ICD-10-CM Overview and Mapping
For Environmental Epidemiology Program

APRIL 8, 2015

ICD-10-CM Chapters
(paraphrased)

<table>
<thead>
<tr>
<th>#</th>
<th>Codes</th>
<th>Descriptions</th>
<th>#</th>
<th>Codes</th>
<th>Descriptions</th>
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<tbody>
<tr>
<td>1</td>
<td>A00-B99</td>
<td>Infections</td>
<td>11</td>
<td>K00-K93</td>
<td>Digestive System</td>
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<td>L00-L99</td>
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<td>3</td>
<td>D50-D98</td>
<td>Blood Disorders</td>
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<td>M00-M99</td>
<td>Muscle/Bone</td>
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<td>4</td>
<td>E00-E90</td>
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<td>N00-N99</td>
<td>Gentourinary</td>
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<td>6</td>
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<td>Nervous System</td>
<td>16</td>
<td>P00-P96</td>
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<td>7</td>
<td>H00-H59</td>
<td>Eye</td>
<td>17</td>
<td>Q00-Q99</td>
<td>Malformations</td>
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<td>8</td>
<td>H60-H95</td>
<td>Ear</td>
<td>18</td>
<td>R00-R99</td>
<td>Symptoms</td>
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<td>9</td>
<td>I00-I99</td>
<td>Circulatory System</td>
<td>19</td>
<td>S00-T98</td>
<td>Injuries, External causes</td>
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<tr>
<td>10</td>
<td>J00-J99</td>
<td>Respiratory System</td>
<td>20</td>
<td>V01-Y98</td>
<td>External Causes Morbidity</td>
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<td></td>
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<td>21</td>
<td>Z00-Z99</td>
<td>Health Factors</td>
</tr>
</tbody>
</table>

International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)

Chapter 9
(10 Blocks)

<table>
<thead>
<tr>
<th>Block</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>I00-I02</td>
<td>Acute rheumatic fever</td>
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<tr>
<td>I05-I09</td>
<td>Chronic rheumatic heart diseases</td>
</tr>
<tr>
<td>I10-I15</td>
<td>Hypertensive diseases</td>
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<tr>
<td>I20-I25</td>
<td>Ischemic heart diseases</td>
</tr>
<tr>
<td>I26-I28</td>
<td>Pulmonary heart disease and diseases of pulmonary circulation</td>
</tr>
<tr>
<td>I30-I52</td>
<td>Other forms of heart disease</td>
</tr>
<tr>
<td>I60-I69</td>
<td>Cerebrovascular diseases</td>
</tr>
<tr>
<td>I70-I79</td>
<td>Diseases of arteries, arterioles and capillaries</td>
</tr>
<tr>
<td>I80-I89</td>
<td>Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified</td>
</tr>
<tr>
<td>I95-I99</td>
<td>Other and unspecified disorders of the circulatory system</td>
</tr>
</tbody>
</table>
ICD-10-CM
(International Classification of Diseases, 10th Revision, Clinical Modification)

Diagnosis Format and Updated Terms

- ICD-9-CM
  - Unstable Angina: Includes Accelerated angina, Crescendo angina, De novo effort angina, intermediate coronary syndrome, Preinfarction syndrome, Worsening effort angina.

One-to-Many Concept
Atrial Fibrillation = ICD-9-CM code 427.31

- Paroxysmal atrial fibrillation
  - i 4 0 0
- Persistent atrial fibrillation
  - i 4 0 1
- Chronic atrial fibrillation
  - i 4 0 2

ICD-9-CM: Acute Myocardial Infarctions
Report these codes if within 8 weeks

- Acute MI Anteriorlateral Wall
- Acute MI Other Anterior Wall
- Acute MI Inferior Wall
- Acute MI Inferiorlateral Wall
- Acute MI Other Inferior Wall
- Acute MI Lateral Wall
- Acute MI True Prosterior Wall
- Acute MI Subendocardial
- Acute MI Other Specified Sites
- Acute MI Unspecified Site
Heart Walls

ICD-10-CM:
Acute (first) Myocardial Infarctions
Report these codes if within 28 days

