How to Use the AJCC Cancer Staging Manual, 7th ed.

FCDS ANNUAL CONFERENCE
ST PETERSBURG, FLORIDA
JULY 30, 2015

Steven Peace, CTR

Outline

- History, Purpose and Background
- Purchase and Ordering Information
- AJCC Staging Manual Organization
- General Chapter Outline and Contents
- Identifying Specific Neoplasms Included by Chapter
- Neoplasms Not Included in the AJCC Manual
- Locating the Correct Chapter for a Case
- Using AJCC TNM Staging Forms
- Other Helpful Information
- Questions
History, Purpose and Background

- The AJCC Cancer Staging Manual and Handbook, prepared by the American Joint Committee on Cancer, are used by physicians, cancer registries, and other allied health care professionals throughout the world to facilitate the uniform description and reporting of cancer staging for most neoplastic diseases.

- Proper classification and staging is essential for physicians to assign proper treatment, evaluate results of management and clinical trials, and to serve as the standard for local, regional and international reporting on cancer incidence and outcomes.

- As knowledge of cancer biology expands, cancer staging must incorporate these advances. This is why the non-anatomic prognostic factors were added in 2010.

- The Seventh Edition of the AJCC Cancer Staging Manual brings together all the currently available information on staging of cancer at various anatomic sites and incorporates newly acquired knowledge on the etiology and pathology of cancer...supplemented by selected molecular markers

<table>
<thead>
<tr>
<th>Edition</th>
<th>Publication Year</th>
<th>Effective Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1977</td>
<td>1978-1983</td>
</tr>
<tr>
<td>2</td>
<td>1983</td>
<td>1984-1988</td>
</tr>
<tr>
<td>5</td>
<td>1997</td>
<td>1998-2002</td>
</tr>
<tr>
<td>6</td>
<td>2002</td>
<td>2003-2009</td>
</tr>
<tr>
<td>7</td>
<td>2009</td>
<td>2010-</td>
</tr>
</tbody>
</table>
Purchase and Ordering Information

- COST: $64.95
- ISBN: 978-0-387-88440-0
- Required - Florida Mandate
  - FCDS will not purchase
  - Facility may purchase
  - Individual may purchase
- Also Required to Purchase 8th Edition in 2016-2017
- https://cancerstaging.org
- http://springer.com
- 1-800-SPRINGER

AJCC Staging Manual Organization

- Part I – Chapter 1 – Purposes and Principles of Cancer Staging
- Part I – Chapter 2 – Cancer Survival Analysis
- Parts II – XII are organized by Body System (digestive/GYN/GU/etc.)
- Each Body System (Part) includes 1 or more Site Chapters
- 57 Site Chapters Organized by Primary Site and/or Histologic Type
  - Chapters are grouped by Body System (digestive, urinary, etc.)
  - Chapters are organized by Disease Site (Primary Site)
  - Plus a few Histology-Based Chapters (melanoma, Merkel cell, etc.)
- Alphabetical Index
- CD-ROM with Printable Staging Forms
Chapter Outline and Contents

Staging at a Glance
Summary of anatomic stage/prognostic grouping

Changes in Staging
Table summarizing changes in staging from the 6th edition

Introduction
Overview of factors affecting staging and outcome

Anatomic Considerations
- Primary Tumor
- Regional lymph nodes
- Metastatic sites

Rules for Classification
- Clinical
- Pathologic

Prognostic Features
Identification and discussion of non-anatomic prognostic factors

Definitions of TNM
T: Primary tumor
N: Regional lymph nodes
M: Distant metastasis

Anatomic Stage Prognostic Groups

Prognostic Factors (SSFs)
- Required for staging
- Clinically significant

Grade

Histopathologic Type

Bibliography

Staging Form

AJCC Cancer Staging Manual, 7th ed. – Chapter 1, Table 1.10, p.14

ANATOMY

Primary Site. The retina is composed of neurons and glial cells. The precursors of the neuronal elements give rise to retinoblastoma, whereas the glial cells give rise to astrocytomas, which are benign and extremely rare in the retina. The retina is limited internally by a membrane that separates it from the vitreous cavity. Externally, it is limited by the retinal pigment epithelium (RPE) and Bruch’s membrane, which separate it from the choroid and act as natural barriers to extension of retinal tumors into the choroid. The continuation of the retina with the optic nerve allows direct extension of retinoblastomas into the optic nerve and then to the subarachnoid space. Because the retina has no lymphatics, spread of retinal tumors is either by direct extension into adjacent structures or by distant metastasis through hematogenous routes.

