Cancer Surgery Standards PROGRAM

AMERICAN COLLEGE OF SURGEONS

CoC Operative Standard 5.8: Pulmonary Resection

December 15, 2020

Presentation created by CSSP Education Committee

facs.org/cssp

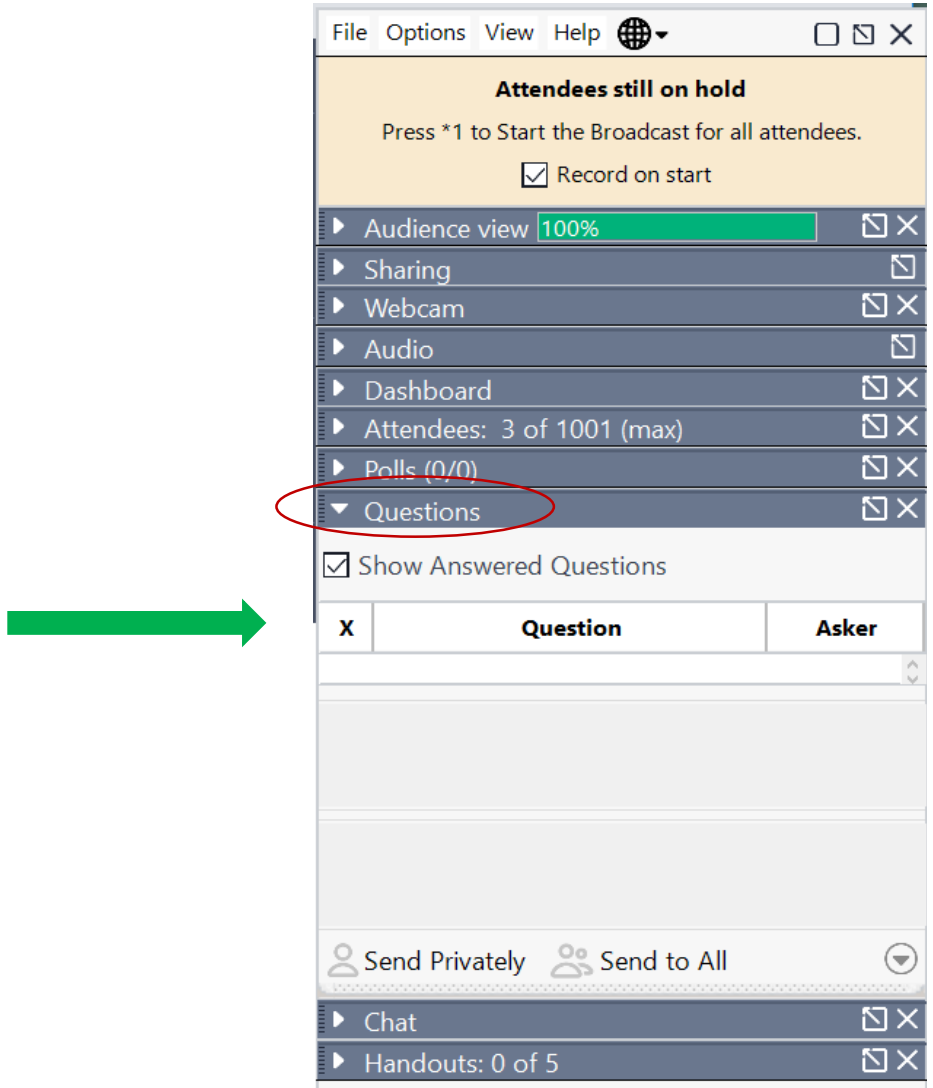
American College of Surgeons

Inspiring Quality: Highest Standards, Better Outcomes

100+years

Webinar Logistics

- All participants are muted during the webinar
- Questions – including technical issues you may be experiencing – should be submitted through the question pane
- Questions will be answered as time permits
- Please complete the post-webinar evaluation you will receive via email

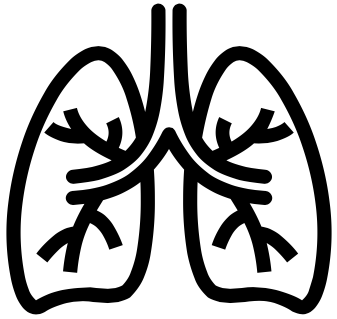


Cancer Surgery Standards Program (CSSP)

- 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

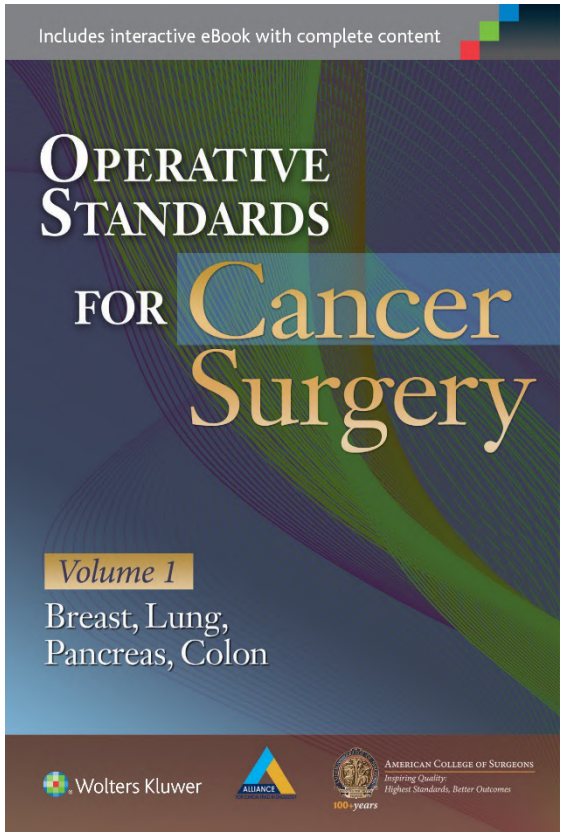
- Shift from standards based in facilities/equipment to **outcomes-based standards**

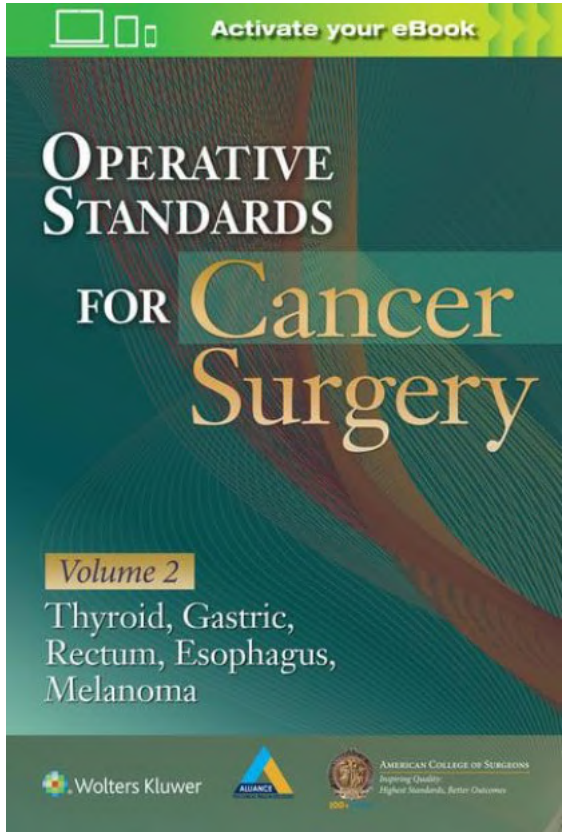
Cancer Surgery Standards Program (CSSP)

