Cancer PROGRAMS
QUALITY PROGRAMS of the AMERICAN COLLEGE OF SURGEONS

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

Update on AJCC Eighth Edition TNM Staging

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

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Learning Objectives

AJCC
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- Solve common questions from the past and present
- Dissect new stage data items and future staging changes
- Demonstrate staging issues through examples and analogies

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Annual Updates to AJCC Staging

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Moving from Edition to Version

- AJCC changing how it updates and releases content
  - Shifting from Cancer Staging Manual to Cancer Staging System
  - Moving from Editions to Versions
- Better aligns with
  - Software development and
  - How many users consume our content
- After 40+ years and eight editions – time to modernize
  - Users want AJCC content in their everyday software products
  - Medicine changing more rapidly than new book every 7 years
  - Critical to provide new staging content to improve patient care

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Annual Updates

- Cervix Uteri first cancer updated as version
  - Effective with cancers diagnosed January 1, 2021
  - Replaces 8th edition cervix content from Staging Manual
- Version 9 Cervix Uteri release
  - Electronic tables distributed to licensed software developers
  - Electronic version of new content includes tables, notes, illustrations
    - Available for purchase soon by physicians, registrars and other users
    - Will be standalone product, final details coming by Fall 2020
- Other disease sites updated to Version 9 in coming years
  - Updated disease sites go into effect January 1 following release

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Clarification:
Blank vs. X

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Blank vs. X

- X
  - Defined by AJCC as cannot be assessed
  - Only physicians assess patients through exam, imaging, procedures, surgery
  - X must ***only*** be physician perspective of patient's story
- If X definition not met, ***only*** option for registrar is blank
  - No choice left for registrar
  - No other AJCC values left to assign if X, 0-4 are not correct
  - Registrar would not assign AJCC category if definition not met
  - Don't change rules for X, not same as unknown to registrar

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Blank vs. X

- Tell patient's story through staging
  - X = phys has no results or results cannot be quantified
  - Clinical staging – story of pt's diagnosis and workup
    - cTX = phys has no exam/imaging results or results cannot be quantified
  - Pathologic staging – pt's story from dx through surgical treatment
    - pTX = specimen cannot be evaluated, maybe fragmentation or destroyed, and no clinical info or operative findings can quantify T category
- Registrar
  - Blank = registrar had no access to physician info on patient
  - Other uses for blank
    - cT blank = no workup for pt, incidental finding at surgical treatment
    - pT blank = pt didn't have surgical treatment

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Blank vs. X

- Physician asked why cTX on M1 breast cases in NCDB files
- cTX would indicate
  - Tumor identified on imaging but can't determine if T1, T2, etc, or
  - No assessment of breast
    - Maybe patient refused exam or imaging, or
    - Imaging not necessary, start treating mets first
- cTX could incorrectly mean
  - Registrar didn't have access to information
  - May not represent what physician knew about patient
  - Some registrars use cTX if can't find info or don't ask physician
  - Registrar using "X vs. blank" skews data for physician researchers
  - Registrar "X" leads to incorrect conclusions on pt care being published

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Clarification: How to Use Pathology Report TNM

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Operative Findings More Extensive than Path

- Scenario
  - PET/CT Chest shows 3cm RUL lung mass, mediastinal fat invasion
  - RUL lobectomy, mediastinal node dissection
  - Operative report notes RUL tumor invades mediastinal fat
  - Path report states tumor invades parietal pleura pT3 pN0
- Operative findings *more extensive* than path report
  - Surgeon notes invasion into mediastinal fat
  - Invasion into mediastinal fat is T4 per AJCC table 36.12
- Pathologist and their pathology report
  - Specimen received was only pT3, didn't microscopically disprove op findings
  - Provides helpful info, not their job to synthesize all clinical and operative info
  - Cannot use pathologist stage as patient's stage
  - Patient's stage is responsibility of managing physician
- Pathological stage = clinical + operative findings + path report specimen
- Pathological stage = cT4 + pT4 + pT3 = pT4

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No Residual on Pathology Report

- Scenario
  - Patient had TURB, invasion into lamina propria, path report pT1 NX
  - Cystectomy no residual ca, path report pT0 NX
- Pathologist pT0 is for specimen not patient
- Pathological stage = clinical stage + operative findings + resected specimen path report
- Pathological stage = cT1 + no findings + pT0 = 1+0+0 = 1
- Therefore pathological T category is pT1

