

Update on CoC Quality Measures, Standards, Lymph Node Counts for Lung Cancer

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Commercial Interest	Relationship(s)
Astra Zeneca	Advisory Board for Adaura Trial dissemination
On Target Laboratories	Steering Committee for ELUCIDATE trial



“People never improve unless they look to some standard or example higher or better than themselves.”

Tyron Edwards, American theologian
1809-1894





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Commission on Cancer in Today's Health Care Environment

The multidisciplinary Commission on Cancer:

- Establishes standards to ensure high-quality, multidisciplinary and comprehensive cancer care.
- Conducts surveys at cancer programs to assess compliance with those standards.
- Collects standardized high-quality data from CoC-accredited organizations.
- Uses data to measure cancer care quality and to monitor treatment patterns and outcomes.
- Requires cancer prevention and screening at programs.
- Monitors clinical surveillance activities.
- Develops effective educational programs to achieve its goals.

CoC Quality of Care Measures - Lung Cancer

OLD GUIDELINES

Non-Small Cell Lung				
10RLN	S	Not Applicable	At least 10 regional lymph nodes are removed and pathologically examined for AJCC stage IA, IB, IIA, and IIB resected NSCLC	Fall 2014
LCT	QI	Standard 4.5 85%	Systemic chemotherapy is administered within 4 months to day preoperatively or day of surgery to 6 months postoperatively, or it is recommended for surgically resected cases with pathologic, lymph node-positive (pN1) and (pN2) NSCLC.	Fall 2014
LNoSurg	QI	Standard 4.5 85%	Surgery is not the first course of treatment for cN2, M0 lung cases	Spring 2015

S = surveillance measure; (for informative purposes) QI = Quality Improvement; (for internal monitoring)
A = Accountability (could be used for public reporting)

CoC Quality of Care *Measures* - Lung Cancer

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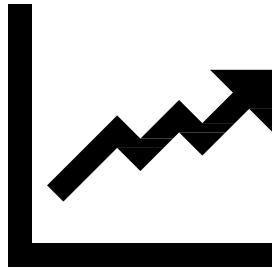
S = surveillance measure; (for informative purposes) QI = Quality Improvement; (for internal monitoring)
A = Accountability (could be used for public reporting)

NEW **MEASURES** COMING IN NEXT 1-2 YEARS

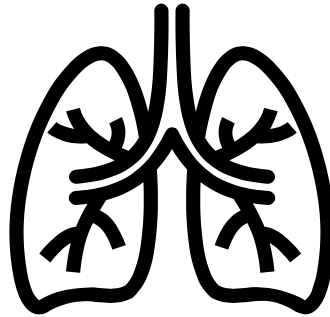
Cancer Surgery *Standards* Program (CSSP)

- The ACS launched the CSSP in June 2020, recognizing growing evidence that adherence to specific operative techniques leads to:

Longer survival



Better surgical outcomes



Improved quality of life

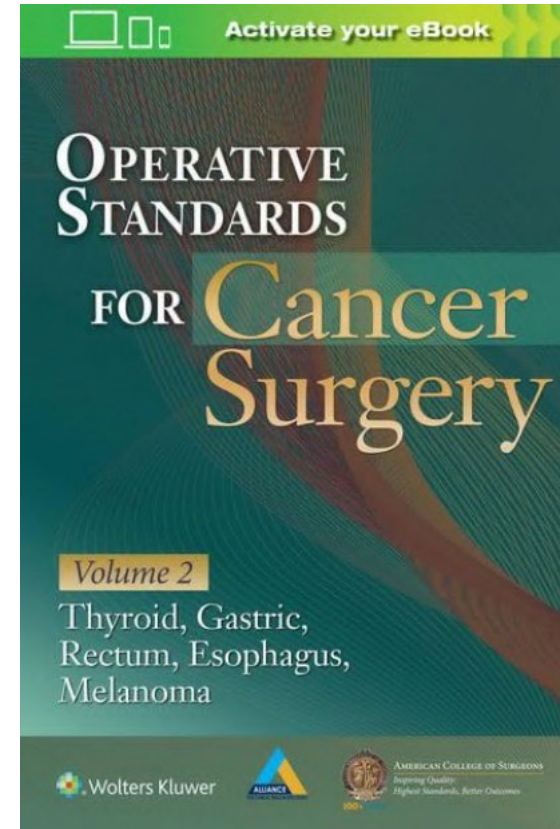
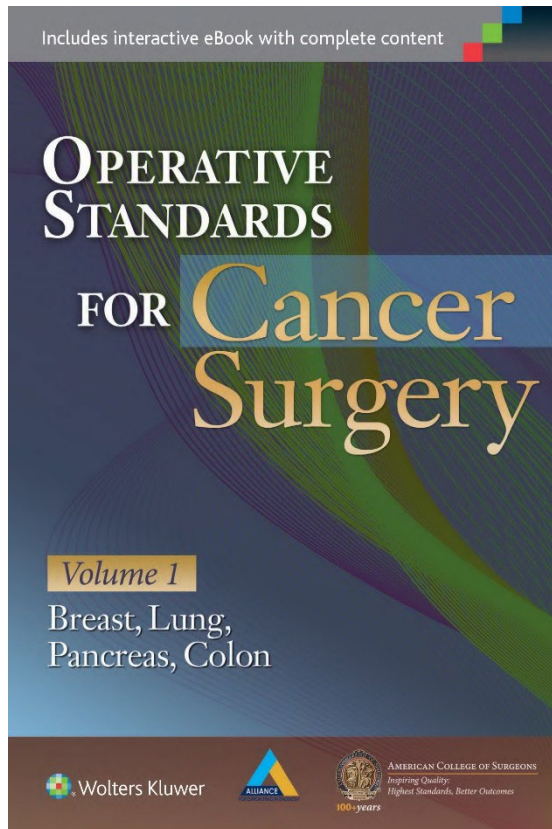


- Shift from standards based in facilities/equipment to **outcomes-based standards**

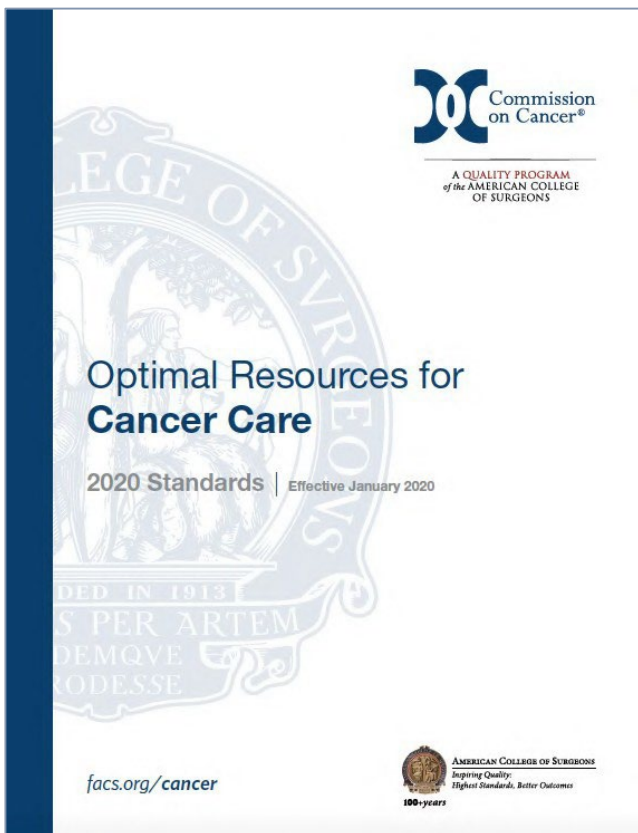
Cancer Surgery Standards Program (CSSP)

- Mission: To improve the quality of care for persons with cancer
- Goals:
 - **Set evidence-based standards** for the technical conduct of oncologic surgery
 - **Educate surgeons** on the key technical aspects of oncologic procedures
 - **Create tools** which support implementation and adherence to the standards
 - Synoptic operative report templates

