ICD-10-CM Field Testing Project

National Committee on Vital and Health Statistics

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Purpose

• Assess functionality and utility of applying ICD-10-CM to actual medical records in a variety of healthcare settings

• Assess level of education and training required by professional credentialed coders to implement ICD-10-CM
Selection of Participants

• AHA and AHIMA solicited HIM professionals
• Individual participants, not a healthcare organization
• Required computer capabilities
  – Access to web-based training program
  – Access to web-based survey instrument
Number of Participants

- Total of 169 actively participated
- Representing a cross-section of all geographic regions of the country
Project Management

- Virtual Community of Practice (CoP) via AHIMA website
- Resources
  - Training materials
  - Coding guidelines
  - Link to survey forms
- Ongoing communication between participants and project coordinators
Training

- Two hour archived audioseminar via internet
- Slide presentation
- Presented by NCHS staff
- ICD-10-CM guidelines
Research Methodology

• Descriptive survey research model used
• A panel of professors and researchers at the doctoral level from several academic institutions reviewed and advised on research methodology
• June 2003 version of ICD-10-CM tested
• Printed copies of index and tabular provided because ICD-10-CM is not yet available in a user-friendly electronic format
Study Limitations

• ICD-10-CM alphabetic index is the means by which diagnostic terms are located and the appropriate code or code categories are identified.

• Unfortunately the only available index file format was unwieldy, cumbersome and difficult to use
Study Limitations (cont.)

- ICD-9-CM: variety of hardcopy and electronic index tools
  - Code books--standard column formats and headings, font styles, and indentations with standard tabs
  - Electronic products--search engines for locating terms in the index

- ICD-10-CM: only available tool today was hardcopy--confusing indentations, infrequent main headings, and lack of font style changes or other characteristics that would facilitate the ability to locate a term.
Study Limitations (cont.)

• Problem was unrelated to the ICD-10-CM structure itself, but rather just related to the available navigation tools and the format of the page layout

• Issue will be resolved when ICD-10-CM is implemented--user-friendly, easy navigable index tools, both electronic and paper products will be available
Record Selection

• 50 records, if possible, per participant
• Random selection from discharges/visits of any month from 2003
• Representative sample from diagnoses treated by facility - both inpatient and outpatient
• Disregard payer
• Do not “cherry-pick”
Process for Coding Records

• Data Collection period: June 30, 2003 through August 5, 2003
• Only discharged patients
• Use only complete records
• Assign both ICD-9-CM and ICD-10-CM diagnosis codes for each record
• Use Official Guidelines for Coding and Reporting
Process for Coding Records (cont.)

- Review entire medical record
- Assign codes as completely and accurately as possible, according to existing medical record documentation
- Do not query physicians
Data Submission

• Data elements determined by AHA and AHIMA staff in consultation with researchers
• Data submitted via web-based survey tool developed by Ohio State University (OSU) and housed on OSU server
Surveys

- Demographic Survey - participant’s background and type of organization where employed
- Record Survey - completed once for each record coded
- Follow up Survey - completed once at conclusion of project - general impressions, opinions
- Supplemental Survey – completed once a few weeks after conclusion of project
Validation

- Diagnostic information from every 5th record for ½ of participants was re-coded
- Additional data submitted was comprised of diagnoses documented in the medical record and ICD-10-CM code assigned
- AHA and AHIMA professional coding staff recoded validation forms in ICD-10-CM
Results

• OSU health informatics and statistical staff cleaned the data, tabulated the results, and reported results to AHA and AHIMA

• Demographic survey and record survey completed by all participants; 152 respondents completed follow-up survey; 145 respondents completed supplemental survey
Participants’ Credentials

- RHIA or RHIT, 85.8%
- CCS, CCS-P or CCA, 14.9%
Job Titles

- Coder/coding professional: 43.4%
- Manager/coordinator/supervisor/team leader: 17.2%
- Other: 13.1%
- Director: 9.7%
- Consultant: 9.0%
- Data quality analyst/case mix analyst: 4.1%
- Assistant Director: 2.1%
- HIM Faculty: 1.4%
- Medical record analyst: 0.0%
Place of Employment