- 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)



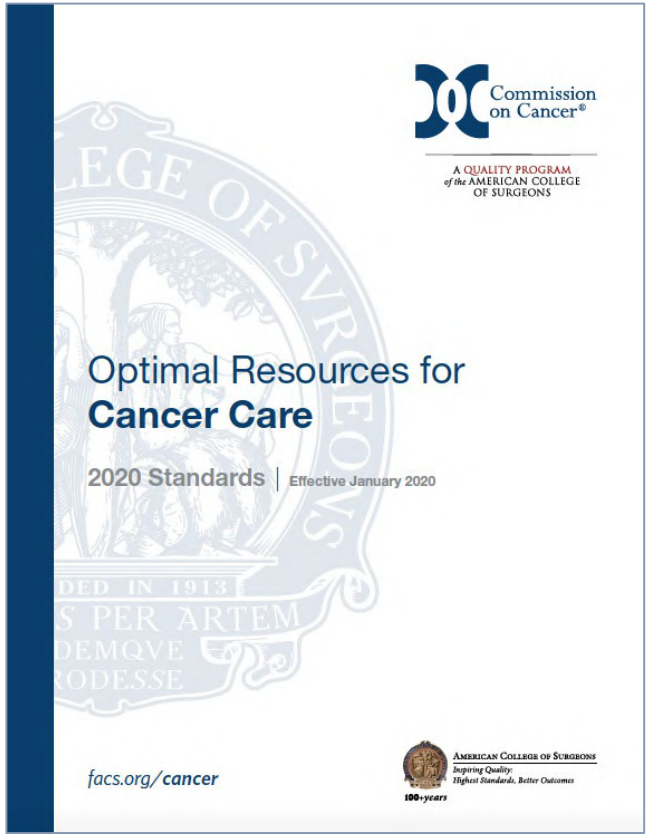


facs.org/cssp

Cancer Surgery Standards PROGRAM

American College of Surgeons
Inspiring Quality: Highest Standards, Better Outcomes
100+years

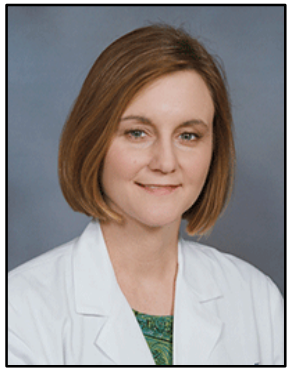
The CoC Operative Standards (2020)



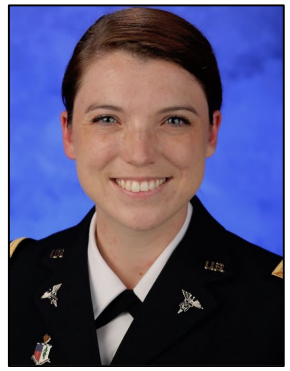
Standard	Disease Site	Procedure	Documentation
5.3	Breast	Sentinel node biopsy	Operative report
5.4	Breast	Axillary dissection	Operative report
5.5	Melanoma	Wide local excision	Operative report
5.6	Colon	Colectomy (any)	Operative report
5.7	Rectum	Mid/low resection (TME)	Pathology report (CAP)
5.8	**Lung**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

Multidisciplinary Panel

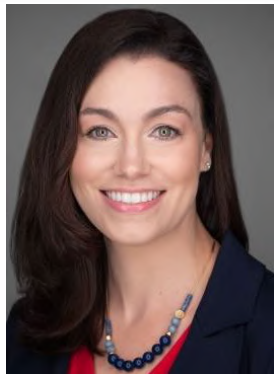
Michael Archer, DO
SUNY Upstate
Thoracic Surgery



