

Medical Transcription

Essentials of Procedures, Terminology, Editing, Reports, Anatomy & Physiology, Concepts of Disease, Medical & Surgical Procedures & More

overview

Scope of Practice

- The **medical transcriptionist (MT)** is an allied health professional who deals with the process of *converting voice-recorded reports from physicians and/or other healthcare professionals into written or text format*
- The MT is a **medical language specialist** who is aware of the:
 - ♦ *standards and requirements that apply to the patient's health record*
 - ♦ *legal significance of medical transcripts*
- The MT is the *primary route of communication* between the physician and other healthcare providers who access patient medical records
- Many types of patient care documents exist, including:
 - ♦ histories and physical examinations
 - ♦ progress reports
 - ♦ emergency room notes
 - ♦ consultations
 - ♦ operative reports
 - ♦ discharge summaries
 - ♦ clinic notes
 - ♦ referral letters
 - ♦ radiology reports
 - ♦ pathology reports
 - ♦ an array of documentation spanning more than 60 medical specialties and subspecialties
- MTs often work for hospitals, clinics, physician offices, national transcription services or other medical offices
- The practice of medical transcription is changing rapidly; advances in technology require a professional who is comfortable with the more technical aspects of documentation in an ever-changing electronic environment

Medical Transcription Process

- When the patient visits a doctor, the doctor spends time with the patient discussing his/her medical problems, including past history and/or problems
 - ♦ The doctor performs a **physical examination** and may request various **laboratory tests** and/or **diagnostic studies**, as well as prescribing **medication** and possibly recommending a **surgical procedure**
 - ♦ The doctor makes a **diagnosis** and decides on a **plan of treatment** for the patient, which he/she then discusses with and explains to the patient
- After the patient leaves the office, the doctor uses a **voice-recording device** to record the information about the **patient encounter**
- This information may be recorded into a hand-held cassette recorder or into a regular telephone that dials into a central server located in the hospital or transcription service office; either way, the report is "held" for the transcriptionist
- The MT then accesses this report, which is received as a **voice file** or **cassette recording**
- The MT then listens to the **dictation** and **transcribes** it into the *required format for the medical record*
- This **medical record** is considered a **legal document**
- The next time the patient visits the doctor, the doctor will call for the medical

skills, knowledge & procedures

- Medical transcriptionists (MTs) are more than just data-entry operators or mere typists working in the healthcare industry
- MTs need to have the skills required for creating **proficient and accurate medical records**; besides having these skills, they need to constantly improvise and hone their skill-sets
- MTs are expected to be proficient in English language use and grammar, medical terminology, anatomy and physiology, disease processes, and medical record-keeping, as well as having advanced proofreading and editing skills, versatility in the use of transcription equipment and computers, and the highly developed analytical skills and deductive reasoning necessary to convert dictated sounds into meaningful form
- These skill-sets are described in detail in the sections that follow, but can be summarized as:
 1. Keyboard Kinetics & Computer Literacy
 2. English Language Proficiency – Grammar, Sentence Structure, Spelling, Punctuation, Numbers & Abbreviations
 3. Medical Terminology
 4. Editing & Proofreading Medical Dictation & Transcription
 5. Medical Reports
 6. Human Anatomy & Physiology
 7. Concepts of Disease
 8. Medical & Surgical Procedures
 9. Pharmacology, Diagnostic Imaging & Laboratory Medicine
 10. Medicolegal Issues

The MT Knows

Logic and critical thinking are key to accurate transcription documents and, thereby, key to effective patient care

record or the patient's entire chart, which will contain all reports from previous encounters

- *It is very important to have a properly formatted, thoroughly edited, and carefully reviewed medical transcription document*—if the MT accidentally types a **wrong medication** or the **wrong diagnosis**, the **patient** can be **at risk if the doctor does not review the document for accuracy**
- Both the doctor and the MT play an important role in making sure that the transcribed dictation is correct and accurate
- *The doctor should speak **slowly and clearly***, especially when dictating medications or details of diseases and conditions, and the MT must possess:
 - ♦ hearing acuity
 - ♦ medical knowledge
 - ♦ good reading comprehension
 - ♦ fact-checking skills (in order to check references when in doubt about the dictation)
- The MT is bound to **transcribe verbatim** (exactly what is said) and make **no changes**, but has the option to flag any report inconsistencies
 - ♦ on some occasions, doctors do not speak clearly, or voice files are garbled
- Some doctors are, unfortunately, time-challenged and need to dictate their reports quickly (as in ER reports)
 - ♦ in addition, there are many regional and/or national accents and mispronunciations of words with which the MT must contend
- It is **imperative** that the MT *look up the correct spelling of complex medical terms, medications, obvious dosage or dictation errors*—this is a large part of the job of the MT, and, when in doubt, he/she should **"flag" a report**
 - ♦ a "flag" on a report requires the dictator to fill in a blank on a finished report, which has been returned to him/her, before it is considered complete
- MTs are never, ever permitted to guess, or "just put anything" in a report transcription!
- Furthermore, medicine is constantly changing—new equipment, new medical devices and new medications enter the market on a daily basis, and the MT needs to be a critical thinker and to research and find the meanings of these new words
 - ♦ MTs need to have access to, or keep on hand, an up-to-date library to quickly facilitate the correctly spelled insertion of every device, procedure and/or medication dictated