Regional Lymph Nodes. Because there are no intrasceral lymphatics, this category of staging applies only to anterior extrasceral extension. The regional lymph nodes are preauricular (parotid), submandibular, and cervical.

Local Extension. Local extension anteriorly can result in soft tissue involvement of the face or a mass protruding from between the lids. Posterior extension results in retinoblastoma extending into the orbit, paranasal sinuses, and/or brain.

Metastatic Sites. Retinoblastoma can metastasize through hematogenous routes to various sites, most notably the bone marrow, skull, long bones, and brain.

RULES FOR CLASSIFICATION

Choroidal Invasion. The presence and the extent (focal vs. massive) of choroidal invasion by tumor should be stated. Differentiation should be made between true choroidal invasion and artificial invasion due to seeding of fresh tumor

AJCC Cancer Staging Manual, 7th ed. – Chapter 52, Retinoblastoma, p.561
Chapter Outline and Contents

**Clinical Staging.** All suspected cases of retinoblastoma should have a neural imaging scan. If it is possible to obtain only one imaging study, computed tomography (CT) is recommended because detection of calcium in the eye on CT confirms the clinical suspicion of retinoblastoma. The request should include cuts through the plane of the region of the brain. Magnetic resonance imaging is particularly useful if extension into either the extraocular space or the optic nerve is suspected or if there is a concern about the possible presence of a primitive neuroectodermal tumor (PNET) in the pineal region (trilateral retinoblastoma).

A staging examination under anesthesia should include ocular ultrasound and retinal drawings of each eye, with each identifiable tumor measured and numbered. Digital images of the retina may be very helpful. In bilateral cases, each eye must be classified separately. Tumor size or the distance from the tumor to the disc or fovea is recorded in millimeters. These millimeter distances are measured by ultrasound, estimated by comparison with a normalized optic disc (1.5 mm), or deduced from the fact that the field of a 28-diopter condensing lens has a retinal diameter of 12 mm.

**Pathologic Staging.** If one eye is enucleated, pathologic staging of that eye provides information supplemental to the clinical staging. First, the pathology should provide histologic verification of the disease. All clinical and pathologic data from the resected specimen are to be used.

**Processing the Enucleated Retinoblastoma Globe.** In certain situations fresh tumor material may be needed from the enucleated globe for research purposes or genetic testing. In these cases the globe should be moved to a sterile area in the Operating Room away from the operative field. After collecting the specimen, the surgeon should change his/her gloves before reentering the operative field.

**Processing With Tumor Sampling.** To collect the tumor specimen, the optic nerve should be removed before opening the globe to prevent the optic nerve from accidentally becoming contaminated with artifactual clumps of tumor cells (so-called floaters). The surgeon should first ink the surgical margin of...
Identifying Neoplasms by Chapter

- Verify Primary Site against list of ICD-O-3 Topography Codes
  - First Page of Each Chapter includes a list of ICD-O-3 Site Codes

- Verify Histopathologic Type against list of ICD-O-3 Histology Codes
  - First Page of Many Chapters includes a list of ICD-O-3 Histology Codes
  - When there is not a list of Histology Codes – go to end of chapter and review the section entitled “Histopathologic Type” to confirm histology

- If cannot verify site and/or histology then go to the Alphabetical Index at the back of the manual to find site/histology combination

- If there is not a corresponding AJCC Staging Chapter – then “N/A”

**At-A-Glance**

<table>
<thead>
<tr>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Classification</td>
</tr>
<tr>
<td>The definitions of T1–T4 were modified</td>
</tr>
<tr>
<td>The definitions for M1 were modified</td>
</tr>
</tbody>
</table>

| Pathologic Classification |
| Minor modifications were made to the definitions for pT2-pT4 |
| Definition of chordoid invasion, focus versus mass |
| The definitions for pM1 were modified |

| Other |
| A description of proper processing of the excised retinoblastoma tissue for pathological examination was added |

**Anatomic Stage/Prognostic Groups**

- No stage grouping applies

**Prognostic Factors (Site-Specific Factors)**

| Required |
| None |

| Clinically Significant |
| Extension evaluated at enucleation |
| Retina |
| Primary globe-sparring treatment failure |
| Greater linear extent of choroidal involvement by choroidal tumor invasion |

**Histologic Grade (G)**

- Grade: is reported in registry systems by the grade value.
- A two-grade, three-grade, or four-grade system may be used.
- If a grading system is not specified, generally the following system is used:
- G1: Grade cannot be assessed
- G2: Well differentiated
- G3: Moderately differentiated
- G4: Poorly differentiated

**Histopathologic TYPE**

This classification applies only to retinoblastoma.

