Cancer PROGRAMS
QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

AJCC
American Joint Committee on Cancer
Validating science. Improving patient care.

Essentials of Navigating the AJCC Cancer Staging Manual, 8th Edition

Donna M. Gress, RHIT, CTR

American College of Surgeons
Inspiring Quality: Highest Standards, Better Outcomes
100+years

1

Learning Objectives

AJCC
American Joint Committee on Cancer
Validating science. Improving patient care.

- Evaluate staging rule changes and effect on registrars
- Dissect registry and physician staging concerns
- Demonstrate staging issues through examples

Cancer PROGRAMS
QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

2

AJCC
American Joint Committee on Cancer
Validating science. Improving patient care.

Staging Rules Effect on Registry

Cancer PROGRAMS
QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

3

Researchers Need Accurate Data

AJCC
American Joint Committee on Cancer
Validating science. Improving patient care.

- Physician rules to assign stage for patient care
- Registry rules for accurate data analysis
- Registrar must assign appropriate AJCC stage
  - AJCC heard challenges of navigating 8th edition staging
  - Provide direction for steering your way through manual
  - Effect of rules on data needed to improve patient care

Cancer PROGRAMS
QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

4

Researchers Need Accurate Data

- Must follow specific registry (not physician) rules
  - No use of uncertain (downstaging) rule
    - cT blank cN0 cM0 when physician stated cT1 or cT2
  - No use of lowest prognostic factor category
    - pT2 pN0 PSA blank Grade Group 3 cM0
  - No use of stage group not in AJCC table
    - pTis pN1 cM0 stage group unknown/99

5

Researchers Need Accurate Data

- Registry stage data
  - **May** not always match physician stage
  - Most involving incomplete information are **uncommon**
  - Uncertainty **mostly confined to clinical** staging
  - Unavailable prognostic factors for staging are **unusual**
- Rationale
  - Important for consistent handling
  - Important to mitigate effect on data analysis
  - Provide accurate national data to inform patient care

6

Blank vs. X and 99

- AJCC staging rules do not exist for blanks and 99's
- Blank vs. X
  - AJCC X definition is physician cannot assess patient's cancer
  - Cannot use AJCC X for registrar doesn't know, must be blank
- Tell patient's story through staging
  - X = phys has no exam/imaging results or results cannot be quantified
  - Blank = registrar had no access to physician info on patient
- Registry rules for 99's
  - Standard setters confirm data item not skipped

7

No Nodes Resected – pNX – Physician

- Elderly patient has breast lumpectomy, no nodes removed

Physician
- cT2 cN0 cM0 Gr 2 HER2 neg ER pos PR pos stage IB
- pT2 cN0 cM0 Gr2 HER2 neg ER pos PR pos stage IA

- Physician needs to provide patient their prognosis
- AJCC rules only allow cN0 exceptions for certain sites
  - Bone, soft tissue sarcoma, corpus uteri, some ophthalmic sites
  - Critical Clarification: Node Status Not Required Rare Circumstances

8

No Nodes Resected – pNX – Registrar

- Elderly patient has breast lumpectomy, no nodes removed

Registrar Perspective
- cT2 cN0 cM0 Gr 2 HER2 neg ER pos PR pos stage IB
- pT2 pNX cM0 Gr2 HER2 neg ER pos PR pos stage 99

- Registrar must follow AJCC staging rules
- No information is lost
- Highlights difference between cN & pN
- No confusion about node status in analysis

9

No Nodes Resected – pNX – Summary

- Elderly patient has breast lumpectomy, no nodes removed

Physician
- cT2 cN0 cM0 Gr 2 HER2 neg ER pos PR pos stage IB
- pT2 cN0 cM0 Gr2 HER2 neg ER pos PR pos stage IA

Registrar
- cT2 cN0 cM0 Gr 2 HER2 neg ER pos PR pos stage IB
- pT2 pNX cM0 Gr2 HER2 neg ER pos PR pos stage 99