Association for Healthcare Documentation Integrity (AHDl)

- The Association for Healthcare Documentation Integrity (AHDl) is of crucial importance to the MT
- The AHDl curriculum is followed by many schools in the United States that offer medical transcription as a course
- Key documents produced by the AHDl are:
 - ♦ **Medical Transcriptionist Bill of Rights**
 - ♦ **AHDl Code of Ethics**
- To read these documents in their entirety and/or to learn more about AHDl, visit their Web site: www.ahdionline.org

keyboard kinetics & computer literacy

- **Typing speed** is important in the productivity of a transcriptionist
 - ♦ techniques for building speed and efficiency on the keyboard are invaluable tools for improving typing speed
 - ♦ usually, the industry requirement is **60–80 words per minute (wpm)**
- The MT must also possess strong **computer skills**, with general knowledge of and ability to operate designated **dictation and transcription equipment**
- The MT must be able to use basic features of **word processing programs**:
 - ♦ inserting and deleting text
 - ♦ creating macros
 - ♦ saving changes/features
- The MT must be able to **identify and secure confidentiality issues** and use:
 - ♦ password protection
 - ♦ antivirus software
 - ♦ encryption
- The MT must be able to:
 - ♦ differentiate between **stand-alone and networked computers**
 - ♦ understand the basic concepts of **dictation and transcription technology**
- MTs have many types of **equipment and reference materials** at their fingertips; basic equipment available includes:
 - ♦ transcriber*
 - ♦ computer
 - ♦ current word-processing software
 - ♦ printer



- ♦ headset
- ♦ foot pedal
- ♦ sound card

[* **NOTE:** Transcribers can be as simple as audiocassette players or as evolved as computerized voice processing machines, voice synthesizers and remote digital dictation]

- **MTs must** be able to use basic **transcription equipment**—both analog and digital—as well as all the equipment in the above list
- **MTs must** be aware of **copyright law implications** and basic concepts of **electronic healthcare records**

The MT Knows

Typing speed and accuracy are a must for the effective MT, but so are knowledge of and comfort in using cutting-edge technology

Punctuation

The correct use of punctuation is crucial for the MT because most dictators of medical records do not bother to include punctuation

Key Punctuation Marks

- apostrophe '
- asterisk *
- backward slash \
- braces/curly brackets { }
- brackets []
- colon :
- comma ,
- ellipsis points . . . (note three dots only, unless preceded by a period if used at the end of a sentence)
- em-dash —
- en-dash –
- exclamation point !
- forward slash/virgule /
- hyphen -
- parentheses ()
- period .
- question mark ?
- quotation marks " "
- semicolon ;
- single quotation marks ' ' (used for quotation within another quotation)

English language proficiency

- The **MT must** know and be able to apply the rules of the English language!
- These rules include proper use of **grammar**, **sentence structure** and **punctuation**, as well as correct **spelling** (including knowledge of synonyms, antonyms, homonyms, acronyms and commonly used/misused, misspelled and confused words, particularly within medical terminology) and accurate representation of **numbers**, **abbreviations**, etc.

Grammar

The **MT must** know the definitions of and the differences among all elements of grammar

- **Nouns:** words that refer to *persons, places, things, ideas or qualities*
 - ♦ **nouns are the most commonly used part of speech**, and sentences may contain more than one noun
 - ♦ nouns are further classified as *proper, common, concrete, abstract, collective and verbal*
 - ♦ **MTs must know when to capitalize nouns used in medical dictation**
- **Pronouns:** words that *substitute for nouns* and function like nouns in sentences
 - ♦ classified as *personal, demonstrative, relative, interrogative, reflexive, intensive and indefinite*
 - ♦ nouns and pronouns can be **subjects** (*doer of the action of the sentence*) or **objects** (*action of the sentence is done to them*)
 - EX: I gave money. (I is the **subject**) EX: Money was given to me. (me is the **object**)
- **Verbs:** words that *express actions, happenings or states of being*
 - ♦ **predicates:** groups of words containing verbs and words that describe or modify verbs
- **Adjectives:** words that *describe or modify nouns and/or pronouns*
- **Adverbs:** words that *describe or modify verbs, adjectives and/or other adverbs*
- **Articles:** determiners that *indicate a noun will follow*
 - ♦ **definite article is the**
 - ♦ **indefinite article is a or an**
- **Conjunctions:** words that *join one part of a sentence to another*
- **Prepositions:** words that *describe the relationship of one thing to another*
 - ♦ prepositions should come **before objects**
 - ♦ prepositions **should not** come at the **end of sentences**

