

Lung Abstracting 101 2025 Training

Anatomy & Solid Tumor Rules

Presented by Melissa Riddle, ODS-C

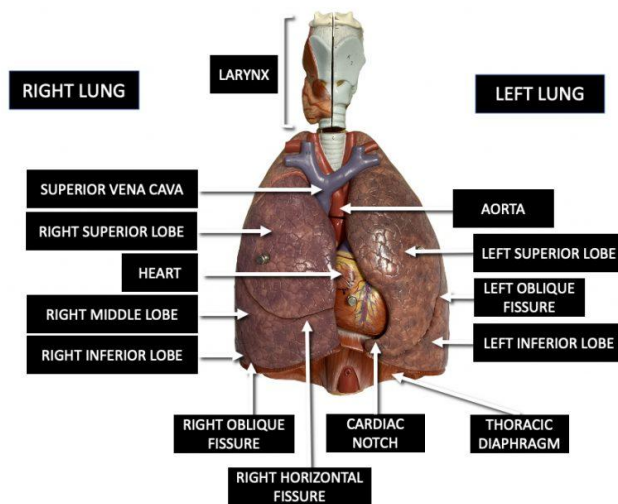
ICR Video Training Series: Iowa Cancer Registry

March 2026

1

1

Lung Anatomy



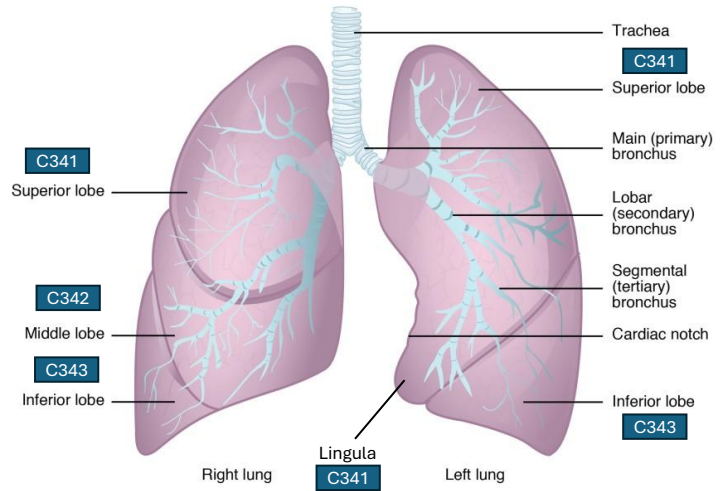
This Photo by Unknown Author is licensed under CC BY

2

2

1

Lung Anatomy

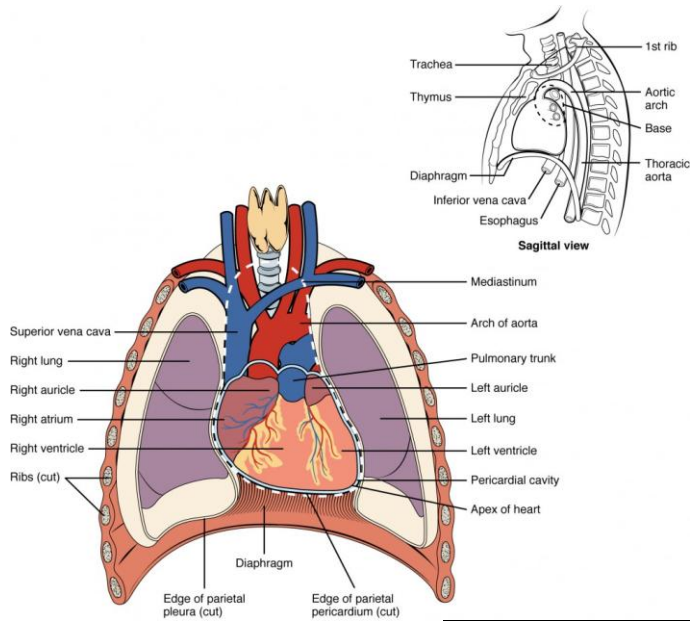


This Photo by Unknown Author is licensed under CC BY

3

3

Mediastinum



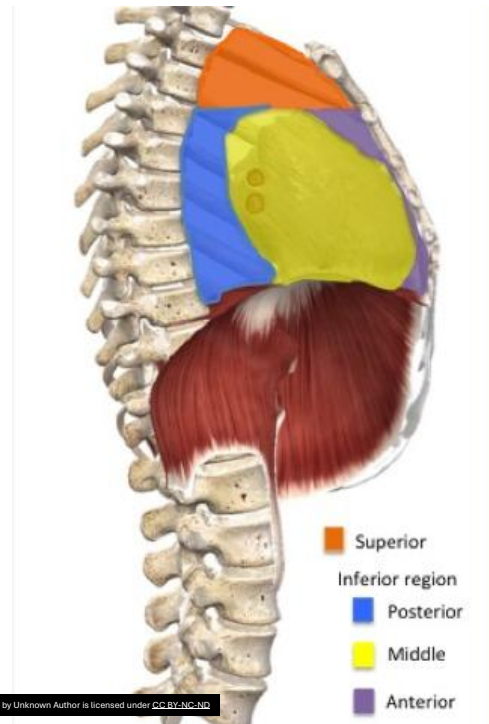
This Photo by Unknown Author is licensed under CC BY

