Collaborative Stage Version 2: What’s New

Education and Training Team
Collaborative Stage Data Collection System
Version 2

Learning Objectives

• Identify changes and updates in CS version 2
• Understand rationale behind changes
• Understand relationships among
  – AJCC TNM 7th edition
  – CSv2
  – Treatment timing
  – Clinical information
  – Pathologic information
  – CAP Protocols
• Understand how and why site-specific factors are used

What’s New in Version 2

<table>
<thead>
<tr>
<th></th>
<th>Version 1 (6th Ed)</th>
<th>Version 2 (7th Ed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team members</td>
<td>6</td>
<td>Nearly 60</td>
</tr>
<tr>
<td>Work Teams</td>
<td>1</td>
<td>7 with sub-groups</td>
</tr>
<tr>
<td>Schemas</td>
<td>94</td>
<td>140</td>
</tr>
<tr>
<td>Tables (estimated)</td>
<td>1,900</td>
<td>5,500</td>
</tr>
<tr>
<td>CS data fields</td>
<td>15</td>
<td>34</td>
</tr>
<tr>
<td>Field length*</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

* CS Extension and CS Lymph Nodes
CSv2 Changes

- New name
  - Collaborative Stage Data Collection System (CS)
- Based on AJCC Cancer Staging Manual, seventh edition
- Commitment to make staging more clinically relevant
  - Better definitions and instructions
  - More site-specific factors
- Compatible with 2010 CAP Protocols

Other Features of CSv2

- Histology inclusions rather than exclusions
  - Code ranges rather than specific terms
- Consistency of code structures from site to site
- More non-specific terms, “Stated as T_, NOS”
- More non-anatomic factors
  - Treatment decisions, prognostic/predictive data
- Data items more complete for lab values
  - Colon, rectum, appendix: CEA and CEA Lab Value

New Schemas

- Mucosal melanoma of head and neck (26)
- Esophagus-GE Junction
- Appendix
- Gastrointestinal stromal tumor (7)
- Neuroendocrine tumor (neuroendocrine/carcinoid) (4)
- Intrahepatic bile ducts
- Perihilar bile ducts
- Distal bile duct
- Other biliary
- Merkel cell carcinoma
- Ocular adnexal lymphoma
- Adrenal gland
Modifications to Schemas

- Non-melanoma skin is primarily squamous CA
- Lung
  - Pleural effusion moved to Mets at Dx
  - Separate tumor nodules moved to Extension
- Extracapsular extension for head and neck sites
  - Split into clinical and pathologic

New CSv2 Data Fields

- New fields in NAACCR record version 12
  - Site-specific factors 7-25 (#2861-2879)
  - Pre- and Post-Treatment (11 fields; #2730-2785)
  - 7th Edition derived fields
- Grade Path Value (#449)
- Grade Path System (#441)
- Lymph-Vascular Invasion (#1182)
- Specific fields for metastatic sites (#2851-2854)
  - Mets at Dx-Bone, -Brain, -Liver, -Lung

Mets at Dx-Metastatic Sites

- 4 new fields
  - Bone excluding marrow
  - Lung excluding pleura and pleural fluid
  - Brain excluding spinal cord and other CNS
  - Liver
- Code 0 when CS Mets at Dx is 00
- Code structure
  0 – No
  1 – Yes
  8 – Not applicable
  9 – Unknown
Lymph-Vascular Invasion (1)

• Coding instructions
  – Based on all pathology reports or information available
    • Priority given to positive results
  – Includes lymphatic invasion, vascular invasion, or lymph-vascular invasion
  – Do not use for perineural invasion
  – Use CAP checklist as primary source
    • Other sources may be used in the absence of a checklist

Lymph-Vascular Invasion (2)

• Code structure
  0 – Lymph-vascular invasion not present (absent)/Not identified
  1 – Lymph-vascular invasion present/identified
  8 – Not applicable
  9 – Unknown/Indeterminate