Sentence Structure

- Every sentence has a **subject** and a **predicate**; depending upon how complex the sentence is, it may be made up of multiple clauses and/or phrases
- Sentences are made up of clauses and phrases
- **Clauses:** groups of related words containing a *subject and a predicate that is not a complete sentence*
 - ♦ clauses are often set off from other parts of a sentence or other clauses by **prepositions, conjunctions and clause introducers**
- **Phrases:** groups of related words *lacking either a subject or a predicate*
 - ♦ phrases are **not complete sentences** by themselves, but they often stand alone
 - ♦ **phrases often appear alone** when used in categories such as:
 - review of systems
 - physical examination
 - laboratory data

The MT Knows

Knowledge of grammar, punctuation, spelling, acronyms, numbers and abbreviations enables the MT to correctly transcribe incorrect sentences; it is essential for the MT to know the difference between jargon, slang, street talk and profanity, and be able to transcribe accurately

Numbers & Abbreviations

The MT understands correct use of both Arabic and Roman numerals

- The MT understands correct use of **units of measure** and is able to identify their **abbreviations**
- However, using abbreviations can be an asset or a liability to the MT—sometimes abbreviations are used as time savers by the dictator; other times abbreviations are not well known, or are unclear, ambiguous or inappropriate for use in medical transcription

	Arabic Numerals	Roman Numerals
	1	I
	5	V
	10	X
	50	L
	100	C
	500	D
	1,000	M

Metric Abbreviation	Metric Unit of Measure
ng, nL, nm	nanogram, nanoliter, nanometer
mcg, mL, mcm	microgram, microliter, micrometer
mg, mL, mm	milligram, milliliter, millimeter
cg, cL, cm	centigram, centiliter, centimeter
dg, dL, dm	decigram, deciliter, decimeter
g, L, m	gram, liter, meter
Dg, DL, Dm	dekagram, dekaliter, dekameter
hg, hL, hm	hectogram, hectoliter, hectometer
kg, kL, km	kilogram, kiloliter, kilometer

Spelling

The MT must be able to apply the rules of spelling, and know how to *spell commonly used, misused, misspelled and confused words*

Spelling Hints

- Do not rely exclusively on pronunciation
- Do remember that there can be different forms of the same word
- Do use preferred American spellings
- Do know the difference between words with “ie” and “ei” spellings
 - EX: quiescent • seizure • vein
- Do know when to keep or drop the final “e”:
 - ♦ drop the “e” before adding “-able”, “-ible” or “-ing” if the ending begins with a vowel
- Do know when to keep or drop the final “y”
 - ♦ change the “y” to “i” when it follows a consonant and when adding an ending
 - EX: hurry#hurries apply#applied
- Do double consonants when adding an ending with single syllable words
 - EX: stop#stopping tan#tanned
 - ♦ exceptions to this rule on doubling consonants:
 - in most cases DO NOT double the consonant when two vowels or a vowel and another consonant precede the final consonant
 - EX: start#starting jump#jumped
 - ♦ double the final consonant when a single vowel precedes the final consonant and the stress falls on the last syllable of a word with two or more syllables
 - EX: refer#referral begin#beginning
 - ♦ DO NOT double the final consonant when two vowels or a vowel and another consonant precede the final consonant, or when the stress falls on a syllable other than the last syllable in a word with two (or more) syllables
 - EX: referral#reference committed#commitment
- Recognize commonly used words, misused words and misspelled words; if you can spell a word, you can look it up to find out its meaning, if in doubt

- **Correct misspelled and misused words**
 - Recognize *homonyms, synonyms, antonyms and acronyms*
 - ♦ **homonyms:** words that sound or are pronounced alike, but are different in meaning
 - EX: aural (pertaining to ears) vs. oral (pertaining to mouth)
 - coarse (thick) vs. course (a path or regimen)
 - ileum (intestine) vs. ilium (hip bone)
 - ♦ **synonyms:** words that have the same meaning
 - EX: disease = illness = sickness = ailment = malady
 - ♦ **antonyms:** words that have opposite meanings
 - EX: abduct vs. adduct
 - hypertension vs. hypotension
 - macroscopic vs. microscopic
 - principal vs. secondary
 - ♦ **acronyms:** words comprised of the first letters in a series of words or in a phrase; sometimes acronyms are pronounced as words, but not always
 - EX: AIDS (Acquired Immune Deficiency Syndrome)
 - CABG (coronary artery bypass graft)
 - HEENT (head, ears, eyes, nose, throat)
 - REM (rapid eye movement)
 - SIDS (Sudden Infant Death Syndrome)
- [Note that syndrome names are capitalized]

medical terminology

- The MT must be able to divide, analyze and **define complex medical words** by recognizing their **prefixes, suffixes, root words and combining forms**
 - ♦ **prefix:** beginning portion of word
 - ♦ **suffix:** ending portion of word
 - ♦ **root:** basic component of word; *the root is the simplest element of a word from which its meaning can be derived*

