American Joint Committee on Cancer
American College of Surgeons

Stage: The Language of Cancer

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Disclosures

I have no conflicts of interest.

Outline

- ❑History of staging
  - ❑UICC and AJCC
- ❑What is staging?
- ❑Why do we stage?
- ❑Who does staging?
- ❑What is the role of the cancer registry/registrar?
- ❑How are imaging and pathology used in staging?
- ❑Why does stage evolve?
- ❑What is different in the 8th and 9th editions?

Historical Perspective 1

- Staging based on the TNM concept was first championed by Dr. Pierre Denoix a surgical oncologist from Insitut Gustave-Roussy, Paris from 1943-52
- Union of International Cancer Control (UICC)

Historical Perspective 2

- North American effort first organized as the American Joint Committee for Cancer Staging and End Results Reporting (AJC) (1959)
- Jointly formed by the *American College of Surgeons, American College of Radiology, College of American Pathologists, College of Physicians, American Cancer Society & the National Cancer Institute*
- AJC (1970) – adopted “objectives, rules & regulations of the AJC” – resulted in formulation and publication of systems of classification of cancer
- First Edition of AJC staging manual published in 1977

American Joint Committee on Cancer

- AJCC established in 1959
- Formulate and publish systems of classification of cancer, including staging and end-results reporting
- Goal: Create acceptable tools to be used by the medical profession for selecting-
  - the most effective treatment
  - determining prognosis
  - continuing evaluation of cancer control measures

American Joint Committee on Cancer

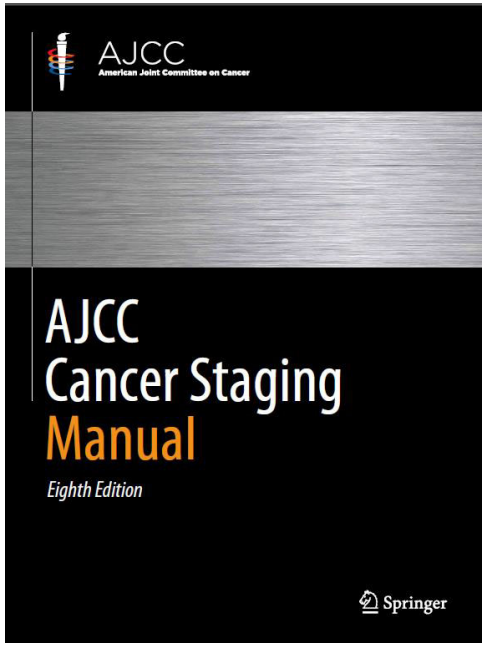
- The AJCC is composed of 18 member organizations, and its activities are administered by the American College of Surgeons.
- Mandatory requirement that the American College of Surgeons accredited hospitals use AJCC TNM as major language for cancer reporting.

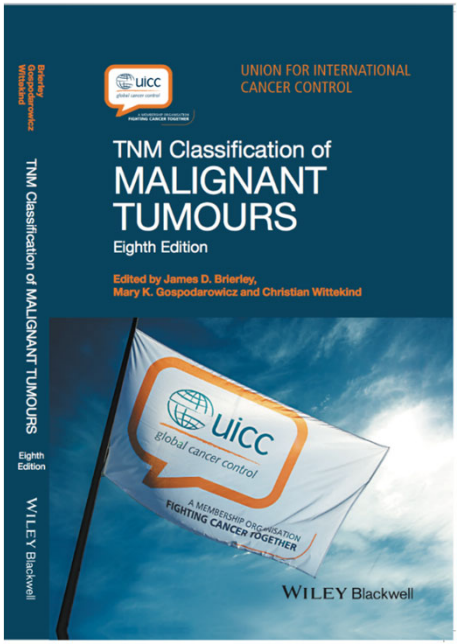
Structure

- AJCC and Union of International Cancer Control (UICC) periodically modify the system in response to newly acquired clinical and pathological data and improved understanding of cancer biology and other factors affecting prognosis.
- Revision cycles were historically every 5-7 years.
- Content Harmonization Core was developed for the 8th edition. Goal was to standardize terms and concepts and overall rules.

Publications 2016

- AJCC: Cancer Staging Manual
- UICC: TNM Classification System





Cancer Staging

To effectively care for any patient with cancer it is essential to consider three factors:

- The site of origin of the cancer
  - e.g. lung, a prostate cancer, or a breast cancer
- The histologic and biologic characteristics
  - if lung cancer, is it non small cell or a small cell cancer
  - if prostate cancer what is the Grade score
  - if breast cancer what is its receptor status
- The extent of the cancer - The globally accepted method of describing anatomical extent of cancer is the TNM Classification

Use of Stage

- To determine treatment
- To determine prognosis
- To facilitate clinical research and evaluate the results of treatments and clinical trials
- To facilitate the exchange and comparison of information between treatment centers, both nationally and internationally

Reasons for Assigning Stage

- Discuss case with multidisciplinary cancer care team using a common language
  - Primary Care physician – Surgeon – Radiologist – Pathologist – Medical Oncologist – Radiation Oncologist- Endocrinologist
- Choose appropriate diagnostic workup and treatment – Guidelines include T, N, M, and stage group criteria
- Analyze treatment results for recurrence and survival
- Data analysis of various factors stratified by stage

Classifications

- Stage may be defined at several time points in the care of the cancer patient.
- Time points are termed classifications and are based on the continuum of evaluation
  - Clinical (cTNM)
  - Pathological (pTNM)
  - Post therapy (ycTNM or ypTNM)
  - Recurrence (rTNM)
  - Autopsy (aTNM)
- The staging classifications have a different purpose and therefore can be different. Do not go back and change the clinical staging based on pathologic staging information.

Stage Group Tables

- Patients with similar prognosis TNM are grouped into prognostic stage groups, commonly referred to as stage groups. Stage groups are defined for each classification (clinical and pathological)
- Subcategories: T1a, T1b
- Specific notations: TX (no information, unknown or can’t be assessed) This term should be minimized
- No MX. There is no pM0. Should be labelled cM0
- Stage 0 is used to denote carcinoma in situ

The original approach to stage was predicated on a sequential process

- ❑Cancer starts in the organ of origin (T)

THEN

- ❑It spreads to local tissues

THEN

- ❑It invades lymphatics or blood vessels (N)

THEN

- ❑It colonizes lymph nodes or other organs (M)

Biology of Cancer

- Halsted

❑Tumors begin in an organ
❑They spread locally
❑They spread regionally
❑They then spread systemically
❑Therefore, a big enough operation will cure cancer
❑Size matters

- Fisher

❑Cancers spread early in their development
❑Cancer is a systemic disease from the time the diagnosis is made
❑Local treatments mean little without effective systemic therapy
❑Biology matters

The original philosophy behind "stage"?

- Stage I: tumour in the organ of origin only
- Stage II: involvement of regional lymph nodes
- Stage III: locally advanced disease or non-regional lymph node involvement
- Stage IV: distant metastatic disease

…but things have changed with increasing knowledge about cancer behaviour and cancer prognosis.

So....

- Small tumours with involvement of some regional lymph nodes may have a worse prognosis than large local tumours without obvious nodal disease

- Factor other than anatomical extent of disease have an important effect on prognosis and they may be combined with anatomical extent of disease to form prognostic stage groups

Non-anatomic factors

- Generally available in the West
- Often not available in the developing world
- Therefore, the staging system has to maintain anatomic staging for universal applicability
- Prognostic staging includes non-anatomic factors (ER/PR, MSI, etc.) to better inform prognosis and treatment

Basic Concepts of Staging

- T-, N-, M- are categories, NOT "T-stage, N-stage, M-stage"
- Clinical and Pathological staging
  - Clinical stage is based on physical examination, biopsy and imaging
  - Pathologic stage is done after removal of the primary tumor
- cTNM Stage applies to the initial presentation ONLY

General Rules

T Extent of the primary tumour

N Absence or presence and extent of regional lymph node metastasis

M Absence or presence and extent of distant metastasis

Fundamentals

- Please read Chapter 1
- Assigning stage requires deciding on:
  - T category
  - N category
  - M category
  - Non anatomic factors
- These are used to assign a Prognostic Stage Group
- Both TNM and Prognostic Stage grouping are required to meet standards and best care for patients

Some concepts - c and p

“Clinical classification” (cTNM):

Clinical stage classification is based on patient history, physical examination, and any imaging done before initiation of treatment.

- ❑No specific imaging is required to assign a clinical stage for any cancer site.
- ❑Imaging study information may be used for clinical staging
- ❑Biopsy information on regional lymph nodes and/or other sites of metastatic disease may be included in the clinical classification.

Stage

- Stage is a verb
  - The treating clinician has the responsiblity to stage a patient

- Stage is a noun
  - The patient has a Stage III breast cancer

Some concepts - c and p

“Pathological classification” (pTNM):

This classification is applicable when a surgical procedure is performed before initiation of adjuvant radiation or systemic therapy.

