Anatomy and Pathophysiology for ICD-10 Overview

Introduction

• ICD-10-CM and ICD-10-PCS will increase the amount of codes available to describe diagnoses and procedures.
• An in depth understanding of Anatomy and Pathophysiology will ensure the most accurate code is assigned to describe the clinical condition of each patient.
Why?
• I have been coding for over 30 years, I KNOW A&P!
• Has the structure and function of the body changed with the implementation of ICD-10?
• We still have to rely on the documentation in order to choose a code anyway, why should I learn A&P?

Doing the same thing for 30 years
• There are many reasons to move forward from ICD-9
  – Outdated codes
  – Outdated terminology
  – Better understanding of disease processes
  – Advances in medical care
• If we keep doing things the same way we have always done then how will we improve?
Body structure and function

• While the structure and function of the body has not changed, and will not change with the implementation of ICD-10, now is a good time to brush up on A&P knowledge so that we can provide better education to the providers on this new coding system
• New coders must have a strong foundation in this area to understand coding processes

They are here for a reason

• One of the main reasons that ICD-10-CM and PCS are being implemented is to provide better information for statistical tracking of diseases and for the Centers for Medicare and Medicaid services to be able to identify fraudulent claims quickly
• Now is the time to educate the provider industry on how to apply the most accurate diagnosis code available
Documentation

• “If it’s not documented, it cannot be billed”
  – Notes will always be coded based on the clinical documentation that is provided.
• However, without an understanding of how disease processes work, we may be at a loss as to how to appropriately select the code that best describes the clinical picture of the patient.

Signs and Symptoms vs. Definitive Diagnoses

• ICD-10-CM guidelines continue to state that Signs and symptoms that are associated routinely with a disease process should not be assigned as additional codes, unless otherwise instructed by the classification
• Additional signs and symptoms that may not be associated routinely with a disease process should be coded when present
Terminology

• Having a solid understanding of medical terminology will help to locate the correct diagnosis code
• Some terminology in ICD-9-CM has become outdated and no longer represents the standards in the health care industry
• New terminology may require physician education as well

Metastatic Disease

• Many of the concepts of coding will remain the same.
• Metastatic disease always indicates that a cancer has spread from one site to another
• In these cases the neoplasm, malignant secondary codes must be assigned as the appropriate diagnosis
Exacerbation

• An exacerbation (as defined by Mosby’s Medical Dictionary) is an increase in the seriousness of a disease or disorder as marked by greater intensity in the signs or symptoms of the patient being treated
• Many codes have an option for exacerbation, when the patient has a worsening of their condition, this is considered an exacerbation

Intractable

• ICD-10-CM indicates the following terms are to be considered equivalent to intractable:
  – Pharmacoresistant (pharmacologically resistant)
  – Treatment resistant
  – Refractory (medically) and poorly controlled
Status

• Migraine codes have the designation of with status migrainosus and without status migrainosus
  – Status migrainosis indicates that the symptoms of the migraine have been continuous for more than 72 hours
• Also classified as with or without aura

Status

• Epilepsy codes also have the designation of with status epilepticus and without status epilepticus
  • Status epilepticus indicates 30 minutes of uninterrupted seizure activity
Anatomy

- A patient is found to have a primary malignant neoplasm of the right tibia
- Two code choices
  - Neoplasm table
    - Neoplasm, leg NEC, malignant primary C76.51
      - C76.51 Malignant neoplasm of right lower limb
    - Neoplasm, tibia (any part), malignant primary C40.21
      - C40.21 Malignant neoplasm of long bones of right lower limb

Blood and Lymphatic Systems

- The hemic system is the system that passes nutrients, gases, hormones, blood cells, etc., to and from cells in the body to help fight diseases, stabilize body temperature and pH to maintain homoeostasis.
- Made up of blood containing vessels:
  - Arteries, capillaries, and veins
Blood and Lymphatic Systems

- The lymphatic system is part of the immune system
- Three primary functions:
  - Defend against invading microorganisms and disease
  - Return excess interstitial fluid to the body
  - Absorb fats and fat-soluble vitamins from the digestive system and transport them as chyle to the venous circulation