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Neoadjuvant Must Be Initial Therapy

- Scenario
  - Patient had lumpectomy with node dissection, path report staged pT3 N3a
  - Followed by full course chemo
  - Proceeded with total mastectomy, path report staged ypT1c NX
- Case is NOT neoadjuvant
  - Neoadjuvant must be *initial* therapy
  - Initial surgical treatment followed by adjuvant therapy and further resection
  - Only clinical and pathological staging, no stage classification after mastectomy
- Never both p (initial surgery) and yp (initial neoadjuvant) – contradictory
- Pathologist and their pathology report
  - May not know treatment plan, only sees cancer cells affected by drugs
  - Cannot stage patient, path report just one piece of pathological staging
  - Provides helpful info to managing physician
  - Only managing phy knows full story to stage patient

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Surgeon & Pathologist Differ on Staging

- ***Different*** points of view on staging information
  - Pathologist: assigns TNM to **specimen**
    - Usually only has 1 piece of the staging information
    - May include additional information if known – previous bx, clinical info
  - Surgeon/managing phy: assigns TNM for **patient**
- Surgeon/managing physician and pathologist may ***not*** agree
  - Registrars asked surgeon to get path report staging changed when it doesn't match surgeon's staging – not appropriate
- Pathological stage = clin stage + op findings + path report

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Posttherapy yp Staging

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Neoadjuvant Therapy for Posttherapy Staging

- Neoadjuvant therapy for posttherapy yc and yp staging should meet national treatment guidelines
- Systemic therapy (chemo/hormone/immunotherapy) must
  - Be provided by dosage and time frame
  - Meeting standard national treatment guidelines
  - To be considered course of treatment
- Drug guidelines have been proven to have ***treatment*** effect on patients when followed

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Neoadjuvant Therapy for Posttherapy Staging

- Providing drug in any dosage for any length of time does ***not*** make it treatment
  - Just because drug is on list identified as being chemo-/hormone-/immuno-therapy does ***not*** make it treatment for cancer patient
- Short course of tamoxifen ***not*** treatment
  - Given to see if cells react to drug as surrogate of tumor response
  - Predicts if given for standard 5-10 years as treatment after surgery
- Drugs given for unconventional reasons prior to surgery
  - Physician experts and national treatment guidelines make it clear
  - These drugs ***not*** given to treat cancer and
  - Do ***not*** provide treatment to patient

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No Pandemic Exceptions

- Few months is ***not*** neoadjuvant even in pandemic
- If cases were actually planned neoadjuvant therapy
  - Would finish entire course systemic therapy
  - Would not take to surgery early, as soon as pandemic allowed
- Do not confuse bridge therapy cases with true neoadjuvant
- AJCC: stage as pathological (p)

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No Pandemic Exceptions

- Do not want to confuse posttherapy staging
  - Only include cases with neoadjuvant therapy meeting guidelines
- Pathological staging must be analyzed carefully
  - During this pandemic time frame
  - Understand if bridge therapy given and analyze effects
- Ability to analyze this unique data based on
  - Date systemic therapy started (follow registry rules) and
  - Date surgery performed, supplemented by
  - New STORE data item for pandemic treatment delay

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Lack of Response is Not Progression

- No response to neoadjuvant is *not* considered progression
- If patient does *not* respond to neoadjuvant therapy
  - Tumor cells continue to divide and grow
  - As they had been since day cancer cells started
  - Causes tumor to expand and invade additional tissue and nodes
- Assign posttherapy stage indicating further involvement
  - cT3, now posttherapy pathological ypT4
  - cN0, now posttherapy pathological ypN2

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Future Posttherapy yc Staging

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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 canceled	yc	0% Missing piece
Neoadjuvant	Excellent response	No surgery needed	yc	0% Missing piece

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Neoadjuvant Therapy with No Surgery

- Significant issue causing incomplete data analysis
  - 20% estimated neoadjuvant ***no surgery*** across all disease sites
  - 90% of anal neoadjuvant cases do ***not*** have surgery
- Neoadjuvant therapy gaining in popularity, some examples
  - Head & Neck
  - Esophagus/Stomach
  - Rectum
  - Neuroendocrine
  - Soft tissue sarcoma
  - Melanoma
  - Breast
  - GYN sites
  - Adrenal