4

4

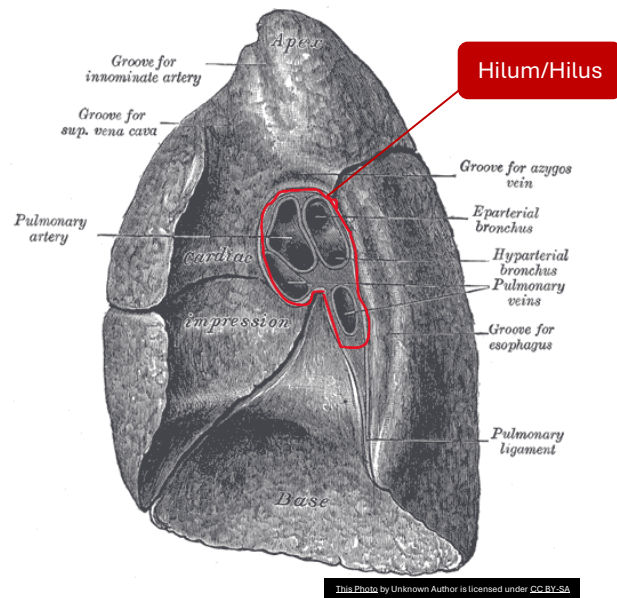
Mediastinum

- **Anterior**
 - Space between pericardium and sternum
- **Middle**
 - Pericardium and heart
- **Posterior**
 - Space between pericardium and vertebral column



5

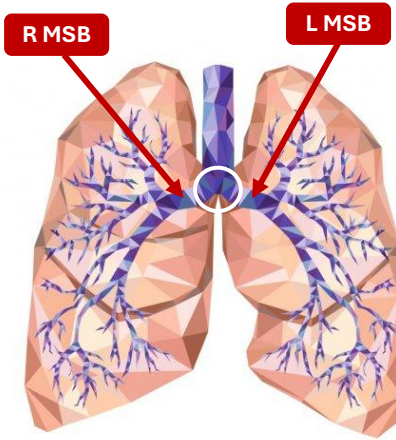
Hilar Region



6

6

Carina & Mainstem Bronchus



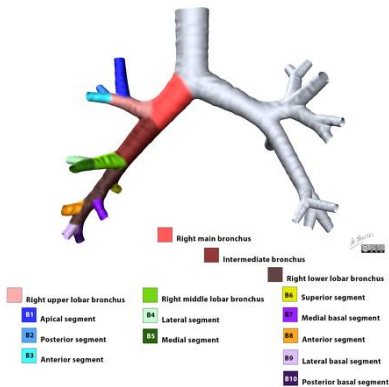
This Photo by Unknown Author is licensed under CC BY

7

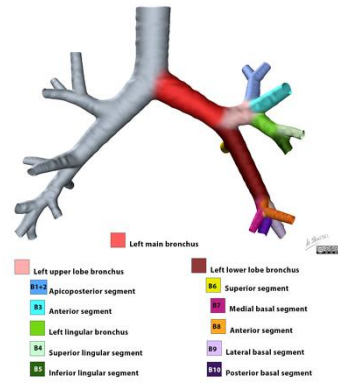
7

Bronchus Anatomy

- **Trachea** – airway passage to the lungs
- **Bronchus** – branches off the trachea: MSB, primary bronchus
- **Bronchi** – smaller subdivisions of bronchus
 - Secondary
 - Tertiary
- **Bronchioles** – smaller subdivisions of the bronchi
- **Alveoli** (not pictured) – gas exchange between lungs and blood



