AJCC Staging: Understanding New Content & Clarification of Staging Issues

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New 2023 Version 9 Protocols

Discuss highlights of new AJCC Version 9 protocols effective for 2023 cases

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AJCC Appendix Version 9: LAMN & HAMN

- WHO Classification of Tumors 2021 Corrigendum
  - LAMN and HAMN behavior changed from borderline to *in situ*
- LAMN and HAMN now malignant tumors, either *in situ* or invasive
  - Registry data collection of LAMN & HAMN started in January 2022
  - Prior to 2022 registry rules considered these non-malignant, not reportable
- HAMN – high grade appendiceal mucinous neoplasm
  - Show pushing invasion in contrast to infiltrative growth of other mucinous adenoca
  - Histologically graded as G2 or moderately differentiated
  - Higher risk of recurrence than LAMN
- HAMN staging
  - Uses same staging system as other appendix adenocarcinomas
  - Tis, T1, T2, T3, T4a, T4b

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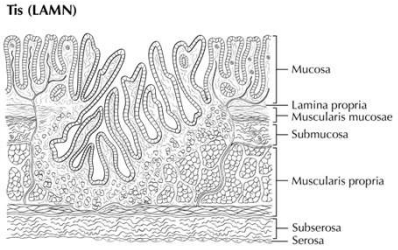
AJCC Appendix Version 9: LAMN

- LAMN – low grade appendiceal mucinous neoplasm
  - Show pushing invasion in contrast to infiltrative growth of other mucinous adenoca
  - Risk of progressive disease is low
  - Depth of appendiceal wall involvement not significant risk factor
  - T categories: Tis(LAMN), T3, T4a, T4b
- Tis(LAMN)
  - T1 and T2 ***not*** used for LAMN
  - LAMN *not* penetrating muscularis propria is Tis(LAMN)
- Tis(LAMN) with peritoneal disease
  - Still assign Tis(LAMN)
  - Peritoneal spread potentially due to perforation that has subsequently "sealed'
- New illustration demonstrating Tis(LAMN)



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AJCC Appendix Version 9: M Category

- M categories reflect distinctive behavior of pseudomyxoma peritonei
- M1a: intraperitoneal mucin is acellular, good prognosis
- M1b: neoplastic cells in mucin
  - Cellular peritoneal implants involving serosa of abdominal viscera, regardless of whether implants demonstrate invasion of underlying tissue
  - Pseudomyxoma peritonei clinical picture includes
    - Ovarian involvement
    - Omental infiltration (omental caking)
    - Surface involvement of abdominal organs (such as liver and intestine)
- M1c: nonperitoneal metastasis
  - Rare in well differentiated mucinous adenocarcinomas
  - More common in other types of appendiceal neoplasia

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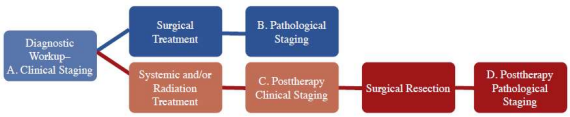
AJCC Appendix Version 9: Staging Rules & Grade

- Common staging scenarios provided
  - Unsuspected cancer in appendectomy specimen
    - Pathological: assessment on Rx resection
    - No clinical staging since it was not known
  - Clinical detection and treated surgically
    - Clinical staging: diagnostic workup
    - Pathological staging: after resection using diagnostic workup, op findings, & pathology report
  - Staging of LAMN
    - Additional information in Note CSS: Common Staging Scenarios



- Grade used for M1 stage group
  - In rare cases of discordance in primary and metastatic histological grade
  - Grade of ***metastatic*** disease utilized for stage group assignment

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AJCC Anus Version 9: Category Changes & p16

- Tis category removed along with prognostic stage group 0
  - Tis lesions are form of high-grade squamous intraepithelial lesions (HSIL)
  - HSIL lesions are not malignant
  - Inclusion of Tis in staging may lead to overtreatment
  - Patients with Tis may benefit from local ablation (ANCHOR Study)
- N1a category
  - Now includes obturator nodes
  - Along with inguinal, mesorectal, superior rectal, and internal iliac
- HPV is risk factor for squamous cell anal cancer
  - Most anal squamous cell cancers are HPV-associated
  - **p16** results collected in cancer registries (***not*** HPV tests)

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AJCC Anus Version 9: Stage Group Changes

