



Knowledge Activity: Classification and Terminology Systems (Master's)

Learning objectives

1. **Apply** diagnosis/procedure codes according to current guidelines (3)
2. **Identify** the functions and relationships between healthcare classification systems (3)
3. **Analyze** current regulations and established guidelines in clinical classification systems (4)
4. **Map** terminologies, vocabularies and classification systems (4)
5. **Evaluate** the accuracy of diagnostic and procedural coding (5)
6. **Evaluate, implement and manage** electronic applications/systems for clinical classification and coding (5)
7. **Evaluate** the accuracy of diagnostic and procedural coding (5)
8. **Interpret** terminologies, vocabularies and classification systems (5)
9. **Construct and maintain** processes, policies, and procedures to ensure the accuracy of coded data based on established guidelines (6)
10. **Construct** examples of mapping of clinical vocabularies and terminologies to appropriate classification systems (6)

Student instructions

1. If you have questions about this activity, please contact your instructor for assistance.
2. You will review the chart of *Zain Hamdan* to complete this activity. Your instructor has provided you with a link to the **Classification and Terminology Systems (MS)** activity. Click on **2: Launch EHR** to review the patient chart and begin this activity.
3. Refer to the patient chart and any suggested resources to complete this activity.
4. Document your answers directly on this activity document as you complete the activity. When you are finished, you will save this activity document to your device and upload this activity document with your answers to your Learning Management System (LMS).

Glossary

Classification system: a system “that arranges or organizes like or related entities.” (Giannangelo, 2014). A classification system is used to classify clinical procedures and conditions, enabling statistical data across the national and international healthcare systems.



Classification systems have other applications in healthcare, including research, performance monitoring, reimbursement, public health reporting and quality of care assessment. (Alakrawi, 2016).

Some common classification systems (World Health Organization, 2016):

- **International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM):** Coding system used to classify and code diagnoses and procedures. Was used in the United States until September 30, 2015.
- **International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10):** Classification system used for systematic recording, analysis, interpretation, and comparison of mortality and morbidity data from different countries and to translate diagnoses, diseases and other conditions into codes. Implemented as the standard coding system for classifying diseases and related health problems in the United States on October 1, 2015. Implementation in Canada as ICD-10-CA began in 2001.
- **International Classification of Diseases, 10th revision, Clinical Modification (ICD-10-CM):** Coding system used to report diseases and conditions of US healthcare patients.
- **International Classification of Diseases, 10th revision, Procedure Coding System (ICD-10-PCS):** Coding system developed to replace Volume 3 of the ICD-9-CM manual.
- **Current Procedural Terminology (CPT):** Coding system established by the American Medical Association for coding of procedures and services.

Terminology system: a system characterized by “a set of concepts and relationships that provide a common reference point for comparisons and aggregation of data about the entire health care process, recorded by multiple different individuals, systems, or institutions.” (Imel, M. & Campbell, J., 2003).

One of the most common terminology systems is the Systematized Nomenclature of Medicine - Clinical Terms (SNOMED CT).

- **SNOMED CT:** a controlled, multilingual medical terminology system that healthcare providers use for the electronic exchange of clinical health information, which provides structured terminology to enable coding of an entire medical record. (Imel, M. & Campbell, J., 2003).



The activity

EHR Go is an educational EHR used for educational purposes only and does not contain 100 percent of classification codes that might be found in an EHR in practice. EHR Go has ICD-9, ICD-10 and CPT codes, but does not have SNOMED CT.

