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2  **National EMS Education Standard Competencies**

Medical Terminology

Uses foundational anatomical and medical terms and abbreviations in written and oral communication with colleagues and other health care professionals.

3  **Introduction (1 of 2)**

- EMTs need a working knowledge of medical terminology
- They need to understand:
 - Key terms
 - Acronyms
 - Symbols
 - Abbreviations

4  **Introduction (2 of 2)**


- Determine the meaning of an unknown word by:
 - Understanding how terms are formed
 - Learning the definitions for parts of a term
- Understanding medical jargon leads to effective communication

5  **Anatomy of a Medical Term (1 of 13)**

- Medical terms are made of distinct parts that perform specific functions
- Changing or deleting any part can change the function (meaning) of a word

6  **Anatomy of a Medical Term (2 of 13)**

- Components that comprise medical terms include the:
 - Word root
 - Prefix
 - Suffix
 - Combining vowels

7  **Anatomy of a Medical Term (3 of 13)**

- How the parts of a term are combined determines its meaning
 - Accurate spelling is essential
 - *-phasia* means speaking; *-phagia* means eating or swallowing
 - *Dys-* means difficult or painful
 - Dysphasia means difficulty speaking
 - Dysphagia means difficulty eating or swallowing


8  **Anatomy of a Medical Term (4 of 13)**

- How the parts of a term are combined determines its meaning (cont'd)
 - Also important:
 - Knowledge of anatomy
 - Context of how words are used
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9  **Anatomy of a Medical Term**

(5 of 13)


- Word roots
 - Main part or stem of a word
 - Conveys the essential meaning
 - Frequently indicates a body part

10  **Anatomy of a Medical Term
(6 of 13)**


- Word roots (cont'd)
 - Add or change a prefix or suffix to change the meaning of the term
 - Cardiopulmonary breaks down into:
 - *Cardio* is a word root meaning "heart"
 - *Pulmon* is a word root meaning "lungs"
 - During CPR, you introduce air into the lungs and circulate blood by compressing the heart

11  **Anatomy of a Medical Term
(7 of 13)**


- Prefixes
 - Appear at the beginning of a word
 - Usually describe location or intensity
 - Also found in general language (e.g., *autopilot*, *submarine*, *tricycle*)
 - Not all medical terms have prefixes
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12  **Anatomy of a Medical Term
(8 of 13)**

- Prefixes (cont'd)
 - Give the word root its specific meaning
 - For the word root *pnea*, one can add the prefix
 - *a-* (without)
 - *brady-* (slow)
 - *tachy-* (rapid)
 - Creates three very different terms
 - By learning commonly used prefixes, you can figure out the meaning of unfamiliar terms
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13  **Anatomy of a Medical Term
(9 of 13)**


- Suffixes
 - Appear at the end of words
 - Usually indicate a:
 - Procedure
 - Condition
 - Disease
 - Part of speech
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14  **Anatomy of a Medical Term
(10 of 13)**

- Suffixes (cont'd)


- Commonly used suffix: *-itis* (inflammation)
- Paired with *arthro-* (joint)
- Creates *arthritis* (inflammation of the joints)

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15  **Anatomy of a Medical Term**
(11 of 13)


- Combining vowels
 - Connects word root to suffix or other word root
 - Most cases, it's an *o*; may also be an *i* or *e*
 - Used when joining:
 - A suffix that begins with a consonant
 - Another word root

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16  **Anatomy of a Medical Term**
(12 of 13)

- Combining vowels (cont'd)
 - Example: Gastroenterology
 - Gastr/o + enter/o + logy
 - Stomach + intestines + study of

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17  **Anatomy of a Medical Term**
(13 of 13)

- Combining form
 - A combining vowel shown with the word root
 - Some common combining forms are:
 - cardi/o (heart)
 - gastr/o (stomach)
 - hepat/o (liver)
 - arthr/o (joint)
 - oste/o (bone)
 - pulmon/o (lungs)

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18  **Word Building Rules**

- Summary of rules

Chapter 5 - Medical Terminology

- The prefix is at the beginning of a term.
- The suffix is at the end of a term.
- Use a combining vowel when:
 - The suffix begins with a consonant (to ease pronunciation)
 - A term has more than one word root
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19 **Plural Endings**