Lymph System

- Organs that make up lymph system:
  - Lymph nodes
  - Tonsils
  - Thymus
  - Spleen
Hypertension in ICD-10-CM

- The following is necessary to code for Hypertension in ICD-10-CM:
  - Essential or secondary
  - Causal relationship of other conditions
  - Elevated blood pressure versus hypertension

Infectious Disease

- Infectious diseases are usually a clinically evident illness that results from the transmission and presence of pathogenic biological agents
- Infectious pathogens include some viruses, bacteria, fungi, protozoa, multicellular parasites, and aberrant proteins known as prions
Integumentary System

- Made up of the structures that cover the body to provide a protective barrier against outside invasion of harmful substances:
  - Skin
  - Hair
  - Nails
  - Sebaceous glands
  - Sweat glands

Pressure Ulcers

- Also called bed sores or decubitus ulcers
- Caused by many factors:
  - unrelieved pressure
  - friction
  - humidity
  - shearing forces
  - temperature
  - age
  - continence and medication
ICD-10-CM Examples

- L89.2Ø3  Pressure ulcer of unspecified hip, stage III
- L89.213  Pressure ulcer of right hip, stage III
- L89.223  Pressure ulcer of left hip, stage III

ICD-10-CM

- Code range for pressure ulcers is L89.ØØØ – L89.95.
- Code selections include:
  - Anatomic site
  - Laterality, when appropriate
  - Stage of pressure ulcer
Respiratory System

- Allows for the exchanges of gases between the human body and the outside environment
- Made up of the following organs:
  - Nose, sinuses, pharynx, larynx, trachea, bronchi, and lungs

COPD

- Chronic obstructive pulmonary disease is one of the most common lung diseases
- Lung damage and inflammation in the large airways results in chronic bronchitis
  - defined in clinical terms as a cough with sputum production on most days for three months of a year for two consecutive years
Cardiovascular System

- Cardiovascular system is made up of the heart, arteries, veins, and capillaries
- Carries blood from the heart to the lungs, then into pulmonary circulation to the rest of the body, then back to the heart in systemic circulation
- Delivers oxygen and nutrients to the body

Cardiovascular system

- Myocardial infarction (MI) or acute myocardial infarction (AMI)
  - Interruption of blood supply to a part of the heart, causing heart cells to die
  - Commonly due to occlusion of a coronary artery following the rupture of a vulnerable atherosclerotic plaque
New vs. subsequent MI timeframe

• Subsequent MI codes are to be used when a patient who has suffered an AMI has a new AMI within the 4-week time frame of the initial
• ICD-9-CM had an 8-week time frame

Digestive System

• Made up of the gastrointestinal tract
• Mouth, pharynx, esophagus, stomach, small intestine, large intestine, rectum, and anus all make up the digestive tract
• Primary function of the digestive system is to break down the food we eat into smaller parts so the body can use it to build and nourish cells and provide energy
Stomach and Duodenal Ulcers

• A stomach ulcer is called a gastric ulcer and an ulcer in the duodenum is called a duodenal ulcer

• Ulcers are caused by hydrochloric acid and pepsin that are contained in our stomach and duodenal parts of our digestive system

Coding for ulcers

• Code choice selections include:
  – Acute or chronic condition
  – Hemorrhage
  – Perforation
  – Hemorrhage with perforation
  – Without hemorrhage or perforation
Genitourinary System

- System includes the organs that function in reproduction and urinary excretion
  - Major structures of the urinary system are the kidneys, ureters, bladder, and urethra
  - Major structures of the reproductive system in males are the testes, sperm ducts, urethra, and penis
  - Major structures of the reproductive system in females are the ovaries, fallopian tubes, uterus, and vagina

Chronic Kidney Disease

- Chronic kidney disease (CKD) is the slow loss of kidney function over time
  - Main function of the kidneys is to remove waste and excess water from the body
- Five Stages
  - Stage 1 - Slight kidney damage with normal or increased filtration
  - Stage 2 - Mild decrease in kidney function
  - Stage 3 - Moderate decrease in kidney function
  - Stage 4 - Severe decrease in kidney function
  - Stage 5 (or End Stage) - Kidney failure
Reproductive System