Grade Path Value (1)

• Does not replace Grade/Differentiation (#440)
• Record grade specified in Grade Path System

• Code structure
  1 Recorded as Grade I or 1
  2 Recorded as Grade II or 2
  3 Recorded as Grade III or 3
  4 Recorded as Grade IV or 4
  Blank No 2-, 3-, or 4-grade system available; unknown
Grade Path Value

- Coding instructions
  - Record grade reported in patient record
  - Based on same tissue as Grade/Differentiation field
  - Do not use for site-specific grading systems
    - Part of the SSF fields
  - If grade is described as a fraction (x/y)
    - This data field is the numerator
  - Histologic grade is another name for overall grade or grade NOS
    - Takes priority over a nuclear or architectural grade

Grade Path System

- New item
  - In addition to Grade Differentiation (#440)
- Record stated grade system; not converted
- Used in conjunction with “Grade Path Value”
- Code Structure
  2 Two-grade system
  3 Three-grade system
  4 Four-grade system
  Blank Not a 2-, 3- or 4-grade system; unknown

Grade Path System

- Coding instructions
  - Record the grading system in the record
  - Based on same tissue as Grade/Differentiation field
  - Do not use for site-specific grading systems
    - Part of the SSF fields
  - If grade is described as a fraction (x/y)
    - This data field is the denominator
CSv2 Field Changes

- CS Extension and CS Lymph Nodes expanded
  - Two digits to three digits
- 7th and 6th Edition mapping fields
- Additional Site-specific Factors
  - NAACCR record allows up to 25 SSFs
- Pre- and post-adjuvant therapy staging data fields
- CS “mixed stage” (combined clinical-pathologic) continues

Example CS Extension Table: Colon

<table>
<thead>
<tr>
<th>Code</th>
<th>TNM 7th Map</th>
<th>TNM 6th Map</th>
<th>SS77 Map</th>
<th>SS2000 Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>420</td>
<td>T3</td>
<td>T3</td>
<td>RE</td>
<td>RE</td>
</tr>
<tr>
<td>450</td>
<td>T3</td>
<td>T3</td>
<td>RE</td>
<td>RE</td>
</tr>
<tr>
<td>460</td>
<td>Adherent to other organs or structures, but no microscopic tumor found in adhesion(s)</td>
<td>T3</td>
<td>T3</td>
<td>RE</td>
</tr>
<tr>
<td>480</td>
<td>Stained as T4, NOS</td>
<td>T4</td>
<td>RE</td>
<td>RE</td>
</tr>
<tr>
<td>500</td>
<td>T4a</td>
<td>T4</td>
<td>RE</td>
<td>RE</td>
</tr>
<tr>
<td>550</td>
<td>Any of [420] to [450] + [500] T4a</td>
<td>T4</td>
<td>RE</td>
<td>RE</td>
</tr>
<tr>
<td>570</td>
<td>Adherent to other organs or structures, NOS</td>
<td>T4</td>
<td>RE</td>
<td>RE</td>
</tr>
</tbody>
</table>

CSv2 Coding Issues

- Topography codes split into different schemas
  - Esophagus schema now includes
    - Gastroesophageal junction (C16.0)
    - Stomach fundus (C16.1)
    - Part of stomach body (C16.2)
  - Extrahepatic bile ducts (C24.0) split into
    - Perihilar (proximal)
    - Distal bile duct
    - Gallbladder schemas
C24.0 Extrahepatic Bile Ducts

<table>
<thead>
<tr>
<th>Gall-bladder schema</th>
<th>Perihilar BD schema</th>
<th>Distal BD schema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gall-bladder schema</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


CSv2 Coding Issues, continued

- Schemas for some sites split by morphology
  - Head and neck: mucosal melanomas vs. carcinomas
  - GIST and neuroendocrine tumors of GI tract separate from carcinomas
  - Liver and intrahepatic bile ducts separate
    - Liver (Hepatocellular ca)
    - Intrahepatic BD (Cholangioca)
  - Esophagus: separate stagings for squamous vs. adenocarcinoma
CSv2 Coding Issues, continued