- Apply these rules
 - Sometimes you add an s (lung to lungs)
 - Words ending in:
 - *a* change to *ae* (vertebra to vertebrae)
 - *is* change to *es* (diagnosis to diagnoses)
 - *ex* or *ix* change to *ices* (apex to apices)
 - *on* or *um* change to *a* (ganglion to ganglia, ovum to ova)
 - *us* change to *i* (bronchus to bronchi)

20 **Special Word Parts (1 of 4)**

- Prefixes can indicate:
 - Numbers
 - Colors
 - Positions and directions

21 **Special Word Parts (2 of 4)**

- Numbers
 - Some prefixes indicate that a term involves a number or two (or more) parts or sides
 - Examples: *uni-*, *dipl-*, *null-*, *primi-*, *multi-*, *bi-*

22 **Special Word Parts (3 of 4)**

- Colors
 - Several word roots describe color.
 - Examples: *cyan/o*, *leuk/o*, *erythr/o*, *cirrh/o*, *melan/o*

23 **Special Word Parts (4 of 4)**

- Positions and directions
 - Prefixes can describe a position, direction, or location.
 - Examples: *ab-*, *ad-*, *de-*, *circum-*, *peri-*, *trans-*, *epi-*, *supra-*

24 **Common Direction, Movement, and Position Terms (1 of 17)**

- Directional terms
 - Needed to discuss:
 - Where an injury is located
 - How pain radiates in the body

25 **Common Direction, Movement, and Position Terms (2 of 17)**

- Some directional terms include:
 - Right and left
 - Superior and inferior

Chapter 5 - Medical Terminology

- Lateral and medial
- Proximal and distal
- Superficial and deep

26 **Common Direction, Movement, and Position Terms (3 of 17)**

- Some directional terms include (cont'd):
 - Ventral and dorsal
 - Palmar and plantar
 - Apex

27 **Common Direction, Movement, and Position Terms (4 of 17)**

- Superior and inferior
 - Superior
 - Nearer to the head
 - Inferior
 - Nearer to the feet
 - Terms describe the relationship of one structure to another
 - Example: The knee is superior to the foot and inferior to the pelvis.
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28 **Common Direction, Movement, and Position Terms (5 of 17)**

- Lateral and medial
 - Lateral (outer)
 - Body parts that lie farther from the midline
 - In general, lateral means side
 - Medial (inner)
 - Body parts that lie closer to the midline
 - Example: A 5-cm laceration on the medial aspect of the thigh (means toward the inside).
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29 **Common Direction, Movement, and Position Terms (6 of 17)**

- Proximal and distal
 - Describe the relationship of any two structures on an extremity
 - Proximal: Closer to the trunk
 - Distal: Farther from the trunk/nearer to the free end of the extremity
 - Example: The elbow is distal to the shoulder and proximal to the wrist and hand.
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30 **Common Direction, Movement, and Position Terms (7 of 17)**

- Superficial and deep
 - Superficial
 - Means closer to or on the skin
 - Deep
 - Means farther inside the body/tissue
 - Away from the skin
 - Examples:
 - Superficial burn = sunburn
 - Deep laceration = cut deeper into the tissue (as with a knife)

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31 **Common Direction, Movement, and Position Terms (8 of 17)**

- Ventral and dorsal
 - Ventral
 - Refers to the belly side of the body
 - Anterior surface of the body
 - Dorsal
 - Refers to the spinal side of the body
 - Posterior surface of the body (e.g., dorsal fin of a dolphin)

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32 **Common Direction, Movement, and Position Terms (9 of 17)**

- Ventral and dorsal (cont'd)
 - More commonly used terms are:
 - Anterior: front surface of the body

- Posterior: back surface of the body
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33 **Common Direction, Movement, and Position Terms (10 of 17)**

- Palmar and plantar
 - Palmar surface
 - Front region of the hand (the palm)
 - Plantar surface
 - Bottom of the foot
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34 **Common Direction, Movement, and Position Terms (11 of 17)**

- Apex (apices)
 - Tip(s) of a structure
 - Example: The apex of the heart is the bottom (inferior portion) of the ventricles
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35  **Common Direction, Movement, and Position Terms (12 of 17)**

- Movement terms
 - Flexion = bending of a joint
 - Extension = straightening of a joint
 - Adduction = motion toward the midline
 - Abduction = motion away from the midline
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36  **Common Direction, Movement, and Position Terms (13 of 17)**