• Ovaries are the female sex glands and produce estrogen and progesterone
  – Lie within the pelvic cavity on either side of the uterus
  – Secrete both estrogen and progesterone

• Testes are the male sex glands and produce testosterone
  – Located behind the penis in the scrotum
  – Produce and store spermatozoa and to produce male sex hormones

Endocrine

• Consists of a series of ductless glands: pituitary, thyroid, pineal, parathyroid, thymus, adrenal, pancreas, ovaries, and testes
  – Secretes hormones into the blood via the endocrine glands
  – Hormones are grouped into three classes based on their structures—steroids, peptides, and amines.
Diabetes

• Diabetes Mellitus
  – Also called hyperglycemia
  – Disease of the endocrine system in which either
    the beta cells fail to secrete insulin or target cells
    fail to respond to insulin
  – Diabetes can be caused by too little insulin,
    resistance to insulin, or both

Diabetes

• In ICD-10-CM, diabetes is no longer classified
  as controlled or uncontrolled
• Now classified as with or without complication
• Combination codes include the type of
  diabetes mellitus, the body system affected,
  and the complications affecting that body
  system
Examples

- E11.3 - Type 2 diabetes mellitus with ophthalmic complications
- E11.4 - Type 2 diabetes mellitus with neurological complications
- E11.5 - Type 2 diabetes mellitus with circulatory complications
- E11.6 - Type 2 diabetes mellitus with other specified complications
- E11.9 - Type 2 diabetes mellitus without complications
- E11.8 - Type 2 diabetes mellitus with unspecified complications

Musculoskeletal System

- Made up of two systems
  - Muscle
  - Skeletal
- Comprised of:
  - Muscle, bone, joints, ligaments, tendons, and cartilage
Skeletal System

• The bones of the body fall into four general categories:
  – Long bones
  – Short bones
  – Flat bones
  – Irregular bones

Muscular System

• Human body contains more than 650 individual muscles attached to the skeleton
  – helps to keep bones in place
  – provides the pulling power for us to move around
### Fractures

- **Types of fractures:**
  - Displaced fractures
  - Non-displaced fractures
  - Closed fracture
  - Open fracture
  - Greenstick fracture
  - Transverse fracture
  - Spiral fracture
  - Oblique fracture
  - Compression fracture

### Coding for fractures in ICD-10-CM

- **Information necessary to code to the highest level of specificity:**
  - Location of fracture
  - Laterality, as appropriate
  - Displaced or nondisplaced
  - Open or closed
  - Type of fracture
  - Episode of care
  - Complications of healing, if present
Open Fractures

• Gustilo open fracture classification consists of three major categories to indicate:
  – Mechanism of injury
  – Soft tissue damage
  – Degree of skeletal involvement

Mental Disorders

• Exact cause of most mental illnesses is not known
• Many of these conditions are caused by a combination of genetic, biological, psychological and environmental factors
• Medical conditions that disrupt a person’s thinking, feeling, mood, ability to relate to others, and daily functioning
Mood Disorders

• One of the most commonly reported conditions in psychiatry
• Characterized by a disturbance in the regulation of mood, behavior, and affect and are divided into three major categories:
  – depressive disorders, bipolar disorders, and depression-associated medical illness or drug and alcohol abuse

ICD-10-CM classification for mood disorders

• Code choice selections include:
  – Type of disorder
  – Severity
  – Status
  – Associated conditions, as necessary
Eye and Adnexa

• Eyes are the most complex of all the sensory organs involving a much larger area of the brain than other senses

• Eye is often compared to a camera

Structure and Function

• Several structures compose the eye
  – Includes the cornea, conjunctiva, iris, crystalline lens, vitreous humor, retina, macula, optic nerve, and extraocular muscles

