- 1. Overview of variables
 - Demographics
 - Tumor characteristics
 - Treatment
 - Follow-up and dates
 - County attributes
- 2. Cancer type recodes
- 3. Cancer type specific variables
- 4. Staging definitions
 - Caution when using over time



Concept of Summary Stage (LRD stage) (very simple, very anatomic – began in the 1950s)

Definition

In situ (I) Localized only (L) Regional (R) Regional by direct extension only (RE) Regional lymph nodes involved only (RN) Regional by BOTH direct extension AND lymph node involvement (RE + RN) Regional, NOS (Not Otherwise Specified) (R, NOS) Distant site(s)/node(s) involved (D) Unknown if extension or metastasis (unstaged, unknown, or unspecified) (U) Death certificate only case





EOD

Extent of Disease





FIELD 20 - EXTENT OF DISEASE Example of two-digit EOD



Local

Ragional

PRIMARY TUMOR NO DIRECT EXTENSION NO DISTANT INVOLVEMENT

Primary Tumor Description	Vessel Invasion	Lymph Nodes	Code
confined strictly to ovarian tissue	no	no	10
"localized" to ovarian tissue	no	no	4-
confined strictly to ovarian tissue	yes	no	30
"localized" to ovarian tissue	yes	no	39
confined strictly to ovarian tissue		yes	50
no detailed information of above		yes	59

TUMOR HAS EXTENDED TO Involvement of **OR INFILTRATED THE FOLLOWING:** regional lymph nodes no yes local invasion of peritoneum and/or fallopian tube by extension_____ 70 80 implants on ovary of primary site______implants on peritoneum in area immediately adjacent 71 81 to ovary of primary site_____ 72 82 more than one (70-72) or (80-82)_____ 79 89

FURTHER DIRECT EXTENSION

any adjacent extension other than 70 or 80	99	-9
--	----	----

DISTANT INVOLVEMENT

distant site involvement	&1	&6
distant lymph node involvement	&2	&7
distant site and distant lymph node involvement	&3	&8

REGIONAL LYMPH NODES FOR THIS SITE (first chain of drainage): internal iliac (hypogastric); inguinal; external iliac; common iliac, including uterosacral lymph nodes; obturator





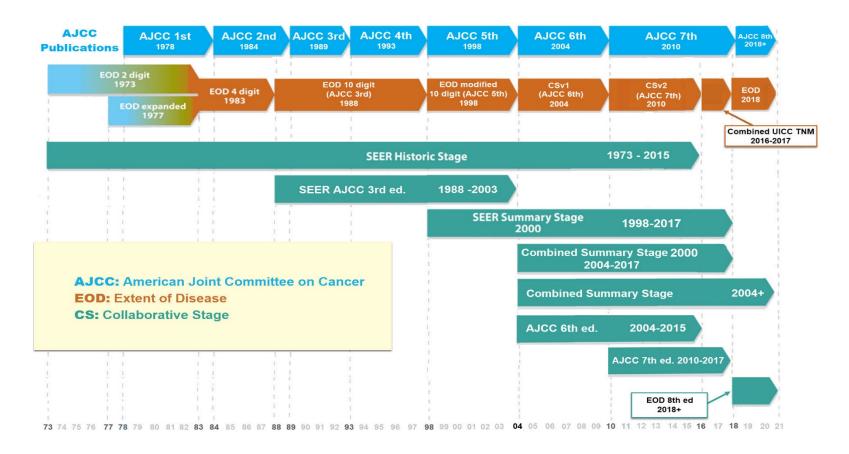
FIELD 20 - EXTENT OF DISEASE COLUMNS 67-68	Example of how historic stage is defined		OVARY U _{(unsta}
PRIMARY TUMOR NO DIRECT EXTENSION NO DISTANT INVOLVEMENT Primary Tumor Description confined strictly to ovarian tissue "localized" to ovarian tissue "localized" to ovarian tissue	no ves	Regional Lymph Nodes no no no	O- I (in situ)
confined strictly to ovarian tissue no detailed information of above TUMOR HAS EXTENDED TO		yes	50 59 RN
OR INFILTRATED THE FOLLOWING:		Involvem regional lyn	ph nodes
local invasion of peritoneum and/or fallopiar implants on ovary of primary site implants on peritoneum in area immediately to ovary of primary site more then one (70, 72) or (20, 82)	adjacent	70 71 72 79	80 81 82 89 RE + RN
more than one (10-12) of (80-82)			I XI N
FURTHER DIRECT EXTENSION any adjacent extension other than 70 or 80		99	
FURTHER DIRECT EXTENSION			-9

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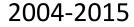


		- french	10.5	1.1	AL.	11.1	6	-	10	5		20		F	21	u	n	С	ł		С	a	r	d	
											0	-											8	3	
011	2	03	0 4 1	051	6	0 7 1	0 8 1	9	10	11	47	0	68	69	70	71	72	73	74	75	76	11	78	79	80
2	2	2		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
91	9 2	93	94	9 5	96	97	9 8	999	9 10		9 47	9 54	9 68		9 70	9 71	9 72	9 73	9 74	9 75	9 76	9 11	9 78	9 79	9 80









Derived Stages from CS

SEER Summary Stage 2000

Collaborative

Staging (CS)