- ♦ **combining form:** root combined with a slash(/) and the letter “o”
- The MT must also be able to **build basic medical words** by using prefixes, suffixes, root words and combining forms
- In addition, the MT must know how to **correctly spell, use and pronounce medical terms**
- The ability to apply **proper word endings for plurals**, including endings of Greek and Latin origin, is also a must

Common Medical Terminology Prefixes	
a- not or without	inter- between
ab- away from	intra- within
ad- to or toward	mal- bad or abnormal
ante- before	neo- young or new
anti- against	para- beside or beyond
bi- two	peri- around
brady- slow	post- after
con- with or together	pre- prior
dys- opposite	pro- earlier than
ecto- outside	re- back or again
endo- inside	retro- backward
epi- upon, after or in addition	sub- under or below
extra- outside of or beyond	sym-/syn- with or together
hyper- above, beyond or extreme	tachy- fast or quickened
hypo- under, below or less than normal	ultra- beyond or excessively
in- not	uni- one

Common Medical Terminology Suffixes	
-algia pain	-oma tumor
-cele tumor, swelling or hernia	-osis syndrome
-cision surgical cutting	-partum birth
-cyte type of cell	-pathy disease process
-ectomy surgical removal	-philia affinity for
-emia condition of the blood	-phobia fear of or aversion to
-gram write or record	-plasm form or formation
-graphy write or record	-plasty surgical repair
-ia condition	-plegia paralytic condition
-iac one who suffers from a condition	-pnea breathing condition
-iasis state or condition of	-rrhea flowing
-ic pertaining to	-scopy observatory procedure
-itis inflammatory condition	-stomy orifice
-lith stone formation	-thesis act of putting/placing
-logy study of	-tomy surgical cutting or incision
-lysis breaking down or decomposition	-trophy growth of nerves
-metry measurement of	-uria urinary condition
-mortem death	

The MT Knows

Understanding the language of medicine is the **most important** and vital aspect of a career as a transcriptionist; improving one's medical vocabulary is a must for a successful MT!

Commonly Misspelled Medical Terms

accommodation	auricle	curette	extraocular	maneuver	piriform sinus
aggravated	auricular	defervescence	fascicular	mucus	pseudomonas
alveolar	auscultation	dependent	fluorescent	ophthalmic	pterygium
annulus	breathe	diarrhea	hemoptysis	ophthalmology	purulent
antihelix	bruit	diuresis	hemorrhage	palpitation	rhabdomyosarcoma
aphthous	buccal	duodenum	hyoid	parenchyma	rhinitis
apneic	caudal	ecchymosis	in situ	paresis	sphenoid
apparent	choana	emphysema	inguinal	phalangeal	telangiectasia
appendiceal	cholesteatoma	eschar	intermittent	phalanges	tenacious
ascites	commissure	esophageal	laryngeal	pharyngeal	tic
asymmetrical	compatible	esophagus	lysis	phlegm	tinnitus
asymptomatic	condyle	exquisite	malar	phonate	vesicular

[NOTE: There are too many common roots and combining forms to list here, but some commonly misspelled medical terms are included; for more detailed lists of medical terms (roots, combining forms, prefixes and suffixes), see **QuickStudy** guides on *Medical Terminology: The Basics* and *Medical Terminology: The Body*

editing & proofreading medical dictation & transcription

Three Steps of Editing

- Content editing:** editing the copy for errors in *style, grammar, sentence structure, spelling and punctuation*
 - Copyediting:** editing the copy for *typographical errors* made by the transcriptionist
 - Spell checking:** checking the document both manually (i.e., reading it over and *looking up spellings* you are unsure of) and electronically (i.e., using the *computer spell checker*)
- There are specific instances when the MT should **NOT edit the dictation** being transcribed:
 - ♦ **DO NOT edit** dictation when there is an **unclear inconsistency**, or when you are not reasonably sure about how to make a correction
 - ♦ **DO NOT edit** dictation if you are **unaware of or confused about the dictator's meaning**

- ♦ **DO NOT edit** dictation if the editorial changes would **alter the dictator's meaning**; instead, **flag it**

Proofreading

- Proofreading involves **reading the document word for word** before the final printing or typesetting
- Copyediting and content editing often are grouped together as part of the proofreading process, but, ideally, both should be done prior to proofreading and are **NEVER a substitute for proofreading!**
- Spell checking is **NEVER a substitute for proofreading!**

The MT Knows

The successful MT must have advanced editing/proofreading skills; not only must he/she know when editing and/or proofreading are necessary, but also how to properly edit and proofread so as not to change the meaning or context of the original dictation

medical reports

- Each medical report has a unique format specifically tailored to make it *concise, clear and uniform*
- Most medical reports are broken down into various **sections**, and those sections are further broken down into **subsections**
- The sections have titles called **headings** and the subsections have titles called **subheadings**
 - Dictators usually follow these headings and subheadings as guides for covering each aspect of the medical report

Six Basic Hospital Reports

History and Physical (H & P)