Cancer Surgery Standards Program (CSSP)



The CoC Operative Standards (2020)



Standard	Disease Site	Procedure	Documentation
5.3	Breast	Sentinel node biopsy	Operative report
5.4	Breast	Axillary dissection	Operative report
5.5	Melanoma	Wide local excision	Operative report
5.6	Colon	Colectomy (any)	Operative report
5.7	Rectum	Mid/low resection (TME)	Pathology report (CAP)
5.8	Lung	Lung resection (any)	Pathology report (CAP)

Multidisciplinary Panel



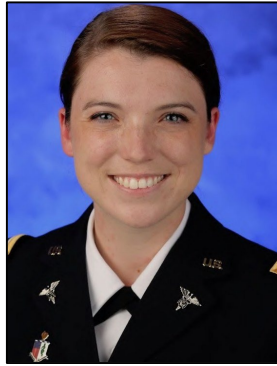
Michael Archer, DO

SUNY Upstate
Thoracic Surgery



Kimberly Absher, MD

UK Markey Cancer Center
Pathology



Lexy Adams, MD MPH

Brooke Army Medical Center
General Surgery Resident



Jennie Jones MSHI-HA, CHDA, CTR

Moffitt Cancer Center
Cancer Registry Director



Timothy Mullett, MD FACS

UK Markey Cancer Center
Thoracic Surgery
Chair, Commission on Cancer



Raymond Osarogiagbon, MD

Baptist Cancer Center
Medical Oncology

Standard 5.8: Lung Resection

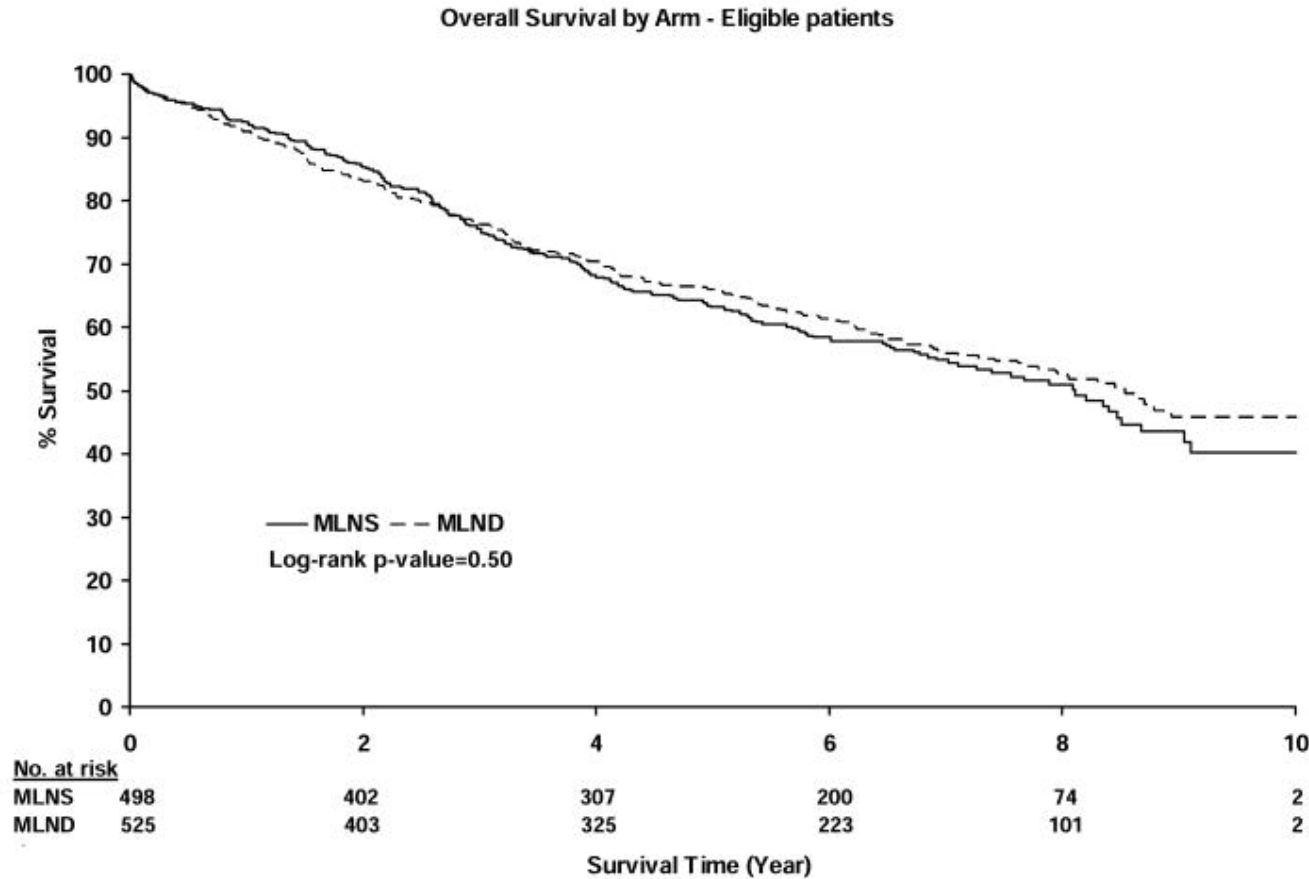
Rationale

Pulmonary Nodal Staging as an Operative Standard: Rationale

- Staging is dependent on status of N1 and N2 nodal stations
- Mediastinal lymph node assessment is recommended
- Audits of surgeon operative notes and pathology reports show poor concordance regarding procedure performed and extent of lymph node sampling