- Prognostic stage groups based on survival
- New NCDB data led to stage group changes in stage II and III
- Revisions in order of prognosis
  - Tumors ≤ 5cm with nodal involvement
  - Tumors > 5cm with/without nodal involvement
  - Tumors invading adjacent organs with nodal involvement

Stage Group	New Version 9	8th Edition
IIB	T1-T2 N1 M0	T3 N0 M0
IIIA	T3 N0-N1 M0	T1-T2 N1 M0
IIIC	T4 N1 M0	T3-T4 N1 M0

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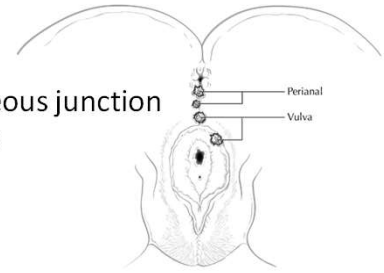
AJCC Anus Version 9: Perianal & Perineum

- Perianal carcinomas staged with this system
- Definition of perianal
  - Arising within skin at or distal to squamous mucocutaneous junction
  - Can be seen in entirety with gentle traction on buttocks
  - Within 5cm of anus



- Perineum lesions
  - Treatment plans may be quite dissimilar
  - Recommend consultations with colleagues in gynecology or colorectal surgery
  - Perianal: arising from distal anal squamous mucosa and extend onto perineum
  - Vulvar: arising from vulva and extend onto perineum
  - Categorize based on clinical impression: lesions localized to perineum and not clearly arising from either vulva or anus

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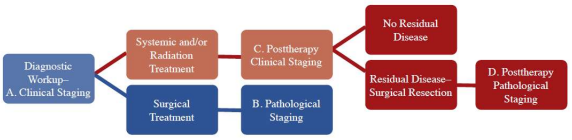
AJCC Anus Version 9: Staging Rules

- Common staging scenarios provided
  - Treated with definitive chemoradiation
    - Clinical staging: diagnostic workup
    - Posttherapy clinical: assessment after chemoradiation
    - Posttherapy pathological: assessment after chemoradiation & surgery, rare cases where resection is needed
  - Treated surgically
    - Clinical staging: diagnostic workup
    - Pathological staging: after Rx resection using diagnostic workup, op findings, & pathology report



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AJCC Brain & Spinal Cord Version 9: Staging & Grade

- AJCC staging limited to M category for medulloblastoma
  - M category based on method of assessment
    - Clinical staging M category: cM0, cM1, pM1
    - Pathological staging M category: cM0, cM1, pM1
- WHO Grade
  - Grading provides a malignancy scale for a wide variety of neoplasms
  - Based on natural history, not expected clinical course following therapy
  - WHO Grades – new system uses Arabic numerals
    - 1: circumscribed, low proliferative potential
    - 2: infiltrative in nature with high likelihood of recurrence
    - 3: demonstrate histologic evidence of malignancy
    - 4: histologically malignant, aggressive clinical course, propensity for spread

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AJCC Brain & Spinal Cord Version 9: M Category

- Medulloblastomas
  - Unusual among brain tumors
  - Propensity to disseminate within CNS and metastasize to distant sites
- AJCC M category for medulloblastoma
  - Based on Modified Chang system
  - M category is prognostic
  - Stratify patients for therapy into high-risk or standard-risk groups
- M1 subcategories stratified by
  - Tumor cells in CSF
  - Intracranial spread beyond primary site
  - Gross spinal subarachnoid seeding
  - Metastasis outside CNS (bone marrow, lung)

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AJCC Stage Classifications

Contrast parameters of four staging classifications

Understand when each is appropriate

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AJCC Stage

- AJCC stage defined at several points in patient care
- In order to stage, ***must*** determine that time point

- Classifications are
  - Terms for those time points in patient care
  - Based on continuum of evaluation (workup) and management (treatment)

- Each classification based on
  - Time frame – starting & stopping points
  - Criteria – type of patient and information to be used

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AJCC Stage Classifications

- Cancer registries ***may*** use 4 of available classifications
  - Clinical - c
  - Pathological - p
  - Posttherapy clinical - yc
  - Posttherapy pathological – yp
- Registries do not use
  - Recurrence or retreatment – r
  - Autopsy - a
- Registry usage based on initial treatment

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Patient Care Timeline

- Treatment is key point in patient care timeline for AJCC staging

- Based on patient diagnostic workup, classification is:
  - For patients with *known or suspected cancer* ***before*** any treatment
  - Clinical staging – c
  - Clinical is also called pretreatment

