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



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
Colums 67-68

PRIMARY TUMOR NO DIRECT EXTENSION NO DISTANT INVOLVEMENT
Primary Tumor Description
confined strictly to ovarian tissue---------------------------------------- no

## Local Vessel Invasion



confined strictly to ovarian tissue
no detailed information of above.
$\underset{\text { Lymphal }}{\text { Regional }}$
O-I (in situ)

TUMOR HAS EXTENDED TO
Involvement of OR INFILTRATED THE FOLLOWING:
gional lymph nodes
local invasion of peritoneum and/or fallopian tube by extension implants on ovary of primary site implants on peritoneum in area immediately adjacent

$\qquad$ more than one $(70-72)$ or ( $80-82$

## FURTHER DIRECT EXTENSION

any adjacent extension other than 70 or 80 _
DISTANT INVOLVEMENT
distant site involvement.
distant lymph node involvement
distant site and distant lymph node involvemen

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



2004-2015

# Derived Stages from CS SEER Summary Stage 2000 

## Collaborative Staging (CS)

## SEER Summary Stage 77

## SEER Historic

AJCC 6th ed. Stage, T, N, and $\mathrm{M}_{\text {(combination o o flinical and path) }}$<br>AJCC 7th ed. Stage, T, N, 2010-2015 and $\mathrm{M}_{\text {(combination of flinical and path) }}$

## 2016-2017

Combination of Directly
Assigned and Recoded
Summary Stage 2000

> Directly assigned TNM $7^{\text {th }}$ ed. $T$, N, M and stage

## Collaborative Staging (CS)

|  | Percent | Percent | Percent |
| :--- | ---: | ---: | ---: |
|  | CS coded | CS coded | CS coded |
|  | 2015 | 2016 | 2017 |
| SEER 9 1975+ | 100 | 53.2 | 35.3 |
| SEER131992+ | 100 | 40.6 | 26.3 |
| SEER182000+ | 100 | 33.2 | 25.4 |

Combination of Derived \& Directly assigned SS 2000
$\longrightarrow$ SEER Summary Stage 2000

SEER Summary Stage

$N$, and $M$

## 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 subgroups |  |  |  |  |  |  |
|  | includes unstaged |  |  | excludes unstaged |  |  |
| 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 |

## 2018

- 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

Note: borderline of ovary - removed from the masterfile starting Nov 2020 files

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

 unclear?```
        % SEER*Stat 8.3.9
```

File Edit Session Window Profile Help

```
    Dictionary
```

```
    Dictionary
```

Database: Incidence - SEER Research Data, 18 Registries, Nov 2020 Sub [2000-2018]


```
Edit Variable - Combined Summary Stage (2004+)
```



## Localized/Regional/Distant Stage Adjustments

| Documentation for SEER Data | The SEER Program strives to make all Localized/Regional/Distant star variables consistent for all cancer sites for the appropriate years. However, there are certain site/year combinat ns where this is not possible. The following tables detail |
| :---: | :---: |
| SEER*Stat Database Details | changes imposed on the SEER Historic and Summary stage nables for each SEER Research Data release. |
| Variable \& Recode Definitions | - 1975-2018 data (November 2020 Submission) |
| Behavior Recode for Analysis | - 1975-2017 data (November 2019 Submission) |
| Cancer Stage Variables | - 1973-2008 data (November 2010 submission) |
| SEER Combined/AJCC + | - 1973-2007 data (November 2009 submission) |
| Cancer Staging | - 1973-2006 data (November 2008 submission) |
| Collaborative Stage Site- <br> Specific Factors (CS SSF) | - 1973-2005 data (November 2007 submission) <br> - 1973-2004 data (November 2006 submission) |
| Localized/Regional/Distant Stage Adjustments | - 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.

${ }^{\text {a }}$ Created from SEER Combined Summary Stage 2000 (2004-2017) and Derived Summary Stage 2018 (2018+). Not available for Massachusetts.
${ }^{\text {b }}$ In databases prior to the November 2018 submission, this field did not have a year range in the name.
${ }^{\text {c Historic Stage Coding for 2004-2015 (XLS, } 355 \text { KB) }}$

## 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


## Lung EOD 1983-1987

2 Tumor(s) of main stem bronchus $>2 \mathrm{~cm}$ from carina
3 Main stem bronchus, NOS;
Localized, NOS
4 Extension to:
Visceral pleura, pleura NOS Parietal pericardium or NOS Pulmonary ligament
Atelectasis/obstructive pneumonitis involving < entire lung or NOS; no pleural effusion
5 Tumor(s) of main stem bronchus $<2.0 \mathrm{~cm}$ 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
Sunerior vena cava: aorta Fxtranulmonary 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
Further Extension or Metastasis
9 UNKNOWN if extension or metastasis
```


## Code 7:

## Lung EOD 1983-1987

- RE:

Ls Chest (thoracic) wall

- Pleura, parietal
- 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 primars ste: 340-34,348:349
Hist: 8000-8700,8720-8790,8972,8980


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



## 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


Source: SEER 9 areas, NCl

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


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


## 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


[^0]

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

1975-2015 $\begin{gathered}\text { Breast: Primary } 501-50,500-509 \text { Hist:8000-8700,8720-8790,8982-8983 or } \\ \text { Primary }\end{gathered}$ Primary 500 Hist: 8000-8700,8982-8983

Rate per 100,000


NH 》 NATIONAL CANCER INSTITUTE

## 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

Corpus carcinoma \& carcinosarcoma: Site:540-543,548-549,559 Hist:8000-8700,8720-8790,8950,8980


Source: SEER g areas, NCI

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



Source: SEER 9 areas, NCl

## 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 19952003, 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, NCl
NIH $\rangle$ NATIONAL CANCER INSTITUTE

## 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-O-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


## 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 SS 2018 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.


## NIH national cancer institute SEER Registrar Staging Assistant

## 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:

[^1]

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

## APPENDIX

## 8000-8700, 8720-8790 histology

## Summary Stage 2018

## C181

C181 Appendix primary site

Note 1: The following sources were used in the development of this chapter

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


[^2]
## Appendix, NET and GIST appendix: 1975-2016, SEER 9



[^3]
## SUMMARY STAGE 2018 CHAPTERS

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

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

## EOD Data v2.0 <br> SEER*RSA

EOD Home > Schema List > Appendix


Notes
8000-8149, 8154, 8160-8231, 8243-8248, 8250-8682, 8690-8700, 8720-8790, 9700-9701
C181 Appendix
Note 1: The following sources were used in the development of this schema

Note 2: See the following schemas for the listed histologies
> 8150-8153, 8155-8156, 8158, 8240-8242, 8249, 8683: NET Appendix
> 8710-8714, 8800-8803, 8810-8921, 8932-8934, 8940-8990, 9000-9016, 9030-9043, 9045-9138, 9141-9230, 9240-9580, 9582: Soft Tissue Abdomen and Thoracic
> 8804-8806, 8930-8931, 8991-8992, 9020, 9044, 9231, 9581: Soft Tissue Other
> 8935-8936: GIST
> 9140: Kaposi Sarcoma

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

Appendix excluding NET Site:181 Histology: 8000-8149,8154,8160-8231,8243-8248,8250-8682,8690-8700,8720-8790,9700-9701


## 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.


[^0]:    Source: SEER g areas, NCl

[^1]:    EOD data access TNM data access
    CS data access

[^2]:    Source: SEER 9 areas, NCl

[^3]:    Source: SEER g areas, NCl

