listed below, write or type the meaning. 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. Do all the items on this page before you go on to the next page.

	Word Part	Meaning
1.	**carcin/o**	_____
2.	**ox/o**	_____

3. **laryng/o** _____
4. **bi/** _____
5. **/genesis** _____
6. **/malacia** _____
7. **syn/; sym/** _____
8. **gynec/o** _____
9. **sarc/o** _____
10. **vit/o** _____
11. **auto/** _____
12. **/drome** _____
13. **chem/o** _____
14. **con/** _____
15. **meta/** _____
16. **ultra/** _____
17. **maxill/o** _____
18. **nect/o** _____
19. **/oma** _____
20. **/blast** _____

Step 11 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.

At this point, give extra attention to any items circled in Step 10 before moving on.

✍ Step 12 Practice Exercise 4-3

❑ Follow these steps.

a. Divide the following medical terms by putting slashes between word parts, including between root words and combining vowels.

b. If you have learned a root word-suffix combination, you don't have to divide that root and its suffix. You may use your flashcards if you need them.

c. Write the meaning of the word in the blank space.

	Divide	Meaning
1.	**oste/o/malacia**	_____
2.	**sarcoma**	_____
3.	**carcinoma**	_____
4.	**connect**	_____
5.	**maxillary**	_____
6.	**laryngitis**	_____
7.	**vital**	_____
8.	**costal**	_____
9.	**sonogram**	_____
10.	**carcinogenesis**	_____
11.	**chemotherapy**	_____
12.	**postpartum**	_____
13.	**maxilloplasty**	_____
14.	**craniotome**	_____
15.	**hypertrophy**	_____
16.	**kleptomania**	_____

Step 13 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.

Step 14 Lesson Summary

- ❑ Medical terms are constructed of different word parts—root words, prefixes and suffixes. You now know that you can divide a medical term into its word parts and derive its meaning.

  Simply 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. But you can learn to divide medical terms, and this skill will enable you to become a competent medical transcriptionist.

  Remember that whenever you encounter a medical term of which you don't know the meaning, break it up into its word parts. Then you can look up the word parts in your medical dictionary to determine the correct spelling and meaning. 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.

  In the next lesson, you'll use your word-part knowledge to combine medical terms.

CONGRATULATIONS!

You've completed Lesson 4.

Lesson 5
Combine Medical Terms

Step 1 Learning Objectives for Lesson 5

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Properly combine prefixes, root words and/or suffixes to form medical terms that describe certain diagnoses and procedures.
  - Determine the meaning of medical terms.
  - Properly divide medical terms to determine their meaning.

Step 2 Lesson Preview

- ❑ The previous lesson taught you how important it is for medical transcriptionists to be able to divide medical terms. You now know that if you break up a complex medical term into its word parts and are able to understand the meaning of each word part, you can then figure out the meaning of the medical term.

  In this lesson we're going to learn to build, or combine, medical terms. You'll soon be taking "plain English" words and combining word parts to form the correct medical term. You'll be amazed at how many medical terms you can build from just a few word parts. As you read this lesson, keep in mind that you will learn both the meanings of and how to assemble words.

  Once again, this lesson contains a couple Practice Exercises to reinforce what you read. Though these exercises may be challenging, it's important that you complete each one. When it comes to learning medical terminology, practice makes perfect. And as a medical transcriptionist, you will need to know how to "talk the talk" with other medical professionals! And don't forget, you may use your flashcards and your course materials to complete your Practice Exercises and quiz.

Completing your Practice Exercises will help you "talk the talk" once you're a medical transcriptionist.

Step 3 Combining Medical Terms

- Combining word parts to form medical terms is 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 dictate, they may say 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. 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 and 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		

You only needed to learn eight word parts to build 17 medical terms! Not bad. Just stick to the steps and before you know it, you will have learned many word parts the easy way.

Step 4 Consonants, Vowels and the Roles They Play

- There are a few important rules to remember when combining medical terms. These rules will help you when combining most Latin terms.

  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

When combining medical terms, 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 the following examples. The combining vowel is not used.

Meaning		Term with Suffix Beginning with Vowel		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

You will 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 terms in this course, you may come across terms that appear to have no root word. For example:

hypertrophy = hyper/ + /trophy

This is due to the use of combined suffixes (see Lesson 4). The root word is actually hidden in the combined suffix (/trophy = troph/o + /y). In these cases, no combining vowel is used between the prefix and the combined suffix.

When dividing and combining terms, 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 kidney	peri/	ren/o	/al	perirenal
enlargement of the liver		hepat/o	/megaly	hepatomegaly
inflammation of vessels		angi/o	/itis	angiitis
removal of the spleen		splen/o	/ectomy	splenectomy

Keep a couple items in mind when you're reading terms. First, read from the beginning of the term to the end when you are pronouncing a term you have created. Second, read from the end of the term to the beginning when you are checking the meaning of a term you have created. Look at these examples.

append/ectomy	removal of the appendix
cardi/o/logy	(the process of) the study of the heart
therm/o/meter	instrument to measure heat

Notice that the meaning of the term was obtained by starting at the end of the term and working backwards.

Combining word parts can be more difficult than dividing terms because there are many suffixes that mean the same thing. You must know which suffix to use. To learn this, you will use the combined suffixes you learned in Lesson 4. By doing this, you will train your ear to recognize which suffixes go with which root words.

In everyday practice, medical transcriptionists will look up a new term in a medical dictionary to be sure they used the correct suffix. In this section, you will not need a medical dictionary; your flashcards contain the word parts you need.

Now, let's review what you've learned with a couple of Practice Exercises.

You can train your ear to recognize which suffixes go with which root words.

✍ Step 5 Practice Exercise 5-1

❑ 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.

	Word Parts	Medical Term	Meaning
1.	**peri/ ren/o /al**	_____	_____
2.	**oste/o arthr/o /itis**	_____	_____
3.	**gastr/o /tomy**	_____	_____
4.	**carcin/o /oid**	_____	_____

5. **sarc/o**
   /oid _____ _____

6. **pulmon/o**
   /ic _____ _____

7. **hepat/o**
   /ic _____ _____

8. **macro/**
   gloss/o
   /al _____ _____

9. **pan/**
   cyt/o
   /penia _____ _____

10. **oste/o**
    /al _____ _____

11. **muc/o**
    /ous _____ _____

12. **thromb/o**
    /osis _____ _____

Step 6 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.

Step 7 Practice Exercise 5-2

- ❑ For each meaning given below, write or type the word parts and the combined medical term. Remember, not every term will use all three types of word parts. We will do the first one for you. Use the slashes on your flashcards to help you with this exercise. Remember a prefix is followed by a slash. A root word has the slash and a combining vowel, and the slash precedes a suffix.

1. **Meaning: one who studies females**
   Word Parts
   prefix: _____
   root(s): gynec/o; log/o
   suffix: /ist
   Medical Term: gynecologist

2. **Meaning:** control blood
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

3. **Meaning:** relating to around the kidney
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

4. **Meaning:** enlargement of the liver
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

5. **Meaning:** inflammation of vessels
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

6. **Meaning:** inflammation of the appendix
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

7. **Meaning:** removal of the spleen
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

8. **Meaning:** lack of cells of all kinds
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

Step 8 Review Practice Exercise 5-2

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

Step 9 Lesson Summary

- ❑ Congratulations! You can successfully combine word parts into medical terms. Now that you know the rules, you can form many complex medical words from a few word parts. This knowledge will help you as you communicate with other medical transcriptionists and healthcare professionals.

  Now that you've learned all about word parts and dividing and combining medical terms, your next lesson will focus on hearing medical terms. You'll develop your listening skills by learning about silent letters and letters that sound alike.

  Before you take the quiz, review your flashcards from the previous lessons. Familiarize yourself with each term's spelling, pronunciation and meaning. In addition, review the information for dividing and combining from Lessons 4 and 5.

Step 10 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 Quiz Cover Sheet included in this course. Use only blue or black ink on your Quiz Cover Sheet and **print in upper and lower case letters**. Red ink is unacceptable. You must **type or print** all answers so they can be read easily by the instructors. Any answers that cannot be read will be marked wrong.

  d. **Important!** Please fill in all information requested on your Quiz Cover Sheet when you submit your quiz via fax or U.S. mail. If you e-mail your quiz, include your name, address, student ID number and course code.

  e. Submit your quiz to the school. Please note, send in your quiz **once** either through mail, e-mail or fax.

Mail-in Quiz 3

For items 1 through 4, write the meaning of each word part in the space provided. Please print your answers on your Quiz Cover Sheet using proper upper and lower case letters.

Word Part	Meaning (use your flashcards)
1. abdomin/o	_____
2. axill/o	_____
3. cerebr/o	_____
4. iatr/o	_____

For items 5 through 8, add slashes to divide the terms on the left, and write the meanings on the right. Remember to fill in your answers on your Quiz Cover Sheet.

Add Slashes to Divide These Terms	Meaning (use your flashcards)
5. pediatric	_____
6. thoracotomy	_____
7. syndrome	_____
8. pancytopenia	_____

For items 9 through 13, use your flashcards to write the word part in the blank space and add slashes to the word part.

Meanings	Word Part
9. fat tissues	_____
10. pour, bond	_____
11. many	_____
12. opposite, against	_____
13. across	_____

For items 14 through 18, add slashes to divide the terms. Remember to fill in your answers on your Quiz Cover Sheet.

14. laryngologist

15. symbiosis

16. electrocardiogram

17. arthrosis

18. leukemia

For questions 19 through 36, combine the word parts to form a complete medical term. Write the medical term in the blank on the right and then transfer to your Quiz Cover Sheet. **Do not give the definition**. Some of the word parts will be new to you, but that's okay. Just follow your combining rules. See this example:

appendic/o/ itis	**appendicitis**

Word Parts	**Combined Medical Term**
19. hemi/ hyper/ /trophy	_____
20. hypo/ derm/o /ic	_____
21. splen/o /ectomy	_____
22. oste/o /penia	_____
23. oste/o path/o /ic	_____
24. col/o /stomy	_____
25. gastr/o enter/o /itis	_____
26. meta/ /stasis	_____
27. syn/ /drome	_____
28. sarc/o /oma	_____
29. laryng/o /malacia	_____
30. endo/ cardi/o /um	_____

31. **thromb/o cyt/o /penia** _____

32. **thorac/o abdomin/o /al** _____

33. **sym/ bi/o /osis** _____

34. **lith/o /genesis** _____

35. **erythr/o cyt/o /e** _____

36. **retro/ hepat/o /ic** _____

Medical Transcription
Mail-in Quiz 3

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.

For School Use Only:
Grade: _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

U.S. Career Institute
2001 Lowe Street
Fort Collins, CO 80525

MD-01

This Space for Instructor Use

Fold on dotted line

Word Part	Meaning (use your flashcards)
1. abdomin/o	_____
2. axill/o	_____
3. cerebr/o	_____
4. iatr/o	_____

Use Slashes to Divide These Terms	Meaning (use your flashcards)
5. pediatric	_____
6. thoracotomy	_____
7. syndrome	_____
8. pancytopenia	_____

Meanings	Word Part
9. fat tissues	_____
10. pour, bond	_____
11. many	_____
12. opposite, against	_____
13. across	_____

Add slashes to divide the terms.

14. **laryngologist**
15. **symbiosis**
16. **electrocardiogram**
17. **arthrosis**
18. **leukemia**

Write the Combined Medical Term—do not include the definition.

Word Parts	Combined Medical Term
19. **hemi/ hyper/ /trophy**	_____
20. **hypo/ derm/o /ic**	_____
21. **splen/o /ectomy**	_____
22. **oste/o /penia**	_____
23. **oste/o path/o /ic**	_____
24. **col/o /stomy**	_____
25. **gastr/o enter/o /itis**	_____
26. **meta/ /stasis**	_____
27. **syn/ /drome**	_____
28. **sarc/o /oma**	_____
29. **laryng/o /malacia**	_____
30. **endo/ cardi/o /um**	_____
31. **thromb/o cyt/o /penia**	_____
32. **thorac/o abdomin/o /al**	_____
33. **sym/ bi/o /osis**	_____
34. **lith/o /genesis**	_____
35. **erythr/o cyt/o /e**	_____
36. **retro/ hepat/o /ic**	_____

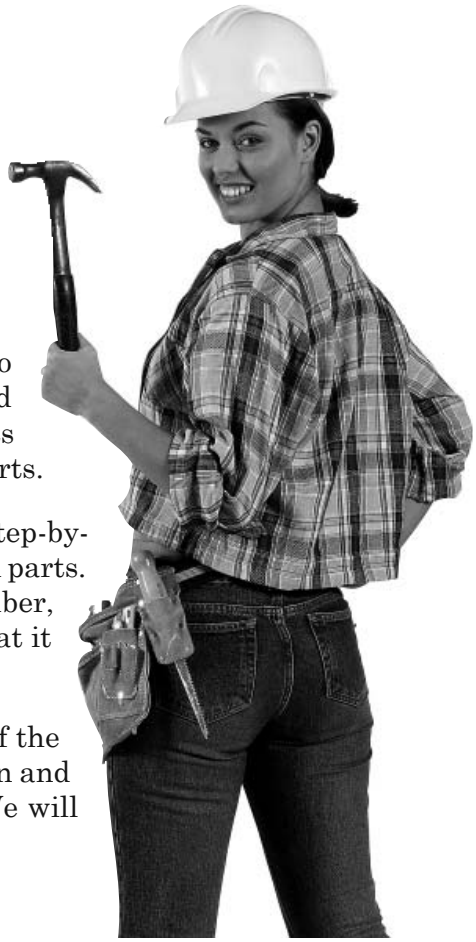
NOW THAT YOU KNOW HOW TO DIVIDE AND COMBINE WORD PARTS, knowing just a few allows you to combine them into many different medical terms. Look at this example of the number of new terms you can form each time you add a new word part to your list.

Word Parts Learned

root words	cardi/o	neur/o		
suffixes	/ac	/logy	/al	/vascular
prefixes	peri/	my/o		

Terms You Can Form

pericardial	pericardiac	pericardiology
cardiovascular	cardiologist	cardiology
cardiac	myocardial	neurologist
perineural	neurovascular	cardioneural



Let's see now. You only needed to learn eight word parts to build 12 medical terms. Not bad. Just stick to the steps and before you know it, you will have learned many word parts the easy way. In this course, you will learn only word parts.

In later courses, you will learn whole terms in an easy, step-by-step manner. But by then, you will already know the word parts. Word parts, like nickels and dimes, add up fast. Remember, it's nickels and dimes that made the phone company what it is today!

Just a reminder: You do not need a computer to do any of the work in Pack 1. Pack 1 was designed to be done with a pen and pencil. If you do not own a computer, do not buy one. We will discuss equipment later in the course.

CONGRATULATIONS!

You've completed Lesson 5.

Don't wait for your quiz results to continue with Lesson 6.

Lesson 6
Listening Skills

Step 1 Learning Objectives for Lesson 6

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Accurately use silent letters and letters that sound alike.
  - Differentiate between classic and modern spellings of common medical terms.

Step 2 Lesson Preview

- ❑ Eric is a medical transcriptionist at a local hospital that uses the latest in speech recognition technology. Eric realizes the importance of fast turnaround time. Speech recognition technology helps him complete his reports quickly. The faster the dictation is charted, the faster the information is available. Physicians can access charts either electronically or via hard copy for immediate access to patient information.

  The speech recognition process is very efficient in the hospital where Eric works. The physicians' notes are recorded digitally, which makes the dictation easier to understand. The physicians' voice files are loaded onto the computer through a digital voice computer that is plugged into the computer. The speech recognition program evaluates the dictation and gives Eric a percentage of how much it recognizes. If it's a high percentage, Eric clicks *OK* and it gives Eric a report. Then Eric listens to the dictation as he goes through the report and edits it. Once the reports are proofed and completed by Eric, the reports go to the physicians to clarify any questions and for their signature. Some report types can be turned around in two to four hours. Before speech recognition, it would take Eric many hours to type up the same reports.

The hospital where Eric works uses speech recognition technology, and Eric edits the reports to ensure accuracy.

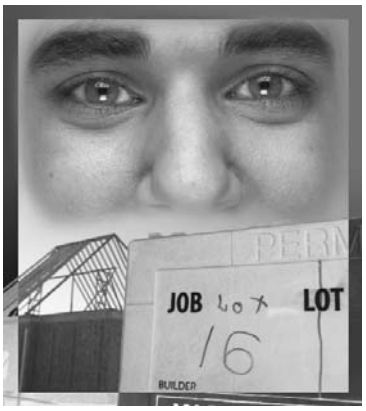
Eric enjoys learning the newest technology in medical transcription and believes the technology makes him a more efficient transcriptionist.

So what happens if information is incorrectly recorded at the very beginning of the process? If this is the case at Eric's hospital, the report is flagged and then the reports are manually processed. This is a time-consuming process for the hospital staff and transcriptionists like Eric. Doctors are instructed to be very clear in pronouncing the patient's name, billing details, social security number and other information in order to ensure that the information is correct.

Now that you have an idea of how to use speech recognition technology in your medical transcription career, let's continue building on medical transcription by focusing on listening skills.

Step 3 Silent Letters

- In this lesson, you will develop your listening skills to help you spell what you hear. The information in this lesson will make it easy for you to work with silent letters and letters that sound alike in medical terms. If you don't recognize a term or know how to spell it, you can use this information to help you find it in your flashcards or in a dictionary.



If you hear the word "sight," do you type "sight" or "site"?

Many everyday words have **silent letters**, or letters that aren't heard. If silent letters are not transcribed, the spelling, meaning and pronunciation of a term changes. Here are some examples. The silent letters are shown in **boldface**.

li**s**tening skil**l**s **k**now**l**e**d**ge si**gh**t

You may not hear the silent letters, but if you don't include them, the word may be misunderstood. If you don't correctly transcribe the silent letters in the word "sight," look what happens.

You hear: sie-t
You type: sit**e**
Or you type: si**gh**t

Do you type site or sight? Because of silent letters, these words sound alike. You might transcribe the word "sight," which means vision, by writing "site," which means location.

In addition, if a silent letter comes at the beginning of a term, you may not know where to find it in a dictionary. Look at these examples.

Sounds Like	Spelled	Listed in Dictionary Under
no	know	K
nat	gnat	G
saam	psalm	P

There are a number of silent letters used in medical terminology. If you hear a term with these sounds and don't know how to spell it, look in the dictionary (or on your flashcards) under the first letter in the letter group. Look at the examples below.

Letter Group	Sound	Example	Pronounced
pn	n	pneumonia	(new-moan-ya)
kn	n	knowledge	(nawl-ege)
mn	n	mnemonic	(nee-mon-ic)
ps	s	pseudonym	(soo-da-nim)
pt	t	ptosis	(toe-sis)
rrh	r	diarrhea	(die-a-ree-ah)
rh	r	rhomboid	(rom-boid)
gm	m	diaphragm	(die-ah-fram)

Look at the first example in the box above. If you heard the term "new-moan-ya" on the dictation, you might look for it in the dictionary under "n" but you won't find it there. It is listed under "pn," pneumonia.

When you hear a new word, remember that silent letters may be present. When you see a new word on a flashcard or in your reading, look for silent letters. Since you won't be able to hear silent letters, memorize how a word is spelled when they are present.

Silent letters may be present, so look for them when you hear a new term.

Letters That Sound Alike

While some letters are silent, other letters sound alike. The letter C can sound like an S or a K while F and PH sound alike. Look at these examples.

Sounds Like	Spelled	Listed in Dictionary Under
fone	phone	P
krome	chrome	C

The following sounds are not always spelled like they sound in medical terms.

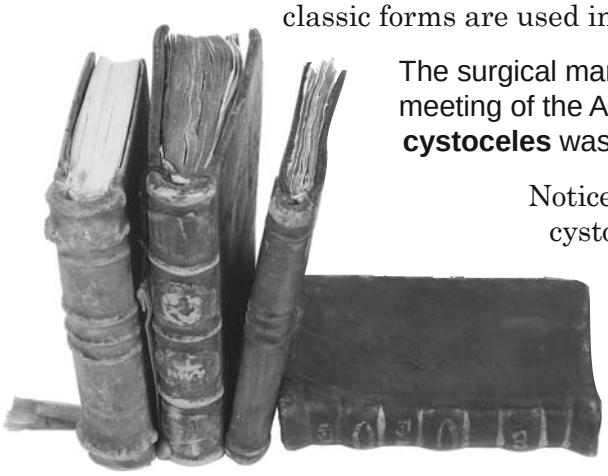
You Hear	Spelled	Example	Pronounced
oo	eu	pneumonia	(noo-moan-ya)
k	ch	cholesterol	(ko-les-ter-all)
f	ph	phobia	(foe-bee-ah)

Medical terms have been around for a long time. Long ago, some sounds used in medical terms were spelled differently. The older way of spelling is called **classic spelling**. Today, the way we spell these sounds is called **modern spelling**. Modern spelling is easier. A medical dictionary will tell you if there are two spellings for a term. You will learn more about dictionary skills later in the course.

Medical transcription uses modern spelling, but it's important to be familiar with classic spelling. For example, a physician spells out the word "orthopaedic" and you know that's the classic way to spell "orthopedic."

Classic Spelling	Modern Spelling	Both Pronounced
anaesthesia	anesthesia	(an-es-thee-zha)
haem/o	hem/o	(heem-o)
haemophilia	hemophilia	(heem-o-feel-ya)
aerobic	(none)	(air-ro-bic)
orthopaedic	orthopedic	(or-tho-pee-dik)
/coele	/cele	(/seal)
cystocoele	cystocele	(sis-toe-seal)

While modern spelling is more prevalent than classic spelling, the names of many book and journal titles and professional organizations use classic spelling. Look at how modern and classic forms are used in a sentence.



Many book and journal titles and professional organizations use classic spelling.

The surgical management of hemophilia will be discussed at the next meeting of the American College of **Orthopaedic** Surgery. A study of **cystoceles** was reported in the American Journal of **Anaesthesia**.

Notice that modern spellings are used for hemophilia and for cystocele, but not for Orthopaedic or Anaesthesia, because they are part of a professional organization name and journal title.

Listen carefully to the dictation pronunciation when you learn a new term. These rules will help you recognize and remember words that aren't spelled like they sound. Use these hints if you hear a new word and cannot find it in a dictionary.

✍ Step 4 Practice Exercise 6-1

❑ For this Practice Exercise, you will continue to practice dividing medical terms. The difference is that you will be listening to the words rather than seeing them. The words are pronounced completely and clearly on the audio track. Follow these steps.

Audio Exercise

a. Access the audio for Lesson 6: Practice Exercise 1.

b. After you hear each numbered term, pause the audio track.

c. Write the term in the blank space on the left. Look at the example below.

You Hear: cardiologist
You Write or Type: cardiologist

d. Using a pencil, make slashes to divide the term into word parts.

Like This: cardi/o/log/ist

e. 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

f. You may refer to the flashcards, if you need to, for any meanings or spellings you don't remember.

	Divide the Term	Meaning
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

11. _____ _____

12. _____ _____

13. _____ _____

14. _____ _____

15. _____ _____

16. _____ _____

17. _____ _____

18. _____ _____

Step 5 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.

Make sure you understood the Practice Exercise before you move on. If you have misunderstood anything on the audio track, look at this page as you play the audio track again. If you divided words incorrectly, review the rules for dividing terms in Lesson 4. If you gave incorrect meanings, practice with those flashcards.

Step 6 Pronounce New Word Parts

❑ Follow these steps to learn how to pronounce word parts.

Audio Exercise

a. Take out your Lesson 6 flashcards and Quick-learn Tutor. Find the first flashcard.

b. Access the audio for Lesson 6. Listen to a word part as it is pronounced. After you hear a word part, pause the player.

c. Look at the word part 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 word part appears in the right window. Read the meaning of the word part. If necessary, turn the card over for the remaining flashterms. Proceed until you have pronounced all the terms for Lesson 6.

d. Next, begin with the Lesson 6 flashcards and play the audio track again. This time, pronounce each word part in order but do not stop the player after each term. 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 it.

e. Next, listen to the audio again and practice the word parts you mispronounced. Be sure you can pronounce each word part clearly and easily. After you have finished pronouncing all of the terms for Lesson 6, move on to the next exercise.

🕮 Step 7 Write New Word Parts

❑ Follow these steps to learn how to write word parts.

a. Using your Lesson 6 flashcards again, look at the first term and say it out loud. Insert your flashcard for Lesson 6 into Side A of your Quick-learn Tutor. 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 put a slash (/) when you write the term, just like you see it on the flashcard.

b. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning on your blank paper, beside the word part. Writing these word parts and meanings will help you learn them more easily. Do this for each flashcard for Lesson 6. After you have pronounced and written each word part, learn the meanings of these word parts in the next exercise.

🕮 Step 8 Learn Word Part Meanings

❑ Follow these steps to learn word part meanings.

a. Again insert the first flashcard for this lesson into Side A of your Quick-learn Tutor. Beginning with 1-160, pronounce each word part 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 lesson.

b. Now insert your flashcards into Side B of your Quick-learn Tutor. Push the card up until you see the meaning of flashterm 1-160 in the right window. Read each meaning out loud. Before looking, 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 lesson.

c. Practice with the flashcards several times until you are familiar with the word parts 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. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 9 Practice Exercise 6-2

❑ For questions 1 through 20, write the meaning of each word part in the space provided. 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, pneumon/o**	_____
3.	**ana/**	_____
4.	**/physis**	_____
5.	**/pnea**	_____
6.	**/rrhea**	_____
7.	**eu/**	_____
8.	**supra/**	_____
9.	**semi/; hemi/**	_____
10.	**/ptosis**	_____
11.	**pro/; ante/**	_____
12.	**pseudo/**	_____
13.	**tom/o**	_____
14.	**trache/o**	_____
15.	**tonsill/o**	_____
16.	**/lysis**	_____
17.	**dys/**	_____
18.	**rhin/o**	_____
19.	**/phoria**	_____
20.	**/crine**	_____

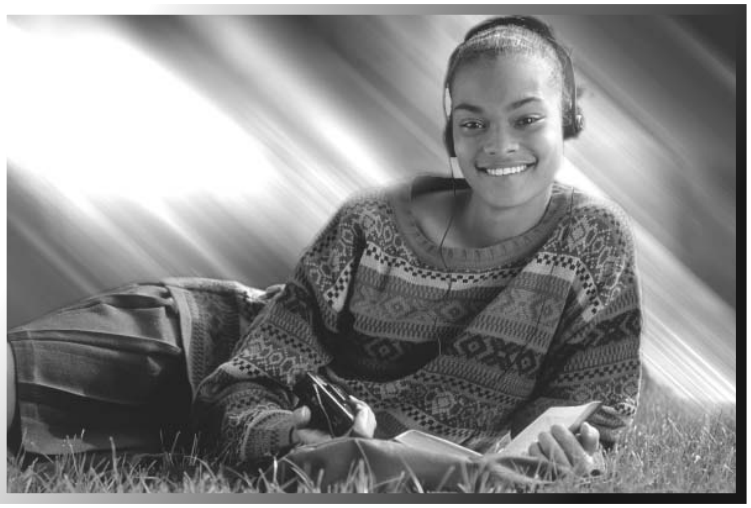
Step 10 Review Practice Exercise 6-2

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

Step 11 Lesson Summary

- ❑ You've learned some important transcription skills in this lesson. You learned that silent letters are challenging to hear on dictation, but they can transform a word's meaning. You also learned to recognize sound-alike letters. You now can differentiate between modern and classic spelling. You put your new knowledge to work in a couple Practice Exercises, so hopefully you're building confidence about your listening skills.

Before we move on, take a moment to review the flashcards from this lesson and flashcards from earlier lessons that you don't easily remember. The time you spend on your flashcards is developing a good vocabulary. Remember, you have learned the basic skill of medical terminology, including how to divide medical terms into word parts and how to combine word parts into medical terms. Use this skill whenever you see a medical term you don't know. It will make working with medical terms easier for you.



Your hard work and time studying will pay off in your new career!

CONGRATULATIONS!

You've completed Lesson 6.

Lesson 7
Forming Plurals

Step 1 Learning Objectives for Lesson 7

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Apply English rules for plurals.
  - Apply medical rules for plurals.

Step 2 Lesson Preview

- ❑ Plurals are very important in any speaking and writing we do. Consider the difference between the words dollar and dollars. Even though only one letter has changed, the words are very different. If you are at the checkout stand at the grocery store, it's important to you whether you owe one dollar or many dollars.

  The same is true in medical transcription. Patients care whether they have one broken bone or many, and you can be sure the expectant mother wants to know if she is having one baby or more than one.

  You undoubtedly already know how to form plurals. You do it every day. In this lesson, we will be reviewing English plurals rules and introducing you to some special rules for making medical terms plural. You'll get practice hearing, writing and forming plurals with several Practice Exercises.

  Let's get started!

It's important to dictate plurals correctly—a patient would like to know whether she's having one baby or two.

Step 3 Introduction to Plurals

- As you remember from Lesson 3, a noun is a word that names a person, place or thing. Nouns can come in two forms.
  - **Singular** The noun means one person, place or thing.
  - **Plural** The noun means more than one person, place or thing.

The suffix is the part of a term that tells you if a term is a noun. So far, all you have learned is the singular form of nouns, that is, the singular form of noun suffixes. Now, you will see how plurals are formed.

Forming plurals of everyday words seems like a simple thing. You add the sound "s" to a word and it means more than one. You can do this by adding the letter "s" or the letters "es." Look at these examples.

