Comparative Analysis of ICD-10-CM with ICD-11 for Morbidity Coding

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Background

- ICD-11 adopted by the World Health Organization (WHO) in May 2019, will be implemented from January 2022
- In the US, we have been creating our own extension called Clinical Modification (ICD-9-CM, ICD-10-CM) for morbidity coding, because the international core is not precise enough to describe the clinical details
- What’s new in ICD-11
  - 40% bigger than ICD-10 (4,000 more codes)
  - Supports postcoordination (over 14,500 extension codes)
- Is a Clinical Modification still necessary?
Research topics the Committee recommends include:

Whether ICD-11 can fully support morbidity classification in the U.S. without development of a U.S. clinical modification (CM) and if not, are there areas to be targeted in a CM version. Development of a U.S. clinical modification for morbidity extends the implementation timetable and requires additional ongoing processes for curation of the classification.

First, adoption for mortality, i.e., cause of death, membership in the World Health Organization’s (WHO) surveillance. It is led by the National Center for Health Statistics with state vital registration and statistics.

Second, adoption for morbidity. ICD-11, while disorder states conditions, however, requires Health Level Seven since a new code set. Its use for morbidity is necessary for hospital billing, health care provider and setting settings. Uses include monitoring the incidence and prevalence of diseases, supporting claims for reimbursement, tracking of safety and quality guidelines, population health monitoring, research as well as state health data reporting.

The U.S. implemented ICD-10 for mortality reporting in 1999. It implemented it for morbidity in 2015, 25 years after it was endorsed by the WHO, and after a protracted regulatory process. As
Research method

- Identify the most commonly used ICD-10-CM codes
- Recode the ICD-10-CM codes in ICD-11 to assess coverage and level of equivalence
- Review coding guidance to look for subtle differences in the meaning of codes
Most commonly used ICD-10-CM codes

- Medicare claims are one of the biggest collections of ICD-10-CM codes in use
- Medicare claims data have been made available to researchers through the CMS Virtual Research Data Center
- However, Medicare patients are mostly > 65 and so missing codes from 3 chapters
  - Chapter 15 Pregnancy, childbirth and the puerperium
  - Chapter 16 Certain conditions originating in the perinatal period
  - Chapter 17 Congenital malformations, deformations and chromosomal abnormalities
- Alternative source of ICD-10-CM codes for these 3 chapters: University of Nebraska Medical Center (thanks to James Campbell and Ellen Kerns)
- All data are aggregate data and deidentified
Medicare claims:
- Jan – Dec 2017
- 61 million unique Medicare patients; 28,981 unique ICD-10-CM codes
- ICD-10-CM codes as principal or secondary diagnosis (except chapters 15,16 & 17)

Nebraska University Medical Center
- Oct 2015 – Mar 2020
- 778,000 unique patients, 23,832 unique ICD-10-CM codes
- ICD-10-CM codes as principal or secondary diagnosis from chapters 15,16 & 17

Most frequently used codes in each chapter covering 60% of unique patients: 962 ICD-10-CM codes