• There are three layers of tissue that compose the spherical structure of the eye
  – The sclera (the outermost layer), the choroid (the middle layer), and the retina (the innermost layer)
Cataracts

• Clouding that develops on the lens of the eye, which can obstruct the amount of light that comes through
  – Three different types of age-related (senile) cataracts, which are characterized by their location on the lens
• Surgery is most common form of treatment

Ear and Mastoid

• Ear is the organ of hearing and equilibrium
• External ear collects sound waves in the air and channels them to the inner parts of the ear
• Middle ear transforms the acoustical vibration of the sound wave into mechanical vibration
• Semi-circular canals in the inner ear allow us to maintain balance and coordination
Ear Infections

- Otitis externa is an inflammation of the external ear and ear canal, and is usually accompanied by an infectious process.
- Otitis media is inflammation of the middle ear, which is normally air-filled.
  - Serous
  - Suppurative

Nervous System

- Nervous system acts as a control center for the entire body.
- Signals are then sent to other parts of the body and the response is carried out.
- Nervous system works with the endocrine system to maintain homeostasis.
Cerebrovascular Disease

- Cerebrovascular disease
  - Cerebrovascular accident (CVA), or stroke, occurs when the brain does not receive enough oxygen to function properly
  - Two types of cerebrovascular accidents: ischemic, hemorrhagic

ICD-10-CM coding for CVA

- Code choice selections include:
  - Type of cerebrovascular disease
  - Site
Pregnancy

- Starts with fertilization and ends with childbirth in an average span of 38 weeks
  - Scientific term for pregnancy is gravid
    - Nulligravida
    - Primigravida
    - Multigravida
    - Abortion
  - Trimesters
    - 1st trimester—less than 14 weeks 0 days
    - 2nd trimester—14 weeks 0 days to less than 28 weeks 0 days
    - 3rd trimester—28 weeks 0 days until delivery

Trimesters of Pregnancy

- Many of the codes in Chapter 15 – Pregnancy, Childbirth, and the puerperium (O00 – O9a) have a final character indicating the trimester of pregnancy
  - Certain codes have characters for only certain trimesters because the condition does not occur in all trimesters, but it may occur in more than just one
Example

• O26.0- Excessive weight gain in pregnancy
  – O26.00 Excessive weight gain in pregnancy, unspecified trimester
  – O26.01 Excessive weight gain in pregnancy, first trimester
  – O26.02 Excessive weight gain in pregnancy, second trimester
  – O26.03 Excessive weight gain in pregnancy, third trimester

• Trimesters are counted from the first day of the last menstrual period

Abortion

• Describes termination of pregnancy prior to the fetus reaching a viable age
• Spontaneous abortion is also known as a miscarriage, and occurs due to an abnormality of the embryo or fetus
ICD-10-CM coding for Abortions

- Information required for coding abortions in ICD-10 includes:
  - The type of abortion
  - Complications
  - Complete vs. incomplete
  - Stage of gestation

Fetal extensions

- ICD-10-CM has seventh character extensions to describe the fetus that is affecting the maternal care
  - O31- Complications specific to multiple gestation
Congenital Malformations

• Any type of “defect” present at time of birth is known as congenital
  – Development of a structure is somehow disrupted early in embryonic life
  – Damage is permanent
  – More than 4,000 different known birth defects

Structure and Function

• Chromosome is a structure within cells that contains the cell’s genetic material
• Molecule of DNA is a very long, coiled structure that contains many identifiable subunits known as genes
  – Single molecule of DNA within a chromosome may be as long as 8.5 centimeters
• Humans have 46 chromosomes that are arranged in 23 pairs
Congenital Heart Defects

- Defects in the structure of the heart and great vessels present at birth are known as congenital heart defects
- Among the most common birth defects
- ICD-10-CM codes are chosen based on the site of the defect

Conclusion

- While it is not necessary to take advanced courses on A&P, it will be beneficial to all coders to take some sort of training to refresh and enhance their knowledge.
- Be prepared to make the transition to ICD-10 by having a solid understanding of disease processes, and the codes available to report these conditions to their highest level of specificity
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