• ST elevation (STEMI) MI Anterior Wall
  – i21.01 ST (STEMI) MI involving left main coronary artery
  – i21.02 ST (STEMI) MI involving left anterior descending coronary artery
  – i21.09 ST (STEMI) MI involving other coronary artery of anterior wall

• ST elevation (STEMI) MI Inferior Wall
  – i21.11 ST (STEMI) MI involving right coronary artery
  – i21.19 ST (STEMI) MI involving other coronary artery of inferior wall

• ST elevation (STEMI) MI Other Sites
  – i21.21 ST (STEMI) MI involving left circumflex coronary artery
  – i21.29 ST (STEMI) MI involving other sites

• ST elevation (STEMI) MI Unspecified Site
  – i21.3 Includes Acute Transmural MI of unspecified site
  – i21.3 Includes Acute MI, NOS

• Non-ST elevation (NSTEMI) MI
  – i21.4 Includes Acute Subendocardial MI or Non-Q wave MI

ICD-10-CM:
Subsequent (Another) Myocardial Infarctions
Report these codes if within 28 days

• Subsequent ST elevation (STEMI) MI Anterior Wall
  – i22.0

• Subsequent ST elevation (STEMI) MI Inferior Wall
  – i22.1

• Subsequent Non-ST elevation (NSTEMI) MI
  – i22.2

• Subsequent ST elevation (STEMI) MI Other Sites
  – i22.8

• Subsequent ST elevation (STEMI) MI Unspecified Site
  – i22.9

ICD-10-CM Official Coding Guidelines

• ICD-9-CM Guidelines
  – Apply MI codes for those within 8 weeks
    – During 8 weeks (last digit)
      • Initial episode of care without a discharge
      • Subsequent episode of care after discharge care
        or follow-up visits and encounters
    – After 8 completed weeks
      • Report old MI (412)

• ICD-10-CM Guidelines
  – Apply MI codes for those within 4 weeks (specifically 28 days)
    – During 4 weeks (28 days or less)
      • i21 codes (first attack) and/or i22 codes (another attack)
    – Apply from its onset in all healthcare settings
    – After 4 completed weeks (29 days or more)
      • Report aftercare codes (i24 or i25 or 248.812)
      • Report old MI (25.2)
Placeholder X

ICD-10-CM utilizes a placeholder character ‘X’.

‘X’ is used as a placeholder at certain codes to allow for future expansion. “X” is a valid code.

For codes less than 6 characters that require a 7th character, a placeholder X must be used for all characters less than 6. The 7th character must always be the 7th character of a code.

Example: Sepsis following immunization is T88.0. The 4-digit code has a coding instruction to use 7th character.

X Fillers are Valid Values

- Sepsis following Immunization, Initial Encounter
  - T 8 8 0 X X A

- Sepsis following Immunization, Subsequent Encounter
  - t 8 8 0 x x d

- Sepsis following Immunization, Sequela
  - T 8 8 0 X x S

7th Character

Also called “7th character extensions”

They are found predominately in two chapters:

Chapter 15 Pregnancy, Childbirth, Puerperium
7th character: Fetus is identified which fetus(s) is affected by the complication of pregnancy.

Chapter 19 Injury, Poisoning, and External Causes
7th character: Episode of Care as initial, subsequent, or sequela.

Encounters for certain chapters

- Sepsis following Immunization, Initial Encounter
  - T 8 8 0 X X A

- Sepsis following Immunization, Subsequent Encounter
  - t 8 8 0 x x d

- Sepsis following Immunization, Sequela
  - T 8 8 0 X x S
Episode of Care

• \(A = \text{Initial Encounter}\) is defined as the period when the patient is receiving ‘active’ treatment for the injury, poisoning, or other consequences of an external cause.

  • \(\text{Example:}\) An “A” may be assigned on more than one record.
    – If a patient is seen in the ER for a head injury evaluated by ER physician, then a CT scan is read by the radiologist, and a consultation by a neurologist, the 7th character “A” is reported for all three encounters (ER, Xray, New Doctor visit).
    – If the patient is admitted to the acute care hospital, the 7th character “A” is used for the entire period that the patient receives active treatment for the injury.

• \(D = \text{Subsequent Encounter}\) is defined as the period after the active phase of treatment and when the patient is receiving routine care for the injury during the period of healing or recovery.