943 ICD-10-CM codes

19 obsolete ICD-10-CM codes excluded from study
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Code range</th>
<th>Total no. of codes in chapter</th>
<th>Top codes (60% usage)</th>
<th>Top codes as % of chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A00-B99 Certain infectious and parasitic diseases</td>
<td>1058</td>
<td>19</td>
<td>1.8%</td>
</tr>
<tr>
<td>2</td>
<td>C00-D49 Neoplasms</td>
<td>1661</td>
<td>66</td>
<td>4.0%</td>
</tr>
<tr>
<td>3</td>
<td>D50-D89 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism</td>
<td><strong>251</strong></td>
<td>5</td>
<td>2.0%</td>
</tr>
<tr>
<td>4</td>
<td>E00-E89 Endocrine, nutritional and metabolic diseases</td>
<td>908</td>
<td>10</td>
<td>1.1%</td>
</tr>
<tr>
<td>5</td>
<td>F01-F99 Mental, Behavioral and Neurodevelopmental disorders</td>
<td>747</td>
<td>10</td>
<td>1.3%</td>
</tr>
<tr>
<td>6</td>
<td>G00-G99 Diseases of the nervous system</td>
<td>622</td>
<td>13</td>
<td>2.1%</td>
</tr>
<tr>
<td>7</td>
<td>H00-H59 Diseases of the eye and adnexa</td>
<td>2606</td>
<td>51</td>
<td>2.0%</td>
</tr>
<tr>
<td>8</td>
<td>H60-H95 Diseases of the ear and mastoid process</td>
<td>653</td>
<td>18</td>
<td>2.8%</td>
</tr>
<tr>
<td>9</td>
<td>I00-I99 Diseases of the circulatory system</td>
<td>1378</td>
<td>14</td>
<td>1.0%</td>
</tr>
<tr>
<td>10</td>
<td>J00-J99 Diseases of the respiratory system</td>
<td>341</td>
<td>12</td>
<td>3.5%</td>
</tr>
<tr>
<td>11</td>
<td>K00-K95 Diseases of the digestive system</td>
<td>799</td>
<td>25</td>
<td>3.1%</td>
</tr>
<tr>
<td>12</td>
<td>L00-L99 Diseases of the skin and subcutaneous tissue</td>
<td>871</td>
<td>61</td>
<td>7.0%</td>
</tr>
<tr>
<td>13</td>
<td>M00-M99 Diseases of the musculoskeletal system and connective tissue</td>
<td>6487</td>
<td>43</td>
<td>0.7%</td>
</tr>
<tr>
<td>14</td>
<td>N00-N99 Diseases of the genitourinary system</td>
<td>672</td>
<td>10</td>
<td>1.5%</td>
</tr>
<tr>
<td>15</td>
<td>O00-O9A Pregnancy, childbirth and the puerperium</td>
<td>2267</td>
<td>45</td>
<td>2.0%</td>
</tr>
<tr>
<td>16</td>
<td>P00-P96 Certain conditions originating in the perinatal period</td>
<td>443</td>
<td>12</td>
<td>2.7%</td>
</tr>
<tr>
<td>17</td>
<td>Q00-Q99 Congenital malformations, deformations and chromosomal abnormalities</td>
<td>838</td>
<td>53</td>
<td>6.3%</td>
</tr>
<tr>
<td>18</td>
<td>R00-R99 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified</td>
<td>722</td>
<td>56</td>
<td><strong>7.8%</strong></td>
</tr>
<tr>
<td>19</td>
<td>S00-T88 Injury, poisoning and certain other consequences of external causes</td>
<td><strong>40654</strong></td>
<td>363</td>
<td>0.9%</td>
</tr>
<tr>
<td>20</td>
<td>V00-Y99 External causes of morbidity</td>
<td>6940</td>
<td>20</td>
<td><strong>0.3%</strong></td>
</tr>
<tr>
<td>21</td>
<td>Z00-Z99 Factors influencing health status and contact with health services</td>
<td>1266</td>
<td>37</td>
<td>2.9%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>72184</td>
<td>943</td>
<td>1.3%</td>
</tr>
</tbody>
</table>
Recoding in ICD-11

- Each ICD-10-CM code was recoded in ICD-11 by 2 terminologists (Julia – NLM, Shannon – NCHS) independently, results compared and discussed until consensus is reached.

- Coding guidelines
  - Use online WHO ICD-11 browser
  - Follow ICD-11 coding reference guide for morbidity
  - Ignore parts of the names that convey absence of information e.g., gout unspecified, Zoster without complications
  - Use ICD-11 codes that are equivalent to or broader than ICD-10-CM code
  - If no equivalent code is found, try postcoordination as directed by ICD-11 browser
Postcoordination in ICD-11