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

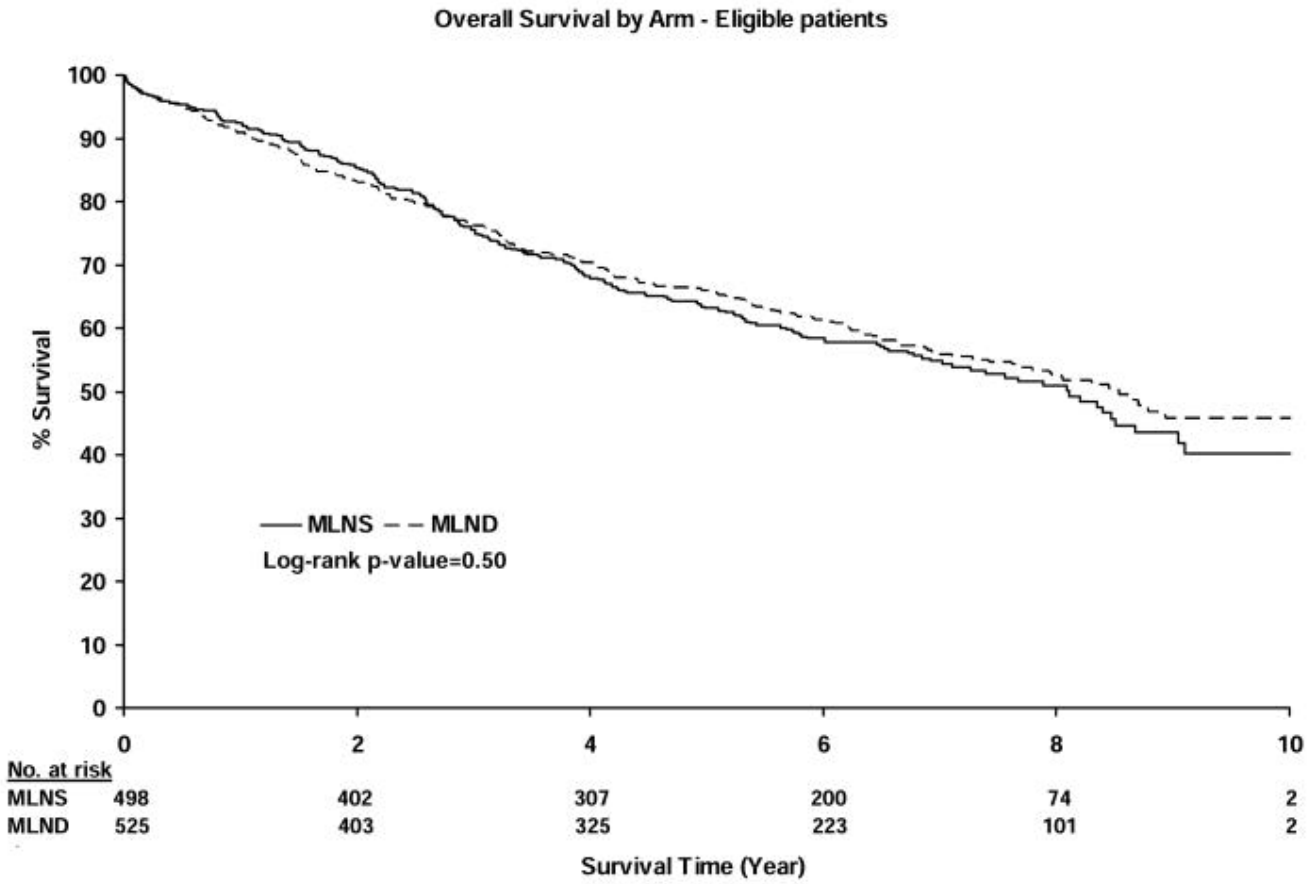
Rationale

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

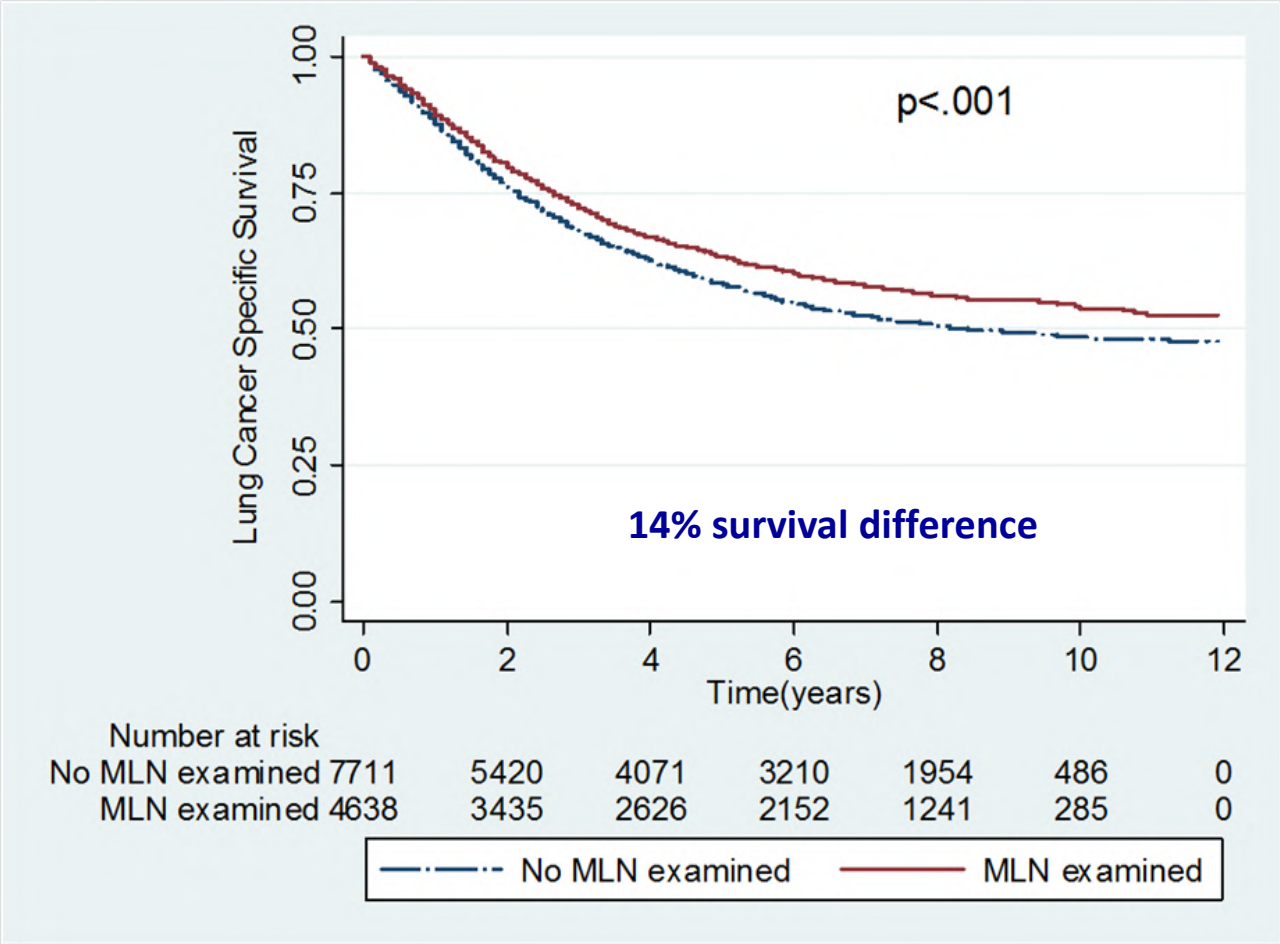
Systematic Mediastinal lymph node sampling (MLNS)

vs

Mediastinal lymph node dissection (MLND)