Singular	Plural
hospital	hospitals
house	houses
class	classes
crutch	crutches

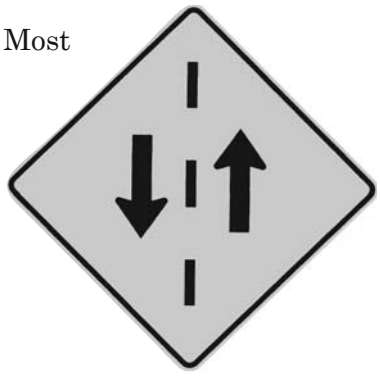
However, not all everyday words follow such simple rules. Look at these examples.

Singular	Plural
sheep	sheep
mouse	mice
woman	women
goose	geese

These words are special, and their plurals just have to be memorized. Most words, however, do follow a few simple rules.

English Rules for Plurals

When you're driving, you follow the rules of the road—most of the time. Otherwise, everyone would drive how they wanted, and people could be hurt. The same is true in medical transcription. Medical transcription has rules for consistency and accuracy of the reports, which actually protects the patients. Throughout the course, you'll be introduced to many medical transcription rules. In this section, you'll learn a few rules to help you form plurals.



Driving and medical transcription function better with rules.

Rule 1 For most words, add s to form the plural.

Singular	Plural
heart	hearts
treatment	treatments

When words already end in an s or a similar sound, you wouldn't be able to hear the extra s, so we have to use another rule.

Rule 2 For words ending in s, x, ch, sh or z, add es.

Singular	Plural
process	process**es**
box	box**es**
match	match**es**
flush	flush**es**
buzz	buzz**es**

Rule 3 For words ending with a consonant followed by a y, change the y to i and add es.

Singular	Plural
thera**py**	thera**pies**

Notice that this rule does not apply to words that end with a y if there is a vowel before the y. (The letters a, e, i, o and u are vowels. All other letters are consonants.) For words ending with a vowel followed by a y, follow Rule 1.

Singular	Plural
toy	toy**s**

Rule 4 For words ending with a consonant followed by an o, add es.

Singular	Plural
pota**to**	pota**toes**

Rule 5 **For words ending with f or fe, change the f or fe to ves.**

Ending With	Use	Example
f	ves	hal**f** - hal**ves**
fe	ves	wi**fe** – wi**ves**

Of course, there are exceptions to these rules. When you're not sure, always look up a term in the dictionary before you use the plural. If the plural form isn't given in the dictionary, then follow the rules above.

Let's see your new rules in action; it's time for a Practice Exercise.

✍ Step 4 Practice Exercise 7-1

❑ In this Practice Exercise, use the rules for English plurals for each of the words on the corresponding audio track for this lesson. All of the words in this exercise follow the English plural rules we have given you. You do not need a dictionary to do this exercise.

Audio Exercise

Follow these steps.

a. Access the audio for Lesson 7: Practice Exercise 1.

b. After you hear each term pronounced, pause the audio track.

c. Write or type the term in the left blank space.

d. Write or type the English plural of the word in the blank space on the right.

	Singular	English Plural
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____

8. _____ _____

9. _____ _____

10. _____ _____

11. _____ _____

12. _____ _____

Step 5 Review Practice Exercise 7-1

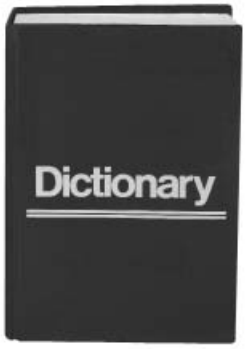
❑ Check your answers with the Answer Key at the back of this instruction pack. Correct any mistakes you may have made.

Step 6 Medical Rules for Plurals

❑ Many times, medical words do not follow the plural rules you have just learned. Therefore, there are some additional rules to follow. If you don't know which rules to apply, check the dictionary. It will list acceptable plurals for medical terms.

Rule 6 **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	criter**i**/**on** - criter**i**/**a** (cry-**tier**-ee-ah)
ax	ac/es	thor**ax** - thorac/es (**thore**-a-seez)
ix	ic/es	cerv**ix** - cerv**ic**/**es** (**serv**-eh-seez)
ex	ic/es	ind**ex** - ind**ic**/**es** (**in**-deh-seez)



If you're unsure of which rules to apply, check a dictionary.

yx	yc/es	cal**yx** - calyc/es (**kay**-luh-seez)
nx	ng/es	lary**nx** - lary**ng**/**es** (lair-**in**-jeez)
en	in/a	lum**en** - lum**in**/**a** (**loo**-men-uh)
ma	mat/a	sarco**ma** - sarco**mat**/**a** (sar-**ko**-ma-tah)

✍ Step 7 Practice Exercise 7-2

❑ In this exercise, let's practice forming plurals using the medical rules you have just learned and some of the terms you have already used in this workbook.

All of the terms in this Practice Exercise follow the medical plural rules we have given you. You do not need a dictionary to do this exercise. Follow these steps.

Audio Exercise

a. Access the audio for Lesson 7: Practice Exercise 2.

b. After you hear each medical term pronounced, pause the audio track.

c. Write the word in the blank space on the left.

d. Write the medical plural of the word in the blank space on the right.

	Singular	**Medical Plural**
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

Step 8 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 9 Add Plurals to Your Flashcards

- ❑ Follow these steps.
  a. Take out your flashcards for Lessons 3, 4 and 6.
  b. On these flashcards, find the following noun suffixes:

/centesis _____

/itis _____

/ium _____

/um _____

/osis _____

/stasis _____

/oma _____

/stoma _____

/physis _____

  c. Write the plural form for each suffix next to the singular form on your flashcard. Use your medical plural rules.

Step 10 Check Your Work

- ❑ You should have written the following plural endings next to the singular noun suffixes on your flashcards.

Singular	Plural	Singular	Plural
/centesis	/centeses	/stasis	/stases
/itis	/itid/es	/oma	/omata
/ium	/ia	/stoma	/stomata
/um	/a	/physis	/physes
/osis	/oses		

These are suffixes that you will often hear in the plural form. When you hear these plural forms, you will be able to refer to your medical plural rules and also to your flashcards for help.

Step 11 Add Plurals to Your Flashcards

- ❑ Follow these steps.
  a. Take out your Lesson 7 flashterms and Quick-learn Tutor.
  b. A singular term is listed on Side A of each flashcard. Write the medical plural for each term on Side B.
  c. Check your answers by reviewing the chart in Rule 6 and the Practice Exercise 7-2 Answer Key.

Step 12 Practice Exercise 7-3

- ❑ Now that you've studied plurals, let's practice transcribing and dividing more medical terms before you take a quiz. For each numbered item, you will hear a medical term. Follow these steps.

Audio Exercise

a. Access the audio for Lesson 7: Practice Exercise 3.
b. After you hear each numbered term, pause the audio track.
c. Write the term in the blank space on the left. Using slashes, divide the word into word parts.
d. Write the meaning of the term in the blank space on the right. You may refer to the flashcards, if you need to, for any meanings you don't remember. Look at the following example.

You hear: cardiac

You write or type: cardiac

You divide and add the meaning: cardi/ac relating to the heart

	Term	Meaning
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

6. _____ _____

7. _____ _____

8. _____ _____

9. _____ _____

10. _____ _____

11. _____ _____

12. _____ _____

13. _____ _____

14. _____ _____

15. _____ _____

16. _____ _____

Step 13 Review Practice Exercise 7-3

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

Step 14 Practice Exercise 7-4

- ❑ In this exercise, you will practice combining medical terms. For each numbered item, you will hear the meaning of a medical term. Follow these steps.

Audio Exercise

a. Access the audio for Lesson 7: Practice Exercise 4.

b. After you hear each numbered meaning, pause the audio track.

c. Write the meaning in the blank space indicated.

d. Write the correct word parts in the spaces indicated. Combine the word parts and write the medical term in the blank space indicated. Remember, do not use the combining vowel if a suffix begins with a vowel.

You hear: relating to the heart

You write or type: **Meaning:** relating to the heart
Word Parts
prefix:
root(s):
suffix:
Medical Term:

Add the word parts and combine: **Meaning:** relating to the heart
Word Parts
prefix:
root(s): cardi/o
suffix: /ac
Medical Term: cardiac

1. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

2. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

3. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

4. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

5. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

6. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

7. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

8. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

9. **Meaning:** _____
   Word Parts
   prefix: _____
   root(s): _____
   suffix: _____
   Medical Term: _____

Step 15 Review Practice Exercise 7-4

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

Step 16 Lesson Summary

- ❑ This lesson introduced to you to English and medical plurals. You also learned several rules that you can use to form plurals. Remember, if you're ever uncertain about the plural form of a word, look it up the dictionary.

  Before we move on, take a moment to review the plural flashcards from this lesson and flashcards from earlier lessons that you don't remember easily. The time you spend on your flashcards is developing a good vocabulary.

  Let's practice what you've learned in this lesson with a quiz. Remember, you can review your course materials when taking your quiz.

Step 17 Mail-in Quiz 4

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

Mail-in Quiz 4

Audio Exercise

a. Access the audio for Lesson 7: Quiz 4.

b. Listen to the numbered items that match your quiz.

c. After you hear each medical term or meaning, pause the audio track.

d. For each question, choose the word you heard on the audio track from the choices provided below.

For questions 1 through 6, choose the word that you heard on the audio track.

1.	**a. cystopathology**	**b. histiopathology**	**c. histopathology**
2.	**a. electrocardiogram**	**b. electroencephalogram**	**c. electrocardigram**
3.	**a. urethrocite**	**b. erythrocyte**	**c. arthrocyte**
4.	**a. numonia**	**b. neuromonia**	**c. pneumonia**
5.	**a. bronchitis**	**b. bronchoitis**	**c. bronkitis**
6.	**a. predrome**	**b. peridrome**	**c. prodrome**

For questions 7 through 12, listen to the meaning on the audio track and choose the medical term that matches the meaning.

7.	**a. splenoma**	**b. hepatoma**	**c. hepatooma**
8.	**a. postgastric**	**b. retroabdominal**	**c. retrogastric**
9.	**a. rhinitis**	**b. rhinoitis**	**c. laryngitis**
10.	**a. toxopathy**	**b. toxemia**	**c. sepsemia**
11.	**a. dyspnea**	**b. pneumopenia**	**c. apnea**
12.	**a. chondritis**	**b. osteitis**	**c. chondroitis**

For questions 13 through 18, select the answer that shows the correct way to divide the following words.

13. hematopoiesis _____

a. hematop/oiesis
b. hemat/o/poiesis
c. hemat/o/poi/esis

14. ophthalmocele _____

a. ophthalm/o/cele
b. ophthal/mo/cele
c. ophthalmo/cele

15. rhinorrhea _____

a. rhinorr/hea
b. rhin/orrhea
c. rhin/o/rrhea

16. percutaneous _____

a. percutan/eous
b. per/cutane/ous
c. per/cutane/o/us

17. tonsillitis _____

a. tonsill/itis
b. ton/sill/itis
c. tonsil/litis

18. tracheolaryngocele _____

a. tracheo/laryngo/cele
b. tracheo/laryng/o/cele
c. trache/o/laryng/o/cele

For questions 19 through 24, select the correct meaning of each medical term.

19. cephalomegaly _____

a. enlargement of the brain
b. measure of the brain
c. enlargement of the head

20. physiology _____

a. to look at nature
b. study of nature
c. living things

21. bradyphagia _____

a. condition of much swallowing
b. condition of slower than usual eating
c. structure which eats slowly

22. pseudoplasia _____

a. false growth
b. excessive growth
c. excessive fear

23. vertebral _____

a. relating to the spinal cord
b. pain in the back
c. relating to the back bones

24. otomegaly _____

a. enlargement of the eyes
b. enlargement of the ears
c. upright ears

For questions 25 through 30, choose the best answer from the choices provided.

25. If a word begins with an n sound, but you can't find it under n in your dictionary, where else might you look? _____

a. ph
b. pn
c. tn

26. Which of the following word parts begins with a silent letter? _____

a. phob/o
b. /poiesis
c. /ptosis

27. What is the classical spelling of hemophilia? _____

a. haemophilia
b. hemophillia
c. haemophillia

28. If you hear an oo sound, how else might it be spelled? _____

a. ee
b. ou
c. eu

29. Which of the following word parts begins with a k sound? _____

a. cervic/o
b. /centesis
c. cutane/o

30. What silent letter is sometimes found before an s in medical terms? _____

a. p
b. t
c. c

For questions 31 through 36, choose the correct medical plural for each singular word.

31. symphysis _____
- a. symphysises
- b. symphyseal
- c. symphyses

32. larynx _____
- a. larynges
- b. larynea
- c. larynxes

33. hepatoma _____
- a. hepatomata
- b . hepatomas
- c. hepatomae

34. cervix _____
- a. cervixes
- b. cervices
- c. cervici

35. pericardium _____
- a. pericardiums
- b. pericardiae
- c. pericardia

36. thorax _____
- a. thoraces
- b. thoraxe
- c. thoraxes

For questions 37 through 40, choose the correct **English plural** for each singular word.

37. tracheotomy _____
- a. tracheotomys
- b. tracheotomyes
- c. tracheotomies

38. process _____

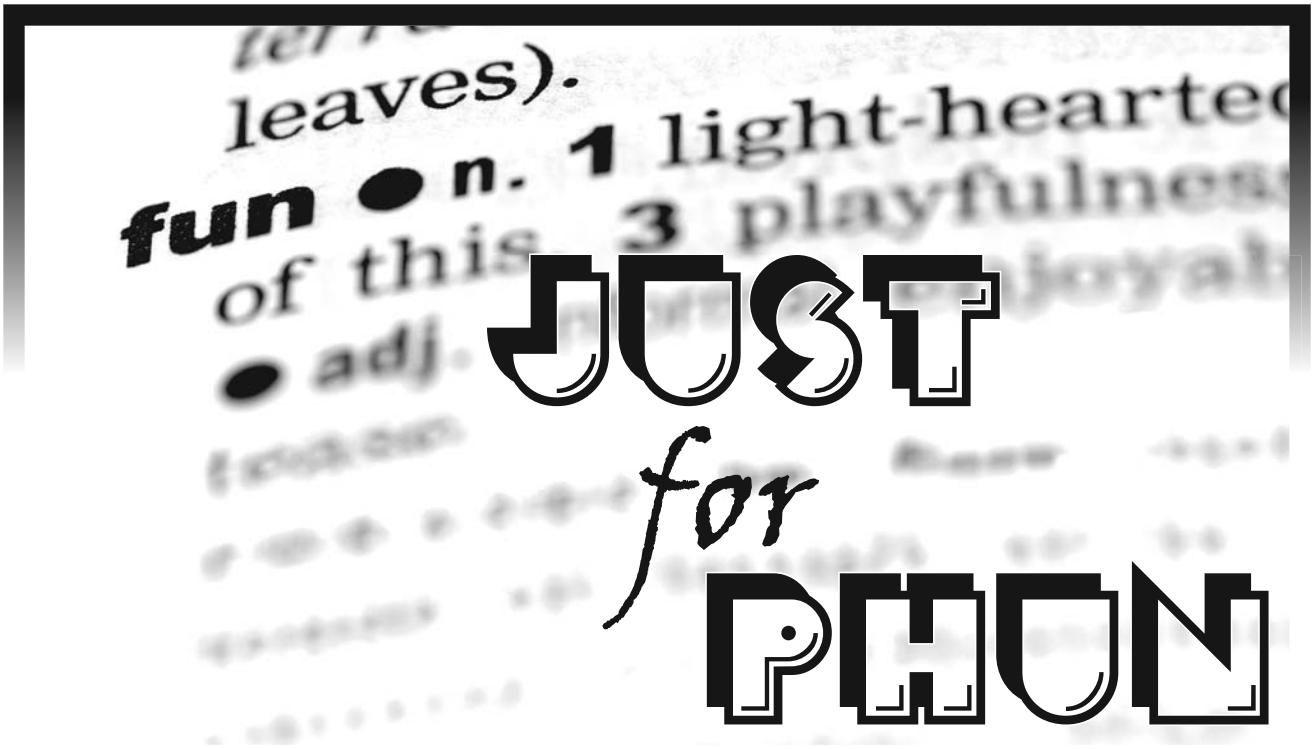
a. process
b. processes
c. procexes

39. knife _____

a. knives
b. knifes
c. kniveses

40. pathology _____

a. pathologys
b. pathologyes
c. pathologies



DO YOU REMEMBER THOSE LETTER PAIRS FROM LESSON 6? Let's see if you can read words that are spelled with them. (Be careful: This is the Just for Phun page, remember?)

How do you spell relief? Rrholaids.

Translate the sentence below. It was written substituting the letter pairs and classic spellings you saw in Lesson 6.

The ptyme yeu spaend sptudying todae will mach yeu ae bepterrh ptranpschrrhiptionist teumorhow.

The letter pairs and classic spellings you studied are found in Greek words. How do you tell if a word is Greek? If a word has any of these letter pairs in it, it came from the Greek language. Some terms, like skeleton, haven't changed from the time of the Trojan wars. Most terms were modernized by Romans, who spoke Latin, by the French and by us. Boy, are Americans good at modernizing.

Look at this example.

Classic Form	**Modern Form**
Kardi/o	Cardi/o (heart)
Electr/o/kardi/o/gram = EKG	Electr/o/cardi/o/gram = ECG
Aerobic (exercising)	Arobic (?)

Divide arobic: a/rob/ic = (exercising without your robe on)

Sorry about that. I guess aerobic is still Greek. We haven't modernized the spelling. But you can see why EKG means electrocardiogram. The spelling of the term is modernized from kardi/o (cardi/o), but the initials EKG are still used by most people.

Rule 6, the medical plural rule you learned, was for Latin and Greek words. In Rule 6, the first six endings are Latin word endings. The remainder of the chart shows Greek word endings. You can usually recognize Greek terms. They have funny letter pairs and endings. "It's Greek to me!"

Latin terms usually look simple, like Anglo-Saxon, but they are longer. Why they are longer is amazing, since they did a lot of their writing by carving in stone. Now we know why Rome wasn't built in a day. It took too long to write the words.

Plurals aren't funny if they're right. Forming the wrong plural can be much more interesting.

Singular	Real Plural	Impossible Plural
son-in-law	sons-in-law	son-in-laws (my son the lawyer)
gang	gangs	ganges (the river in India)
mix	mixes	mices (Betty Crocker in Greece)
INXS*	INXSes	INCES (Greek rock groups)
mouse	mice	mousses (chocolate or styling)
louse	lice	leese (the landlord is a louse)

In the old days, say 1970, doctors had to study Latin before they went to medical school. That's no longer true. So younger doctors today wouldn't recognize Latin or Greek if a Roman soldier sat on them. Because of this, they won't always form plurals correctly. But that's OK. The dictionary will list the correct plural form. You know how to form plurals either the English way or the medical way.

Older doctors and ones who have studied science or Latin before medical school will use the classic form for Latin and Greek words.

You have learned the rules that will help you work with all doctors, even ones who don't know as much as you do about plurals and silent letters.

Be patient with the poor doctors who don't know how to make plurals. They haven't had the education you have had. But they will recognize a well-formed plural when they see it. They will respect your skills.

** Remember this rock group from the 1980s? It's pronounced in-ex-sess.*

CONGRATULATIONS!

You've completed Lesson 7.

Don't wait for your quiz results to continue with Lesson 8.

Lesson 8
Proper Names and Acronyms

Step 1 Learning Objectives for Lesson 8

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Use common eponyms and brand names.
  - Use eponyms appropriately.
  - Use and pronounce common medical acronyms.

Step 2 Lesson Preview

- ❑ In your career you will encounter eponyms, brand names and acronyms, all of which we'll define and explain in this lesson. By becoming familiar with these words now, you'll save time and increase your efficiency as a medical transcriptionist.

  While some of these items may seem complex, your flashcards and Practice Exercises will help you along the way. It's amazing how much you've already learned about medical transcription and medical terminology in this course.

  Your fellow medical transcriptionists and other medical professionals will appreciate your knowledge as you work alongside them!

  Now, let's get started with this lesson—we'll start with *eponyms*.

Your flashcards and Practice Exercises will help you develop your medical transcription skills.

Step 3 Eponyms and Brand Names

- In addition to the medical terms you learned in previous lessons, you will encounter information such as laboratory test results, special medical abbreviations and the names of medical equipment and procedures as you work as a medical transcriptionist. Often these words include **proper names**—that is, brand names or the names of people. You must capitalize proper names.

  In the past, it was customary to use a person's name to identify his or her medical inventions or discoveries. Items named for people include a new disease or a symptom of disease; an anatomical structure; or a new instrument, test or examination method.

  In your career you will encounter eponyms, brand names and acronyms.

Eponyms

An **eponym** is a term that is formed from a person's name. The person's name is given to his or her discovery or invention to indicate that person did the research and made the discovery. One example is Bell('s) palsy.

An eponym has two parts:

1. The person's name as an adjective
2. The type of invention or discovery as a noun

For example, look at this eponym:

Adjective	Noun	Meaning
↓	↓	↓
Bell('s)	palsy	facial paralysis

Here are some more examples.

Eponym Adjective	Eponym Noun	Noun Meaning
Bell('s)	palsy	facial paralysis
Pott('s)	clamp	surgical instrument
Chiba	needle	long biopsy needle
McBurney	point examination	location for the appendix
Kaposi('s)	sarcoma	unusual skin cancer

Because an eponym is a person's name, dividing rules don't apply. Spelling rules don't apply either. However, there is information that makes transcribing eponyms easy for you.

TIP **To find the proper spelling of an eponym, look up the noun part of the phrase in a medical dictionary. The eponym will be listed under that noun.**

Look at these examples.

Eponym	Listed Under
Bell('s) palsy	palsy
Chiba needle	needle
Potts(') clamp	clamp

Could one of these be a Chiba needle?

Because it is difficult to remember the meanings of eponyms, their use is becoming less common. In fact, it is now considered more professional to use a properly combined medical term rather than an eponym.

However, if a doctor dictates an eponym, transcribe the eponym. Don't substitute the equivalent medical term.

Most professional organizations don't like the use of eponyms because they do not communicate information clearly. Even so, eponyms are still frequently used by doctors.

TIP **Check with your client or facility about eponym preferences. *The Book of Style for Medical Transcription* by AHDI and *The AMA Manual of Style* prefer that the possessive form of eponyms be dropped for clarity and consistency.**

Some eponyms do not have a corresponding medical term.

Look at these examples.

Eponym	Medical Term
Bell('s) palsy	facial paralysis
Chiba needle	none
Potts(') clamp	none

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 find the correct spelling in the dictionary. Now, let's take one more look at some common eponyms.

Common Eponyms

Babkin reflex	Erb('s) palsy	Laennec('s) cirrhosis
Cantor tube	Gordon('s) reflex	Legg('s) disease
Charcot('s) syndrome	Halsted suture	McBurney('s) point
Colles(') fracture	Hodgkin('s) disease	Miller-Abbott tube
Cooley('s) anemia	Hodgkin('s) sarcoma	Pauley('s) point
Epstein-Barr virus	Kaposi('s) sarcoma	West Nile virus

Brand Names

In the past, an eponym told you the name of the person who took credit for a discovery or an invention. Some eponyms are still given to medical products, but they indicate that a company owns the patent for its 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 a genetic cell line or tissue culture product; equipment or instruments; or drugs or therapy methods.

Look at these examples.

- General Electric CT scanner
- Phillips' milk of magnesia

Let's practice what you've learned so far.

✍ Step 4 Practice Exercise 8-1

❑ Each of the numbered items is an eponym. In the blank space on the right, write the word you would look up in the dictionary to find the eponym.

Eponym	Dictionary Word
1. Epstein-Barr virus	_____
2. Halsted(’s) incision	_____
3. Legg(’s) disease	_____
4. Miller-Abbott tube	_____
5. Pauly(’s) point	_____
6. Hodgkin(’s) disease	_____
7. Hodgkin(’s) sarcoma	_____
8. Gordon(’s) reflex	_____
9. Laennec(’s) cirrhosis	_____
10. Cantor tube	_____
11. Kaposi(’s) sarcoma	_____
12. Babkin reflex	_____
13. McBurney point	_____
14. Colles(’) fracture	_____
15. Cooley(’s) anemia	_____
16. West Nile virus	_____
17. Erb(’s) palsy	_____
18. Charcot(’s) syndrome	_____

Step 5 Review Practice Exercise 8-1

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

Step 6 Practice Exercise 8-2

- ❑ For this Practice Exercise, you will need your flashcards. Follow these steps.

  a. Take out your Lesson 8: Eponyms flashcards. Eponyms are listed on the flashcards as they are in a medical dictionary, under the noun.

  b. For questions 1 through 13, write the eponyms next to each corresponding noun.

Noun	Eponym
1. disease	_____
2. palsy	_____
3. anemia	_____
4. fracture	_____
5. point	_____
6. incision	_____
7. reflex	_____
8. tube	_____
9. syndrome	_____
10. sarcoma	_____
11. respiration	_____
12. virus	_____
13. cirrhosis	_____

Step 7 Review Practice Exercise 8-2

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

Step 8 Pronounce Eponyms

- ❑ Follow these steps to learn how to pronounce eponyms.

Audio Exercise

a. Take out your Lesson 8 Eponyms flashcards and Quick-learn Tutor. Find the first flashcard. Access the audio for Lesson 8 Eponyms flashcards.

b. Listen to a group of eponyms as they are pronounced. After you hear the group, pause the player.

c. Look at each group of eponyms 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 noun with which these eponyms correspond appears in the right window. Proceed until you have pronounced all the eponyms for Lesson 8.

d. Next, begin with Lesson 8 Eponyms flashcards and play the audio track again. This time, pronounce each group of eponyms in order but do not stop the player after each group. As you pronounce each group, look at it on the flashcard. Listen to your own pronunciation of each term. If you mispronounce one, put a check mark next to it.

e. Next, listen to the audio track again and practice the eponyms you mispronounced. Be sure you can pronounce each eponym clearly and easily. After you have finished pronouncing all of the eponyms in Lesson 8 Eponyms, move on to the next step.

Step 9 Acronyms

- An **acronym** is a word that is formed by using the initials from a group of words or from word parts. Look at these examples.

Acronym	Stands For
IRS	Internal Revenue Service
USA	United States of America
DMV	Department of Motor Vehicles

Acronyms are a special kind of abbreviation. We will be discussing abbreviations more in later lessons. Doctors like to use acronyms because they save time. Instead of having to dictate the very long names of some diseases and procedures, the doctor can simply say the acronym.

CBC is the acronym for complete blood count.

For example:

Medical Phrase	Acronym
electrocardiogram	EKG or ECG
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.

FTD = **F**lorist **T**elegraph **D**elivery
NG = **n**aso**g**astric

Not every word in the phrase has to be represented in the acronym. Small, nonessential words in a phrase are usually omitted.

HEENT = **h**ead, **e**yes, **e**ars, **n**ose (and) **t**hroat


The acronym HEENT stands for head, eyes, ears, 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.

Look at these examples:

Acronym	Pronounced
EEG (say the letters)	ee-ee-gee
ELISA (pronounce the word)	el-**ee**-sah
HEENT	Some heent or h-e-e-n-t doctors pronounce this as "heent" instead of saying the acronyms' letters.

In fact, some acronyms that can be 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 word phrase any more because laser is an accepted word. The same is true of scuba, which stands for self-contained underwater breathing apparatus.

Acronyms are written in capital letters with no periods or spaces between the letters.

Rule 7 **Acronyms are all caps, no periods.**

Examples:

CBC = complete blood count
NSVD = normal spontaneous vaginal delivery

When you hear a new acronym, be sure to look it up and find out what it stands for. This will help you be sure that you are using the correct acronym and spelling it correctly.

Most common acronyms can be found in your medical dictionary along with their meanings.

✍ Step 10 Practice Exercise 8-3

❑ Let's practice forming acronyms. Access the audio for Lesson 8: Practice Exercise 3. Pause the audio track after each item. Then write the acronym for each item in the blank space on the right.

Audio Exercise	Acronym
1. blood urea nitrogen	_____
2. white blood count	_____
3. Venereal Disease Research Laboratory	_____
4. rheumatoid arthritis	_____
5. human immunodeficiency virus	_____
6. Physicians' Desk Reference	_____
7. (The) pupils (are) equal, round (and) reactive (to) light (and) accommodation.	_____
8. electr/o/encephal/o/gram	_____
9. head, eyes, ears, nose (and) throat	_____
10. intra/muscular	_____

Step 11 Review Practice Exercise 8-3

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

Step 12 Meanings for Acronyms

- ❑ Write the meanings for the acronyms from Practice Exercises 3 and 4 on your Lesson 8 flashcards.

  a. Take out the flashcards labeled Lesson 8: Acronyms.

  b. Next to each flashterm, write the full term or phrase the acronym stands for.

Step 13 Pronounce Acronyms

- ❑ Follow these steps to learn how to pronounce acronyms.

Audio Exercise

a. Take out your Lesson 8 Acronyms flashcards and Quick-learn Tutor. Access the audio for Lesson 8 Acronyms flashcards.

b. Listen to an acronym as it is pronounced. After you hear an acronym, put the player on pause.

c. Look at the acronym 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 acronym appears in the right window. Read the meaning of the acronym. If necessary, turn the card over for the remaining flashterms. Proceed until you have pronounced all the acronyms for Lesson 8.

Your practice pronouncing and listening to acronyms will help you in your future career.

d. Next, begin with Lesson 8 Acronyms flashcards and play the audio file again. This time, pronounce each acronym in order but do not stop the player after each term. As you pronounce each acronym, look at it on the flashcard. Listen to your own pronunciation of each acronym. If you mispronounce one, put a check mark next to it.

e. Next, listen to the audio track again and practice the acronyms you mispronounced. Be sure you can pronounce each acronym clearly and easily. After you have finished pronouncing all of the acronyms in Lesson 8 Acronyms, move on to the next step.