**Bibliography**


AJCC Cancer Staging Manual, 7th ed. – Chapter 52, Retinoblastoma, p.561 and p.564
Neoplasms Not in the AJCC Manual

- Not all types of cancer are AJCC-stage able.

- Use the Primary Site Codes listed at the beginning of each chapter in the AJCC Cancer Staging Manual. Use the List of Histopathologic Types in each chapter are toward the end of each chapter and are used as a guide to indicate the cancer types which can be AJCC-staged using that staging scheme.

- Histologic Types listed as inclusions (or not listed – because they are exclusions) for each individual chapter should NOT be AJCC-staged using that chapter.

- Note: Some chapters are specifically limited to certain cancer types only with a certain anatomic site (such as skin melanomas). Some chapters are specifically limited to certain histologic types 9590-9729 regardless of primary site. This site and/or histology limitation does not limit coding for the primary site here.

Neoplasms Not in the AJCC Manual

- Pediatric cancers are not included in the AJCC Cancer Staging Manual with only a few exceptions. See below for exceptions.

- These cancers would ordinarily be considered un-stage able in this system.

- However: if a physician has staged a pediatric case using TNM (clinically or pathologically), then this staging may be coded and unknown codes should be used for any unspecified fields.

- Exceptions: Musculoskeletal Sites (sarcoma), Lymphoid Neoplasms, Retinoblastoma, and Other Neoplasms of Primary Site and/or Histology where a relevant chapter that would include pediatric cases exists.
Neoplasms Not in the AJCC Manual

- When the primary site is not clear, not specified or unknown.

- AJCC staging of the cancer should be based on "reasonable clinical certainty" of a primary site identification. You cannot assign TNM to C80.9 or C76.* cases.

- When there is not "reasonable clinical certainty" indicating one primary site, then the AJCC staging should be "not applicable" (as for an unknown primary site).

- When a case is assigned a Primary Site Code of “body system, NOS” that would also include sub-sites such as “colon, NOS” versus “sigmoid colon” the case cannot be staged due to lack of specificity of tumor origin or degree of cancer spread from that NOS primary site at diagnosis, including regional lymph nodes.

- Exception: Histology-based chapters such as “Lymphoid Neoplasms”

Refer Directly to the AJCC Manual

- The Collaborative Stage Data Collection System has spoiled all of us because the API used by everybody for all CS cases uses the primary site and histology you entered in the abstract to make sure you are using the correct CS Schema. The API uses site/histology to automatically pull up the correct CS Schema including Notes, and all the registrar has to do is find the code that best reflects the extension, nodes, mets at diagnosis and the associated SSFs. The algorithm determines if the AJCC data can be populated – not you.

- Registrars will have to focus more on what is and just as important what is not included in each AJCC Chapter rather than what pops open with your abstractor field menus to ensure you assign TNM and AJCC Stage Group correctly. EDITS will not yet catch errors.

- The Chapters are treated as though they are comprehensive for cancers of a particular site and/or histology without exception. But, there are histology exceptions for each chapter. These are now treated as inclusion rather than exclusion criteria.

- So, YOU MUST KNOW THAT YOU ARE USING THE RIGHT CHAPTER – the software won’t check to make sure you are using the correct chapter schema like CS did. Learning Curve...
Refer Directly to the AJCC Manual

Once you have sized up the case and read through all of the imaging studies, diagnostic biopsy (any type), resection including lymph nodes if done, neo-adjuvant therapy status, operative report, consultations, etc. Be sure to include and annotate in text the physician stage if provided as a component of your assessment.

PLEASE - DO NOT JUST TAKE THE PHYSICIAN STAGE WITHOUT ASSESSING THE CORRECTNESS. You might have additional information in the medical record that was not available or not included in the physician and/or pathologist assignment of TNM or AJCC Stage Group.

Use the Definitions of TNM Section in the Chapter to assign the most appropriate T, N, and M values using the AJCC Staging Manual Instructions and Rules for assignment. Remember the Downstaging Rule when assigning. And, note that for some cancers or specific cases you may not be able to assign a value as precisely as you did in CS Ext or CS LN.

Make sure you include any prognostic factors (anatomic or non-anatomic) that are required for determining the correct Anatomic Stage/Prognostic Groups – most are SSFs may also include: age, histologic type, grade of tumor, as well as other non-anatomic SSFs.