Darling et al. 2011

Examining Mediastinal Lymph Nodes Improves Survival



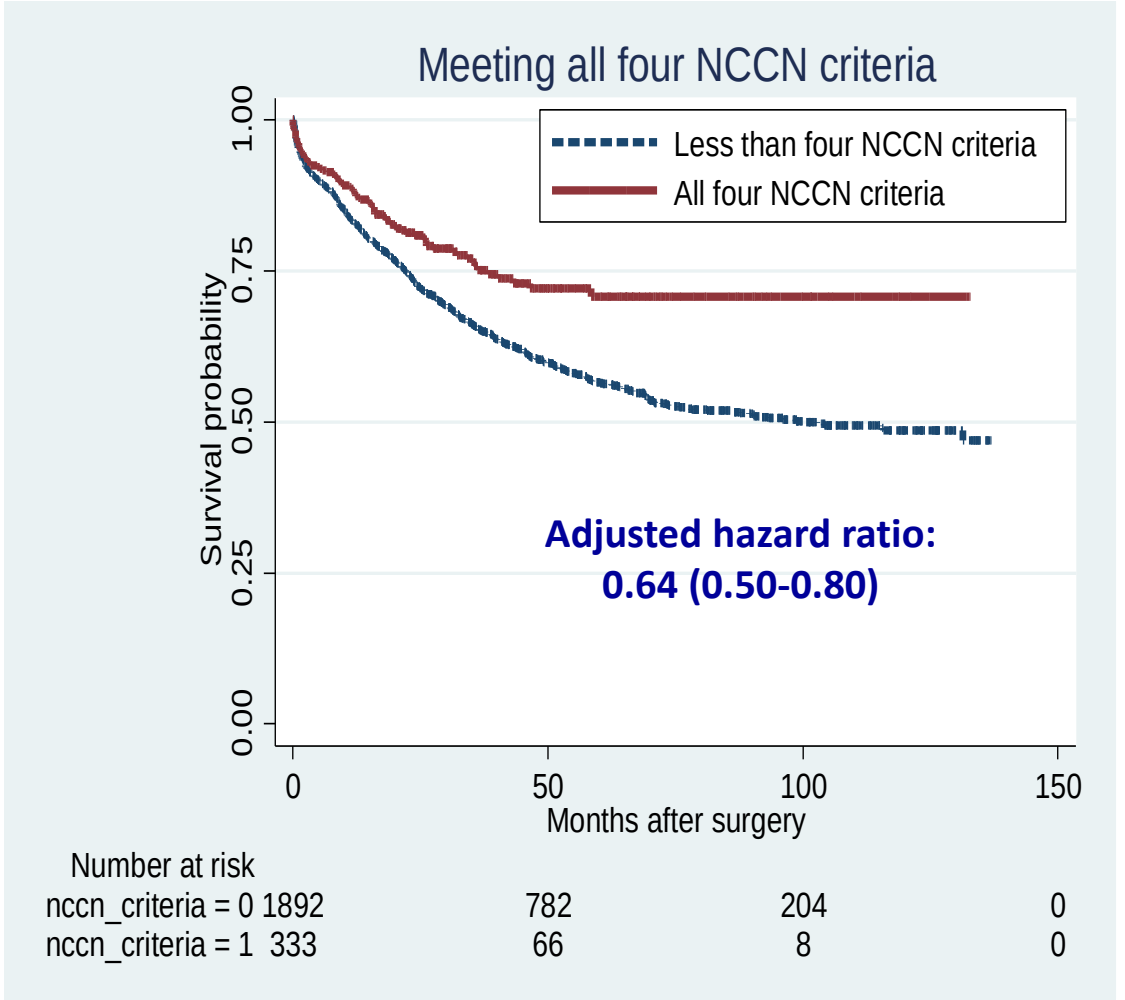
Osarogiagbon et al. 2012

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



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

1 hilar lymph node

1 + 3 RULE

3 mediastinal lymph nodes

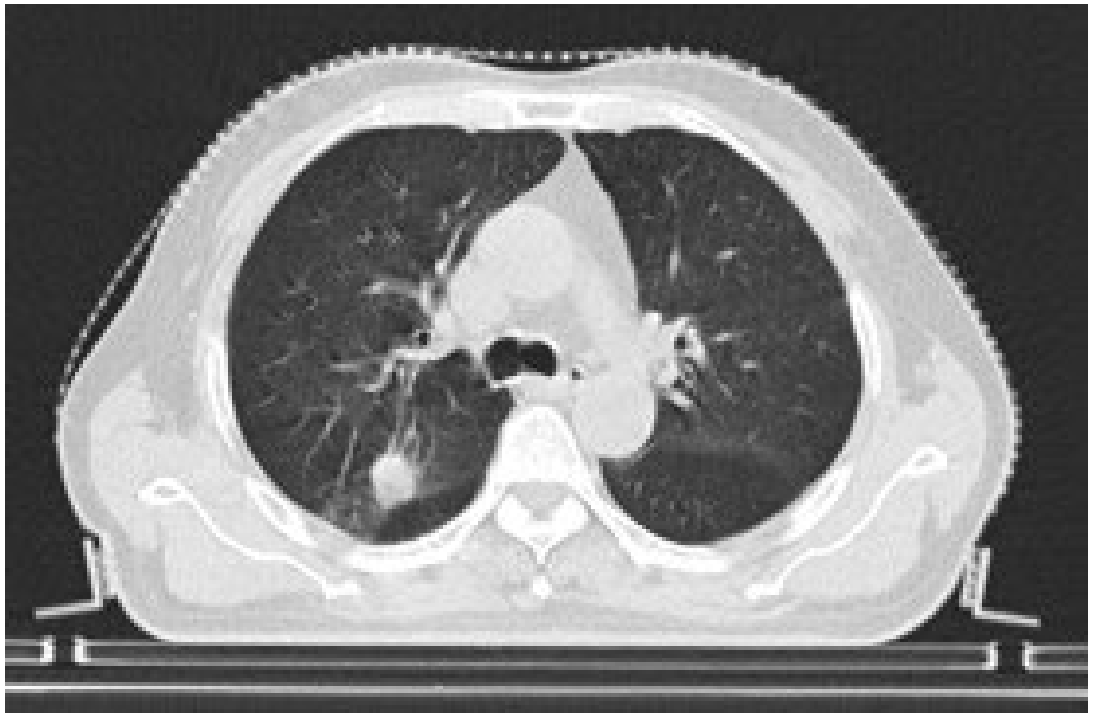
(3 distinct stations)

Standard 5.8: Lung Resection

Technique

Case Presentation: Lung Cancer

- 60 year old man with 40 pack year smoking history, referred by PCP after screening CT
- 2 cm peripheral mass found in right upper lobe
- No apparent nodal disease on CT or PET
- Scheduled for VATS lobectomy



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+)

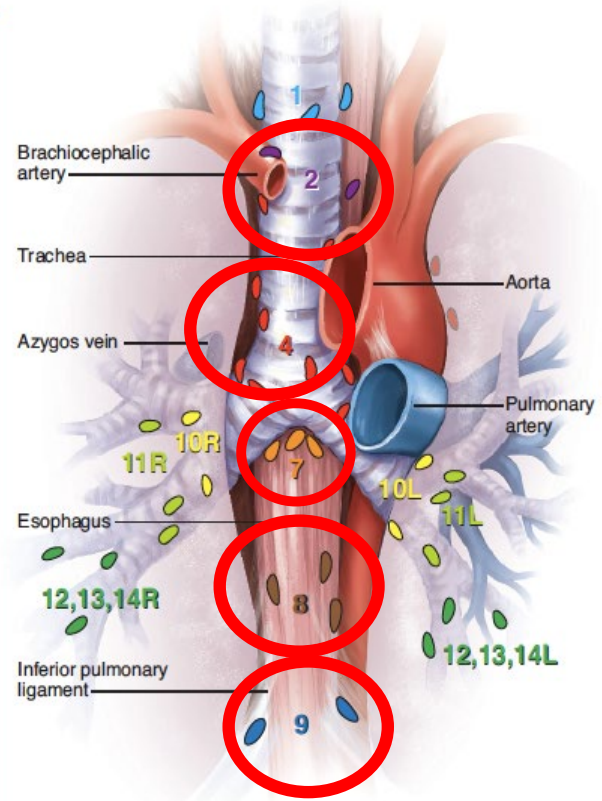
Lymph Node Stations

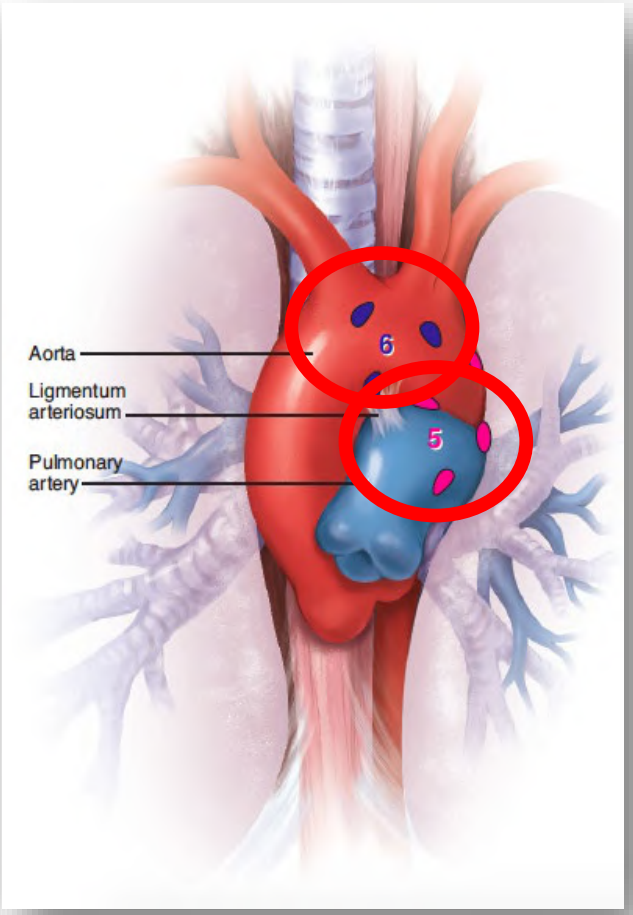
Superior Mediastinal Nodes
- 1 Highest mediastinal
- 2 Upper paratracheal
- 3 Pre-vascular and retrotracheal
- 4 Lower paratracheal (including azygos nodes)

