

CHAPTER 1 – The Anatomy of Medical Terms

The Foundation of Medical Language

Chapter 1 Teaching Overview

Your students need to understand the basics of medical terminology, including word elements such as roots and combining forms, suffixes and prefixes. Students need to understand what a combining vowel is and situations in which a combining vowel is necessary. Suffixes and prefixes drastically change the meaning of words. Some suffixes, for example, exist mostly to turn nouns into adjectives, but others help to build words that are symptoms, signs, diagnoses, procedures, or diagnostic tests. Likewise, some prefixes define positions, numbers, and directions. There are unique medical terms which do not deconstruct as well as medical terms that sound alike but have very different meanings. Give students plenty of encouragement and support while working through the initial chapters. The better they grasp the concepts and skills in Chapter 1, the better they will do in all the chapters that follow.

As with all activities in this Instructor Manual, you can and should modify them to best meet the needs of *your* students, *your* schedule, and *your* curricula.

Although medical terminology is English vocabulary, this class has much in common with a foreign language course. Students will be learning how to listen, speak, read, write, and understand medical language. In their future roles as health professionals, not only must they be fluent in medical terminology in order to communicate with other health professionals, they must also know medical language well enough to be able to translate the vocabulary using very simple words when necessary so that a patient or client will understand what is being communicated. Achieving mastery of the material presented in Chapter 1 is the first step in this learning process, which will continue through the students' professional careers.

Teacher to Teacher:

- Color-coding word elements reinforces how the word parts combine to create meaning. Have students practice writing medical terms with colored markers, pencils, or crayons to emphasize the use of the word parts.
- Instruct students to make color-coded flashcards for word elements.
- Whenever you see a medical term used incorrectly in print, photocopy or print the error and bring it in to share with students. Discuss the cost and safety risks associated with misuse of medical terminology so students truly understand the importance of precision when using medical language.
- Ask students why medical terminology is important; what would happen if there weren't a standardized medical language.
- Share with students a short list of strategies for being successful in your class.

Chapter Learning Outcomes

- LO 1.1 Identify and utilize the roots and combining forms to form medical terms.
- LO 1.2 Identify and utilize suffixes and prefixes to build medical terms.
- LO 1.3 Recognize medical terms taken directly from Greek, Latin, or Old English words.
- LO 1.4 Differentiate between medical terms that are spelled and/or pronounced similarly.

Note: These activities are designed with ultimate flexibility in mind. When customizing them for your own class, always choose activities that are most relevant to your curriculum, your students, and your teaching goals—especially if you do not have time to implement all the provided activities into your class period.

Chapter 1: The Anatomy of Medical Terms

Sections 1.1, 1.2, and 1.3



Total Time:
75 Minutes

Prepare Your Materials:

- **Dry erase board** (or smartboard, chalkboard, or butcher's block paper)
- **Sections 1.1, 1.2, and 1.3 PowerPoint® presentations** – Found with the Instructor Resources that can be accessed through the “Library” tab of Connect, and then under “Instructor Resources.”
- **Sections 1.1, 1.2, and 1.3 Student Note-taking Handouts** – Create by selecting the “Handouts” option when printing the PowerPoint presentation; select 3 slides per page to print slides with blank lines to the right where students can take notes.
- **Sections 1.1, 1.2, and 1.3 Handouts and Instructor Answer Keys: Roots and Combining Vowels; Suffixes; Prefixes** – Found at the end of this section of the Instructor Manual, beginning on page 1-12.

Teaching Guide

Chapter 1 – Sections 1.1-1.3

Date: _____

SECTIONS 1.1-1.3	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	CHAPTER LEARNING OUTCOMES 
Warm-up & Introduction	10 min	Activity Description: Students read Chapter 1, Section 1.1 in Textbook Introducing and Working with Roots Step 1: Write the following words on the board: brontosaurus, brachiosaurus, tyrannosaurus and stegosaurus. Step 2: Ask students what these words represent – response should be —dinosaurs). Step 3: Ask students how they know these are types of dinosaurs. If they have trouble explaining how they know, ask them to look at the words and identify what each word has in common: (saurus). Saurus (meaning lizard) is the root of all those words. Step 4: Now, write the following words on the board: maxisaurus, minisaurus, aquasaurus, nonsaurus, and octosaurus. Step 5: Tell students that these are nonsense words but ask them to try to predict what the meaning of each word might be. Suggestions: • Maxisaurus = full-size dinosaur • Minisaurus = small dinosaur • Aquasaurus = dinosaur of the water • Nonsaurus = not a dinosaur • Octosaurus = dinosaur with eight of something (arms, legs, heads) Step 6: Help students see that by knowing the root, they can understand words that have additional parts added to them.	Dry-erase board	LO 1.1
Lecture	5 min	Section 1.1 Lecture/Discussion Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View”, then “Notes Page”).	Section 1.1 PowerPoint Presentation	LO 1.1