This Photo by Unknown Author is licensed under CC BY-SA-NC

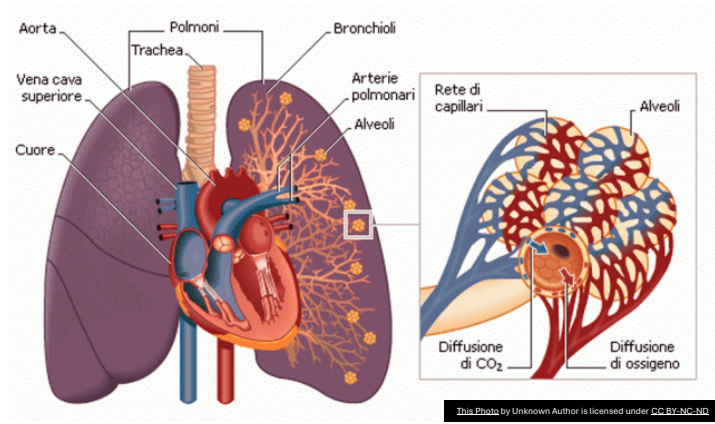


This Photo by Unknown Author is licensed under CC BY-SA-NC

8

8

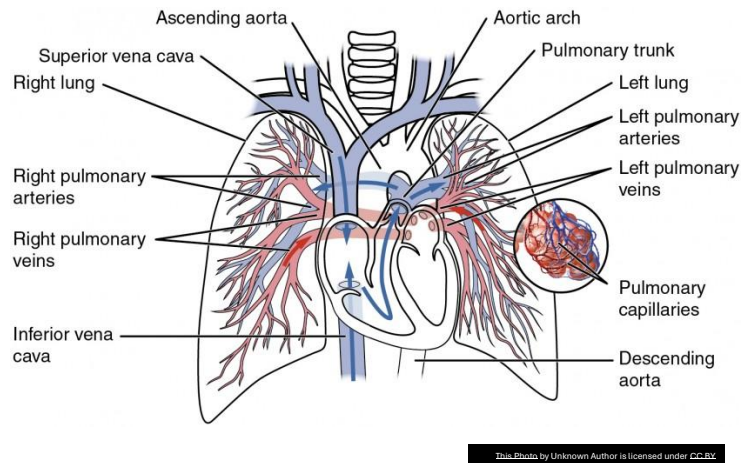
Alveoli



9

9

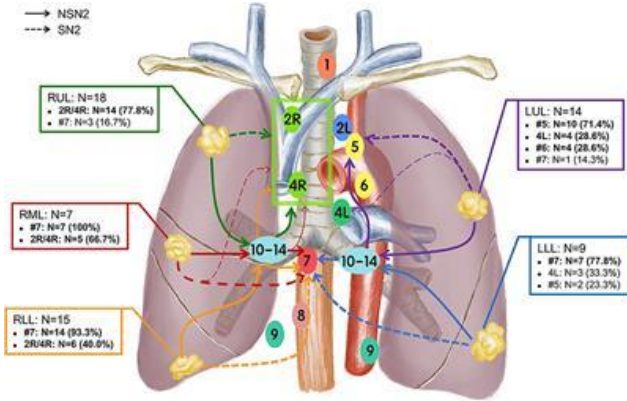
Vascular Anatomy of the Lung



10

10

Regional Lymph Nodes



This Photo by Unknown Author is licensed under CC BY

Superior Mediastinal Nodes

- Levels 1-4

Aortic Nodes

- Levels 5 & 6

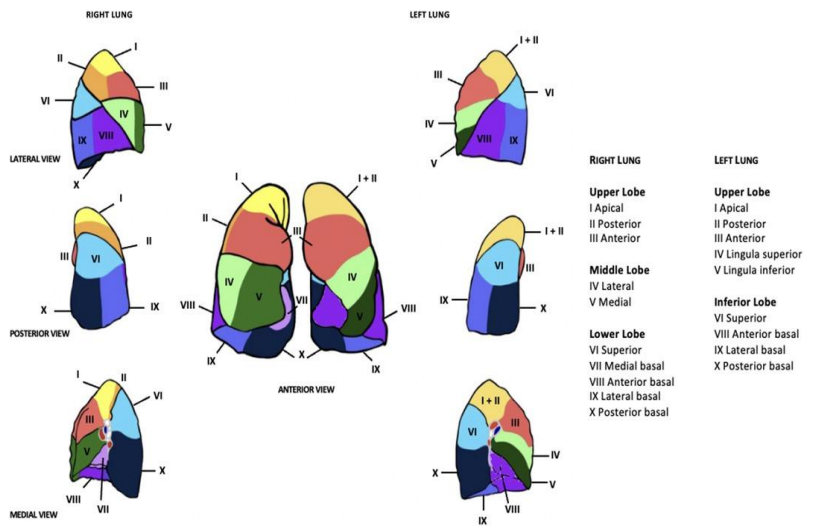
Inferior Mediastinal Nodes

- Level 7-9

N1 Nodes

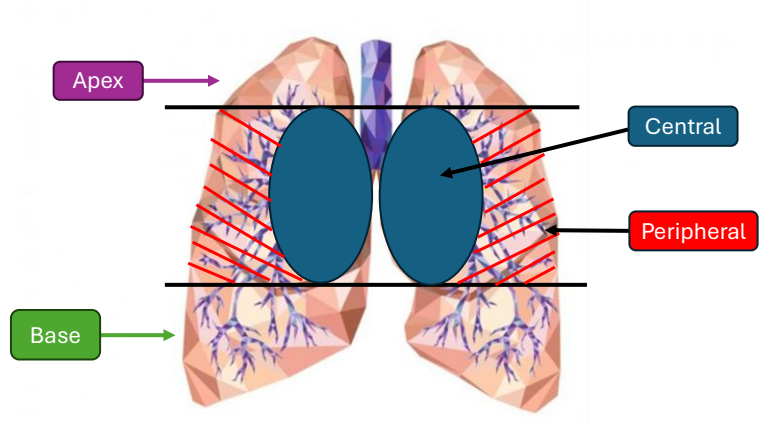
- Level 10 – Hilar
- Level 11 – Interlobar
- Level 12 – Lobar
- Level 13 – Segmental
- Level 14 - Subsegmental