- Short term acute care hospital (aver. bed size 358) 56.8%
- Integrated healthcare system 17.8%
- Consultant/vendor 5.9%
- Physician office practice 3.0%
- Other 3.0%
- Educational institution 3.0%
- Nursing home 2.4%
- Government agency or contractor 2.4%
- Rehabilitation facility 1.8%
- Ambulatory setting (non-physician) 1.8%
- Long term care hospital 1.2%
- Home/health/hospice entity 0.6%
- Behavioral health facility 0.6%
Short Term Acute Care Hospital by Bed Size

- > 400 beds, 42.7%
- 250 - 399 beds, 12.5%
- 150 - 249 beds, 18.8%
- 100 - 149 beds, 5.2%
- 51 - 99 beds, 8.3%
- < 50 beds, 12.5%
Years of Coding Experience

- More than 5 years: 88%
- More than 10 years: 68.50%
Number of Hours Per Week Spent Coding

- 25-34 hours per week, 16.6%
- 35-40 hours per week, 25.5%
- 15-24 hours per week, 16.6%
- 6-14 hours per week, 11.0%
- 1-5 hours per week, 13.8%
- Other, 16.6%
Type of Coding Experience

- Hospital-inpatient: 31.9%
- Hospital-outpatient: 31.7%
- Post-acute care: 12.3%
- Ambulatory setting other than above: 10.9%
- Physician practice: 10.2%
- Other: 3.1%
Type of Medical Record Coded

- Short term acute care hospital inpatient: 42.3%
- Short term acute care hospital outpatient (ER, Ambulatory, Ancillary): 38.8%
- Post acute settings (home health or hospice, nursing homes, long term care hospitals, rehab): 7.9%
- Physician practice: 6.0%
- Clinics, community health centers, freestanding ambulatory surgery centers, freestanding diagnostic facilities: 2.9%
- Behavioral health inpatient and outpatient: 1.6%
- Other: 0.6%
Number of Codes Assigned

- ICD-10-CM – 23,122
- Total number of non-specific codes – 2,847 (12.3% of total number of reported codes)
## Number of ICD-10-CM Diagnosis Codes by Chapter

<table>
<thead>
<tr>
<th>Chapters</th>
<th>Number of Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases of the circulatory system</td>
<td>3885</td>
</tr>
<tr>
<td>Factors influencing health, health services</td>
<td>2441</td>
</tr>
<tr>
<td>Endocrine, nutritional and metabolic diseases</td>
<td>2230</td>
</tr>
<tr>
<td>Symptoms, signs and abnormal clinical findings, not elsewhere classified</td>
<td>1585</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>1560</td>
</tr>
<tr>
<td>Diseases of the respiratory system</td>
<td>1439</td>
</tr>
<tr>
<td>Diseases of the musculoskeletal system</td>
<td>1374</td>
</tr>
</tbody>
</table>
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</tr>
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<tbody>
<tr>
<td>Injury, poisoning, other consequences</td>
<td>1235</td>
</tr>
<tr>
<td>Mental and behavioral disorders</td>
<td>1163</td>
</tr>
<tr>
<td>Diseases of the genitourinary system</td>
<td>1046</td>
</tr>
<tr>
<td>Diseases of the nervous system</td>
<td>792</td>
</tr>
<tr>
<td>External causes of morbidity</td>
<td>714</td>
</tr>
<tr>
<td>Diseases of blood and blood-forming organs</td>
<td>696</td>
</tr>
<tr>
<td>Neoplasms</td>
<td>622</td>
</tr>
</tbody>
</table>
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<tbody>
<tr>
<td>Pregnancy, childbirth, and puerperium</td>
<td>600</td>
</tr>
<tr>
<td>Certain infectious/parasitic diseases</td>
<td>455</td>
</tr>
<tr>
<td>Diseases of skin and subcutaneous tissue</td>
<td>322</td>
</tr>
<tr>
<td>Diseases of eye and adnexa</td>
<td>296</td>
</tr>
<tr>
<td>Congenital malformations, deformities</td>
<td>240</td>
</tr>
<tr>
<td>Diseases of ear and mastoid process</td>
<td>214</td>
</tr>
<tr>
<td>Perinatal conditions</td>
<td>213</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>23,122</strong></td>
</tr>
</tbody>
</table>
Comparison of Coding Times