- It is composed of information from diagnostic workup from clinical staging combined with:
  - operative findings
  - pathology review of resected surgical specimens

INTRODUCTION TO STAGE
General Rules

cTNM

Clinical Classification

Determined

before any treatment

pTNM

Pathological Classification

Determined

after surgical treatment

INTRODUCTION TO STAGE
General Rules - Primary Tumor

- **TX** Primary tumour cannot be assessed
- **T0** No evidence of primary tumour
- **Tis** Carcinoma in situ
- **T1-T4** Increasing size and/or local extent of the primary tumor

INTRODUCTION TO STAGE
General Rules - Regional Nodes

- NX Regional lymph nodes cannot be assessed
- N0 No regional lymph node metastasis
- N1-N3 Increasing involvement of regional lymph nodes

INTRODUCTION TO STAGE
General Rules - Metastases

- **M0** No distant metastasis
- **M1** Distant metastases

- Note: the cMX category should never be used because clinical assessment of metastasis can be based on physical examination and imaging alone.

Prognostic Stage Grouping

- Prognostic stage groups are based on combinations of T, N, M, and relevant prognostic factors
- They are identified by roman numeral as I, II, III or IV
- They usually define groups of patients with similar outcomes to help to:
  - define prognosis and appropriate treatment,
  - enable comparisons of similar groups of patients between institutions and over time

Anatomical Stage Groups

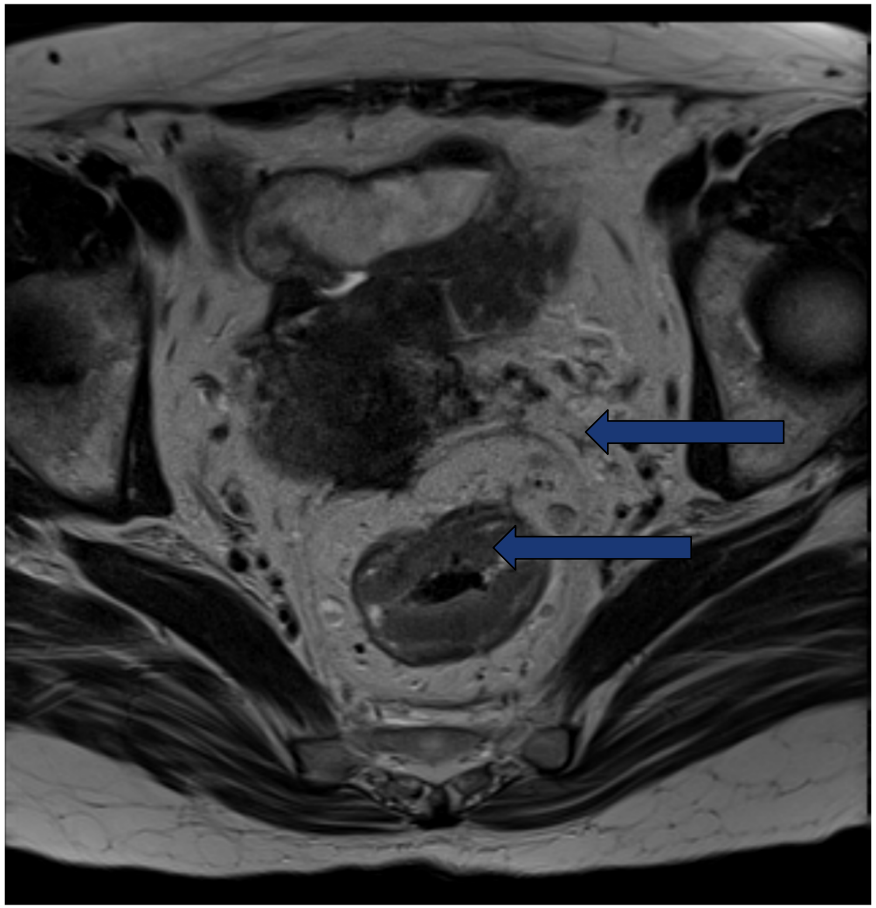
- Some stage groups depend only on anatomical extent of disease
  - Examples are lung cancer and colorectal cancer

For example:

- 65 year old man presents with rectal bleeding, examination shows a rectal carcinoma
- Biopsy confirms adenocarcinoma
- MRI is performed

T3N0

- cT3N1



cT3N1a
Rectal cancer

Lymph Node

T3 Rectal Cancer

Staging Workup

- ❑CT scan thorax, abdomen and pelvis is performed
- ❑Multiple liver metastases are identified
- ❑cM1a

Therefore, the Stage Grouping is:

- T3N1aM1a
- Which is Stage IVa

When T is…	And N is…	And M is…	Then the stage group is…
Tis	N0, NX	M0	0
T1 , T2	N0	M0	I
T3	N0	M0	IIA
T4a	N0	M0	IIB
T4b	N0	M0	IIC
any T	N1-N2	M0	III
T1 –T2	N1/N1c	M0	IIIA
T1	N2a	M0	IIIA
T3–T4a	N1/N1c	M0	IIIB
T2–T3	N2a	M0	IIIB
T1–T2	N2b	M0	IIIB
T4a	N2a	M0	IIIC
T3–T4a	N2b	M0	IIIC
T4b	N1-N2	M0	IIIC
Any T	Any N	M1	IV
Any T	Any N	M1a	IVA
Any T	Any N	M1b	IVB
Any T	Any N	M1c	IVC

Assigning Stage: The Role of the Managing Physician Chapter 1

- Staging requires the collaborative effort of many professionals, including the managing physician, pathologist, radiologist, cancer registrar and others

- While the pathologist and the radiologist provide important information, stage is defined ultimately by the managing physician from the synthesis of all available information some of which the other physician may not have

Assigning Stage: The Role of the Managing Physician

The **managing physician is therefore responsible for:**

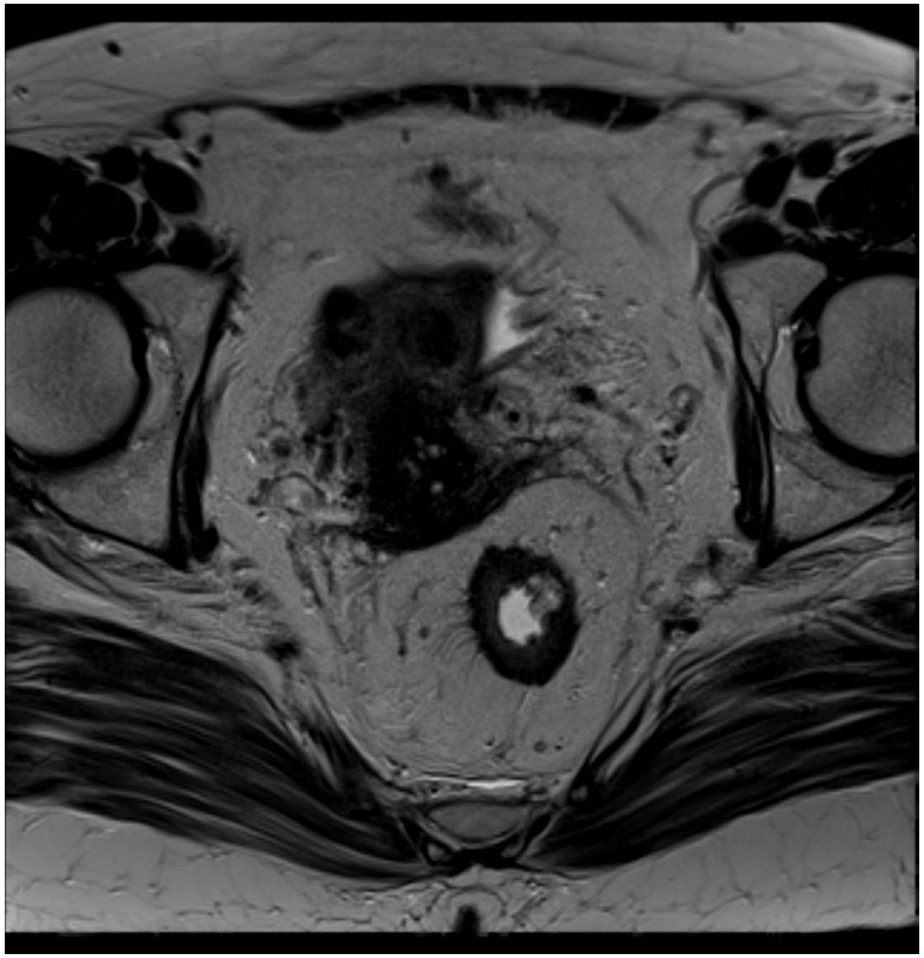
- ❑ **ensuring all appropriate staging investigations have been performed**
- ❑ **assigning the patient's stage**

RULES ABOUT STAGE

- Stage at diagnosis does not change
- Patients do change; the extent of disease can change after treatment and after follow up
- But the original stage “sticks”

Modifiers of Stage “y”

- If there were no liver metastases in the case described above
- The stage at diagnosis is:
  - cT3N1aM0
  - Stage IIIB
- Preoperative chemoradiation is given