✍ Step 14 Practice Exercise 8-4

❑ For questions 1 through 15, write the acronym in the blank space on the right.

	Acronym
1. no significant disease	_____
2. nothing by mouth	_____
3. nil per os (means nothing by mouth)	_____
4. milk of magnesia	_____
5. muscular dystrophy	_____
6. multiple sclerosis	_____
7. intensive care unit	_____
8. lactated Ringer's solution	_____
9. leave of absence	_____
10. high blood pressure	_____
11. for your information	_____
12. arteriovenous	_____
13. sexually transmitted disease	_____
14. below knee amputation	_____
15. hypertension	_____

🔑 Step 15 Review Practice Exercise 8-4

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

Step 16 Lesson Summary

- This lesson introduced you to eponyms, brand names and acronyms. As you know, eponyms are terms that are formed from a person's name. Brand names are like eponyms because they demonstrate who discovered the procedure, diagnosis or disease. An acronym is a word that is formed using the initials from a group of words or from word parts.

  Your knowledge of eponyms, brand names and acronyms will help you in your transcription career. Now that you're familiar with writing, pronouncing and reading eponyms, brand names and acronyms, you're ready to move on to the next lesson. We'll continue to build your foundation of medical terminology in the next lesson by learning about abbreviations and numbers.

CONGRATULATIONS!

You've completed Lesson 8.

Lesson 9
Abbreviations and Numbers

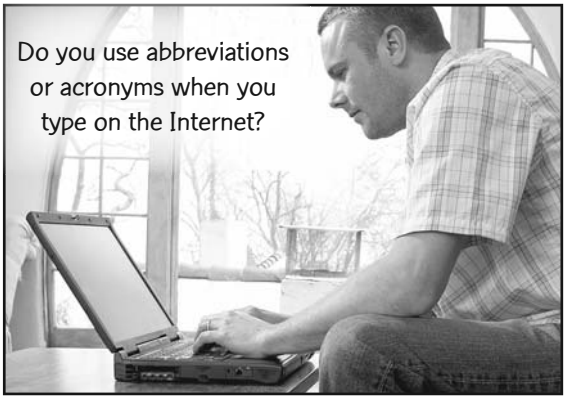
Step 1 Learning Objectives for Lesson 9

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Use medical abbreviations and apply appropriate rules when transcribing.
  - Appropriately use medical and English slang and correctly transcribe slang when dictated.
  - Transcribe numerical values and symbols and correctly transcribe when dictated.

Step 2 Lesson Preview

- ❑ Have you ever received "lol" in an e-mail or through instant messaging? LOL, or laugh out loud, is an acronym that saves people time from typing. In the same way the Internet uses acronyms and abbreviations to save time, the medical world uses abbreviations and slang to save time.

  Abbreviations and slang are both shorthand substitutes for medical terms or phrases. You have already learned about one type of abbreviation, acronyms. Now you will learn about the many other types of abbreviations doctors use.



Step 3 Abbreviations

- ❑ Doctors frequently use shortened versions of longer words or phrases. These are extremely useful to a doctor because they save valuable time. However, abbreviations are not helpful unless the other doctors and nurses who will read the medical report know what the abbreviations mean. Because of this, doctors and hospitals get together and produce lists of approved abbreviations, ones that they all agree upon and understand.

As a transcriptionist, you will need to know how to use abbreviations in different situations.

- **Hospitals**—Hospitals that are accredited by The Joint Commission are required to keep a list of unacceptable abbreviations. Unacceptable abbreviations may not be used in the medical records for that hospital. For example, a hospital may not allow you to abbreviate daily with q.d.
- **Office records**—The rules for abbreviations are more relaxed here. However, any reports typed for a hospital chart must follow the hospital's list of abbreviations.
- **Memos and telephone messages**—Doctors sometimes dictate memos or telephone messages on the same audio file as medical reports. Here, the doctor can use his own abbreviations even if they don't appear on any approved list.
- **Pharmacy**—Lists of medications and treatments prepared by a pharmacy are included in the medical record. Latin abbreviations are frequently used for these lists.

Doctors use abbreviations to save time.

Abbreviation Rules

There are a few rules to remember as you work with abbreviations in a medical setting.

Rule 8 Do not use abbreviations in any of the following parts of a medical record.

ADMISSION DIAGNOSIS

DISCHARGE DIAGNOSIS

PREOPERATIVE DIAGNOSIS

POSTOPERATIVE DIAGNOSIS

IMPRESSION

ASSESSMENT

OPERATION PERFORMED

Each item above is the heading for a part of a medical report. Because these parts of the report are so important, all terms are written out in full. Abbreviations are not used in these parts of the report. We will learn more about each of these headings and reports in later lessons.

Rule 9 Do not use abbreviations that are on a facility's unacceptable abbreviations list for medical records.

When you transcribe for a hospital, they will provide you with a list of unacceptable abbreviations.

Rule 10 If you clearly hear an abbreviation but don't know the meaning, type the abbreviation. Flag the abbreviation and determine the meaning for future reference.

If it's okay with your client or facility, use the abbreviation that is dictated even if you don't know the meaning.

If you transcribe for a hospital, you'll have a list of approved abbreviations.

Rule 11 Do not punctuate abbreviations that are all capitals.

Do not punctuate: RN CRT CMT O (oxygen) PKU MD DDS BA

Notice that abbreviations that stand for academic degrees, certification, registration or licensure like RN and CMT are not punctuated.

Rule 12 Punctuate abbreviations for common words using both upper and lower case letters.

St. Ave. Apt.

Exception: According to *The Book of Style for Medical Transcription*, it's preferred to drop the periods in abbreviated personal and courtesy titles (Mr, Mrs, Dr). While AHDI prefers titles written without periods, you'll see personal and courtesy titles with periods in this course.

Rule 13 Punctuate Latin lower case abbreviations (except for metric measurements).

Exception: According to *The Book of Style*, the trend is to drop the periods after most Latin abbreviations (etc, eg, ie). However, in this course you'll see Latin lower case abbreviations with periods.

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. Look at these examples.

e.g. (for example) q.h. (every hour) b.i.d. (twice a day)

So if you hear ee-gee on a dictated sound file or tape, you only need to know that it means "for example" and that it is typed like this: e.g. or eg.

Rule 14 **Always abbreviate metric and English measurements used with numerals (1, 2, 3, etc.). The abbreviation stands for both the singular and plural forms of the word; an s is never added to the abbreviation. Do not add an s to form the plural of the abbreviation. Do not abbreviate most nonmetric units of measure (pounds, minutes, ounces).**

Exception: You may add s to the abbreviation "tab."

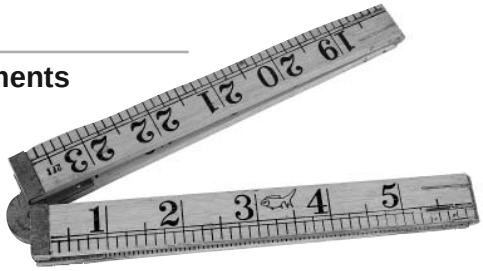
7 mm 2.3 cm 2 tabs

Rule 15 **Do not abbreviate metric or English measurements when they are used without a number.**

Look at this example.

Right: Please use centimeters to describe the size of tumors.

Wrong: Please use cm to describe the size of tumors.



Don't abbreviate metric or English measurements when they are used without a number.

Rule 16 **Do not use periods after metric or English measurement abbreviations.**

Right: There was a 5 mm mass in the right upper lobe.

Wrong: There was a 5 mm. mass in the right upper lobe.

Rule 17 **Do not punctuate Latin and chemical abbreviations that use upper and lower case letters together.**

Look at these examples.

mEq (milliEquivalents) Ca (calcium)

Hg (mercury) pH (hydrogen ratio)

Make sure the use of capitals and punctuation is correct for the abbreviation you are using.

Look at these examples.

pH Sx Rx Hb ad lib. e.g. RN MD

Step 4 Pronounce Common Medical Abbreviations

❑ Follow these steps to learn how to pronounce medical abbreviations.

Audio Exercise

a. Take out your Lesson 9 flashcards and Quick-learn Tutor. Access the audio for Lesson 9.

b. Listen to each abbreviation as it is pronounced. After you hear an abbreviation, pause the player.

c. Look at each abbreviation 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 abbreviation's meaning appears in the right window. Proceed until you have pronounced all the abbreviations for Lesson 9.

d. Next, begin with the Lesson 9 flashcards and play the audio track again. This time, pronounce each abbreviation in order but do not pause the player after each term. As you pronounce each abbreviation, look at it on the flashcard. Listen to your own pronunciation of each term. If you mispronounce one, put a check mark next to it.

e. Next, listen to the audio again and practice the abbreviation you mispronounced. Be sure you can pronounce each abbreviation clearly and easily. After you have finished pronouncing all of the terms for Lesson 9, move on to the next exercise.

Step 5 Write Abbreviations

❑ Follow these steps to learn how to write abbreviations.

a. Insert your flashcard for Lesson 9 into Side A of your Quick-learn Tutor. 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 put a slash (/) when you write the term, just like you see it on the flashcard.

b. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning on your blank paper, beside the abbreviation. Writing these abbreviations and meanings will help you learn them more easily. Do this for each abbreviation flashcard for Lesson 9. After you have pronounced and written each abbreviation's meaning, learn the meanings of these terms in the next exercise.

🕮 Step 6 Learn Abbreviation Meanings

- ❑ Follow these steps to learn how to write abbreviations.

  a. Again insert the first flashcard for this lesson into Side A of your Quick-learn Tutor. Beginning with 1-234, pronounce each abbreviation 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 lesson.

  b. Now insert your flashcards into Side B of your Quick-learn Tutor. Push the card up until you see the meaning of flashterm 1-234 in the right window. Read each meaning out loud. Before looking, see if you can remember the abbreviation that goes with that meaning. Check yourself by pushing the flashcard up until you can see the abbreviation in the left window. Do this for each abbreviation flashterm for Lesson 9.

  c. Practice with the flashcards several times until you are familiar with the abbreviations 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. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 7 Practice Exercise 9-1

- ❑ Items 1 through 15 are sample sentences from chart notes. Chart notes are short notes written about the daily events during the course of treatment. Cross out any abbreviation in the note and write the full word or phrase in the space below the abbreviation. For Latin abbreviations, write only the English meaning.

  1. **The patient was seen today and his CO_2 was 33.**

  2. **His medications were changed to Lasix 40 mg p.o. b.i.d.**

  3. **O_2 2 L per nasal prongs begun, with improvement.**

  4. **Patient is n.p.o. until the GB study is completed.**

  5. **Abdomen: NBS. No hepatomegaly or splenomegaly.**

  6. **Laboratory studies confirm the diagnosis of EBV.**

  7. **U/A: Sp. gr. 1.023. No white cells in the urine.**

  8. **Normal TPR.**

  9. **The leukemia responds to bleomycin 15 U and IM injections.**

10. **R/O osteoarthritis. Repeat CBC. Last specimen q.n.s.**

11. **Order IV fluids stat. I will notify LMD of the patient's condition.**

12. **The neurologic examination showed a decrease in the DTRs.**

13. **The mass measured 1 cm × 7 mm.**

14. **The specimen was examined by EM. NSD.**

15. **The patient is a 72-YO white male in no obvious distress.**

Step 8 Review Practice Exercise 9-1

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

Step 9 Slang

❑ You probably already know what slang is—in fact, you likely use it every day as you talk to your friends, family and coworkers. **Slang** is defined as an informal language of words and phrases that generally aren't considered appropriate in formal situations. It's important to remember that many slang words could be considered abbreviations. So you may see these words referred to as abbreviations and vice versa. To what medical professionals refer to these terms as is not important—it's simply necessary that you be able to understand what these terms mean.

There are two types of slang you may encounter in the medical field—*medical slang* and *English slang*.

You likely use slang every day as you talk to your friends, family and co-workers.

Medical Slang

Medical slang words are informal abbreviations for longer medical terms. For example, sedimentation rate is called sed rate. The laboratory is called the lab. Temperature is called temp, siblings (brothers and sisters) is called sibs and subcutaneous is called subcu. or subQ. Doctors use medical slang frequently for the same reason they use abbreviations—to save time. If you encounter slang on a medical form, use the full term the slang represents. For example:

If the doctor wrote, "The patient was prepped for appy," you would know to write or say the term *appendectomy*.

Here are rules to follow when slang words are dictated.

Rule 18 **Do not transcribe slang unless it is essential to the meaning of the report, or when you cannot determine what it means.**

Look at this example:

Dictated: The patient was scheduled for appy.

Transcribed: The patient was scheduled for appendectomy.

Exception: Some medical slang terms are so common that their use is accepted even in formal medical reports. The terms "exam" and "prep" may be used in formal medical reports.

When used, slang terms are not capitalized, and no periods are used after them.

For example:

The chest exam was normal.

We will prep the patient prior to surgery.

English Slang

The other kind of slang you may encounter in medical dictation is *English slang*. **English slang** words are highly informal words that are not usually used in professional writing. Follow this rule:

Rule 19 **Obscene or offensive statements are never put in a medical report unless the patient is being quoted (always use quotation marks around the quoted statement). If the patient is not being quoted, delete the offensive or obscene statement.**

Correct: The patient said, "I fell down and hurt my ass."

Incorrect: The patient is a pain in the ass. (You would leave out this whole sentence.)

📖 Step 10 Pronounce Slang Terms

❑ Follow these steps to learn how to pronounce slang terms.

Audio Exercise

a. Take out your Lesson 9 Slang flashcards and Quick-learn Tutor. Access the audio for Lesson 9 Slang flashcards.

b. Listen to a each slang term as it is pronounced. After you hear the slang term, pause the player.

c. Look at each slang term 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 term's meaning appears in the right window. Proceed until you have pronounced all the slang terms for Lesson 9

d. Next, begin with Lesson 9 Slang flashcards and play the audio track again. This time, pronounce each slang term in order but do not stop the player after each slang term. As you pronounce each slang term, look at it on the flashcard. Listen to your own pronunciation of each term. If you mispronounce one, put a check mark next to it.

e. Next, listen to the audio track again and practice the slang terms you mispronounced. Be sure you can pronounce each slang term clearly and easily. After you have finished pronouncing all of the slang terms in Lesson 9, move on to the next step.

🕮 Step 11 Write Slang Terms

❑ Follow these steps to learn how to write slang terms.

a. Insert your flashcard for Lesson 9 into Side A of your Quick-learn Tutor. Look at each slang term as it appears in the window and say it out loud. Write each term on blank paper. Be sure to put a slash (/) when you write the term, just like you see it on the flashcard.

b. Push the card up until the meaning appears in the right window and read the meaning out loud. Write the meaning on your blank paper, beside the slang term. Writing these slang terms and meanings will help you learn them more easily. Do this for each flashcard for Lesson 9. After you have pronounced and written each term's meaning, learn the meanings of these terms in the next exercise.

🕮 Step 12 Learn Slang Term Meanings

❑ Follow these steps to learn slang term meanings.

a. Again take out your Lesson 9 Slang flashcards. Pronounce each slang term out loud. Before you look at the meaning, see if you can remember it. Check yourself by turning the flashcard over to see the meaning. Do this for each term for Lesson 9.

b. Now turn your Lesson 9 Slang flashcards over so you can see the meanings of the slang terms. Read each meaning out loud. Before you look, see if you can remember the slang term that goes with that meaning. Check yourself by turning the flashcards over to see the slang terms. Do this for each term in Lesson 9.

c. Practice with the flashcards several times until you are familiar with the slang terms and their meanings. It's not necessary to memorize all the terms now. You will find that you begin to memorize slang terms as you use them throughout this course. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 13 Practice Exercise 9-2

❑ For questions 1 through 11, match the slang words with the medical terms they stand for.

1. _____	**sibs**	**a.**	**medications**
2. _____	**prep**	**b.**	**nullipara, no births**
3. _____	**meds**	**c.**	**pathology**
4. _____	**ab**	**d.**	**siblings, brothers and sisters**
5. _____	**exam**	**e.**	**abortion**
6. _____	**path**	**f.**	**primipara, one birth**
7. _____	**appy**	**g.**	**subcutaneous**
8. _____	**primip**	**h.**	**temperature**
9. _____	**nullip**	**i.**	**preparation**
10. _____	**subcu**	**j.**	**appendectomy, appendicitis**
11. _____	**temp**	**k.**	**examination**

🗝 Step 14 Review Practice Exercise 9-2

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

🕮 Step 15 Numbers and Numerals

❑ In transcription, you can spell out numbers or you can use figures for them. A numerical value can be expressed in five different ways. Look at the following example.

one 1 I first 1st

If you know the proper names for each different example of the number one above, you will sound like a professional. You will also be able to clearly communicate with others about how to transcribe numerical values and understand instructions on a dictation. Let's study the names of each of the examples given above.

Numbers are digits that are spelled out: one, two, three or first, second, third.

Numerals are figures: 1, 2, 3 or I, II, III or 1st, 2nd, 3rd.

Notice in the definitions above that numerals are not spelled out; numbers are spelled out.

There are three kinds of numerals.

Arabic numerals are the figures you use every day. They come from the ancient Arabic alphabet: 1, 2, 3.

Roman numerals are made up of the capital letters I, V, X, L, M and C. They come from the ancient Roman alphabet: I, II, III.

Ordinal numerals tell you where in **order** a numbered item comes. They are made up of Arabic numerals and a few letters: 1st, 2nd, 3rd.

If you have trouble remembering which is which, remember the phrase "written numbers, Roman numerals." A Roman numeral is not spelled out; it is a figure.

In order to correctly transcribe numbers, it's important to differentiate between numbers and numerals.

Written numbers are the words for Arabic numerals. Written numbers are spelled out: one, two, three.

Ordinal numbers are the words for ordinal numerals. Ordinal numbers are spelled out: first, second, third.

If you are not familiar with these names for figures, let's summarize them.

- **Written numbers:** one, two, three.
- **Ordinal numbers:** first, second, third.
- **Arabic numerals:** 1, 2, 3.
- **Ordinal numerals:** 1st, 2nd, 3rd.
- **Roman numerals:** I, II, III

Keep this phrase in mind to help you differentiate between numbers and Roman numerals: written numbers, Roman numerals.

Notice that when dictated numbers are spelled out in words, they are called **numbers**. When dictated numbers are written as figures, they are called **numerals**.

Now let's see if you can match the figure on the left to the name of the figure. Choose from the terms below to fill in the blanks.

II _____

5 _____

eight _____

fourth _____

2nd _____

written number
ordinal number
Arabic numeral
Roman numeral
ordinal numeral

The Roman numeral is II; the Arabic numeral is 5; the written number is eight; fourth is the ordinal number; finally, 2nd is the ordinal numeral.

Both numbers and numerals sound alike on dictation.

Look at this example.

You hear: three

You write or type: three or 3 or III

Here is another example.

You hear: third

You write or type: third or 3rd

When you transcribe "three," how can you tell whether to type a number or a numeral? In this lesson, you will learn the rules that will make it easy for you to transcribe dictated figures.

Rule 20 **Use written or ordinal numbers (one, two, three, first, second, third) for street names of ten or less.**

First Street Tenth Street Avenue Five

Rule 21 **Use Arabic or ordinal numerals (1, 2, 3, 1st, 2nd, 3rd) for street names greater than ten.**

11th Street 15th Street Calle 16

Rule 22 **Use written or ordinal numbers (one, two, three, first, second, third) for numbers of ten or less for items that can be counted.**

five rooms ten sponges six operators

You should follow the general rule of writing out the numbers ten and under unless another rule applies that tells you to use a numeral. *The Book of Style for Medical Transcription* by AHDI prefers that numerals be used for numbers of ten or less. However, check with your client or facility. In this course, you'll see written numbers for numbers less than ten.

Rule 23 **Use Arabic or ordinal numerals (1, 2, 3, 1st, 2nd, 3rd) for numbers larger than ten for items that can be counted and for all days of the month.**

11 sponges 15 sutures 5th of May (May 5)

Rule 24 **Use Arabic or ordinal numerals (1, 2, 3, 1st, 2nd, 3rd) for all items in a series when a number smaller than ten is used with numbers larger than ten in the same series.**

Yes: 4 sponges, 11 sutures, 15 needles

No: four sponges, 11 sutures, 15 needles

Rule 25 **Use Arabic numerals (1, 2, 3) for suture materials.**

You hear: three oh silk four oh gut

You transcribe: 3-0 silk 4-0 gut

Exception: Do not use all zeroes for sutures greater than 4-0.

Yes: 5-0

No: 00000

Rule 26 **Use Arabic numerals (1, 2, 3) when numbers are combined with symbols or abbreviations.**

3+ protein 4 b.i.d. 5 mg

Rule 27 **Use Arabic numerals (1, 2, 3) for sizes, dimensions, measurements and statistics.**

You hear: the cyst was thirty three by twenty two by six cee-em

You transcribe: the cyst was 33 x 22 x 6 cm.

The term "age" sometimes indicates that a statistic is being given.

When the age is listed in the following format: always use a numeral, even when the number is ten or less.

age 5 age 10 age 32

Rule 28 **Use written and ordinal numbers (one, two, three, first, second, third) for simple fractions. Hyphenate written-out fractions.**

one-third one-half three-quarters

Rule 29 **Use Arabic numerals (1, 2, 3) for mixed fractions and decimal numbers. Use a hyphen with a mixed fraction unless you have a single-key fraction on your keyboard. Never leave a blank space before a decimal point; use a zero before a decimal point if there is no other numeral dictated.**

1-1/3 1-1/2 1½ 0.5 (not .5)

Rule 30 **Use Arabic numerals (1, 2, 3) in all expressions pertaining to drugs, including strength, dosage and directions. Use numerals for fractions that pertain to drugs also.**

Valium 10 mg aspirin 3 tabs 1/2 tab

Rule 31 **Avoid the use of Roman numerals except when Roman numerals are specified as part of an established nomenclature, or unless there is strong documentation that the preferred form is Roman.**

Exception: Either Arabic or Roman numerals may be used for cranial nerves. Generally, stages are expressed as Roman numerals. If you are unsure whether to use Arabic or Roman numerals for other medical terms, check the latest copy of the Association for Healthcare Documentation Integrity (AHDI) guide, called *The Book of Style for Medical Transcription*.

Rule 32 **Use written numbers (one, two, three) at the beginning of a sentence.**

Incorrect: 15 patients were in the waiting room.

Correct: Fifteen patients were in the waiting room.

Rule 33 **When two different numbers are next to each other, spell out one and use a numeral (1, 2, 3) for the other.**

two 1-liter solutions six 3-bed wards

✍ Step 16 Practice Exercise 9-3

❑ For each of the numbers underlined below, write or type the correct number or numeral in the space on the right, using the rules you have studied in this lesson.

1. **The patient was given Compazine <u>fifteen</u> mg p.r.n.** _____
2. **Dr. Jones' office is at 323 <u>twenty seventh</u> Street.** _____
3. **The final count was <u>three</u> needles and <u>twenty</u> sponges.** _____
4. **The skin incision was closed with <u>five-0</u> silk suture.** _____

5. **Urinalysis: four + protein, trace sugar, many white cells.** _____
6. **The kidney measured ten × six cm.** _____
7. **Cranial nerves three through eleven were examined.** _____
8. **Exploratory surgery showed the cancer was stage four.** _____
9. **The creatinine was point five.** _____
10. **The specific gravity was one point oh three two.** _____
11. **He had burns over one-third of his body.** _____
12. **Take one and one-half the regular amount.** _____
13. **Give digitalis one-half gr every 4 hours.** _____

Step 17 Review Practice Exercise 9-3

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

Step 18 Symbols

❑ Now that you're familiar with abbreviations and numbers, let's wrap up the lesson with symbols. The symbols used in medicine are no different from those used in everyday life.

Rule 34 **When you use symbols, do not leave a space between the symbol and the numeral.**

Exception: Leave a space between a numeral and the symbol "x." *The Book of Style* by AHDI states that a space should be included between the numeric value and the degree symbol.

Look at the list of symbols below, what they mean and how they are used.

You Hear	Symbol	Example
degrees Celsius	°C	32 °C
degrees Fahrenheit	°F	98.6 °F
and (between caps only)	&	D&C
times; by	×	× 3 days; 2 × 3 × 5
plus (urine; reflexes)	+	3+

You Hear	Symbol	Example
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 silk
number	#	#16 Fr #3-0 silk

✍ Step 19 Practice Exercise 9-4

❑ Follow these steps to complete the Practice Exercise.

Audio Exercise

a. Access the audio for Lesson 9: Practice Exercise 4.

b. Before you listen to the audio, fill in the blanks of questions 1 through 8 with the correct symbol. You may use the list of symbols from the previous section on symbols.

c. For questions 9 through 18 of the exercise, each sentence is dictated. Listen to each sentence, then pause the audio track. Fill in the blanks for this part of the exercise. For this exercise, use only Arabic numerals, abbreviations and the proper symbols.

For items 1 through 8, fill in the blanks with the correct symbol.

1. **Temperature** _____
2. **Number** _____
3. **Sutures** _____
4. **Over (blood pressure)** _____
5. **And (between capitals)** _____
6. **Minus** _____
7. **Vision** _____
8. **Ratio** _____

For items 9 through 18, listen to the audio track to fill in the blanks.

9. **The patient's blood pressure was _____.**
10. **Temperature is _____.**
11. **Weight _____.**
12. **The incision was closed with _____ silk sutures.**
13. **The mass measured _____ cm.**
14. **PAST MEDICAL HISTORY: _____. _____ repair.**
15. **The pedal reflexes were _____.**
16. **The A/G ratio was _____.**
17. **The blood sugar range was _____.**
18. **VISION: _____.**

Step 20 Review Practice Exercise 9-4

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

Step 21 Lesson Summary

❑ As a medical transcriptionist, you'll often use abbreviations, slang terms and symbols.

The healthcare profession is a busy one, and using these items allows those who work in this field to save time. Therefore, it's important that you understand the meanings of these terms.

Review your Practice Exercises and flashcards if you believe you need some extra help. Then you're ready for a quiz!

✉ Step 22 Mail-in Quiz 5

❑ 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 Answer Sheet included in this course. Use only blue or black ink on your Quiz Answer Sheet and **print in upper and lower case letters**. Red ink is unacceptable. You must **type or print** all answers so they can be read easily by the instructors. Any answers that cannot be read will be marked wrong.

d. **Important!** Please fill in all information requested on your Quiz Answer Sheet or when you submit your quiz via fax. If you e-mail your quiz, include your name, address, student ID number and course code.

e. Submit your quiz to the school. Please note, send in your quiz only **once** through mail, e-mail or fax.

Mail-in Quiz 5

Audio Exercise

You will need your Lesson 9 flashcards and your Lesson 9 audio files for this quiz.

a. Access the audio for Lesson 9: Quiz 5.

b. Each item is numbered. At the end of the item, pause the player. You may replay to listen to any item again.

c. For items 1 through 15, fill in the blanks, using your eponym and acronym flashcards. **For acronyms, write out the full phrase in the blank space**. Look at this example of an acronym:

You hear: m o m

You write: Milk of Magnesia

d. For items 16 through 20, fill in the blanks.

e. For items 21 through 30, use the audio tracks again, and listen to the dictation for each numbered item. Fill in the blank with the correctly transcribed number, numeral or symbol.

For the following questions, print your answers on your Quiz Cover Sheet. **Please write out all acronyms.**

1. **An hepatic biopsy was performed which showed _____ cirrhosis.**

2. **_____.**

3. **There is a _____ tube in place.**

4. **The patient's neurologic symptoms suggested _____ disease.**

5. **Lymphadenopathy is commonly seen in _____ disease.**

6. **The patient had a febrile illness with _____ respiration.**

7. **_____ respiration is a sign of neurologic damage.**

8. **The arthropathy was diagnosed as _____.**

9. **Appendicitis shows rebound tenderness at _____ point.**

10. **_____ reflex is a test for neurologic dysfunction.**

11. **You'll find chemotherapy drugs listed in the _____.**

12. **Gastritis usually doesn't elevate the _____.**

13. **_____ disease involves the legs but was named for a doctor.**

14. **_____, there is a perinephric abscess.**

15. **A _____ was performed for osteosarcoma.**

	Acronym
16. **intramuscular**	_____
17. **intensive care unit**	_____
18. **muscular dystrophy**	_____
19. **rheumatoid arthritis**	_____
20. **electroencephalogram**	_____ _____

For the following questions, print your answers on your Quiz Cover Sheet.

21. **There is a _____ cm mass, soft, nontender, in the upper abdomen.**

22. **The patient was catheterized with a _____ French Foley catheter.**

23. **The incision was closed with a _____ Vicryl continuous suture.**

24. **On admission, temperature was _____, pulse _____, respirations _____, blood pressure _____, weight _____kg.**

25. **Cranial nerves _____ are intact.**

26. **PAST MEDICAL HISTORY: _____. _____ repair.**

27. **The cancer was stage _____.**

28. **Vision in the left eye was _____, the right _____.**

29. **The usual dose is _____ gr.**

30. **Give Valium _____ mg in _____ tab doses.**

Medical Transcription
Mail-in Quiz 5

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.