- Remember clinical staging cN0 available for data analysis

10

Assign Each Category

- Assign each available category, even if others blank
- One category missing **does not** negate other categories
- Assignment of any category is valuable data
  - Considerable data analysis on just T or N in isolation
  - Always document what you know
- Examples
  - cT2 cN blank cM0
  - cT blank cN1 cM0

11

Value in Categories

- Value in TNM categories even if group not assigned
  - Group isn't final answer
  - AJCC accepts some cases will not have stage group
  - No stage group in some scenarios accurate and reflective of rules
- Capturing T, N, M is extremely **valuable data**
  - Staging updates often made on T and N data alone
  - Helps inform better future patient care
- Staging
  - Stage group for patient in room with physician, outcomes/survival
  - T,N,M is for patient who will be with physician in 10 years
  - AJCC strives to help both patients

12

Completeness vs. Accuracy

- Completeness is good, but **accuracy** is better
- Registrars' major contribution is accuracy of TNM and prognostic factor categories
  - Cases without complete staging is OK if true to rules
  - Better to have T and M with no N than nothing at all
- Researchers use all data available
  - Omitting what you know is not helping
  - Guessing at what you don't know is harmful

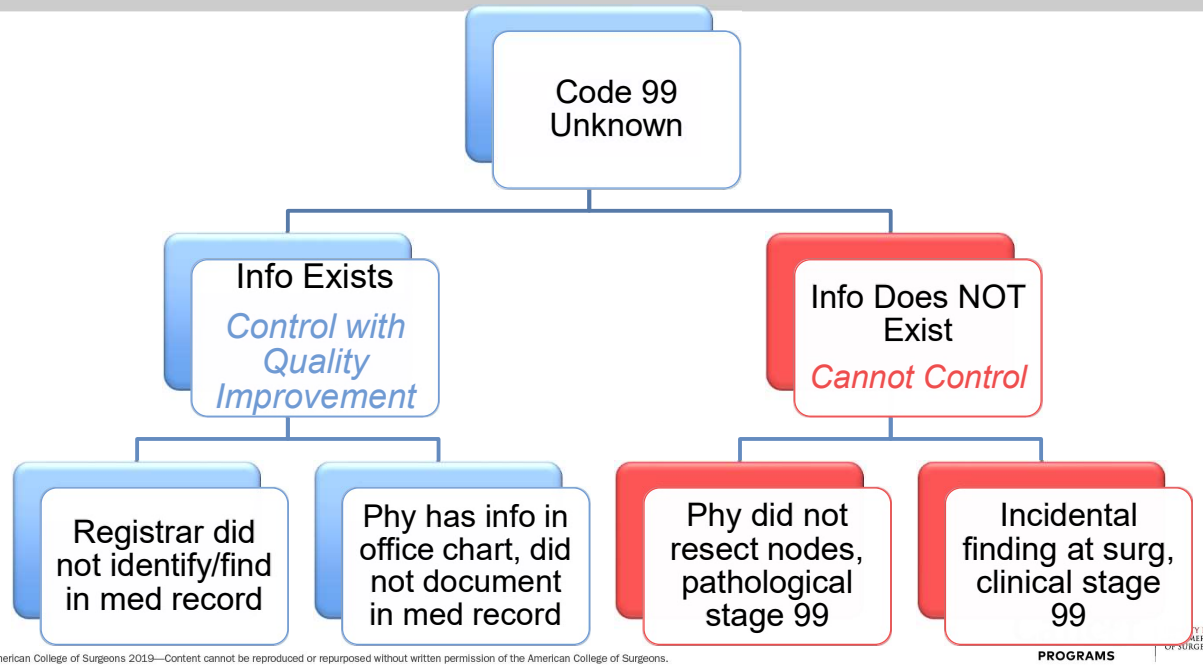
13

Code 99 Unknown

- Physician stage and registry data mismatch concerns
  - Registry viewed as wrong or not reflecting physician stage
  - Frequency of incomplete info or doesn't exist should be **minimal**
  - Frequency of missing info should be reviewed for QI
- Distinguish info that doesn't exist from missing information
- All 99's are not the same – not created equal
  - Document in abstract what type: doesn't exist or missing
  - Quality improvement opportunity

