Chapter 1

Introduction to Medical Terminology
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Medical Terminology at a Glance

- Studying medical terminology is like learning a new language.
- Basic rules for building terms will help you both build and translate many different words.
- You must be able to put words together or build words from their parts.
  - Like piecing together a puzzle.
Understanding Medical Terms

• It is impossible to memorize all of the thousands of medical terms
• You can distinguish the meaning of many different words by analyzing the word parts
  • Word roots
  • Combining forms
  • Prefixes
  • Suffixes
Figure 1.1 – Nurse completing a patient report. Healthcare workers use medical terminology in order to accurately and efficiently communicate patient information to each other.
Basic Word Parts

- **Word root** is the fundamental meaning of the term
- **Prefixes** and **suffixes** modify the word root
- **Combining vowels** connect other word parts
- Always exceptions to rules
Click [here](#) to view a movie introducing the parts of a medical term.
Medical Terms Are Built from Word Parts

<table>
<thead>
<tr>
<th>Word Part</th>
<th>Example (Meaning)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word root</td>
<td><em>cardi</em>ogram (record of the heart)</td>
</tr>
<tr>
<td>Prefix</td>
<td><em>peri</em>cardium (around the heart)</td>
</tr>
<tr>
<td>Suffix</td>
<td><em>cardi</em>itis (inflammation of heart)</td>
</tr>
<tr>
<td>Combining form</td>
<td><em>cardiomy</em>opathy (heart muscle disease)</td>
</tr>
</tbody>
</table>
Word Root

- **Foundation** of the term
- General meaning of word
- Often gives body system or part
  - cardi = heart
- Or may be an action
  - cis = to cut
Word Root

- Medical terms may have more than one root
  - *gastroenteritis*
- Many medical terms built without a word root
  - *hyper-* = prefix meaning excessive
  - *–troph* = suffix meaning development
  - *hypertrophy* = excessive development
Combining Vowels

• Make it possible to pronounce long terms
• Usually an “o”
• Combine two word parts:
  • Between two word roots
  • Between word root and suffix
Combining Vowel Rules

- Between word root and suffix
- If the suffix begins with a **vowel**
  - **Do not** use a combining vowel
  - Arthritis, not arthroitis
- If the suffix begins with a **consonant**
  - **Use** a combining vowel
  - Arthroscope, not arthrscope
Combining Vowel Rules

• Combining vowel is typically kept between two word roots
• Even if the second word root begins with a vowel
  • gastroenteritis, not gastreenteritis
Combining Form

• Typically used to write word roots
• Also use the word root/combining vowel format
• Examples:
  • cardi/o
  • arthr/o
  • gastr/o
Common Combining Forms

- aden/o – gland
- carcin/o – cancer
- cardi/o – heart
- chem/o – chemical
- cis/o – to cut
- dermat/o – skin
- enter/o – small intestine
- gastr/o – stomach
- gynec/o – female
- hemat/o – blood
- hydr/o – water
### Common Combining Forms

- **immun/o** – immune
- **laryng/o** – voice box
- **morph/o** – shape
- **nephrol/o** – kidney
- **neur/o** – nerve
- **ophthalmol/o** – eye
- **ot/o** – ear
- **path/o** – disease
- **pulmon/o** – lung
- **rhin/o** – nose
- **ur/o** – urine, urinary system
Prefix

- Added to the **front** of a term
- May add meaning such as:
  - location of organ  
  - number of parts  
  - time (frequency)  
  - sub- = below  
  - mono- = one  
  - post- = after
Prefix

- Not all medical terms have a prefix
- When written by itself, followed by a hyphen
  - intra–
  - hyper–
  - multi–
Common Prefixes

- a– without, away from
- an– without
- ante– before, in front of
- anti– against
- auto– self
- brady– slow
- dys– painful, difficult
Common Prefixes

- **endo-** within, inner
- **epi-** upon, over
- **eu-** normal, good
- **hetero-** different
- **homo-** same
- **hyper-** over, above
- **hypo-** under, below
Common Prefixes

- infra– under, beneath, below
- inter– among, between
- intra– within, inside
- macro– large
- micro– small
- neo– new
- pan– all
Common Prefixes

- **para-** beside, beyond, near
- **per-** through
- **peri-** around
- **post-** after
- **pre-** before, in front of
- **pseudo-** false
- **retro-** backward, behind
Common Prefixes

- sub- below, under
- super- above, excess
- supra- above
- tachy- fast
- trans- through, across
- ultra- beyond, excess
Number Prefixes

- bi– two
- hemi– half
- mono– one
- multi– many
- nulli– none

- poly– many
- quad– four
- semi– partial, half
- tri– three
- uni– one
Suffix

• Attached to the end of a term
• Adds meaning such as:
  • condition  –algia = pain
  • disease    –itis = inflammation
  • procedure –ectomy = surgical removal
Suffix