Anatomy Terms



This Photo by Unknown Author is licensed under CC BY

Imaging Terms



This Photo by Unknown Author is licensed under CC BY

13

13

Anatomy Definitions

- **Bronchogenic**
 - Anatomic designation (not a specific histology) for a lung cancer arising in a bronchus (C349)
- **Contiguous tumor**
 - Single tumor that involves, invades, or bridges adjacent or connecting sites/subsites (C348)
- **Central tumors** are usually squamous cell carcinoma, arising in hilum or bronchus
- **Peripheral tumors** are often adenocarcinoma or large cell tumors, arising in lung tissue or alveoli

14

14

Solid Tumor Rules

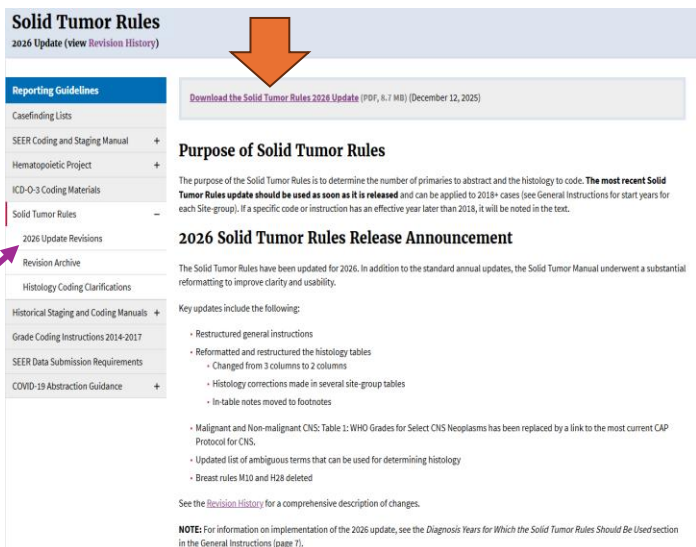
Primary Site Coding
Multiple Tumors
Histology

15

15

2026 STR

- Download the latest manual
 - <https://seer.cancer.gov/tools/solidtumor/>
- Review the changes in the Revision History:
 - <https://seer.cancer.gov/tools/solidtumor/revisions.html>



Solid Tumor Rules
2026 Update (view Revision History)

[Download the Solid Tumor Rules 2026 Update \(PDF, 6.1 MB\) \(December 12, 2025\)](#)

Reporting Guidelines

- Casefinding Lists
- SEER Coding and Staging Manual +
- Hematopoietic Project +
- ICD-O-3 Coding Materials
- Solid Tumor Rules** -
- 2026 Update Revisions
- Revision Archive
- Histology Coding Clarifications
- Historical Staging and Coding Manuals +
- Grade Coding Instructions 2014-2017
- SEER Data Submission Requirements +
- COVID-19 Abstraction Guidance +

Purpose of Solid Tumor Rules

The purpose of the Solid Tumor Rules is to determine the number of primaries to abstract and the histology to code. **The most recent Solid Tumor Rules update should be used as soon as it is released** and can be applied to 2018+ cases (see General Instructions for start years for each Site group). If a specific code or instruction has an effective year later than 2018, it will be noted in the text.

2026 Solid Tumor Rules Release Announcement

The Solid Tumor Rules have been updated for 2026. In addition to the standard annual updates, the Solid Tumor Manual underwent a substantial reformatting to improve clarity and usability.

Key updates include the following:

- Restructured general instructions
- Reformatted and restructured the histology tables
 - Changed from 3 columns to 2 columns
 - Histology corrections made in several site-group tables
 - In-table notes moved to footnotes
- Malignant and Non-malignant CNS: Table 1: WHO Grades for Select CNS Neoplasms has been replaced by a link to the most current CAP Protocol for CNS.
- Updated list of ambiguous terms that can be used for determining histology
- Breast rules M10 and H28 deleted

See the [Revision History](#) for a comprehensive description of changes.

NOTE: For information on implementation of the 2026 update, see the [Diagnosis Years for Which the Solid Tumor Rules Should Be Used](#) section in the General Instructions (page 7).