For School Use Only:
Grade: _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

U.S. Career Institute
2001 Lowe Street
Fort Collins, CO 80525

MD-01

This Space for Instructor Use

Fold on dotted line

1. _____
2. _____
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14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____, _____, _____, _____, _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

Just for Fun

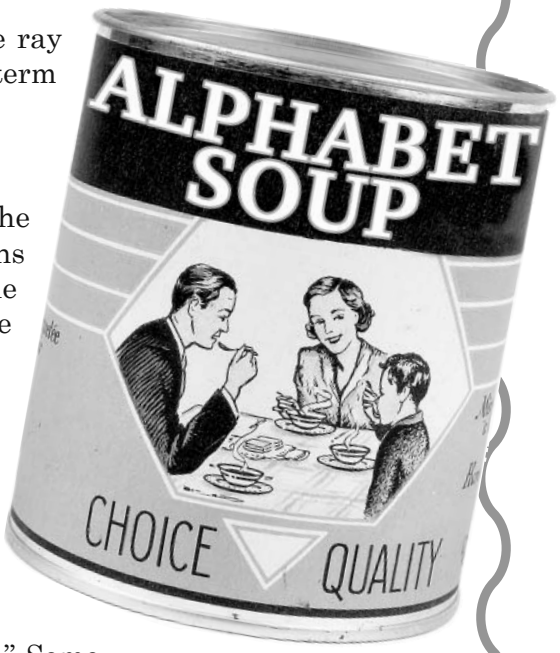
Here are some acronyms that you've probably heard. They are used so much that most people who use them don't know what they mean.

PC—This stands for personal computer. This acronym was developed by IBM (International Business Machines) for the microcomputers it invented for everyday people to use. It means the same thing as microcomputer, a computer with a microchip to hold its memory. Originally, PC was just an IBM brand name. Now PC is used to mean a microcomputer of any brand, the same way many people use Kleenex to mean facial tissue of any brand.

CRT—This stands for cathode ray tube. A cathode ray tube is a television picture tube. Let's divide the term cathode.

cat/ = negative /ode = electrical pole

The tube is a vacuum tube. Inside, in the back, the cathode (negative pole) sends out a stream of electrons called the cathode ray, like water from a hose. The cathode ray sprays across the inside surface of the tube to make the picture on the tube.



Every picture tube you see—whether it is in a TV, an x-ray machine or a computer monitor—is a CRT.

CPU—This stands for central processing unit. The memory chip is here. This is the brains of a computer—where the computer does its work.

The CPU does the computing and is the "computer." Some ads for low-priced "computers" only quote the price of the CPU. The CRT, keyboard, and disk drives are extra.

Look up any acronyms you don't know. If you can't find an acronym, ask the person who used it what it means. An expert will know what it means or how to find it.

CONGRATULATIONS!

You've completed Lesson 9.

Don't wait for your quiz results to continue with Lesson 10.

Lesson 10
Medical Capitalization and Punctuation

Step 1 Learning Objectives for Lesson 10

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Apply medical capitalization rules and exceptions.
  - Apply basic medical punctuation rules in medical transcription.

Step 2 Lesson Preview

- ❑ Doctors are busy people with many responsibilities. Sometimes doctors are rushed and don't dictate proper capitalization or punctuation. In this case, you'll have to insert the proper capitalization and punctuation in order for medical reports to be accurate. In order to do this, you have to know what words or letters should be capitalized and which sentences need punctuation.

  This lesson will continue to build your medical terminology foundation so you can be a successful medical transcriptionist. You'll learn rules for medical capitalization and punctuation and get some hands-on practice with your newly-learned rules.

Step 3 Capitalization Rules

- ❑ To **capitalize** means to use the upper case for a letter. As you know, A, B and C are the upper case for the first three letters of the English alphabet and a, b and c are the lower case letters. There are three general ways to capitalize words and letters.

  1. All the letters in a word, word part or phrase.

     UCLA CHIEF COMPLAINT

  2. The first letter in a word, phrase, or sentence.

     The bandages were removed.

     Bell('s) palsy No history of hypertension.

  3. Individual letters or only some of the letters in a word.

     Cort-Dome pHisoHex NaCl (sodium chloride; salt)

  The rules for medical capitalization also include exceptions, which mean the lower-case letter is used. Pay careful attention to the exceptions because they can be as important as the rules.

Rule 35 **Capitalize all the letters in major headings in medical reports. Subheadings should be in initial capital letters.**

CHIEF COMPLAINT
The patient complains of chest pain.

REVIEW OF SYSTEMS
Respiratory: Clear.

Some clients prefer that the headings under physical examination are in all capital letters, while others prefer initial capital letters. In this course, capitalize the headings under the Physical Examination title.

PHYSICAL EXAMINATION
CARDIAC: Regular rhythm.
ABDOMEN: Soft and nontender.

Rule 36 **Institutions have specific rules for allergy statements. Most institutions require that a patient's allergies are entered in all capital letters.[1] *The Book of Style for Medical Transcription* by AHDI recommends that allergy statements are not underlined, bolded or italicized because it reduces readability.**

ALLERGIES: ALLERGIC TO PENICILLIN.

ALLERGIES: THE PATIENT IS ALLERGIC TO IODINE.

A severe allergic reaction can kill a patient, so it's important that every effort be made to avoid accidentally giving a medication that is known to be harmful to a patient. Allergy statements are usually capitalized in a medical record so that they are noticeable, but the institution you work for may have specific requirements. (It is a medical error to forget to include the allergy statement.) When you capitalize all allergy statements, you may someday save a life.

A patient's allergies are usually entered in all capital letters to draw attention.

Step 4 More Capitalization Rules

❑ Let's take a look at a few more capitalization rules.

Rule 37 **Capitalize the first letter in a sentence. If the first word of a sentence is never capitalized, insert another word to start the sentence.**

Look at this example.

You Hear: p h was six point two

Transcribe: The pH was 6.2.

Rule 38 Capitalize the first letter in each item in a vertical list.

This is an example of a vertical list:

1. Trauma.
2. Infectious disease.
3. Metabolic disease.

Rule 39 Capitalize the first letter following a report heading or subheading.

CHIEF COMPLAINT
The patient complains of persistent cough.
REVIEW OF SYSTEMS
Cardiac: Regular rhythm and rate.
Respiratory: Clear.

What follows the heading does not have to be a complete sentence. Even a single word or short phrase should be capitalized.

Rule 40 Capitalize the proper name part of an eponym.

Bell('s) palsy Hodgkin('s) disease

Rule 41 Only capitalize departments when referring to a specific department.

Weston Hospital Pathology Department Send the report to the pathology department.

Rule 42 Do not capitalize the names of specialties or types of specialists.

pathologist pathology report

Rule 43 Capitalize the first letter of names of races and ethnic groups.

Asian Caucasian Indian

Rule 44 Do not capitalize words that refer to skin color.

black brown yellow white

Rule 45 **Capitalize brand names of medications, instruments, equipment and supplies.**

Capitalize brand names the way the manufacturer does.

Valium PrameGel pHisoHex General Electric

Rule 46 **Do not capitalize generic medication or product names that are not brand names. Look at these examples.**

codeine aspirin milk of magnesia tetracycline

Rule 47 **Capitalize the first letter of abbreviations of chemical elements when they are dictated alone or in a compound.**

Na H ZnO

Generic names are not capitalized.

Rule 48 **Do not capitalize the p in pH, pO_2 or pCO_2.**

Rule 49 **Do not capitalize the full names of chemical elements and compounds.**

These examples match the abbreviations shown in Rule 47.

sodium hydrogen zinc oxide

Rule 50 **Capitalize the first letter of abbreviations for units of measure that are eponyms when spelled out.**

Hz = Hertz W = Watt

These units of measure are named for an individual. Since the abbreviation comes from a person's name, you capitalize the first letter.

Rule 51 **Do not capitalize medical classification terms like stage, grade, class, lead, series and type.**

You've learned a lot of rules so far in this lesson! Here are two more hints to keep in mind when capitalizing.

Capitalize the first word after a colon if that word begins a complete thought.

The patient was given the following instructions: Take medications as prescribed and return in two weeks for an office visit.

Capitalize the first word of a complete direct quotation. Do not capitalize the first word of partial quotations.

The patient said, “I am having trouble breathing.”

She says she has been having “hot flashes” for several months.

Step 5 Medical Punctuation

- There are many ways to punctuate sentences. However, when doctors dictate, they are speaking, not writing on paper. As a result, doctors don’t speak in perfect sentences and they don’t always dictate punctuation. As a transcriptionist, you will need to punctuate your work. Your ultimate goal is to have punctuation that doesn’t change the meaning of the dictation and that conforms to a generally accepted style of medical punctuation.

In this section, we will review basic punctuation rules for medical transcription. We know that there can be more than one “right” way to punctuate dictation. In this course, we will teach you the punctuation rules most commonly used by medical transcriptionists. After you are working for a while, you may choose to use a different way of punctuating from time to time. Even then, the punctuation should not change the meaning of a report or give the appearance of poor punctuation skills. These basic rules will help make it easy for you to decide how to punctuate your transcription. In later sections, you will learn more details about some of these rules as well as new rules.

Rules for Using Periods

Rule 52 **Use a period at the end of a phrase that is a complete thought.**

Ears, nose and throat normal. Abdomen tender.

Rule 53 **Use a period after item numbers in a vertical list and at the end of each item.**

Look at this example.

DISCHARGE DIAGNOSIS
1. Congestive heart disease.
2. Chronic renal failure.

Exception: Use parentheses and no periods for numbered items in a horizontal series.

The patient has (1) congestive heart failure, (2) chronic renal failure.

Rule 54 **Use a period to separate each separate test in a series of laboratory results, but not to separate different parts of one test.**

In the example below, there are three separate tests, the chest film (x-ray), the U/A (urinalysis, a urine test) and the CBC (blood count).

> Chest film normal. U/A: Sp. gr. 1.016, pH 7, negative microscopic examination. CBC: Hb 14.5, Hct 33.6, WBC 6.7.

In the example above, notice that the results of each separate test are separated by periods. Also notice that the different parts of the urine test and the blood count are not separated by periods.

Rule 55 **Do not use periods with chemical symbols, acronyms or Latin abbreviations with upper and lower case letters in them.**

HEENT CO_2 pH

Rule 56 **Use periods for Latin lower case abbreviations.**

t.i.d. p.r.n. p.o.

Let's practice these new rules with a Practice Exercise.

✍ Step 6 Practice Exercise 10-1

❑ Add periods as needed to each item below. Underline each punctuation mark that you add so that you can see it clearly.

1. **PLAN**

   1. CBC
   2. Urinalysis
   3. Admit to hospital

2. **The patient had no pain or tenderness**

3. **Chest film normal CBC normal Urinalysis normal**

4. **The patient had a positive VDRL three months ago**

5. **DISCHARGE DIAGNOSIS**

   1 Microcephaly
   2 Tracheomalacia
   3 Hepatomegaly

6. **Tell the patient that tid means three times a day**

7. **Take 15 mg po prn**

8. **The chemical symbol for water is H_2O**

9. **NaCl is the chemical symbol for salt**

10. **The UCLA team ordered an ELISA**

Step 7 Review Practice Exercise 10-1

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

Step 8 Using Commas

❑ Before we dive into some more rules, let's refresh your memory with the basic grammar information. Remember, a noun is used to name a person, place or thing. Look at these examples where the nouns are bolded.

Person—The **patient** is early.

Place—The **office** is closed.

Thing— His **chest** hurts.

An adjective describes or limits the meaning of a noun or pronoun and generally tells what kind, which one or how many. Look at these examples.

What Kind—**soft** abdomen, **thyroid** enlargement

Which One—**my** office, **bottom** layer

How Many— **five** sponges, **no** rash

Here are some rules that will help you remember when to use a comma.

Rules for Using Commas

Let's continue learning some rules that you'll use in your medical transcription career.

Rule 57 **Use a comma to separate adjectives that modify one noun.**

Look at this example.

The abdomen is soft, nontender, flat.
noun — adjectives that modify the noun

There was a thick, red, crusty patch over the left knee.
adjectives — noun

When the adjectives come before the noun, a comma is not placed between the last adjective and the noun.

If the doctor is dictating a parenthetical expression, put a comma before and after it.

Rule 58 **Put commas before and after parenthetical expressions and parenthetical abbreviations.**

A parenthetical expression or parenthetical abbreviation is one that can be left out of a sentence without changing its meaning. A few commonly used parenthetical expressions are: that is, however, for example, of course. Look at the examples below.

The patient is moribund, that is, comatose.
parenthetical expression

The patient is moribund, i.e., comatose.

The abbreviation i.e. means “that is.”

Rule 59 **Use a comma to separate a phrase that explains a noun when that phrase follows the noun.**

Study the examples.

There is swelling in both feet, right greater than the left.
noun — explanatory phrase

DISCHARGE DIAGNOSIS
Rash, left cheek.

Rule 60 **Use a comma to separate items in a series. If the word “and” or “or” is used before the last word, a comma is not used unless it is necessary to clarify the meaning.**

Exception: *The Book of Style for Medical Transcription* recommends a comma before the final conjunction.

Study these examples.

The patient complained of coughing, sneezing, and runny nose.

There is no tenderness, weakness, or bleeding.

Rule 61 **Use a comma after an introductory phrase.**

After you have the x-ray, I will examine you.

Rule 62 **Use a comma to indicate thousands in a number.**

45,000 6,500

Exception: A comma can be left out for numbers less than 9999.

8900 6500

Rule 63 **Do not use commas to separate drug names and dosages.**

The patient was given ampicillin 250 mg q.i.d.

Rule 64 **Do not use commas to separate a laboratory value from the test that measures the value.**

sp. gr. 1.020 Hb 14.5 WBC 7,500

Rule 65 **Use a comma to set off degrees or titles from names.**

Mail this to John Vogt, Esq.

John Jones, MD, saw the patient in consultation.

Use an apostrophe when referring to part of a patient's body to show possession.

Rules for Using Apostrophes

Rule 66 **Use apostrophes to show possession.**

the patient's hand

If the word already ends in an s, put the apostrophe after the *s*.

The Graves' house

Rule 67 **Do not use apostrophes to form plurals of names.**

Look at this example.

Yes: There are three Sarah Wrights at the clinic.

No: There are three Sarah Wright's at the clinic.

Rule 68 **For this course, use an apostrophe to form the possessive of an eponym.**

Exception: *The Book of Style for Medical Transcription* and *The AMA Manual of Style* prefer that the possessive form of eponyms be dropped for clarity and consistency.

Bell('s) palsy Achilles(') tendon

Rule 69 **Do not use apostrophes to form plurals of upper case abbreviations or acronyms.**

EEGs BKAs DTRs

Rule 70 **Use apostrophes to form plurals of lower case abbreviations and symbols.**

wbc's #'s 3-0 and 4-0

✍ Step 9 Practice Exercise 10-2

❑ Add commas and apostrophes to the following items using the rules you have learned. Underline each comma or apostrophe you have added so you can see it well. You may use your flashcards.

1. **There is weakness in both arms left greater than right.**
2. **The patient is oriented to time place and person.**
3. **There is redness swelling and loss of motion.**
4. **Colles fracture is usually seen in adults.**
5. **Of course call me if you see Cheyne-Stokes respiration.**
6. **I will use either #s 4-0 or 5-0 silk sutures.**
7. **The patients lab results are negative.**
8. **The platelet count was 450000.**
9. **For example there should be a good result in one week.**
10. **No shortness of breath cardiac or breast enlargement.**
11. **The patient experienced short labored rattling respiration.**

Step 10 Review Practice Exercise 10-2

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

Step 11 Rules for Using Colons

Rule 71 **Only use a colon after major headings and subheadings in a medical report if the information continues on the same line.**

Urinalysis: Sp. gr. 1.012, sugar negative, pH 7.2.

Rule 72 **Use a colon after phrases ending with "the following" or "as follows."**

Take the medication as follows: at breakfast, 4:00 p.m. and at bedtime.

Rule 73 **Use a colon for ratios and the time of day.**

You Hear: the titer was three to four

You Write: The titer was 3:4.

You Hear: five p m

You Write:: 5:00 p.m.

Rules for Using Hyphens

Rule 74 **Use a hyphen in place of the word "to" in range expressions if the following conditions are met: 1) the phrases *from…to, from…through* and *between… and* are not used, 2) decimals and/or commas don't appear in numeric values, 3) neither value contains four or more digits and 4) neither value is negative.**

You Hear: the heart rate ranged from 60 to 120

You Write: The heart rate ranged from 60 to 120.

You Hear: cranial nerves two through twelve are intact

You Write: Cranial nerves 2-12 are intact.

Exception: Use a hyphen to express the space between two vertebrae. However, use the word "through" to express the range between two, nonadjacent vertebrae.

Rule 75 **Use a hyphen after a prefix if it makes the term easier to pronounce. Use a hyphen after a prefix or between roots when two matching vowels are next to each other or when any three vowels are next to each other. Use a hyphen between a prefix and an eponym.**

Yes:	re-x-rayed	intra-arterial	pseudo-Kaposi's sarcoma
No:	rex-rayed	intraarterial	pseudoKaposi's sarcoma

Hyphens are only used to make pronunciation easier. Check the flashcards or a dictionary if the term is new to you. If you cannot find the correct hyphenation, use this rule.

Rule 76 **Use a hyphen to join eponyms named for two people. The correct form is shown in *Dorland's Medical Dictionary.***

Miller-Abbott tube Cheyne-Stokes respiration

Exception: Do not use a hyphen if the two names are the first and last name of one person.

Austin Flint respiration

Rule 77 **Use a hyphen between a prefix and an abbreviation or number. Use a hyphen between a noun and a letter or number.**

Look at these examples.

post-1997 treatment alpha-1

Exception: Do not use a hyphen in a chemical symbol.

Yes:	CO_2	ZnO_2
No:	CO-2	ZnO-2

Rule 78 **Use a hyphen when fractions are written out in words.**

one-half two-thirds

✍ Step 12 Practice Exercise 10-3

❑ Punctuate the transcription below using the punctuation rules you learned in this lesson. You may refer to the rules if you need to. Underline any punctuation you have added so you can see it well.

1. **The patient has a Smith Jones valve in her heart She was placed on medications as follows Coumadin digoxin and Lasix**

2. **The titer was 3 4 This is two times greater than normal**

3. **DISCHARGE DIAGNOSIS**
   1 **Congestive heart failure**
   2 **Atrial fibrillation**
   3 **Chronic airway obstruction**

4. **There was swelling of both hands the right greater than the left Increase Lasix to 80 mg po daily**

5. **ABDOMEN The abdomen was flat nontender soft The liver spleen and kidneys are not enlarged NBS**

6. **At 500 pm the patient arrived at the hospital ie at the emergency department**

7. **Urinalysis Sp. gr. 1.020 white cells negative pH 7.4**

Step 13 Review Practice Exercise 10-3

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

Step 14 Lesson Summary

- ❑ In this lesson, you learned strategies for proper medical capitalization and medical punctuation. Although it may not seem significant, proper capitalization is very important. A capitalization or punctuation error can alter the meaning of a medical report and possibly harm a patient. For example, you learned that simply capitalizing a patient's allergies can draw attention to it and could be a lifesaver.

  In the same way, proper punctuation also is important to medical records. Misplaced punctuation can change the meaning of a sentence, and ultimately, the information in a patient's medical report. As a medical transcriptionist, you may need to insert proper punctuation to capture what the doctor intended to communicate.

  You've been introduced to many rules in this lesson! Don't worry if you haven't soaked them all in yet. You'll practice using them in the remainder of your course, so you'll be ready to use them once you're a medical transcriptionist.

  As always, take a moment to review the rules from this lesson. Then you're ready to take a quiz.

  In the next lesson, you'll polish your listening skills and decipher sound alikes.

✉ Step 15 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 answers to the school via mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 6

For items 1 through 20, select the choice that shows the correct punctuation for each item. Mark your answer on your Scanner Answer Sheet. Remember, offensive statements shouldn't be transcribed, and medical slang should be written out.

1. ____ discharge diagnoses:
1. renal carcinoma.
2. cystitis.
3. perirenal hematoma.

a. DISCHARGE DIAGNOSIS:
1. Renal carcinoma
2. Cystitis
3. Perirenal Hematoma

b. DISCHARGE DIAGNOSIS
1. Renal carcinoma.
2. Cystitis.
3. Perirenal hematoma.

2. ____ allergies: allergic to prozac.

a. ALLERGIES: ALLERGIC TO PROZAC.

b. ALLERGIES: Allergic to Prozac.

3. ____ the patient is a 40-year-old asian male with a history of intravenous drug abuse.

a. The patient is a 40-year-old Asian male with a history of intravenous drug abuse.

b. The patient is a 40-year-old asian male with a history of IV drug abuse.

4. ____ the blood pressure was 110/80 mmHg. the temp was elevated.

a. The blood pressure was 110/80 mmHg. The temperature was elevated.

b. The blood pressure was 110/80 mmHg. The temp was elevated.

5. ____ heent: perrla.

chest: no rales, rhonchi, splinting or shortness of breath.

abdomen: normal bowel sounds. no hepatomegaly, splenomegaly or tenderness.

a. HEENT: PERRLA.

CHEST: No rales, rhonchi, splinting or shortness of breath.

ABDOMEN: Normal bowel sounds. No hepatomegaly, splenomegaly or tenderness.

b. HEENT: PERRLA.

chest: no rales, rhonchi, splinting or shortness of breath.

abdomen: normal bowel sounds. no hepatomegaly, splenomegaly or tenderness.

6. ____ the patient was sent home on valium 10 mg p.r.n.

a. The patient was sent home on Valium 10 mg p.r.n.

b. The patient was sent home on Valium 10 mg as needed.

7. ____ i have ordered an electrocardiogram and gallbladder study.

a. I have ordered an electrocardiogram and gallbladder study.

b. i have ordered an EKG and gallbladder study.

8. ____ urinalysis: specific gravity 1.035. no cells or casts are seen.

a. Urinalysis: specific gravity 1.035. no cells or casts are seen.

b. Urinalysis: Specific gravity 1.035. No cells or casts are seen.

9. ____ he had previously seen dr. west, who is a jerk.

a. He had previously seen Dr. West.

b. He had previously seen dr. west, who is a jerk.

10. ____ admitting diagnoses: hepatitis, splenomegaly, renal failure.

a. ADMITTING DIAGNOSIS
Hepatitis, splenomegaly, renal failure.

b. Admitting Diagnoses: hepatitis, splenomegaly, renal failure.

11. ____ rule out the possibility of kaposi('s) sarcoma.

a. Rule out the possibility of kaposi('s) sarcoma.

b. Rule out the possibility of Kaposi('s) sarcoma.

12. ____ MEDICATIONS
1 Slow-K 3 tabs po tid
2 Lasix 30 mg bid
3 Captopril 125 mg q8h

a. MEDICATIONS.
1) Slow-K, 3 tabs, po, tid.
2) Lasix 30, mg bid.
3) Captopril, 125 mg, q8h.

b. MEDICATIONS
1. Slow-K 3 tabs p.o. t.i.d.
2. Lasix 30 mg b.i.d.
3. Captopril 125 mg q.8 h.

13. ____ FOLLOW-UP: he will be seen in my office two days after discharge for repeat U/A EKG and digoxin levels

a. FOLLOW-UP
He will be seen in my office two days after discharge for repeat U/A, EKG and digoxin levels.

b. FOLLOW-UP: He will be seen in my office, two days after discharge, for repeat U/A EKG and digoxin levels.

14. ____ CBC revealed a white count of 14000 with 57 segs 3 bands 2 lymphs

a. CBC revealed a white count of 14000 with 57, segs 3, bands 2, lymphs.

b. CBC revealed a white count of 14,000 with 57 segs, 3 bands, 2 lymphs.

15. ____ The father was unreliable ie an alcoholic

a. The father was: unreliable, i.e., an alcoholic.

b. The father was unreliable, i.e., an alcoholic.

16. ____ The patient denies a history of the following measles appendicitis hepatitis

a. The patient denies a history of the following: measles, appendicitis, hepatitis.

b. The patient denies a history of the following; measles; appendicitis; hepatitis.

17. ____ SOCIAL HISTORY he is retired married smokes two packs per day drinks two drinks per day

a. Social history: He is retired, married, smokes two packs per day, drinks two drinks per day.

b. Social history: He is retired. Married. Smokes. Two packs per day, drinks two drinks per day.

18. ____ For further information please see the patients medical record

a. For further information, please see the patient's medical record.

b. For further information, please see the patients medical record.

19. ____ The tests we need are 1 CBC and 2 urinalysis

a. The tests we need are (1) CBC and (2) urinalysis.

b. The tests we need are 1. CBC and 2. urinalysis.

20. ____ The results are reported in mEq of NaCl

a. The results are reported in mEq of NaCl.

b. The results are reported in m.Eq. of NaCl.

Endnotes

[1] ASTM International. (2003). *E2184-02 Standard Specification for Healthcare Document Formats*. Modesto, CA: American Association for Medical Transcription.

CONGRATULATIONS!

You've completed Lesson 10.

Don't wait for your quiz results to continue with Lesson 11.

Lesson 11
Grammar Basics

Step 1 Learning Objectives for Lesson 11

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Describe each of the eight parts of speech.
  - Apply correct verbs, verb forms and tenses and regular verbs.
  - Ensure that subjects and verbs agree.
  - Clarify the antecedents of pronouns, and ensure noun and pronoun agreement.

Step 2 Lesson Preview

- ❑ You're transcribing a physician's dictation but a sentence sticks out. You replay it again just to make sure. No wonder it sounds odd, the sentence is grammatically incorrect! The subject and the verb don't agree. Because you know your grammar so well, you can correct as you type and move on. Your knowledge in grammar has ensured that the patient's chart note is accurate. Great job!

  Situations like these actually occur in medical transcription. Doctors are not always grammatically correct. So, it's important to polish your grammar skills in order to recognize inaccurate grammar.

  In earlier lessons you learned about parts of speech, such as nouns and adjectives. In this lesson, you'll look at the remaining parts of speech and sentences, so we're all using the same vocabulary. Lastly, we'll look at the guidelines that govern how we communicate in English.

Polishing your grammar skills now will make you a more accurate transcriptionist in the future.

Step 3 What We Use: Parts of Speech

- To communicate, people use words in combinations that convey meaning.

We use different types of words for different purposes. They're all parts of the communication process, and they're called parts of speech. English has eight parts of speech: nouns, *pronouns*, *verbs*, adjectives, *adverbs*, *prepositions*, *conjunctions* and *interjections*. We'll look at each separately.

Remember that the purpose of lesson is to be sure we're using the same words to refer to the same items.

Now, let's review nouns.

Nouns

As you know, a noun is a person, a place or a thing. It's a sister, a dog or a pen. When you think of things, keep in mind that they can be physical objects, like cups and saucers, but they can also be intangible, like time or freedom.

A **proper noun** refers specifically to one person, place or thing and is therefore capitalized. Examples include Esther; Dubuque, Iowa; or The Music Man. Other types of nouns are called **common nouns**. Some examples include woman, city and state or movie. To find the nouns in a sentence, asking who? and what? can get you started in the right direction.

Although it's intangible, time is a noun.

Pronouns

A movie star usually has a stand-in—a person who physically stands in the actor's spot on the set while the director fiddles with camera angles and lighting and the movie star takes a nap in his trailer. Nouns have stand-ins, too; they're called pronouns. A **pronoun** takes the place of a noun in a sentence.

Pronouns come in many types. You'll probably recognize many of the most common types, such as personal, demonstrative and interrogative pronouns. Again, it's more important that you recognize different types of pronouns. It's far less important that you be able to associate pronouns with their types or recite the list of indefinite pronouns.

- **Personal pronouns**—*I*, *me*, *my*; *you*, *your*; *he*, *him*, *his*; *she*, *her*, *hers*; *it*, *its*; *we*, *us*, *our*; *they*, *them*, *their*
- **Possessive pronouns**—*mine*, *yours*, *his*, *hers*, *ours*, *theirs*, *whose*, *my*, *your*, *his*, *her*, *its*, *our*, *their*
- **Demonstrative pronouns**—*this*, *that*, *these*, *those*

- **Relative pronouns**—*that*, *what*, *whatever*, *which*, *whichever*, *who*, *whoever*, *whom*, *whomever*, *whose*
- **Indefinite pronouns**—*all*, *another*, *any*, *anybody*, *anything*, *both*, *each*, *either*, *every*, *everybody*, *everyone*, *everything*, *few*, *many*, *most*, *much*, *neither*, *no one*, *nobody*, *none*, *one*, *several*, *some*, *somebody*, *someone*, *something*, *such*
- **Interrogative pronouns**—*what*, *which*, *who*, *whom*, *whose*
- **Expletive pronouns**—*it*, *there*
- **Reflexive pronouns**—*myself*, *yourself*, *himself*, *herself*, *itself*, *ourselves*, *yourselves*, *themselves*

Pronouns let you write without repeating the nouns.

Verbs

A **verb** is a term of action. It also refers to the action of being. A verb phrase is called a **predicate**. The verb in the following sentence is bold.

Allie **ran** the Boston Marathon.

The **present tense** is used to show that something is happening now (I am writing). The *base form* and the *present participle* show action occurring in the present. The **base form** of a verb is the form you'd see in the dictionary, while the **present participle** is the *ing* form of a verb.

The **past tense** shows that something has already happened (I wrote). The *past form* and *past participle* show action that occurred in the past. The **past form** is simply the past tense of the verb (I wrote), while the **past participle** is the *ed* form of the verb.

So, in all, there are four verb forms that indicate action and time: base form, present participle, past form and past participle. The names of the forms aren't as important as knowing how they are used to indicate action and time. Take a look at the chart that follows.

Table 11-1: Verbs

Verb	Base Form	Past Form	Present Participle	Past Participle
write	I write	I wrote	I am writing	I have written
perform	I perform	I performed	I am performing	I have performed
work	I work	I worked	I am working	I have worked

Notice how the forms of *write*, *perform* and *work* change to show whether the action happened in the present or the past.

The present participle is identified with the suffix *ing*. The past participle is often identified with the suffix *ed*. But as you can see when you look at the word written (the past participle of write), there are many exceptions that apply. The word "have" in the sentence can also be a good indicator of use of the past participle form. The exceptions in these verb forms are called **irregular verbs**.