▪ New feature
▪ Allows combination of codes ("code clustering") to represent new meaning
▪ ICD-11 allows two kinds of post-coordination:
  ▪ Two or more main ("stem") codes (connected by "/")
    Urinary tract infection due to Extended spectrum beta-lactamase producing Escherichia coli = GC08.0 / MG50.27
    ▪ GC08.0 Urinary tract infection, site not specified, due to Escherichia coli
    ▪ MG50.27 Extended-spectrum beta-lactamase producing Escherichia coli
  ▪ Main ("stem") codes with one or more extension codes (connected by "&")
    Tuberculosis of prostate = 1B12.5 & XA63E5
    ▪ 1B12.5 Tuberculosis of the genitourinary system
    ▪ XA63E5 Prostate gland
GC08.0 Urinary tract infection, site not specified, due to Escherichia coli

Postcoordination

GC08.0 Urinary tract infection, site not specified, due to Escherichia coli

Associated with

MG50.27 Extended spectrum beta-lactamase producing Escherichia coli

Associated with (use additional code, if desired.)

MG50.2 Antibiotic resistant Escherichia coli
MG50.20 Sulfonamide or trimethoprim resistant Escherichia coli
MG50.21 Fluoroquinolone resistant Escherichia coli
MG50.22 Third generation cephalosporin resistant Escherichia coli
MG50.23 Fourth-generation cephalosporins resistant Escherichia coli
MG50.24 Carbapenem resistant Escherichia coli
MG50.25 Polymyxin resistant Escherichia coli
MG50.26 Penicillin resistant Escherichia coli

MG50.27 Extended spectrum beta-lactamase producing Escherichia coli

Code: GC08.0/MG50.27
### Three levels of representation

<table>
<thead>
<tr>
<th></th>
<th>Example</th>
<th>Number of ICD-10-CM codes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full representation without postcoordination</td>
<td>Q02 Microcephaly → LA05.0 Microcephaly</td>
<td>222 (23.5%)</td>
</tr>
<tr>
<td>Full representation with postcoordination</td>
<td>H52.13 Myopia, bilateral → 9D00.0 Myopia &amp; XK9J Bilateral</td>
<td>81 (8.6%)</td>
</tr>
<tr>
<td>Partial representation</td>
<td>S80.211A Abrasion, right knee, initial encounter → NC90.0 Abrasion of knee &amp; XK9K Right</td>
<td>640 (67.9%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>943 (100%)</td>
</tr>
<tr>
<td>Chapter</td>
<td>Full representation without postcoordination</td>
<td>Full representation with postcoordination</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>% of codes</td>
<td>% of usage</td>
</tr>
<tr>
<td>1</td>
<td>52.6%</td>
<td>70.1%</td>
</tr>
<tr>
<td>2</td>
<td>37.9%</td>
<td>46.8%</td>
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<tr>
<td>3</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>4</td>
<td>80.0%</td>
<td>86.6%</td>
</tr>
<tr>
<td>5</td>
<td>60.0%</td>
<td>54.5%</td>
</tr>
<tr>
<td>6</td>
<td>61.5%</td>
<td>55.8%</td>
</tr>
<tr>
<td>7</td>
<td>17.6%</td>
<td>29.6%</td>
</tr>
<tr>
<td>8</td>
<td>16.7%</td>
<td>30.0%</td>
</tr>
<tr>
<td>9</td>
<td>64.3%</td>
<td>87.6%</td>
</tr>
<tr>
<td>10</td>
<td>83.3%</td>
<td>92.8%</td>
</tr>
<tr>
<td>11</td>
<td>64.0%</td>
<td>81.2%</td>
</tr>
<tr>
<td>12</td>
<td>16.4%</td>
<td>21.6%</td>
</tr>
<tr>
<td>13</td>
<td>20.9%</td>
<td>33.1%</td>
</tr>
<tr>
<td>14</td>
<td>70.0%</td>
<td>72.6%</td>
</tr>
<tr>
<td>15</td>
<td>26.7%</td>
<td>34.2%</td>
</tr>
<tr>
<td>16</td>
<td>91.7%</td>
<td>96.7%</td>
</tr>
<tr>
<td>17</td>
<td>45.3%</td>
<td>44.1%</td>
</tr>
<tr>
<td>18</td>
<td>53.6%</td>
<td>56.3%</td>
</tr>
<tr>
<td>19</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>20</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>21</td>
<td>27.0%</td>
<td>21.5%</td>
</tr>
<tr>
<td>Chapter average</td>
<td>47.1%</td>
<td>53.1%</td>
</tr>
</tbody>
</table>
Inter-rater agreement in ICD-11 coding