Nelson et al. 2015, De Leyn et al. 2014, Osarogiagbon et al. 2015

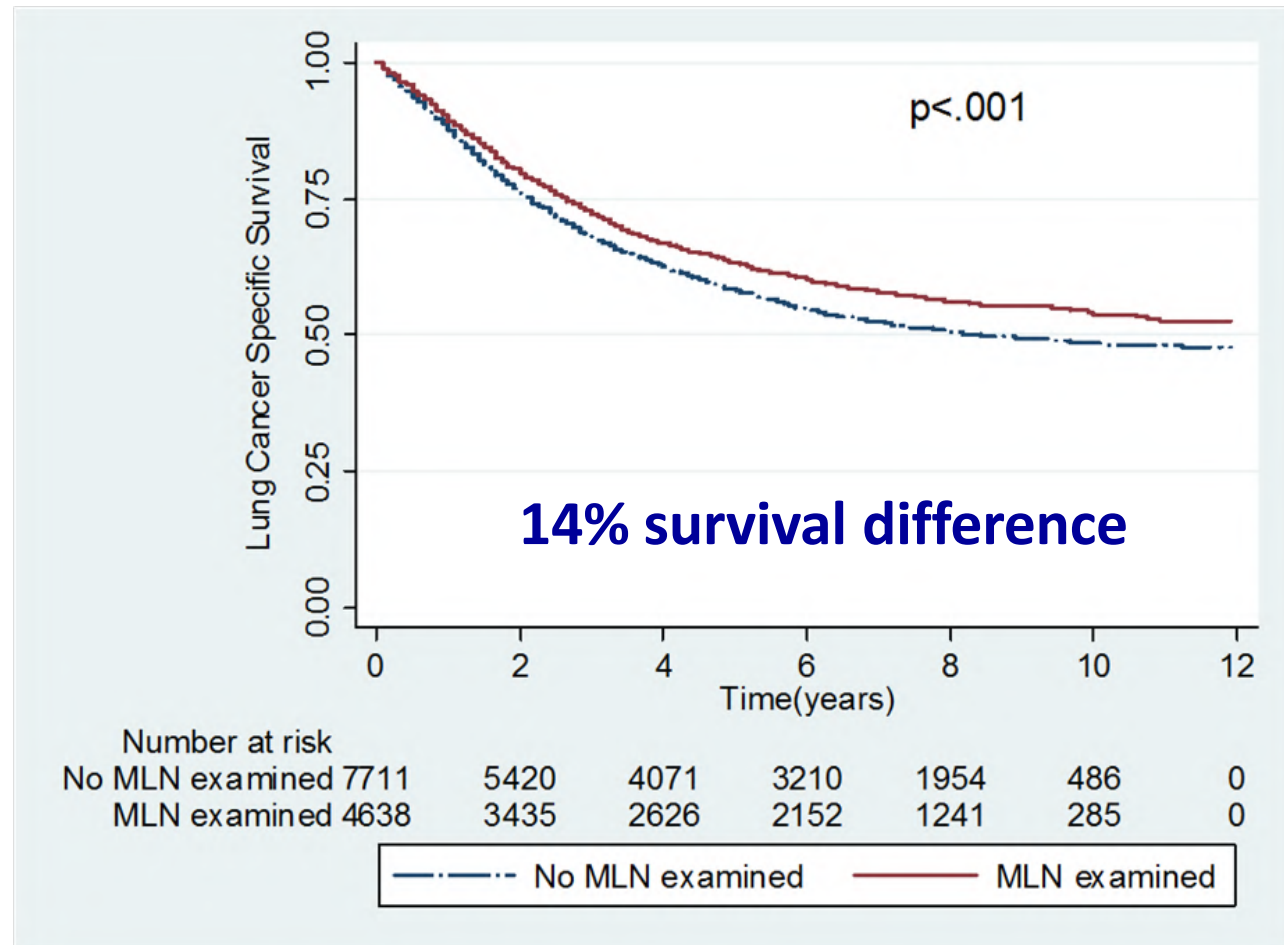
Mediastinal Lymph Node Assessment



ACOSOG Z0030:
Equivalent survival for
Systematic Mediastinal lymph
node sampling (MLNS)
VS
Mediastinal lymph node
dissection (MLND)

Darling et al. 2011

Examining Mediastinal Lymph Nodes Improves Survival



Osarogiagbon et al. 2012

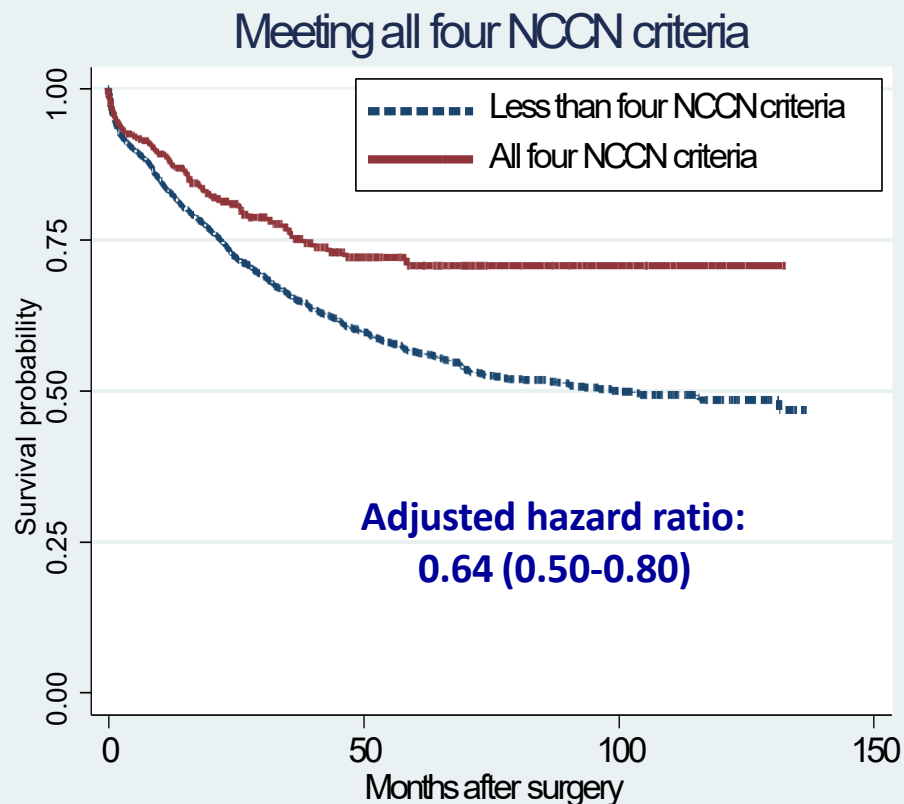
Examining Mediastinal Lymph Nodes Improves Survival

Following NCCN guidelines improves survival

NCCN

Guidelines:

1. Anatomic resection
2. Negative margins
3. Examination of hilar/intrapulmonary LNs
4. Examination of ≥ 3 mediastinal LNs



Number at risk				
nccn_criteria = 0	1892	782	204	0
nccn_criteria = 1	333	66	8	0

Osarogiagbon et al. 2017

Pulmonary Resection Critical Elements: Lymph node staging

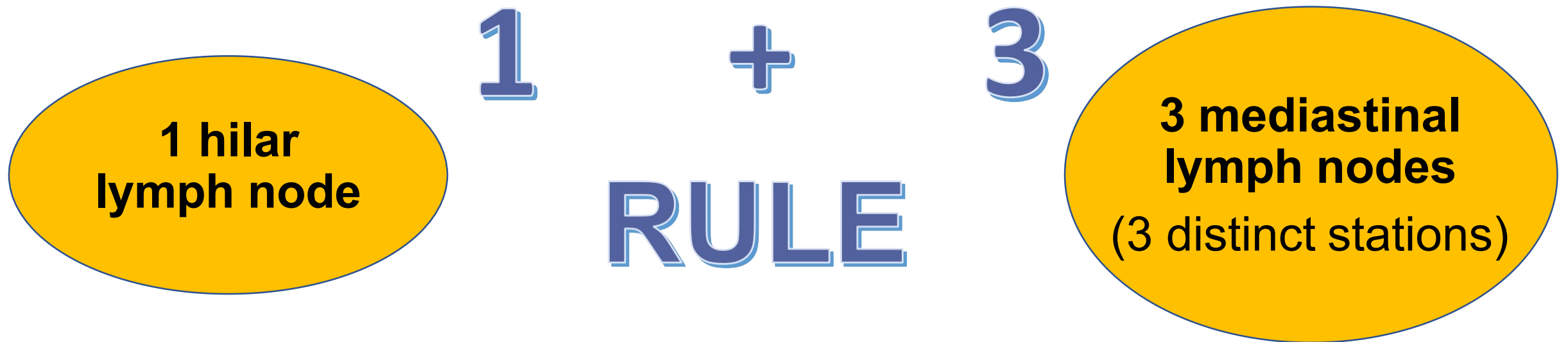
- Mediastinal staging prior to treatment (radiographic or invasive)
- Invasive mediastinal staging for central tumors, clinical N1 disease and tumors >3cm
- Confirmation of imaging findings at thoracic exploration
- **Mediastinal staging at the time of lung resection**

Any curative intent lung resection, including:

Non-small cell lung cancer
Small cell lung cancer
Carcinoid tumor

Nelson et al. 2015

Standard 5.8: Pulmonary Nodal Staging



Standard 5.8: Lung Resection Technique

Pulmonary Resection: Lymph Node Stations

LEFT

9L

8L

7

6

5

(4L & 2L
if accessible)



RIGHT

9R

8R

7

10R

4R

2R

Mediastinal stations:

Single digit (2-9)

Hilar stations:

Double digit (10+)

Lymph Node Stations

Superior Mediastinal Nodes

- 1 Highest mediastinal
- 2 Upper paratracheal
- 3 Pre-vascular and retrotracheal
- 4 Lower paratracheal (including azygos nodes)