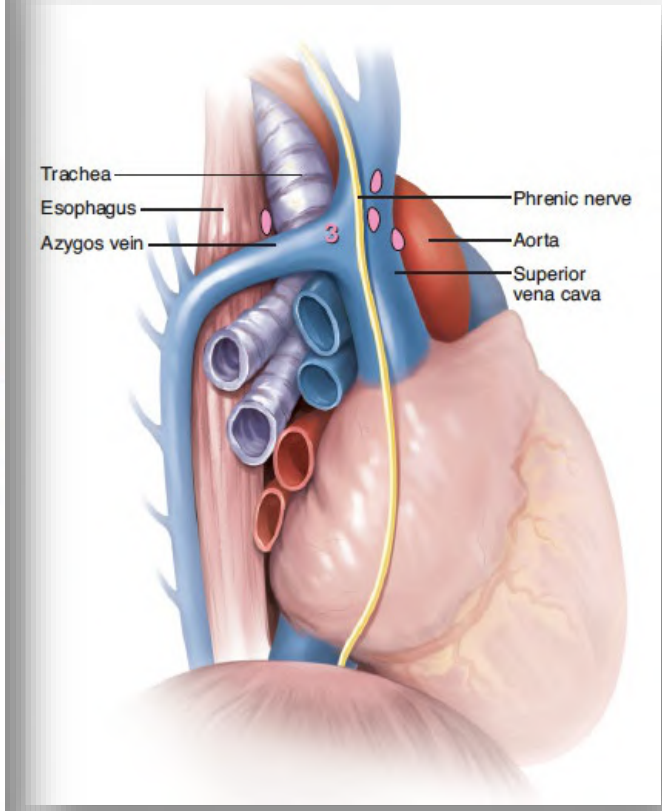
Aortic Nodes
- 5 Subaortic (A-P window)
- 6 Para-aortic (ascending aorta or phrenic)

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

N_1 Nodes
- 10 Hilar
- 11 Interlobar
- 12 Lobar
- 13 Segmental
- 14 Subsegmental



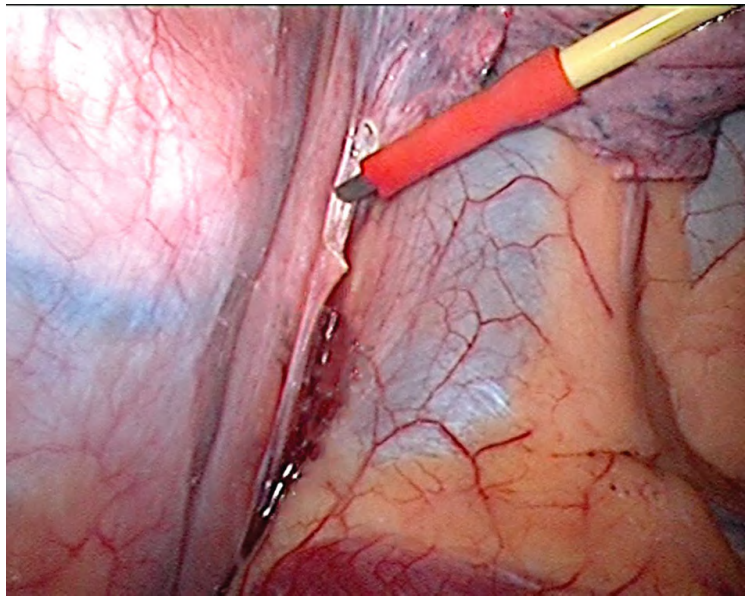


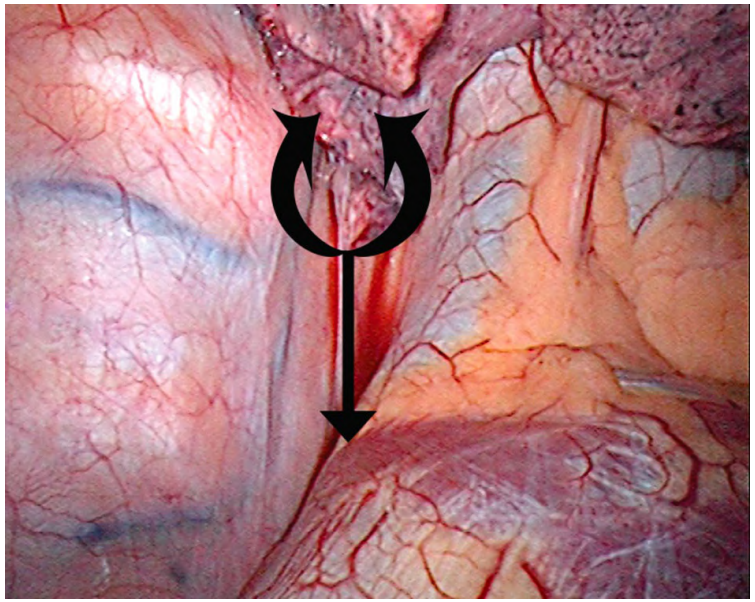


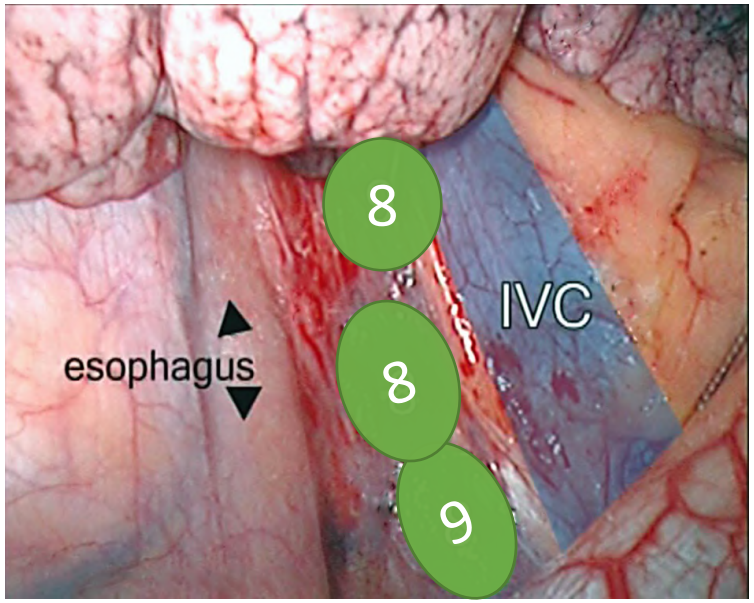
Nelson et al. 2015

Pulmonary resection: Technique (right)