943 (100%) ICD-10-CM codes

716 (75.9%) agreed on main ICD-11 code

380 (40.3%) neither used PC
83 (8.8%) one used PC
253 (26.8%) both used PC

227 (24.1%) disagreed on main ICD-11 code

111 (11.8%) neither used PC
69 (7.3%) one used PC
47 (5%) both used PC

199 (21.1%) same PC codes (78.7% agreement)
54 (5.7%) different PC codes

PC: postcoordination

NIH U.S. National Library of Medicine
Failure analysis

- Reviewed all codes that were partially represented
- Reasons for not achieving full representation:
  1. Missing information in postcoordination
     - Postcoordination not allowed e.g.,
       - H93.13 Tinnitus, bilateral → MC41Tinnitus (does not allow postcoordination)
     - Addition of existing extension code not allowed e.g.,
       - M25.552 Pain in left hip → ME82 Pain in joint & XA4XS4 Hip joint
         (further addition of extension code XK8G Left is not allowed)
     - Missing extension code e.g.,
       - S00.31XA Abrasion of nose, initial encounter
       - O16.3 Unspecified maternal hypertension, third trimester
       - T45.515A Adverse effect of anticoagulants, initial encounter
         » ICD-10-CM distinguishes between adverse effect (drug properly administered), poisoning (improper use) and underdosing (taking less than required)
• Reasons for not achieving full representation (cont’d):
  2. Residual categories
    • Both ICD-10-CM and ICD-11 have “catch-all” residual categories (e.g., R18.8 Other ascites, R26.2 Difficulty in walking, not elsewhere classified) to ensure coding of every possible case
    • The meaning of these categories depends on the neighboring codes (mainly the siblings)
    • Even apparently equivalent codes can have different meanings e.g. H26.8 Other specified cataract ≠ 9B10.2Y Other specified cataracts
▪ Reasons for not achieving full representation (cont’d):

3. ICD-11 more specific than ICD-10-CM
   - Usually we choose an ICD-11 code that is equivalent or broader than the ICD-10-CM code
   - In some cases, ICD-11 coding guidance points to a specific code e.g.
     - ICD-10-CM code M62.82 Rhabdomyolysis
     - ICD-11 index term “rhabdomyolysis” points to FB32.20 Idiopathic rhabdomyolysis, which is more specific than rhabdomyolysis
   - Postcoordination is not applicable in these cases because it can only refine a code and make it more specific, but not more general
<table>
<thead>
<tr>
<th>Reason for failure of full representation</th>
<th>ICD-10-CM codes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Missing information in postcoordination</td>
<td></td>
</tr>
<tr>
<td>Episode of care</td>
<td>375 (39.8%)</td>
</tr>
<tr>
<td>Laterality</td>
<td>53 (5.6%)</td>
</tr>
<tr>
<td>Mode of exposure</td>
<td>35 (3.7%)</td>
</tr>
<tr>
<td>Trimester of pregnancy</td>
<td>16 (1.7%)</td>
</tr>
<tr>
<td>Other missing information</td>
<td></td>
</tr>
<tr>
<td>- anatomy</td>
<td>45 (4.8%)</td>
</tr>
<tr>
<td>- devices</td>
<td>25 (2.7%)</td>
</tr>
<tr>
<td>- injury dimension</td>
<td>25 (2.7%)</td>
</tr>
<tr>
<td>- etiology</td>
<td>16 (1.7%)</td>
</tr>
<tr>
<td>- substances</td>
<td>11 (1.2%)</td>
</tr>
<tr>
<td>- severity</td>
<td>10 (1.1%)</td>
</tr>
<tr>
<td>- temporality</td>
<td>5 (0.5%)</td>
</tr>
<tr>
<td>- external cause</td>
<td>4 (0.4%)</td>
</tr>
<tr>
<td>- histopathology</td>
<td>3 (0.3%)</td>
</tr>
<tr>
<td>- capacity context</td>
<td>1 (0.1%)</td>
</tr>
<tr>
<td>- Others</td>
<td>100 (10.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>245 (26.0%)</td>
</tr>
<tr>
<td>2. Residual categories</td>
<td>131 (13.9%)</td>
</tr>
<tr>
<td>3. ICD-11 more specific</td>
<td>13 (1.4%)</td>
</tr>
</tbody>
</table>
ICD-11 enhancements