Aortic Nodes

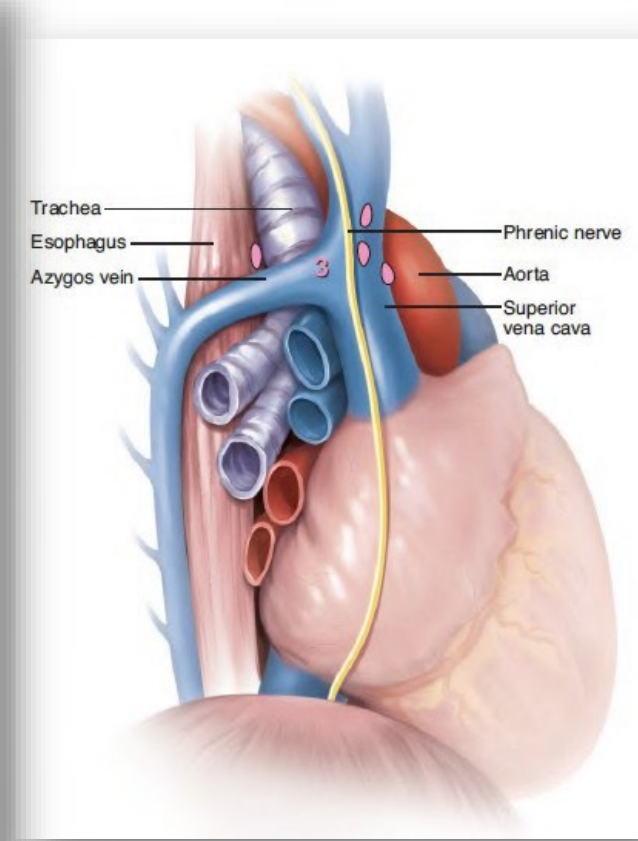
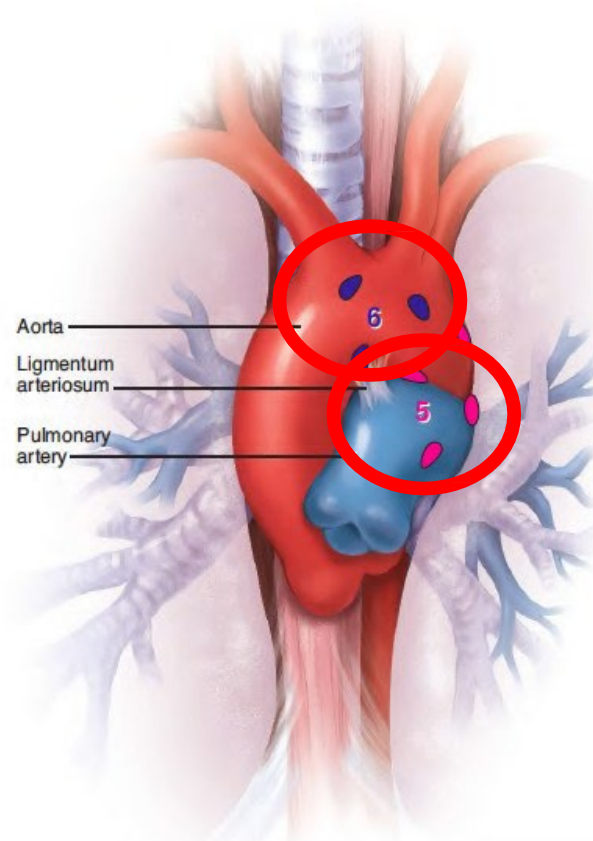
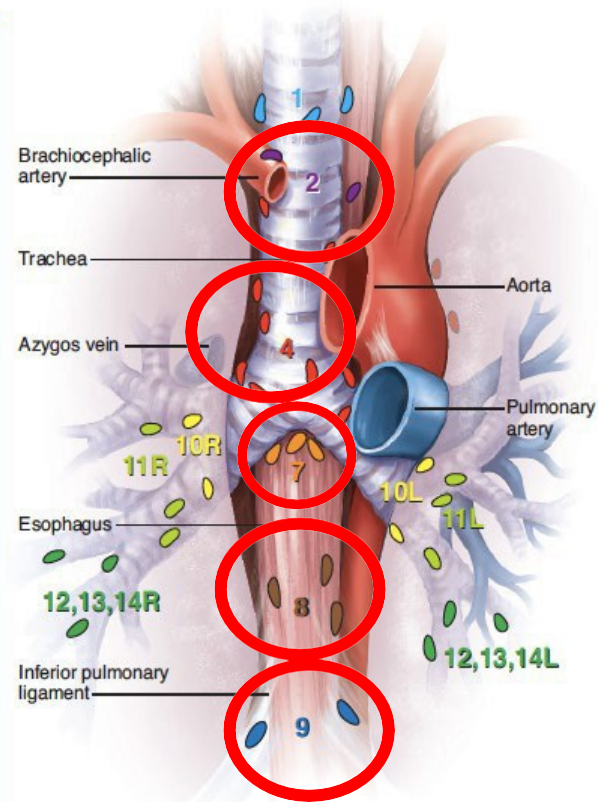
- 5 Subaortic (A-P window)
- 6 Para-aortic (ascending aorta or phrenic)

Inferior Mediastinal Nodes

- 7 Subcarinal
- 8 Paraesophageal (below carina)
- 9 Pulmonary ligament

N₁ Nodes

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



Nelson et al. 2015

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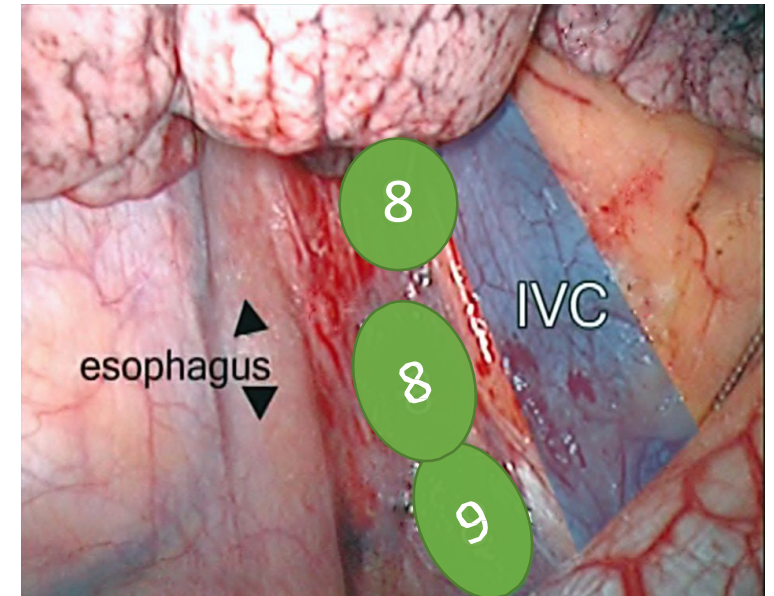
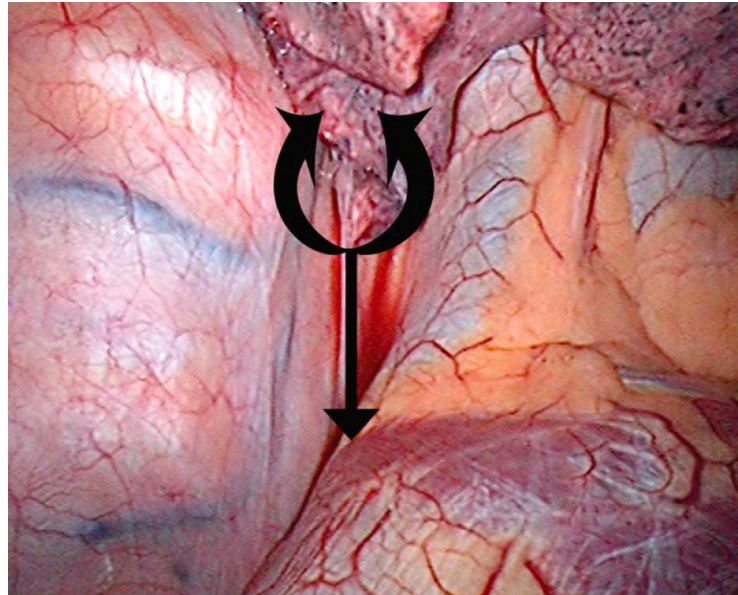
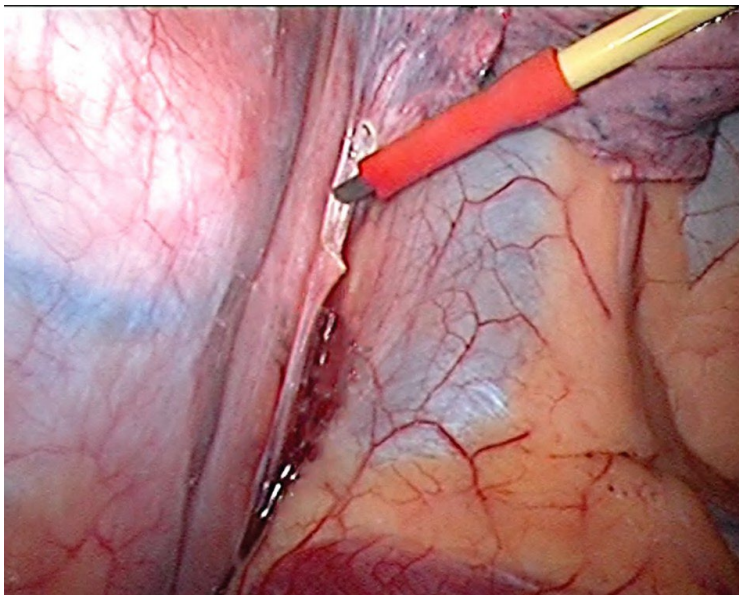