• **All** medical terms **must** have a suffix
  • Only mandatory word part
• **When written by itself, precede with a hyphen**
  • –logy
  • –sclerosis
  • –cyte
Common Suffixes

- **–algia**: pain
- **–cele**: hernia, protrusion
- **–cise**: cut
- **–cyte**: cell
- **–dynia**: pain
- **–ectasis**: dilatation
- **–gen**: that which produces
- **–genesis**: produces, generates
Common Suffixes

- **-genic** producing
- **-ia** state, condition
- **-iasis** abnormal condition
- **-ism** state of
- **-itis** inflammation
- **-logist** one who studies
- **-logy** study of
- **-lysis** destruction
### Common Suffixes

- **–malacia**: abnormal softening
- **–megaly**: enlargement, large
- **–oma**: tumor, mass
- **–osis**: abnormal condition
- **–pathy**: disease
- **–plasia**: development, growth
- **–plasm**: formation, development
- **–ptosis**: drooping
Common Suffixes

- –rrhage  excessive, abnormal flow
- –rrhea    discharge, flow
- –rrhexis  rupture
- –sclerosis hardening
- –stenosis narrowing
- –therapy  treatment
- –trophic nourishment, development
Adjective Suffixes

- Suffix may be used to convert a word root into a complete word
- Translation of these suffixes is pertaining to
- New word can then be used to modify another word
Adjective Suffix Example

- To state that a patient has an ulcer in his stomach:
  - gastr/o = stomach
  - -ic = pertaining to
  - gastric = pertaining to the stomach
  - gastric ulcer = ulcer found in the stomach
# Adjective Suffixes

- **–ac**
- **–al**
- **–an**
- **–ar**
- **–ary**
- **–eal**
- **–iac**
- **–ic**
- **–ical**
- **–ile**
- **–ior**
- **–ory**
- **–ose**
- **–ous**
- **–tic**
Surgical Suffixes

- **–centesis**: puncture to withdraw fluid
- **–ectomy**: surgical removal
- **–ostomy**: surgically create an opening
- **–otomy**: cutting into
- **–pexy**: surgical fixation
- **–plasty**: surgical repair
- **–rrhaphy**: suture
Procedural Suffixes

- **–gram** record or picture
- **–graph** instrument for recording
- **–graphy** process of recording
- **–meter** instrument for measuring
- **–metry** process of measuring
- **–scope** instrument for viewing
- **–scopy** process of visually examining
Word Building

• Putting together several parts to form a variety of terms to convey the necessary information
• Begins with knowing the meaning of the various word parts in order to select the correct ones
• Always remember the rules regarding the location of each word part
Interpreting Medical Terms

- Term to be translated
  - gastroenterology

- Divide the term into its word parts
  - gastr/o/enter/o/logy
Interpreting Medical Terms

- Define each word part
  - gastr = stomach
  - o = combining vowel, no meaning
  - enter = small intestine
  - o = combining vowel, no meaning
  - –logy = study of

- Combine the meanings of the word parts
  - study of the stomach and small intestine
Pronunciation

- Will differ according to place of birth and education
- When in doubt, ask for spelling
- New terms in the book are introduced in boldface type, with phonetic spelling in parentheses
- Stressed syllable will be in capital letters:
  - pericarditis (per ih car DYE tis)
Spelling

- Only one correct way to spell a term
- Changing one letter can change the meaning of a word
  - abduction (moving away) vs. adduction (moving towards)
  - ileum (small intestine) vs. ilium (hip bone)
Same Sounds Spelled Differently

- psy psychiatry
- cy cytology
- dys dyspepsia
- dis dislocation
Singular and Plural Endings

- Many medical terms come from Greek or Latin words
- Rules for forming plurals for these languages are different from English
  - Plural of atrium is atria, not atriums
- Other words will use English rules
  - Plural of ventricle is ventricles
### General Rules for Plurals

<table>
<thead>
<tr>
<th>Word Ends In</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>• –a</td>
<td>• vertebra</td>
<td>• vertebrae</td>
</tr>
<tr>
<td>• –ax</td>
<td>• thorax</td>
<td>• thoraces</td>
</tr>
<tr>
<td>• –ex or –ix</td>
<td>• appendix</td>
<td>• appendices</td>
</tr>
<tr>
<td>• –is</td>
<td>• metastasis</td>
<td>• metastases</td>
</tr>
<tr>
<td>• –ma</td>
<td>• sarcoma</td>
<td>• sarcomata</td>
</tr>
<tr>
<td>• –nx</td>
<td>• phalanx</td>
<td>• phalanges</td>
</tr>
<tr>
<td>• –on</td>
<td>• ganglion</td>
<td>• ganglia</td>
</tr>
<tr>
<td>• –us</td>
<td>• nucleus</td>
<td>• nuclei</td>
</tr>
<tr>
<td>• –um</td>
<td>• ovum</td>
<td>• ova</td>
</tr>
<tr>
<td>• –y</td>
<td>• biopsy</td>
<td>• biopsies</td>
</tr>
</tbody>
</table>
Abbreviations