  • \(\text{Subsequent encounter include:}\) cast change, removal of external or internal fixation device, medication adjustment, and follow-up of fracture treatments.

  • \(\text{Example:}\) A patient with an ankle sprain may return to the office to have joint stability re-evaluated and to ensure that the injury is healing properly. In this case, 7th character “D” is reported.

• \(S = \text{Sequela Encounter}\) is defined late effect where the residual condition developed long after the current injury healed.

  • \(\text{Example:}\) Scar due to old lacerations, deformity due to a nonunion fracture three months ago, paralysis due to previous accident, and brain damage from drug reaction that was discontinued six months ago.

Combination Codes

• ICD-9-CM multiple coding rules are complex and confusing. There are very few combination codes.

• To eliminate the confusion, ICD-10-CM created many combination codes, such as:
  - I25.110 Atherosclerotic heart disease of native coronary artery, with unstable angina pectoris
  - K50.011 Crohn’s disease of small intestine with rectal bleeding
  - K57.21 Diverticulitis of large intestine with perforation and abscess with bleeding
  - E11.341 Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema.
2 codes | ICD-9-CM
--- | ---
414.01 | Arteriosclerotic heart disease of native coronary artery
411.1 | Unstable angina

1 code | ICD-10-CM
--- | ---
i25.110 | Atherosclerotic heart disease of native coronary artery with unstable angina pectoris

ICD-10-CM has more combination codes.
Condition + Site/Symptom + Attribute about the diagnosis.

Stage 1:
Map Original ICD-9 Codes to ICD-10 Codes

Stage 2:
Map new ICD-10 Codes from Stage 1 to find more ICD-9 Codes

Stage 3:
Map new ICD-9 Codes from Stage 2 to find more ICD-10 Codes
**MAPPING Concept: Proper Direction**

9-to-10 Forward Map

<table>
<thead>
<tr>
<th>ICD-9 Description</th>
<th>Map</th>
<th>ICD-10 Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.11 Acute MI of other anterior wall, initial episode of care</td>
<td>F Map</td>
<td>I21.09 ST elevation (STEMI) MI involving other coronary artery of anterior wall</td>
</tr>
</tbody>
</table>

10-to-9 Backward Map

<table>
<thead>
<tr>
<th>ICD-10 Description</th>
<th>Map</th>
<th>ICD-9 Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I21.09 ST elevation (STEMI) MI involving other coronary artery of anterior wall</td>
<td>B Map</td>
<td>410.11 Acute MI of other anterior wall, initial episode of care</td>
</tr>
</tbody>
</table>

Match in general description

**MAPPING Concept: Reverse Direction**

Reverse Map

<table>
<thead>
<tr>
<th>ICD-10 Description</th>
<th>Map</th>
<th>ICD-9 Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.11 Acute MI of other anterior wall, initial episode of care</td>
<td>R Map</td>
<td>I21.09 ST elevation (STEMI) MI involving other coronary artery of anterior wall</td>
</tr>
<tr>
<td>I21.02 ST elevation (STEMI) MI involving left anterior descending coronary artery</td>
<td>R Map</td>
<td></td>
</tr>
<tr>
<td>I22.0 Subsequent ST elevation (STEMI) MI of anterior wall</td>
<td>R Map</td>
<td></td>
</tr>
</tbody>
</table>

Reverse Backward mapping logic

Use the backward map and reverse the lookup

Provide more specific codes ……..

**GEM Flags – What do they tell you?**

<table>
<thead>
<tr>
<th>ICD-9</th>
<th>Desc</th>
<th>ICD10</th>
<th>Desc</th>
<th>Approx</th>
<th>No Map</th>
<th>Comb</th>
<th>Scenario</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>411.81</td>
<td>Acute coronary occlusion without myocardial infarction</td>
<td>i24.0</td>
<td>Acute coronary thrombosis not resulting in myocardial infarction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- The **Approximate** Flag: code 0 means exact match.
- **Business rule:**
  - Do you take them as face-value?
  - Do you want to evaluate these exact-matches as well?