- The **history** component of this report covers the *summary of the chronological situation, events and other associated topics that may have contributed to the patient's condition*

- The **physical** component of this report is composed of the *visual evaluation, what is heard, what is felt and what is smelled (sensed by the nose)*
- This is the **hands-on evaluation** performed by the *physician or healthcare provider*

Consultation Report

- A report from the *specialist physician to the patient's primary physician*, the consultation is like a **second opinion** regarding a particular problem or **diagnosis**
- The consultation report contains an **evaluation** of the patient's condition from the standpoint of the specialist, an impression of the patient's condition, and **recommendations** on how to treat the patient
- This report also contains (if appropriate):
 - ♦ date of consult
 - ♦ pathology reports
 - ♦ surgical reports
 - ♦ imaging reports
 - ♦ laboratory results

MEDICAL RECORDS

- There is usually a complimentary close at the end of the report such as "thank you for the referral"

Discharge Summary

- Summarizes the patient's **in-hospital stay**
- The discharge summary details:
 - ♦ the reason the patient was admitted
 - ♦ the patient's medical history
 - ♦ a review of the events that occurred while the patient was hospitalized
- Usually, the physician will dictate:
 - ♦ follow-up instructions
 - ♦ discharge medications
 - ♦ the patient's condition when discharged
 - ♦ the patient's prognosis

Operative Report

- Describes an **operation** or **surgical procedure**
- The operative report contains:
 - ♦ a description of the surgical procedure
 - ♦ the name of the surgeon
 - ♦ the title and date of the surgery
 - ♦ the indications for surgery
 - ♦ the surgical findings
 - ♦ the sponge count
 - ♦ the amount of blood lost during the procedure
- The operative report ends when the patient is taken to recovery and will state the condition of the patient

Pathology Report

- Describes the **pathological** (i.e., disease-related) **findings of tissue samples** taken during surgery, biopsy, special procedure or autopsy

The MT Knows

The MT must not only know which tools to use when transcribing, but he/she must also be familiar with the proper order and organization of the information being transcribed and how it should be placed (formatted)

human anatomy & physiology

The MT must be able to understand human anatomy (structures) and physiology (functions and activities)

Basic Biology

The MT must understand and be able to define essential biological terms

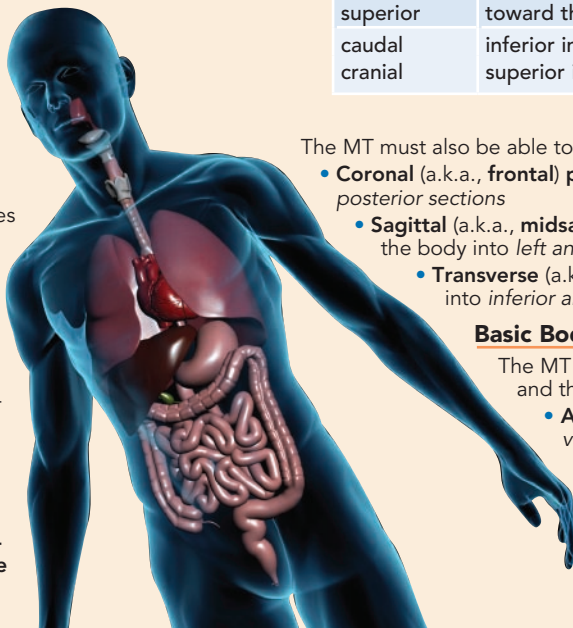
cell → tissue → organ → system

- **Cell:** structural and functional unit of all known living organisms; often called the *building block of life*
- **Tissue:** cellular organizational level intermediate between cells and a complete organism; *ensemble of cells that carry out a specific function*; tissue cells are not necessarily identical, but they are of the same origin
- **Organ:** *tissue that performs a specific function* or group of functions
- **System:** *group of organs* that work together to perform a certain task

Basic Anatomy

The MT must be able to name the **major body systems** and their components, while also being able to describe their locations and meanings, and knowing which **organs** are part of **multiple systems** (EX: pancreas is part of both the digestive and endocrine systems)

- **Circulatory system:** *pumps and channels blood* to and from the body and lungs
 - ♦ key components: **heart, blood** and **blood vessels**
- **Digestive system:** processing food; *digestion, absorption* and *elimination* (solid waste)
 - ♦ key components: **salivary glands, esophagus, stomach, liver, gallbladder, pancreas, intestines** (small and large), **rectum** and **anus**
- **Endocrine system:** *communication within the body using hormones* made by glands
 - ♦ key components (glands): **hypothalamus, pituitary, pineal, thyroid, parathyroids** and **adrenals**; *certain glands also function within other systems* (EX: pancreas – digestive; ovaries and testes – reproductive)
- **Integumentary system:** *first defense* against foreign matter and *controls temperature*
 - ♦ key components: **skin, hair** and **nails**
- **Lymphatic & immune system:** structures (nodes and vessels) involved in the transfer of lymph between tissues and the bloodstream; *defends against disease-causing agents*
 - ♦ key components: **leukocytes** (white blood cells), **tonsils, adenoids, thymus** and **spleen**
- **Muscular system:** *movement* of the body, and other *involuntary functions* (including contractions of the heart, which is a muscle)
 - ♦ key components: **muscles** (600+, including: skeletal, involuntary, cardiac)
- **Nervous system:** *collecting, transferring and processing information*
 - ♦ key components: **brain, spinal cord, peripheral nerves, autonomic nerves** and **sense organs**