• No difference between ICD-9-CM and ICD-10-CM coding times in 3,616 records (58.6%)

• Overall average coding time was almost twice as great in ICD-10-CM
  – 6.37 minutes in ICD-9-CM
  – 12.14 minutes in ICD-10-CM
ICD-10-CM Coding Time

• Majority (91.9%) of cases where ICD-10-CM coding time was increased were due to index file format and/or difficulty locating term in index

• Average ICD-10-CM coding time expected to be higher
  – Less familiar with ICD-10-CM than ICD-9-CM
  – Minimal training
  – Lacked user-friendly coding tools
Validation of Coding Accuracy

- 360 validation forms were submitted (5.8% of total number of records coded)
- 79.2% of participant’s and validator’s code assignments matched
- Reasons for coding errors included:
  - New feature in ICD-10-CM
  - Erroneous assumption based on different amounts of information available to participant and validator
  - Difficulty in using index file format resulted in selection of incorrect code
Opportunities for System Improvement

• “Problem identification form” submitted
  – Specific ICD-9-CM code(s) assigned
  – Specific ICD-10-CM code(s) assigned, if possible
  – Narrative description of problems encountered during code assignment
Opportunities for System Improvement

- 305 unique issues regarding errors or conflicts in instructions or index entries or other problems assigning ICD-10-CM code
- For 151 diagnoses, participant was unable to identify appropriate code
- Problems will be reported to NCHS for consideration of modifications to facilitate the coding process
Training Needed for an Experienced Coder

- 16 hours or less, 60.0%
- 17 to 24 hours, 24.1%
- 25 to 32 hours, 11.7%
- Other, 4.1%
Timing of Training

- 1 year before implementation: 9.0%
- 6 months before implementation: 29.0%
- 3 months before implementation: 58.6%
- Other: 3.4%
Training Method – First Choice

Audio seminars, 1.4%
Videotapes, 3.4%
Internet-based, 15.9%
Other (please specify), 2.8%
Face-to-face, 76.6%
Training Method – Second Choice

- Internet-based, 47.6%
- Videotapes, 19.3%
- Audio seminars, 17.2%
- Face-to-face, 13.1%
- Other (please specify), 2.8%
Comparison of Clinical Descriptions

ICD-10-CM appears to be better, 71.7%

ICD-9-CM is better, 11.2%

No difference, 5.3%

Unsure, 10.1%
Were notes, instructions, and guidelines in ICD-10-CM clear and comprehensive?

- Yes, 64.5%
- No, 22.4%
- Unsure, 13.2%
Does ICD-10-CM appear to be an improvement over ICD-10-CM?

- Yes, 76.3%
- No, 9.9%
- Unsure, 13.8%
Do you support migration to ICD-10-CM?

- Yes, 83.6%
- Unsure, 12.5%
- No, 3.9%
Comments for Not Supporting Migration to ICD-10-CM

• Index tool was too difficult - it needs an overhaul
• Concerns
  – the cost to change
  – about availability of resources to assist coders.
Comments for Being “Unsure” About Supporting Migration to ICD-10-CM

- Problems with the index tool
- Poor physician documentation would prevent reaping benefits from the greater specificity of ICD-10-CM
- Other concerns
  - cost of implementation
  - shortage of coders
  - systems will need to change
If you support migration, how soon should it be implemented?

- Three years or less, 78.6%
- Other, 21.4%
Significant Comments Regarding How Soon ICD-10-CM Should Be Implemented

• Fix the index problems first
• Implementation should take place as soon as vendors and payers can accommodate the change
• “ASAP!”
• “Did not answer ‘yes’ but feel it is in the best interest of our profession to get on with this as soon as possible.”
Next Steps

• Summary of data on problems assigning ICD-10-CM codes and will be provided to the National Center for Health Statistics

• Further review and analysis of the field-testing data will be conducted
Conclusion

• Migration to ICD-10-CM favored
• ICD-10-CM seen is an improvement over ICD-9-CM
• Coding system can be applied to medical records in a variety of healthcare settings, without necessitating a change in documentation practices
• ICD-10-CM more applicable to non-hospital settings than ICD-9-CM
Conclusion (cont.)

• Maximum of 16 hours of training thought to be sufficient
• Face-to-face training and Internet-based training preferred
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Questions?