SEER Summary Stage 77

SEER Historic

AJCC 6th ed. Stage, T, N, and M (combination of clinical and path)

AJCC 7th ed. Stage, T, N, and M (combination of clinical and path)





2016-2017

Combination of Directly Assigned and Recoded Summary Stage 2000

Directly assigned TNM 7th ed. T, N, M and stage



	Percent	Percent	Percent
	CS coded	CS coded	CS coded
	2015	2016	2017
SEER 9 1975+	100	53.2	35.3
SEER 13 1992+	100	40.6	26.3
SEER 18 2000+	100	33.2	25.4

Combination of Derived & Directly assigned SS 2000 SEER Summary Stage 2000





Summary Stage 2000 (SS2000): Percent agreement between SS2000 Derived from CS and Directly Assigned, 2015

SS2000 DirA vs CSder excl two regs and blanks 2015 only in situ malignant cases only							
R not broken into	regional subg	roups					
		includes u	nstaged			excludes u	nstaged
CS schema	Total	# Agree	Percent		Total	# Agree	Percent
Bladder	11,823	11,681	98.8		11,348	11,220	98.9
Breast	50,853	50,546	99.4		49,945	49,664	99.4
Colon	15,882	15,544	97.9		14,954	14,647	97.9
HemeRetic	13,286	13,258	99.8		13,042	13,014	99.8
Lung	34,544	33,616	97.3		32,467	31,577	97.3
Lymphoma	12,463	12,065	96.8		11,440	11,085	96.9
MelanomaSkin	28,412	28,204	99.3		27,705	27,570	99.5
Prostate	32,066	31,689	98.8		30,151	29,844	99.0





- Summary Stage 2018 Good news is that it was designed to be as close as possible to SS2000
- Schema ID 2018 identifies the schema used for EOD 2018
 - reflects the addition of several new schemas based on histology
- EOD 2018 size, extension, lymph node involvement, distant mets, SSDI, etc.



Summary Stage variables on SEER Research file (Nov 2020)

- Combined Summary Stage (2004+)
- Summary stage 2000 (1998-2017)
- SEER Combined Summary Stage 2000 (2004-2017)
- SEER historic stage A (1975-2015)



Summary Stage variables on SEER Research file (Nov 2020)

- Combined Summary Stage (2004+) doesn't separate into regional categories, benign/borderline CNS coded to N/A; temporarily doesn't include testis; all other sites are included; combination of SS2000 for 2004-2017 and SS2018 for 2018
- Summary stage 2000 (1998-2017) certain sites not included; 2018 not included; benign/borderline CNS blank; ovary in situ not included (could be corrected);
- SEER Combined Summary Stage 2000 (2004-2017) similar to Combined SS 2004+ above except 2018 (SS2018) is not included
- SEER historic stage A (1975-2015) regional not separated; Prostate: loc/reg combined (1995-2015) and blank for 1975-1994, some sites not include for certain years; brain/CNS - unstaged



What can you do if the definition of a SEER*Stat variable is unclear?

File Edit Session Window Profile Help # 🛚 % 🗭 ÷ 🎝 📰 😅 🖬 ᅞ 😵 Server Data: ssp://seerstat.imsweb.com:2038 Frequency Session-1 Check the data dictionary Statistic Selection Table Output Data **Display Variables** Page Dictionary B- Row Combined Summary Stage (2004+) Database: Incidence - SEER Research Data, 18 Registries, Nov 2020 Sub Summary stage 2000 (1998-2017) (2000-2018) E Column Age at Diagnosis Close + -Year of diagnosis Race, Sex, Year Dx Site and Morphology Help + Stage - Summary/Historic Ē Combined Summary Stage (2004+) Create.. Summary stage 2000 (1998-2017) SEER Combined Summary Stage 2000 (2 Edit. SEER historic stage A (1973-2015) Stage - 8th edition

SEER

SEER*Stat 8.3.9



Name: Combined Summary Star Description: Created from SEER Com Edit	category: User-Defin bined Summary Stage 2000 (2004-2017) Derived Sur https://seer.cancer.gov/seerstat/variables/seer/Ird-	
Groupings	Values	(0 Selected
In situ Localized Regional Distant N/A Unknown/unstaged Not coded - Testis Blank(s)	Add Add All Add Rest Update	
Up Dn <> Rename	Delete	



Localized/Regional/Distant Stage Adjustments

More information

Documentation for SEER Data

SEER*Stat Database Details

Variable & Recode Definitions

Behavior Recode for Analysis

Cancer Stage Variables

SEER Combined/AJCC Cancer Staging

Collaborative Stage Site-Specific Factors (CS SSF)

Localized/Regional/Distant Stage Adjustments

Cancer Type-Specific Recodes +

The SEER Program strives to make all Localized/Regional/Distant stare, variables consistent for all cancer sites for the appropriate years. However, there are certain site/year combinations where this is not possible. The following tables detail changes imposed on the SEER Historic and Summary stages unables for each SEER Research Data release.

- 1975-2018 data (November 2020 Submission)
- 1975-2017 data (November 2019 Submission)
- 1973-2009 SEER Research Data (November 2011 submission) and Later Releases up to 1975-2016
- 1973-2008 data (November 2010 submission)
- 1973-2007 data (November 2009 submission)
- 1973-2006 data (November 2008 submission)
- 1973-2005 data (November 2007 submission)
- 1973-2004 data (November 2006 submission)
- 1973-2003 data (November 2005 submission)



The SEER Program strives to make all L/R/D stage variables consistent for all cancer sites for the appropriate years. However, there are certain site/year combinations where this is not possible. The following table details changes imposed on the stage variables by the SEER Program.