16

16

Primary Site

17

- **Table 1: Primary Site**

- **Column 1 – Terms**
 - Used by physicians or on scans to describe lung “masses” NOT lymph nodes
- **Column 2 – Laterality**
 - Term that is only used for the R lung, L lung, or bilateral
- **Column 3 – ICD-O code/term**

Terminology	Laterality	Site Term and Code
Bronchus intermedius Carina Hilus of lung Perihilar	Bilateral	Mainstem bronchus C340 ^{1,2,3}
Lingula of lung	Left	Upper lobe C341
Apex Apex of lung Lung apex Pancoast tumor Superior lobar bronchus Upper lobe bronchi	Bilateral	Upper lobe C341

¹ Mainstem bronchus starts at the trachea and extends only a few centimeters into the lung where it divides into secondary bronchi at the carina.
² Bronchus intermedius is the portion of the right mainstem bronchus between the upper lobar bronchus and the origin of the middle and lower lobar bronchi.
³ Code to mainstem bronchus C340 when it is specifically stated in the operative report and/or documented by a physician.

17

Histology Table 2: Combination/Mixed Codes

- Do **NOT** use this table for:
- Tumors with both in situ and invasive
- One histology described as differentiation/features
- NOS term and S/V of that NOS term

Table 2: Combination/Mixed Histology Codes

Required Terms	Combination Histologies and Code
Adenocarcinoma NOS AND ¹ Squamous cell carcinoma NOS	Adenosquamous carcinoma 8560
Giant cell carcinoma AND Spindle cell carcinoma ²	Sarcomatoid carcinoma 8033 ³
Epithelial carcinoma AND Myoepithelial carcinoma	Epithelial-myoepithelial carcinoma 8562
Large cell neuroendocrine carcinoma AND <ul style="list-style-type: none"> • Adenocarcinoma (includes subtypes/variants) OR • Squamous cell carcinoma (includes subtypes/variants) OR • Spindle cell carcinoma OR • Giant cell carcinoma 	Combined large cell neuroendocrine carcinoma 8013

¹ Cases dx'd prior to 1/1/2023: Dx must be adenocarcinoma NOS and squamous cell carcinoma NOS, NOT any of the subtypes/variants. Cases dx'd 1/1/2023+: Subtypes/variants of adenocarcinoma NOS and keratinizing, non-keratinizing, and/or basaloid variants of SCC NOS can be coded to adenosquamous carcinoma.
² Sarcomatoid carcinoma is not in the histology table because sarcomatoid tumors primarily originate in the mediastinum. The combination code is added for the rare occasion when a tumor occurs within the lung.
³ Both giant cell carcinoma and spindle cell carcinoma are components of sarcomatoid carcinoma. The most accurate code for a combination of giant cell and

18

18

Histology Table 3: Specific/NOS and S/V

Table 3: Specific Histologies, NOS, and Subtype/Variants

Specific or NOS Term, Code, and Synonym(s)	Subtype(s)/Variant(s) and Synonym(s)
Adenocarcinoma 8140 ★ Minimally invasive adenocarcinoma NOS (J3) ★ Invasive non-mucinous adenocarcinoma (J3)	Acinar adenocarcinoma (for lung only) 8551 • Adenocarcinoma, acinar predominant (for lung only) Adenoid cystic 8200 • Adenocystic carcinoma Colloid adenocarcinoma 8480 Enteric adenocarcinoma 8144 • Pulmonary intestinal type adenocarcinoma Fetal adenocarcinoma 8333 Lepidic adenocarcinoma 8250 (J3) • Adenocarcinoma, lepidic predominant (J3) • Non-mucinous adenocarcinoma preinvasive (J2) ★ • Non-mucinous adenocarcinoma in situ (J2) Micropapillary adenocarcinoma 8265 • Adenocarcinoma micropapillary predominant Mixed invasive mucinous and non-mucinous adenocarcinoma 8254 Mucinous adenocarcinoma 8253 (J3) • Mucinous adenocarcinoma, in situ (J2) • Mucinous adenocarcinoma, preinvasive (J2) Mucinous adenocarcinoma, minimally invasive 8257 (J3)¹ Non-mucinous adenocarcinoma, minimally invasive 8256 (J3)² Papillary adenocarcinoma 8260 • Adenocarcinoma, papillary predominant Solid adenocarcinoma 8230 • Adenocarcinoma, solid predominant

¹ "Mucinous adenocarcinoma, microinvasive" is a non-preferred term. It should be coded to 8257.