- The pathology report is dictated by the **pathologist**, who reports on the:
 - ♦ gross (i.e., visible) findings
 - ♦ microscopic findings
- This report concludes with a **pathological diagnosis**

Radiology Report/Imaging Report

- These are reports that describe **diagnostic procedures** done in the **radiology department** and are dictated by a **radiologist**
- Some of the exams performed in radiology involve the use of:
 - ♦ computerized tomography (CT) scans
 - ♦ fluoroscopy
 - ♦ interventional radiography
 - ♦ magnetic resonance imaging (MRI)
 - ♦ mammography
 - ♦ nuclear medicine (nuc med)
 - ♦ positron emitting tomography (PET)
 - ♦ single photon emission computed tomography (SPECT)
 - ♦ ultrasound/sonography
 - ♦ x-ray
- The **radiology report** contains:
 - ♦ the diagnostic examination
 - ♦ a description of the examination
 - ♦ the findings
 - ♦ the diagnostic impression
- A **diagnostic report** will also contain:
 - ♦ the amount of radioactive material given to the patient
 - ♦ the amount of barium used for a fluoroscopic procedure
 - ♦ the amount of contrast material used in an IV injection for a CT scan
 - ♦ the amount of gadolinium injected for an MRI procedure

Reproductive system: sex organs

- ♦ key components (female): **ovaries, fallopian tubes, uterus** and **vagina**
- ♦ key components (male): **testes, vas deferens, seminal vesicles, prostate** and **penis**

Respiratory system: organs used for breathing

- ♦ key components: **nose/nasal passages, pharynx, larynx, trachea, bronchi, lungs** and **diaphragm**

Skeletal system: structural support and protection

- ♦ key components: **bones, cartilage, ligaments** and **tendons**

Urinary system: maintains fluid balance, electrolyte balance and elimination of liquid waste (excreted urine)

- ♦ key components: **kidneys, ureters, bladder** and **urethra**

Basic Body Positions, Directions & Planes

The MT must be able to locate and identify terms describing **anatomical positions and directions**

anterior	nearer to the front of the body
posterior	nearer to the back of the body
dorsal	posterior (back side) of the body
ventral	anterior (front side) of the body
lateral	farther from the midline of the body
medial	nearer to the midline of the body
proximal	nearer to the point of origin
distal	farther from the point of origin
inferior	away from the head
superior	toward the head
caudal	inferior in position
cranial	superior in position

The MT must also be able to identify the **planes of the body**

- **Coronal** (a.k.a., **frontal**) **plane:** divides the body into *anterior* and *posterior* sections
- **Sagittal** (a.k.a., **midsagittal** or **median sagittal**) **plane:** divides the body into *left* and *right*
 - **Transverse** (a.k.a., **horizontal**) **plane:** divides the body into *inferior* and *superior* sections

Basic Body Cavities, Organs & Regions

The MT must be able to identify **body cavities** and the **organs** contained in those cavities

- **Abdominopelvic cavity:** *lower portion of the ventral body cavity*, it is often divided into the superior abdominal and inferior pelvic cavities
 - ♦ **abdominal cavity:** space that contains the *digestive organs and glands* (i.e., liver, gallbladder, spleen, kidneys, pancreas, stomach, small intestine and the majority of the large intestine)

Basic Body Cavities, Organs & Regions (continued)

- ♦ **pelvic cavity:** space surrounded by the pelvis and containing the inferior portion of the large intestine, bladder, uterine tubes (females) and reproductive organs
- **Cranial cavity:** fluid-filled space inside the cranium (skull) that contains the brain
- **Dorsal body cavity:** space within the cranium (skull) and the spinal canal, which is surrounded by the vertebrae
- **Spinal cavity:** space that encloses the spinal cord and extends from the cranial cavity to the base of the spine
- **Thoracic cavity:** upper portion of the ventral body cavity, it contains the lungs, heart, lower esophagus, thymus gland, and other organs of the cardiovascular, respiratory and lymphatic systems
 - ♦ subdivided into: **right pleural cavity** of the right lung, the **left pleural cavity** of the left lung and the **mediastinum**, which is between the pleural cavities

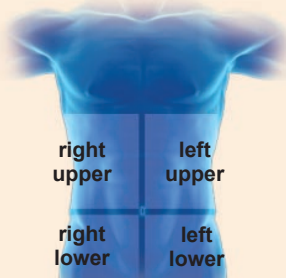
- ♦ **mediastinum:** contains the trachea, esophagus, thymus and heart, as well as the vessels connected to the heart and the **pericardial cavity**, which is the area surrounding the heart