Differences between ICD-9 and ICD-10

There are significant differences between ICD-9 and ICD-10 codes. There are nearly 19 times as many procedure codes and nearly 5 times as many diagnosis codes in ICD-10-CM than in ICD-9-CM. Further, ICD-10 uses alphanumeric categories instead of simple numeric categories like ICD-9 does. (CDC, n.d.-b).

| Differences Between ICD-9-CM and ICD-10 Code Sets | | |
|---|--|--|
| | ICD-9-CM | ICD-10 code sets |
| Procedure | 3,824 codes | 71,924 codes |
| Diagnosis | 14,025 codes | 69,823 codes |
| ICD-10 Code Structure Changes (selected details) | | |
| | Old | New |
| Diagnosis Structure | ICD-9-CM | ICD-10-CM |
| | <ul style="list-style-type: none"> • 3-5 characters • First character is numeric or alpha • Characters 2-5 are numeric | <ul style="list-style-type: none"> • 3-7 characters • Character 1 is alpha • Character 2 is numeric • Characters 3 – 7 can be alpha or numeric |
| Procedure Structure | ICD-9-CM | ICD-10-PCS |
| | <ul style="list-style-type: none"> • 3-4 characters • All characters are numeric • All codes have at least 3 characters | <ul style="list-style-type: none"> • ICD-10-PCS has 7 characters • Each can be either alpha or numeric • Numbers 0-9; letters A-H, J-N, P-Z |

The ICD-10 codes include an expanded number of characters, which allows for greater specificity to identify disease etiology, anatomic site and severity.



ICD-10 Code Structure:

- Characters 1-3 – Category
- Characters 4-6 – Etiology, anatomic site, severity, or other clinical detail
- Character 7 – Extension

Character 7 for ICD-10 indicates:

A – Initial encounter

D – Subsequent encounter

S – Sequela

(Mitchell, D., 2014).

- **Initial encounter:** Patient’s initial encounter for active treatment of an injury. (CDC, n.d.-a)

Example: A patient is seen in the Emergency Department for a displaced transverse fracture of the left ulna. The ED applies ice and immobilization, but the fracture cannot be managed immediately. Instead, the ED advises the patient to seek follow-up with an orthopedic specialist. This ED encounter would be reported using *S52.222A Displaced transverse fracture of the left ulna, initial encounter for closed fracture*. (Mitchell, D., 2014).

Should the patient see an orthopedist the next day, and the orthopedist is able to reduce the fracture, this would be considered initial active treatment for the fracture. Because the ED was only able to provide comfort care, the encounter with the orthopedist would be considered the first encounter of definitive care. Therefore, this encounter would also be considered an initial encounter and S52.222A code would again be used. (Mitchell, D., 2014).

- **Subsequent encounter:** “Encounters after the patient has received active treatment of the injury and is receiving routine care for the injury during the healing or recovery phase.” (CDC, n.d.-a)

“Examples of subsequent care are: cast change or removal, removal of external or internal fixation device, medication adjustment and follow up visits following injury treatment.” (CDC, n.d.-a)

- **Sequela:** “for use for complications or conditions that arise as a direct result of an injury, such as scar formation after a burn. The scars are sequelae of the burn.” In other words, sequela are the late effects of an injury. (CDC, n.d.-a)



Introducing SNOMED CT

SNOMED CT is a standard clinical terminology system with specific support for multi-lingual translation. SNOMED CT can cross-map to other international standards and classifications. (Alakrawi, 2016). For example:

- SNOMED CT to ICD-9-CM Reimbursement Map
- SNOMED CT to ICD-10-CM Map
- ICD-9-CM Diagnostic Codes to SNOMED CT Map
- ICD-9-CM Procedure Codes to SNOMED CT Map

Knowing how to cross-map the coding systems is important for data collection, retaining the value of the data when going from one database to another, limiting or preventing errors, and controlling costs. U.S. National Library of Medicine. (n.d.).

Differences between SNOMED CT and ICD-10

- SNOMED CT coding is completely automated by the system, while ICD-10 coding is usually performed manually by professional coders. Although coders may utilize computer-assisted coding (CAC), human intervention is still required to validate the coding.
- SNOMED CT has more specific clinical coverage than ICD-10, with 100,000 coding concepts in SNOMED CT compared to 68,000 ICD-10 diagnosis codes. As a result, more than one ICD-10 code may be needed to represent one concept in SNOMED CT.
- SNOMED CT is more clinician friendly. ICD-10 codes often include conventions used by coders (e.g. initial encounter, subsequent encounter, sequela, etc.) that are irrelevant and confusing for clinicians.
- ICD-10 is utilized by a wider spectrum of healthcare users and, unlike SNOMED CT, can help provide patients with information on treatment options, costs and outcomes.
- ICD-10 provides a much simpler system for the collection and reporting of data for research, which, in turn, benefits consumers through improved reimbursement systems, surveillance of public health and monitoring of administrative performance.