Preoperative chemoradiation is

The tumor reduces in size - Downsizing

The tumor is now staged as T2 and no involved nodes N0- Downstaging

Surgery is performed.
There is residual tumor invading the muscularis propria -T2 and no evidence of node involvement but mucin seen in three lymph nodes- N0

Stage “y”

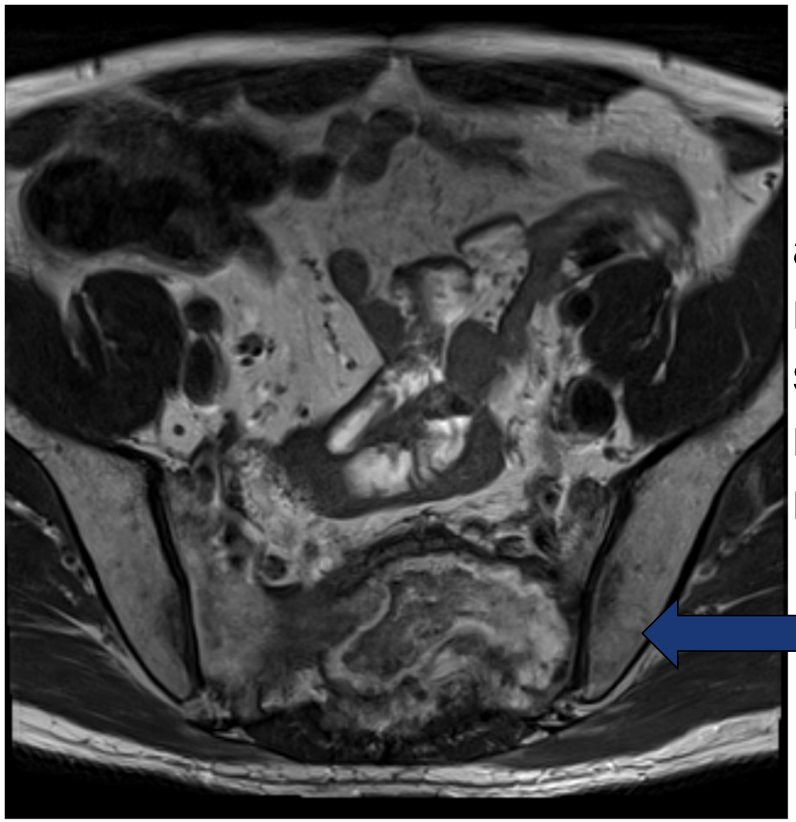
- At the time of surgery residual tumour cells in muscularis propria are found
- Mucin is seen in 3 lymph nodes
- The stage now is
  - ypT2N0M0
  - yp Stage I
- “y” is used as a prefix to indicate that the stage has been determined after preoperative treatment
- “p” is used to identify that this is the pathologic stage
- The same stage group table shown is used to determine the yp stage

Modifiers of Stage “r”

Five years later has pelvic pain

Stage Modifier “r” rT4N0M0

r is used as a prefix to indicate that the stage has been determined after initial treatment and at recurrence or after a period of surveillance



MRI reveals a sacral mass. Biopsy shows recurrent rectal cancer

Prognostic Stage Groups

- For some cancers the stage groups depends on anatomical extent of disease **and** additional prognostic factors
- Examples are:
  - Thyroid Age
  - Prostate PSA and Grade Score
  - Breast Grade, ER/PR, Her-2-neu, Genomic assays

How to Record the Stage

Stage at Diagnosis. Recorded in the chart and remains unchanged

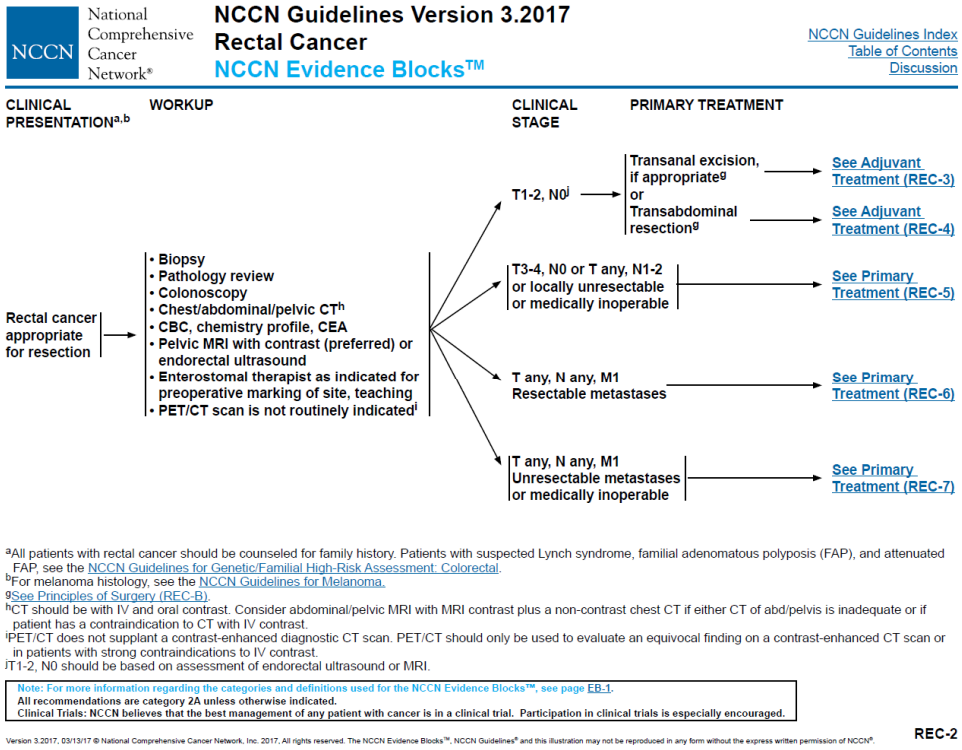
Use of modifiers:

- After neoadjuvant therapy –
  - use y
- After period of freedom from disease or after surveillance –
  - use r

Anatomical and Prognostic Stage Groups

- For some cancers there are clinical, pathological and prognostic stage groups
- Some prognostic factors may not always be available, especially in low and middle income countries
- Therefore in some tumor sites such as breast there are both anatomical stage groups and prognostic stage groups

Stage is used in treatment decision making



NCCN National Comprehensive Cancer Network®

NCCN Guidelines Version 3.2017
Rectal Cancer
NCCN Evidence Blocks™

NCCN Guidelines Index
Table of Contents
Discussion

CLINICAL PRESENTATION[a,b]	WORKUP	CLINICAL STAGE	PRIMARY TREATMENT
Rectal cancer appropriate for resection	• Biopsy • Pathology review • Colonoscopy • Chest/abdominal/pelvic CT[h] • CBC, chemistry profile, CEA • Pelvic MRI with contrast (preferred) or endorectal ultrasound • Enterostomal therapist as indicated for preoperative marking of site, teaching • PET/CT scan is not routinely indicated[i]	T1-2, N0[j]	Transanal excision, if appropriate[g] → See Adjuvant Treatment (REC-3) or Transabdominal resection[g] → See Adjuvant Treatment (REC-4)
		T3-4, N0 or T any, N1-2 or locally unresectable or medically inoperable	See Primary Treatment (REC-5)
		T any, N any, M1 Resectable metastases	See Primary Treatment (REC-6)
		T any, N any, M1 Unresectable metastases or medically inoperable	See Primary Treatment (REC-7)

[a]All patients with rectal cancer should be counseled for family history. Patients with suspected Lynch syndrome, familial adenomatous polyposis (FAP), and attenuated FAP, see the NCCN Guidelines for Genetic/Familial High-Risk Assessment: Colorectal.
[b]For melanoma histology, see the NCCN Guidelines for Melanoma.
[g]See Principles of Surgery (REC-B).
[h]CT should be with IV and oral contrast. Consider abdominal/pelvic MRI with MRI contrast plus a non-contrast chest CT if either CT of abd/pelvis is inadequate or if patient has a contraindication to CT with IV contrast.
[i]PET/CT does not supplant a contrast-enhanced diagnostic CT scan. PET/CT should only be used to evaluate an equivocal finding on a contrast-enhanced CT scan or in patients with strong contraindications to IV contrast.
[j]T1-2, N0 should be based on assessment of endorectal ultrasound or MRI.