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



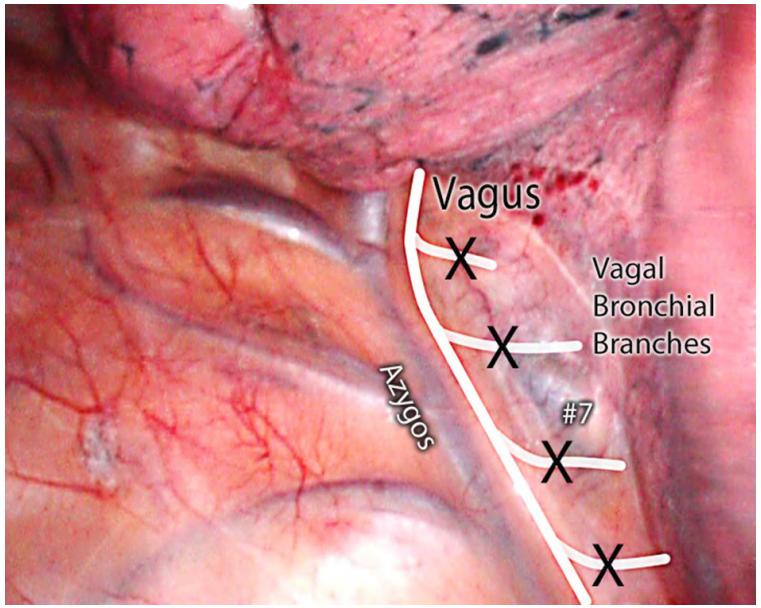


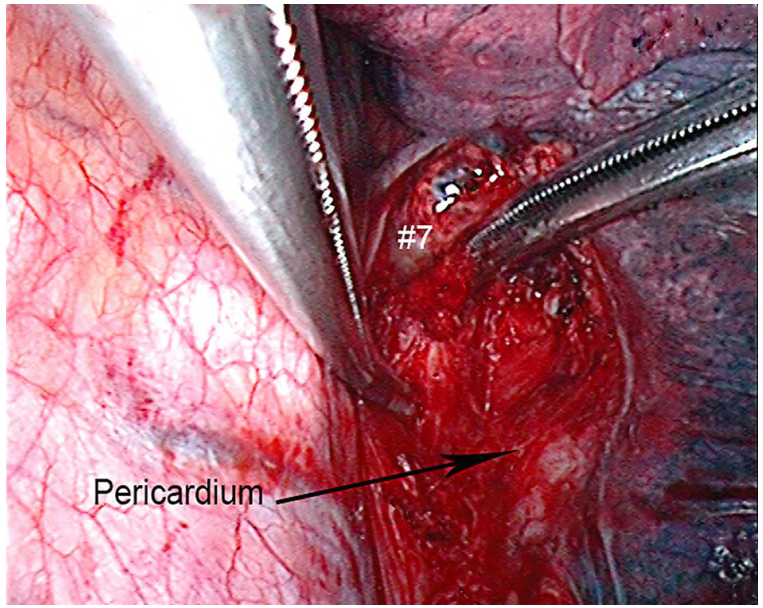


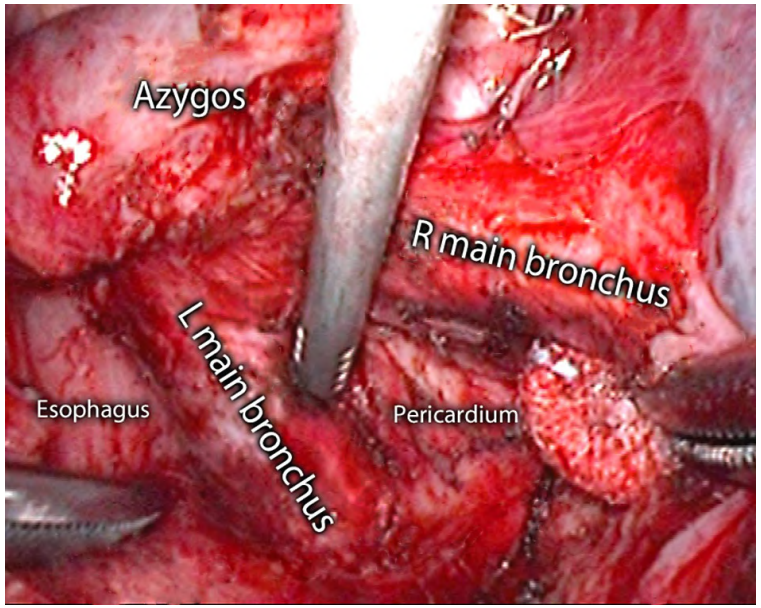
Nelson et al. 2015

Pulmonary resection: Technique (right)

Right sided approach to station 7 (subcarinal)



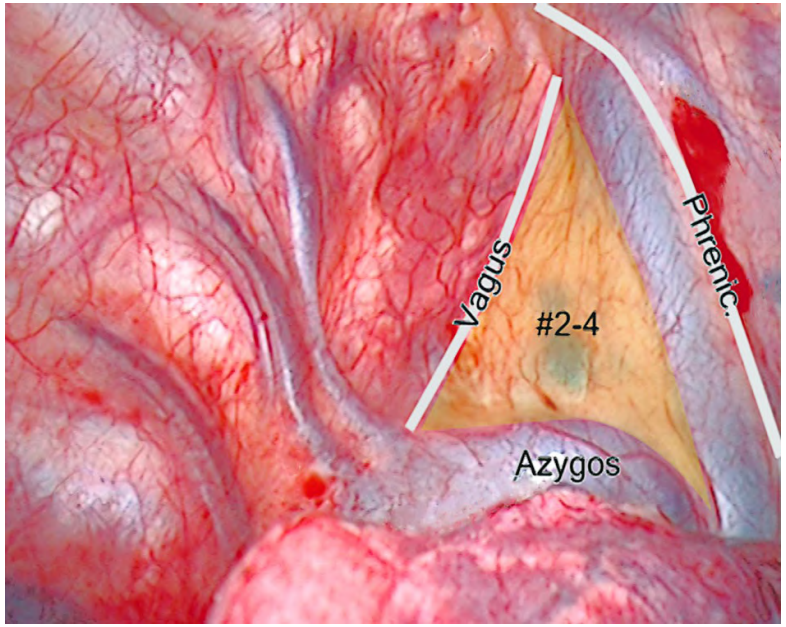


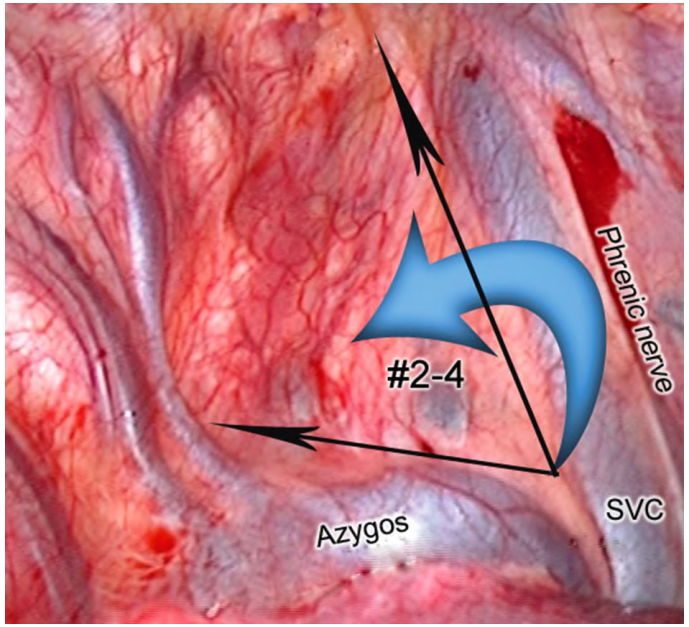


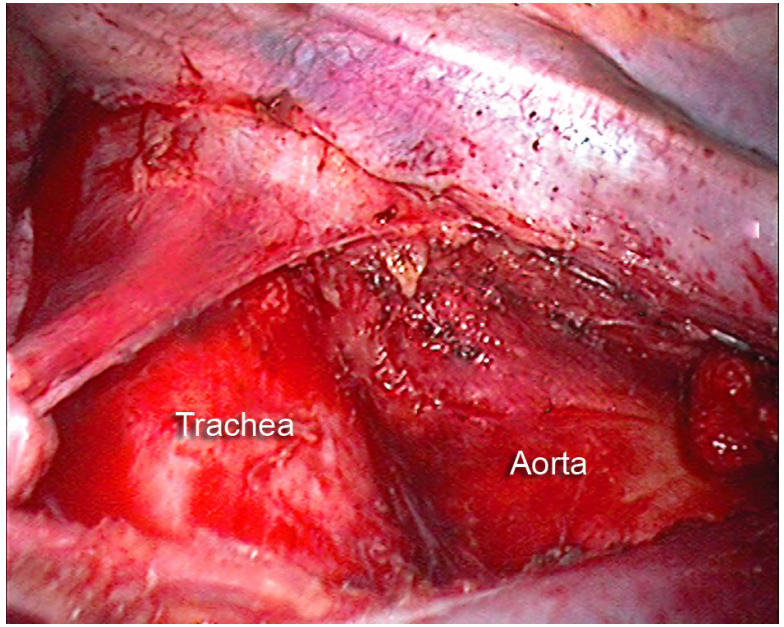
Nelson et al. 2015

Pulmonary resection: Technique (right)