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Missing Piece – Only Part of the Story

- Missing piece of neoadjuvant with surgery canceled
  - Skewed picture of patient outcomes
  - Could lead to erroneous conclusions about neoadjuvant success
  - Affects many patient populations
- Critical to capture data on missing piece
  - Cannot keep telling just part of the story
  - Complete story must be told to evaluate ***all*** treatment results
- Treatment completeness ***quality*** issue

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Posttherapy Clinical yc Staging

- CoC collecting yc staging starting in 2021
- Why is yc stage necessary?
  - Shows patient treatment plan initially included surgery
  - Treatment plan changed due to "good" or "poor" response
  - 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

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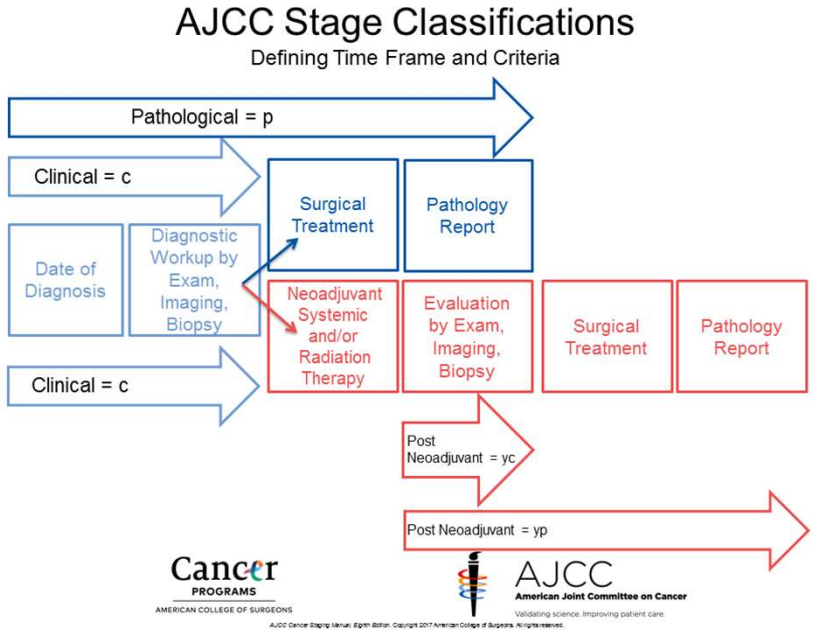
Timing Is Everything



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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 canceled	X		X	
4	Systemic/radiation only	X			

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Registry Cases & Applicable AJCC Stage

- Registrar never assigns >2 AJCC stage classifications
  - Only ask for yc when yp cannot be assigned
  - Provides assessment of response, which is
    - Difference between cTNM and ycTNM
- Without yc, cannot distinguish between Rx
  - Different treatment for cases 3 & 4 (previous slide)
  - 3. Neoadjuvant therapy with surgery canceled
  - 4. Systemic/Radiation therapy only, no surgery planned

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Case Scenario

- Pancreatic T2 4cm tumor with no nodal involvement
  - Received neoadjuvant chemoradiation
  - Tumor is 3cm on imaging, no nodal involvement
  - Planned pancreaticoduodenectomy surgery aborted when liver nodule found on exploration, biopsy shows mets
  - Physician states liver mets probably present at initial staging but occult (too small for imaging to detect)
- What is the correct stage?
  a. ypT2 ypN0 pM1
  b. ycT2 ycN0 pM1
  c. patient has progression so no staging
  d. cT2 cN0 pM1

Write down your choice – correct answer will be revealed later

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When yc Staging Must Be Used

- yc assigned when
  - Treatment plan is neoadjuvant followed by surgery
  - But surgery canceled
- Examples of yc must be used
  - Patient ***doesn't respond*** to neoadjuvant, surgery is canceled
  - Patient ***responds so well***, surgery no longer indicated
- yc includes:
  - Evaluation by physical exam, imaging, biopsy, and any diagnostic procedures

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No yc Stage Group…Yet

- There are no yc stage groups for any disease site yet, but
  - T, N, and M that registrars document is
    Absolutely ***critical*** for advancement of patient care, and
    Will help to develop stage groups in future

T, N, M are our puzzle pieces

Need all puzzle pieces:
Doing puzzles during shelter in place
What if a piece is missing?
You can't complete the picture