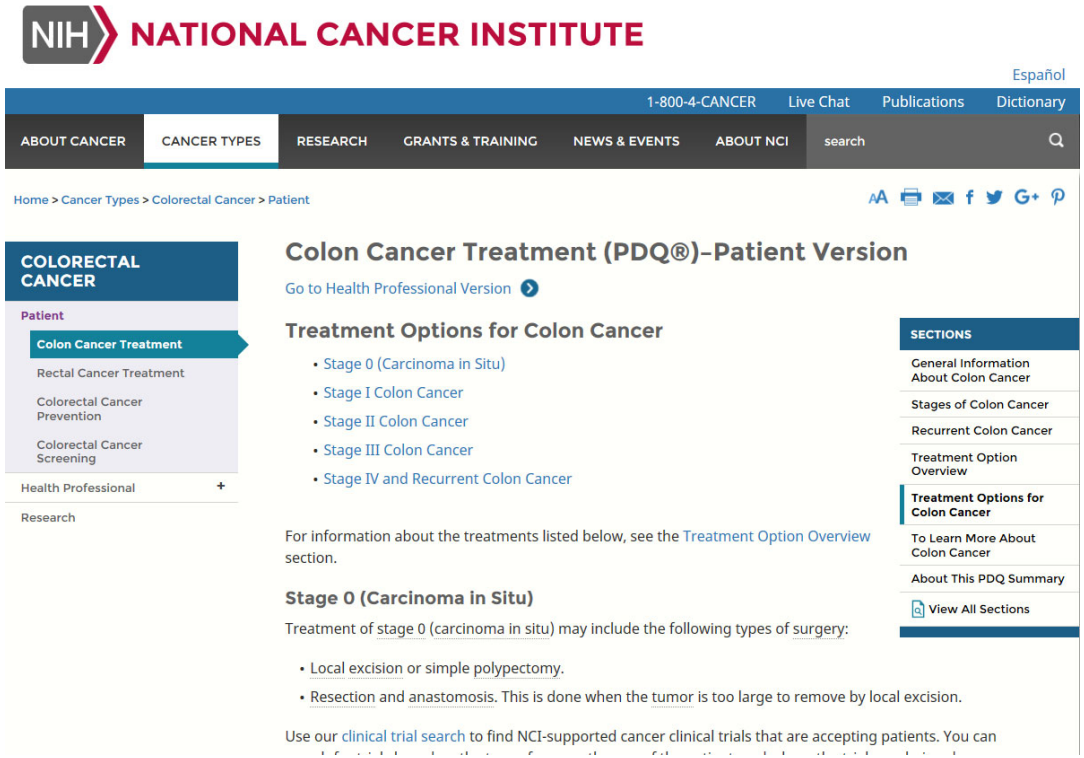
Note: For more information regarding the categories and definitions used for the NCCN Evidence Blocks™, see page EB-1.
All recommendations are category 2A unless otherwise indicated.
Clinical Trials: NCCN believes that the best management of any patient with cancer is in a clinical trial. Participation in clinical trials is especially encouraged.

REC-2

Knowing stage at diagnosis is essential in choosing appropriate treatment.

For instance in the NCCN guideline for the management of rectal cancer the primary treatment recommendations differ for different stages.

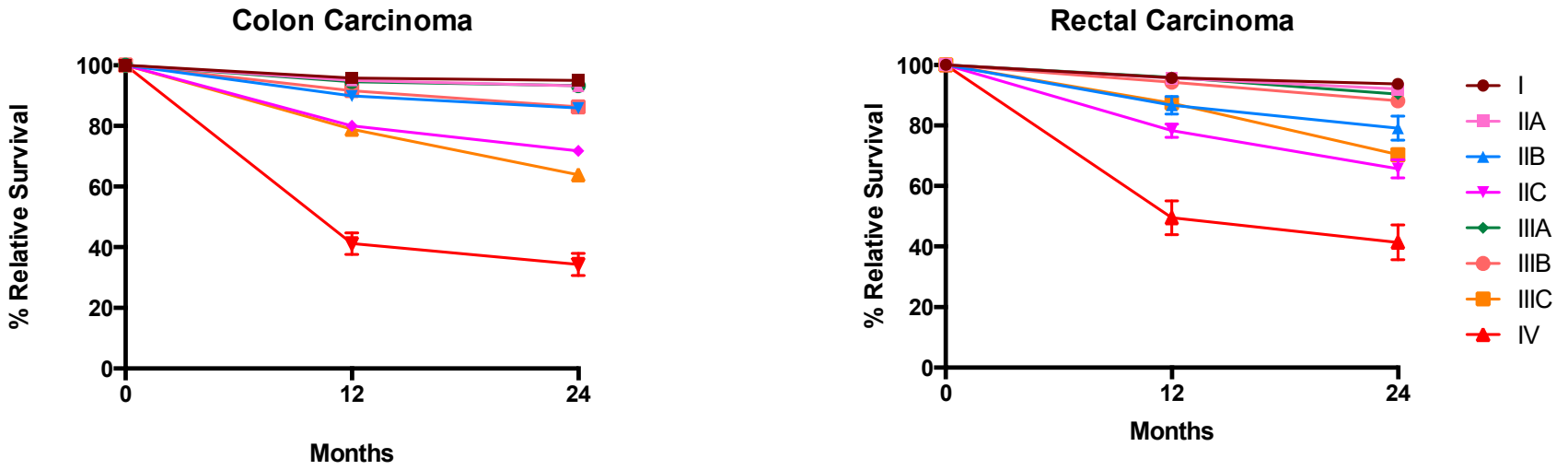
Stage is important in patient education



Patients with cancer are encouraged to ask the stage of their cancer if they have not been told.

It helps in looking up information about their cancer and treatment options as seen in this page from the NCI website for patients.

Stage gives an indication of prognosis



Staging in Population Health 1

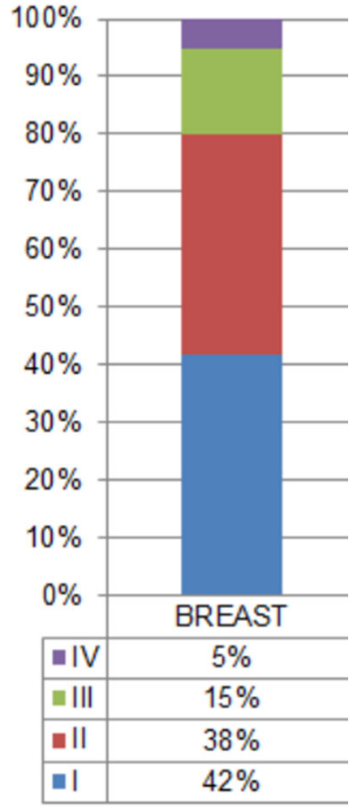
If stage is known as well as incidence the data can be used for:

Screening

- ❑Assess the need
- ❑Assess effectiveness
  - ❑After introduction of an effective screening program we would expect change in distribution with fewer stage IV and more stage I cancers

Treatment guideline concordance

- ❑If treatment is known, we can assess if treatment given is concordant with guidelines that incorporate stage



Staging in Population Health 2

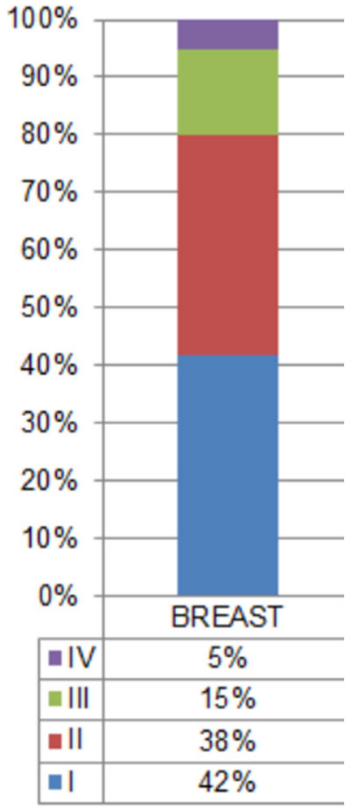
If stage is known as well as incidence the data can be used for:

Resource Planning

- ❑Different resources are needed depending on at which stage patients present
- ❑The more patients presenting with advanced stage the greater the need for systemic therapy and/or palliative care facilities

Comparisons of survival by stage

- ❑The survival by stage can be compared between different countries



Staging terms that cause confusion - 1

- Stage Migration
  - describes a change in the proportion of T, N or M categories following introduction of new means of assessing disease extent, such as PET scan.
- Stage Shift
  - describes a change in the pattern of stage distribution within a population to a lower stage following the introduction of early detection or screening programs, or to higher stage when access to care becomes limited.
  - The COVID pandemic caused delays in screening, which might have resulted in a shift to higher stage disease.