- TNM 7 includes staging for certain histologies
  - Currently NOT reportable to population-based registries
  - May be reportable-by-agreement
    - High grade dysplasia of esophagus
    - PanIN III of pancreas, severe ductal dysplasia
    - Carcinoid of appendix
    - Squamous carcinoma of skin

CSv2 Coding Issues, continued

- Some codes made obsolete
- “Flavors” of Obsolete
  - Obsolete Data Retained Version xxxx (vanilla)
  - Obsolete Data Converted Version xxxx (chocolate)
  - Obsolete Data Converted and Retained Version xxxx (rocky road)
  - Obsolete Data Reviewed and Changed Version xxxx (hazelnut)

Site-Specific Factors (1)

- New SSFs
  - Based on AJCC 7th edition
  - Some needed for TNM mapping
    - Number of positive axillary nodes, extracapsular extension; thickness of melanoma
  - Some tumor markers and lab values
    - CA 125, CA 19-9, AFP, HCG, KRAS, Ki-67
  - Some prognostic/predictive
    - Gleason tertiary pattern, pPI, FLIPI, IPS (lymphomas)
  - Some for future research/special interest
    - Microsatellite instability (GI cancers), tumor infiltrating lymphocytes (TILs; Merkel cell)
  - Some for patient history of other diseases
    - Sjogren’s syndrome (ocular lymphoma), history of asbestos exposure (pleural mesothelioma), retinoblastoma gene mutation
Site-Specific Factors (2)

- 25 total SSFs available
  - Breast – 24
  - Eyelid, lacrimal gland – 15 to 16
  - Prostate – 13
  - Ocular lymphoma – 12
  - Head & Neck sites (carcinoma & melanoma) – 9 to 11
  - Colon and Rectum – 9
  - CNS – 9

- Standards setters decide which SSFs are required

Site-Specific Factors (3)

- If information regarding SSF is not in pathology report or medical record
- Registrar is not required to go looking for it
  - Information may not be available in some facilities
  - Not registrar’s role to enforce practice standards
  - Instructions included in schemas on how to code missing information

Examples of New SSFs (1)

- Microsatellite instability (MSI)
  - Colon, rectum and appendix schemas
    - Pathologic test
      - Determines likelihood of a specific gene mutation for hereditary non-polyposis colorectal cancer (HNPCC)/Lynch syndrome
    - Code structure
      - 000 Stable
      - 010 Unstable – Low
      - 020 Unstable – High [suggestive of HNPCC]
      - 030 Unstable, NOS
      - 998 Test ordered, results not in chart
      - 999 Unknown; Not documented
Examples of New SSFs (2)

- HPV Status
  - Head & neck sites (melanoma/carcinoma), anus, penis
  - Presence of human papilloma virus (HPV)
    - Known risk factor for cancer
  - Code structure
    - Negative for any HPV
    - Negative for high-risk HPV, type(s) not specified
    - Low risk positive (all positive type(s) are low risk)
    - High risk positive, NOS, type(s) not specified
    - High risk positive, specified type(s) other than types 16 or 18
    - High risk positive for HPV 16 only
    - High risk positive for HPV 18 only
    - High risk positive for HPV 16 and 18
    - High risk positive for HPV 16 or 18 plus any other high risk type(s)*
    - with or without positive results for low risk type(s)

Examples of New SSFs (3)

- Upper and Lower Cervical Lymph Node Levels
  - Head and neck sites
  - Defines whether LN are above or below lower border of cricoid cartilage for prognostic purposes
  - Code structure
    - 000 No lymph nodes involved
    - 010 Upper level lymph nodes involved
      - Levels I, II, III, VA, "Other groups"
    - 020 Lower level lymph nodes involved
      - Levels IV, VB, VII
    - 030 Upper and lower level lymph nodes involved
    - 040 Unknown level lymph nodes involved
      - Code "mid neck" and levels V, VI here if not specified as upper or lower
    - 999 Unknown, not stated

