



CSv2 101

Education & Training Team
Collaborative Stage Data Collection System
Lecture Version 1.0

Objectives

- Collaborative Stage Data Collection System Overview
- CSv2 high level changes
- CS General guidelines
- CS General Instructions
- Coding CS Data Elements

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Collaborative Stage Data Collection System Overview

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Collaborative Stage

- What is Collaborative Stage Data Collection System (CS)?
 - Set of coding structures based on tumor characteristics such as tumor size, extension, nodes, distant metastasis, and other data items
 - Algorithm to combine these characteristics into various staging systems
- Implementation dates
 - CSv1: cases diagnosed January 1, 2004
 - CSv2: cases diagnosed January 1, 2010

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Why CS Developed

- One staging system to meet all needs
- All groups agreed to this collaboration
- Reduce registrar workload
- Reduce error rate
- Able to derive all various staging systems

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Advantages of CS

- Eliminate duplicate data collection
- Clinically relevant data
- Compatibility between systems
- Data collected similar to past data fields
- New items
 - Evaluation for origin of data
 - Site-specific factors

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CS System

- Collaborative Stage Data Collection System
 - Modified EOD format
 - EOD codes more detailed than other systems
 - Assures consistency over time
 - Collected data collapsed into other staging systems

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Other Staging Systems

- AJCC TNM staging
 - Forward flexibility and clinical utility
 - Changed periodically to meet decision-making needs
 - TNM general rules incorporated into CS rules
 - Computer able to derive T, N, M and stage group from CS
 - Derives both 6th and 7th Editions

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Other Staging Systems


- Summary staging
 - Two versions, 1977 and 2000
 - Longitudinal stability for population-based registries
 - Less complex than other systems
 - Useful for small case series
 - Computer able to derive 1977 and 2000 versions from CS

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New Rules and Instructions

- New theories and design
- Changes and compromises to derive
- Competing general instructions and guidelines for old systems
- Change in structure and format

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Changes in Abstracting Rules

- Organizations agreed to
 - Resolution in timing rule
 - Standardized coding rules
- CS data set derives best stage
- Disease progression
 - Further extension or metastasis after diagnosis established
 - Excluded from CS fields

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Changes in Abstracting Rules

- Abstracting rules updated to deal with contemporary health care environment
 - No tests expected to be negative
 - Clinical notes report positive findings
- Rules will
 - Improve data
 - Provide complete staging

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How The CS System Works

- Determine site or histology
 - 153 schemas based on primary site or histology
- Code all required CS fields
- Activate computer algorithm
 - Summary Stage 1977 & 2000
 - AJCC 6th & 7th T, N, M, descriptor for each, stage group
- Algorithms
 - Portable platform-independent form
 - Accuracy of derived stages
- Stage determined by computer

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Benefits of Collaborative Stage

- Efficiency and Quality of Data
 - Unified rules and standardized training
 - Stage is derived from objective data
 - Registrar controls quality of data
 - Does not depend on physician staging
- Maintains independent objectives of users
 - ACoS; AJCC; NPCR; SEER
 - Accommodates future TNM revisions

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CSv2 High Level Changes

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CSv2 Data Input and Output


- 41 data items (at most) collected for 2010 diagnosis cases and forward are staged using CSv2
 - 6 descriptive (size, extension, nodes, metastasis)
 - 3 evaluation
 - 25 site-specific (if used)
 - Lymph-Vascular Invasion
 - Grade Path Value and Grade Path System
 - 4 Mets at Dx – Metastatic Sites
- 4 staging systems output
 - TNM 6th edition
 - TNM 7th edition
 - Summary Stage 1977
 - Summary Stage 2000



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CS Coding Instructions


- Electronic Coding Instructions
 - Designed for desktop use for easy access
 - 508 compatible for people with disabilities
 - Print manual will be available through a vendor
- 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 instructions



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CS Coding Instructions Part I

- Part I Section 1
 - General
 - Data fields
- Part I Section 2 - Site-specific notes section
 - Lymph nodes (head and neck, breast)
 - Other problematic data items
 - Lab values and tumor markers
- Appendices
- Cross-referenced to Part II schemas



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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
- 2010 CAP Protocols are compatible
 - Changed to match the AJCC seventh edition