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



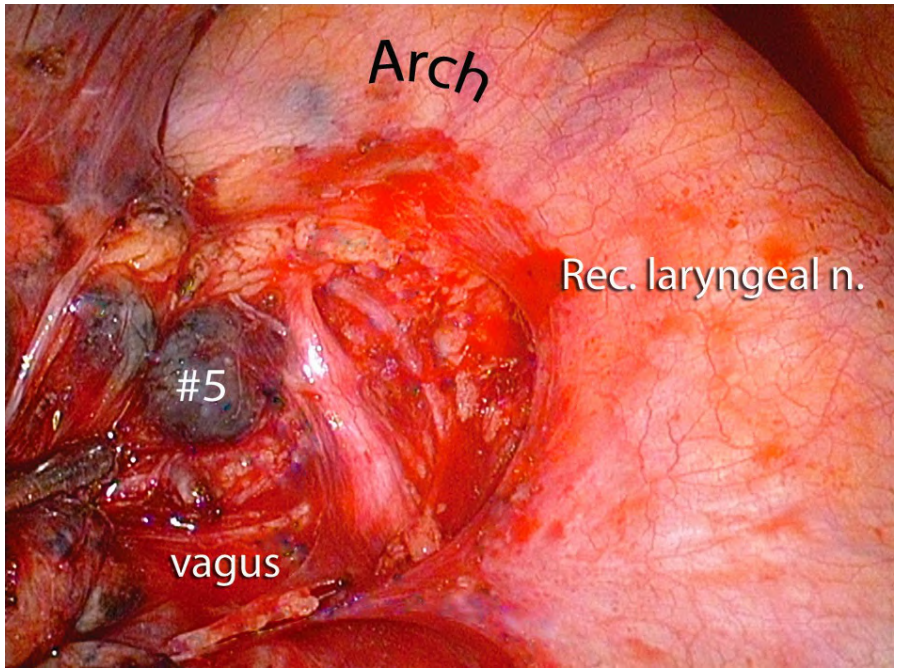




Nelson et al. 2015

Pulmonary resection: Technique (left)

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



Nelson et al. 2015

Standard 5.8: Pulmonary Nodal Staging

1 hilar lymph node

1 + 3 RULE

3 mediastinal lymph nodes

(3 distinct stations)

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: ___
Specify nodal station(s) involved (applicable only if node(s) involved): _____
___ 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): _____

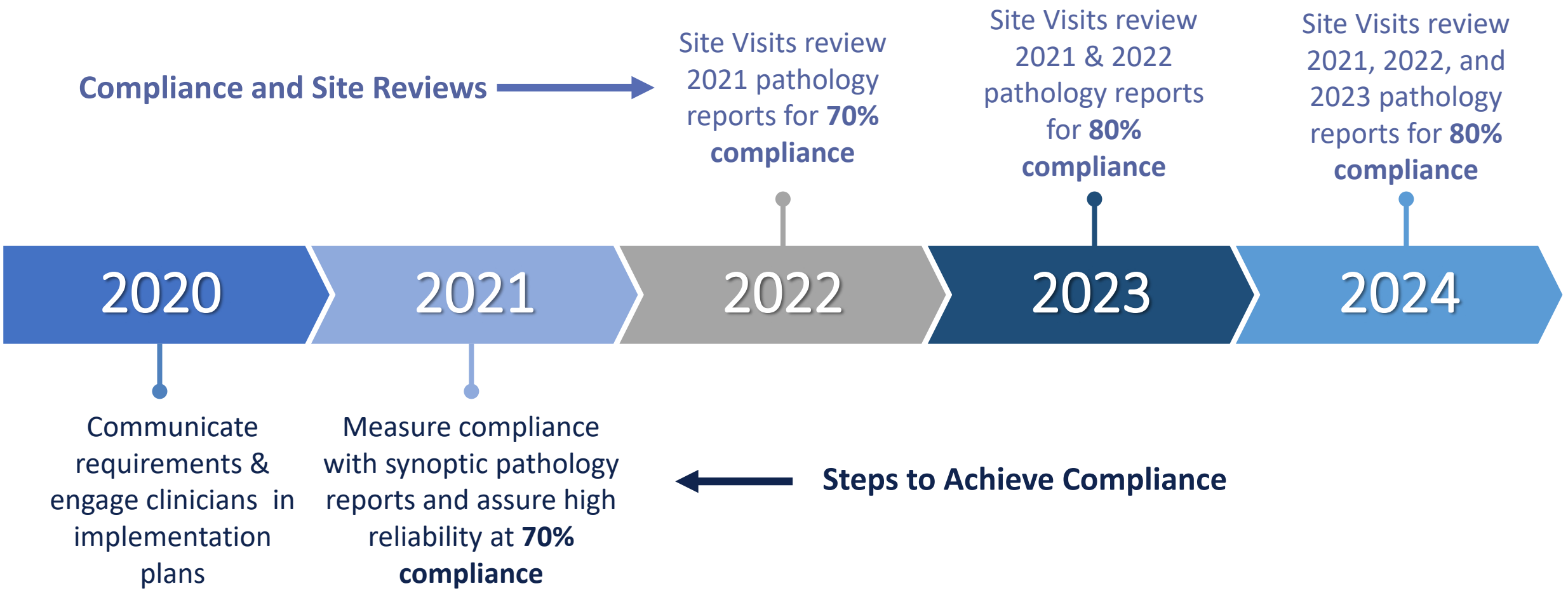
Number of Lymph Nodes Examined: ____
___ Number cannot be determined (explain): _____
Specify nodal station(s) examined: _____

How will compliance be assessed?

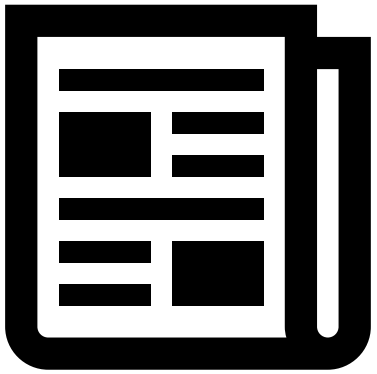
- A site visit reviewer will review the **standardized synoptic pathology reports** for curative intent pulmonary resections

- By 2022, sites will be expected to have **70% compliance**

Timeline to Achieve Compliance: Standard 5.8

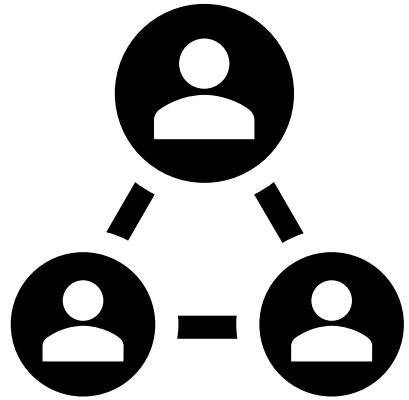


How Can Programs Optimize Compliance?