14

99 Unknown – Does Information Exist?



15

Code 99 Unknown

- Example of info doesn't exist:
  - Renal cell ca kidney resection with no nodes removed
    - Registrars assign pNX, stage group 99
    - Node dissection optional in some cases, data doesn't exist
    - Cannot control, appropriate medical care
  - Appendectomy for acute appendicitis
    - Incidental finding of cancer on resection specimen
    - No clinical stage may be assigned, TNM blank, stage group 99
    - Cannot control, appropriate medical care

16

Code 99 Unknown - Opportunity for QI

- Opportunity for registrar quality improvement
  - Identify when registrar did not recognize necessary info in chart
    - Did not understand medical information in chart
    - Did not apply staging rules correctly to medical info
- Opportunity for completeness quality improvement
  - Identify ***missing information*** in medical record
    - Missing prognostic factor
    - Unclear info with no assignment of T or N category in chart
  - Info only available in physician office chart or other facility
- Improve physician documentation of ***missing information***
  - Positive impact on registry data completeness
  - Patient data available to other medical team members
  - Benefits for facility, physicians, and patient care

17

Cancer Program Standards

STANDARD 1.6

Cancer Registry Quality Control Plan

Each calendar year, the cancer committee establishes and implements a plan to annually evaluate the quality of cancer registry data and activity. The plan includes procedures to monitor and evaluate each required control plan component.

4. Identifies the activities to be evaluated. Required activities:
   d. The percentage of information coded as unknown (usually coded as 9 or a string of 9s)
6. Establishes the minimum quality benchmarks and required accuracy. Cancer registry data submitted to the NCDB meet the established quality and timeliness criteria included in the annual NCDB Call for Data.

- Note: *No predetermined threshold for 9's from CoC*
- Facility sets review standards & benchmarks

18

Guidance for Registry Quality Control

AJCC American Joint Committee on Cancer
Validating science. Improving patient care.

- Review metric of 99 unknown in CoC Standard 1.6
  - Identify which category for 99's
    Can control with QI vs. Cannot control
  - Further identify "can control"
    - Registrar education
    - Physician documentation
  - ***99's can demonstrate accuracy AND completeness***
- Registry next steps
  - QI plan for "can control" issues
  - Monitor "cannot control" for appropriateness
- AJCC/Cancer Programs communication plan
  - Discuss difference in 99's with surveyors
  - Inform accredited programs: Ca Comm, leadership

Cancer PROGRAMS | QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

19

AJCC American Joint Committee on Cancer
Validating science. Improving patient care.

Specific Chapter Topics

Cancer PROGRAMS | QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

20

Grade – Based on AJCC Stage Rules

- Clinical Grade: diagnostic workup
- Pathological Grade:
  - Clinical stage info + resected specimen path report
  - Remember pathological stage = clinical stage + op findings + resected specimen path report
  - Example
    - Clinical stage G2 + path specimen G1 = G2 pathological grade
    - Pathological grade is for **patient**, not grade based on one specimen
- Posttherapy Grade: all post-Rx bx + resected specimen

21

Breast Grade Category in Stage Group

- **Must** be Nottingham for invasive ca, not nuclear grade
  - Assign G1 – G3
- Nuclear grade
  - Just one of three components of Nottingham
  - **Least reproducible** of three components
  - Must **not** use for grade category to assign stage group
  - If nuclear grade, code as A-D, stage group not assigned

22

Breast Posttherapy yp Staging Critical

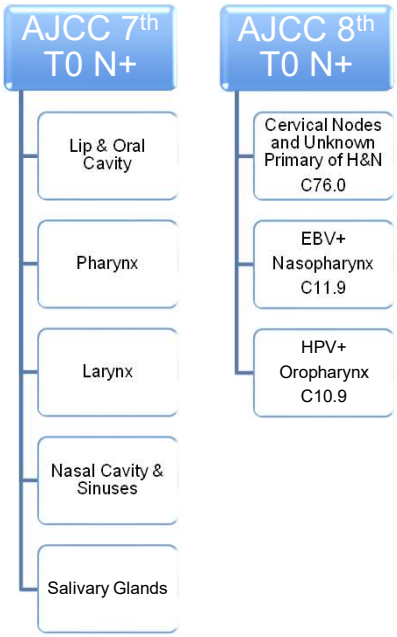
- Critical posttherapy staging, all cases regardless of response
  - Tumor responds, little or no residual
  - Tumor does not respond, stays the same
  - Tumor larger or more nodal involvement, **not** considered progression
- Assign ypT, ypN, and c/pM categories for all cases
- No posttherapy stage group