		• Define a Root • Define a Combining Vowel • Define a Combining Form		
Active Learning & Practice	7 min	Step 1: Distribute Section 1.1 Roots and Combining Vowels Handout found on page 1-12 at the end of this section of the instructor manual. *Answers to Roots and Combining Vowels Handout found on page 1-13 at the end of this section of the instructor manual. Step 2: Read over the instructions and have students complete the handout alone, in pairs, or in small groups. Step 3: As a group, go over the answers, explaining any items that were difficult or misunderstood.	Section 1.1 Roots and Combining Vowels Handout	LO 1.1
Review	3 min	Step 1: Go through Check Point Section 1.1 exercises. Explain or clarify anything that is difficult for students.	Textbook, Check Point Section 1.1 exercises	LO 1.1
Homework Assignment		Ask students to bring in five medical terms of their choice and label the roots and combining vowels of each term. Students may use the Internet or other sources to assist them.		LO 1.1
Warm-up & Introduction	5 min	Activity Description: Section 1.2 Students read Chapter 1, Section 1.2 in Textbook Introducing and Working with Suffixes Step 1: Write the following words on the board: baker, bakery, demonstrate, demonstration, fearful, and fearless. Step 2: Ask students to isolate the element of each word that creates the difference in meaning (e.g., “-er,” “-ery,” “-ate,” “-tion,” “-full,” and “-less”). Step 3: Direct students to define each word element. Suggestions: -er – person who does -ery – place that does -ate – cause to be -tion – action of doing -ful – full of -less – without Step 4: Tell students that these word elements	Dry-erase board	LO 1.2

		located after, and adding meaning to, root words are called suffixes. Ask students to brainstorm other words that use these same suffixes and to explain their meaning in those words. Suggestions: -er – singer, driver, computer -ery – refinery, eatery, distillery -ate – liquidate, alleviate, duplicate -tion – resolution, junction, alteration -ful – beautiful, thoughtful, watchful -less – careless, faultless, merciless		
Lecture	10 min	Section 1.2 Lecture/Discussion Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View”, then “Notes Page”). • What is a suffix • Classification of suffixes - diagnostic - surgical - pathologic - adjectival - noun	Textbook, Section 1.2 Section 1.2 PowerPoint Presentation	LO 1.2
Active Learning & Practice	7 min	Step 1: Distribute Section 1.2 Suffixes handout found at the end of this section of the instructor manual on page 1-14. *Answers to Suffixes Handout is at the end of this section of the instructor manual on page 1-15. Step 2: Read over the instructions and have students complete the handout alone, in pairs, or in small groups. Step 3: Go over the answers as a group to ensure everyone understands them.	Section 1.2 Suffixes Handout	LO 1.2
Review	3 min	Step 1: Have students review Check Point Section 1.2 exercises, discussing the activity in pairs. Step 2: When students are finished, ask questions based on Section 1.2 PowerPoint presentation. Reinforce correct pronunciation while going over the questions and answers.	Textbook, Check Point Section 1.2 exercises	LO 1.2
Homework Assignment		Tell students to bring in five medical terms of their choice and to label the suffix, root(s)/combining form(s) of each term. Students may use the Internet or other sources to assist		LO 1.1, 1.2

		them.		
Warm-up & Introduction	5 min	Activity Description: Students read Chapter 1, Section 1.3 in Textbook Introducing and Working with Prefixes Step 1: Write the following words on the board: maxisaurus, minisaurus, aquasaurus, nonsaurus, and octosaurus. Connection Point: The meaning of the root “saurus” is lizard. One can predict the meaning of a word if one knows the meaning of the root word. Step 2: Remind students that although these are nonsense words, they can make logical predictions about what the words mean. Suggestions: • Maxisaurus = Full-size dinosaur • Minisaurus = small dinosaur • Aquasaurus = dinosaur of the water • Nonsaurus = something that is not a dinosaur • Octosaurus = dinosaur with eight of something (arms, legs, heads)	Dry-erase board	LO 1.2
		Step 3: Ask students to isolate the element in each word that creates the difference in meaning (“maxi,” “mini,” “aqua,” “non,” “octo”). Step 4: Direct students to define what each of those word elements means. Suggestions: • Maxi = full, large • Mini = small, tiny, little • Aqua = of or pertaining to water • Non = not having, not being, etc. • Octo = eight Step 5: Tell students that these word elements located before, and adding meaning to, root words are called prefixes. Ask students to brainstorm other words that use these same prefixes and to explain their meaning in those words. Suggestions: • Maximum, maximize • Miniscule, miniskirt, miniseries • Aquarium, aquatic, aquanaut • Nondairy, nonfiction, nonsense • Octopus, octagon, octuplet		