- Some minor changes in ICD-11 can make a big difference
  - Add 9 extension codes (3 episode of care, 3 trimester of pregnancy, 3 mode of drug exposure)
  - Allow adding laterality modifier to anatomic entities

<table>
<thead>
<tr>
<th></th>
<th>Number of ICD-10-CM codes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing ICD-11</td>
</tr>
<tr>
<td>Full representation</td>
<td></td>
</tr>
<tr>
<td>without postcoordination</td>
<td>222 (23.5%)</td>
</tr>
<tr>
<td>Full representation</td>
<td></td>
</tr>
<tr>
<td>with postcoordination</td>
<td>81 (8.6%)</td>
</tr>
<tr>
<td>Partial representation</td>
<td>640 (67.9%)</td>
</tr>
<tr>
<td>Total</td>
<td>943 (100%)</td>
</tr>
</tbody>
</table>
Coding guidance review

- ICD-10-CM and ICD-11 have inclusions, exclusions and an index that provide guidance to coders and delineate the boundaries of a code
- ICD-11 has a description (definition) for most codes
- The coding guidance is important in understanding the full meaning of a code and what it encompasses. Apparently equivalent codes can have different meanings due to differences in the coding guidance
- We reviewed the coding guidance of the ICD-10-CM code and its corresponding ICD-11 target for conflict
Definitions

- The definition of each ICD-11 code was reviewed with the inclusions and exclusions of the ICD-10-CM code and its ancestors
- No conflict detected
Inclusions and exclusions

1. Inclusions of the ICD-10-CM code and its ancestors were reviewed for conflicts with exclusions of the ICD-11 code and its ancestors

- A41.9 Sepsis, unspecified organism
  - Inclusions: Septicemia NOS
- 1G40 Sepsis without septic shock
  - Exclusions: Septicemia (MA15)
  - MA15 Microbiological findings in blood, blood-forming organs, or the immune system
Inclusions and exclusions (cont’d)

2. Exclusions of the ICD-10-CM code and its ancestors were reviewed for conflicts with inclusions of the ICD-11 code and its ancestors

- **K59.00** Constipation, unspecified
  - Exclusions: Fecal impaction (K56.41)

- **ME05.0** Constipation
  - Inclusions: Fecal impaction

- **K56.41** Fecal impaction
Indexes

- An index conflict
  - In the ICD-10-CM index, an index term points to the ICD-10-CM code
  - The same index term occurs in the ICD-11 index, but points to an ICD-11 code other than the chosen target code
- Because of the large number of index terms, we were not able to do a comprehensive review
- Focused review
  - Index terms were normalized by the UMLS lexical tool (luinorm) to remove differences due to punctuation, capitalization, inflexion, word order etc.
  - Same index entries in ICD-10-CM and ICD-11 were found by matching the normalized index terms
  - Cases in which an index term in ICD-11 pointed to a code different from the chosen target code were reviewed
Index conflict

Q25.0 Patent ductus arteriosus

ICD-10-CM index

Aneurysm
- patent ductus arteriosus Q25.0

LA8B.4 Patent arterial duct

ICD-11 index

LA8B.Y Other specified congenital anomaly of great arteries including arterial duct

Matching Terms:
- patent ductus arteriosus aneurysm
- PDA - [patent ductus arteriosus] aneurysm

LA8B.Y Other specified congenital anomaly of great arteries including arterial duct
Coding guidance conflicts - actual