Upper and Lower Cervical Lymph Nodes

Examples of New SSFs (4)

- **Prostate New SSFs**
  - Gleason Tertiary Pattern
  - Number of Cores Positive
  - Number of Cores Examined
  - Clinical Staging Procedures Performed
    - Digital rectal exam, imaging
  - Gleason information from core needle biopsy/TURP
    - Primary and secondary pattern
    - Score
  - Needle core biopsy findings
  - Gleason information from prostatectomy/autopsy
    - Primary and secondary pattern
    - Score

Examples of New SSFs (5)

- **Breast New SSFs**
  SSF 7 – Nottingham or Bloom-Richardson Score/Grade
  SSF 8 – HER2: IHC Test Lab Value
  SSF 9 – HER2: IHC Test Interpretation
  SSF 10 – HER2: FISH Test Lab Value
  SSF 11 – HER2: FISH Test Interpretation
  SSF 12 – HER2: CISH Test Lab Value
  SSF 13 – HER2: CISH Test Interpretation
  SSF 14 – HER2: Result of Other or Unknown Test
  SSF 15 – HER2: Summary Result of Testing

Examples of New SSFs (6)

- **Breast New SSFs, continued**
  SSF 16 – Combinations of ER, PR, and HER2
  SSF 17 – Circulating Tumor Cells & detection method
  SSF 18 – Disseminated Tumor Cells & detection method
  SSF 19 – Assessment of Ipsilat. Level I-II Axillary LN
  SSF 20 – Assessment of Distant Metastases
  SSF 21 – Response to Neoadjuvant Therapy
  SSF 22 – Multi-gene Signature Method
  SSF 23 – Result/Score of Multigene Signature
  SSF 24 – Paget Disease
  SSF 25 – 988
Pre- and Post-Treatment Fields

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tumor size</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Extension</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TS/Ext Eval</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Reg LN</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>LN Eval</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mets at Dx</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mets Eval</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

CS Data Collection and Coding Manual

- Electronic manual
  - Designed for desktop use for easy access
    - 508 compatible for people with disabilities
  - Print manual *may* be available
- Part I extensively revised and expanded
  - Improvements based on suggestions from users and reliability studies
- Part I rules cross-referenced in Part II
  - Hyperlinks in electronic manual

CS Manual Part I

- Coding instructions
  - General
  - Data fields
- More examples with rules
- Site-specific notes section
  - Lymph nodes (head and neck, breast)
  - Other problematic data items
    - Clinical status of regional lymph nodes (stomach, colon)
- Lab values and tumor markers
- Appendices
- Cross-referenced to Part II schemas
What’s NOT New in Version 2

- Code every case — all sites and all histologies
  - Computer algorithm will map to appropriate
    - 6th and 7th edition T, N, M
    - Stage Group 1977 and 2000
- Pay attention to table notes
  - Notes before tables — coding guidelines
  - Notes after tables — mapping guidelines
  - * (asterisk) for 6th Ed notes
  - ^ (carat) for 7th Ed notes

Summary

- CSv2 based on changes in TNM 7th edition
- Enhanced clinical and pathologic information
- Improved definitions and instructions in manual
- Mapping to both 6th and 7th Editions
- More site-specific factors
  - Markers and lab values
  - Prognostic and predictive data
  - Fine points of TNM mapping
  - If not in chart, don’t search for SSFs

Inquiry & Response System

- Submit questions to Inquiry & Response System
  - Allows tracking for educational purposes
  - Provides information for all
- http://web.facs.org/coc/default.htm
American Joint Committee on Cancer
Contact Information

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Collaborative Stage Data Collection System Web Site
www.cancerstaging.org/cstage