In addition to the various tenses, verbs come in three major types. You'll recognize each type of verb as you see its examples—you probably just never knew that these verbs were classified as certain types!

- **Static verbs** express a form of being. Examples include *to be*, *appear*, *seem*, *prove*, *remain*, *look*, *taste*, *smell*, *feel* and *sound* (as in that sounds great!).
- **Dynamic verbs** express action. Examples include *kick*, *spit*, *run*, *sleep*, *eat*, *scamper*, *frolic* and *skate*.
- **Helping verbs** work with other verbs to express time or mood. Examples include *may*, *might*, *could*, *should*, *would*, *have*, *can*, *must*, *will*, *am*, *are*, *was* and *were*.

Most writers use too many static verbs and should try to use more dynamic verbs—within reason, of course. For example, you probably won't use *scamper* or *frolic* very often in medical reports! However, looking to replace forms of *to be* with more direct verbs can often improve the clarity of your communication.

Adjectives

An **adjective** modifies, or limits the meaning of, a noun or pronoun. It can identify, quantify or describe. Adjectives help insert shades of gray and lavender into the world simply by appearing with nouns to add information.

And adjectives can give all kinds of information! Adjectives are numbers, opinions, qualities, sizes, emotions, ages, shapes, colors, origins and materials. You may be most familiar with descriptive adjectives, but adjectives come in many different types. A few examples are given for each category that follows.

- **Articles**—*a* trumpet, *an* instrument, *the* orchestra
- **Numbers**—*three* trumpets
- **Possessive adjectives**—*Esther's* trumpet, *her* favorite instrument, *your* entertainment
- **Demonstrative adjectives**—*this* trumpet, *that* orchestra, *those* musicians, *these* chairs
- **Indefinite adjectives**—*any* trumpet, *some* chairs, *a few* musicians, *all* instruments
- **Interrogative adjectives**—*which* trumpet? *what* instrument?
- **Descriptive adjectives**—*golden* trumpets, *straight-backed* chairs, *diligent* musicians

Adjectives usually come before the nouns they modify, as in the examples you just studied. It sounds easy enough, right? But think about these phrases, which you sometimes see on menus or in advertisements: *a hot cup of coffee*, *a cold glass of milk*. Would you want a *hot cup* and a *cold glass*? Or would you prefer *a cup of hot coffee* and *a glass of cold milk*?

Adverbs

Like adjectives, **adverbs** modify other parts of speech. However, adverbs are more versatile—they can modify verbs, adjectives and other adverbs.

Adverbs tell you information that answers these questions: *When? Where? How? How Much?*

Here are a few examples from each category:

- **When?**—*immediately*, *soon*, *now*
- **Where?**—*there*, *down*, *here*, *up*
- **How?**—*boldly*, *greedily*, *raucously*
- **How much?**—*very*, *absolutely*, *minimally*

Adverbs are very powerful.

- Adverbs can modify an entire sentence. For example: *Clearly*, we need more information before we can make a decision.
- Adverbs can also join two sentences, each of which could stand alone. For example: She seemed like the best candidate for the position during the interview; *however*, she gave us incomplete contact information for her references, and she lied on her resume.

However, many writers use adverbs instead of a more precise word, especially when the adverb answers the *how much?* question. In your opinion, which of the following sentences makes the strongest statement?

I was very happy.

I was ecstatic.

If you selected the second sentence, you're right! Using the correct word instead of piling on modifiers leads to stronger writing.

Prepositions

Prepositions serve as glue to link other words—nouns, pronouns or phrases—to the rest of a sentence. Prepositions introduce a phrase that answers the questions *where?* or *when?* about a noun or pronoun.

- **Where?**—*in* the ocean, *under* the shelf, *on* the floor
- **When?**—*until* dinner, *during* the night

Lawyers are infamous for using awkward prepositions such as *hereinafter* and *therein*. However, they're not alone. Many business writers hide behind prepositions in phrases like these: *as of now*, *for the time being*, *at this point in time*, *at present*. But all they really need to say is *now*.

Conjunctions

Conjunctions join words, phrases and clauses. In general, conjunctions give you information about the things they're joining. Are they the same? Are they different? Are they contradictory? Does one depend on another? Here are some types of conjunctions at work:

- **Coordinating conjunctions**—*for*, *and*, *nor*, *but*, *or*, *yet* and *so*. (Some suggest remembering these conjunctions by their first letters: FANBOYS.) I'll eat soon, *for* I am hungry. I'll eat tacos *and* pizza. I'll eat lunch *but* not supper.
- **Subordinating conjunctions**—*after*, *although*, *as*, *as if*, *as long as*, *as though*, *because*, *before*, *even though*, *if*, *in order that*, *once*, *since*, *so that*, *though*, *unless*, *until*, *when*, *whenever*, *where*, *whereas*, *wherever*, *whether* and *while*. *Until* I hear from you, I'll keep reading. *When* the sun breaks through the clouds, I'll go for a run. *Though* I often work through lunch, I'll make an exception today.
- **Correlative conjunctions**—*both/and*, *either/or*, *if/then*, *neither/nor* and *not only/but also*. *Neither* a borrower *nor* a lender be. *Either* you're for us *or* you're against us. She is *both* patriotic *and* clear-sighted.

When you studied adverbs, you learned about a kind of adverb that can join sentences like those in the following example: She seemed like the best candidate for the position during the interview; *however*, she gave us incomplete contact information for her references, and she lied on her resume. That type of adverb is a **conjunctive adverb** (also sometimes referred to as a **transitional expression**). In the example sentence, *however* serves the same role as *but* would—it lets you know that a contradiction is coming.

Let's look at one more part of speech—interjections.

Interjections

Interjections are just plain fun. They're words that add a bit of emotion to a sentence. Interjections aren't related grammatically to anything else in the sentence. They're rarely used in medical reports, but you hear them often in speech and in creative writing. The interjections in the following examples are italicized.

Hey! Where are you going with my bike?

Wow, that skateboard is heavy.

The day, *alas*, dwindles to dusk.

Oh my, the refrigerator's empty.

Now, don't forget to tune into the sports!

Wow is an example of an interjection.

Some spoken language is made up nearly exclusively of interjections. For example: "*Like, you know*, it was awesome, *I mean, wow, man*." Writers of graphic novels—the grown-up version of comic books—use interjections such as *bam!* and *socko!* and *thump!* to express emphasis, usually while the hero beats up on the bad guys.

Now, before we move on, let's use the Practice Exercise that follows to review what you've read so far.

✍ Step 4 Practice Exercise 11-1

❑ For questions 1 through 3, refer to the following sentences. Choose the best answer from the choices provided.

> I'll eat lunch but not supper. Though I often work through lunch, I'll make an exception today.

1. Which of the following lists verbs from these sentences? _____

a. lunch, supper, exception
b. but, though
c. I'll, often
d. eat, work, make

2. Which of the following lists conjunctions from these sentences? _____

a. lunch, supper, exception
b. but, though
c. I'll, often
d. eat, work, make

3. Which of the following lists nouns from these sentences? _____

a. lunch, supper, exception
b. but, though
c. I'll, often
d. eat, work, make

For items 4 through 12, match the definition with the correct term.

a. adverb	d. pronoun	g. proper noun
b. conjunction	e. adjective	h. interjection
c. noun	f. preposition	i. verb

4. _____ a person, place or thing

5. _____ a specific person, place or thing

6. _____ **a stand-in for a noun**

7. _____ **an action or form of being**

8. _____ **an identifier, quantifier or descriptor**

9. _____ **a word that describes when, how or how much**

10. _____ **a word that starts a phrase to describe where or when**

11. _____ **a word that joins words, phrases or clauses**

12. _____ **a word that adds fun and spice**

Step 5 Review Practice Exercise 11-1

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

Step 6 Grammar Guidelines

❑ Now that you're familiar with the different parts of speech, let's learn about grammar guidelines. Language constantly changes, even today. But accepting those changes isn't the same as taking an anything-goes attitude when it comes to communicating!

Cars on the autobahn and communication both have something in common—they move at lightning speed.

Think of communication as if it were a highway—how about Germany's autobahn? The autobahn is a multilane highway with long stretches where the speed limit of 130 kilometers per hour (about 80 miles per hour) is merely suggested! When all the drivers are going as fast as their cars can, it's vital that everyone obey a few rules of safe driving—for example, driving on the right side of the road. German law also strictly prohibits drunk driving and requires anyone in a car to wear a seat belt.

Similarly, communication moves at lightning speed. You communicate by messages sent to personal digital assistants, by phone, through e-mail and with chat utilities. Medical facilities also rely on traditional written

communications, ranging from letters and medical reports to policy statements. Making yourself clear requires following a few basic rules, just as does driving on that highway.

So yes, language changes—but you have to have a foundation. In this section, you'll learn grammar guidelines as they apply to everything from subjects and verbs to pronouns.

Subjects and Verbs

Let's examine the grammar guidelines for subjects and verbs. You may have heard the term subject-verb agreement. One feature of English grammar is that subjects and verbs convey the same information, specifically about number. Let's look at this feature in the context of a few guidelines.

Guideline 1: The number of the subject (singular or plural) determines the number of the verb.

Singular means one. **Plural** means more than one. This rule forms the basis of subject-verb agreement. Here are some examples.

The company approves the plan. (subject is singular)

The vice presidents approve the plan. (subject is plural)

In the first sentence, *the company* is singular, so it uses the singular form of the verb, *approves*. In the second sentence, the subject is plural, and the verb *approve* is plural.

You may have learned a rule long ago that you form plurals by adding *s* or *es* to a word. If so, then the fact that *approves* is a singular verb might be confusing. Although it's true that most nouns become plurals by adding an s or es (such as paper/papers or pen/pens), verbs are different.

Guideline 2: Words that come between the subject and the verb do not affect the number of the verb.

This is why it's important to be able to identify the subject of a sentence.

The vice president for public relations approves the plan.

Mathematics is a highly underrated subject.

These two sentences are slightly different. In the first sentence, *vice president* is the true subject. *Public relations* is the **object of a preposition**—the word that the preposition introduces. In the second sentence, *mathematics* is the subject, and it's singular because it's one entity. Similarly, *public relations* is one business function, even though it ends with an s. It's not the subject of that sentence—but how about the sentence that follows?

Public relations requires excellence in public speaking and in managing relationships.

Although your word-processing software's grammar check may try to tell you that the subject and verb don't agree, the software is wrong. *Public relations*, like *mathematics*, is the subject of the sentence. It's one entity—a business function or a university major.

Here are more examples in which words come between the subject and the verb:

The team leader with all the projects was late to the meeting.

The customers who call on the green line have gold-card status.

In the first sentence, *the team leader* is the subject—not her projects. She was late to the meeting, so the verb is singular. In the second sentence, *customers* is the subject; these customers have gold-card status. Don't get confused and try to match the verb with *projects* or *line*.

Guideline 3: If the subject is two or more words connected by *and*, use a plural verb.

The following examples show when to use this guideline.

The company and the vice presidents seek input on their plan.

Risk communication and damage control are important concepts in public relations.

Credit cards and mortgages are common personal debts.

Pretty clear, huh? Well, the next guideline is a bit trickier.

Guideline 4: An exception to Guideline 3 is that if the words are connected by *and* to make one unit, use a singular verb.

So, the question is whether the words function as a unit or as two units.

M&O is always a top-dollar line in the budget.

Liver and onions is the favorite entrée in the company cafeteria.

The entrée hamburger and fries is one entrée that is served together, so it's singular.

In the first sentence, *M&O* refers to *management and operations*—two business functions that, in the sentence, appear on one line in the budget. In the second sentence, the entrée is made up of both liver and onions, which are served together.

Truthfully, this situation comes up less often than you might imagine. If you get stuck, you could try rewriting to get out of your dilemma.

Management and operations are often costly business functions.

When the company cafeteria serves liver and onions, the cafeteria manager hears nothing but rave reviews.

But how likely is it that you'll be writing about liver and onions, anyway?

Guideline 5: Use a singular verb when any of the following is the subject: anyone, anybody, everyone, everybody, each, either, neither, someone, one, nobody, The Netherlands, politics, summons, a corporation or business.

This guideline covers a lot of ground, but remembering it can save you a lot of time and worry.

Everyone agrees that the basic architecture is sound.

Nobody thinks that the budget for pouring the concrete is realistic.

SmartPhoto won the contract; it is due to bring its software to tomorrow's meeting.

Neither the vice presidents nor the Board of Directors agrees with the CEO.

A summons is a request to appear in court.

We won't go into detail about the international use of English. For now, be aware that this guideline is different in the United Kingdom, where a corporate entity is called *they*.

Guideline 6: Use a singular verb with none when it means no one or not one. Use a plural verb when none suggests more than one person or thing.

Here are some examples of this rule.

None of us has decision-making authority.

None of the goods we've ordered are here yet.

In the first sentence, *none* means *not one of us*. In the second sentence, *none* means *no amount of* the goods.

You could also make an argument that by *goods*, you *mean items from a variety of sources*. In that case, your point might actually be something like this sentence:

None of our vendors has shipped our order yet.

In this sentence, *none* means *not one of our*, so it takes a singular verb.

If this rule stumps you, remember the easiest rule of all: When in doubt, try rewriting. What's your real point? It might be better expressed in one of the sentences that follows.

The receiving dock is empty.

We haven't received anything from our vendors.

So far, we've only placed the orders. We can expect the shipments in two weeks.

Sometimes, direct writing makes the problem go away.

Pronouns

As you recall, pronouns replace nouns in sentences. The sentence that follows sounds a bit silly, right? *The dog ate the dog's bone and then the dog begged for more*. This sentence is a bit more compact. *The dog ate her bone, and then she begged for more*.

But if repeating a noun sounds silly, pronoun problems don't create a pretty picture, either. Here are a few guidelines to help you keep your pronouns in line.

Guideline 7: If you use a pronoun, be sure the antecedent of the pronoun is clear.

The dog ate the dog's bone and then the dog begged for more. Repetitive, isn't it? Good thing we have pronouns.

A pronoun's **antecedent** is the noun to which that pronoun refers. It sounds like a simple guideline, doesn't it? But it's an easy guideline to overlook because *you* always know what you mean.

I read the report on my flight; it was late.

In this sentence, what is the antecedent of *it*? What's late? Was the report turned in late? Did the flight arrive late? Or was the hour late—say, midnight?

The administrative assistants will present the results of their study at a company meeting next week. You can see them there.

What is the antecedent of *them* in the sentence? Does the writer mean that *you can see the study results there* or *you can see the assistants there*?

See, you know what you mean—but remember, until we all learn how to communicate mind-to-mind, you have to be sure to express yourself so that your reader knows what you mean, too.

Here's another guideline that seems pretty straightforward.

Guideline 8: Use a singular pronoun to replace a singular noun and a plural pronoun for a plural noun.

The team leader presented her budget. She then asked for comments.

The team members looked at each other. Then they peppered her with questions.

In the first example, *she* in the second sentence refers to the team leader. One team leader, one person asking for comments. In the second example, *they* in the second sentence refers to the team members. Many people, many people shouting questions.

This gets tricky when you have to determine whether the noun is a collective noun or a plural noun. Remember Guideline 6, which lists the nouns that take singular verbs. They also take singular pronouns.

SmartPhoto won the contract; it is due to bring its software to tomorrow's meeting.

Anyone who has better ideas for her retirement portfolio should go into business for herself.

SmartPhoto is one entity; the proper pronoun is *it*. *Anyone* also is singular; you must use a singular pronoun for it. We'll discuss whether to use *he* or *she* with *anyone* in a later guideline. Just know that *they*, though used commonly in this situation, is technically wrong.

Guideline 9: Use a subject pronoun when replacing the subject.

As you'll remember from earlier in the lesson, pronouns come in all different kinds. A **subject pronoun** replaces the subject of the sentence. When Skylar refers to herself, she might use *I*, *me* or *my*, depending on where the reference is in the sentence. Someone else referring to Skylar would use *she* or *her*.

Skylar will staff the press conference this afternoon.

I will staff the press conference this afternoon.

She will staff the press conference this afternoon.

When you're using a pronoun to replace the subject of a sentence, use the proper form: *I*, *you*, *he*, *she*, *it*, *we* or *they*.

You will staff the press conference this afternoon.

We will staff the press conference this afternoon.

They will staff the press conference this afternoon.

Using other forms of pronouns, such as *him* or *their*, to refer to a subject is incorrect.

Next we have the complement to Guideline 9. An object pronoun replaces the object of the sentence.

Guideline 10: Use an object pronoun when replacing the object.

The trainer has a book for Skylar. He will give it to her.

This example is loaded with pronouns. The one that matches this rule is *her* in the second sentence. The trainer wouldn't give a book to *she* because that's a subject pronoun, and Skylar is the object of the sentence.

Notice that including the first sentence gives the second sentence fairly clear referents. *He* is the trainer, *it* is the book and *her* is Skylar. Still, you'd probably want to add information to make your meaning clear.

The trainer really wants Skylar to have the book. He'll give it to her without charging her for it.

Here's another example.

Skylar hired Jordan. He never thanked her. She refused to recommend him for promotion.

Notice in the second sentence that *he* is the subject pronoun referring to Jordan, and *her* is an object pronoun referring to Skylar. In the third sentence, *she* is a subject pronoun and *him* is an object pronoun.

Guideline 11: Use nonsexist pronouns, or rewrite awkward sentences, whenever you are making a general statement that could refer to both men and women.

Here's a prime example of how language is changing. Into the 1970s, the pronoun *he* was used to refer to subjects that could have been either feminine or masculine. However, that usage is incorrect today.

You have several options to correct the problem. You can use a *he* or *she* approach. You can also use a *they* approach.

> At this point in the simulation, each astronaut should buckle his or her safety harness.
>
> At this point in the simulation, astronauts should buckle their safety harnesses.
>
> A press secretary should remember to take his or her cues from the policy manual. He or she should use the manual as a guide for referring reporters' questions.
>
> Press secretaries should remember to take their cues from the policy manual. They should use it as a guide for referring reporters' questions.

You can get a sense from the examples that sometimes *he* or *she* works better and sometimes *they* works better. Usually, *they* is fairly easy to produce. However, sometimes other rewriting helps make *they* the best choice.

> Press secretaries should remember to take their cues from the policy manual, which lists guidelines for referring reporters' questions.

Singular pronouns like *anyone* or *each* present slightly more difficult situations. Although some authorities accept *they*, you should really use a singular pronoun.

> Anyone with better ideas about how to invest her paycheck should go into business for herself.

Another reasonable workaround is to become indefinite. It loses a little specificity, though.

> Anyone with better ideas about investing a paycheck should start a business.

Your clients may have policies for handling language in harder-to-fix circumstances. For example, in this course, we try to alternate *he* and *she* for nonspecific nouns. Your school is in good company—some Supreme Court justices simply alternate *he* and *she* in their decisions.

Some Supreme Court justices simply alternate he and she in their decisions.

You might think that the effort it takes to think about nonsexist language is a waste of time. However, remember that most clients require nonsexist language. Revising sentences is easy and takes care of most situations.

And finally, the philosopher Ludwig Wittgenstein said, "The limits of my language are the limits of my world."[1] How we use language both shows how we see the world and helps determine the way the world is. Today, both men and women become astronauts, run for office and stay home with children. Language changes may have had a role in making those choices possible. Language should certainly reflect today's world.

While it's alright to edit your letters and e-mails for grammar, you will type doctors' dictation as it was dictated. In fact, many portions of medical reports include partial sentences. Remember, you can always contact your client or facility with questions.

Now, let's complete the Practice Exercise that follows.

✍ Step 7 Practice Exercise 11-2

❑ For questions 1 through 3, refer to the following sentence. Choose the best answer from the choices provided.

> The manager of East Coast Operations usually withholds support from training programs.

1. In the sentence, the subject is _____.

a. singular
b. *Coast*
c. plural
d. *training programs*

2. In the sentence, the verb is _____.

a. singular
b. *usually*
c. plural
d. *train*

3. The sentence is grammatically correct because the subject _____.

a. and verb are both singular
b. and verb are both plural
c. is singular, and the verb is plural
d. is plural, and the verb is singular

For questions 4 through 11, choose the best answer from the choices provided.

4. *The vice president of three divisions _____ late to the meeting.* The appropriate verb for this sentence is _____.

a. *was*
b. *were*
c. *be*
d. *been*

5. *Bill and Bridget _____ for our competitor.* The appropriate verb for this sentence is _____.

a. *works*
b. *work*
c. *was*
d. *has*

6. ***Our competitor has had an excellent quarter; _____ on track to beat our rating by 3 percent.*** **The appropriate pronoun and verb for this sentence are _____.**
   a. *they are*
   b. *it is*
   c. *they may*
   d. *it may*

7. ***Everyone _____ the new management plan.*** **The appropriate verb for this sentence is _____.**
   a. *support*
   b. *detract*
   c. *dislike*
   d. *supports*

8. **The noun that a pronoun refers to is called its _____.**
   a. antidote
   b. conjunction
   c. antecedent
   d. anecdote

9. ***Anyone who thinks they can come up with a better advertising plan should see me after the meeting.*** **This sentence is _____.**
   a. correct as written
   b. incorrect because *they* should be either *he* or *she*
   c. incorrect because the antecedent of *me* is unclear
   d. incorrect because *thinks* should be *think*

10. **Avoiding sexist language is _____.**
    a. a big waste of time
    b. always too difficult to do
    c. easy, fair and necessary in today's business world
    d. hard on readers

11. **To avoid sexist language, you should do all of the following EXCEPT _____.**
    a. rewrite sentences using plural subjects and plural pronouns, such as *they*
    b. alternate *he* or *she* and use singular subjects
    c. learn your own clients' policies
    d. use *he* exclusively

Step 8 Review Practice Exercise 11-2

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

Step 9 Lesson Summary

- ❑ In this lesson, you learned about the remaining parts of speech and sentences, so that we're all using the same vocabulary. We defined the eight parts of speech in the English language: nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions and interjections.

  In addition, you looked at the guidelines that govern how we communicate in English. You learned several grammar guidelines as they apply to everything from subjects and verbs to pronouns.

  In the next lesson, you'll focus on your listening skills.

Step 10 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 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 answers to the school via mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu**.**

Mail-in Quiz 7

For questions 1 through 20, choose the best answer from the choices provided.

1. **The words budget, statistics and program are examples of _____.**
   a. nouns
   b. proper nouns
   c. pronouns
   d. adjectives

2. **The words Des Moines, IBM and Tara are examples of _____.**
   a. nouns
   b. proper nouns
   c. pronouns
   d. adjectives

3. **The words him, this and anything are examples of _____.**
   a. nouns
   b. proper nouns
   c. pronouns
   d. adjectives

4. **Different types of pronouns include all of the following EXCEPT _____.**
   a. complex
   b. interrogative
   c. personal
   d. indefinite

5. **Pronouns let you do all of the following EXCEPT _____.**
   a. express possession
   b. write without repeating nouns
   c. question
   d. connect two independent clauses

6. **Which of the following statements is true? _____**
   a. Verbs can express only movement.
   b. Verbs describe a person, place or thing.
   c. Verbs express action or a state of being.
   d. Verbs cannot express a lack of activity.

7. The three major types of verbs include _____.

a. dynamic, static and helping
b. person, place or thing
c. to be, to think and to feel
d. movement toward and away from something, movement up or down something and movement in or out of something

8. Adjectives modify _____.

a. anything
b. verbs only
c. pronouns
d. nouns or pronouns

9. Which of the following is NOT something that adjectives do? _____

a. Identify
b. Describe
c. Show action
d. Quantify

10. Which of the following is NOT an example of an adjective? _____

a. Lavender
b. However
c. Three
d. A few

11. Which of the following parts of speech do adverbs NOT modify? _____

a. Nouns
b. Verbs
c. Adjectives
d. Other adverbs

12. Which of the following is NOT an example of an adverb? _____

a. Pleasantly
b. Black and white
c. Absolutely
d. Immediately

13. Instead of piling on adverbs, you should try to _____.

a. use adjectives whenever possible
b. stick to subject-verb-object sentences
c. find the precise verb you mean
d. look for pronouns

14. Prepositions introduce a _____ that expresses _____.

a. sentence, action
b. verb, static
c. phrase, where or when
d. pronoun, adjectives

15. Prepositions describe _____.

a. verbs and adverbs
b. adjectives and adverbs
c. nouns and pronouns
d. complex and compound sentences

16. To join words, phrases and clauses, you use _____.

a. prepositions
b. conjunctions
c. predicates
d. adverbs

17. The FANBOYS (for, and, not, but, or, yet and so) are examples of _____.

a. predicates
b. conjunctions
c. adverbs
d. prepositions

18. Which of the following is a grammatically correct sentence? _____

a. The Board of Directors broke for lunch, the vice presidents agreed to abdicate.
b. But the Board of Directors broke for lunch, the vice presidents agreed to abdicate.
c. During the break, the Board of Directors and vice presidents.
d. While the Board of Directors broke for lunch, the vice presidents agreed to abdicate.

19. Which of the following is a grammatically correct sentence? _____

a. During the previous quarter, total sales fell, but premium sales rose.
b. The previous quarter, total sales but premium sales rose.
c. During the previous quarter, total sales.
d. The previous quarter.

20. Which of the following is grammatically correct? _____

a. The afternoon shift less popular, and the nurses earn more per hour.
b. The afternoon shift is less popular, and the nurses earn more per hour.
c. The afternoon shift are less popular; the nurses earn more per hour.
d. The afternoon shift is less popular. Them nurses earn more per hour.

Endnotes

[1] "Professor Joseph P. White Lecture Notes." *Santa Barbara City College*. http://www.cpesbcc.net/whitelecturenotes.htm (15 March 2006).

CONGRATULATIONS!

You've completed Lesson 11.

Don't wait for your quiz results to continue with Lesson 12.

Lesson 12
Listening Skills and Sound Alikes

Step 1 Learning Objectives for Lesson 12

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Explain antonyms and provide examples.
  - Differentiate between basic medical antonym pairs.
  - Explain medical homophones and provide examples.

Step 2 Lesson Preview

- ❑ You've learned many different types of terms in your course, such as acronyms and eponyms. In this section, we will look at two more types of terms that can be confusing when you hear them. These terms may sound so much alike or look so much alike that they may confuse you. As you know, you must transcribe terms correctly in order to capture the correct meaning of the dictation. This lesson will introduce you to common antonyms and homophones that you'll hear as a medical transcriptionist.

  It's time to dive into the lesson and learn about *antonyms* and *homonyms*.

Step 3 Antonyms

- ❑ **Antonyms** are words or word parts that are opposite in meaning to each other. Look at the following antonym examples.

  Hypotension means low blood pressure.
  Hypertension means high blood pressure.

  In the rush of a dictation, these words can sound very much alike. But they are opposites. Listen to the context of the words. That is, listen to how they are used.

> "The patient's hypertension has been successfully treated with medication with a lowering of the blood pressure to..."

The context tells you the blood pressure originally was high. Hypertension is the right choice in this context.

Some antonyms are not a problem in transcription. They are opposites, but they don't sound alike. Even so, a doctor may say one but mean the other. Even when antonyms don't sound alike, look at the context of what you have typed. Does it make common sense?

For example, look at these antonyms.

Internal means inside.
External means outside.

Internal and external don't sound alike. You wouldn't have much trouble telling them apart. However, a dictation error could cause an unintended transcription error.

For example, you would use the term "external" hernia to describe an inguinal hernia, which is bowel pushing outside through the groin. But an "internal" hernia is inside the abdomen, a loop of bowel pushing through a loop of other bowel.

> "The patient had an internal hernia in the right inguinal canal."

The doctor made a dictation error that you would be able to catch because you know that an inguinal hernia is an external hernia.

If antonyms don't make sense in context, the doctor may have dictated the wrong antonym. We will teach you what to do in these situations later in the course.

Right now, we will look at the terms you have been studying to determine which terms are antonyms. Look at these examples.

endocrine	secretes within
exocrine	secretes without
gastrectomy	removing the stomach
gastrotomy	cutting into the stomach

The doctor may have dictated the wrong antonym if antonyms don't make sense in the report's context.

Notice that by changing one word part, you have changed the meaning of a term to its opposite—its antonym.

Here are guidelines that will help you work with antonyms when you transcribe them.

- Listen carefully to determine if you have clearly heard a word part that has an antonym.
- If you cannot clearly hear a term, look to see if the meaning of the word makes sense to you in context.

Look at these examples. Which term below is correct?

The patient was fed through the gastr**ostomy**.

The patient was fed through the gastr**ectomy**.

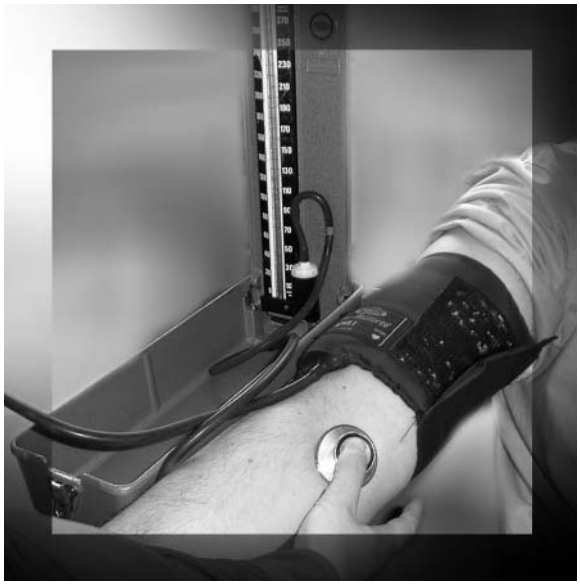
Since you cannot feed a patient through a stomach that isn't there, gastrectomy is not correct. You can feed a patient through a hole made by cutting into the stomach. Gastrostomy is the correct choice in this context.