Any cases diagnosed in years not covered by the year range indicated in parentheses within the stage variable name are coded as Blank. Cancer sites without notations for a stage variable are fully staged within the year ranges covered by the variable.

Site Recode with Ka Sarcoma and Meso		Combined Summary Stage (2004+) ^a	SEER Summary Stage 2000 (1998- 2017)	SEER Historic Stage A (1973-2015) ^{<u>b</u>, <u>s</u>}
Gum and Other Mo	ıth		All cases are blank	
Nasopharynx			All cases are blank	2004+ all cases are blank
Tonsil			All cases are blank	
Oropharynx		and the second second second	Albcallengreiblicht	and a second

Ear	- Marian	have been and the second of the second secon
Larynx		2004+ all cases are blank
Lung and Bronchus		1973-1987 all cases are blank
Pleura	All cases are blank	1973+ all cases are unstaged
Trachea	All cases are blank	2004+ all cases are blank
Bones and Joints	All cases are blank	

^a Created from SEER Combined Summary Stage 2000 (2004-2017) and Derived Summary Stage 2018 (2018+). Not available for Massachusetts.

^b In databases prior to the November 2018 submission, this field did not have a year range in the name.

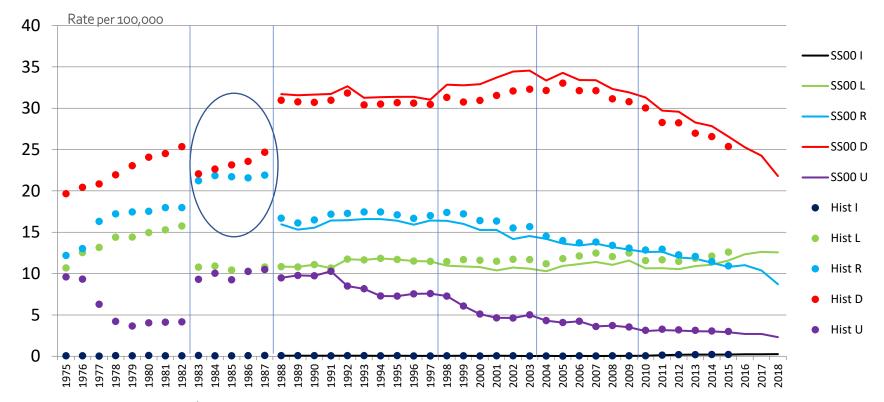
^c <u>Historic Stage Coding for 2004-2015</u> (XLS, 355 KB)

Glitches in long term trends?

- Historic stage may have problems that some of the categories may not be consistent over time
 - Historic stage has been removed for certain years and some sites on the Research file
 - Most problems seem to be between R and D over time.
 - The list of regional nodes for a site may vary over time.
 - There are many small inconsistencies because one EOD code may group entities some of which are R and others which are D.



Lung (both sexes): SS2000 fixed (lines) 1988-2018 and Historic (circles) 1975-2015



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Source: SEER 9 areas, NCI

1983-87: ext code 7: placed in RE

EXTEN	ISION			
0	IN SITU: Noninvasive; intraepithelial			
1	Invasive tumor confined to main stem bronchus or carina	Lung EOD 1983-1987		
2	Tumor(s) of main stem bronchus >2 cm from carina	5 5557		
3	Main stem bronchus, NOS; Localized, NOS			
4	Extension to:			
	Visceral pleura, pleura NOS Parietal pericardium or NOS Pulm	onary ligament		
	Atelectasis/obstructive pneumonitis involving < entire lung			
5	Tumor(s) of main stem bronchus <2.0 cm from carina			
6	Extension to:			
	Carina to MSB; MSB to carina			
	Trachea; Esophagus			
	Nerve(s):			
	Recurrent laryngeal; vagus; phrenic; cervical sympathetic	(Horner's syndrome)		
	Major blood vessel(s):			
	Pulmonary artery or vein			
	Superior vena cava: aorta Extrapulmonary mediastinum	or NOS		
7	Extension to:			
	Contralateral main stem bronchus Heart; visceral pericardium	Pleura, parietal		
	Pleural effusion*			
	Rib, sternum, vertebra			
	Chest (thoracic) Wall			
	Skeletal muscle			
	Skin of chest			
	Diaphragm			
	Abdominal organs			
	Atelectasis/obstructive pneumonitis involving entire lung			
8	Further Extension or Metastasis			
9	UNKNOWN if extension or metastasis			



