LUNG CANCER
FCDS 2013 Educational Webcast Series
September 19, 2013

Mayra Espino, BA, RHT, CTR
Steven Peace, BS, CTR
FCDS QC Staff

Presentation Outline
- Overview of Lung Cancer
- Signs, Symptoms and Risk Factors
- Anatomy of the Lungs
- Histologic Types of Lung Cancer
- New Lung Cancer Screening Recommendations
- Multiple Primary and Histology Coding Rules Refresher
- Collaborative Stage Data Collection System (CSv02.04)
- C.S. Site Specific Factors
- NCCN/ASCO Treatment Guidelines by Stage
- Text Documentation

Overview
Definition of Lung Cancer

Lung cancer or bronchogenic cancer is defined as a malignant tumor of the lung arising within the wall or epithelium of the bronchus.

Incidence and Mortality Lung Cancer

Estimated Number* of New Cancer Cases and Deaths by Sex
US & FL - 2013

- 228,190 new lung cancers
- 118,080 new Male lung cancer
- 110,110 new Female lung cancer
- 17,960 FL new cases lung cancer

- 159,480 lung cancers deaths
- 87,260 Male lung cancer deaths
- 72,220 Female lung cancer deaths
- 12,070 FL lung cancers deaths

*ACS Cancer Facts & Figures 2013
Lung Cancer Kills More People Than...
Lung Cancer Survival by Stage

- The 5-year survival for small cell lung cancer (6%) is lower than that for non-small cell (18%).

- 5-year survival rate for all stages combined is only 16%.

- Only 15% of lung cancers are diagnosed at a localized stage, for which the 5-year survival rate is 52%.

- 1-year relative survival for lung cancer increased from 37% in 1975-1979 to 44% in 2005-2008, largely due to improvements in surgical techniques and combined therapies.

Cancer Facts & Figures 2013
Geographic Patterns in Lung Cancer Death Rates* by State, US, 2005-2009: Males

Geographic Patterns in Lung Cancer Death Rates* by State, US, 2005-2009: Females

Appalachia and Major U.S. Rivers

Poverty Rates in Appalachia, 2005-2009
http://arc.gov

Mississippi River, Ohio River, Missouri River
http://voanews.com

*Age adjusted to the 2000 US standard population.
Signs and Symptoms

Symptoms may include persistent cough, sputum streaked with blood, shortness of breath, wheezing, chest pain, voice change, and recurrent pneumonia or bronchitis, hoarseness, pain when swallowing, high pitched sound when breathing.

* Persistent cough
* Unexplained dyspnea (SOB)
* Sputum with blood (Hemoptysis)
* Excessive sputum production
* Weight loss & fatigue & anorexia
* Hoarseness or change in voice
* Shoulder or other joint pain
* Chest, back or arm pain
* Recurring episodes of pleural effusion, pneumonia or bronchitis

U.S. Adult Smoking Rates

http://www.cdc.gov
Signs and Symptoms

Risk Factors

Tobacco Use
Asbestos

- Asbestos and lung cancer
- Asbestos and mesothelioma

http://www.mesothelioma.com/asbestos-cancer

Air and Water Pollution

- High levels of air pollution
- Drinking water containing high levels of arsenic

http://abcnews.go.com/Health/story?id=47265354

Viruses

- Implicated viruses include Human Papilloma Virus (HPV), Simian Virus (SV40), cytomegalovirus (CMV).
- These viruses may effect the cell cycle allowing uncontrolled cell division

http://abcnews.go.com/Health/story?id=47265354
Lung Anatomy

- C34.0 Main bronchus
- C34.1 Upper lobe, lung
- C34.2 Middle lobe, lung (right lung only)
- C34.3 Lower lobe, lung
- C34.8 Overlapping lesion
- C34.9 Lung, NOS

* Source: SEER Training: ICD-O-3 Site Codes
Lung Anatomy

The **hilum** is the space in each lung where the bronchus and blood vessels enter the lung.

The **apex** is the rounded area at the top of each lung.

---

Lung Anatomy

The **lingula**, found only in the left lung, is a projection of the upper lobe of the left lung thought to be a remnant of an ancient middle lobe of the left lung.

---

Lung Anatomy

**Great Vessels**

Source: Springer Images. Figure adapted from Atlas of Human Anatomy, 2nd ed. Contents of the superior and middle mediastinum. http://www.springerimages.com/Images/MedicineAndPublicHealth/1-13507-0186-9_2-2_4
• Code laterality for all lung sub-sites except carina
• Code the laterality for the lung in which the tumor originated
• Count cancer in both lungs as separate primaries unless metastasis from one side to the other is documented
• Always check that multiple pulmonary nodules are not metastasis from another primary site

• If both lungs have nodules or tumors and the lung of origin is not known, assign code 4.
• Diffuse bilateral lung nodules is the only time when laterality = 4
• Always check that multiple pulmonary nodules are not metastasis from another primary site

N1 Regional lymph nodes cannot be assessed
N0 No regional lymph node metastases
N1 Metastasis in ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes, including involvement by direct extension
N2 Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s)
N3 Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or subclavicular lymph node(s)

N1 is defined as metastasis in ipsilateral peribronchial (left side of diagram) and/or ipsilateral hilar lymph nodes (right side of diagram) and intrapulmonary nodes, including involvement by direct extension of the primary tumor.
N2 is defined as metastasis in ipsilateral mediastinal (left side of diagram) and/or subcarinal (right side of diagram).