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Pulmonary resection: Technique (right)

**Right sided approach to stations
8 (para-esophageal) & 9 (inferior pulmonary ligament)**



Nelson et al. 2015

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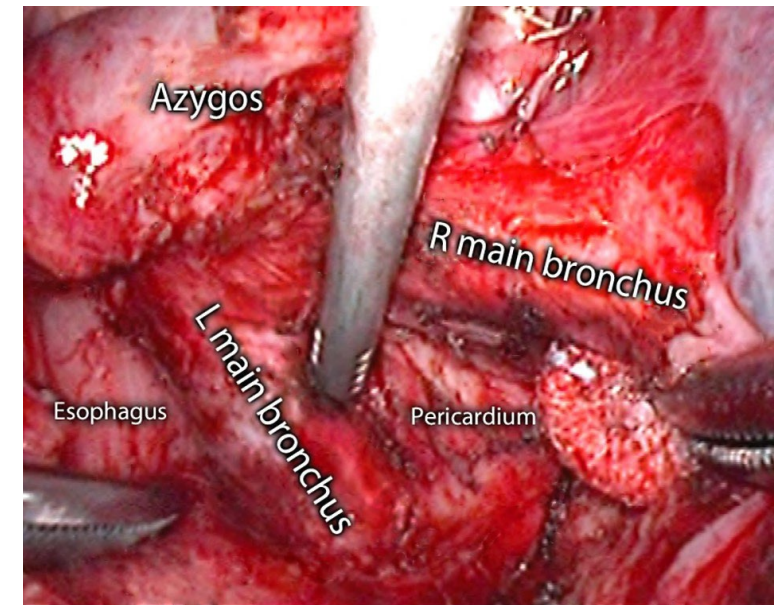
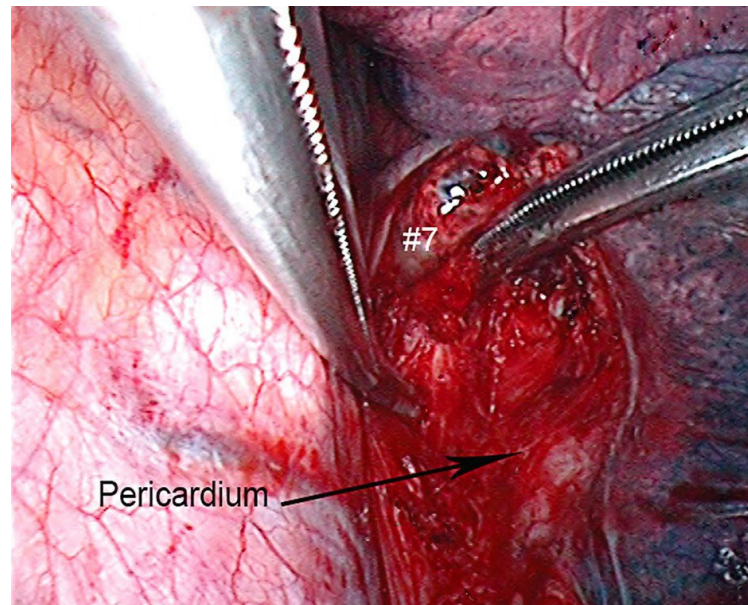
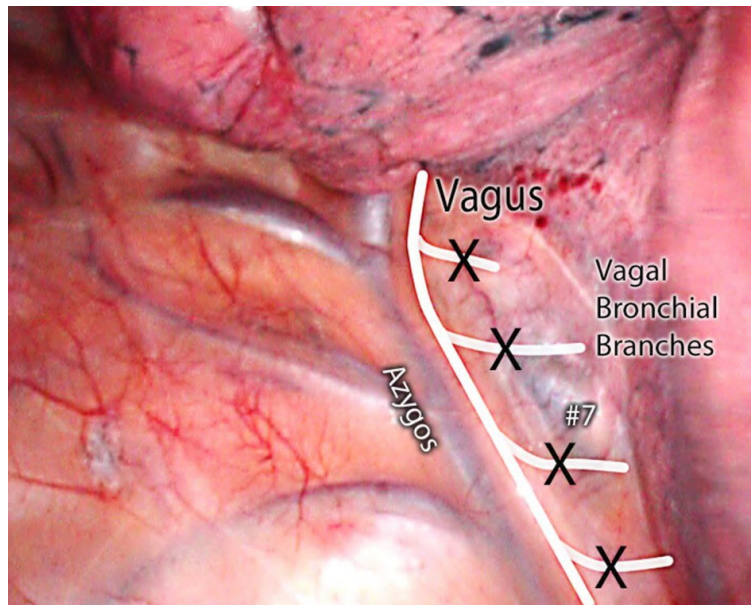
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Pulmonary resection: Technique (right)

Right sided approach to station 7 (subcarinal)