Lung EOD 1983-1987

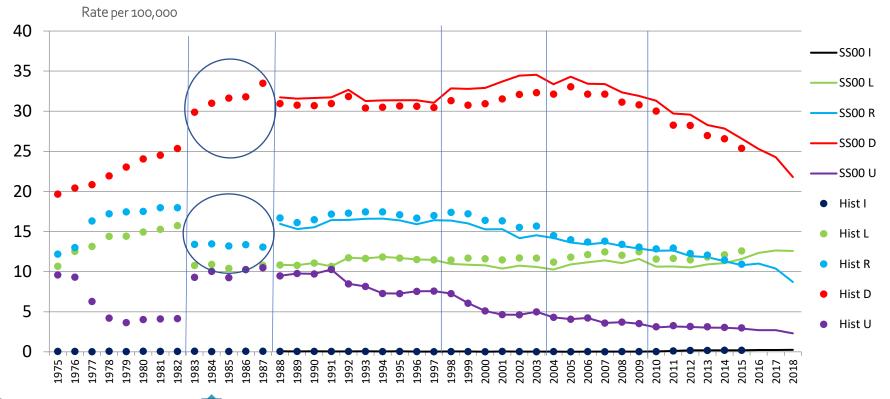
Code 7:

- RE:
 Chest (thoracic) wall
 - Pleura, parietal
- o D:
- Contralateral main stem bronchus
- Heart (RE in historic)
- Visceral pericardium
- Pleural effusion
- Rib, sternum, vertebra
- Skeletal muscle
- Skin of chest
- Diaphragm, Abdominal organs
- Atelectasis/obstructive pneumonitis involving entire lung



Lung (both sexes): SS2000 fixed (lines) 1988-2018 and Historic (circles) 1975-2015 Lung primary site: 340-343,348-349

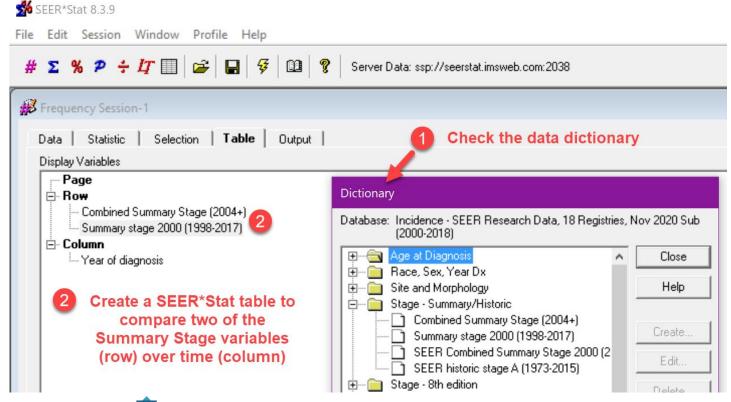
Hist: 8000-8700,8720-8790,8972,8980



Source: SEER 9 areas, NCI

1983-87: ext code 7: placed in D

What can you do if the definition of a SEER*Stat variable is unclear?



SEER

Long term trends

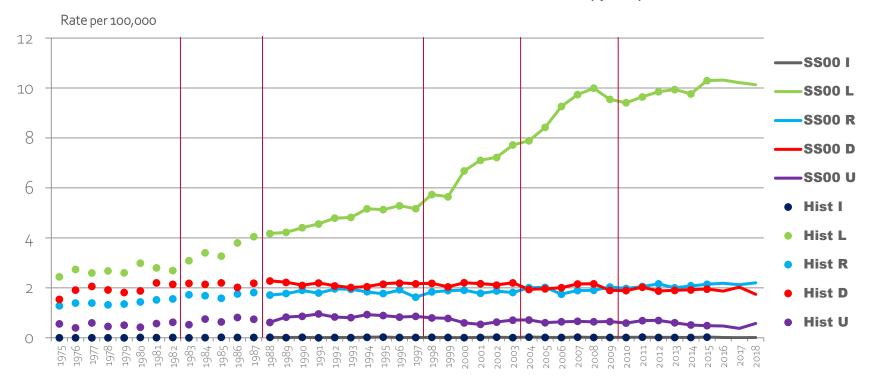
- Long-term trends in Summary Stage can be problematic
 - Certain sites where SEER Historic Stage and SS2000 are identical or very similar: could be combined for a longer trend, 1975-2018. SEER is evaluating longer time trends.





Kidney Parenchyma: SS2000 (lines) and Historic (circles) 1975-2015

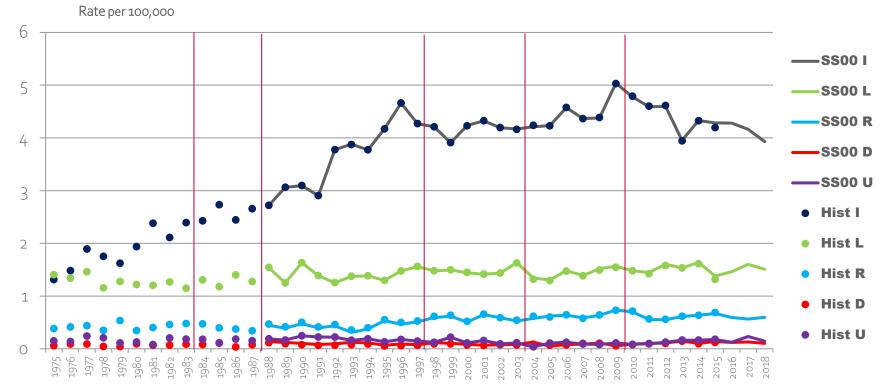
Kidney parenchyma Site:649 Hist:000-8700,8720-8790