- Other directional terms
 - Bilateral = both sides of midline (e.g., eyes, ears, hands, feet)
 - Structures inside the body also appear on both sides of midline (e.g., lungs and kidneys)
 - Unilateral = only one side of the body (e.g., unilateral chest expansion)
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37  **Common Direction, Movement, and Position Terms (14 of 17)**

- Other directional terms
 - The abdominal cavity is divided into four equal quadrants:
 - Right upper quadrant
 - Left upper quadrant
 - Right lower quadrant
 - Left lower quadrant

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38 **Common Direction, Movement, and Position Terms (15 of 17)**

- Other directional terms (cont'd)
 - Learn these concepts:
 - To describe the location of any injury or assessment findings
 - So medical personnel will know where to look and what to expect

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39 **Common Direction, Movement, and Position Terms (16 of 17)**

- Anatomic positions
 - Prone or supine
 - Prone means lying face down; supine means lying face up
 - Fowler position
 - Semi-reclining with head elevated

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40 **Common Direction, Movement, and Position Terms (17 of 17)**

- Anatomic positions (cont'd)
 - Semi-Fowler
 - Patient sits at a 45-degree angle
 - High-Fowler
 - Patient sits at a 90-degree angle

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41 **Breaking Terms Apart (1 of 5)**

- Use the meaning of parts to decipher the term.
- Define in this order:
 - The suffix
 - The prefix
 - The word root
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42 **Breaking Terms Apart (2 of 5)**

- Nephropathy
 - nephr/o/pathy
 - -pathy (means "disease")
 - o (combining form)
 - nephr (meaning "kidney")
 - nephropathy = disease of the kidney
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43 **Breaking Terms Apart (3 of 5)**

- Dysuria

- dys/ur/ia
- -ia (means "condition of")
- dys- (means "difficult, painful, or abnormal")
- ur (means "urine")
- dysuria = painful urination

44  **Breaking Terms Apart (4 of 5)**

- Hyperemesis
 - hyper/emesis
 - hyper- (prefix meaning "excessive")
 - emesis (word root meaning "vomiting")
 - hyperemesis = excessive vomiting

45  **Breaking Terms Apart (5 of 5)**

- Analgesic
 - an/algēs/ic
 - -ic (suffix meaning "pertaining to")
 - -an (prefix meaning "without" or "absence of")
 - algēs (word root meaning "pain")
 - analgesic = pertaining to no pain

46  **Abbreviations, Acronyms, and Symbols (1 of 3)**

- Shorthand used for communication
 - Developed for speed
 - Do not trade speed for accuracy
 - Use only commonly understood acronyms and abbreviations to minimize errors
 - Some agencies limit the use of abbreviations

47  **Abbreviations, Acronyms, and Symbols (2 of 3)**

- Abbreviations
 - Take the place of words to shorten notes/documentation
 - Use only accepted ones to avoid confusion/errors
 - Be familiar with abbreviations in your service area

48  **Abbreviations, Acronyms, and Symbols (3 of 3)**

- Symbols
 - Sometimes used as a shortcut
 - Use only accepted symbols to avoid confusion/errors
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49  **Review**

1. Which of the following components of a medical term conveys its essential meaning?
 - A. Prefix
 - B. Suffix
 - C. Word root
 - D. Combining vowels

50  **Review**

Answer: C

Rationale: The word root conveys the essential meaning of a medical term. The prefix usually describes location or intensity. The suffix will indicate a procedure, condition, disease, or part

of speech. Combining vowels are used to connect a word to the suffix or word root.

51 **Review**

1. Which of the following components of a medical term conveys its essential meaning?

A. Prefix

Rationale: The prefix describes location or intensity.

B. Suffix

Rationale: The suffix indicates a procedure, condition, disease, or part of speech.

52 **Review**

1. Which of the following components of a medical term conveys its essential meaning?

C. Word root

Rationale: Correct answer

D. Combining vowels

Rationale: Combining vowels are used to connect a word to the suffix or other root word.

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53 **Review**

2. Prefixes can indicate:

A. color.

B. conditions.

C. body parts.

D. procedures.

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54 **Review**

Answer: A

Rationale: Prefixes are used to indicate colors, numbers, position, or direction. Suffixes will indicate a procedure, condition, disease, or part of speech. Word roots will indicate specific body parts.