Nelson et al. 2015

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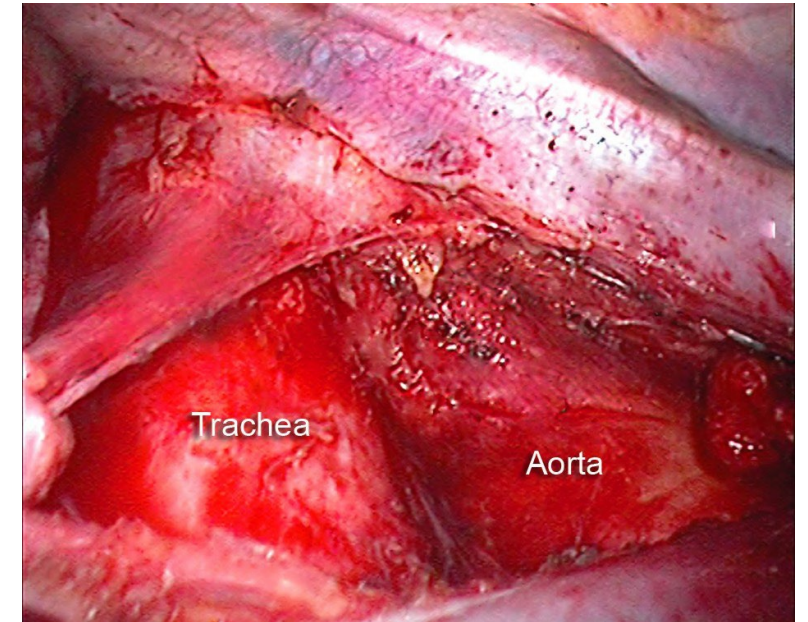
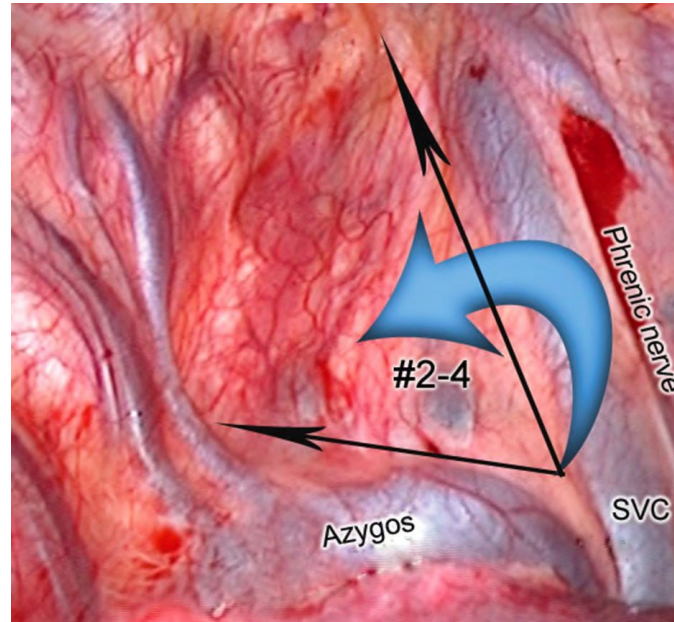
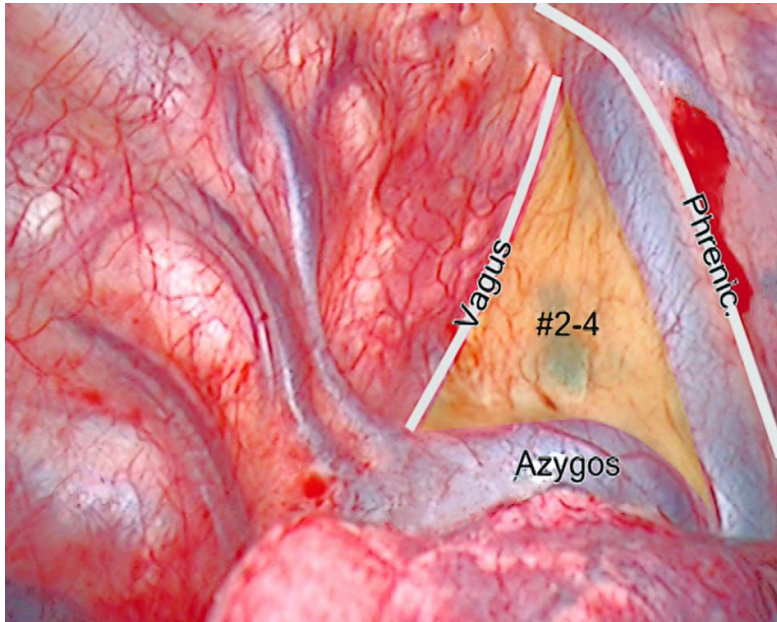
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Pulmonary resection: Technique (right)

Right sided approach to stations 2R (upper paratracheal) and 4R (lower paratracheal)



Nelson et al. 2015

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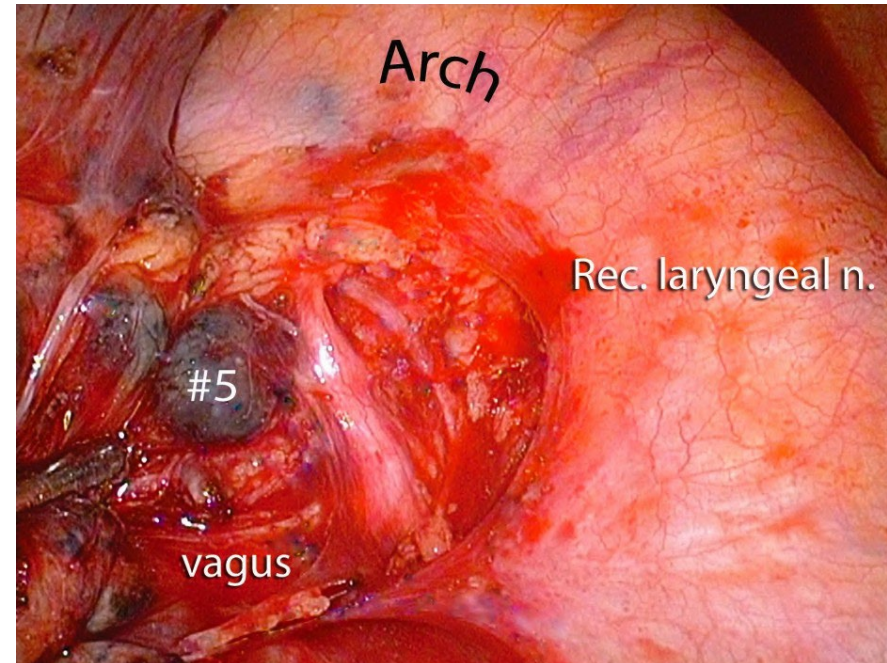
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Pulmonary resection: Technique (left)

Left sided approach to stations 5 (sub-aortic) and 6 (para-aortic)



Nelson et al. 2015

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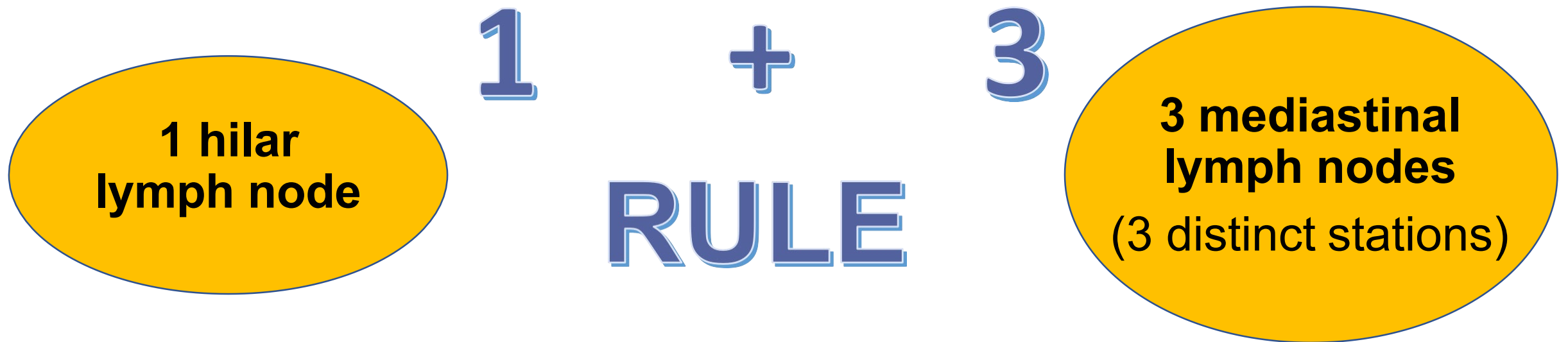
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Standard 5.8: Pulmonary Nodal Staging



Standard 5.8: Lung Resection

Documentation, Implementation Timeline & Compliance

CoC Compliance Measures: Standard 5.8

- 1) The hilum and mediastinum should be **thoroughly staged at the time of lung resection**, even in patients undergoing non-anatomic parenchyma sparing resection (i.e. a wedge resection)
- 2) The surgical pathology report must contain lymph nodes from at least **one hilar station** and **at least three distinct mediastinal stations**
- 3) The nodal stations examined by the pathologist must be documented in curative pulmonary resection pathology reports **in synoptic format**

Example of a CAP Lung Resection Synoptic Report

CAP Approved

Thorax • Lung • Resection • 4.1.0.1

Surgical Pathology Cancer Case Summary

Protocol posting date: February 2020

LUNG: Resection

Select a single response unless otherwise indicated.