- Actual conflicts – need to change target ICD-11 code

**ICD-10-CM index**

- B19.20
  - Unspecified viral hepatitis C without hepatic coma

**ICD-11 index**

- 1E5Z Viral hepatitis, unspecified

**1E51.1 Chronic hepatitis C**

- 1E51.1 Chronic hepatitis C NOS

Hepatitis - C (viral) B19.20
Coding guidance conflicts - potential

- Target ICD-11 code is correct in general, but incorrect in specific cases. Three types:
  1. Partial overlap – a specific case points to a broad code

A41.9 Sepsis, unspecified organism
Inclusions: Septicemia NOS

1G40 Sepsis without septic shock
Exclusions: Septicemia (MA15)

MA15 Microbiological findings in blood, blood-forming organs, or the immune system
Coding guidance conflicts - potential

2. Granularity difference – a specific case points to a specific code

- K59.00 Constipation, unspecified
  - Exclusions: Fecal impaction (K56.41)

- ME05.0 Constipation
  - Inclusions: Fecal impaction

- K56.41 Fecal impaction
Coding guidance conflicts - potential

3. Different default assumption

ICD-10-CM index

O03.9 Complete or unspecified spontaneous abortion without complication

ICD-11 index

JA00.09 Spontaneous abortion, complete or unspecified, without complication

JA00.29 Unspecified abortion, complete or unspecified, without complication

Abortion (complete) (spontaneous) O03.9
## Coding guidance conflicts results

<table>
<thead>
<tr>
<th>Inclusions and exclusions</th>
<th></th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of conflicts</td>
<td>ICD-10-CM codes</td>
</tr>
<tr>
<td>Actual conflict</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Potential conflict</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>--partial overlap</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>--granularity difference</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>
Summary of findings

- Based on 943 frequently used ICD-10-CM codes, representing 60% of usage from each chapter, ICD-11 can achieve
  - 23.5% full representation without postcoordination
  - 8.6% full representation with postcoordination (can be increased to 35.2% with minor enhancements)
  - 67.9% partial representation

- Review of inclusions, exclusions and indexes revealed conflicts in about 10%, mostly potential conflicts that do not require change of target ICD-11 codes
Can ICD-11 replace ICD-10-CM?

- Based on the General Equivalence Maps (published by CMS), only 24.3% of ICD-9-CM codes have exact matches in ICD-10-CM.
- Transition from ICD-10-CM to ICD-11 may not be more disruptive than transition from ICD-9-CM to ICD-10-CM.
- The disruption can be even less with postcoordination.

Caveats:
- Postcoordination has never been used in ICD coding.
- Impact on tooling and coder education.
- May increase coding variability – in our study, coder variability in postcoordination is about the same as for the main codes.
Advantages of using ICD-11 for morbidity

▪ Avoid the cost of creating and maintaining ICD-11-CM
▪ Earlier use of an up-to-date, international medical classification
▪ Avoid divergence of the US Clinical Modification from the international core
  ▪ Theoretically, ICD-10-CM should be totally compatible with ICD-10
  ▪ However, significant differences can be observed e.g.
    ▪ E14 Unspecified diabetes mellitus is not found in ICD-10-CM (diabetes unspecified is coded as type 2)
    ▪ K68 Disorders of retroperitoneum is not found in ICD-10
    ▪ Other differences are likely to exist due to differences in inclusions, exclusions and indexing as shown in our study
▪ ICD-11 Foundation Component (logical underpinning)
  ▪ Alignment with other terminologies e.g. SNOMED CT
  ▪ Automated coding
New options for CM?

- Even if ICD-11 cannot totally replace ICD-10-CM, some alternatives to a full-fledged ICD-11-CM may be worth considering
  - “ICD-11-CM lite” – adopt some chapters of ICD-11 as-is, only modify chapters that have more differences from ICD-10-CM
  - “Extension of extension” – US will maintain its own additional set of ICD-11 extension codes to provide the necessary postcoordination
  - “ICD-11-CM as a linearization”
    - The various ICD-11 code sets for different use cases can be derived from the Foundation Component as linearizations
    - If ICD-11-CM can use the same logical underpinning and be generated as another linearization, it will be guaranteed to be tightly aligned with ICD-11
Thank you!