Specific or NOS Term, Code, and Synonym(s)	Subtype(s)/Variant(s) and Synonym(s)
Neuroendocrine carcinoma 8246 • NEC	Combined small cell carcinoma 8045 Small cell carcinoma 8041 • Small cell neuroendocrine carcinoma
Neuroendocrine tumor, NOS 8240 • Bronchial adenoma, carcinoid • Carcinoid NOS • Carcinoid tumor NOS • NET • Neuroendocrine tumor, grade 1 • Neuroendocrine tumor, low grade • Neuroendocrine carcinoma, well differentiated • Typical carcinoid	Atypical carcinoid 8249 • Neuroendocrine tumor, grade 2 ★ • Neuroendocrine tumor, grade 3 • Neuroendocrine carcinoma, moderately differentiated
NUT carcinoma 8023 • Aggressive (15:19) positive carcinoma • BET-rearranged carcinoma • Carcinoma with t(15:19) translocation • Midline carcinoma of children and young adults with NUT rearrangement • Midline lethal carcinoma • NUT midline	

20

Multiple Primary Rules

Multiple Primary Rules

• Unknown if Single or Multiple Tumors

• M1 – Single Primary

- Not possible to determine the number of tumors
- Use only after all information has been reviewed
- Minimal information cases: outpatient biopsy without follow-up information

• Single Tumor

• M2 – Single Primary

- Single tumor = Single primary

21

21

Multiple Primary Rules

• Multiple Tumors

• M3 – Multiple Primaries

- Separate, non-contiguous tumors in different ICD-O site codes at the second (C~~X~~xx) or third (Cx~~X~~) character

• M4 – Multiple Primaries

- Subsequent tumor after being clinically disease free for greater than 3 years
 - No evidence of recurrence in the same lung on follow-up (Imaging is WNL)
 - Recurrence less than or equal to 3 years the “clock” starts over
 - Calculate time interval from date of last recurrence
 - If unknown, calculate from date of diagnosis

22

22

MP Rules – Multiple Tumors

23

• M5 – Multiple Primaries

- At least one tumor with:
 - NEC or S/V of NEC **OR**
 - NET or S/V of NET
- **AND** another tumor with non-small cell carcinoma S/V

• M6 – Multiple Primaries

- Separate tumors are **2+ different S/V** on *Table 3*
 - Timing irrelevant

• M7 – Single Primary

- Synchronous, separate tumors in the **SAME** lung and on the **SAME** row in *Table 3*

23

MP Rules – Multiple Tumors

24

• M8 – Multiple Primaries

- Separate tumors are on different rows in *Table 3* **or**
- Combination code (*Table 2*) and a code from *Table 3*

• M9 – Single Primary

- Simultaneous multiple tumors:
 - **BOTH** lungs **OR**
 - Same lung **OR**
 - Single tumor in one lung, multiple in contralateral lung
- **EXCEPTION:**
 - Do not use this rule if pathology from biopsy or resection proves tumors are different histologic types or if physician states unequivocally that the tumors are different primaries

24

MP Rules – Multiple Tumors

- **M10 – Single Primary**

- In situ tumor is diagnosed AFTER and invasive tumor AND occurs in the same lung

25

- **M11 – Multiple Primaries**

- Single tumor in each lung
 - 1 in Right and 1 in Left
- **EXCEPTION:**
 - Proof that one tumor is metastatic from the other

25

MP Rules – Multiple Tumors

- **M12 – Single Primary**

- Invasive tumor is diagnosed **less than or equal to 60 days** after an in-situ tumor in the same lung

26

- **M13 – Multiple Primaries**

- Invasive tumor occurs **more than 60 days** after an in-situ tumor in the same lung

- **M14 – Single Primary**

- None of the previous rules apply
 - Last resort rule
 - Go back through to confirm a rule wasn't overlooked

26

27

Histology Rules

27

Priority Documents

- Code histology prior to neoadjuvant therapy

- *Exception:*

- If initial diagnosis is based on histology from FNA, smears, cytology from the primary OR histology from a regional or metastatic site, and neoadjuvant therapy is given, followed by resection of primary tumor which identifies a different or specific histology, code the histology from the resected primary tumor

- Do not change the histology in order to make the case applicable for staging
- Code the most specific pathology/tissue from either resection or biopsy

28

Priority Documents

29

1. Tissue or pathology from primary site
 - A. Addendum(s) and/or comment(s)
 - B. Final diagnosis/synoptic report
 - C. CAP protocol
2. Cytology
3. Tissue/pathology from metastatic site
4. Imaging
 - A. CT
 - B. PET
 - C. MRI
 - D. CXR
5. Documented histology by physician
 - A. Treatment plan
 - B. Tumor board
 - C. Information in medical record reference original path, cytology, or scan
 - D. Physician refer to histologic type

29

Coding Histology

Use this section for 1+ histologies in a single tumor

1. Code the most specific histology or S/V, regardless of whether it is described as:
 - A. Majority or predominant part of tumor
 - B. Minority of tumor
 - C. Component
2. Code the histology described as differentiation or features/features of **ONLY** when there is a specific ICD-O code for the “histology with ____ features” or (histology with ____ differentiation”
 - Do not code differentiation or features when there is **NO** specific ICD-O code

30

30

Coding Histology

3. Code the specific histology described by ambiguous term **ONLY** when A or B is true:

A. The only diagnosis is **one histology** described by ambiguous term

B. **NOS histology and a more specific (S/V)** described by ambiguous term

- Specific histology is clinically confirmed by a physician **OR**
- Patient is receiving treatment based on the specific histology described by ambiguous term