		Step 6: Emphasize that each prefix has its own meaning that clarifies or further describes the root word with which it is used.		
Lecture	10 min	Section 1.3 Lecture/Discussion Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View”, then “Notes Page”). • What is a prefix • Classification of prefixes - position - numbers and measurements - directions and locations	Textbook, Section 1.3 Section 1.3 PowerPoint Presentation	
Active Learning & Practice	7 min	Step 1: Distribute Section 1.3 Prefixes handout found at the end of this section of the instructor manual on page 1-16. *Answers to Prefixes Handout is at the end of this section of the instructor manual on page 1-17. Step 2: Read over the instructions and have students complete the handout alone, in pairs, or in small groups. Step 3: Go over the answers as a group to ensure everyone understands them.	Section 1.3 Prefixes Handout	LO 1.2
Review	3 min	Step 1: Have students review Check Point Section 1.3 exercises, discussing the activity in pairs. Step 2: When students are finished, ask questions based on Section 1.3 PowerPoint presentation. Reinforce correct pronunciation while going over the questions and answers.	Textbook Check Point Section 1.3	
Homework Assignment		Tell students to bring in five medical terms of their choice, and to label the suffix, root(s)/combining form(s) and prefixes of each. Students may use the Internet or other sources to assist them.		LO 1.1, 1.2

Chapter 1: The Anatomy of Medical Terms

Section 1.4

Total Time:

20 Minutes

Prepare Your Materials:

- **Dry erase board** (or smartboard, chalkboard, or butcher's block paper)
- **Section 1.4 PowerPoint® presentation** – Found with the Instructor Resources that can be accessed through the “Library” tab of Connect, and then under “Instructor Resources.”
- **Section 1.4 Student Note-taking Handouts** – Create by selecting the “Handouts” option when printing the PowerPoint presentation; select 3 slides per page to print slides with blank lines to the right where students can take notes.

Teaching Guide

Chapter 1 – Section 1.4

SECTION 1.4	TIME 	ACTIVITY & INSTRUCTIONS 	MATERIALS 	CHAPTER LEARNING OUTCOMES 
Lecture	5 min	Section 1.4 Lecture/Discussion Students read Chapter 1, Section 1.4 in Textbook Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View”, then “Notes Page”). Greek, Latin, and Old English Words	Textbook, Chapter 1, Section 1.4 Section 1.4 PowerPoint Presentation	LO 1.4
Active Learning & Practice	7 min	Ask students to list 5 terms that do not deconstruct Ask students to identify whether the terms are from Latin, Greek or Old English origin Dictate 5 sentences containing terms from the list of terms that are alike. Ask students to write the correct terms that that were used in the sentences on a dry erase board. Ask students to hold the boards up so instructor can identify incorrect responses.	Dry-erase board	
Lecture	3 min	Section 1.4 Lecture/Discussion Students read Chapter 1, Section 1.4 in Textbook Reference the Speaker Notes for each slide to assist you in discussing the talking points. You can view or print “Notes Pages” to use during the lecture for easy reference (in PowerPoint, select “View,” then “Notes Page”). Terms that are Alike	Textbook, Chapter 1, Section 1.4 Section 1.4 PowerPoint Presentation	LO 1.4
Active Learning & Practice	2 min	Ask students to give examples of words from the English language that sound the same but have different meanings.		

Review	3 min	Step 1: Have students review Check Point Section 1.4 exercises, discussing the lesson in pairs. Step 2: When students are finished, ask questions based on Section 1.4 PowerPoint presentation. Reinforce correct pronunciation while going over the questions and answers.	Textbook Check Point Section 1.4 Exercises	LO 1.4
Homework Assignment		Ask students to complete Chapter 1 Review exercises. Review answers next class period to ensure that every student understands the rationale for each answer. Have students read aloud sentences from the Case Reports. Reinforce correct pronunciation while going over the questions and answers.	Textbook Chapter 1 Review Exercises	LO 1.1, 1.2, 1.3, 1.4
Chapter 1 Masters •Section 1.1 Roots and Combining Vowels Handout, Page 1-12 •Section 1.2 Suffixes Handout, Page 1-14 •Section 1.3 Prefixes Handout, Page 1-16				
Answers to Chapter 1 Masters •Section 1.1 Roots and Combining Vowels Handout Answer Key, Page 1-13 •Section 1.2 Suffixes Handout Answer Key, Page 1-15 •Section 1.3 Prefixes Handout Answer Key, Page 1-17				

Roots and Combining Vowels Handout: Chapter 1, Section 1.1

Directions: For each medical term listed below, put a box around the root word (s) and underline the combining vowel (s). Use a medical dictionary to look up the meaning of the roots and write the definition on the line below each word.