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Patient Care Timeline

- Treatment is key point in patient care timeline for AJCC staging

- Based on *initial* patient treatment, classification is 1 of 2 choices:
  - Definitive surgical treatment – p
  - Neoadjuvant systemic/radiation therapy – yc and/or yp
- Decision not to treat results in no treatment-based staging assigned

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Clinical Classification – c

- Time frame – diagnosis to initiation of primary treatment
- Criteria – cancer identified before Rx by exam, imaging, bx, procedures
- No clinical stage
  - Cancer was *not* known or suspected *prior to treatment*
  - Incidental finding at time of surgery for other medical conditions
  - Surgery was definitive treatment for cancer
  - No retrospective clinical staging, cannot go backwards in time
  - Treatment is “point of no return”
- Clinical stage
  - Incidental finding at time of surgery for other medical conditions
  - Surgery was *NOT* definitive treatment for cancer
  - Surgery is diagnostic procedure, meets the criteria above

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Pathological Classification – p

- Time frame – diagnosis through surgical resection
- Criteria – surgery is initial therapy, info is clinical stage + operative findings + resected specimen pathology report
- Surgical treatment requirement varies by disease site
  - Ranges from resection of tumor to complete resection of organ (or more)
  - May include resection of regional nodes
  - Not all surgical procedures are surgical treatment
- Imaging studies after surgical treatment may be included
- Surgical treatment
  - Cannot be used for both clinical & pathological staging
  - Treatment is "point of no return"

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Posttherapy Clinical Classification – yc

- Time frame – after primary systemic/radiation Rx and before surgical Rx
- Criteria – initial therapy is systemic/radiation, evaluated by exam, imaging, bx, procedures
- Neoadjuvant Rx
  - Must follow national guidelines for drugs, dose, duration
  - Not all medications meet this criteria
  - Some are given for other medical conditions or reasons
  - Some for unconventional reasons and follow no medical guidelines
- Changes between clinical and posttherapy shows response to Rx
  - cCR – clinical complete response
  - cPR – clinical partial response

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Posttherapy Pathological Classification – yp

- Time frame – after primary systemic/radiation Rx followed by surgical Rx
- Criteria – initial therapy is systemic/radiation then surgery, info is yc stage + operative findings + resected specimen pathology report

- Surgical resection must follow national guidelines
  - Must be definitive surgical resection
  - Not surgical procedure

- Changes between clinical and posttherapy shows response to Rx
  - pCR – pathological complete response
  - pPR – pathological partial response

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Stage Classifications

- Keep timeline in mind – pretreatment or treatment
  - Clinical staging is pretreatment *ONLY*
  - Treatment must meet standard guidelines of definitive treatment
    - Not all surgical procedures are treatment
    - Not all systemic therapies are neoadjuvant treatment

- Ask yourself
  - What time frame is patient in? diagnostic workup or treatment
  - Has the criteria been met? Type of patient and type of information

- Timeline always moves *forward*
  - After treatment, no clinical staging
  - Surgical treatment cannot be both diagnostic workup & treatment

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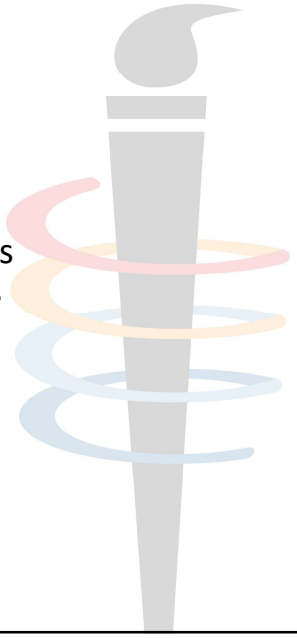
Common Questions & Issues

Demonstrate common questions and staging issues with clarifications through examples and analogies



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Blank vs. X – The Issue

- Correct use of blank or X
  - Causing data analysis issues, misinterpretation by physicians/researchers

TX	Primary tumor cannot be assessed	NX	Regional lymph nodes cannot be assessed

- Blank makes more sense
  - Why registrar reluctance to use blank?
  - Potential harm coming from X
  - Registrars do ***not*** assess patients
  - Need to refine and reinforce instructions for clear data
  - Making a difference to physicians using the data

Guiding principle

- Always tell patient's story from physician's perspective

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Blank vs. X – Risks & Benefits