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Additional Case Scenarios – Surgery Canceled

- Excellent response - no residual
  - Rectal cT3 node negative treated with neoadjuvant chemoradiation. Six weeks after completion of treatment, no residual tumor on endoscopy. ycT0 ycN0 cM0
- No response – no change in primary
  - Breast cT3 cN2a receives neoadjuvant systemic therapy. No response in breast tumor now has supraclavicular nodal involvement, N3c, and tumor inoperable. ycT3 ycN3c cM0
- No response – more involvement
  - Esophageal cT2 tumor with two left gastric nodes. Received neoadjuvant chemoradiation. Imaging showed tumor extending into adventitia with five nodes involved. ycT3 ycN2 cM0

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Answer to Case Scenario

- **b. ycT2 ycN0 pM1**
- Correct yc posttherapy clinical stage ycT2 ycN0 pM1
  - Tumor decreased from 4cm to 3cm, but remains T2 category
  - Still no nodal involvement for ycN0
  - Liver metastases microscopically proven for pM1
- yp staging criteria includes surgical treatment resection
  - Surgeon's evaluation/exploration prior to beginning resection identified liver mets
  - Surgical resection not performed
- Not considered progression
  - Patient did not respond to neoadjuvant chemoradiation, therefore
  - Tumor cells continued to divide and grow as they had been since cancer started
  - Resulted in tumor cells breaking away and depositing in liver as mets
  - Physician states liver mets probably present at initial staging but occult
- Clinical stage M category not pM1
  - Mets not microscopically proven during diagnostic workup

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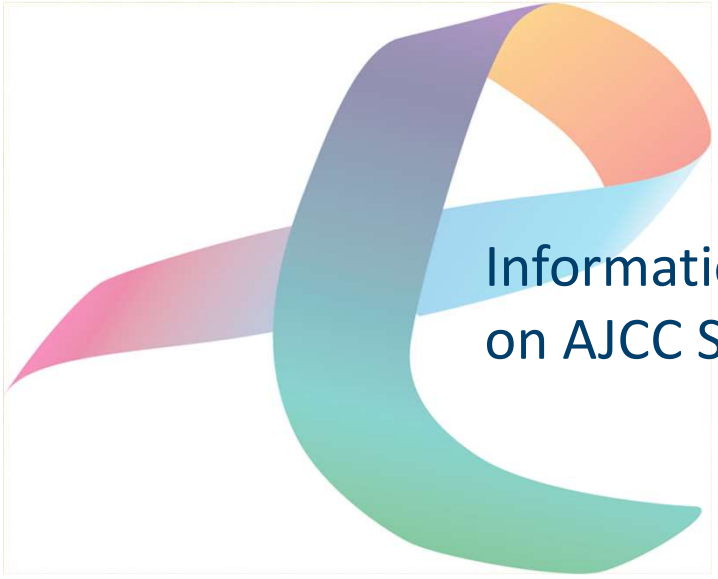

Information and Questions on AJCC Staging

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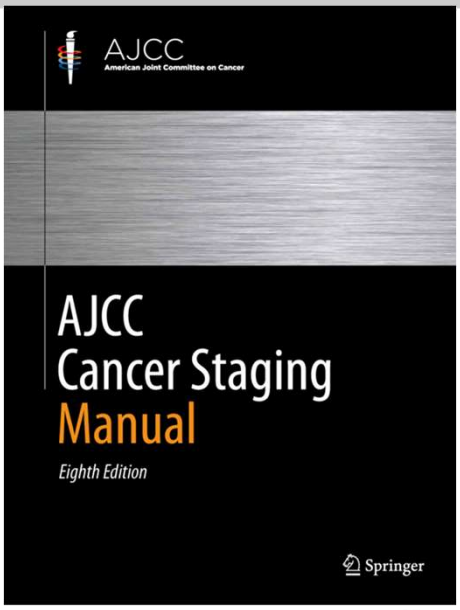
AJCC Web site

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



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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/

CAnswer FORUM
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Summary

- Clarified common questions
  - When to use “blank” – AJCC “X” definition not met
  - Pathology reports are only one piece of assigning stage
- Highlighted new stage data items & future staging changes
  - Annual updates for AJCC Version 9
  - Critical importance of yc staging system
  - Provide missing data on neoadjuvant therapy outcomes
- Demonstrated staging issues through examples & analogies

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Thank You

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