1. **ARTHROSCOPY**

Meaning: _____

2. **TRACHEOTOMY**

Meaning: _____

3. **PULMONOLOGY**

Meaning: _____

4. **HEMORRHAGE**

Meaning: _____

5. **NEUROPATHY**

Meaning: _____

6. **DERMATOLOGIST**

Meaning: _____

7. **OSTEOGENESIS**

Meaning: _____

8. **CARDIOGRAM**

Meaning: _____

9. **HEMOPNEUMOTHORAX**

Meaning: _____

10. **RHINOPLASTY**

Meaning: _____

Instructor Answers: Roots and Combining Vowels: Chapter 1, Section 1.1

Directions: For each medical term listed below, put a box around the root words and underline the combining vowels. Use a medical dictionary to look up the meaning of the roots and write the definition on the line below each word.

1. **ARTHRQSCOPY**
Meaning: Visual examination of a joint
2. **TRACHEQTOMY**
Meaning: Surgical incision into the trachea
3. **PULMONQLOGY**
Meaning: The study of the lungs.
4. **HEMQRRHAGE**
Meaning: To bleed profusely.
5. **NEURQPATHY**
Meaning: Disease of nerves and the nervous system.
6. **DERMATQLOGIST**
Meaning: One who studies the skin, specialist in dermatology.
7. **OSTEQGENESIS**
Meaning: Formation of new bone.
8. **CARDIQGRAM**
Meaning: A record of the heart's electrical activity.
9. **HEMQPNEUMQTHORAX**
Meaning: Blood and air in the space that surrounds the lungs in the chest.
10. **RHINQPLASTY**
Meaning: Surgical repair of the nose.

Suffixes Handout: Chapter 1, Section 1.2

Directions: For each medical term below, put a box around the suffix. Use a medical dictionary to look up the meaning of the complete term, and then predict the meaning of the suffix based on this definition.

1. ARTHROCENTESIS

Meaning of the term: _____

Suffix Meaning: _____

2. CYANOSIS

Meaning of the term: _____

Suffix Meaning: _____

3. TRACHEOSTOMY

Meaning of the term: _____

Suffix Meaning: _____

4. ENDOCARDITIS

Meaning of the term: _____

Suffix Meaning: _____

5. DERMATOLOGY

Meaning of the term: _____

Suffix Meaning: _____

Instructor Answers: Suffixes: Chapter 1, Section 1.2

Directions: For each medical term below, underline the suffix. Use a medical dictionary to look up the meaning of the complete term, and then predict the meaning of the suffix based on this definition.

1. ARTHROCENTESIS

Meaning of the term: surgical puncture of a joint space

Suffix Meaning: surgical puncture

2. CYANOSIS

Meaning of the term: abnormal condition of blue skin due to lack of oxygen

Suffix Meaning: abnormal condition

3. TRACHEOSTOMY

Meaning of the term: surgical formation of an opening into the trachea

Suffix Meaning: surgical formation of an opening

4. ENDOCARDITIS

Meaning of the term: Inflammation of the lining of the heart

Suffix Meaning: Inflammation

5. DERMATOLOGY

Meaning of the term: the study of the skin

Suffix Meaning: the study of

Prefixes Handout: Chapter 1, Section 1.3

Directions: For each medical term below, underline the prefix. Use a medical dictionary to look up the meaning of the complete term, and then predict the meaning of the prefix based on this definition.

1. EPIDERMIS

Meaning of the term: _____

Prefix Meaning: _____

2. BRADYCARDIA

Meaning of the term: _____

Prefix Meaning: _____

3. POLYURIA

Meaning of the term: _____

Prefix Meaning: _____

4. HYPERTROPHY

Meaning of the term: _____

Prefix Meaning: _____

5. INTERCOSTAL

Meaning of the term: _____

Prefix Meaning: _____

Instructor Answers: Prefixes Handout: Chapter 1, Section 1.3

Directions: For each medical term below, underline the prefix. Use a medical dictionary to look up the meaning of the complete term, and then predict the meaning of the prefix based on this definition.

1. EP I D E R M I S

Meaning of the term: the top layer of the skin

Prefix Meaning: above, over, upon

2. BR A D Y C A R D I A

Meaning of the term: slow heart rate condition

Prefix Meaning: slow

3. PO L Y U R I A

Meaning of the term: excessive production of urine condition

Prefix Meaning: excessive

4. HY P E R T R O P H Y

Meaning of the term: increase in size

Prefix Meaning: above, excessive

5. IN T E R C O S T A L

Meaning of the term: pertaining to between two ribs

Prefix Meaning: between