Ambiguous Term		
Appears	Cannot rule out	Likely
Favor (s)	Presumed	Suspicious (for)
Suggestive of		

Definitive Term		
Comparable with	Compatible with	Consistent with
Most likely	Probable	Typical (of)

31

Coding Histology

4. Do **NOT** code histology described as:

- Architecture
- Foci; focus; focal
- Pattern

• **EXCEPTION:**

See Rule H7 –
greatest
percentage of
tumor

- Acinar pattern: Adenocarcinoma, acinar predominant **8551**
- Lepidic (growth) pattern: Adenocarcinoma, lepidic predominant **8250**
- Micropapillary pattern: Adenocarcinoma, micropapillary predominant **8265**
- Papillary pattern: Adenocarcinoma, papillary predominant **8260**
- Solid pattern: Adenocarcinoma, solid predominant **8230**

32

Histology Rules

Single Tumor

- Rules H1-H9

Multiple Tumors Abstracted as a Single Primary

- Rules H10-H16

33

33

Histology Rules – Single Tumor

H1

- Code **mucinous adenocarcinoma** as follows:
 - **8253/3** when behavior unknown/not documented or invasive
 - **8257/3** when microinvasive or minimally invasive
 - **8253/2** when preinvasive or in situ

H2

- Code **non-mucinous adenocarcinoma** as follows:
 - **8256/3** when microinvasive or minimally invasive
 - **8250/2** when preinvasive or in situ

34

34

Histology Rules – Single Tumor

H3

- **Code specific histology** when
 - Diagnosis is non-small cell lung carcinoma consistent with a specific carcinoma
 - Histology clinically confirmed by a physician
 - Patient treated for the histology described by ambiguous term

H4

- **Code histology** when only 1 histology present

H5

- **Code invasive histology** when in situ and invasive histologies are present

35

35

Histology Rules – Single Tumor

H6

- **Code S/V** when there is a NOS and a single S/V of that NOS

H7

- Code the histology that **comprises the greatest percentage of tumor** when 2+ of the following are present:
 - Acinar adenocarcinoma **8551**
 - Lepidic adenocarcinoma **8250**
 - Micropapillary adenocarcinoma **8265**
 - Papillary adenocarcinoma **8260**
 - Solid adenocarcinoma **8230**

CAP Protocol allows pathologists to identify these histologies as pattern along with percentages

36

36

Histology Rules – Single Tumor

H8

- Code **combination code** when there are multiple histologies **AND**
 - The combination is listed in *Table 2* **OR**
 - You received a combination code from Ask a SEER Registrar

H9

- Code **adenocarcinoma with mixed subtypes 8255** for
 - Multiple adenocarcinoma subtypes **OR**
 - Any combination of histologies which are not listed in *Table 2*

37

37

Histology Rules – Multiple Tumors Abstract as Single Primary

H10

- Code **mucinous adenocarcinoma** when all tumors are:
 - **8253/3** when behavior is unknown/not documented or invasive
 - **8257/3** when microinvasive or minimally invasive
 - **8253/2** when preinvasive or in situ

H11

- Code **non-mucinous adenocarcinoma** when all tumors are:
 - **8256/3** when microinvasive or minimally invasive
 - **8250/2** when preinvasive or in situ

38

38

Histology Rules – Multiple Tumors Abstract as Single Primary

H12

- **Code specific histology** when diagnosis is **NSCLC consistent with a specific carcinoma** when:
 - Histology clinically confirm by physician
 - Patient is treated for histology described by ambiguous term
 - Case is accessioned based on a single histology described by ambiguous term

H13

- **Code histology** when only 1 histology is present in ALL tumors

H14

- **Code invasive histology** when all tumors have both invasive and in situ behaviors