NIH



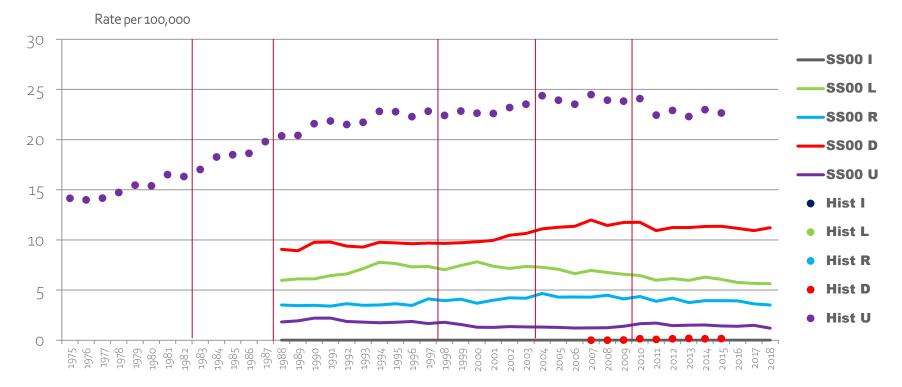
Vulva (female): SS2000 (lines) 1988-2018 and Historic (circles) 1975-2015



 $|N|H\rangle$



Lymphoma: SS2000 fixed (lines) 1988-2018 and Historic (circles) 1975-2015 added SS2000 for 1983-87



SEER

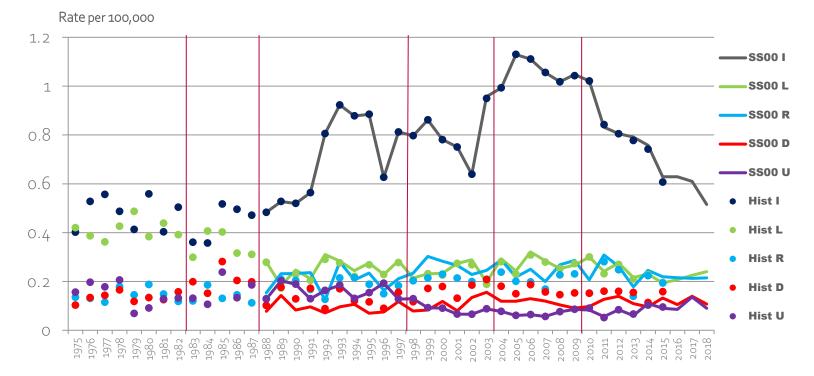


Reportability Issues

- There have been many changes to reportability over time
 - These affect incidence rates, but they may also affect staging
- Some examples (not exhaustive list):
 - NET tend to be more localized than other histologies
 - GIST currently only reportable if malignant but in 2021 all GIST are reportable
 - VIN, VAIN, AIN increase the in situ rate only
 - CNS benign/borderline (2004+); currently NA or blank in Summary Stage recodes
 - MDS
 - Thyroid



Vagina (female): SS2000 fixed (lines) 1988-2018 and Historic (circles) 1975-2015



Source: SEER 9 areas, NCI



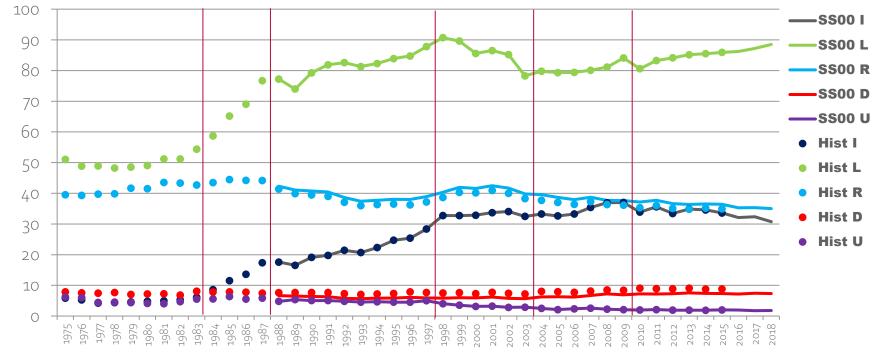


Breast (female) : SS2000 (lines) 1988-2018 and Historic (circles)

1975-2015

Breast: Primary 501-506,508-509 Hist:8000-8700,8720-8790,8982-8983 or Primary 500 Hist: 8000-8700,8982-8983

Rate per 100,000





Breast Cancer Possible issues

Inflammatory: definition change over time

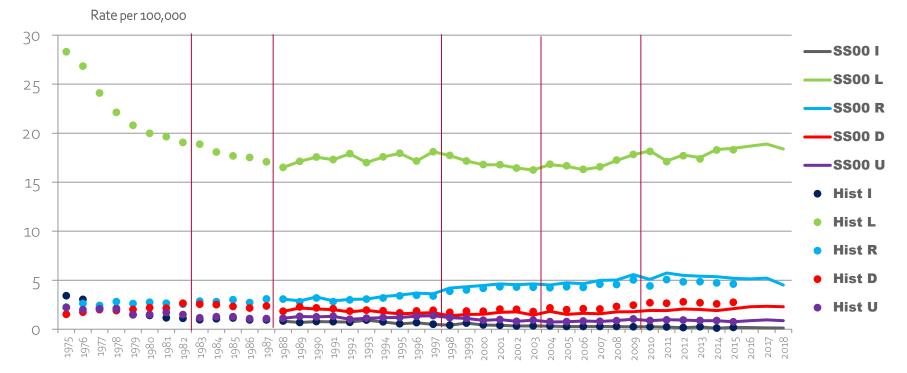
 Infraclavicular Lymph Nodes: regional for SS2000 and distant for historic but can't be separated from supraclavicular in some EOD