Staging terms that cause confusion - 2

- Downstaging
  - describes a reduction in T or N category after neoadjuvant therapy
- Downsizing
  - describes a reduction in size of tumor after neoadjuvant therapy

Remember though, the stage at diagnosis remains the patient's clinical stage even if the tumor shrinks

The need to change and remain relevant

- New Knowledge. For example:
  - Breast prognosis
    - Genomics are a more powerful an indicator of outcome than anatomic features
- New disease. For example:
  - HPV Oropharynx

BREAST CANCER
Anatomical and Prognostic Stage Groups

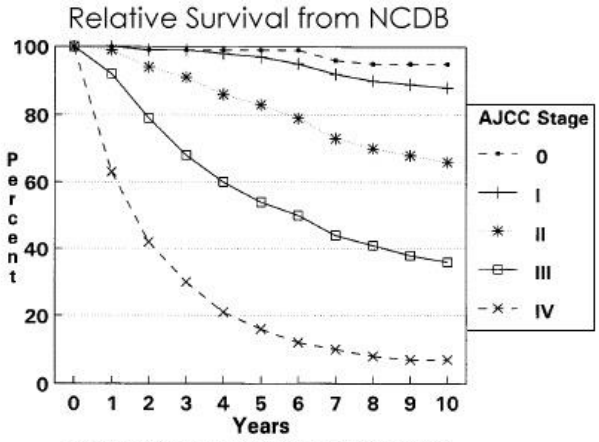
Breast cancer is now understood to be a group of diseases with different molecular characteristics (*identified by gene expression profiling, IHC, proteomics, NGS*, and other molecular techniques)* that originate in breast epithelial tissue

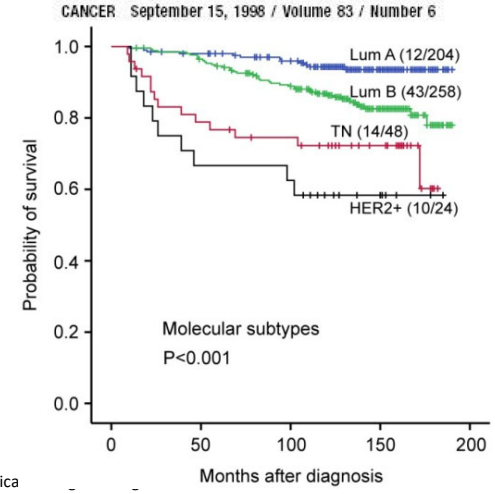
- *different prognoses*
- *different patterns of recurrence*
- *different patterns of metastasis*
- *different sensitivities to available therapies*

*(NGS=next generation sequencing, I didn't know that either)

Breast: Anatomy is Not Enough

- Anatomy provides some prognostic information to support treatment planning
- But anatomy is insufficient to define prognosis and therapy
- Including non-anatomic factors is necessary to define prognosis and treatment





BREAST CANCER Prognostic Group

- Addition of tumor factors such as
  - Grade
  - HER2 status
  - Estrogen receptor (ER), progesterone receptor (PR) Status
  - Genomic assays

- In conjunction with anatomic information on the tumor (T), regional nodes (N), and distant metastases (M) categories

BREAST CANCER (8th Ed.)
Anatomical and Prognostic Stage Groups

- Anatomic Stage table. Based solely on anatomic extent of cancer as defined by the T, N, and M categories.
  - Intended for use in settings around the world where biomarker analysis is not available.
- When biomarkers are available, cancers are staged using the Clinical and Pathological Prognostic Stage tables.

BREAST CANCER 8th Ed. Anatomical and Prognostic Stage Groups

- ❑ Stage Groups reflect survival outcome for that TNM
- ❑ Stage group does not directly drive treatment
- ❑ But there is the expectation that treatment will be appropriate for the TNM

When TNM is...	And Grade is...	And HER2 Status is...	And ER Status is...	And PR Status is...	Then the Pathological Prognostic Stage Group is...
T2 N1 M0 T3 N0 M0	1	Positive	Positive	Positive	IA
				Negative	IIB
			Negative	Positive	IIB
				Negative	IIB
		Negative	Positive	Positive	IA
				Negative	IIB
			Negative	Positive	IIB
				Negative	IIB
	2	Positive	Positive	Positive	IB
				Negative	IIB
			Negative	Positive	IIB
				Negative	IIB
		Negative	Positive	Positive	IB
				Negative	IIB
			Negative	Positive	IIB
				Negative	IIB

Persistent Challenges to TNM Staging

- **TNM largely limited to anatomic information**
  - **–Lacks biologic data and impact of response**
  - **–Creates ‘bins’ of like patients**

- **TNM does not always meet needs of clinicians and patients – is it still relevant ?**
  - **–Individualized prognosis**
  - **–Predict value of therapy**
  - **–TNM risks marginalization**

- **Should TNM maintain anatomic base ?**
  - **–Population incidence and impact**
  - **–Longitudinal changes**
  - **–World wide use**

What's Changing Since the Last Edition - *The Evolving Landscape (2008 - 2013 …..)*

- Advances in molecular underpinnings of cancer - TCGA etc. - oncogenesis, progression, resistance – molecular classification of cancer
- Increasing availability of high throughput testing, mutational analysis (sequencing), microarrays (RNA, mi RNAs, SNPs, etc)
- Advances in informatics & computational biology; increased adoption of EHRs, data interoperability, real time risk calculating strategy apps (nomograms, tables, etc)

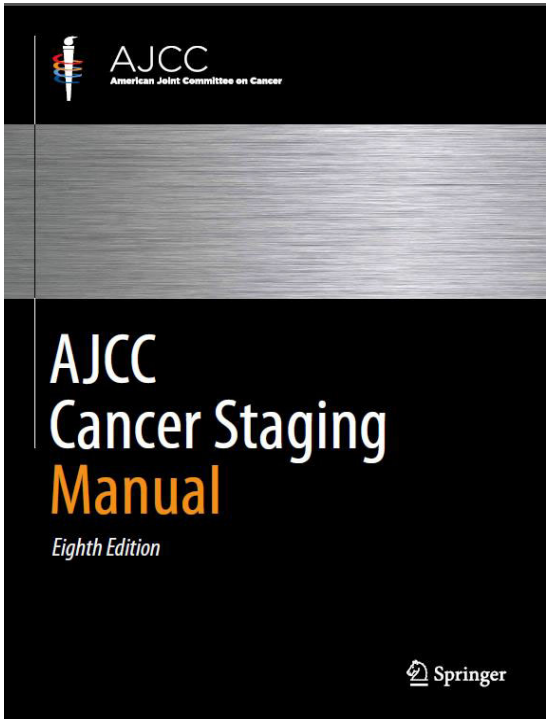
A New Disease

- HPV related squamous cell oropharyngeal carcinoma behaves differently from squamous cell oropharyngeal cancer related to smoking
- TNM was developed for smoking related oropharygngeal cancer
- When applied to HPV cancer the survival curves for stage I and II and III and IV overlap
- The 7th edition TNM does not work for HPV related disease so a new separate classification has been developed for HPV oropharyngeal cancer for the 8th edition

AJCC 8th Edition

- **Bridge from a Population Based to a More Personalized Approach**
  - require integration of a wide variety of information based on patient history and physical examination findings supplemented by imaging, intraoperative findings, and pathologic data

- **What's New?**
  - Data Element Review Form and Levels of Evidence
  - Precision Medicine Core with relevant genomic markers
  - Chapter Templates
  - New Chapter Headings
  - Tabular format for TNM Definitions and Stage Group



AJCC 8th Edition

- Published October 6, 2016
- Effective for all cased diagnosed on or after January 1, 2018
- **Read Chapter 1**
  - Principles of Cancer Staging
- Chapter Outline
  - Definitions of AJCC TNM
  - AJCC Prognostic Stage Groupings
  - Registry data collection variables
  - Histologic Grade
  - Survival Data
  - Illustrations
  - Bibliography

AJCC 8th Edition

- Involved 450 volunteers
  - 18 expert panels
  - Editorial Board consisting of 19 volunteers
  - Six Content Oversight Core Groups (precision medicine , stats , data collection and content harmonization)
  - 25 Core committees
  - Countless hours of work by dedicated AJCC staff
- Introduced structured authoring that will allow for editing and publication in a variety of formats
- Created an API; an electronic platform that supports publication, research and translation

AJCC 8th Edition

- Evidence-based medicine approach
  - 18 expert panels
  - 420 contributors
  - 181 institutions, 22 countries, 6 continents
  - Expanded editorial board supported by 7 AJCC core committees
    - Content harmonization, precision medicine, statistics, imaging, data collection, professional organization and corporate relationships
- Collaborative authorship

Persistent Challenges to TNM Staging

The 8th Edition recognizes that :

TNM is largely limited to anatomic information

- ❑–Lacks biologic data and impact of response
- ❑–Creates 'bins' of like patients and not individualized

TNM does not always meet needs of clinicians and patients – but is it still relevant for many disease sites

- ❑ –Individualized prognosis
- ❑ –Predict value of therapy
- ❑ –But TNM risks marginalization

❑ **TNM should maintain anatomic base because of its value in:**

- ❑ –Population incidence and impact
- ❑ –Longitudinal changes
- ❑ –World wide use

What's Changing Since the Last Edition - *The Evolving Landscape (2008 - 2013 …..)*

- Advances in molecular underpinnings of cancer - oncogenesis, progression, resistance – molecular classification of cancer
- Increasing availability of high throughput testing, mutational analysis (sequencing), microarrays (RNA, mi RNAs, SNPs, etc)
- Advances in informatics & computational biology; increased adoption of EHRs, data interoperability, real time risk calculating strategy apps (nomograms, tables, etc)
- Maturing data is gradually becoming available on prognostic and predictive factors that allow evidence-based decision making

Evolution of Cancer Staging

- Cancer Staging ***Manual*** → rebranded as Cancer Staging ***System***
- Goal → Continue to ensure cancer staging is current, evidence-based, and meets needs of clinical care and surveillance communities