23

Neck Nodes with Unknown H&N Primary

7th Edition

- Staging based on nodal involvement
- Case distribution by primary site not based on scientific evidence
- Physicians guessed at primary site, no evidence
- C76.0 not used, unstageable



8th Edition

- Staging based on nodal involvement
- Case distribution by primary site based on scientific evidence
- Choose based on EBV or HPV, all similar cases grouped together
- C76.0 indicates Cervical Nodes Chapter

24

Chapter Selection for HPV & EBV Results

AJCC American Joint Committee on Cancer
Validating science. Improving patient care.

AJCC Chapter Selection		EBV		
		positive	negative	unknown
p16+ HPV	positive	nasopharynx	oropharynx	oropharynx
	negative	nasopharynx	cervical nodes	cervical nodes
	unknown	nasopharynx	cervical nodes	cervical nodes

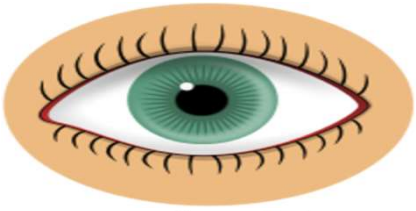
Cancer PROGRAMS QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

25

Melanoma Criteria for Staging

AJCC American Joint Committee on Cancer
Validating science. Improving patient care.

- Clinical staging diagnostic procedures
  - Excisional biopsy of lesion (pupil) to assess thickness (pupil or less)
  - Smaller biopsies may be needed for certain sites
  - Do NOT change staging based on subsequent info
- Pathological staging surgical treatment primary site
  - Resection with 1-2cm margin from tumor on all sides
    - Circle (iris) drawn around lesion (pupil) to establish boundaries
    - Draw football around circle to close wound
  - If nodal sampling/dissection not done, still considered treatment



Cancer PROGRAMS QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

26

Lung Tumors – Separate vs. Multiple

- No simple answer with more than 1 tumor
- Multiple synchronous tumors
  - Arise independently
  - Usually different cell types or subtypes
  - Stage by highest T category, usually largest tumor
  - **Must** use (m) to indicate multiple tumors
- Separate tumor nodules
  - Primary lesion spreading to other areas in lung
  - Intrapulmonary spread is terminology used
  - Assignment of T or M category depends on location
  - Not multiple tumors so (m) is **never** used

27

Postneoadjuvant Staging

28

Not All Meds Meet Neoadjuvant Criteria

- A few med doses isn't treatment
  - AJCC physician experts state no effect on tumor
  - NCCN guidelines establish treatment regimen
  - Do **not** assign posttherapy staging
- Analogy
  - 10 day antibiotic course, comprised of 3 pills per day
  - Take 1 pill on first day and never take any more
  - Equivalent to tamoxifen for 7 days, when full course is ~180 days
  - 7 day pre-op tamoxifen is **not** for treatment
  - Won't act like treatment any more than 1 antibiotic pill when 30 needed to finish course and kill infection

29

Procedures Don't Preclude Neoadjuvant

- Surgery codes
  - Procedures are not treatment
  - Doesn't **disqualify** neoadjuvant therapy & posttherapy yp staging
- Examples of procedure vs. treatment

Site	Diagnostic Workup Procedures	Surgical Treatment
Bladder	TURB	Cystectomy
Rectal	Excisional biopsy	Transabdominal resection