Synchronous Tumors (required if morphologically distinct unrelated multiple primary tumors are present)

☐ Present*
Specify total number of primary tumors identified: _____
Specimen ID(s): _____
☐ Cannot be determined

* Morphologically distinct tumors that are considered to represent separate primary lung cancers should have separate synoptic reports

Procedure (select all that apply)

☐ Wedge resection
☐ Segmentectomy
☐ Lobectomy
☐ Completion lobectomy
☐ Sleeve lobectomy
☐ Bilobectomy
☐ Pneumonectomy
☐ Major airway resection (specify): _____
☐ Other (specify): _____
☐ Not specified

(...and other sections)

Lymph Node Examination (required only if lymph nodes present in the specimen)

Number of Lymph Nodes Involved: _____
☐ Number cannot be determined (explain): _____
Specify nodal station(s) involved (applicable only if node(s) involved): _____

Number of Lymph Nodes Examined: _____
☐ Number cannot be determined (explain): _____
Specify nodal station(s) examined: _____

+ Extranodal Extension (Note J)

+ ☐ Not identified
+ ☐ Present
+ ☐ Cannot be determined

Treatment Effect (Note I)

☐ No known presurgical therapy
☐ Greater than 10% residual viable tumor
☐ Less than or equal to 10% residual viable tumor
☐ Cannot be determined

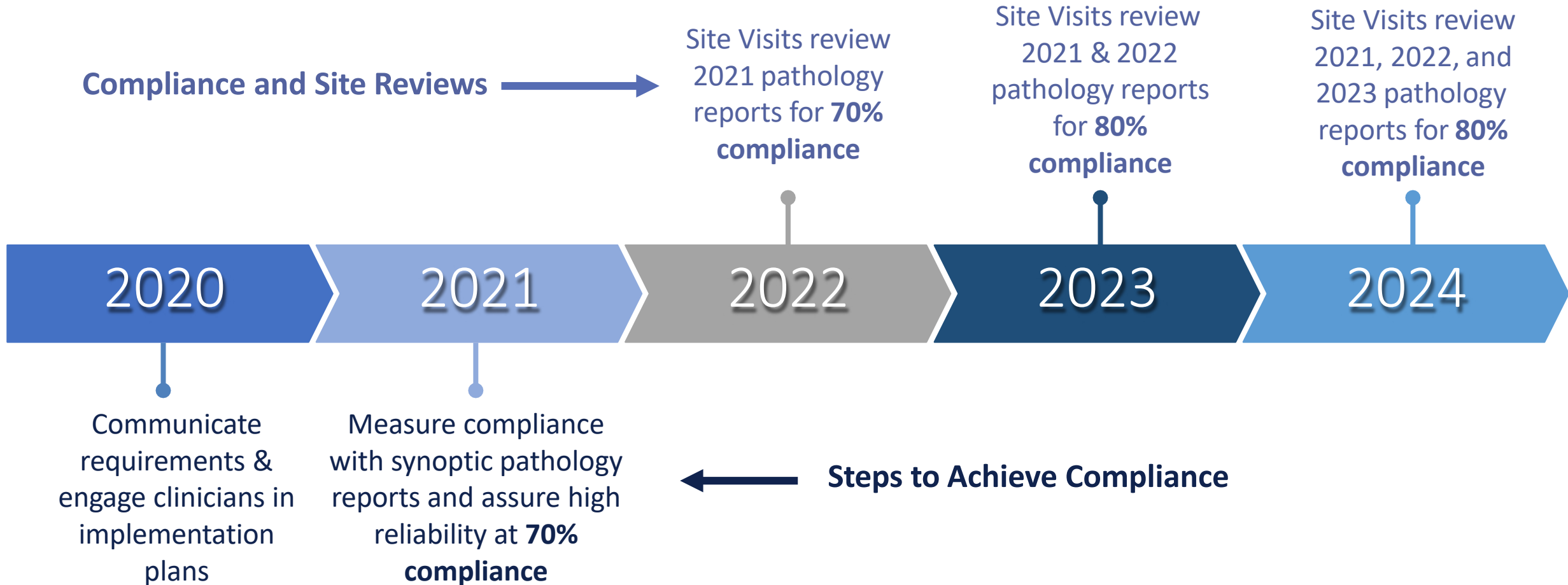
Number of Lymph Nodes Involved: _____
☐ Number cannot be determined (explain): _____
Specify nodal station(s) involved (applicable only if node(s) involved): _____

Number of Lymph Nodes Examined: _____
☐ Number cannot be determined (explain): _____
Specify nodal station(s) examined: _____

How will compliance be assessed?

- A site visit reviewer will review the **standardized synoptic pathology reports** for curative intent pulmonary resections
- By 2022, sites will be expected to have **70% compliance**

Timeline to Achieve Compliance: Standard 5.8



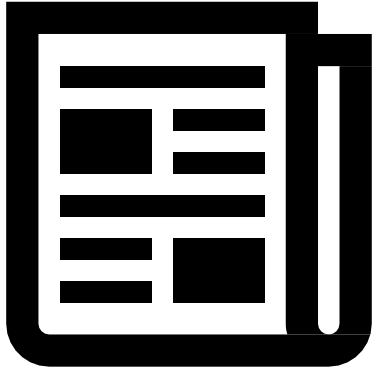
Compliance levels for 5.7 & 5.8

Visit Year	Standard	Materials Assessed	Requirement
2022	5.7	7 rectal pathology reports from 2021	70% compliance
	5.8	7 lung pathology reports from 2021	70% compliance
2023	5.7	7 rectal pathology reports from 2021-2022	80% compliance
	5.8	7 lung pathology reports from 2021-2022	80% compliance
2024	5.7	7 rectal pathology reports from 2021-2023	80% compliance
	5.8	7 lung pathology reports from 2021-2023	80% compliance
2025	5.7	7 rectal pathology reports from 2022-2024	80% compliance
	5.8	7 lung pathology reports from 2022-2024	80% compliance

LINDA'S TIPS AND TRICKS

- It does NOT count if you document that you LOOKED but didn't FIND
- Per Tim Mullett – CAN count nodes evaluated on EBUS or MED – must get it into the path report
 - ***TALK TO YOUR PATHOLOGISTS***

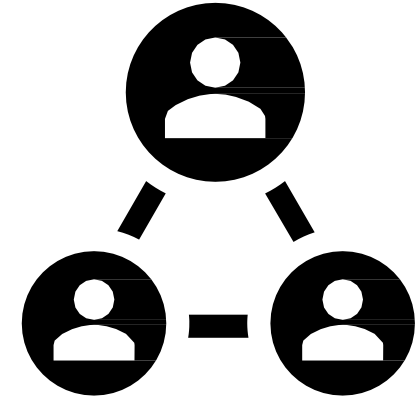
How Can Programs Optimize Compliance?