Normal blood pressure is 120/80. Which term below is correct?

The patient has **hyper**tension with a blood pressure of 90/60.

The patient has **hypo**tension with a blood pressure of 90/60.

In this context, **hypotension** is correct since 90/60 is lower than 120/80.



Remember that normal blood pressure is 120/80. This way you can determine if hypertension or hypotension fits into context.

Some of the more common antonym pairs are listed below. You have already practiced their meanings with your flashcards. Write the meaning of each term in the blank space. Refer to your flashcards if you don't know the meaning.

1. micro/ _____

   macro/ _____

2. peri/ _____

   para/ _____

3. ante/ _____

   post/ _____

4. hypo/ _____

   hyper/ _____

5. eu/ _____

   dys/ _____

6. endo/ _____

   exo/ _____

7. inter/ _____

   intra/ _____

8. con/ _____

   contra/ _____

9. tachy/ _____

   brady/ _____

10. ana/ _____

    cata/ _____

11. ab/ _____

    ad/ _____

12. infra/ _____

    supra/ _____

    super/ _____

13. /ectomy _____

    /tomy _____

14. /malacia _____

    /sclerosis _____

15. a/ _____

    Not using this prefix is the antonym.

16. in/ _____

    ex/ _____

✍ Step 4 Practice Exercise 12-1

- ❑ Let's practice creating antonyms using the list of antonym pairs you have just created. You may refer to the list if you wish. For items 1 through 17, change a prefix or suffix to create the antonym, and write it in the blank space. We'll do an example.

Example: **infra**spinous **supra**spinous

1. **osteomalacia** _____
2. **afebrile** _____
3. **anabolism** _____
4. **antepartum** _____
5. **microcephalic** _____
6. **tachypnea** _____
7. **suprasternal** _____
8. **cholecystotomy** _____
9. **macroorganism** _____
10. **pararenal** _____
11. **intervertebral** _____
12. **convene** _____
13. **euphoria** _____
14. **hypothyroid** _____
15. **leukocytosis** _____
16. **interior** _____
17. **postnatal** _____

Step 5 Review Practice Exercise 12-1

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

Making aleukocytosis from leukocytosis is hard to remember. It is always difficult to see a prefix that isn't there. If the doctor dictated "a leukocytosis," you might transcribe "aleukocytosis." However, the phrase "the patient has aleukocytosis" means just the opposite of "the patient has a leukocytosis."

Step 6 Homophones

- In this section, you'll continue to develop your listening skills by learning about **homophones**, or terms that sound alike. However, homophones are not spelled alike and have different meanings. Many English words are homophones. Do you remember "there," "their" and "they're"? Here are some examples.

principle	principal
seen	scene
meddle	metal

Beside true homophones, which sound exactly alike, there are many words in medical transcription that can sound almost alike. Look at these examples:

infection	injection
advice	advise

Homophones can be tricky to transcribe.

There are some tricks to learning homophones. Try these methods.

- Exaggerate the pronunciation of the word when you first learn it. This may bring out very subtle differences in pronunciation. It can help you remember differences in spelling.
- Look at the context of the word. You will learn the context of words by seeing how others use them. As you begin to read human biology in the next lesson, you will see these words where they belong—in context.
- Make a list of homophones. Whenever you mistake one term for another, add it to your flashcards. Write the homophone next to the word that sounds like it.
- You can use these flashcards as a reference source in this course and when you are working as a medical transcriptionist.

When you study homophones, you have three goals.

- Pronounce each word correctly.
- Spell each word correctly.
- Remember the meaning of each word.

Step 7 Pronounce Homophones

❑ Follow these steps to learn how to pronounce homophones.

Audio Exercise

a. Take out your Lesson 12 Quick-learn Tutor and Homophones flashterms. Access the audio for Lesson 12 Homophones flashcards.

b. Listen to the homophones as they are pronounced. After you hear them, pause the audio track.

c. Look at the homophones and practice pronouncing them out loud several times until you can pronounce them correctly and easily. Turn the Quick-learn Tutor over and read the meanings of the homophones. Continue with all the terms in Lesson 12 Homophones.

d. Next, begin with Lesson 12 Homophones flashterms and play the audio track again. This time, pronounce each homophone in order but do not stop the player after each group. As you pronounce each homophone, look at it on the flashcard. Listen to your own pronunciation of each homophone. If you mispronounce one, put a check mark next to it.

e. Next, listen to the audio track again and practice the homophones you mispronounced. After you have finished pronouncing all of the homophones in Lesson 12 Homophones, move on to the next exercise.

Step 8 Learn Homophone Meanings

❑ Follow these steps to learn homophone term meanings.

a. Again take out your Quick-learn Tutor and Lesson 12 Homophones flashterms. Pronounce each homophone out loud. Before you look at the meanings, see if you can remember them. Check yourself by turning the flashcard over to see the meanings. Do this for each term for Lesson 12 Homophones.

b. Now turn over your Quick-learn Tutor so you can see the meanings of the homophones. Read each meaning out loud. Before you look, see if you can remember the homophone that goes with that meaning. Check yourself by pushing the flashcard up until you see the homophone in the left window. Do this for each term in Lesson 12 Homophones.

c. Practice with the flashterms several times until you are familiar with the homophones and their meanings. It's not necessary to memorize all the terms now.

You will find that you begin to memorize homophones as you use them throughout this course. Remember to keep your flashterms in order even after you're finished with an activity so you can refer back to them easily. You may use your flashterms for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 9 Practice Exercise 12-2

❑ Complete the Practice Exercise below. You will practice listening to homophones.

Audio Exercise

a. Access the audio for Lesson 12: Practice Exercise 2.

b. The items in the Practice Exercise are numbered. First you will hear one of the homophones from this lesson pronounced. After you hear each item, put the player on pause. You may reverse the player to listen to any item again. Find the homophone being pronounced on your flashcards.

c. In the space provided below, write all the homophones listed on the card on the line for that item.

d. Play the audio track again and you will hear a sentence containing the homophone.

e. Underline the homophone that should be transcribed. Choose from the list you just created.

You Hear: Item 1 aee-fay-zha

You Write: 1. aphagia aphasia a phase of

You Hear: aee-fay-zha means unable to speak

You Underline: 1. aphagia <u>aphasia</u> a phase of

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Step 10 Review Practice Exercise 12-2

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

Step 11 Lesson Summary

- ❑ Now you can add a couple more word terms to your knowledge bank—antonyms and homophones. Antonyms are words or word parts that are opposite in meaning to each other while homophones are terms that sound alike but have different meanings.

  As a medical transcriptionist, you'll face antonyms and homophones on a regular basis. You'll hear the word and will have to type the correct word for the context. You wouldn't think you'd have to worry about antonyms in transcription because they are opposites and don't sound alike. However, a doctor may say one and mean the other so you'll have to check the context in order to type the intended term.

  You're doing great with your studies! In the next lesson, you'll start learning about human biology and put all of your knowledge from the course to use. Let's take a quiz before we move on to the next lesson.

Step 12 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 answers to the school via mail, fax or, to receive your grade immediately, submit your answers online at www.uscareerinstitute.edu.

Mail-in Quiz 8

Part 1

For the terms in questions 1 through 12, choose the antonym from the choices provided.

1. **postpartum** _____
   a. bradycardia
   b. intravertebral
   c. antepartum
   d. pararenal

2. **intervertebral** _____
   a. bradycardia
   b. intravertebral
   c. antepartum
   d. pararenal

3. **tachycardia** _____
   a. bradycardia
   b. intravertebral
   c. antepartum
   d. pararenal

4. **perirenal** _____
   a. macroglossia
   b. gastrotomy
   c. antepartum
   d. pararenal

5. **microglossia** _____
   a. macroglossia
   b. gastrotomy
   c. antepartum
   d. adduct

6. **gastrectomy** _____
   a. macroglossia
   b. gastrotomy
   c. antepartum
   d. adduct

7. **euphoria** _____
   a. macroglossia
   b. gastrotomy
   c. dysphoria
   d. adduct

8. **hypothyroid** _____
   a. macroglossia
   b. hyperthyroid
   c. dysphoria
   d. pararenal

9. **abduct** _____
   a. macroglossia
   b. gastrotomy
   c. dysphoria
   d. adduct

10. **incision** _____
    a. macroglossia
    b. excision
    c. dysphoria
    d. pararenal

11. **infrarenal** _____
    a. suprarenal
    b. excision
    c. dysphoria
    d. adduct

12. **leukocytosis** _____
    a. macroglossia
    b. excision
    c. aleukocytosis
    d. adduct

Part 2

Audio Exercise

For questions 13 through 20, listen to your audio files to fill in the blank with the correct word. Select the best choice from the answers provided.

13. The stomach is lined by a _____ membrane.

a. mucous
b. mucus

14. What is your _____?

a. advise
b. advice

15. The speech pathologist will evaluate the child for _____.

a. dysphasia
b. dypsphasia

16. The patient was _____. His temperature was normal.

a. afebrile
b. a febrile

17. An x-ray was taken to evaluate the _____ for irregularity.

a. dialysis
b. diaphysis

18. The pathology report showed evidence of _____.

a. metastasize
b. metastasis

19. An _____ was given to sedate the patient.

a. infection
b. injection

20. The abbreviation for tonsillectomy and adenoidectomy is _____.

a. TA
b. T&A

CONGRATULATIONS!

You've completed Lesson 12.

Don't wait for your quiz results to continue with Lesson 13.

Lesson 13
Overview of Human Biology

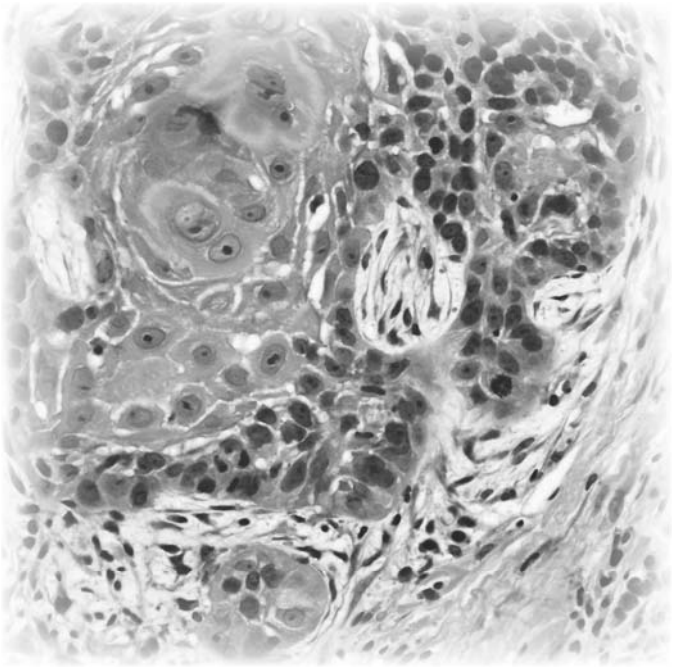
Step 1 Learning Objectives for Lesson 13

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Differentiate among the divisions of biology.
  - Explain biological terms and correctly use them in context.

Step 2 Lesson Preview

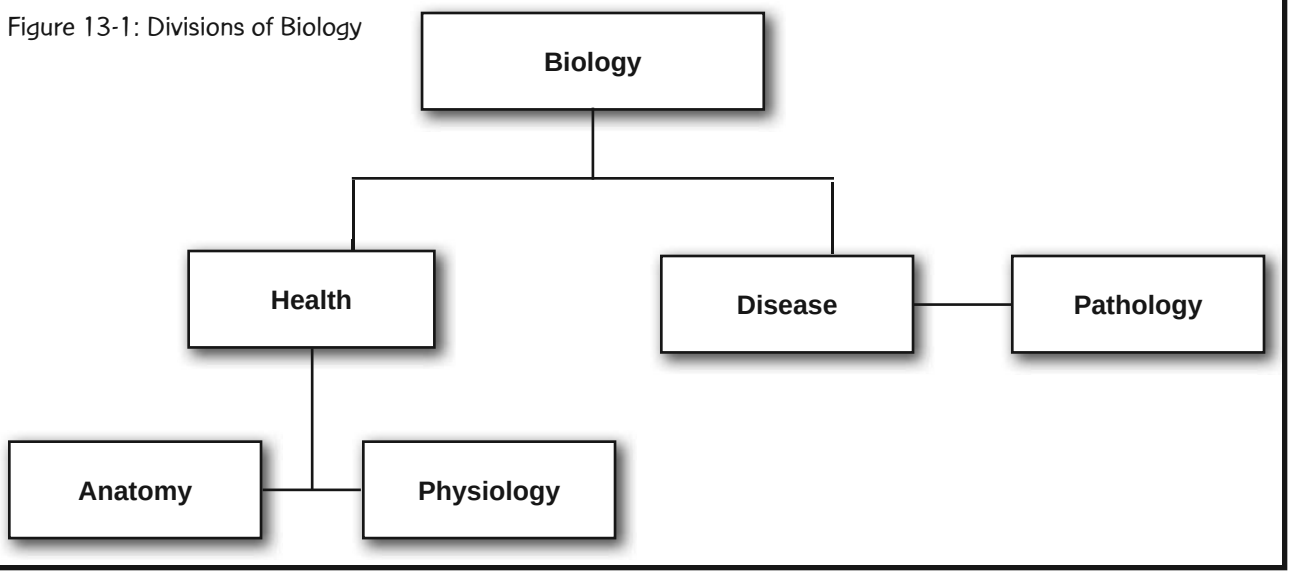
- ❑ You've read the lesson title—Overview of Human Biology—but what is human biology? Let's define it before we dive in. **Human biology** is the study of how the body is put together and how it works in health and disease. Beginning with this lesson, you will read about human biology. We do not expect you to become an expert in biology. But understanding the basics about biology will give you a good background for the terms doctors use. This will help you become a better transcriptionist.

  Human biology in the healthy state covers two basic concepts: *anatomy* and *physiology*. On the other hand, human biology in disease deals with *pathology*. Let's look at how these concepts are related:



Human biology is the study of how the body is put together and how it works when the body is healthy as well as diseased.

Figure 13-1: Divisions of Biology



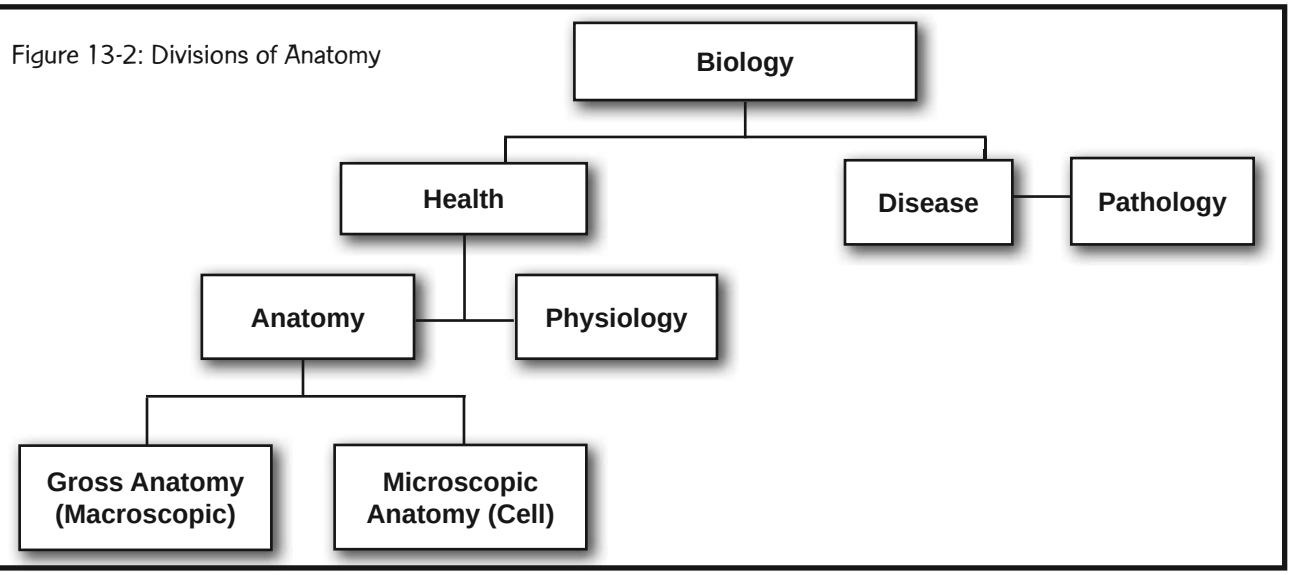
We'll discuss each of these topics in more detail. Remember, the idea is not to become an expert in biology, but to understand the context of the terms you hear in transcription.

Anatomy

Anatomy is the science of the structure of the body—the appearance and relationships of body parts. There are two kinds of anatomy.

- **Gross anatomy**—Gross anatomy includes parts of the body that we can see with our eyes. It is also called **macroscopic** anatomy.
- **Microscopic anatomy**—Microscopic anatomy includes parts of the body that are too small to be seen with the naked eye. It is also called cell anatomy.

Figure 13-2: Divisions of Anatomy



Gross Anatomy

In gross (macroscopic) anatomy, we have two concerns.

- The presence and appearance of a body part
- The location and position of the organs and body parts

Let's start with the first concern—the presence and appearance of a body part. The study of the form of body parts is called **morphology**. The form of a body part includes its size, shape, color, contour and texture. For example, when a kidney is normal in size, shape, color, contour and texture, we say it has **normal morphology**.

A basketball player and a jockey both have the same anatomic structure. For example, they both have hands with five fingers. However, there is a morphologic difference between them. For example, the hand of the basketball player is larger than the hand of the jockey.

Our second concern in gross anatomy is the location and position of the organs and body parts. Not only should the heart be in the chest, but it should be in the left side of the chest.

The terms used to describe gross anatomy include the following:

- The names of the body parts
- Where the body parts are located
- How the location of two body parts are related

Microscopic Anatomy

Microscopic anatomy is the science of the structure of the body's individual cells and tissues. This kind of study is done with a microscope. The microscopic study of cells is called **cytology**. The microscopic study of tissues is called **histology**.

The terms used to describe microscopic anatomy include the following:

- The names of different cell parts and cell types
- The colors cells become when they are dyed for microscopic examination
- The ways cells are arranged in different types of tissue

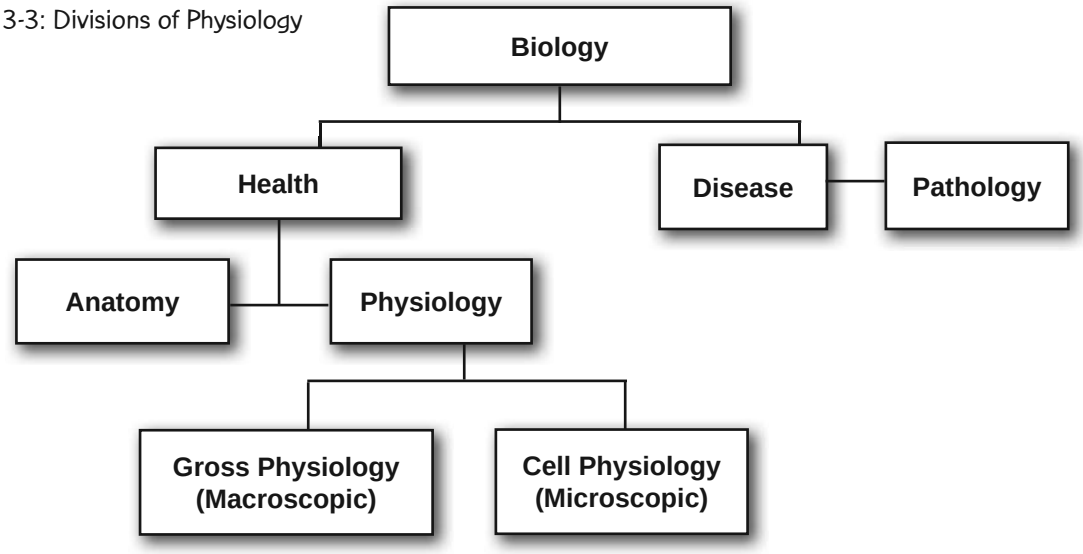
Physiology

Physiology is the study of how the body works. Physiology describes the function of the body, its organs, tissues and cells.

Each organ, cell or tissue has its own special **physiologic** function. For example, kidneys make urine, but they cannot think.

Physiology can also be divided into macroscopic physiology and microscopic physiology. Macroscopic physiology is usually called gross physiology and microscopic physiology is usually called cell physiology.

Figure 13-3: Divisions of Physiology



Step 3 Biology Terminology

- When you are reading about human biology, you will see new terms. There are two ways to determine the meaning of the term.
  - Divide the term into word parts and look at the meaning of the parts.
  - Look at the context of the term in the sentence.

Let's look at some hints to help when you study new terminology.

If you don't know the meaning of a medical term from its context, divide the term to find its meaning. Look at this example.

Term	Meaning Derived from Word Parts
ana/tom/y	the positive process of slicing or cutting up

The meaning of the word parts and the meaning from context may not be exactly alike. Try to make a connection between the two meanings in your mind. Let's continue with another example.

Term:	anatomy
Meaning from Context:	the science of appearance and relationships of body parts
Meaning Derived from Word Parts:	the positive process of slicing or cutting up

The connection: The science of anatomy is based on cutting the body in a constructive way. In this way, parts can be observed, not destroyed.

So as you can see, the meaning of word parts may seem different than the meaning of the whole term. Even so, there is a connection that can help you remember the term, its spelling or meaning. Now let's try this by looking at a term you don't know.

Meta/bol/ism is the process of both building up and breaking down molecules in the body. Is the process of only building up molecules called ana/bol/ism or cata/bol/ism? Since you know that ana/ means "positive, up" from the example term "anatomy" or from your flashcards, you may be able to guess that the answer is anabolism.

When you see a new term in the reading material, you may not know how to pronounce it. If you don't know how to pronounce a new term, don't worry. Just pronounce the word parts. That's good enough for now.

✍ Step 4 Practice Exercise 13-1

❑ For items 1 through 10, match the correct meanings to the word parts below. You may use the flashcards from your course if you need them.

1. _____ **ana/**

2. _____ **micro/**

3. _____ **bi/o**

4. _____ **norm/o**

5. _____ **/tomy**

6. _____ **/ic**

7. _____ **/oid**

8. _____ **macro/**

9. _____ **morph/o**

10. _____ **/scope**

a. positive, up
b. relating to
c. form, structure
d. instrument to see through or with
e. the process of cutting into or slicing
f. gross, large
g. living thing, life
h. proper, rule
i. small, tiny
j. like

For items 11 through 14, in the blank space, give the meaning that you have learned in this lesson (from context), not the meaning derived from word parts.

11. **microscopic anatomy** _____

12. **macroscopic anatomy** _____

13. **anatomic** _____

14. **morphology** _____

For items 15 through 17, create the proper medical term and write it in the blank space below. You may use your flashcards if you need help.

15. **instrument for seeing small things** _____

16. **study of cells** _____

17. **relating to study of the form of organs** _____

For items 18 through 22, fill in the blanks using a term from the list below.

biology	morphology	physiology	pathology
gross anatomy	microscopic anatomy	histology	

18. **_____ is the science of the structure of the body's individual cells and tissues.**

19. **_____ is the study of tissues.**

20. **The terms used in the science of _____ include the following:**
    - **The names of body parts**
    - **Where the body parts are located**
    - **How the location of two parts are related**

21. **The study of the size, shape, color and texture of body parts, the form of body parts, is called _____.**

22. **The study of the structure and function of the human body in health and disease is called human _____.**

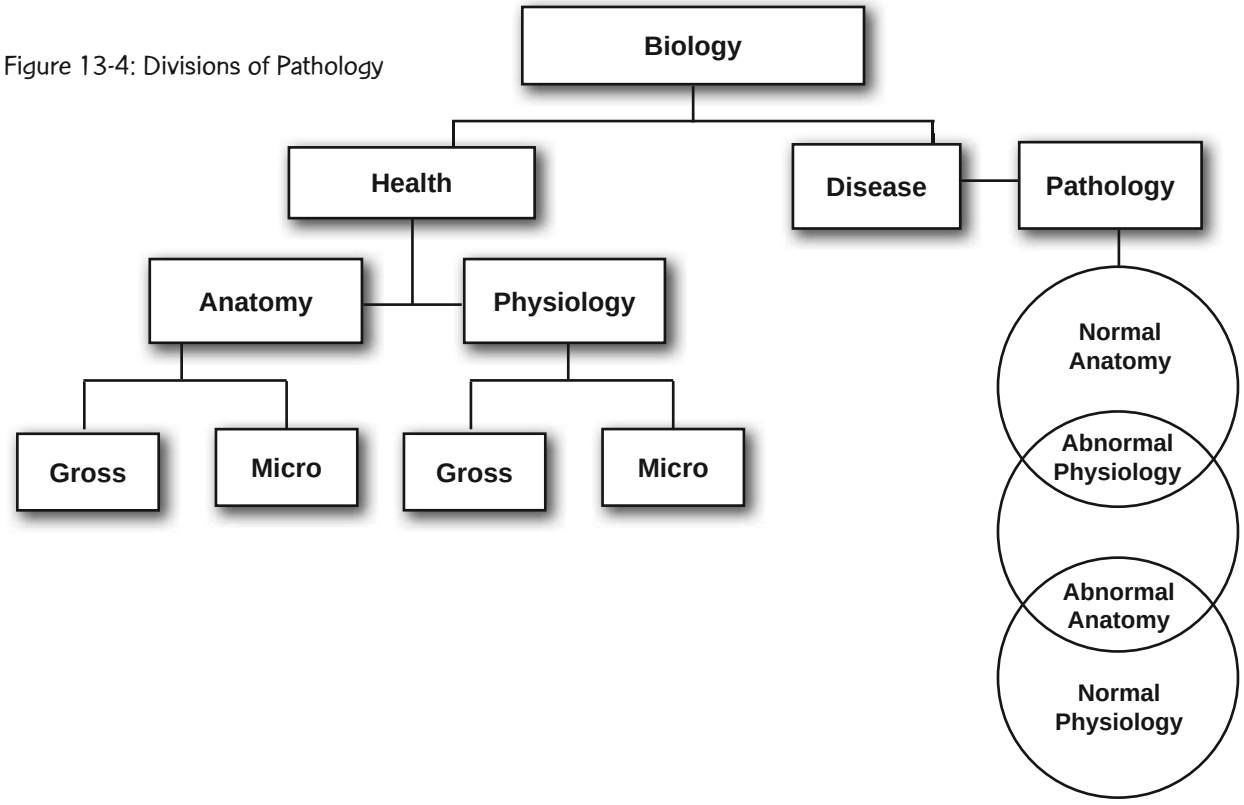
Step 5 Review Practice Exercise 13-1

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

Step 6 Pathology

❑ **Pathology** is the study of human biology when anatomy and/or physiology are abnormal. Abnormal physiology is sometimes called **pathophysiology**. Abnormal anatomy is called pathology or **pathologic** anatomy. Look at the relationships below.

Figure 13-4: Divisions of Pathology



How do anatomy, physiology and pathology relate to one another?

1. **Normal Anatomy/Abnormal Physiology**

   A person can have abnormal physiology (pathophysiology) but normal anatomy. For example, a diabetic has abnormal physiology—they cannot make insulin—but may have normal anatomy. The insulin-making function is abnormal but the appearance and location of the organ that makes the insulin is normal.

2. **Abnormal Anatomy/Normal Physiology**

   A person can have abnormal anatomy (pathology) but normal physiology. For example, a healthy person with dwarfism has abnormal anatomy but normal physiology. The anatomy is abnormal but it functions normally.

3. **Abnormal Anatomy/Abnormal Physiology**

When an anatomic abnormality (anatomic pathology) lasts long enough, it may lead to a physiologic abnormality.

For example, in early alcoholism, the liver changes. It contains more fat and enlarges. These are anatomic abnormalities. The function is normal. If alcoholism continues long enough, the liver slowly stops functioning. This is a physiologic abnormality.

On the other hand, when a physiologic abnormality (pathophysiology) lasts long enough, it may lead to an anatomic abnormality.

For example, at the start of a cold, you will have sniffles and a loss of smell. These are physiology abnormalities. The function of the nose is abnormal. The anatomy of the nose, its size and color, is normal.

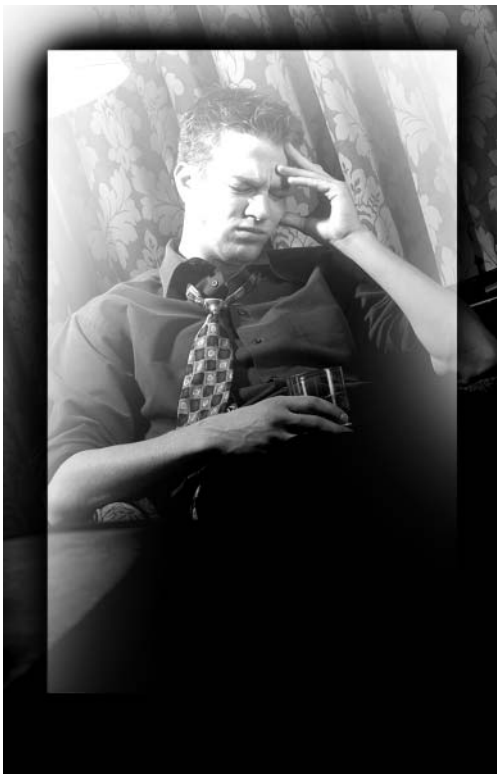
Later, you may have a swollen, red nose from the cold. Swelling and redness are pathologic changes in anatomy. Because swelling and redness are changes in size and color, they can also be called morphologic changes.

For most disease processes, anatomy and physiology have both become abnormal (pathologic) by the time a diagnosis is made.