Assigning AJCC TNM - N/A Cases

CoC FORDS Values – Blank, X, 88, 99

- T, N, and M data fields
  - Values allowed by FORDS
  - Further explanations from AJCC
    - Blank indicates
      - No information in medical record
      - Do not know if any assessment was performed
      - Criteria not met for this stage classification so each category (T,N,M) is blank
    - X indicates not assessed
      - T cannot be assessed
      - N cannot be assessed
      - Does not apply to M, if patient was examined it can be assessed
      - Criteria met for this stage classification so each category is valid value or X
    - 88 indicates not applicable, not defined by AJCC

Code 88 = Not Applicable
- Unknown Primary Site
- Pediatric Neoplasm
- Ill-Defined Primary Site
- Histology Excluded
Assigning Stage Group - N/A Cases

CoC FORDS Values – Blank, X, 88, 99

- Stage group data fields
  - Values allowed by FORDS
  - Further explanations from AJCC
  - Blank indicates
    - No information in medical record or
    - Criteria not met for pathologic staging
      - CoC does not allow blank for clinical staging
  - 99 indicates unknown, not defined by AJCC
    - 99 indicates T or N are unknown, and stage cannot be assigned
    - 99 indicates T, N, or M are not specific enough to assign stage
      - Example: T2 assigned when T2a or T2b needed to assign stage
      - CoC mandates non-blank for clinical stage group, use 88
    - Do not use 99 if pathologic staging criteria not met, use blank
  - 88 indicates not applicable, not defined by AJCC

Code 88 = Not Applicable
- Unknown Primary Site
- Pediatric Neoplasm
- Ill-Defined Primary Site
- Histology Excluded

AJCC Registrar Curriculum – Explaining Blanks and X, Ambiguous Terminology and Support for AJCC Staging

Locating the Correct TNM Chapter

- Verify Primary Site against list of ICD-O-3 Topography Codes
  - First Page of Each Chapter includes a list of ICD-O-3 Site Codes

- Verify Histopathologic Type against list of ICD-O-3 Histology Codes
  - First Page of Many Chapters includes a list of ICD-O-3 Histology Codes
  - When there is not a list of Histology Codes – go to end of chapter and review the section entitled “Histopathologic Type” to confirm histology

- If cannot verify site and/or histology then go to the Alphabetical Index at the back of the manual to find site/histology combination

- If there is not a corresponding AJCC Staging Chapter – then “N/A”
Verifying the Correct TNM Chapter

<table>
<thead>
<tr>
<th>At-A-Glance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUMMARY OF CHANGES</strong></td>
</tr>
<tr>
<td><strong>Clinical Classification</strong></td>
</tr>
<tr>
<td>- The definitions of T2-T4 were modified</td>
</tr>
<tr>
<td>- The definitions for M1 were modified</td>
</tr>
<tr>
<td><strong>Pathologic Classification</strong></td>
</tr>
<tr>
<td>- Minor modifications were made to the definitions for pT2-pT4</td>
</tr>
<tr>
<td>- Definition of chorioidal invasion, focal versus massive</td>
</tr>
<tr>
<td>- The definitions for pM1 were modified</td>
</tr>
<tr>
<td><strong>Other</strong></td>
</tr>
<tr>
<td>- A description of proper processing of the enucleated retinoblastoma globe for pathological examination was added</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANATOMIC STAGE/PROGNOSTIC GROUPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-stage grouping applies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROGNOSTIC FACTORS (SITE-SPECIFIC FACTORS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended for Collection</strong></td>
</tr>
<tr>
<td><strong>Required for staging</strong></td>
</tr>
<tr>
<td>Clinical significance</td>
</tr>
<tr>
<td>Extent evaluated at excision</td>
</tr>
<tr>
<td>RB gene mutation</td>
</tr>
<tr>
<td>Positive family history of retinoblastoma</td>
</tr>
<tr>
<td>Primary globe-sparring treatment failure</td>
</tr>
<tr>
<td>Greatest linear extent of chorioidal involvement by chorioidal tumor invasion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HISTOPATHOLOGIC TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>This classification applies only to retinoblastomas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BIBLIOGRAPHY</th>
</tr>
</thead>
</table>

---

Read the Chapter Introduction, Anatomy and Rules Before You Start

- These 3 sections are too often overlooked or skimmed. This is where most of your questions will be answered...not in the coding section.