Corpus Carcinoma (female): SS2000 (lines) 1988-2018 and Historic (circles) 1975-2015 Hist:8000-8700,8720-8790,8950,8980

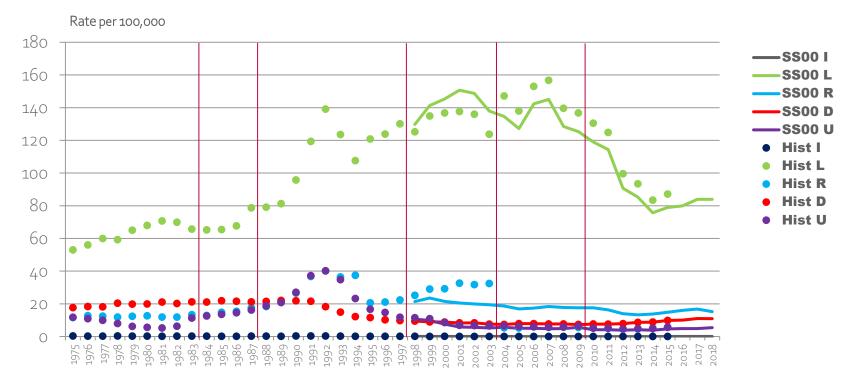
Corpus carcinoma & carcinosarcoma: Site: 540-543, 548-549, 559



Source: SEER 9 areas, NCI



Prostate (males): SS2000 (lines) and Historic (circles) 1975-2015



Source: SEER 9 areas, NCI



Prostate issues impacting LRD stage

- Prostatectomy: as these increased, increase in regional disease because better evaluation of extracapsular extension
- Apex involvement: historic (regional) and SS2000 (localized). Between 1995-2003, tripling of cases extending into the apex.
- Random needle biopsy and elevated PSA: around 1981 increase in unstaged disease.
- EOD change in 1995: split extension into two codes: clinical and pathologic evaluation.

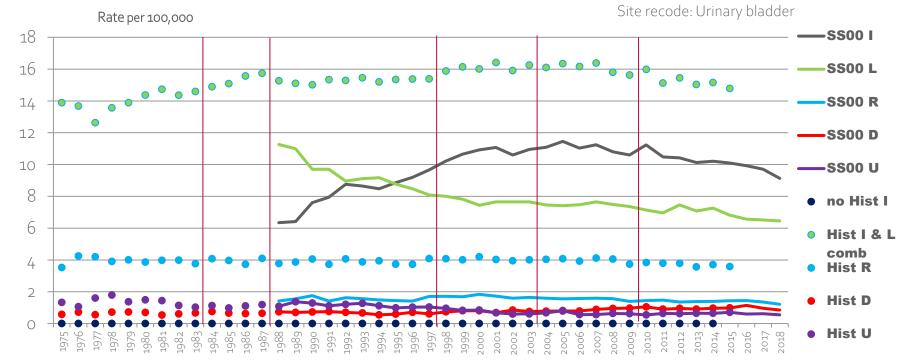


Glitches in long term trends?

- Specific 'site groups'
 - Bladder:
 - Usually localized and in situ are combined.
 - What year was criteria specified? Implementation 1/1/1999 for terminology to distinguish in situ and localized.
 - They can be separated out based on EOD.



Urinary bladder: SS2000 (lines) 1988-2018 and Historic (circles) 1975-2015 Historic shows In situ and Localized combined



Source: SEER 9 areas, NCI

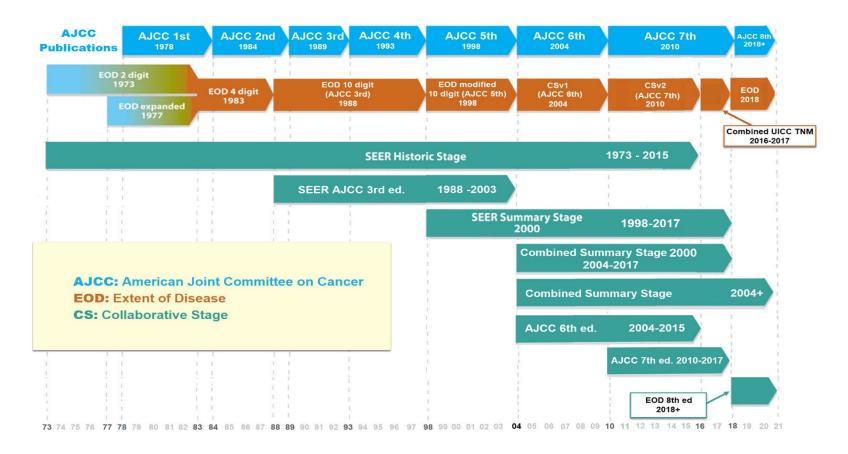




Glitches in long term trends?