(Alakrawi, 2016).

EHR Go and SNOMED CT

There is not SNOMED-CT or a mapping system between ICD-9 and ICD-10 terms and codes in the EHR Go EHR. Users must select the appropriate codes manually. On the Problems tab of the



patient chart, after choosing the **New** button in the bottom right corner, users have the option to search for and define problems using ICD-9, ICD-10, or a free-text “Add Other” option.

A screenshot of the 'New' problem form. It includes a dropdown for 'Author' (Clara Rojo, RHIT), a dropdown for 'Problem:' (Please select problem), and radio buttons for 'Status' (Active, Inactive, Resolved, Removed) and 'Immediacy' (Acute, Chronic, Unknown, S/P). To the right of the 'Problem:' dropdown are radio buttons for 'ICD9', 'ICD10', and 'Add Other'. A red arrow points to the 'Add Other' option.

Assigning an ICD-10 diagnosis code or a CPT procedure code for billing purposes can be done from the **Account** section of the chart under the **Claims** tab.

To add a diagnosis code, users can click on the **Add Diagnosis** button under the Diagnosis or Nature of Illness or Injury section of the Account/Claims tab.

A screenshot of the 'Diagnosis or Nature of Illness or Injury' section. It shows a table with columns for 'Line #', 'ICD10 Code', and 'Description'. In the bottom right corner, there is a blue button labeled 'Add Diagnosis'. A red arrow points to this button.A screenshot of the 'Add New Diagnosis' dialog box. It has a title bar 'Add New Diagnosis'. Below the title bar, there is a 'Line #' field with the value '1'. Below that is an 'ICD10 code:' field with a dropdown menu showing 'Please select'. At the bottom right, there are two buttons: 'Cancel' and 'Add'.

To add a procedure code, users can click on the **Add Procedure** button under the Procedure/Service/Supplies section of the Account/Claims tab.



Procedure/Service/Supplies

| From | To | Place of Service | CPT/HCPCS | Description | Modifier(s) | Diagnosis Pointer | Charges | Days or Units | Rendering Provider |
|-------------------------------|----|------------------|-----------|-------------|-------------|-------------------|---------|---------------|--------------------|
| Add Procedure | | | | | | | | | |

Add New Procedure

Date(s) of Service:

Place of Service:

Rendering Provider:

CPT/HCPCS:

Modifier 1:

Modifier 2:

Modifier 3:

Modifier 4:

Charge:

Days or Units:

Diagnosis Pointer:

Apply your knowledge

Open the EHR for patient Zain Hamdan. Utilizing the information found in the patient’s chart and the information provided above, answer the questions below.

Questions

Zain’s back pain has recently worsened because of a fall, and his problem of chronic pain needs to be added to the problem list in his chart. Click on the **Problems** tab in Zain’s EHR. Click on



New in the bottom right corner. Look up the ICD-9 code for *Chronic pain due to trauma* by selecting the ICD-9 option to the right of the Problem field and performing a search as outlined above on page 5.

1. What is the ICD-9 code for *Chronic pain due to trauma*?

338.21

2. Next, search for the ICD-10 code for *Chronic pain due to trauma*. What is the ICD-10 code?

G89.21

3. Close out of the Problem Edit screen by clicking **Cancel**. Choose **Don't Save**. Zain has a problem of Primary pulmonary hypertension in his chart that is classified with an ICD-9 code. What is the ICD-9 code?