- The Rules for Classification instruction you as to which diagnostic and staging tests, imaging, biopsy, sentinel or resected nodes, etc. can and should be used when assigning clinical or pathologic TNM.

- Sometimes the Cancer Staging Form and/or the AJCC Chapter includes anatomic drawings to help clarify local/regional anatomy.

- Always review the Prognostic Features as this will help you identify which laboratory tests, symptoms, or other factors are important for staging.
HELP – The Number of Primaries is NOT the Same - MPH Rules vs. AJCC

- What do you do when the MPH Rules tell you the case is one primary and the AJCC criteria tells you the case is two primaries?
- Why are they different and who is correct?
- What about “recurrences” versus “new primary”?
- Will this be “fixed” before the AJCC Cancer Staging Manual, 8th ed.
- Will there be new MPH Rules or updates to MPH Rules before 8th ed.

Practice TNM Staging by Chapter

- Read the COMPLETE AJCC Chapter – THEN work 5-10 cases
- DO NOT START WITH BREAST OR OTHER COMPLEX CHAPTER
- Please take your time – read, learn, practice
- 5-10 Colon Cases
- 5-10 Lung Cases
- 5-10 Breast Cases
- 5-10 Bladder Cases
- 5-10 GYN Cases
- 5-10 Melanoma Cases
- Then Other Sites of Interest

There is no glory in practice, but without practice, there is no glory… –Unknown
Refer Directly to the AJCC Manual

- The Collaborative Stage Data Collection System has spoiled all of us because the API used by everybody for all CS cases uses the primary site and histology you entered in the abstract to make sure you are using the correct CS Schema. The API uses site/histology to automatically pull up the correct CS Schema including Notes, and all the registrar has to do is find the code that best reflects the extension, nodes, mets at diagnosis and the associated SSFs. The algorithm determines if the AJCC data can be populated – not you.

- Registrars will have to focus more on what is and just as important what is not included in each AJCC Chapter rather than what pops open with your abstractor field menus to ensure you assign TNM and AJCC Stage Group correctly. EDITS will not yet catch errors.

- The Chapters are treated as though they are comprehensive for cancers of a particular site and/or histology without exception. But, there are histology exceptions for each chapter. These are now treated as inclusion rather than exclusion criteria.

- So, YOU MUST KNOW THAT YOU ARE USING THE RIGHT CHAPTER – the software won’t check to make sure you are using the correct chapter schema like CS did. Learning Curve...

Refer Directly to the AJCC Manual

- Once you have sized up the case and read through all of the imaging studies, diagnostic biopsy (any type), resection including lymph nodes if done, neo-adjuvant therapy status, operative report, consultations, etc. Be sure to include and annotate in text the physician stage if provided as a component of your assessment.

- PLEASE - DO NOT JUST TAKE THE PHYSICIAN STAGE WITHOUT ASSESSING THE CORRECTNESS. You might have additional information in the medical record that was not available or not included in the physician and/or pathologist assignment of TNM or AJCC Stage Group.

- Use the Definitions of TNM Section in the Chapter to assign the most appropriate T, N, and M values using the AJCC Staging Manual Instructions and Rules for assignment. Remember the Downstaging Rule when assigning. And, note that for some cancers or specific cases you may not be able to assign a value as precisely as you did in CS Ext or CS LN.

- Make sure you include any prognostic factors (anatomic or non-anatomic) that are required for determining the correct Anatomic Stage/Prognostic Groups – most are SSFs but may also include; age, histologic type, grade of tumor, as well as other non-anatomic SSFs.
Other Helpful Information

- Optional AJCC TNM Staging References

![Cancer Staging Atlas](http://www.springer.com/us/book/9781461420798) $84.95
![Cancer Staging Handbook](http://www.springer.com/us/book/9780387884424) $44.95


REPRINTS & ERRATA

- Several "Reprints" Published
- New Manuals Complete
- Errata May Be Needed
- Check Printing Reprint
- Download Errata Needed
- Mesh into Your Manual

Other Helpful Information

TNM Help
- AJCC 6th ed. & 7th ed. Help
- Introduction Help
- Abbreviated Chapter
- Explanatory Notes
- Common Questions
  - FREE!


Q&A

Donna M. Gress, RHIT, CTR
AJCC Technical Specialist
dgress@facs.org

AJCC
American Joint Committee on Cancer
Validating science. Improving patient care.
633 N. Saint Clair, Chicago, IL 6011-3211
cancerstaging.org

Steven Peace – FCDS
305-243-4601
speace@miami.edu