- Changes in reportability over time affect long term trends:
 - ICD-O-2 changes
 - ICD-O-3 changes
 - NAACCR histology updates (various years)
 - SEER 2010 updates to leukemias and lymphomas
 - ICD-0-3.2
 - Notable issues:
 - Ovary: borderline tumors were included only during ICD-O-2; excluded from Research file since Nov 2020 submission
 - Benign brain: only reportable since 2004
 - MDS
 - Carcinoids of all except appendix became reportable and later included appendix
 - Addition of new histology terms can be change reportability such as some dysplasias





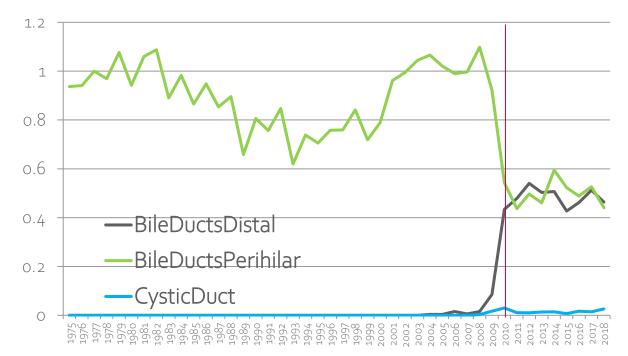


Site recodes & Schema IDs

- Schema IDs can be confusing but are NECESSARY to understand under which set of criteria the EOD and stage were coded.
 - EOD Schema ID Recode (2010+)
 - TNM 7/CS vo204+ Schema recode 1975-2018 (except bile ducts)
- Site recodes:
 - The current SEER site recode is mostly site based with a few histology-based groupings like leukemias, lymphomas, etc.
 - The International Classification of Childhood Cancer (ICCC-3) (2017) and the Adolescent and Young Adult Classification (AYA) are very histology based

Bile ducts (C24.0): by subgroup 1975-2018 Discriminator added in 2010

Rate per 100,000



Source: SEER 9 areas, NCI

Note: intrahepatic C24.1 not included

Possible choices for site/histology for long-term trends

- If there is a particular site/histology group of interest, check to make sure whether it involves multiple schemas with differing EOD/staging criteria.
- Site recode is consistent over time but also may include multiple schemas (as above) and may include unwanted histologies. Don't use Site recode for T, N, M or TNM stage or "site-specific" information (SSDI or SSF).
- If SS2018 or EOD 2018 schema criteria are of interest, there isn't an EOD 2018 schema ID recode that goes back before 2010 but the on-line documentation can help define exactly the site/histology group over time.



SEER*RSA

Welcome to the SEER*RSA (SEER Registrar Staging Assistant) website. This site is to be used by cancer registrars who abstract and code extent of disease information, and important site-specific predictive and prognostic factors. Instructional manuals are provided elsewhere.

Usage

Use the information on this site to:

- Code EOD 2018 data items
- Code Summary Stage 2018
- Code Site-Specific Data Items (SSDIs)
- > Code TNM or CS data items, as appropriate, for 2017 and prior cases

In addition to this site, SEER*RSA data are provided via both an API and software libraries. To learn more, choose from the following links:

EOD data access TNM data access CS data access



View EOD Data (2018+)

Current Version: 2.0



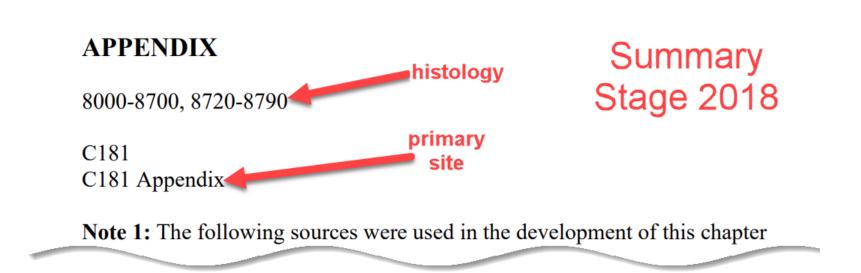
View TNM 7th Data (2016-2017)

Current Version: 1.9



View CS Data (2004-2015)

Current Version: 02.05.50



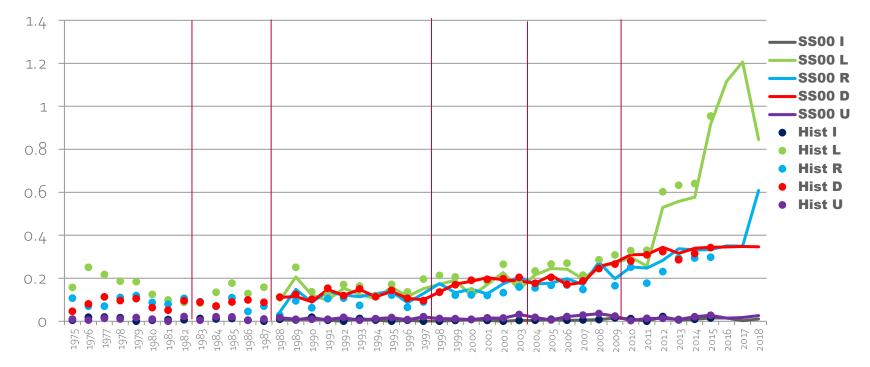
Note 2: See the following chapters for the listed histologies