X

- Risks
  - Is registrar confident that physician did ***not*** know
  - May ***not*** accurately represent physician information
  - May lead to misinterpretation of data if physician knew
  - No advantage of using X instead of blank
- Benefits
  - Clearly conveys physician did ***not*** know – if that is accurate

Blank

- Risks
  - None, no information is lost
- Benefits
  - Registrar not penalized for blanks
  - Using blank instead of X ***does not lose any information***
  - No advantage to using X instead of blank
  - Better to err on the side of caution
  - Best if not sure the physician does not know

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Blank vs. X – Conclusions by Physicians

- Physician data interpretation of X
  - Physician did *not* perform exam or imaging
  - Physician ordered tests but results were *not* clear
  - Examples from physician data questions about appropriate workup
    - Breast cTX cM1: phy concerned breast exams or imaging not performed
    - Melanoma cNX: phy concerned no nodal area clinical exam or imaging
    - Rectum cTX: phy concerned no imaging assessment
- Physician data interpretation of blank
  - Registrar did not have access to information

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Blank vs. X – Conclusions for Registrars

- Registrars
  - Assign X
    - Physicians are clear they do not know
    - Physicians have not or could not assess primary tumor or nodes
    - Physicians have assessed but results did not provide any information
  - Assign blank
    - Registrar does not have info, but physician might
    - Physician using uncertainty rule with main categories (e.g. T3/T4)
- Prioritize **accuracy** over completeness
  - Registrar must leave data items blank if necessary info not available
  - Can't get around this, can't fill in every data item with "meaningful" code
  - Skews data, causes misinterpretation by physicians/researchers

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Grade

- Grade for **patient**, not specimen
  - Since it affects patient's prognosis and treatment
  - Must code grade for **patient** to indicate true outcomes
  - Individual specimens may not represent patient's grade
  - Worst grade may have been removed in earlier biopsies
  - Does not mean worst grade is still not affecting the patient
  - Code highest grade from ***any*** specimen during appropriate timeframe
- This philosophy makes it easy to choose correct grade
  - Grade clinical – primary tumor biopsy or procedure for workup
  - Grade posttherapy clinical – primary tumor biopsy after neoadjuvant
  - Grade pathological – ***any*** from diagnosis through treatment
  - Grade posttherapy pathological – ***any*** from after neoadjuvant

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Grade – Analogy

- Students take SAT test for college
  - If not happy with score, may take it a second time
  - If second test is lower, doesn't mean student's intelligence went down
  - Student is still as smart as first test
  - Will use first test as mark of student's intelligence on college applications
- Grade is test of tumor's aggressiveness, how fast it is growing
  - High marks on 1st test (biopsy) & lower marks on 2nd test (surgical treatment)
  - Those test results are BOTH for the PATIENT
- I want my doctor to treat me, not treat surgical resected specimen
  - Would cause me to not be treated as aggressively as I should be
  - Could have bad outcomes - like death!
- Explains why use higher grade from bx & not lower from resection
  - It's about the **student/patient** not the individual tests/specimens

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Prostate Grade Group

- AJCC prostate stage group uses ***highest*** Grade Group
  - Bx cores may have different Gleason patterns/scores and Grade Groups
  - Pathologist may ***not*** assign overall highest Grade Group
- CAP requirements
  - Each core assigned Gleason score and Grade group
  - Overall case Gleason score and Grade group may be assigned, but ***not required***
- CAP guidelines for case level prostate needle bx reporting
  - Recorded as highest grade, composite grade or global grade
  - Composite is aggregate that considers spatial distribution and overall involvement
  - No consensus by ISUP or GUPS on highest vs overall grade and **both** acceptable
- CAnswer Forum questions AJCC #133116 and ATP #133140

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Prostate Cancer DRE

- Required for AJCC cT category
  - Clinical T category reflects DRE findings ***only***
  - ***STOP*** *– do not pass go, do not collect $200 –* ***DRE only***
  - Standard of care, included in NCCN diagnostic workup
- DRE requirement for cT1
  - Not just for cT1c
  - Also required for TURP findings in cT1a and cT1b
- DRE – understand procedure and how described
  - Digital = finger, not some type of electronic technology
- Discuss with cancer committee, physician advisors, administration

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CAnswer Forum – Posting Questions

- Start a new post when your scenario doesn't match *exactly*
  - Mismatch between title and/or previous posted scenarios
  - Confuses registry community trying to learn
- Follow etiquette guidelines on forum Home page
- Additional posts
  - AJCC questions left open for dialogue, such as additional info needed
  - Asking for clarification on answers is acceptable
  - Do not continue to argue same point, won't result in different answer
    - Answers based on physician experts' chapters/protocols/rules
    - AJCC is physician rules for patient care, not registry rules