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55 **Review**

2. Prefixes can indicate:

A. color.

Rationale: Correct answer

B. conditions.

Rationale: Conditions are indicated by the suffix.

56 **Review**

2. Prefixes can indicate:

C. body parts.

Rationale: Body parts are indicated by the word root.

D. procedures.

Rationale: Procedures are indicated by the suffix.

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57 **Review**

3. The plural form of the word bronchus is:
- A. bronchae.
 - B. bronches.
 - C. bronchices.
 - D. bronchi.

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58 **Review**

Answer: D

Rationale: When a word ends in *us*, the plural form will end in *i*. For words that end in *a*, the plural form will end in *ae*. When words end in *is*, the plural form will end in *es*. Words that end in *ex* or *ix* will have a plural form that end in *ices*.

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59 **Review**

3. The plural form of the word bronchus is:
- A. bronchae.

Rationale: For words that end in *a* the plural form will end in *ae*.

- B. bronches.

Rationale: When words end in *is* the plural form will end in *es*.

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60 **Review**

3. The plural form of the word bronchus is:
- C. bronchices.

Rationale: Words that end in *ex* or *ix* will have a plural form that end in *ices*.

- D. Bronchi

Rationale: Correct answer

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61 **Review**

4. The statement, "the lungs are superior to the bladder" indicates that the lungs are closer to the:
- A. feet.
 - B. surface of the skin.
 - C. head.
 - D. trunk.

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62 **Review**

Answer: C

Rationale: The term *superior* is used to indicate a structure is closer to the head than another structure. *Inferior* is the term used to describe a structure that is closer to the feet. *Superficial* is used to describe a structure that is closer to the skin than another. *Proximal* is used to describe a structure that is closer to the trunk in comparison to another.

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63 **Review**

4. The statement, "the lungs are superior to the bladder" indicates that the lungs are closer to the:
- A. feet.

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Rationale: The term *inferior* is used to describe one structure being closer to the feet than another.

B. surface of the skin.

Rationale: The term *superficial* is used to indicate that one structure is closer to the skin than another.

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64 **Review**

4. The statement, "the lungs are superior to the bladder" indicates that the lungs are closer to the:

C. head.

Rationale: Correct answer

D. trunk.

Rationale: The term *proximal* is used to indicate that one structure is closer to the trunk than another.

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65 **Review**

5. Movement of the arm toward midline is referred to as:

A. flexion.

B. extension.

C. adduction.

D. abduction.

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66 **Review**

Answer: C

Rationale: The term *adduction* is used to describe movement of a structure towards the midline of the body. *Flexion* refers to the bending of a joint. *Extension* refers to the straightening of a joint. *Abduction* is used to describe movement of a structure away from the midline of the body.

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67 **Review**

5. Movement of the arm toward midline is referred to as:

A. flexion.

Rationale: *Flexion* refers to the bending of a joint.

B. extension

Rationale: *Extension* refers to the straightening of a joint.

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68 **Review**

5. Movement of the arm toward midline is referred to as:

C. adduction.

Rationale: Correct answer

D. abduction.

Rationale: *Abduction* refers to motion away from the midline.

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69 **Review**

6. A body part that lies closer to the midline when compared to another is considered to be:

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- A. medial.
- B. distal.
- C. lateral.
- D. proximal.

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70 **Review**

Answer: A

Rationale: The term *medial* is used to identify a body part that is closer to the midline when compared to another. *Distal* is used to refer to a body part that is further away from the trunk in comparison to another. *Lateral* refers to a structure that lies away from the midline or towards the side of the body. *Proximal* is used to describe a body part that is closer to the trunk when compared to another.

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71 **Review**

6. A body part that lies closer to the midline when compared to another is considered to be:

- A. medial.

Rationale: Correct answer

- B. distal.

Rationale: *Distal* is used to describe a body part that is further from the trunk than another.

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72 **Review**

6. A body part that lies closer to the midline when compared to another is considered to be:

- C. lateral.

Rationale: The term *lateral* is used to describe a body part that lies away from the midline or towards the side.

- D. proximal.

Rationale: *Proximal* is used to describe a body part that is closer to the trunk than another.