Let's use our alcoholism and cold examples once again. In the early stages of alcoholism, the liver functions well and the liver function tests are normal. The diagnosis of alcoholic liver disease is not usually made. The patient feels fine and cannot believe that the liver is abnormal. When both the anatomy and physiology are pathologic, the patient feels sick, there is hepatomegaly and the liver function tests are abnormal. So you can see that the diagnosis is not usually made until both the anatomy and physiology are pathologic.

Likewise, in the early stages of a cold, when there are just sniffles, most people say, "I think I'm getting a cold." When their nose is red, swollen, stuffy and runny, they will say, "I have a cold." Again, the diagnosis isn't usually made until both anatomy and physiology are abnormal. Of course, it's hard to take a day off work with just abnormal anatomy or just abnormal physiology.

So even though diseases can be divided into anatomic pathology and pathophysiology, most of the time medicine deals with both anatomic and physiologic pathology at the same time.



Although you have the symptoms of a cold, a diagnosis can't be made until both the anatomy and physiology are abnormal.

✍ Step 7 Practice Exercise 13-2

❑ For questions 1 through 20, match the meanings to the word parts below. Use your flashcards if you need help.

1. _____ **/tomy**
2. _____ **micro/**
3. _____ **ana/**
4. _____ **/logy**
5. _____ **/scope**
6. _____ **macro/**
7. _____ **bi/o**
8. _____ **ab/**
9. _____ **norm/o**
10. _____ **path/o**
11. _____ **/ic**
12. _____ **cata/**
13. _____ **/opsy**
14. _____ **/y**
15. _____ **morph/o**
16. _____ **physiology**
17. _____ **anatomy**
18. _____ **microscopic anatomy**
19. _____ **pathology**
20. _____ **morphologic**

a. away from
b. relating to the study of form: size, shape, color, contour and texture
c. small, tiny
d. relating to
e. disease
f. negative, down
g. cut into or slice
h. positive, up
i. the science of the appearance and relationships of body parts
j. the science of the structure of the body's individual cells and tissues
k. look at
l. process of
m. the study of disease
n. the study of body function
o. gross, large
p. study of
q. instrument to see through or with
r. living thing, life
s. proper, rule
t. form, structure

For items 21 through 30, use the meanings of the word parts and fill in the blanks with a term from the list below. Choose the term that fits the context of the sentence.

anatomy	pathologic	microscopic anatomy	biologic
morphology	gross anatomy	macroscopic	histology
pathology	microscopic	physiologic	histologic
anatomic	physiology	microscope	morphologic
			biology

21. Anatomy, physiology and pathology are included in the study of life called human _____.

22. When there are changes in the form of an organ, such as size, shape or color, they are called _____ changes.

23. The science of the appearance and relationships of body parts is called _____.

24. The study of the function of body parts is called _____.

25. The study of disease is called _____.

26. The study of tissues is called _____.

27. The science of the structure of the body's cells and tissues is called _____.

28. To see a cell, you would use an instrument called a(n)_____.

29. Changes in the function of an organ are called _____ changes.

30. The disease changes you see in an organ are called _____ changes.

31. Divide the following terms. More than one division is possible. You may use combined suffixes.

histology _____ **anatomy _____**

pathology _____ **microscope _____**

physiology _____ **morphology _____**

For items 32 through 34, write the correct term in the blank on the right.

32. relating to the study of tissues _____

33. relating to the science of structure _____

34. relating to the study of disease _____

Step 8 Review Practice Exercise 13-2

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

Step 9 Lesson Summary

❑ Human biology—or the study of how the body is put together and how it works in health and disease—provides a good background so you'll have a better understanding of the terms doctors use.

When the body is healthy, doctors examine the structure—or the anatomy—and the physiology—or the function—of the body. If the body is unhealthy, doctors will study the disease. Pathology is when doctors examine the abnormal anatomy and physiology.

In the next lesson, you'll continue building your anatomy foundation. You'll learn some anatomic terms and how to divide the body into sections and planes.

CONGRATULATIONS!

You've completed Lesson 13.

Don't wait for your quiz results to continue with Lesson 14.

Lesson 14
Anatomy: Locating Parts of the Body

Step 1 Learning Objectives for Lesson 14

- ❑ When you have completed the instruction in this lesson, you will be trained to do the following:
  - Demonstrate the anatomic position.
  - Divide the body into sections and planes.
  - Define and pronounce anatomical location terms.

Step 2 Lesson Preview

- ❑ You've probably heard a version of this medical horror story. A patient goes in for knee surgery and the doctor operates on the wrong leg. Whether or not this type of story is true, it's important to have a system to correctly describe the location of a patient's body parts. This eliminates confusion and ensures the patient receives proper medical care.

  As it's important for doctors, it's also important for you to be aware of anatomic locations. This way, you will notice discrepancies between what the doctor dictates and the context. In this lesson, you'll learn about the anatomical position, planes and sections of the human body and anatomical terms.

A system for identifying a patient's body parts eliminates any confusion.

Step 3 The Anatomic Position

- There is a system of describing the location of anatomical parts. This system assures that there is no confusion about the location of any parts, even if the patient is hanging by the feet doing yoga.

  The location of body parts is always described as if the patient were in the position shown in Figure 14-1. This body position is called the anatomic position.

  Notice the position of the hands in Figure 14-1. The palms are facing forward and the thumbs are facing outward. No matter what the position of the patient, the doctor will describe the location of anatomic parts as if the patient were always in this position. Stand up and put your body in the anatomic position.

  Be sure you can remember the anatomic position. All the terms you will learn in this lesson are based on the relationships of body parts when the body is in this position.

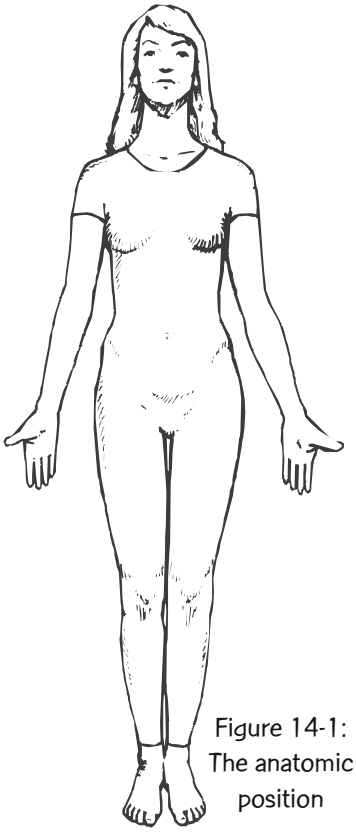


Figure 14-1: The anatomic position

Planes and Sections of the Human Body

The human body has three dimensions: height, width and depth. The body can be divided in three different ways.

- Superior and inferior sections
- Right and left sections
- Anterior and posterior sections

Dividing the body like this can help you understand where organs or parts are located. You can divide the body into these sections by making a mental "slice" or "cut."

Transverse Planes and Sections

The **transverse**, or **horizontal**, plane divides the body into superior (above) and inferior (below) sections. A transverse plane can be made anywhere in the body from the feet to the head.

- A transverse plane made at the neck divides the body into superior and inferior sections. The head is superior to the plane. The chest, arms, abdomen and legs lie inferior to the plane.
- A transverse plane made at the waist also divides the body into superior and inferior portions. The head, chest and arms are superior to the plane. The pelvis and legs are inferior to the plane.

- A transverse plane made at the level of the knees divides the body into superior and inferior sections, too. The thighs, abdomen, chest, arms and head are superior to the plane. The calves and toes are inferior to the plane.

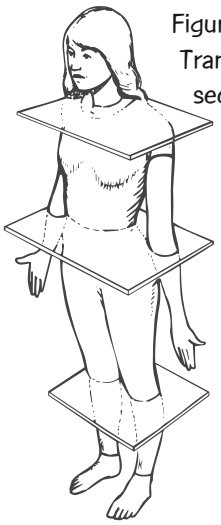


Figure 14-2: Transverse sections

Sagittal Planes and Sections

If the body is divided longitudinally instead of horizontally, it's a *sagittal* plane. A **sagittal**, or **longitudinal**, plane divides the body into right and left sections. A sagittal plane can be made at any point of the body from the right side to left side.

The body can be divided several different ways longitudinally. A **midsagittal** or **median** plane divides the body into equal right and left sections. A midsagittal plane is the midline of the body. A **parasagittal** plane divides the body into unequal right and left sections.

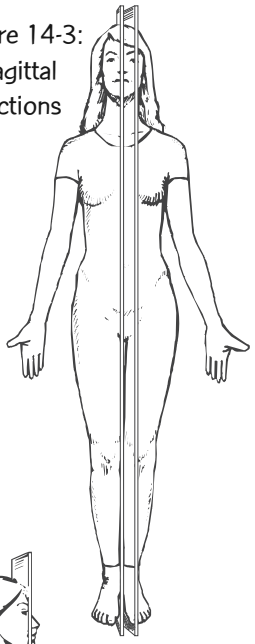


Figure 14-3: Sagittal sections

Coronal Planes and Sections

A **coronal**, or **frontal**, plane divides the body into anterior (front) and posterior (back) sections. A coronal plane can be made at any point from the front of the body to the back of the body.

- A coronal plane at the level of the ears divides the body into anterior and posterior sections. The face, abdomen and knees are anterior to the plane. The back, buttocks and ankles are posterior to the plane.

- A coronal plane at the level of the nose divides the body into anterior and posterior sections. The nose is anterior to the plane. Everything else is posterior to the plane.

You can divide the body and each organ using planes. For example, a midsagittal plane of the liver would divide the liver into equal left and right sections.

Now that you're familiar with the body division terms, continue to study the definitions of these planes until you can form a mental image of them. You can remember these concepts more easily if you picture the planes using your own body.

Figure 14-4: Coronal sections

✍ Step 4 Practice Exercise 14-1

❑ For items 1 through 10, fill in the blanks in each sentence by using one of the words in the list below. Use each term once.

anatomic position	sagittal	midsagittal	frontal	transverse
median	coronal	sections	parasagittal	horizontal

1. **When the arms are at the side, the palms of the hands face forward and the thumbs point outward, the body is in the _____.**
2. **A(n) _____ plane is also called a horizontal plane.**
3. **A(n) _____ plane divides the body into unequal left and right sections.**
4. **A frontal plane is also called a(n) _____ plane.**
5. **A(n) _____ plane divides the body into superior and inferior sections.**
6. **A longitudinal plane is also called a(n) _____ plane.**
7. **A(n) _____ plane divides the body into anterior and posterior sections.**
8. **A(n) _____ plane divides the body into equal left and right sections.**
9. **A midsagittal plane is also called a(n) _____ plane.**
10. **A plane divides the body or organ into _____.**

🗝 Step 5 Review Practice Exercise 14-1

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

🕮 Step 6 Location Terms

❑ The location terms you will learn in this section are very important. Doctors use location terms to describe what they see when they examine a patient. Try to memorize these terms now because later you'll be tested on how to use these terms and how well you transcribe them. You will learn how to pronounce the terms later in this lesson.

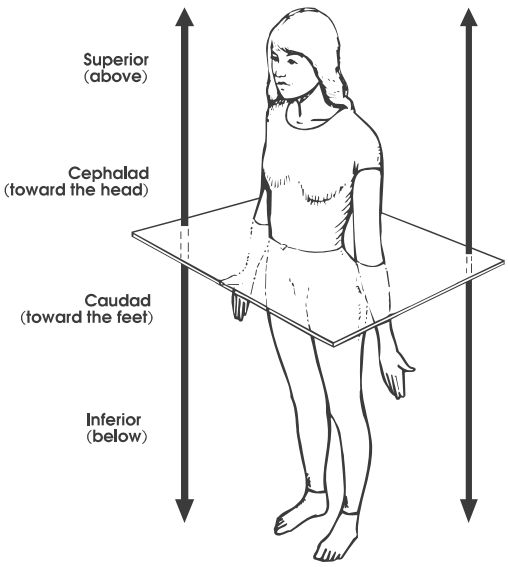


Figure 14-5: Transverse plane

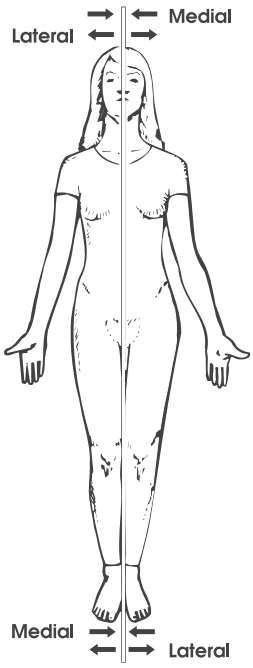


Figure 14-6: Midsagittal plane

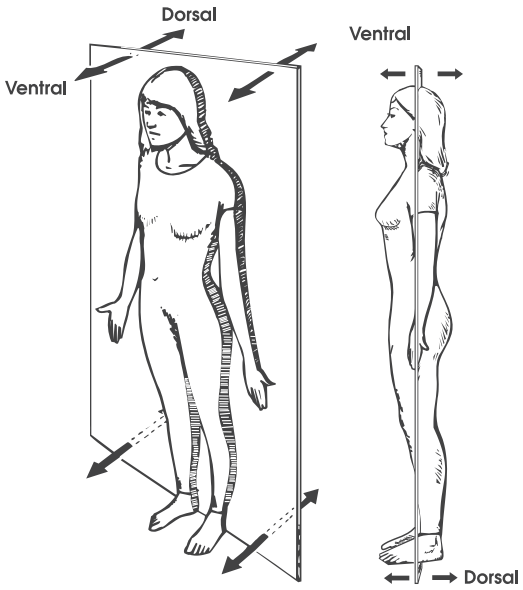


Figure 14-7: Coronal plane

When doctors describe the location of anatomic parts, they use terms that compare the location of one part to another part. There are a number of terms used to describe the relative location of body parts and organs. These terms rely on the anatomical position and the anatomic sections you have just learned.

These terms usually come in antonym pairs. Each word of an antonym pair means the opposite of the other word, such as the antonym pairs above and below or left and right.

If you draw a transverse plane through the body or an organ, these words describe anything above or below that plane.

- **Superior** means above.
- **Inferior** means below.
- **Cephalad** means toward the top of the head.
- **Caudad** means toward the soles of the feet. The term **caudal** is also used.

If you draw a midsagittal plane through the body or an organ, these words describe anything closer to or farther away from that plane.

- **Medial** means closer to the midsagittal plane or middle.
- **Lateral** means farther away from the midsagittal plane or middle.

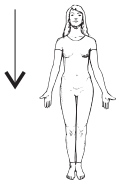
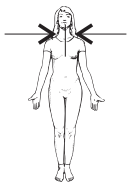
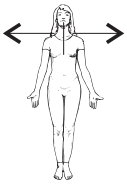
If you draw a coronal plane through the body or an organ, these words describe anything in front of or behind that plane.

- **Anterior** means in front of.
- **Posterior** means in back of.

- **Ventral** means on the belly side.
- **Dorsal** means on the back side.

The following chart summarizes these location terms and how they are used.

Table 14-1: Summary of Location Terms

Location Term	Definition	Location Illustration	Example
Superior	Above		The nose is superior to the chin.
Inferior	Below		The pelvis is inferior to the abdomen.
Medial	Closer to the middle		The groin is medial to the thigh.
Lateral	Farther away from the middle		The ear is lateral to the nose.
Anterior	In front of		The heart is anterior to the spine.
Posterior	In back of		The lungs are posterior to the sternum.

Look at some sentences showing how these words are used. Compare these statements to your own body. Be sure your body is in the anatomic position when you do.

The lungs are superior to the liver.

The liver is inferior to the heart.

The incision was made in a cephalad direction.

The arteries for the lower extremities travel in a caudad direction.

The nose is medial to the eye.

The right thumb is lateral to the right index finger.

The sternum is anterior to the heart.

The lungs are posterior to the ribs.

The ventral hernia was repaired.

The patient was placed in the dorsal position for surgery.

The following terms are used for the body or an organ as a whole. They describe parts that are nearer the center or parts that are nearer the surface of the body or an organ.

- **Proximal** means nearer to the center of the body or organ.

The knee is proximal to the foot.

- **Distal** means farther away from the center of the body or organ.

The foot is distal to the knee.

- **Superficial** means on or closer to the skin or surface of an organ.

The wound was superficial, not involving the muscles, and did not require sutures.

- **Deep** means under or farther away from the skin or surface of an organ.

The wound was deep and penetrated the liver.

- **Central** means within or near the center.

The heart is central within the rib cage.

- **Peripheral** means at or near the rim or edge.

The peripheral veins of the arms and hands can easily be seen.

- **Parietal** means the outer wall of a body cavity.

The parietal pleura form the outer layer that surrounds the lungs.

- **Visceral** means the covering of an organ.

The visceral pleura cover the lungs.

- **External** means outside or closer to the skin or surface of an organ.

The pericardium is external to the heart.

- **Internal** means inside or farther away from the skin or surface of an organ.

The lungs are internal to the ribs.

- **Ipsilateral** means situated on or affecting the same side of the body.

The left leg and left arm are ipsilateral.

- **Contralateral** means situated on or affecting the opposite side of the body.

The right leg and left arm are contralateral.

Some things in the body—like blood cells, fluid or nerve messages—can move. The next two terms describe body parts that carry things that move.

- **Afferent** means carrying toward a body part or the center of an organ.

An afferent neuron is a nerve that carries nerve messages to the brain from a muscle.

- **Efferent** means carrying away from a body part or the center of an organ.

An efferent neuron is a nerve that carries nerve messages away from the brain to a muscle.

The term af/ferent uses a prefix that you know, ad/. However, you may not have recognized it. Sometimes when a prefix is combined with certain root words, a letter must be changed. You will learn the other prefixes below in the flashcards.

When the prefix ad/ is used before root words that begin with the letters *c, f, g, p, s* or *t,* change the "d" to match the first letter of the root word. The same rule applies to the prefix ex/ when it is used before root words that begin with the letters *c* or *f*.

Look at these examples.

ad/	+	/ferent	=	af/	+	/ferent	=	afferent
ad/	+	/signment	=	as/	+	/signment	=	assignment
ex/	+	/ferent	=	ef/	+	/ferent	=	efferent
ex/	+	/centric	=	ec/	+	/centric	=	eccentric

Step 7 Pronounce New Terms

❑ Follow these steps to learn how to pronounce new terms.

Audio Exercise

a. Take out your Quick-learn Tutor and Lesson 14 flashterms. Access the audio in Lesson 14 flashcards.

b. Listen to the terms as they are pronounced. After you hear them, put the player on pause.

c. Look at the terms on the flashcards and practice pronouncing them out loud several times until you can pronounce them correctly and easily. Turn the Quick-learn Tutor over and read the meanings of the terms. Continue with all the terms in Lesson 14.

d. Next, begin with Lesson 14 flashcards and play the audio track again. This time, pronounce each term in order but do not stop the player after each group. As you pronounce each term, look at it on the flashcard. Listen to your own pronunciation of each term. If you mispronounce one, put a check mark next to it.

e. Next, listen again and practice any terms you mispronounced. After you have finished pronouncing all of the terms in Lesson 14, move on to the next exercise.

🕮 Step 8 Write New Terms

❑ Follow these steps to learn how to write new terms.

a. Using your Quick-learn Tutor and Lesson 14 flashterms again, look at the first term and say it out loud.

b. Write this term on blank paper. If the term is a word part, be sure to include the slash (/) when you write the term, just like you see it on the flashcard. Then turn the card over to Side B and read the meaning out loud. Write the meaning on your blank paper, beside the term. Do this for each flashcard. After you have finished writing all the Lesson 14 terms, move on to the next exercise.

🕮 Step 9 Learn Term Meanings

❑ Follow these steps to learn new term meanings.

a. Again, take out your Quick-learn Tutor Lesson 14 flashterms. Pronounce each term out loud. Before you look at the meanings, see if you can remember them. Check yourself by turning the Quick-learn Tutor over to see the meanings. Do this for each term for Lesson 14.

b. Now turn your Lesson 14 flashcards over so you can see the meanings of the terms. Read each meaning out loud. Before you look, see if you can remember the term that goes with that meaning. Check yourself by turning the Quick-learn Tutor over to see the term. Do this for each term in Lesson 14.

c. Practice with the flashcards several times until you are familiar with the terms and their meanings. It's not necessary to memorize all the terms now. You will find that you begin to memorize terms as you use them throughout this course. Remember to keep your flashcards in order even after you're finished with an activity so you can refer back to them easily. You may use your flashcards for all Practice Exercises and quizzes. However, the time you spend reviewing the terms now will mean less time spent looking them up later.

✍ Step 10 Practice Exercise 14-2

❑ Follow the steps to complete the Practice Exercise.

Audio Exercise

a. Access the audio for Lesson 14: Practice Exercise 2. Each sentence below is dictated to you.

b. Fill in the blanks. You may refer to the drawings in the text and your flashcards, if you wish.

c. If you have a computer, type each entire sentence.

We filled in the first item to get you started.

1. **The hand is <u>distal</u> to the elbow.**
2. **Separating the body into right and left halves is called a _____ section.**
3. **The thumb is _____ to the index finger.**
4. **When you make a coronal section of the body, the body is divided into _____ or _____ and _____ or _____ portions.**
5. **The knee is _____ or _____ to the chest.**
6. **The bellybutton is _____ or _____ to the spine.**
7. **A blood vessel that carries blood away from the heart is called an _____ vessel.**
8. **Ultrasound, MRI and CT images are sections made in the _____, _____ and _____ planes.**
9. **The position that we use to describe the location or anatomic relationships of the body is called the _____.**
10. **In this position, the palms of the hands are _____ to the backs of the hands.**
11. **In this position, the thumbs are _____ to the ring finger.**
12. **The nose is _____ and _____ to the eyes.**

13. The shoulders are _____ and _____ to the ears.

14. The buttocks are _____ and _____ to the breastbone.

15. Anterolateral means one part is anterior and _____ to another part.

Step 11 Review Practice Exercise 14-2

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

Step 12 Lesson Summary

❑ This lesson introduced you to anatomical terms that doctors use frequently. Doctors describe the location of the patient's anatomic parts assuming she is in the anatomic position. This eliminates confusion between body parts. Now you know that the anatomic position is when the palms are facing forward and the thumbs are facing outward.

In this lesson, you also learned the proper terms for dividing the body into sections or planes. The transverse plane divides the body horizontally while the sagittal plane divides the body longitudinally, or into left and right sections. A coronal plane divides the body into front and back sections.

You learned a lot of new anatomical terms in this lesson. Before you move on to the quiz, take some time to review your flashterms. The time you spend doing this now will save you time in the long run. As always, you may use any flashcards during your quizzes if you need help.

Step 13 Mail-in Quiz 9

❑ 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 included in this course. Use only blue or black ink on your Quiz Cover Sheet and **print in upper and lower case letters**. Red ink is unacceptable. You must **type or print** all answers so they can be read easily by the instructors. Any answers that cannot be read will be marked wrong.

d. **Important!** Please fill in all information requested on your Quiz Cover Sheet or when you submit your quiz via e-mail. If you e-mail your quiz, please be sure to include your name, address, student ID number and course code.

e. Submit your quiz to the school. Please note, send in your quiz **once** either through mail, e-mail or fax.

Mail-in Quiz 9

Audio Exercise

a. Access the audio for Quiz 9. There are 26 numbered sentences on the audio file(s). You may pause or replay the audio track at any time to listen again. However, it is best if you listen to one whole sentence at a time.

b. After each sentence, pause the audio track. Type or write the sentence number and a period on the Quiz Cover sheet that follows. If you're using a computer for your work, attach the Quiz Cover sheet to your printed pages as a cover page.

c. Type or write the sentence dictated. Sometimes a sentence will contain a list of items. Each item in the list may be numbered or unnumbered. Use the following format for lists.

Format for numbered lists:

You hear: item number five… there are two ways to look at anatomy… number one… gross anatomy… number two… microscopic anatomy

You type:

5. There are two ways to look at anatomy:

    1. Gross anatomy.
    2. Microscopic anatomy.

Format for unnumbered lists:

You hear: item number five… there are two ways to look at anatomy… gross anatomy… microscopic anatomy

You type:

5. There are two ways to look at anatomy: gross anatomy, microscopic anatomy.

d. Most of the punctuation will be dictated for you. However, if you notice an obvious punctuation error or missing punctuation, you should punctuate the sentence correctly, regardless of what was dictated. This will be a skill you use frequently as a transcriptionist.

Please attach your typed-up or written-out sentences to your Quiz Cover Sheet.

Medical Transcription
Mail-in Quiz 9

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.

For School Use Only:
Grade: _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

U.S. Career Institute
2001 Lowe Street
Fort Collins, CO 80525

MD-01

This Space for Instructor Use

Fold on dotted line

For your quiz, either attach your typed sentences to your Quiz Cover Sheet, or write your sentences below.

Just for Fun

"Variety is the spice of life." As a transcriptionist, you will see differences in the way that different doctors transcribe terms ending with the suffixes /ic and /al. These suffixes both mean "relating to." Look at these examples.

anatom**ic**	anatom**ical**
physiolog**ic**	physiolog**ical**
morpholog**ic**	morpholog**ical**

Some doctors use just one adjective suffix, /ic. Some doctors use two adjective suffixes, /ic/al. Either way the meaning of the terms is the same. Look at these examples.

The heart is in the correct anatom**ic** position.
The heart is in the correct anatom**ical** position.

Both sentences have the same meaning. The differences came about because of different customs and how doctors were taught their medical language. Both terms are correct and are adjectives which mean "relating to" anatomy.

It doesn't matter which way a term like this is written. Transcribe the suffixes the way the doctor dictates them. Listen carefully to be sure you heard which suffixes are used. You may mistake the last suffix /al for the first part of the next word.

Say these words to yourself.

anatomical lines physiological limits morphologic alternative

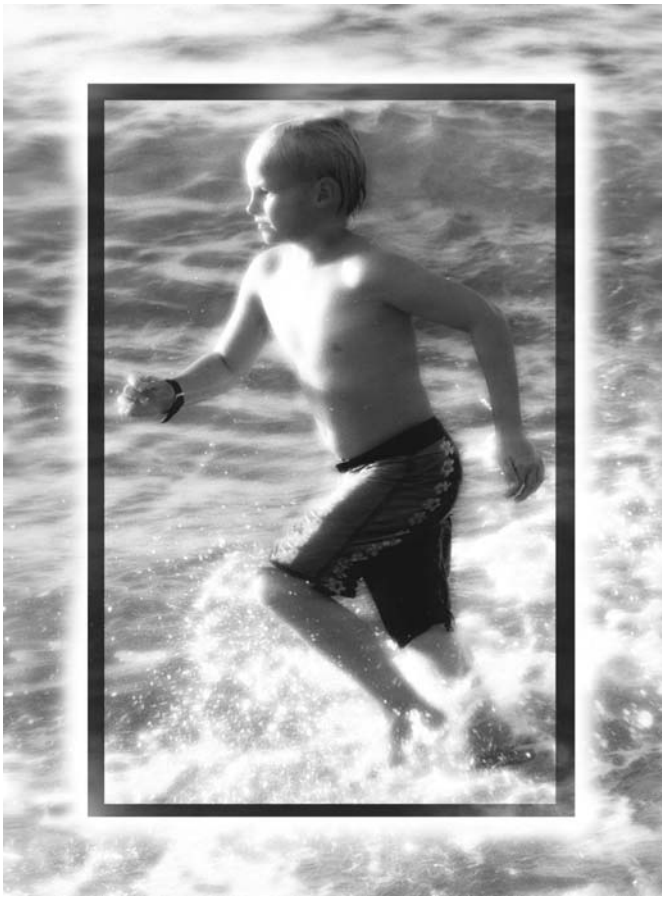
They can sound like this:

anatomic aligns physiologic all limits morphological ternative

The suffixes we have discussed so far have been noun or adjectives suffixes. Remember, an adjective modifies a noun. There is another word form that is used to describe verbs or adjectives—the adverb.

Verbs are action words.

The boy ran.
↑
Verb



Words that describe verbs or adjectives are called adverbs. Adverbs can tell you how a certain activity was done.

How did the boy run?
The boy ran quickly.
↑
Adverb

Now look at another example:

The injured boy ran quickly.
↑
Adjective

If we want to describe the adjective "injured," we use an adverb.

The badly injured boy ran quickly.
↑
Adverb

You may hear adverbs dictated for medical reports. The suffix /ly means "in the style of." When this suffix is added to a term, the term is used as an adverb. It describes the verb or an adjective in the sentence. The list below identifies the word endings for adjectives and adverbs.

Adjective	**Adjective**	**Adverb**
anatomic	anatomical	anatomically
physiologic	physiological	physiologically
morphologic	morphological	morphologically

Adjectives and adverbs are not interchangeable. One modifies a noun, the other a verb or adjective. Look at the example sentences.

The x-rays revealed that the sinuses were anatomically correct.

The urinary tract appeared physiologically sound.

Morphologically, the tissue appeared healthy.

If you cannot hear clearly which term is being used, look at the context of the term in the sentence. Is it an adverb or an adjective? If you listen carefully, you will hear the differences in these terms.

If you still are having trouble telling adjectives and adverbs apart, there are a number of good basic grammar books at the public library. Do it the easy way. Get the simplest beginning book on grammar you can find.

Study the basics of English grammar. It may have been a long time since you learned grammar in school.

In our everyday lives, correct grammar isn't always important. In your business it is. Working on your business grammar is like learning to parallel park your car. You don't need it very often, but when you do, it can save your bumpers and your pride.

CONGRATULATIONS!

You've completed Lesson 14 and Pack 1.

Continue on to Pack 2.