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CSv2 Changes

- Some primary sites have multiple schemas determined by histology
 - Example: Colon (carcinoma), GIST Colon, NET Colon
- Schema Discriminator
 - Some primary site codes have multiple schemas
 - Example: C24.0 Extrahepatic bile ducts (distal bile duct; cystic duct; right, left, and common hepatic ducts)
 - Example: Nasopharynx includes pharyngeal tonsils. Nasopharynx has its own schema; pharyngeal tonsils are coded with oropharynx
 - Example: Peritoneum (usually soft tissue sarcomas, but sometimes primary peritoneal carcinoma in women)
 - Schema discriminator brings appropriate schema to computer screen

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CSv2 Changes

- Obsolete codes
 - Necessary as a result of TNM 6 to 7 changes
 - Splitting of previous codes
 - Moving a structure from Extension to Mets at Dx
 - Correcting mapping errors in CS version 1
 - Labeled in CSv2
 - Obsolete codes may be hidden in software
 - Do not use obsolete codes for 2010 diagnoses and forward
 - Retained as a reference for data users

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Effective Dates of CS versions 02.02 and 02.03

- Cases with a diagnosis date of 2010
 - Coded in CS version 02.02 or higher
- Cases with a diagnosis date of 2011
 - Coded in CS version 02.03 or higher
 - Once 02.03 is installed it should be used for all cases regardless of diagnosis date

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General Guidelines

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CS General Guidelines

1. Microscopic confirmation useful but not required
2. Code all sites and all histologies
 - Computer algorithm sorts data into stages
 - All sites summary staged
3. Only applicable cases staged for TNM

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CS General Guidelines

- 4. Timing rule
 - Includes all information gathered through completion of surgery(ies) in first course of treatment OR
 - within four months of diagnosis in absence of disease progression
 - whichever is LONGER
- Timing rule NOT identical to TNM7

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CS General Guidelines

- 5. Take site specific and histology specific guidelines over general guidelines
- 6. Hierarchical codes
 - Within categories, least specific --> more specific
 - Code the highest applicable number
 - Code as specifically as possible
 - Use 'localized', 'stated as' and 'NOS' sparingly

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CS General Guidelines

- 7. Use of clinical-pathologic information
 - In general, pathology information takes priority
 - When malignant tissue is not completely removed or not removed, gross observation at surgery important
 - Clinical information can change the stage
 - All information pertaining to the case coded according to CS rules

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CS General Guidelines

- 7. Use of clinical-pathologic information (con't)
 - When neo-adjuvant treatment is NOT given and pathology report disproves the clinical information
 - When **pre-op treatment given**, record the greatest extent of invasion prior to the beginning of treatment
In rare cases, post-operative disease is more extensive; use code '6' for method of evaluation field
 - Reg LN Pos and Reg LN Exam are based on pathologic information only

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CS General Guidelines

- 8. Eval Fields (CS TS/Ext Eval, CS Lymph Nodes Eval, CS Mets at Dx Eval)
 - General structure
 - 0 clinical only
 - 1 invasive techniques, no bx; or needle bx
 - » bx does not meet criteria for pathologic T
 - 2 autopsy (known or suspected dx)
 - 3 pathology
 - » meets criteria for pathologic T
 - 5 pre-op tx, clinical eval
 - 6 pre-op tx, path eval
 - 8 autopsy (dx not suspected or diagnosed)
 - 9 unknown, not assessed, not documented

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CS General Guidelines

- 9. Site-Specific Factors
 - Included in every schema
 - Incorporated into staging algorithms when additional information is necessary to derive
 - the T, N, M, or
 - TNM Stage group or
 - When the SSF is of clinical or prognostic importance

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CS General Guidelines

- 10. Exclude: tumor extension, lymph node involvement or distant metastasis obtained after disease progression documented
- 11. Autopsy Reports
 - Used in CS the same way as pathology reports
 - Apply same timing rules for inclusion and exclusion

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CS General Guidelines

- 12. Clinician statement of T, N, M
 - Codes included in CS version 2
 - Stated as T1, NOS; Stated as T1a
 - Use only when there is no information available to assign more specific code
 - Discrepancies between clinician statement and documentation
 - Documentation takes precedence
 - Discuss case with clinician

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CS General Guidelines

- 13. Reportable-by-Agreement Cases
 - Staging systems available in TNM for neoplasms that may not be reportable to population-based registries
 - Examples
 - Borderline tumors of ovary; GIST, NOS
 - Carcinoid of appendix
 - Squamous ca of skin
 - High grade dysplasia (esophagus)
 - PanIN III of pancreas, severe ductal dysplasia