- Must assign posttherapy yp stage

30

Changing Drugs Doesn't Stop Neoadjuvant

- Changing chemo drug class
  - Does **not** stop neoadjuvant treatment plan
  - Must assign AJCC posttherapy stage
- Analogy
  - Penicillin antibiotic for infection
  - Allergic reaction, or no change, or even gets worse
  - Penicillin antibiotic family is beta-lactams, many meds in family
  - Physician tries different drug family
    - Penicillin doesn't work, don't try other drugs in penicillin family
    - 4 classes of antibiotics, physician picks one of other families

31

Progression

- Tumor doesn't "freeze" once identified

caught in imaging light

32

Progression

- Physician states ***progression*** as tumor growing despite Rx
- Tumor is ***not*** like deer in headlights or burglar in spotlight
  - Doesn't freeze & stop growing minute spotted on imaging
  - Cells continue to divide & grow until something kills cells
- If tumor did grow and progress
  - Not considered progression in the sense staging not assigned
- Progression to stop staging
  - Considered as huge shift and major explosion of tumor burden

33

Future – Posttherapy yc

34

3 Types of Neoadjuvant Therapy Patients

Initial treatment	Response to neoadjuvant	Further planned treatment	AJCC staging	% in Data
Neoadjuvant	Good	Surgical resection	yp	100%
Neoadjuvant	No response	Surgery cancelled	yc	0%
Neoadjuvant	Excellent response	No surgery needed	yc	0%

- Significant issue causing incomplete data analysis
  - 20% is estimated no surgery across all disease sites
  - 90% of anal neoadjuvant cases do not have surgery

35

Postneoadjuvant Therapy Staging

- yp: posttherapy pathological staging
  - Initial treatment is systemic/radiation followed by surgical resection
  - Systemic/radiation therapy before planned surgery is “neoadjuvant”
  - Documents response ONLY when patient has surgical resection
- yc: posttherapy clinical staging
  - Following neoadjuvant therapy but before/without planned surgery
  - Based on physical exam, imaging, biopsies or surgical exploration
- Two scenarios where yc must be used
  - Patient doesn’t respond to neoadjuvant, surgery cancelled
  - Patient responds so well, surgery no longer necessary

36

Posttherapy Clinical yc Staging

- CoC intends to collect yc staging in 2021
- Why is yc stage necessary?
  - Shows patient treatment plan initially included surgery
  - Shows **exact** level of response compared to clinical stage
- Examples showing level of response

No Response
cT3 cN1 cM0
ycT4 ycN1 cM0

Exceptional Response
cT3 cN1 cM0
ycT0 ycN0 cM0

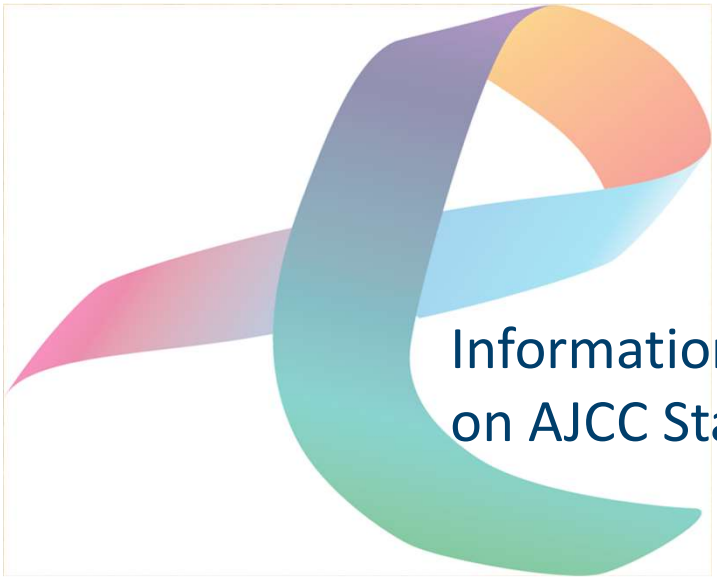
37

Registry Cases & Applicable AJCC Stage

Case #	Treatment	AJCC Stage Classifications			
		Clinical c	Pathological p	Posttherapy yc	Posttherapy yp
1	Surgery	X	X		
2	Neoadjuvant & surgery	X			X
3	Neoadjuvant, surgery cancelled	X		X	
4	Systemic/radiation only	X			