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CAnswer Forum – Usability for Community

- Registry community wants to learn from posts
- Make searching easier
  - Post in correct forum
  - Title of post should include key points, not vague
- Make posts easier to read and understand
  - Provide all critical info
  - Don't use all caps
  - Make your question clear - what aspect needs assistance
    - Classification
    - T, N, or M category, stage group
    - Applicable staging rules
  - Propose an answer – helps us further understand issue and thought process

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Information and Questions on AJCC Staging

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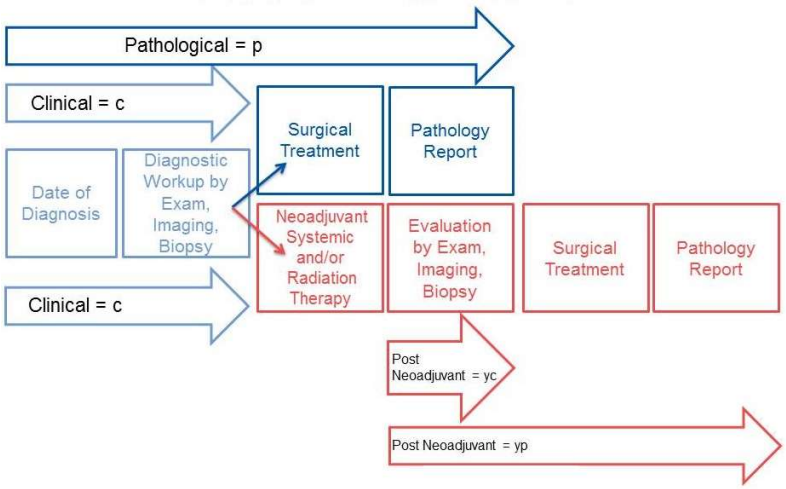
Timing is Everything

AJCC Stage Classifications

Defining Time Frame and Criteria



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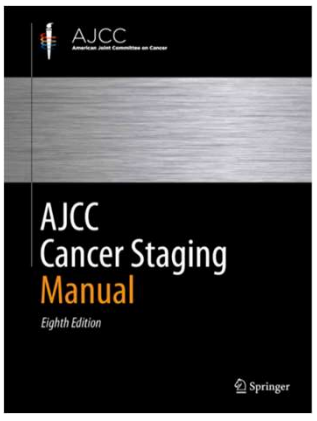
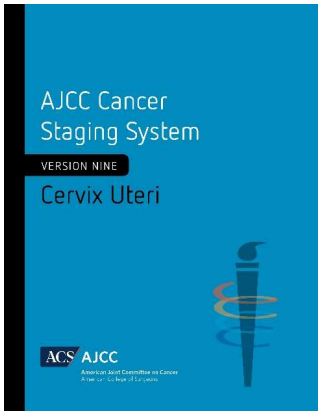
AJCC Web Site

- https://cancerstaging.org
- https://www.facs.org/quality-programs/cancer-programs/american-joint-committee-on-cancer/

- General information
  - Overview
  - Version 9
  - Cancer Staging Systems
    - AJCC 8th edition Chapter 1: Principles of Cancer Staging
  - Cancer Staging Education
  - FAQ & Resources





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CAnswer Forum

- Submit questions to AJCC Forum
  - Version 9 Forum
  - 8th Edition Forum
  - Located within CAnswer Forum
  - Provides information for all
  - Allows tracking for educational purposes
- http://cancerbulletin.facs.org/forums/

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Summary

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Summary

- Discussed highlights of new AJCC Version 9 protocols
  - New features of AJCC protocols
  - Understanding strategies of new staging systems
- Contrasted parameters of staging classifications
  - Identified dividing point in patient care timeline of treatment initiated
  - Understand when each is appropriate
  - Must meet time frame and criteria (type of pt and type of info)
- Demonstrated staging issues through examples and analogies
  - Consequences of using X when blank is correct
  - Grade is for the patient, not the individual specimen

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déjà vu

- My first lecture for an NCRA Annual Conference
  - 1991 at this very same hotel – 32 yrs ago
  - Topic: Integrating Registry Data into the Hospital QA Program
- Probably won't be my last
- Honor and privilege to speak at these meetings

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