- 8710-8714, 8800-8934, 8940-9138, 9141-9582: Soft Tissue
- 8935-8936: GIST
- 9140: Kaposi Sarcoma
- 9700-9701: Mycosis Fungoides

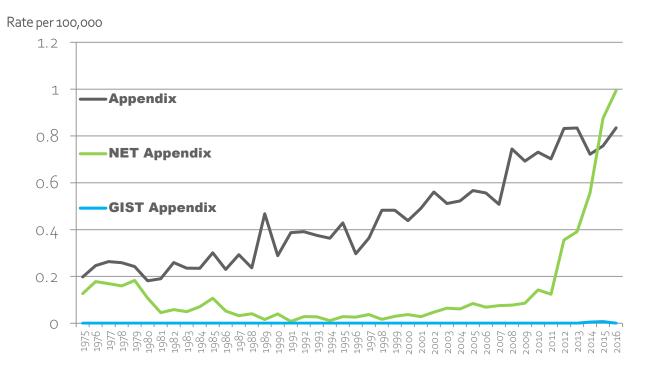
Appendix (including NET) : SS2000 (lines) 1988-2018 and Historic (circles) 1975-2015

Appendix including NET Site:181 Histology: 8000-8700,8720-8790

Rate per 100,000



Appendix, NET and GIST appendix: 1975-2016, SEER 9



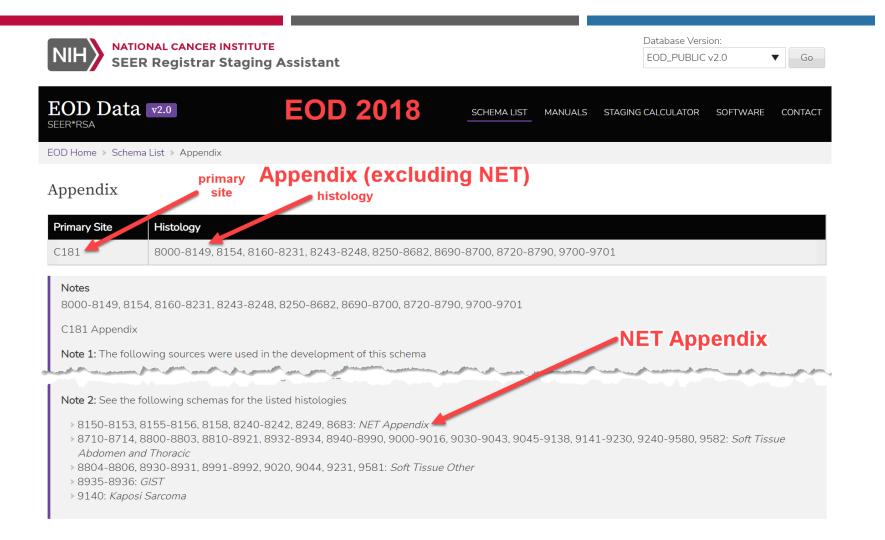
Source: SEER 9 areas, NCI



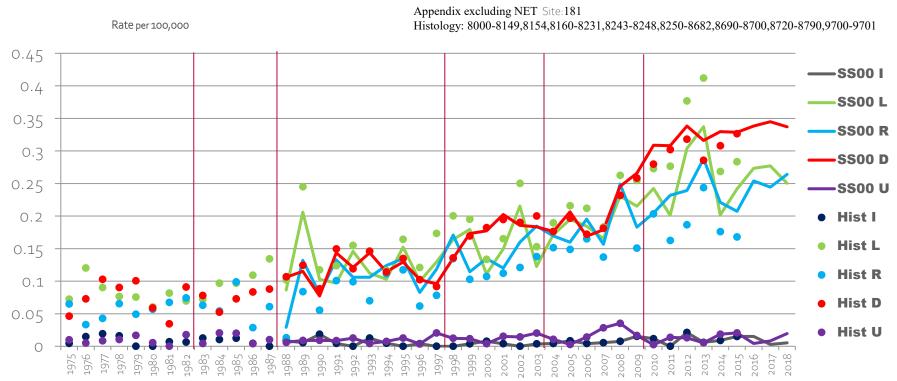
SUMMARY STAGE 2018 CHAPTERS

The Summary Stage site-specific chapters are based on historical staging, Summary Stage 2000 and the AJCC 8th Edition. Some of the AJCC 8th edition chapters were divided to line up with historical Summary Stage chapters.

Schema ID	SS Chapter	EOD Schema	AJCC Chap. No	AJCC Chapter Name
00190	Appendix (including NET)	Appendix	19	Appendix-Carcinoma
00320	Appendix (including NET)	NET Appendix	32	Neuroendocrine Tumors of the Appendix



Appendix excluding NET : SS2000 (lines) 1988-2018 and Historic (circles) 1975-2015



Please note especially for long-term trends



In SEER*stat to access the in situ cases and CNS benign/borderline cases, uncheck the 'Malignant Behavior' box on the Selection Tab.

 Decide which set of registries. It is easier to check frequencies over time when the same registries are used., i.e. consider using the SEER 9 Research file to have the same registries from 1975-2018.





Final summary

- There is a wealth of information available for analyses.
- Summary stage may be the first step, but further analysis may uncover important details.
 - Check the detailed EOD information underlying the stage to help explain trends.





www.cancer.gov/espanol

www.cancer.gov