8th Edition	Version 9
Hardcopy book	Leverages Content Management infrastructure to support multiple products
Chapters	Protocols for each disease site
Published every 5-7 years	AJCC will release ~ 5 protocols each year
Entire manual (all chapters) published simultaneously	Protocols published disease site by disease site based on needs of clinical care & surveillance communities and in coordination with WHO Blue Book update cycle
Print manual → "static"	Electronic platform facilitates rapid integration of updated staging information into EHR and cancer registry software as well as other products

Evolution of Cancer Staging - II

- **8th Edition** Cancer Staging Manual content **will continue to be used** for staging and cancer surveillance **until new Version 9** disease site protocol available

- Ongoing **communication** efforts in coordination with partners, vendors, physicians and registrars for smooth transition

Version 9 Protocols

Milestone Descriptions

Production Phase	WHO:	Sequence	Brief description
Phase I- Data review, survival curves and staging assessment	Panel Chair	1	Chair in place
	4-5 Panel members	2	8th Ed to Protocol Shell
	Statistics	3	Mini-Panel Kick-off
	Oncology	4	Histologies reconciliation
	Surgery	5	Appoint clinicians to review data
	Pathology	6	Mtg 1 - NCDB - code conversion reconciliation
	Radiology	7	NCDB survival codes report
	Editorial Comm Liaison	8	Mtg 2 Statistical reconciliation
		9	Final K-M curves
		10	Review staging data tables
		11	Clinical decision on staging changes
		12	Determine if new data items to be proposed to QIC/ NAACCR for v 10
		13	Determine path for V9 TNM (short or long)
		14	**Present content to EBMC for appv'l if req'd**
Phase II: Literature Review, Draft Tables, Descriptive Content, Illustrations, Refs, Proofing, Editorial Approval	Panel Chair	15	Full Panel Kick-off
	Vice Chair	16	Review Pre -Prod Protocol
	Full Panel Members	17	Box Training for everyone
	AJCC Registry Ops Staff	18	Begin Drafting
	Medical Illustrator	19	Diagnostic Table
	ACS Integrated Comms	20	Pathological Table
		21	Review illustrations 8th Ed pdf
		22	Staging Rules
		23	Illustrations review and approve final proofs - if req'd
		24	Final comments for larger panel - if req'd
		25	Panel completed final draft all sections
		26	Protocol Final Proofing
		27	Final Corrections
		28	**Editorial Committee Approval**

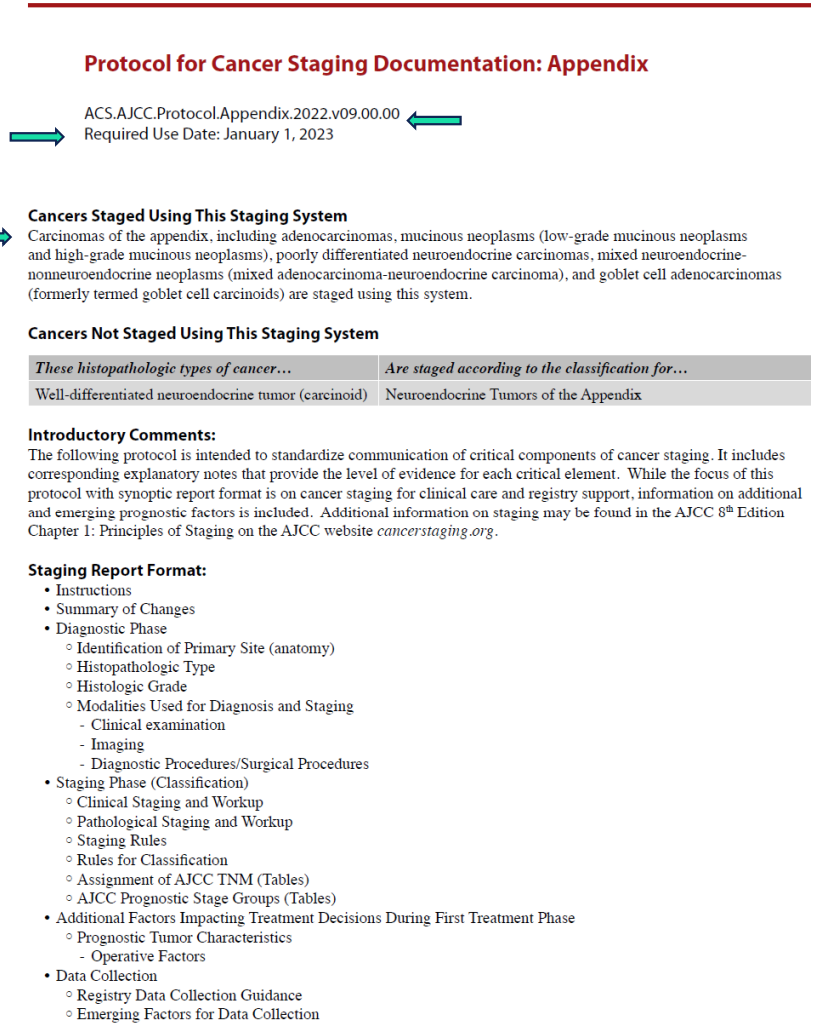
EDITORIAL WORK COMPLETE

Panel Percent Complete as of 05 May 2023

% Complete		Pre- Production/ Survival Data & Decision = 14 milestones													Protocol Complete & Ready for Publication = 14 milestones												Panel Content Complete	API-DLL Data accpeted and completed	Quality Check Complete
Note: time intervals vary for each milestone		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
2023 Release cycle																																
Vulva	100.0%																													1/31/2023	Complete	
NET-1 Pancreas	100.0%																													3/20/2023	Complete	
NET -2 Colon-rectum	85.7%																															
NET -3 Ileum & Jejunum	100.0%																													3/27/2023	Complete	
NET-4 - Stomach	100.0%																													4/28/2023	Complete	
NET-5 Duodenum & Amp	93.0%																													5/5/2023	Complete	
NET-6 Appendix	71.4%																													5/31/2023	Complete	

Version 9 Protocol Structure

- Version control to clearly indicate Version 9, and allow for minor corrections (typos and other errata)
- Clear indication of effective date for implementation
- Standardized format
- Clear indications of cancers covered in Protocol and those not staged
- Outline of the Format to orientate reader



Protocol for Cancer Staging Documentation: Appendix

ACS.AJCC.Protocol.Appendix.2022.v09.00.00
Required Use Date: January 1, 2023

Cancers Staged Using This Staging System

Carcinomas of the appendix, including adenocarcinomas, mucinous neoplasms (low-grade mucinous neoplasms and high-grade mucinous neoplasms), poorly differentiated neuroendocrine carcinomas, mixed neuroendocrine-nonneuroendocrine neoplasms (mixed adenocarcinoma-neuroendocrine carcinoma), and goblet cell adenocarcinomas (formerly termed goblet cell carcinoids) are staged using this system.

Cancers Not Staged Using This Staging System

These histopathologic types of cancer…	*Are staged according to the classification for…*
Well-differentiated neuroendocrine tumor (carcinoid)	Neuroendocrine Tumors of the Appendix

Introductory Comments:

The following protocol is intended to standardize communication of critical components of cancer staging. It includes corresponding explanatory notes that provide the level of evidence for each critical element. While the focus of this protocol with synoptic report format is on cancer staging for clinical care and registry support, information on additional and emerging prognostic factors is included. Additional information on staging may be found in the AJCC 8th Edition Chapter 1: Principles of Staging on the AJCC website *cancerstaging.org*.

Staging Report Format:

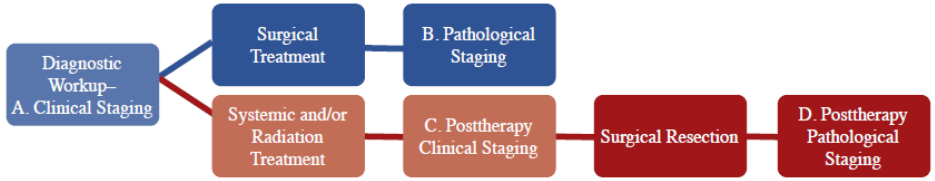
- Instructions
- Summary of Changes
- Diagnostic Phase
  - Identification of Primary Site (anatomy)
  - Histopathologic Type
  - Histologic Grade
  - Modalities Used for Diagnosis and Staging
    - Clinical examination
    - Imaging
    - Diagnostic Procedures/Surgical Procedures
- Staging Phase (Classification)
  - Clinical Staging and Workup
  - Pathological Staging and Workup
  - Staging Rules
  - Rules for Classification
  - Assignment of AJCC TNM (Tables)
  - AJCC Prognostic Stage Groups (Tables)
- Additional Factors Impacting Treatment Decisions During First Treatment Phase
  - Prognostic Tumor Characteristics
    - Operative Factors
- Data Collection
  - Registry Data Collection Guidance
  - Emerging Factors for Data Collection

New Features

- Visualization of Staging Rules show a decision tree format for Expert Panels to utilize
- Common Staging Scenarios provide additional guidance for clinicians
- Survival Curves, Additional Factors for Treatment

Staging Rules for Appendix

Information to help guide staging is shown in the figure below and described in the treatment scenarios. For metastatic patients, diagnostic workup can result in pM1 which can be used in both a clinical stage and a pathological stage if there is no surgical resection. Depending on the appendiceal histology, an appendectomy can represent a diagnostic workup procedure or a definitive surgical treatment (e.g. an appendectomy is definitive surgical treatment for a LAMN).