- **Ventral body cavity:** contains the organs in the chest and abdomen; it is further divided by the diaphragm into the superior thoracic cavity and the inferior abdominopelvic cavity

The MT must be able to locate and identify the **anatomical** and **clinical divisions** of the **abdomen**

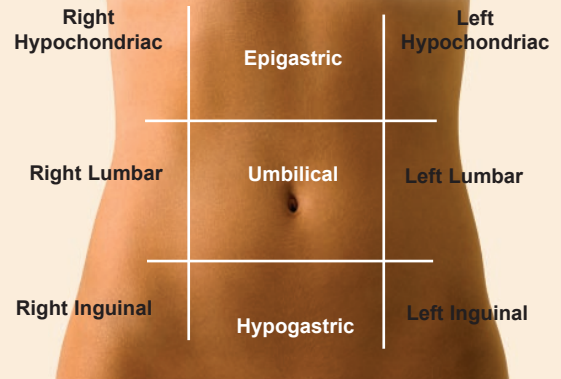
The MT Knows

A general understanding of the human body and how it works is essential to the successful MT, including basic knowledge of all major body systems—circulatory, digestive, endocrine, integumentary, lymphatic & immune, muscular, nervous, reproductive, respiratory, skeletal & urinary—their functions, organs and common diseases



4 Quadrants of the Abdomen

right upper quadrant	RUQ
right lower quadrant	RLQ
left upper quadrant	LUQ
left lower quadrant	LLQ



9 Regions of the Abdomen

right hypochondriac	epigastric	left hypochondriac
right lumbar	umbilical	left lumbar
right inguinal	hypogastric	left inguinal

concepts of disease

The MT must possess a basic understanding of disease and the causes of disease

- Identify major **pathological conditions** and **disease processes** that affect each body system
- Understand and know the **direct causes** of diseases
- Recognize the general **morphology of organisms** and their role in the disease process
- Know the **signs and symptoms** of the diseases of each body system
- Be able to describe the **diagnostic procedures** for the diseases of each body system
- Know the **prognosis and prevention** of the diseases of each body system
- Have knowledge of **blood-borne diseases** and their **transmission**
- Be able to practice **infection control** and follow **universal precautions**

The MT must be able to define and describe terminology associated with disease

- **Cancer:** a class of diseases in which a group of cells displays uncontrolled growth, invasion and sometimes metastasis (spreading to another part of the body)
- **Communicable disease:** an infectious disease transmissible (as from person to person) by direct contact with an affected individual or that individual's discharges or by indirect means (as by a vector)
- **Contagious disease:** an infectious disease communicable by contact with

one who has it, with a bodily discharge of such a patient, with an object touched by such a patient or by bodily discharges

- **Hemodynamic disorder:** blood or bleeding problems
- **Immunopathology:** a branch of medicine that deals with immune responses associated with disease; includes the study of the pathology of an organism, organ system or disease, with respect to the immune system, immunity and immune responses
- **Infectious disease:** a clinically evident disease resulting from the presence of pathogenic microbial agents
- **Inflammation:** biological response of vascular tissues to harmful stimuli, such as pathogens, damaged cells or irritants
- **Injury:** damage or harm caused to the structure or function of the body caused by an outside agent or force
- **Nature of disease:** an abnormal condition of an organism that impairs bodily functions, associated with specific symptoms and signs
- **Repair:** process by which the body begins to heal itself

The MT Knows

The MT must have a fundamental understanding of the nature of diseases, their treatments, etiology, signs and symptoms, as well as diagnostic and treatment modalities, prognoses, prevention, and pathologies of selected human systems

medical & surgical procedures

The MT must be familiar with different types of **surgical instruments**

- **Carriers** and **applicators** for optical, electronic and mechanical devices
- **Clamps** and **occluders** for blood vessels and other organs
- **Dilators** and **specula** for access to narrow passages or incisions
- **Distractors, positioners** and **stereotactic** devices
- **Graspers**, such as **forceps**
- **Irrigation** and **injection needles**, tips and tubes, for introducing fluid
- **Measurement devices**, such as **rulers** and **calipers**
- **Mechanical cutters** (*scalpels, lancets, drill bits, rasps, trocars, etc.*)
- **Powered devices**, such as **drills** and **dermatomes**
- **Retractors**, used to spread open skin, ribs and other tissue
- **Scopes** and **probes**, including fiber-optic **endoscopes** and tactile probes
- **Suction** tips and tubes, for removal of bodily fluid
- **Tyndallers**, to help "wedge" open damaged tissue in the brain
- **Ultrasound tissue disruptors**, **cryotomes** and **cutting laser guides**

The MT must be familiar with different **anesthesia types**



The MT Knows

Medical and surgical reports are generated every day, and the MT needs to have knowledge of surgical specialties, pathology reports, types of drugs and anesthesia used in the operating room (OR), the anatomy (structure) being operated on and the types of surgical instruments used