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CS General Guidelines

- 14. No forward compatibility
 - CS version 2 maps to both TNM 6th and 7th editions
 - Cannot rerun computer algorithm to derive TNM 7th edition on a pre-2010 case
 - For new schemas, no backward compatibility
 - Cases not previously staged will not generate a TNM 6th edition

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CS General Guidelines

- 15. Lymphomas and hematopoietic diseases generally excepted
 - staging of solid tumors are not same as lymphomas and systemic hematopoietic diseases

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CS General Instructions

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CS General Instructions

- 1. Coding “none” vs. “unknown”
 - Use unknown code(s) if reasonable doubt that tumor is no longer localized
 - Inaccessible lymph nodes:
 - Not easily examined by palpation, observation, physical examination or other similar methods
 - Applies to early stage (T1, T2, localized) tumors
 - Examples (but not limited to): bladder, kidney, prostate, esophagus, stomach, lung, liver, corpus, ovary
 - Coding Death Certificate Only Cases

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CS General Instructions

- 1. Coding “none” vs. “unknown” (con't)
 - Coding Distant Metastases
 - No MX category in TNM 7th edition
 - CS Mets at Dx code 99 (unknown) maps to M0
 - Registrar can assume no distant mets unless there is
 - Evidence of mets clinically (physical exam, imaging, etc.)
 - Microscopically proven distant mets
 - Use code 00 instead of 99

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CS General Instructions

- 2. Use of autopsy information
 - Use appropriate eval code: 2 vs. 8
 - Refer to the schema-specific lists of codes
- 3. Definitions of Adjacent tissues, Structures, and Organs
 - Refer to Part I Section 1, p21 of the CS Coding Instructions for terms that relate to adjacent connective tissues, organs and structures

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CS General Instructions

- 4. Ambiguous Terminology
 - Some terms are considered as involvement and others should not be considered as involvement
 - Refer to Part I Section1 p22 of the CS Coding Instructions
- 5. Coding Involvement of regional and distant lymph nodes
- 6. Document source of CS data elements

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Coding Instructions for CS Data Elements

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CS Data Elements: Tumor Size

- Priority of Tumor Size Source:
 - No preoperative treatment - PATHOLOGY report
 - Preoperative treatment – IMAGING report UNLESS tumor is larger at surgery
 - IMAGING report – when no specific size info from path or operative report

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CS Data Elements: Tumor Size

- Record exact size of primary tumor
 - Code the size of the primary tumor, not the size of polyp, ulcer, cyst or distant metastasis
 - **EXCEPTION:** If the tumor is described as "cystic mass" and the size given is entire mass, code the size of the entire mass
 - Record the largest dimension or diameter of tumor
 - Record the size of the invasive component, if given

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CS Data Elements: Tumor Size

- Record exact size of primary tumor (con't)
 - Both an in situ and invasive component present
 - Additional rule for breast primaries
 - Pure in situ lesions

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CS Data Elements: Tumor Size

- Record exact size of primary tumor (con't)
 - Disregard microscopic residual or positive surgical margin
 - If residual tumor is larger than excisional biopsy, code the size of residual tumor
 - Do not add pieces of chips together

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CS Data Elements: Tumor Size

- Record exact size of primary tumor (con't)
 - Residual tumor is larger than excisional biopsy
 - Incisional needle biopsy
 - Malignant melanoma
 - Multifocal/multicentric tumors
 - “Stated as”

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CS Data Elements: Tumor Size

- Special Codes:
 - Use field for tumor dimension only
 - No size reported, code as 999
 - Use of Code 000, 990 – 995, 998

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CS Data Elements: Extension

- Code the farthest documented extension of the primary tumor
 - Do not include discontinuous mets to distant sites

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CS Data Elements: Extension

- Record extension information:
 - No neo-adjuvant treatment: Pathology report
 - Neo-adjuvant treatment: clinical report prior to treatment
 - No response to neo-adjuvant treatment and the tumor is more extensive than the clinical: pathology report

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CS Data Elements: Extension

- Contiguous extension only
 - All codes represent direct extension of tumor
 - Exception of mucinous carcinoma of appendix, corpus uteri, ovary, fallopian tube and female peritoneum.