39

39

Histology Rules – Multiple Tumors Abstract as Single Primary

H15

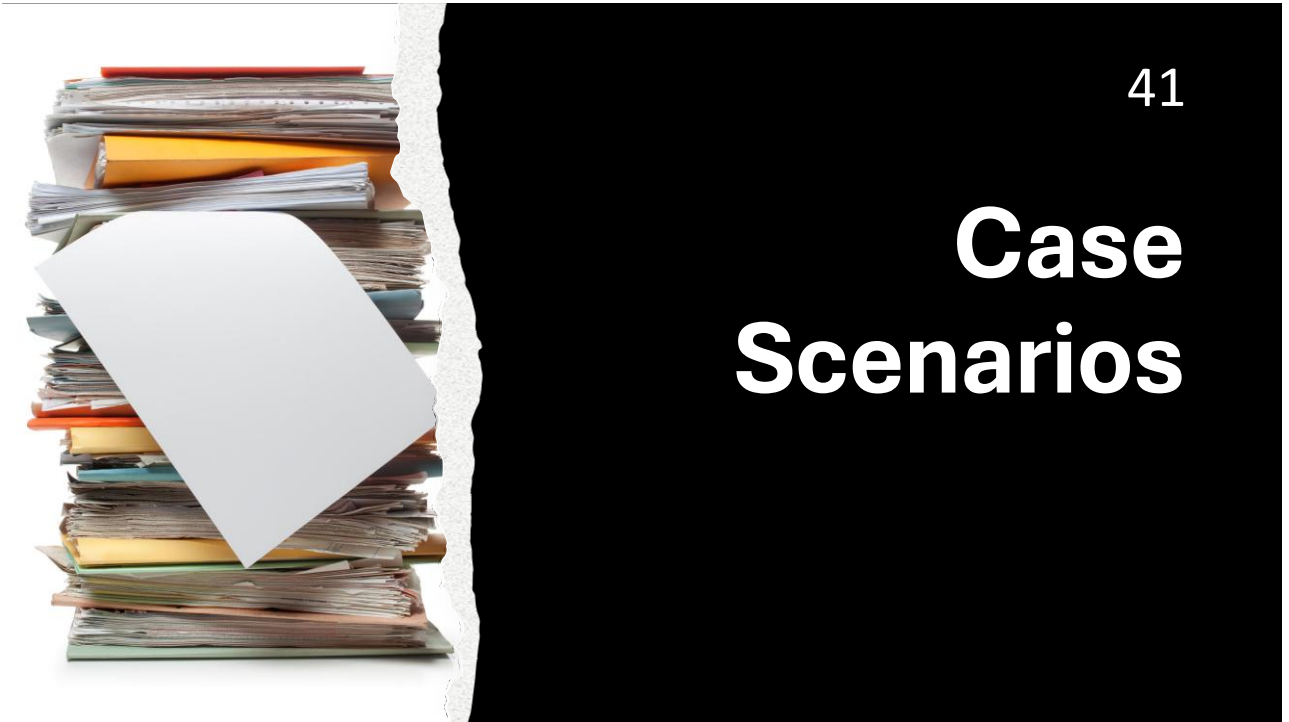
- **Code S/V** when there is a **NOS** and a single S/V of that NOS

H16

- **Code appropriate combination code** when all tumors have multiple histologies **AND**
 - Combination is listed in *Table 2* **OR**
 - You received a combination code from Ask a SEER Registrar

40

40



41

Scenario 1

—
Patient diagnosed with squamous cell carcinoma (8070/3) in 2014 of the RUL s/p lobectomy (case is in your database)

42

New right lung mass noted 8/9/2025

8/12/2025 RLL, CT guided biopsy: squamous cell carcinoma

How many primaries?

Rule:

42

Scenario 1 Answer Sheet

43

Data Item	Primary 1	Primary 2
Sequence		
Date of Diagnosis		
Primary Site		
Laterality		
Histology/Behavior		
Histology Rule		

43

Scenario 2

45

3/12/2025 CT Chest: large 5cm mass in RUL with 2 additional masses in RLL along with 4 metastatic lesions in LUL

3/15/25 Physician states: findings consistent with bronchogenic carcinoma

How many primaries?

Rule:

45

Scenario 2 Answer Sheet

46

Data Item	Primary 1	Primary 2
Sequence		
Date of Diagnosis		
Primary Site		
Laterality		
Histology/Behavior		
Histology Rule		

46

Scenario 3

48

5/18/2025 LLL lung mass, CT Guided biopsy

5/20/2025 LLL, CT Guided biopsy: squamous cell carcinoma with spindle cell carcinoma

How many primaries?

Rule:

48

Scenario 3 Answer Sheet

49

Data Item	Primary 1	Primary 2
Sequence		
Date of Diagnosis		
Primary Site		
Laterality		
Histology/Behavior		
Histology Rule		

49

Scenario 4

51

2/15/25 CT Chest: 1.9cm mass in RUL and an additional suspicious nodule in the RLL; no LAD noted

2/22/25 Bronchoscopy: no masses/lesions noted

3/02/25 CT guided biopsy, RUL and RLL masses

3/02/25 RUL biopsy: invasive papillary adenocarcinoma; RLL biopsy: invasive mucinous carcinoma

How many primaries?

Rule:

51

Scenario 4 Answer Sheet

52

Data Item	Primary 1	Primary 2
Sequence		
Date of Diagnosis		
Primary Site		
Laterality		
Histology/Behavior		
Histology Rule		

52

SEER*Educate Case Review

- Complete the SEER*Educate Cases
 - Training – Coding CEs
 - Dx 2018-2025 Solid Tumor Rules
 - **Lung cases 01-05**



54

54

Questions? Contact Me.

Melissa Riddle, ODS-C
Education & Training
Iowa Cancer Registry
melissa-riddle@uiowa.edu



56