Common staging scenarios (Note CSS):

1) Unsuspected cancer in an appendectomy specimen
The most common way that appendiceal cancer is diagnosed and staged is by pathological examination of an appendectomy specimen, often in a patient presenting with signs and symptoms of acute appendicitis in whom appendiceal cancer is not suspected preoperatively. **Pathological staging** (B in figure above) is assigned by the managing physician for this incidental finding. There is no clinical staging.

2) Detection by imaging or colonoscopy prior to or without appendectomy
Less commonly, appendiceal cancer is identified on imaging or as a lesion at the appendiceal orifice upon colonoscopy. **Clinical staging** (A in figure above) cT, cN, and cM/pM are assigned based on imaging findings. The pathologist assigns pT, pN, and pM (when metastases are sampled) based on the resected specimen, usually a right hemicolectomy specimen. The managing physician then assigns the **pathological staging** (B in figure above) based on the clinical stage information, the operative findings, and the resected specimen pathology report information.

AJCC Content is Available in…

EHR Software

Epic

Cerner

Allscripts

MEDITECH

flatiron

McKESSON

varian

Registry Software

Elekta

ONCO
ONCOLOGY DATA MANAGEMENT SYSTEMS

ROCKY MOUNTAIN CANCER DATA SYSTEMS

C/NET SOLUTIONS

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NPCR
NATIONAL PROGRAM of CANCER REGISTRIES

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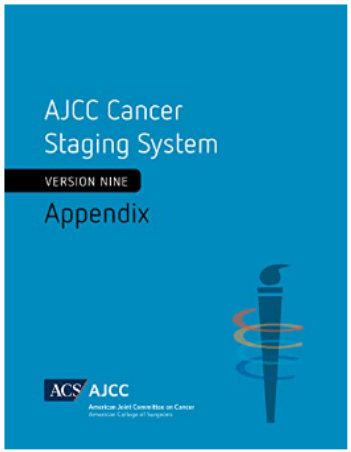


Read sample

AJCC Cancer Staging System: Appendix: Version 9 of AJCC Cancer Staging System (Version 9 of the AJCC Cancer Staging System) [Print Replica] Kindle Edition

by Michael J. Overman (Author), Sanjay Kakar (Author), Norman J. Carr (Author), Nader N. Hanna (Author), & 6 more | Format: Kindle Edition

5.0 ★★★★★ 1 rating

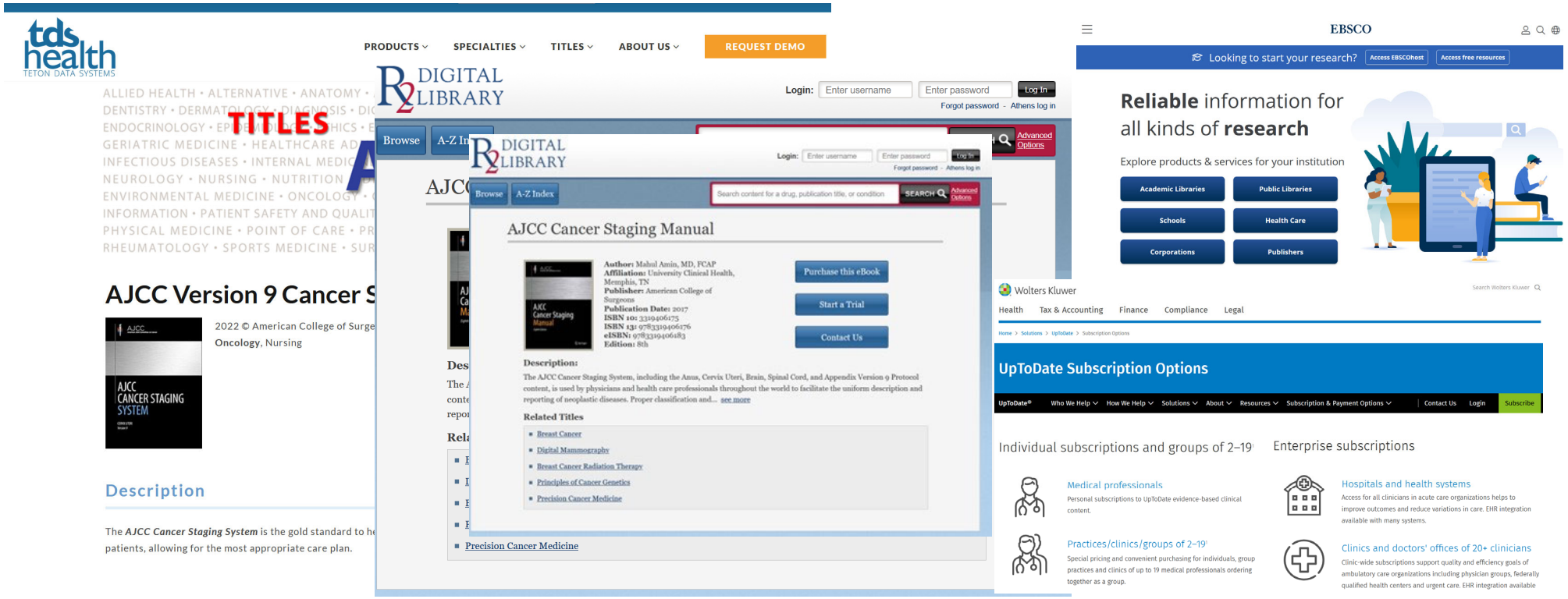
Part of: Version 9 of the AJCC Cancer Staging System (4 books) See all formats and editions

Kindle	Paperback
$9.99	$9.99
Read with Our Free App	1 New from $9.99

Version 9 of the American Joint Committee on Cancer (AJCC) Cancer Staging System for the Appendix. The new Version 9 Appendix content is presented in a streamlined, easy-to-use format, incorporates the World Health Organization (WHO) Classification of Tumors histology codes. Physicians, registrars, researchers, and other content users will be benefit from the updated Appendix content, including tables, explanatory notes and illustrations. Version 9 of the Appendix Cancer Staging System becomes effective on January 1, 2023 and replaces the 8th Edition Appendix cancer site content.

Part of series	Print length	Language	Sticky notes	Publication date	File size
Version 9 of the AJCC Cancer Staging System	39 pages	English	Not Enabled	October 5, 2022	3825 KB

Library Services



** NOTE: AJCC does not endorse any specific products, but does license content for distribution through web base platforms.*

What's Coming Next in Version 9

New Version 9 Protocols for 2024

- Vulva
- Neuroendocrine Tumors
  - Jejunum Ileum
  - Pancreas
  - Colon Rectum
  - Stomach
  - Duo-Vater
  - Appendix

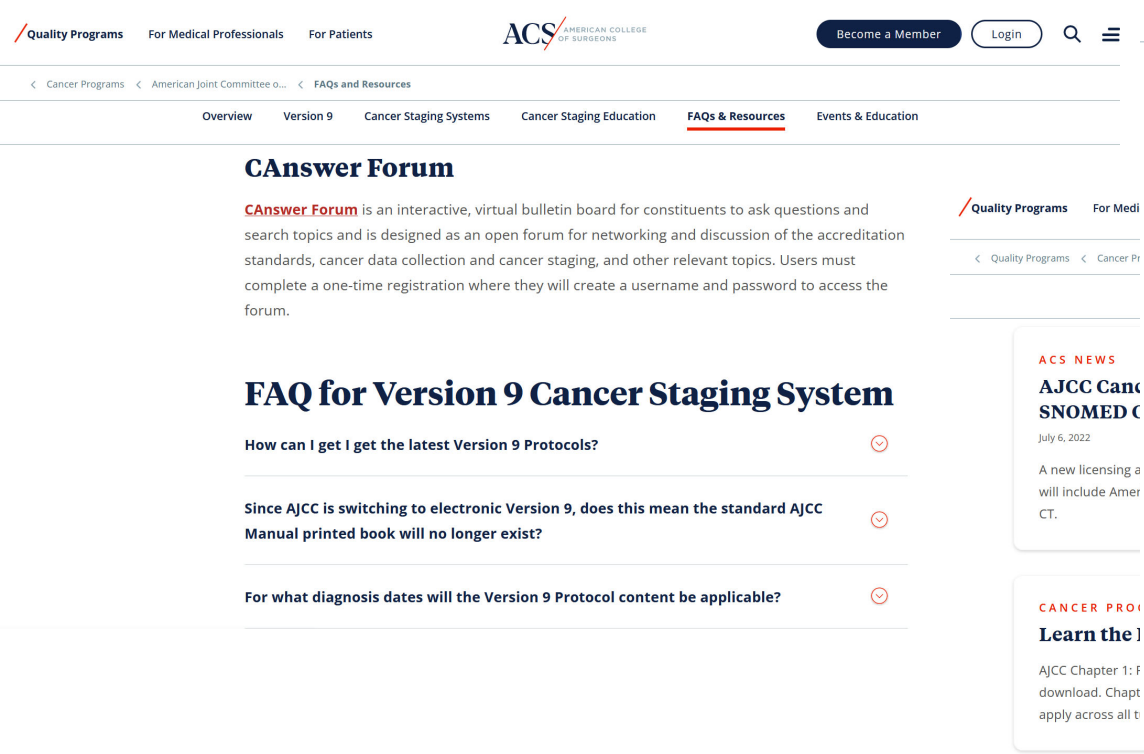
- Protocols will be available for purchase in Fall 2023
- Effective for cases diagnosed January 1, 2024, and later
- Updated Version 9 protocol content will be made available to licensees