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CS Data Elements: Extension

- Code the highest applicable specific number
 - Codes for Unknown, Not Applicable, and NOS categories such as Localized NOS or "Stated as T1, NOS" do not take priority over more specific codes with lower number
- Inferring extension code from stated T category or site-specific staging
 - If the information in the medical record is ambiguous or incomplete, physician statement of T category can be used

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CS Data Elements: Extension

- Use of NOS categories:
 - NOS is added when there is further breakdown of the category into subsets, but the correct subset cannot be determined
- Discontinuous or distant metastases:
 - Must be coded in CS Mets at Dx field
 - Exceptions: corpus uteri, ovary, fallopian tube and female peritoneum

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CS Data Elements: Extension

- In situ pathology with nodal or metastatic tumor
 - Use code Localized, NOS if there is no better info then in situ
- Microscopic residual or positive tumor margins:
 - Does not increase the extension code

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CS Data Elements: CS Lymph Nodes

- Record the specific involved regional lymph node chain(s) farthest from the primary site:
 - Identifies regional nodes only
 - Code farthest involved regional node chain clinically or pathologically
 - If no neoadjuvant therapy: use pathology information
 - Pathologic information takes precedence: if there is discrepancy between clinical and pathologic information about the same lymph node
 - Inaccessible lymph nodes rule for regional lymph nodes

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CS Data Elements: CS Lymph Nodes

- Record the specific involved regional lymph node chain(s) farthest from the primary site (con't):
 - Direct tumor extension into lymph node
 - Multiple nodes involved for head and neck primary
 - Neoadjuvant treatment planned or administered
 - No response to neoadjuvant treatment
 - Use of Code 800

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CS Data Elements: CS Lymph Nodes

- When CS Extension is coded as in situ or noninvasive
 - Use code 000 when CS Ext is coded in situ
 - “In situ” means noninvasive
 - If there is evidence of regional lymph node involvement, code the CS Lymph Nodes appropriately and code the CS Extension and behavior code to reflect that the tumor is invasive

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CS Data Elements: CS Lymph Nodes

- Terms meaning lymph node involvement:
 - If solid tumor- “fixed”; “matted”; “mass in the hilum, mediastinum, retroperitoneum, and/or mesentery” are considered involvement
 - Ignore: palpable, enlarged, visible swelling, shotty, lymphadenopathy unless statement of involvement present
 - For lymphoma cases, any positive involvement indicates involvement of lymph nodes

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CS Data Elements: CS Lymph Nodes

- Terms meaning lymph node involvement (con't):
 - Inaccessible lymph nodes rule
 - “homolateral”, “ipsilateral” and “same side” are used interchangeably
 - Any unidentified nodes included with the resected primary site specimen are to be coded as regional lymph nodes, NOS

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CS Data Elements: CS Lymph Nodes

- Coding size of lymph node: code from pathology report, if available
 - Code the size of the mets, not the entire node
 - Some site specific schema will require to code the size of the entire node
 - If the size of the mets in the node is unknown, code the size of the involved node
 - Code the clinical size if pathology report is not present

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CS Data Elements: CS Lymph Nodes

- Coding size of lymph node: code from pathology report, if available (con't)
 - If the size is described as a mass, code the size of the mass
 - Info about location, number and size of the lymph nodes may be collected in CS Lymph Nodes field and one or more site-specific factors

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CS Data Elements: CS Lymph Nodes

- Inferring lymph node involvement from stated N category or site-specific staging
- Isolated Tumor Cells (ITCs) in lymph nodes: ITCs are single cells or small clusters of epithelial cells in regional lymph nodes whose metastatic potential unknown
- Use of NOS categories

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CS Data Elements: CS Lymph Nodes

- Discontinuous (satellite) tumor deposits (peritumoral nodules) for colon, appendix, rectosigmoid and rectum:
 - Tumor nodules in pericolic or perirectal fat without evidence of residual lymph node structures can be one of several aspects of the primary cancer: discontinuous spread, venous invasion with extravascular spread, or a totally replaced lymph node
- 7th edition: if the primary tumor is localized or T1 or T2, code CS Lymph Node as 050
- Code the total number of tumor deposits in the appropriate SSFs for Tumor Deposits

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CS Data Elements: CS Lymph Nodes

- Sentinel lymph nodes
 - Involved nodes found during sentinel lymph node procedures are positive nodes and coded in CS Lymph Nodes
 - Involved nodes may be classified as clinical if there is no resection of the primary tumor

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**CS Data Elements: Regional Nodes
Positive/Examined**

- Regional lymph nodes only
- Based on pathologic information only
- True in situ cases cannot have positive lymph nodes

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**CS Data Elements: Regional Nodes
Positive/Examined**