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

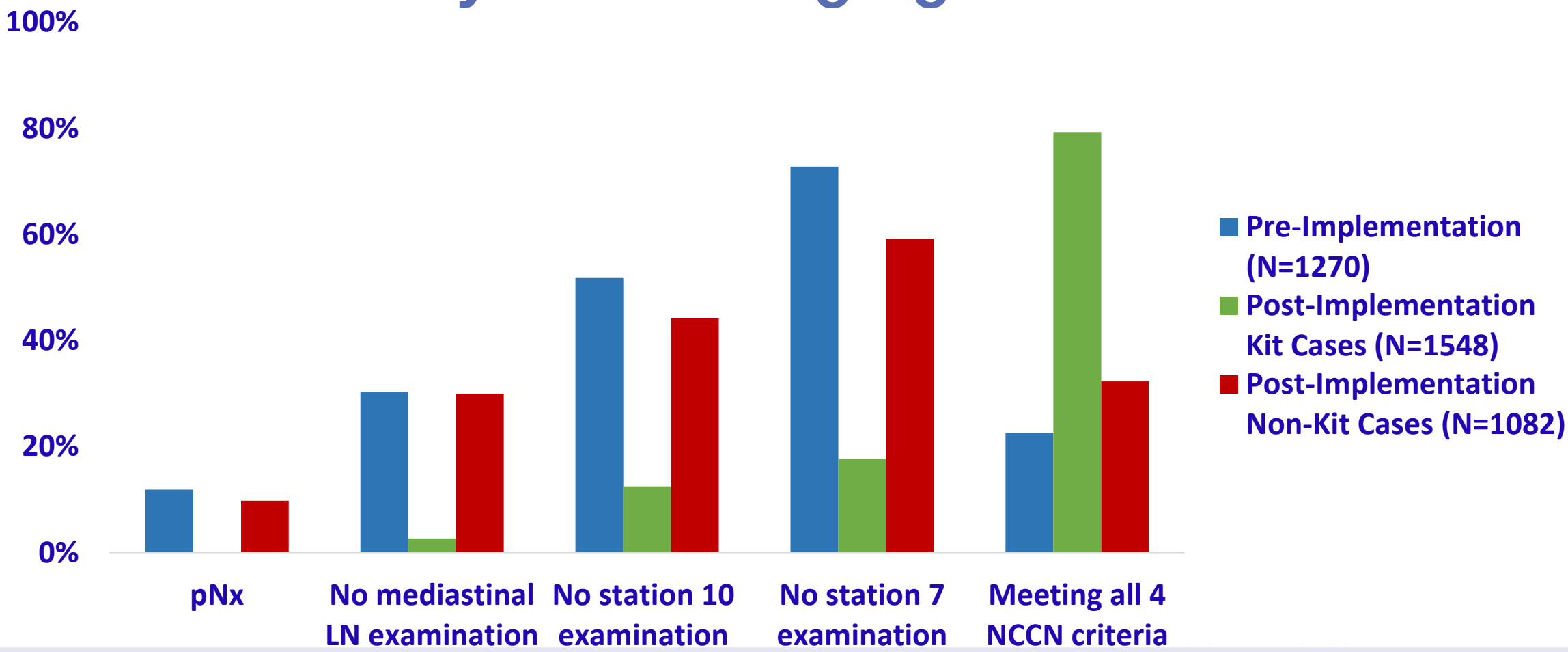
Concordance in surgeons' and pathologists' reporting

39% → 80%

Osarogiagbon et al, 2012

Osarogiagbon et al, 2015

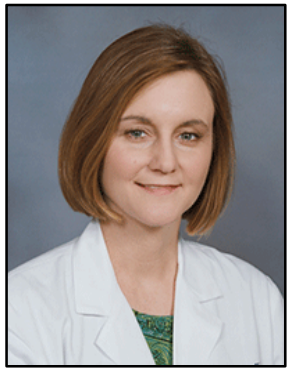
Standardized Collection Kits Improve Compliance With Pulmonary Nodal Staging



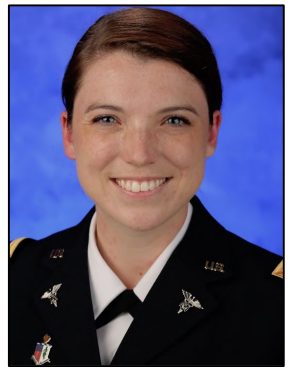
Courtesy of Dr. Osarogiagbon

Multidisciplinary Panel

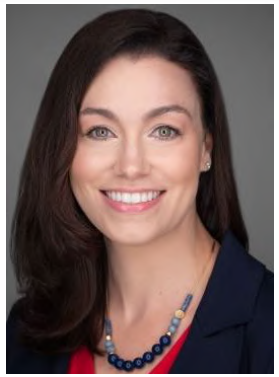
Michael Archer, DO
SUNY Upstate
Thoracic Surgery



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

Commission on Cancer Operative Standards 2020

Standard 5.8: Pulmonary Resection

Summary

Operation

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

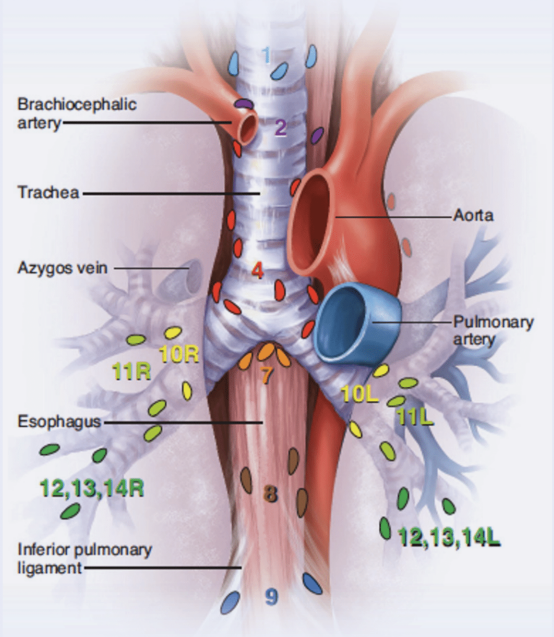
Resect nodal stations from:

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

facs.org/**cssp**

Commission on Cancer®

Cancer Surgery Standards PROGRAM
AMERICAN COLLEGE OF SURGEONS

American College of Surgeons
Inspiring Quality: Highest Standards, Better Outcomes
100+years

Special Thanks

Moderator:
Michael Archer, DO

Panelists:
Kimberly Absher, MD
Timothy Mullett, MD, FACS
Raymond Osarogiagbon, MD
Lexy Adams, MD
Jennie Jones, MSHI-HA, CHDA, CTR

ACS Cancer Programs Staff:
Asa Carter: Senior Manager, Education & Training
Chantel Ellis: Administrator, Education & Training
Andrea Scrementi: Meetings and Events Administrator

CSSP Leadership & Staff:
CSSP Chair: Matthew H.G. Katz, MD FACS
CSSP Vice-Chair: Kelly K. Hunt, MD, FACS
CSSP Senior Manager: Amanda Francescatti, MS
CSSP Program Coordinator: Linda Zheng

CoC Leadership:
CoC Chair: Timothy W. Mullett, MD, FACS

CSSP Education Committee

Questions? *cssp@facs.org*

Resources

ACS Cancer Surgery Standards Program (CSSP)

www.facs.org/cssp

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, Dooms 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.