Local Anesthetics	General Anesthetics
Amethocaine	Desflurane
Bupivacaine	Enflurane
Cocaine	Halothane
Dibucaine	Isoflurane
Levobupivacaine	Nitrous Oxide
Lidocaine	Sevoflurane
Mepivacaine	
Prilocaine	
Procaine	
Ropivacaine	

pharmacology, diagnostic imaging & laboratory medicine

Knowledge of the basics of pharmacology, diagnostic imaging and laboratory tests are essential to effective medical transcription

- The MT must be able to identify common **diagnostic imaging modality testing**, such as:
 - computed tomography (CT) scan
 - echocardiogram
 - fluoroscopic procedures
 - interventional radiography
 - magnetic resonance imaging (MRI)
 - mammography
 - nuclear medicine
 - positron emission tomography (PET) scan
 - radiography (a.k.a., diagnostic radiology [DR])
 - single photon emission computed tomography (SPECT) scan
 - ultrasound (a.k.a., sonography or ultrasonography)
- The MT must be able to differentiate among **common tests** used in **pathology** and **laboratory medicine**, including:
 - diagnostic indications
 - techniques
 - expression of values
 - significance of findings
- The MT must be able to identify **laboratory testing methods** for various diseases and conditions:

The MT Knows

Understanding the language used in pharmacology, diagnostic imaging and laboratory medicine—including: drug classes, dosages and routes of administration; diagnostic imaging modalities; laboratory diagnostic tests, indications, techniques, expressions of values and significance of the findings—is critical to accurate medical transcription

Amino Acids	Lipid Panel
Chem 7	Liver Function Panel
Coagulation	PSA
Complete Blood Count (CBC)*	Renal Function Panel
Coronary	Thyroid
Electrolyte Panel	Toxins
Glucose Panel	Tumor Markers
Hormone Levels	Urinalysis
Immunology	Vitamins
[* most commonly ordered lab test]	

- The MT must be able to identify **normal laboratory value ranges**
 - laboratory values are dependent upon the lab doing the testing, but the MT should have some knowledge of:
 - blood values
 - cancer tumor markers
 - cardiac enzymes
 - hormones
 - lipids
 - urinalysis
 - and other values for common tests that doctors may order
- The MT must also be able to identify, pronounce, spell, define and apply **drug categories**
 - analgesics:** relieve pain
 - anesthetics:** suppress the sensation of feeling
 - antianxiety drugs:** calm anxious feelings and relieve muscle spasms
 - antibiotics:** suppress growth of bacteria
 - anticoagulants:** prevent blood from clotting
 - anticonvulsants:** inhibit or control seizures
 - antidepressants:** affect communication between cells
 - antidiarrheals:** control gastrointestinal distress
 - antiemetics:** prevent and control nausea and vomiting
 - antifungals:** treat fungal infections
 - antihistamines:** block histamines; used to treat allergies
 - antihypertensives:** lower blood pressure
 - anti-inflammatories:** reduce inflammation
 - antineoplastics:** chemotherapeutic agents
 - antivirals:** treat viral infections
 - corticosteroids:** reduce inflammation
 - diuretics:** remove fluid from cells
 - narcotics:** federally controlled substances that relax the central nervous system and relieve pain
 - tranquilizers:** relieve anxiety
- Furthermore, the MT must be able to distinguish common **drug classes, forms** and **dosages** and know the routes of **drug administration**:
 - oral
 - rectal
 - mucous* membrane
 - topical
 - parenteral
 - intra dermal
 - subcutaneous
 - intramuscular
 - intravenous (IV)

[*mucous is correctly spelled here because it is used as an adjective, modifying membrane; BUT, mucus is the correct spelling for the noun form: mucus is a slippery secretion]

medicolegal issues

- The MT continually handles **privileged patient information**
- When producing "official reports" it is imperative for transcriptionists to be aware of:
 - current laws affecting healthcare
 - patient service activities
 - proper policies and procedures for completing and submitting "official documents"
- Therefore, the MT must:
 - know that a patient's **health record** is a **legal document**
 - demonstrate a general knowledge of standards and regulations related to **healthcare documentation**, as set by the following organizations:
 - Association for Healthcare Documentation Integrity (AHDI, formerly known as the American Association of Medical Transcriptionists [AAMT])
 - American Health Information Management Association (AHIMA)
 - American Medical Association (AMA)

- Joint Commission on Accreditation of Healthcare Organizations (JCAHO)
- National Committee of Quality Assurance (NCQA)
- Health Level 7 (HL7)
- Centers for Medicaid and Medicare Services (CMS)
- apply the concepts of *Health Insurance Portability and Accountability Act* (HIPAA)
- apply the **code of ethics** as presented by the Association for Healthcare Documentation Integrity (AHDI)



The MT Knows

Medical transcription requires an understanding of both medical and legal concepts and ethics—remember that the **medical record is a legal document!**

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