416.0

4. If the ICD-9 code for Primary pulmonary hypertension were updated to an ICD-10 code in the chart, what would the ICD-10 code be?

127.0

5. Zain has a problem entered in his chart for gastroesophageal reflux disease that is not coded using an ICD code. If an ICD-10 code needed to be assigned to this problem, what additional information would be helpful to know regarding Zain's gastroesophageal reflux disease?

Gastroesophageal reflux disease "due to..."

6. Spelling is important when searching for ICD codes. If a user was searching for an ICD-10 code for "gastroesophageal" or GERD (instead of gastroesophageal"), what would they discover?

No matches were found

7. What does this tell you about search protocol for ICD codes?



Accuracy is important. When I searched for “gastroesophageal,” these three options became available to choose from:

- **K21.0 Gastro-esophageal reflux disease with esophagitis**
- **K21.9 Gastro-esophageal reflux disease without esophagitis**
- **K21.0 Gastro-esophageal reflux laceration-hemorrhage syndrome**

8. To better understand the differences between ICD-9s and ICD-10s, assume that Zain was also suffering from a dog bite. Perform another search on the **Problem** tab. Search for “dog” under both ICD-9 and ICD-10. List all ICD-9 and ICD-10 codes associated with a dog bite or being bitten by a dog.

- **ICD-9: (DOG BITE) E906.0**
- **ICD-10: (BITTEN BY DOG) W54.0XXA, W54.0XXD, W54.0XXS**
- **ICD-10: (STRUCK BY DOG) W54.1XXA, W54.1XXD, W54.1XXS**

9. Based on your answer to #7, what is a key difference between ICD-9 and ICD-10 codes?

1CD-9 diagnoses are limited and less descriptive when compared to 1CD-10

Imagine that it was determined that Zain has a dislocation of the left ankle after his recent fall. As a result, the doctor is placing him in a short leg cast that will begin below his knee and go to his toes. He will be allowed to walk with the cast on.

A claim for his diagnosis and procedure is needed. Click on the **Account** tab in Zain’s chart and then choose the **Claims** tab. Select **New** in the bottom right corner. Refer to page 5 for more detail on adding a diagnosis code and CPT procedure code to a claim. (Note: you only need to look up the appropriate codes and do not need to enter and save them in the chart).

10. What is the ICD-10 code for the diagnosis of dislocation of the left ankle?

M24.472

11. What is the procedure name and CPT code for this type of cast?

29425: Application of short leg cast (below the knee to toes); walking or ambulatory type



12. In your opinion, how does the human factor (data entry, manual abstraction, human error, etc.) impact the success of using classification systems? Provide details and examples to support your answers.

If you bring awareness to the human element of errors, you have a better chance to evaluate the limitations of the coding and application.

13. What steps would you recommend a facility take to ensure the accuracy of the coded data in their patient diagnoses and procedures?

- **Ongoing education and training**
- **Accurate documentation**
- **Audits**
- **Updated reference manuals**
- **Physician and company buy-in**

14. EHR Go EHR has electronic ICD-9, ICD-10, and CPT code look-up. Evaluate these applications and make any suggestions for improvement.

Unfortunately, I do not have enough working knowledge to make informed suggestions for improvement.

15. Provide an example of mapping a clinical term to both ICD-9 and ICD-10. For example, the clinical term of “headache” could potentially be mapped to an ICD-9 of 784.0 and ICD-10 of R51.

According to Rhonda Butler, CCS, CSS-P, there is a need to translate old and new classification codes and terminologies to support interoperability. In her opinion, this has been long overdue. The 2.15 version of Logical Observation Identifiers Names and Codes (LOINC) and the 2005 Current Procedural Terminology (CPT) assume CPT will be submitted for billing and LOINC will be used for laboratory testing.

Submit your work

Document your answers directly on this activity document as you complete the activity. When you are finished, save this activity document to your device and upload this activity document with your answers to your Learning Management System (LMS). If you have any questions about submitting your work to your LMS, please contact your instructor.



References

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