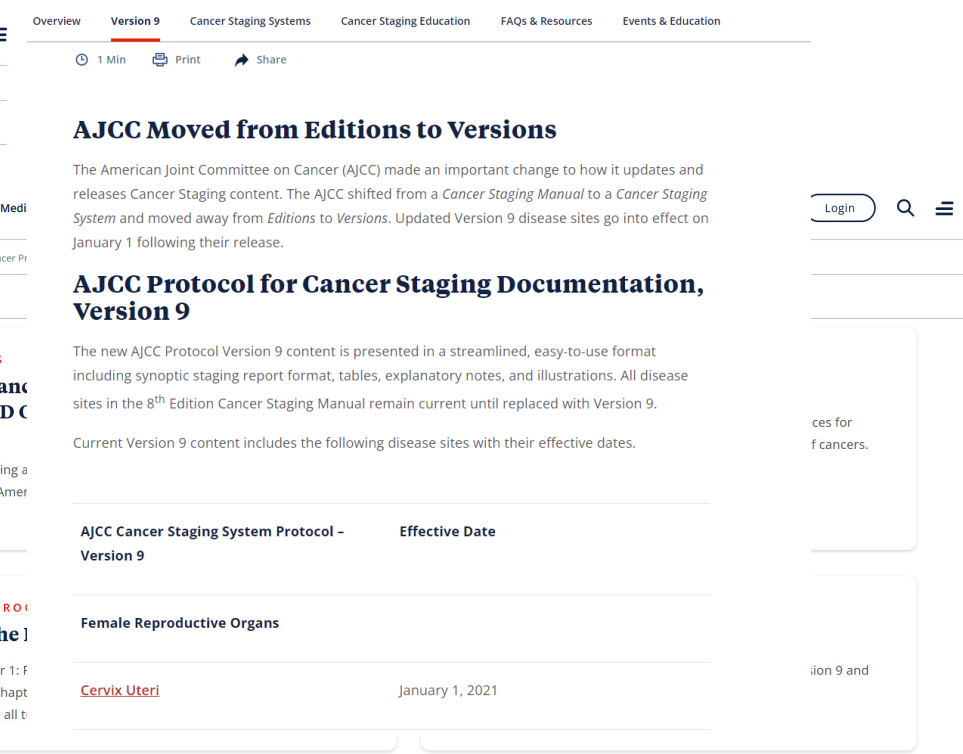
Version 9 Protocol plans for 2025

- Thoracic Sites
  - Lung
  - Thymus (TBD)
  - Mesothelioma (TBD)
- Head & Neck
  - Sites TBD

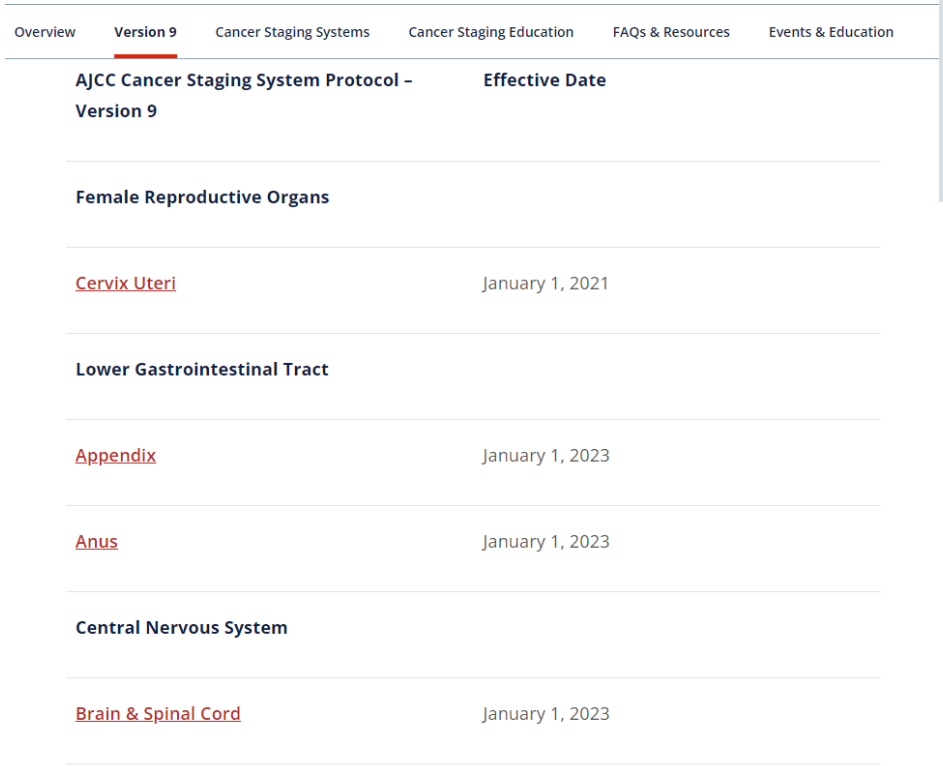
- Review of data just beginning
- Protocols would be available for purchase in Fall 2024
- Effective for cases diagnosed January 1, 2025, and later
- ***Plans may change as things emerge in the protocol production process***

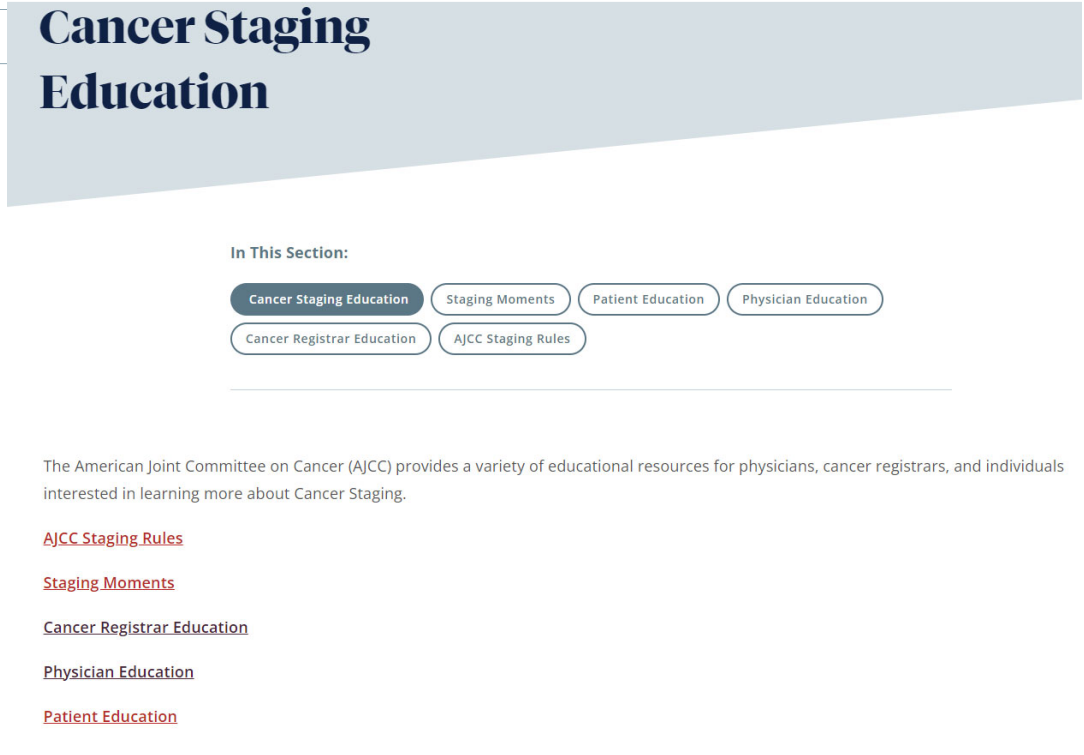
Utilize AJCC Website!





Utilize AJCC Website!





Summary

- The AJCC Cancer Staging System is the “language of cancer”
- It is used to classify extent of disease, help define treatment strategies and to analyze and compare results of clinical trials.
- The 9th Edition will roll out when new data is available.