• Commonly used to save time
• Can be confusing
• If you are concerned about confusion, spell out the term
• Do not use your own personal abbreviations
Figure 1.2 – Health information management workers maintain accurate, orderly, and permanent patient records.
The Medical Record

• Documents details of hospital stay
  • Patient’s day-to-day condition
  • When and what services were provided
  • Response to treatment

• All personnel with patient contact complete the appropriate report

• Medical records department ensures that all documents are present, complete, signed, and in order
Click [here](#) to view a video on the duties of the medical transcriptionist.
Common Elements of the Medical Record

- **History and Physical**
  - Written by admitting physician
  - Details patient’s:
    - History
    - Exam results
    - Initial diagnosis
    - Physician’s plan of treatment

- **Physician’s Orders**
  - Ordered by the doctor
  - Complete list of:
    - Care
    - Medications
    - Tests
    - Treatments
Click [here](#) to view a video on the correct manner while taking patient histories.
Patient Histories Video Two

Click [here](#) to view a video on the wrong manner while taking patient histories.
Common Elements of the Medical Record – Notes

- **Nurse’s Notes**
  - Records the patient’s care throughout the day
  - Includes vital signs, treatment specifics, patient’s response to treatment, and patient’s condition

- **Physician’s Progress Notes**
  - Daily record of patient’s condition
  - Results of physical exam, summary of test results, updated assessment and diagnoses, further plans for treatment
Common Elements of the Medical Record – Reports

• **Consultation Reports**
  - Given by a specialist when the physician asks for patient evaluation

• **Ancillary Reports**
  - From various treatments and therapies
  - Such as rehabilitation, social services, respiratory therapy, or dietetics
Common Elements of the Medical Record – Reports

• **Operative Report**
  - From surgeon detailing the operation
  - Includes pre- and post-operative diagnosis
  - Specific details of the procedure and how the patient tolerated the procedure

• **Anesthesiologist’s Report**
  - Relates details of drugs given to patient
  - Response to anesthesia
  - Vital signs during surgery
Common Elements of the Medical Record – Reports

- **Diagnostic Reports**
  - Results of all diagnostic tests performed on the patient
  - From lab to medical imaging

- **Pathologist’s Report**
  - Report given by pathologist who studies tissue removed from patient
Common Elements of the Medical Record

• **Informed Consent**
  • Document voluntarily signed by the patient or responsible party
  • Clearly describes purpose, methods, procedures, benefits, and risks of procedures

• **Discharge Summary**
  • Outline of patient’s entire hospital stay
  • Includes condition at admission, admitting diagnosis, test results, treatments, and patient’s response, final diagnosis, and follow-up plans
Healthcare Settings

- **Acute Care or General Hospital**
  - Provides services to diagnose and treat diseases for a short period of time
- **Specialty Care Hospital**
  - Provides care for specific type of disease
  - Example: psychiatric hospital
Figure 1.3 – A nurse and medical assistant review a patient’s chart and plan his or her daily care.
Healthcare Settings

• **Nursing Home or Long-Term Care Facility**
  • Provides long-term care for patients who need extra time to recover before going home
  • For persons who cannot care for themselves

• **Ambulatory Care, Surgical Center or Outpatient Clinic**
  • For patients who do not need overnight care
  • Simple surgeries, therapy, or diagnostic testing
Healthcare Settings

- **Physician’s Office**
  - Individual or group of doctors providing diagnostic and treatment services in an office setting

- **Health Maintenance Organization**
  - Group of primary care physicians, specialists, and other healthcare professionals
  - Provides wide range of services in a pre-paid system
Healthcare Settings

• **Home Health Care**
  - Agencies that provide nursing, therapy, personal care, or housekeeping services in patient’s home

• **Rehabilitation**
  - Provides physical and occupational therapy
  - Inpatient and outpatient

• **Hospice**
  - Organized group of health workers that provide supportive treatment to terminally ill patients and their families
Confidentiality

• Any information or record relating to a patient is privileged
• Moral and legal responsibility to keep all information private
• Proper authorization must be signed by patient before any information can be released
• **Health Insurance Portability and Accountability Act** of 1996 (HIPAA) sets federal standards to protect records
Click [here](#) to view a video describing HIPAA.