Answer Key
Medical Transcription, Pack 1, Lessons 1-14

Lesson 1

Practice Exercise 1-1

1. The Medical Transcription Course is in an easy-to-follow, **step-by-step** format.

2. If you can't find the answer to a Practice Exercise or assignment question, you can look it up because the course is **open book**.

3. As a medical transcriptionist, you take doctor's dictated notes and **transcribe** them.

4. It's important to transcribe notes **accurately** and in a timely manner.

5. **Electronic documents** allow information to flow between transcriptionists and other staff, records to be accessed remotely from any location, and reports to be viewed electronically.

6. **Speech recognition technology** transcribes dictation into a draft report and allows medical transcriptionists to follow along with the draft report and listen to the dictation.

7. Transcription companies may pay for a computer, high-speed Internet access or other equipment, or they'll charge you **rent or require a deposit**.

8. Jack transcribed reports using **digital sound files** that were saved in folders on a shared drive.

9. EHR stands for **Electronic Health Record**.

10. Disadvantages to speech recognition technology are if the physician **mumbles or talks fast** it makes it difficult to decipher.

11. Transcriptionists and physicians can use an **electronic signature** to sign transcribed reports.

12. An EHR also is known as a **Electronic Medical Record (EMR)**.

13. Explain the basic responsibilities of the medical transcriptionist. **Retrieves reports or notes and transcribes them—puts them in a form that is accessible to everyone who needs the complete report on the patient's status. The reports or notes add information to a patient's medical file—they help the doctor treat the whole patient, not just the parts of a person that can be discussed as numbers.**

14. Explain speech recognition technology. **Speech recognition technology does what its title implies—it recognizes speech. Speech recognition transcribes dictation into a draft report. It also allows medical transcriptionists to follow along with the draft report and listen to the dictation. This way the transcriptionist can edit as she goes.**

15. Why are you taking this course? **Answers will vary because students take the course for different reasons.**

Lesson 2

Practice Exercise 2-1

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 a suffix 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 or combining vowel**.
8. A prefix is attached to the word part called the **root word**.
9. A combining vowel combines a root word and a **suffix or another root word**.
10. In the term trans/script/ion/ist, the word part /ist is a **suffix**.
11. In the term trans/script/ion, the word part trans/ is a **prefix**.
12. In the term bi/o/logy, the word part /o/ is called a **combining vowel**.

Practice Exercise 2-2

	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**
11.	pulmon/o	**lung**
12.	enter/o	**small intestine**
13.	bi/o	**living thing, life**
14.	hepat/o	**liver**
15.	gen/o	**giving rise to, creating**
16.	my/o	**muscle**
17.	tens/o	**pressure**
18.	secti/o	**cut into**
19.	ren/o	**kidney**
20.	hem/o; hemat/o	**blood**

Lesson 3

Practice Exercise 3-1

	Prefix	Meaning
1.	a/	**without, absent**
2.	ad/	**toward, near**
3.	ec/, ex/, ecto/, exo/	**outside, outer**
4.	infra/	**inferior to, below**
5.	micro/	**small, tiny**
6.	peri/	**around, surrounding**
7.	retro/	**behind, back**
8.	hypo/	**decreased, below**
9.	dia/	**through**
10.	tachy/	**faster than usual**
11.	sub/	**under, inferior to**
12.	pre/	**before**
13.	hemi/	**half**
14.	anti/	**against, opposed**
15.	en/, endo/	**within**
16.	macro/	**gross, large**
17.	pan/	**all, every**
18.	ab/	**away from**
19.	post/	**after, past**
20.	de/	**lessened, removed**

Practice Exercise 3-2

	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.	/ic; /al; /ary; /tic; /ous; /ar; /eal; /iac; /ior; /ac	**relating to**
8.	/ium, /um	**structure**
9.	/meter	**distance measure, instrument to measure**
10.	/grade	**go**
11.	/scope	**instrument to see through or with**
12.	/oid	**like**
13.	/emia, /hemia	**throughout the blood**
14.	/centesis	**withdrawing fluid**
15.	/opsy	**look at**
16.	/algia	**pain**
17.	/pathy	**disease process**
18.	/osis	**pathologic condition**
19.	/itis	**inflammation**
20.	/ia	**condition**

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.	para/ren/al	**beside (beyond) the kidney**
6.	peri/ren/al	**around (surrounding) the kidney**
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.	hemi/hepat/ectomy	**removal of half of the liver**
11.	hem/o/stasis	**control (hold in) blood**
12.	neur/itis	**inflammation of nerve(s)**
13.	appendic/itis	**inflammation of the appendix**
14.	hepat/itis	**inflammation of the liver**
15.	therm/o/meter	**instrument to measure heat**
16.	bi/opsy	**look at living thing (life)**
17.	crani/um	**(structure of the) skull**

Practice Exercise 4-2

	Word Part	Meaning
1.	carcin/o	**cancer of gland tissue**
2.	ox/o	**oxygen**
3.	laryng/o	**voicebox, larynx**
4.	bi/	**two**
5.	/genesis	**creating**
6.	/malacia	**softening**
7.	syn/; sym/	**together with**
8.	gynec/o	**female**
9.	sarc/o	**nongland tissue, flesh**
10.	vit/o	**living, alive**
11.	auto/	**self**
12.	/drome	**run**
13.	chem/o	**chemical, drug**
14.	con/	**with**
15.	meta/	**change, beyond**
16.	ultra/	**beyond, higher than**
17.	maxill/o	**upper jaw**
18.	nect/o	**bind**
19.	/oma	**tumor, mass**
20.	/blast	**undifferentiated, original**

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.	son/o/gram	**picture or record of sound**
10.	carcin/o/genesis	**creating cancer of gland tissue**
11.	chem/o/therapy	**treatment with chemicals (or drugs)**
12.	post/partum	**after labor (delivery)**
13.	maxill/o/plasty	**restore the upper jaw by surgery**
14.	crani/o/tome	**cutting instrument for the skull**
15.	hyper/trophy	**increased growth by size or nourishment**
16.	klept/o/mania	**obsession with stealing**

Lesson 5

Practice Exercise 5-1

	Medical Term	Meaning
1.	**perirenal**	**relating to surrounding the kidney**
2.	**osteoarthritis**	**inflammation of joint, bone**
3.	**gastrotomy**	**cut into or slice the stomach**
4.	**carcinoid**	**like cancer of gland tissue**
5.	**sarcoid**	**like nongland tissue**
6.	**pulmonic**	**relating to the lung**
7.	**hepatic**	**relating to the liver**
8.	**macroglossal**	**relating to a large tongue**
9.	**pancytopenia**	**lack of cells of all kinds**
10.	**osteal**	**relating to bone**
11.	**mucous**	**relating to mucus**
12.	**thrombosis**	**condition of having a clot**

Practice Exercise 5-2

1. Meaning: one who studies females
   Word Parts
   prefix:
   root(s): **gynec/o; log/o**
   suffix: **/ist**
   Medical Term: **gynecologist**
2. Meaning: control blood
   Word Parts
   prefix:
   root(s): **hem/o**
   suffix: **/stasis**
   Medical Term: **hemostasis**
3. Meaning: relating to around the kidney
   Word Parts
   prefix: **peri/**
   root(s): **ren/o**
   suffix: **/al**
   Medical Term: **perirenal**
4. Meaning: enlargement of the liver
   Word Parts
   prefix:
   root(s): **hepat/o**
   suffix: **/megaly**
   Medical Term: **hepatomegaly**

5. Meaning: inflammation of vessels

   Word Parts

   prefix:

   root(s): **angi/o**

   suffix: **/itis**

   Medical Term: **angiitis**

6. Meaning: inflammation of the appendix

   Word Parts

   prefix:

   root(s): **appendic/o**

   suffix: **/itis**

   Medical Term: **appendicitis**

7. Meaning: removal of the spleen

   Word Parts

   prefix:

   root(s): **splen/o**

   suffix: **/ectomy**

   Medical Term: **splenectomy**

8. Meaning: lack of cells of all kinds

   Word Parts

   prefix: **pan/**

   root(s): **cyt/o**

   suffix: **/penia**

   Medical Term: **pancytopenia**

Lesson 6

Practice Exercise 6-1

	Divide the Term	Meaning
1.	**chem/ist**	**one who specializes in chemicals**
2.	**crani/o/tomy**	**cut into the skull**
3.	**laryng/ectomy**	**remove 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/maniac**	**relating to obsessive 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/bladder**

Practice Exercise 6-2

	Word Part	Meaning
1.	lapar/o	**abdomen**
2.	pneum/o, pneumon/o	**air, gas, lung air sacs**
3.	ana/	**positive, up**
4.	/physis	**grow**
5.	/pnea	**breathing**
6.	/rrhea	**flow**
7.	eu/	**normal, even, good**
8.	supra/	**above, superior to**
9.	semi/; hemi/	**half**
10.	/ptosis	**drooped, slipped down**
11.	pro/; ante/	**before**
12.	pseudo/	**false**
13.	tom/o	**cut, slice or a hole**
14.	trache/o	**windpipe**
15.	tonsill/o	**tonsils**
16.	/lysis	**break down, dissolve**
17.	dys/	**bad, labored**
18.	rhin/o	**nose**
19.	/phoria	**bear**
20.	/crine	**secrete**

Lesson 7

Practice Exercise 7-1

	Singular	English Plural
1.	**therapy**	**therapies**
2.	**dermatologist**	**dermatologists**
3.	**appendectomy**	**appendectomies**
4.	**microscope**	**microscopes**
5.	**biopsy**	**biopsies**
6.	**syndrome**	**syndromes**
7.	**larynx**	**larynxes**
8.	**virus**	**viruses**
9.	**gash**	**gashes**
10.	**starch**	**starches**
11.	**dwarf**	**dwarves**
12.	**six**	**sixes**

Practice Exercise 7-2

	Singular	Medical Plural
1.	**synthesis**	**syntheses**
2.	**larynx**	**larynges**
3.	**carcinoma**	**carcinomata**
4.	**thorax**	**thoraces**
5.	**cardium**	**cardia**
6.	**cranium**	**crania**
7.	**mucus**	**mucus***
8.	**virus**	**viruses***
9.	**ganglion**	**ganglia**
10.	**index**	**indices**

***Please note that these terms do not follow the medical plural rule.

Practice Exercise 7-3

	Term	Meaning
1.	**necr/opsy**	**look at the dead (death)**
2.	**thyr/oid**	**like a shield**
3.	**eu/phoria**	**bear evenly, well**
4.	**ot/ic**	**relating to the ear**
5.	**ophthalm/ic**	**relating to the eye**
6.	**nephr/ic**	**relating to the kidney**
7.	**trache/o/malacia**	**softening of the windpipe**
8.	**a/pnea**	**absence of breathing**
9.	**per/cutane/ous**	**relating to through the skin surface**
10.	**vertebr/al**	**relating to the back bones**
11.	**tox/ic**	**relating to poison**
12.	**phag/o/cyt/ic**	**relating to cells that swallow**
13.	**chondr/al**	**relating to cartilage**
14.	**cervic/al**	**relating to the neck**
15.	**necr/o/tic**	**relating a condition of death**
16.	**gnos/tic**	**relating to a condition of knowledge**

Practice Exercise 7-4

1. Meaning: **cell that swallows**
   Word Parts
   prefix:
   root(s): **phag/o**
   suffix: **/cyte**
   Medical Term: **phagocyte**

2. Meaning: **study of form or structure**
   Word Parts
   prefix:
   root(s): **morph/o**
   suffix: **/logy**
   Medical Term: **morphology**

3. Meaning: **false pregnancy**
   Word Parts
   prefix: **pseudo/**
   root(s):
   suffix: **/cyesis**
   Medical Term: **pseudocyesis**

4. Meaning: **bladder hernia**
   Word Parts
   prefix:
   root(s): **cyst/o**
   suffix: **/cele**
   Medical Term: **cystocele**

5. Meaning: **restore the nose by surgery**
   Word Parts
   prefix:
   root(s): **rhin/o**
   suffix: **/plasty**
   Medical Term: **rhinoplasty**

6. Meaning: **secrete within**
   Word Parts
   prefix: **endo/**
   root(s):
   suffix: **/crine**
   Medical Term: **endocrine**

7. Meaning: **remove the tonsils**
   Word Parts
   prefix:
   root(s): **tonsill/o**
   suffix: **/ectomy**
   Medical Term: **tonsillectomy**

8. Meaning: **flow through**
   Word Parts
   prefix: **dia/**
   root(s):
   suffix: **/rrhea**
   Medical Term: **diarrhea**

9. Meaning: **study of nature or natural things**
   Word Parts
   prefix:
   root(s): **physi/o**
   suffix: **/logy**
   Medical Term: **physiology**

Lesson 8

Practice Exercise 8-1

	Eponym	Dictionary Word
1.	Epstein-Barr virus	**virus**
2.	Halsted('s) incision	**incision**
3.	Legg('s) disease	**disease**
4.	Miller-Abbott tube	**tube**
5.	Pauly('s) point	**point**
6.	Hodgkin('s) disease	**disease**
7.	Hodgkin('s) sarcoma	**sarcoma**
8.	Gordon('s) reflex	**reflex**
9.	Laennec('s) cirrhosis	**cirrhosis**
10.	Cantor tube	**tube**
11.	Kaposi('s) sarcoma	**sarcoma**
12.	Babkin reflex	**reflex**
13.	McBurney point	**point**
14.	Colles(') fracture	**fracture**
15.	Cooley('s) anemia	**anemia**
16.	West Nile virus	**virus**
17.	Erb('s) palsy	**palsy**
18.	Charcot('s) syndrome	**syndrome**

Practice Exercise 8-2

	Noun	Eponym
1.	disease	**Alzheimer('s), Hodgkin('s), Hodgson('s), Hirschsprung('s), Legg('s)**
2.	palsy	**Bell('s), Erb('s), Klumpke('s), Todd('s)**
3.	anemia	**Cooley('s), Lederer('s), Dresbach('s), Chvostek('s)**
4.	fracture	**Pott('s), Colles('), Monteggia('s), Galeazzi('s), Jefferson('s)**
5.	point	**McBurney, Brewer('s), Addison('s), Pauly('s), Mackenzie('s).**
6.	incision	**Roux-en-Y, Pfannenstiel('s), Halsted('s), Rollet('s), McBurney**
7.	reflex	**Babinski('s), Gordon('s), Babkin, Barkman('s), Brudzinski('s)**
8.	tube	**Miller-Abbott, Kelly('s), Mueller-Frazier, Ochsner('s), Cantor**
9.	syndrome	**Cushing('s), Curtius('), Charcot('s), Cornelia de Lange('s), Leriche('s)**
10.	sarcoma	**Hodgkin('s), Kaposi('s), Kupffer cell, Abernethy('s), pseudo-Kaposi**
11.	respiration	**Corrigan('s), Cheyne-Stokes, Austin Flint, Kussmaul('s)**
12.	virus	**Epstein-Barr, Brunhilde, West Nile, Powassan, Mengo**
13.	cirrhosis	**Laënnec('s), Hanot('s), Budd('s), Charcot('s), Todd('s)**

Practice Exercise 8-3

		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.	Physicians' Desk Reference	**PDR**
7.	(The) pupils (are) equal, round (and) reactive (to) light (and) accommodation.	**PERRLA**
8.	electr/o/encephal/o/gram	**EEG**
9.	head, eyes, ears, nose (and) throat	**HEENT**
10.	intra/muscular	**IM**

Practice Exercise 8-4

		Acronym
1.	no significant disease	**NSD**
2.	nothing by mouth	**NBM**
3.	nil per os (means nothing by mouth)	**NPO**
4.	milk of magnesia	**MOM**
5.	muscular dystrophy	**MD**
6.	multiple sclerosis	**MS**
7.	intensive care unit	**ICU**
8.	lactated Ringer's solution	**LRS**
9.	leave of absence	**LOA**
10.	high blood pressure	**HBP**
11.	for your information	**FYI**
12.	arteriovenous	**AV**
13.	sexually transmitted disease	**STD**
14.	below knee amputation	**BKA**
15.	hypertension	**HTN**

Lesson 9

Practice Exercise 9-1

1. The patient was seen today and his CO_2 was 33.
carbon dioxide

2. His medications were changed to Lasix 40 mg p.o. b.i.d.
milligrams twice a day
by mouth

3. O_2 2 L per nasal prongs begun, with improvement.
Oxygen
liters

4. Patient is n.p.o. until the GB study is completed.
nothing by mouth
gallbladder

5. Abdomen: NBS. No hepatomegaly or splenomegaly.
Normal bowel sounds

6. Laboratory studies confirm the diagnosis of EBV.
Epstein-Barr virus

7. U/A: Sp. gr. 1.023. No white cells in the urine.
Urinalysis
Specific gravity

8. Normal TPR.
temperature, pulse and respiration

9. The leukemia responds to bleomycin 15 U and IM injections.
units **intramuscular**

10. R/O osteoarthritis. Repeat CBC. Last specimen q.n.s.
Rule out **complete blood count** **quantity not sufficient**

11. Order IV fluids stat. I will notify LMD of the patient's condition.
intravenous **local doctor**
at once

12. The neurologic examination showed a decrease in the DTRs.
deep tendon reflexes

13. The mass measured 1 cm x 7 mm.
centimeter millimeters

14. The specimen was examined by EM. NSD.
electron microscope No serious disease

15. The patient is a 72-YO white male in no obvious distress.
-year-old

Practice Exercise 9-2

Medical Term	Slang Word
1. **d – siblings, brothers and sisters**	sibs
2. **i – preparation**	prep
3. **a – medications**	meds
4. **e – abortion**	ab
5. **k – examination**	exam
6. **c – pathology**	path
7. **j – appendectomy, appendicitis**	appy
8. **f – primipara, one birth**	primip
9. **b – nullipara, no births**	nullip
10. **g – subcutaneous**	subcu
11. **h – temperature**	temp

Practice Exercise 9-3

1. The patient was given Compazine fifteen mg p.r.n. **15**
2. Dr. Jones' office is at 323 twenty seventh Street. **27th**
3. The final count was three needles and twenty sponges. **3 20**
4. The skin incision was closed with five-0 silk suture. **5-0 (not 00000)**
5. Urinalysis: four + protein, trace sugar, many white cells. **4+**
6. The kidney measured ten x six cm. **10 6**
7. Cranial nerves three through eleven were examined. **III, XI** or **3, 11**
8. Exploratory surgery showed the cancer was stage four. **IV**
9. The creatinine was point five. **0.5**
10. The specific gravity was one point oh three two. **1.032**
11. He had burns over one-third of his body. **one-third**
12. Take one and one-half the regular amount. **1-1/2 or 1½**
13. Give digitalis one-half gr every 4 hours. **1/2 or ½**

Practice Exercise 9-4

1. Temperature **°C or °F**
2. Number **#**
3. Sutures –
4. Over (blood pressure) **/**
5. And (between capitals) **&**
6. Minus –
7. Vision **/**
8. Ratio **:**
9. The patient's blood pressure was **110/90**.
10. Temperature is **99 °F**.
11. Weight **185 pounds**
12. The incision was closed with **2-0** silk sutures.
13. The mass measured **18.5 × 9.2 × 3** cm.
14. PAST MEDICAL HISTORY: **D&C. A&P** repair.
15. The pedal reflexes were **1+**.
16. The A/G ratio was **1:1.9**.
17. The blood sugar range was **40-60**.
18. VISION: **20/25**.

Lesson 10

Practice Exercise 10-1

		Rule
1.	PLAN 1. CBC. 2. Urinalysis. 3. Admit to hospital.	53
2.	The patient had no pain or tenderness.	52
3.	Chest film normal. CBC normal. Urinalysis normal.	52
4.	The patient had a positive VDRL three months ago.	52
5.	DISCHARGE DIAGNOSIS 1. Microcephaly. 2. Tracheomalacia. 3. Hepatomegaly.	 53 53 53
6.	Tell the patient that t.i.d. means three times a day.	56, 52
7.	Take 15 mg p.o. p.r.n.	56
8.	The chemical symbol for water is H_2O.	52, 55
9.	NaCl is the chemical symbol for salt.	52, 55
10.	The UCLA team ordered an ELISA.	52, 55

Practice Exercise 10-2

		Rule
1.	There is weakness in both arms, left greater than right.	59
2.	The patient is oriented to time, place, and person.	60
3.	There is redness, swelling, and loss of motion.	60
4.	Colles(') fracture is usually seen in adults. (Colles is also acceptable per *AHDI*)	68
5.	Of course, call me if you see Cheyne-Stokes respiration.	61
6.	I will use either #'s 4-0 or 5-0 silk sutures.	70
7.	The patient's lab results are negative.	66
8.	The platelet count was 450,000.	62
9.	For example, there should be a good result in one week.	61
10.	No shortness of breath, cardiac, or breast enlargement.	60
11.	The patient experienced short, labored, rattling respiration.	57

Practice Exercise 10-3

1. The patient has a Smith-Jones valve in her heart. She was placed on medications as follows: Coumadin, digoxin, and Lasix.

   Rules 76, 52, 72, 60, 60, 52

2. The titer was 3:4. This is two times greater than normal.

   Rules 73, 52, 52

3. DISCHARGE DIAGNOSIS
   1. Congestive heart failure.
   2. Atrial fibrillation.
   3. Chronic airway obstruction.

   Rules 71, 53, 52

4. There was swelling of both hands, the right greater than the left. Increase Lasix to 80 mg p.o. daily.

   Rules 59, 52, 56, 52

5. ABDOMEN: The abdomen was flat, nontender, soft. The liver, spleen, and kidneys are not enlarged. NBS.

   Rules 71, 60, 60, 52, 60, 60, 52, 52

6. At 5:00 p.m., the patient arrived at the hospital, i.e., at the emergency department.

   Rules 73, 56, 61, 58, 52 (ie is also acceptable per AHDI)

7. Urinalysis: Sp. gr. 1.020, white cells negative, pH 7.4.

   Rules 71, 60, 60, 52

Lesson 11

Practice Exercise 11-1

1. **d. *eat*, *work*, *make*** Which of the following lists verbs from these sentences?
2. **b. *but*, *though*** Which of the following lists conjunctions from these sentences?
3. **a. *lunch*, *supper*, *exception*** Which of the following lists nouns from these sentences?
4. **c. noun** a person, place or thing
5. **g. proper noun** a specific person, place or thing
6. **d. pronoun** a stand-in for a noun
7. **i. verb** an action or form of being
8. **e. adjective** an identifier, quantifier or descriptor
9. **a. adverb** a word that describes when, how or how much
10. **f. preposition** a word that starts a phrase to describe where or when
11. **b. conjunction** a word that joins words, phrases or clauses
12. **h. interjection** a word that adds fun and spice

Practice Exercise 11-2

1. In the sentence, the subject is **a. singular**.
2. In the sentence, the verb is **a. singular**.
3. The sentence is grammatically correct because the subject **a. and verb are both singular**.
4. *The vice president of three divisions _____ late to the meeting.* The appropriate verb for this sentence is **a. *was***.
5. *Bill and Bridget _____ for our competitor.* The appropriate verb for this sentence is **b. *work***.
6. *Our competitor has had an excellent quarter; _____ on track to beat our rating by 3 percent.* The appropriate pronoun and verb for this sentence are **b. *it is***.
7. *Everyone _____ the new management plan.* The appropriate verb for this sentence is **d. *supports***.
8. The noun that a pronoun refers to is called its **c. antecedent**.
9. *Anyone who thinks they can come up with a better advertising plan should see me after the meeting.* This sentence is **b. incorrect because *they* should be either *he* or *she***.
10. Avoiding sexist language is **c. easy, fair and necessary in today's business world**.
11. To avoid sexist language, you should do all of the following EXCEPT **d. use *he* exclusively**.

Lesson 12

Practice Exercise 12-1

1.	osteomalacia	**osteosclerosis**
2.	afebrile	**febrile**
3.	anabolism	**catabolism**
4.	antepartum	**postpartum**
5.	microcephalic	**macrocephalic**
6.	tachypnea	**bradypnea**
7.	suprasternal	**infrasternal**
8.	cholecystotomy	**cholecystectomy**
9.	macroorganism	**microorganism**
10.	pararenal	**perirenal**
11.	intervertebral	**intravertebral**
12.	convene	**contravene**
13.	euphoria	**dysphoria**
14.	hypothyroid	**hyperthyroid**
15.	leukocytosis	**aleukocytosis**
16.	interior	**exterior**
17.	postnatal	**antenatal**

Practice Exercise 12-2

1.	**mucus**	mucous			
2.	afebrile	**a febrile**			
3.	aphagia	**aphasia**	a phase of		
4.	dysphagia	**dysphasia**	dysplasia	displays of	
5.	&	**N**	in	in/	en/
6.	**gastrotomy**	gastroscopy	gastrostomy		
7.	auto/	**ought to**			
8.	/phoria	**for you**			
9.	affect	**effect**			
10.	metastasis	**metastases**	metastasize	metaphysis	
11.	my/o	**myel/o**	mild		
12.	advice	**advise**			

Lesson 13

Practice Exercise 13-1

1. **a. positive, up** ana/
2. **i. small, tiny** micro/
3. **g. living thing, life** bi/o
4. **h. proper, rule** norm/o
5. **e. the process of cutting into or slicing** /tomy
6. **b. relating to** /ic
7. **j. like** /oid
8. **f. gross, large** macro/
9. **c. form, structure** morph/o
10. **d. instrument to see through or with** /scope
11. microscopic anatomy **science of body structure too small to be seen with naked eye**
12. macroscopic anatomy **science of body structure seen by the eyes**
13. anatomic **relating to science of body structure**
14. morphology **study of the form of body parts**
15. instrument for seeing small things **microscope**
16. study of cells **cytology**
17. relating to study of the form of organs **morphologic**
18. **Microscopic anatomy** is the science of the structure of the body's individual cells and tissues.
19. **Histology** is the study of tissues.
20. The terms used in the science of **gross anatomy** include the following:
    - The names of body parts
    - Where the body parts are located
    - How the location of two parts are related
21. The study of the size, shape, color and texture of body parts, the form of body parts, is called **morphology**.
22. The study of the structure and function of the human body in health and disease is called human **biology**.

Practice Exercise 13-2

1. **g. cut into or slice** /tomy
2. **c. small, tiny** micro/
3. **h. positive, up** ana/
4. **p. study of** /logy
5. **q. instrument to see through or with** /scope
6. **o. gross, large** macro/
7. **r. living thing, life** bi/o
8. **a. away from** ab/
9. **s. proper, rule** norm/o
10. **e. disease** path/o
11. **d. relating to** /ic
12. **f. negative, down** cata/
13. **k. look at** /opsy
14. **l. process of** /y
15. **t. form, structure** morph/o
16. **n. the study of body function** physiology
17. **i. the science of the appearance and relationships of body parts** anatomy
18. **j. the science of the structure of the body's individual cells and tissues** microscopic anatomy
19. **m. the study of disease** pathology
20. **b. relating to the study of form: size, shape, color, contour and texture** morphologic
21. Anatomy, physiology and pathology are included in the study of life called human **biology**.
22. When there are changes in the form of an organ, such as size, shape or color, they are called **morphologic** changes.
23. The science of the appearance and relationships of body parts is called **anatomy**.
24. The study of the function of body parts is called **physiology**.
25. The study of disease is called **pathology**.
26. The study of tissues is called **histology**.
27. The science of the structure of the body's cells and tissues is called **microscopic anatomy**.

28. To see a cell, you would use an instrument called a **microscope**.
29. Changes in the function of an organ are called **physiologic** changes.
30. The disease changes you see in an organ are called **pathologic** changes.
31. histology **hist/o/log(/)y**
    pathology **path/o/log(/)y**
    physiology **physi/o/log(/)y**
    anatomy **ana/tom(/)y**
    microscope **micro/scope**
    morphology **morph/o/log(/)y**
32. relating to the study of tissues **histologic**
33. relating to the science of structure **anatomic**
34. relating to the study of disease **pathologic**

Lesson 14

Practice Exercise 14-1

1. When the arms are at the side, the palms of the hands face forward and the thumbs point outward, the body is in the **anatomic position**.
2. A **transverse** plane is also called a horizontal plane.
3. A **parasagittal** plane divides the body into unequal left and right sections.
4. A frontal plane is called a **coronal** plane.
5. A **horizontal** plane divides the body into superior and inferior sections.
6. A longitudinal plane is also called a **sagittal** plane.
7. A **frontal** plane divides the body into anterior and posterior sections.
8. A **midsagittal** plane divides the body into equal left and right sections.
9. A midsagittal plane is also called a **median** plane.
10. A plane divides the body or organ into **sections**.

Practice Exercise 14-2

1. The hand is **distal** to the elbow.
2. Separating the body into right and left halves is called a **midsagittal** section.[1]
3. The thumb is **lateral** to the index finger.
4. When you make a coronal section of the body, the body is divided into **anterior** or **posterior** and **ventral** or **dorsal** portions.
5. The knee is **inferior** or **caudal** to the chest.
6. The bellybutton is **anterior** or **ventral** to the spine.
7. A blood vessel that carries blood away from the heart is called an **efferent** vessel.
8. Ultrasound, MRI and CT images are sections made in the **transverse**, **sagittal** and **coronal** planes.
9. The position that we use to describe the location or anatomic relationships of the body is called the **anatomic position**.
10. In this position, the palms of the hands are **anterior** to the backs of the hands.
11. In this position, the thumbs are **lateral** to the ring finger.
12. The nose is **medial** and **inferior** to the eyes.
13. The shoulders are **inferior** and **lateral** to the ears.
14. The buttocks are **posterior** and **inferior** to the breastbone.
15. Anterolateral means one part is anterior and **lateral** to another part.

[1] Although "sagittal" is dictated, "midsagittal" is correct in this sentence because halves implies equal parts.