**GEM Flag: Exact Match**
### GEM Flag: Approximate Match

<table>
<thead>
<tr>
<th>ICD-9</th>
<th>ICD10</th>
<th>Approx</th>
<th>No Map</th>
<th>Comb</th>
<th>Scenario</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>518.53</td>
<td>J96.20</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- **The Approximate Flag**: code 1 means approximate match in descriptions.
- **Business rule**: How will these descriptions affect your project or study?

### GEM Flag: No Map

<table>
<thead>
<tr>
<th>ICD-9</th>
<th>ICD10</th>
<th>Approx</th>
<th>No Map</th>
<th>Comb</th>
<th>Scenario</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>707.25</td>
<td>NoDx</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- **The No Map Flag**: code 1 means there are no codes to match the description (often found in the proper direction).
- **Business rule**:
  - Are there any other codes to consider?
  - Consider reverse map to find additional codes?

### GEM Flag: Example of “No Map”

<table>
<thead>
<tr>
<th>ICD9</th>
<th>Description</th>
<th>Map</th>
<th>ICD10</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>707.25</td>
<td>Pressure Ulcer, unstageable</td>
<td>F Map</td>
<td>No Dx</td>
<td>No Dx</td>
</tr>
</tbody>
</table>

### GEM Flag: Combination

**Source**: 415.11 Iatrogenic pulmonary embolism and infarction

<table>
<thead>
<tr>
<th>ICD10 Target</th>
<th>Description</th>
<th>Approx</th>
<th>No Map</th>
<th>Comb</th>
<th>Scenario</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>T80.0xxA</td>
<td>Air embolism following infusion, transfusion, therapeutic injection, initial encounter</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>I26.90</td>
<td>Septic pulmonary embolism without acute cor pulmonale</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>I26.99</td>
<td>Other pulmonary embolism without acute cor pulmonale</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

- **The Combination Flag**: code 1 means it takes more than one target code to satisfy all the meaning of the source code.
- **Business rule**: Do you want to capture all choices or are you limited to one choice?
**GEM Flag: Example of Combination Clusters**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Choice</th>
<th>ICD-10</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>T80.00A</td>
<td>Air embolism following infusion, transfusion, therapeutic injection, initial encounter</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>i26.90</td>
<td>Septic pulmonary embolism without acute cor pulmonale</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Choice</th>
<th>ICD-10</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>T80.00A</td>
<td>Air embolism following infusion, transfusion, therapeutic injection, initial encounter</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>i26.99</td>
<td>Other pulmonary embolism without acute cor pulmonale</td>
</tr>
</tbody>
</table>

Source: 415.11 Iatrogenic pulmonary embolism and infarction

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**Inferior Wall and Right Coronary Artery**

- Inferior Wall
- Right Coronary Artery
- Lateral Wall

---

**How to Interpret and Decide?**

<table>
<thead>
<tr>
<th>Code</th>
<th>ICD-10-CM (4 weeks concept)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I21.11</td>
<td>ST Elevation (STEMI) MI involving right coronary artery</td>
</tr>
<tr>
<td>I22.19</td>
<td>ST Elevation (STEMI) MI involving other coronary artery of inferior wall</td>
</tr>
<tr>
<td>I22.1</td>
<td>Subsequent ST Elevation (STEMI), inferior wall</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>ICD-9-CM (8 weeks concept)</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.30</td>
<td>Acute MI of inferior posterior wall, unspec. episode of care</td>
</tr>
<tr>
<td>410.31</td>
<td>Acute MI of inferior posterior wall, initial episode of care</td>
</tr>
<tr>
<td>410.32</td>
<td>Acute MI of inferior posterior wall, subsequent episode of care</td>
</tr>
</tbody>
</table>

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**ICD-10-CM Official Guidelines for Coding and Reporting**

- Guidelines can be found in front of the ICD-10-CM codebook.
- Guidelines are located in the website:
  - For ICD-9-CM (bottom of this webpage) [http://www.cdc.gov/nchs/icd/icd10cm.htm](http://www.cdc.gov/nchs/icd/icd10cm.htm)
AHA ICD-10-CM and ICD-10-PCS Coding Handbook with Answers is a wonderful resource for the coding community. May be helpful to you.

http://www.ahacentraloffice.org/codes/products.shtml

Questions?

Thank You

Ginger Cox, RHIT, CCS