Ensure institution is utilizing **standardized CAP reports** for all lung cancer procedures



Document performance of lymph node sampling during pulmonary resection & label stations **clearly** in operative note



Encourage communication amongst surgeons, pathologists, & registrars

Pre-labeled Specimen Collection Kits and Checklists Improve Communication



Overall performance of mediastinal lymph node examination
Median number of MLN examined:

1 → 6

Concordance in surgeons' and pathologists' reporting

39% → 80%



Osarogiagbon et al, 2012

Osarogiagbon et al, 2015

Standardized Collection Kits Improve Compliance With Pulmonary Nodal Staging

100%

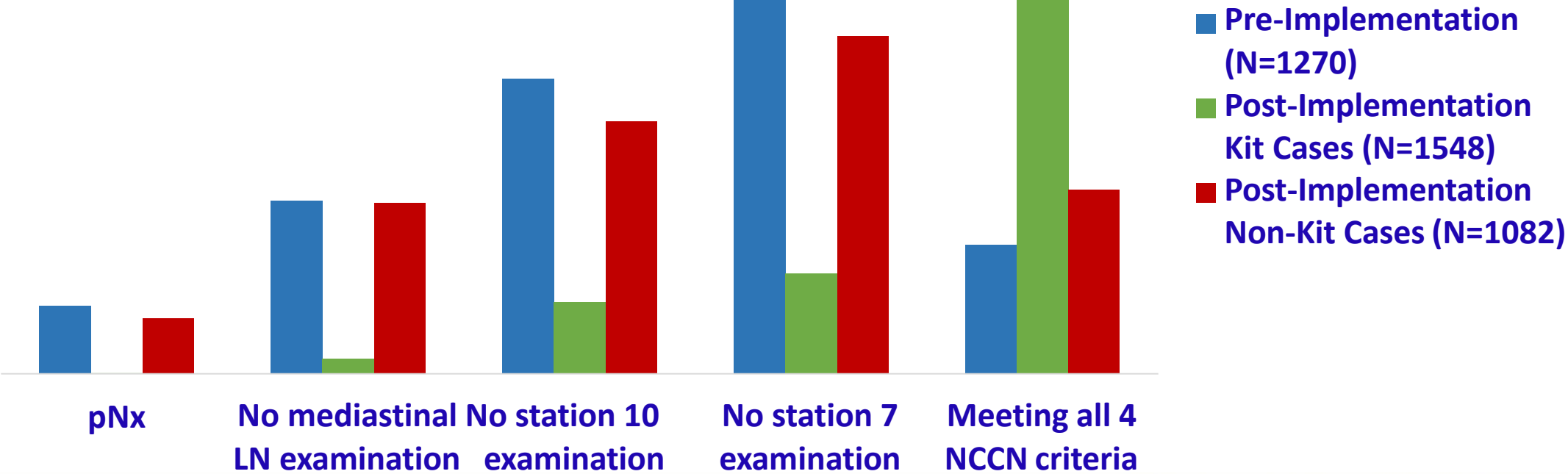
80%

60%

40%

20%

0%



Courtesy of Dr. Osarogiagbon

Standard 5.8: Pulmonary Resection

Operation

For any primary pulmonary resection performed with curative intent
(including non-anatomic parenchymal-sparing resections)

Resect nodal stations from:

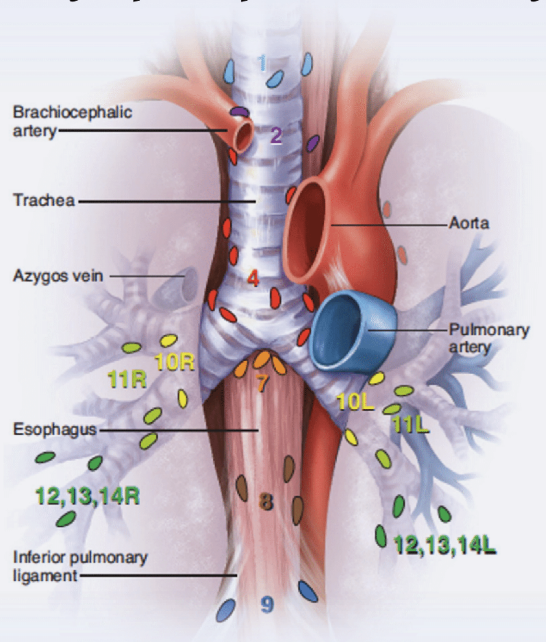


Mediastinum
(Stations 2-9)
≥3 distinct stations

Hilum
(Stations 10-14)
≥1 station

Pathology Documentation

Synoptic report documents lymph nodes from:



≥ 1 hilar station
≥ 3 mediastinal stations

with names and/or numbers of stations

When?

2021:
Implementation

2022 site visits:
70% Compliance

References

1. Darling GE, Allen MS, Decker PA, et al. Randomized trial of mediastinal lymph node sampling versus complete lymphadenectomy during pulmonary resection in the patient with N0 or N1 (less than hilar) non-small cell carcinoma: Results of the American College of Surgery Oncology Group Z0030 Trial. J Thorac Cardiovasc Surg. 2011;141(3):662-670.
2. De Leyn P, Doooms C, Kuzdzal J et al. Revised ESTS guidelines for preoperative mediastinal lymph node staging for non small- cell lung cancer. Eur J Cardiothorac Surg. 2014;45(5): 787-98.
3. National Comprehensive Cancer Network. NCCN clinical practice guidelines: Non-small cell lung cancer. Version 6.2019. August 12, 2019.
4. Nelson H, Hunt KK, Veeramachaneni N, et al. Operative Standards for Cancer Surgery, Volume I. Chicago, IL: Wolters Kluwer; 2015.
5. Osarogiagbon RU, Miller LE, Ramirez RA, et al. Use of a surgical specimen-collection kit to improve mediastinal lymph-node examination of resectable lung cancer. J Thorac Oncol. 2012 Aug;7(8):1276-82.
6. Osarogiagbon RU, Ray MA, Faris NR, et al. Prognostic value of National Comprehensive Care Network Lung cancer resection quality criteria. Ann Thorac Surg. 2017;103: 1557-65.
7. Osarogiagbon RU, Sareen S, Eke R et al. Audit of lymphadenectomy in lung cancer resections using a specimen collection kit and checklist. Ann Thorac Surg. 2015;99(2): 421-427.
8. Osarogiagbon RU, Yu X. Nonexamination of lymph nodes and survival after resection of non-small cell lung cancer. Ann Thorac Surg. 2013;96:1178-89.

Standard 5.8 - Pulmonary Resection

Synoptic operative report

- **NOT YET REQUIRED**
- **But now is a good time to start**

Can You Meet the 2020 CoC Surgical Standards?

Lung Cancer Critical Elements of Synoptic

Preresection Staging

None
EBUS
EUS
Cervical mediastinoscopy
VATS/thoracotomy
Chamberlain

Preresection Nodal Staging (with Diagnostic Lymphoid Tissue)

N/A	
Right nodal stations	Left nodal stations
2	2
4	4
7	5
8	6
9	7
10	8
Other N1	9
	10
	Other N1

Nodal Evaluation at Time of Resection

Systematic sampling

Nodal dissection

Nodal Stations Examined at Time of Resection

N/A	
Right nodal stations	Left nodal stations
2	2
4	4
7	5
8	6
9	7
10	8
Other N1	9
	10
	Other N1

Method of Lung Resection

VATS

Thoracotomy

Robot assisted

Extent of Lung Resection

Segmentectomy

Lobectomy

Pneumonectomy

Wedge resection

Component of
non-anatomic resection as
part of anatomic resection

yes

no

“People never improve unless they look to some standard or example higher or better than themselves.”

Tyron Edwards, American theologian
1809-1894

Useful Resources

https://www.facs.org/-/media/files/quality-programs/cancer/cssp/58_visual_abstract.ashx

<https://www.youtube.com/watch?v=tT2LkQNppX0>

<https://surgonctoday.libsyn.com/commission-on-cancer-standard-58-best-practices-to-meet-to-standard-for-nodal-assessment-during-a-curative-operation-for-lung-cancer>

https://www.facs.org/-/media/files/quality-programs/cancer/cssp/webinar_standard_5_8_pulmonary_resection.ashx

https://www.facs.org/-/media/files/quality-programs/cancer/cssp/best_practices_57_58_webinar.ashx
[2022 Site Visit Preparation for CoC Standards 5.7 & 5.8 \(facs.org\)](#)