- Counting nodes (positive or examined):
 - Cumulative from all procedures that removed lymph nodes
 - Do not count positive aspiration or core biopsy of node in same chain removed at surgery
 - Do count positive aspiration or core biopsy of node in different region
 - If location of biopsied/aspirated node unknown, do not count

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**CS Data Elements: Regional Nodes
Positive/Examined**

- Isolated tumor cells (ITCs) in lymph nodes:
 - Do not include in the count of lymph nodes positive and examined
 - Exception: For cutaneous melanoma and Merkel cell carcinoma, count nodes with ITCs as positive nodes
- Priority of node counts
 - Final dx, synoptic report, microscopic, gross

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CS Data Elements: Regional Nodes Positive/Examined

- Special Codes
 - Code 95: when the only procedure is a needle aspiration or core biopsy
 - Use of Code 97: when the number of involved nodes cannot be determined
 - Use of Code 98: When the assessment of lymph nodes is clinical only

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CS Data Elements: Regional Nodes Examined

- “Sampling”: removal of a limited number of lymph nodes
 - Lymph node biopsy, berry picking, sentinel lymph node procedure, sentinel node biopsy, selective dissection
- “Dissection”: removal of most or all of the nodes in the lymph node chain(s)
 - Lymphadenectomy, radical node dissection, lymph node stripping

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CS Data Elements: CS Mets at Dx

- Generally used for discontinuous, blood-borne, or fluid-borne mets and involved distant lymph nodes
- Code the documented metastasis
 - Priority given to the highest M category or subcategory
 - May be clinical or inferred
 - May be based on tissue diagnosis (pathology)
 - If pre-op rx: clinical stage information is used

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CS Data Elements: CS Mets at Dx

- Mets at Dx codes (general structure)
 - 10 Distant lymph nodes
 - 40 Specific named structures or carcinomatosis
 - 50 Distant nodes plus distant mets
 - 60 Nonspecific distant metastases
- No MX in TNM 7th edition
 - Registrar can code Mets at Dx 00 unless distant mets are identified and classified as cM1 or pM1

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CS Data Elements: CS Mets at Dx

- When to code 00 vs. 99
 - Code 00 when
 - No clinical or pathologic evidence of distant mets and patient is not treated as if mets are present or suspected
 - Only history and physical exam must have been performed
 - Code 99 when
 - Reasonable doubt that tumor no longer localized
 - Maps to MX in TNM 6th edition and M0 in 7th edition
- No MX in TNM 7th edition
 - Registrar can code Mets at Dx 00 unless distant mets are identified and classified as cM1 or pM1

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CS Data Elements: CS Mets at Dx

- Inferring distant metastases from stated M category
- Use of NOS categories
- CTCs and DTCs: Breast only: code as 05
- Code 98: Lymphoma, heme-retic, and some other sites

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Mets at Dx-Metastatic Sites

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

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Lymph-Vascular Invasion

- 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

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Lymph-Vascular Invasion (con't)

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

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Grade Path Value

- New item
 - In addition to 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

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Grade Path Value (con't)

- 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

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Grade Path System

- New item
 - In addition to Grade Differentiation (#440)
- Record stated grade system
- 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

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Grade Path System (con't)

- Coding instructions
 - Record grade system 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 denominator

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Site-Specific Factors

- 25 SSFs available
 - Needed for TNM mapping
 - Number of positive axillary nodes, extracapsular extension; thickness of melanoma
 - Tumor markers and lab values
 - CA 125, CA 19-9, AFP, HCG, KRAS, Ki-67
 - Prognostic/predictive
 - Gleason tertiary pattern; IPI, FLIPI, IPS (lymphomas), HER2
 - Future research/special interest
 - Microsatellite instability (GI cancers), CTCs and DTCs (breast), TILs (Merkel cell)
 - Associated diseases and conditions
 - History of asbestos exposure (pleural mesothelioma), retinoblastoma gene mutation

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Conclusion

- Coding Instructions Part I
 - Have been greatly expanded
 - More examples
- Part I Section 1
 - General information
- Part I Section 2
 - Site-specific factors including lab tests and tumor markers

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CAnswer Forum

- Submit questions to CS Forum
 - Located within the CAnswer Forum
 - Provides information for all
 - Allows tracking for educational purposes
 - Includes archives of Inquiry & Response System
- CS Forum: <http://cancerbulletin.facs.org/forums/>
- CS Web Site: www.cancerstaging.org/cstage



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