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73 **Review**

7. This is used to identify a body part that is on the "belly side" or anterior surface of the body.

- A. Deep
- B. Superficial
- C. Dorsal
- D. Ventral

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74 **Review**

Answer: D

Rationale: *Ventral* is used to identify a body part that is located on the "belly side" or anterior surface of the body. *Deep* is used to describe a structure that is further away from the skin's surface. *Superficial* refers to a structure that is close to the skin's surface. *Dorsal* describes a structure on the back or posterior side of the body.

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75 **Review**

7. This is used to identify a body part that is on the “belly side” or anterior surface of the body.
- A. Deep
Rationale: *Deep* refers to a structure that is further away from the skin’s surface.
 - B. Superficial
Rationale: *Superficial* refers to a structure that is closer to the skin’s surface.
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76 **Review**

7. This is used to identify a body part that is on the “belly side” or anterior surface of the body.
- C. Dorsal
Rationale: *Dorsal* refers to the back or posterior side of the body.
 - D. Ventral
Rationale: Correct answer
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77 **Review**

8. You place a patient in the semi-Fowler’s position for transport. This means the patient is:
- A. lying on his or her back.
 - B. lying on his or her stomach.
 - C. sitting at a 45-degree angle.
 - D. sitting at a 90-degree angle.
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78 **Review**

- Answer: C
- Rationale: A patient that is sitting at a 45-degree angle is said to be in a semi-Fowler’s position. A patient is said to be supine when positioned on his or her back. When a patient is lying on his or her stomach, they are said to be in a prone position. If you have a patient sitting at a 90-degree angle, you have placed them in a high-Fowler’s position.
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79 **Review**

8. You place a patient in the semi-Fowler’s position for transport. This means the patient is:
- A. lying on his or her back.
Rationale: *Supine* is used to describe the position when a patient is lying on his or her back.
 - B. lying on his or her stomach.
Rationale: *Prone* is used to describe the position when a patient is lying on his or her stomach.
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80 **Review**

8. You place a patient in the semi-Fowler’s position for transport. This means the patient is:
- C. sitting at a 45-degree angle.
Rationale: Correct answer
 - D. sitting at a 90-degree angle.
Rationale: High-Fowler is used to describe the position when a patient is sitting at a 90-degree angle.
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81 **Review**

9. A laceration located on the plantar surface is on the:

- A. sole of the foot.
- B. palm of the hand.
- C. back of the body.
- D. front of the body.

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82 **Review**

Answer: A

Rationale: *Plantar* refers to the soles of the feet while *palmar* refers to the palms of the hands. *Dorsal* or *posterior* is used when referring to the back of the body. *Ventral* or *anterior* is used to when referring to the front of the body.

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83 **Review**

9. A laceration located on the plantar surface is on the:

- A. sole of the foot.

Rationale: Correct answer

- B. palm of the hand.

Rationale: *Palmar* is used to describe the palm of the hand.

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84 **Review**

9. A laceration located on the plantar surface is on the:

- C. back of the body.

Rationale: *Dorsal* or *posterior* is used when describing the back of the body.

- D. front of the body.

Rationale: *Ventral* or *anterior* is used when describing the front of the body.

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85 **Review**

10. When using abbreviations, acronyms, or symbols, an EMT should:

- A. be familiar with those used in your agency.
- B. use only those that are medically accepted.
- C. use them to shorten documentation.
- D. All of the above.

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86 **Review**

Answer: D

Rationale: Before using abbreviations, acronyms, or symbols in your documentation, it is important to know which ones are accepted for use by your agency. You should only use those that are medically accepted so anyone who is reading your report can understand what you are saying. To minimize the length of your documentation you can use abbreviations, acronyms, and/or symbols.

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87 **Review**

10. When using abbreviations, acronyms, or symbols, an EMT should:

- A. be familiar with those used in your agency.

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Rationale: Correct answer. An EMT should be familiar with the abbreviations, acronyms, and symbols, used by his or her agency.

B. use only those that are medically accepted.

Rationale: Correct answer. An EMT should use abbreviations, acronyms, or symbols that are medically accepted.

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88 **Review**

10. When using abbreviations, acronyms, or symbols, you should:

C. use them to shorten documentation.

Rationale: Correct answer. EMTs can use abbreviations, acronyms, or abbreviations to shorten documentation.

D. All of the above.

Rationale: Correct answer.

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