- Registrar never assigns more than 2 AJCC stage classifications
  - Only ask for yc when yp cannot be assigned
  - Provides assessment of response, difference between cTNM and ycTNM
- Without yc, cannot distinguish between Rx for cases 3 & 4

38



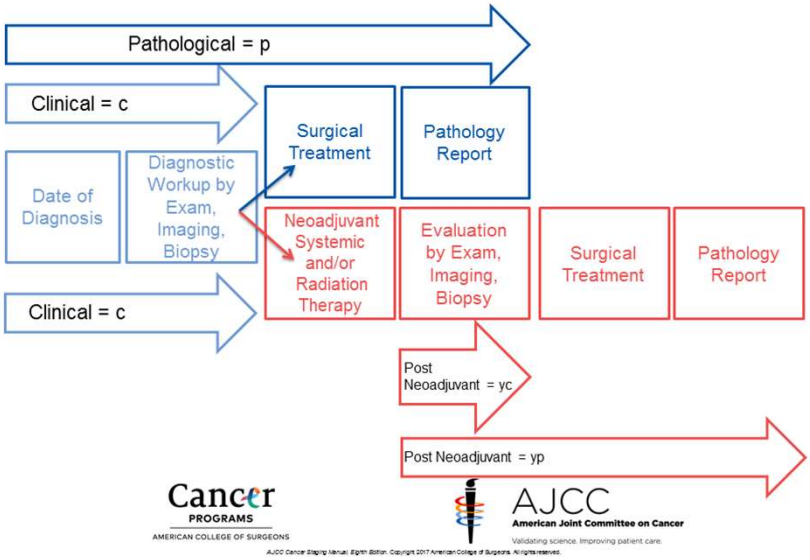
Information and Questions on AJCC Staging

39

Timing Is Everything

AJCC Stage Classifications

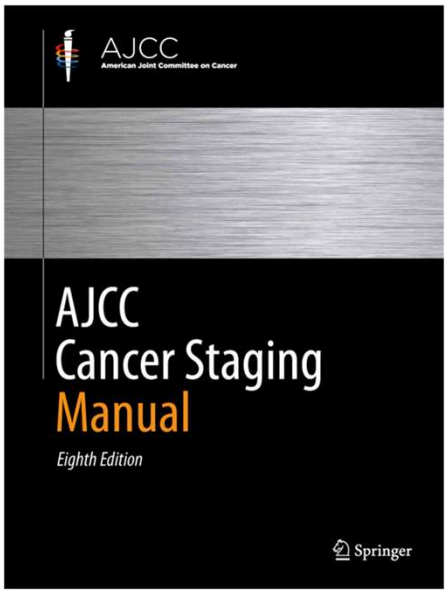
Defining Time Frame and Criteria



40

AJCC Web site

- https://cancerstaging.org
- General information
  - Education
  - Articles
  - Updates
- For Registrars
  - Webinars with free CE hrs
  - Critical Clarifications
  - Staging Moments



41

CAnswer Forum

- Submit questions to AJCC Forum
  - 8th Edition Forum
  - 7th Edition Forum will remain
  - Located within CAnswer Forum
  - Provides information for all
  - Allows tracking for educational purposes
- http://cancerbulletin.facs.org/forums/

42

43

Summary

- Evaluate staging rule changes and understand effect on data
- Dissect registry and physician staging concerns to
  - Understand impact on data
  - Provide information to AJCC and partners for guidance
  - Improve rules and guidelines for registrars
- Demonstrate staging issues through examples to provide clarity to registrars

44

Value of Registrar

- Registrars add value by documenting factual data
- Value in messiness of incomplete/imperfect data
  - Demonstrates what information is needed
  - Helps to move science forward
- Impact on future of staging & patient care

45

Thank You

Donna M. Gress, RHIT, CTR
Technical Editor AJCC Cancer Staging Manual
First Author, Chapter 1: Principles of Cancer Staging

46