N3 is defined as metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph node(s), whereas M1b is defined as distant metastasis (in extrathoracic organs), and this would include distant lymph nodes.

M1a is defined as separate tumor nodule(s) in a contralateral lobe, tumor with pleural nodules or malignant pleural (or pericardial) effusion. This is an image of tumor with malignant pleural effusion (graph nodes).
A tumor that falls short of completely traversing the elastic layer of the visceral pleura is defined as PL0. A tumor that extends through the elastic layer is defined as PL1 and one that extends to the surface of the visceral pleura as PL2. Extension of the tumor to the parietal pleura is defined as PL3.
World Health Organization (WHO) divides lung cancer into two major classes based on histology, therapy and prognosis.

The main classes of lung cancer are:
- Small Cell Lung Cancer (SCLC)
- Non-Small Cell Lung Cancer (NSCLC)
  - Large Cell Carcinoma
  - Large Cell Neuroendocrine Carcinoma
  - Squamous Cell Carcinoma
  - Adenocarcinoma
  - Bronchoalveolar Carcinoma

Small Cell Lung Carcinoma (SCLC)

- A type of lung cancer made up of small, round cells.
- Small cell lung cancer is less common than non-small cell lung cancer.
- Often grows more quickly.
- The name is often shortened to SCLC. Another name for SCLC is oat cell cancer because the cancer cells may look like oats (flat shape) when viewed under a microscope, grows rapidly and quickly spreads to other organs.

Non-Small Cell Lung Carcinoma (NSCLC)

- Non-Small Cell Lung Cancer is the most common type of Lung Cancer.
- Is usually grows and spreads more slowly than small cell lung cancer.
- Non-small cell lung cancer is divided into 3 subcategories:
  - Large cell carcinomas make up a group of cancers that look large and abnormal under a microscope.
  - Squamous cell carcinoma originates in the thin, flat cells that line the passages of the respiratory tract.
  - Adenocarcinoma begins in the cells that form the lining of the lungs.
Large Cell Carcinoma

- Incidence: 15%
- More often peripheral mass; either single or multiple masses; may be central
- Named for the large, round cells seen in this cancer
- Grow quickly and spread so usually are diagnosed in later stage

Squamous Cell Carcinoma

- Arises from bronchial epithelium (i.e. major bronchi), confined to bronchial wall with no lymph node metastases
- As growth occurs, cavitation may develop in lung distal to tumor. 
- Tumor may occur in apex & upper respiratory zone
- Growth rate: slow growth

Non-Small Cell Lung Carcinoma (NSCLC)

- Squamous or epidermoid (8073)- least likely to recur after resection; frequently a central or bronchial lesion
- Adenocarcinoma (8143)- usually slow-growing, but can metastasize widely; usually a peripheral lesion.
- Bronchioloalveolar (82503)- a very specific subtype adenocarcinoma with a distinct characteristic presentation and behavior. These tumors arise in the alveolar sacs of the lungs.
- Large cell carcinoma (81213)- also called giant cell or clear cell.
- Other subtypes of adenocarcinoma are acinar, papillary, and mucinous.
- Adenosquamous carcinoma (85603)- a specific histologic variant containing both epithelial (squamous and glandular (adeno-) cells.
- Carcinoids (8243)- arise from neuroectoderm (which generates supporting structures of lung).
- Melanomas, sarcomas and lymphomas also rise in the lung.
- Mesothelioma (9053)- linked to asbestos exposure; usually involves the pleura, not the lung.
- Non-small cell carcinoma (80463)- a general term used sloppily to separate small cell from the "non-small cell" types (such as adenocarcinoma, squamous cell carcinoma, large cell, etc.).

Only use 8046/3 when there is no other type of non-small cell carcinoma contained in the source documents.
Adenocarcinoma

- Majority Arises from terminal bronchioles
- Tend to be located in the periphery of the lung
- Cancer that begins in the cells that line the alveoli and make substances such as mucus.
- 80% contain mucin
- A slow growing cancer that can take years to develop into invasive cancer
- Most common subtype in nonsmokers
- In US, 50% of lung carcinomas in women are adenocarcinoma

Incidence: >40%

Clinical features
- May be associated with scarring
- Grows slower than SCC
- 5 year survival:
  - Stage I - 69%
  - Stage II - 40%
  - Stage IIIA - 17%
  - Stage IIIB - 5%
  - Stage IV - 8%

Gross description
- Poorly circumscribed gray-yellow lesions, single or multiple, may be mucoid
- 77% involve visceral pleura producing puckering/pleural retraction, 65% are peripheral
- Usually not cavitary
- Often associated with a peripheral scar or honeycombing (scar appears to be response to tumor)
- Rarely spreads into pleural space to coat visceral and parietal pleura and resemble diffuse mesothelioma

This is a peripheral adenocarcinoma of the lung

http://www.pathologyoutlines.com
Bronchoalveolar Adenocarcinoma

Travis Classification

- Adenocarcinoma in situ (AIS) (formerly Bronchoalveolar Carcinoma - BAC) which is a pre-invasive lesion
- Minimally invasive adenocarcinoma (MIA) <3cm nodule with <5mm invasion
- These neoplasms have a better prognosis than other lung cancers.
- Composed of columnar cells that proliferate along the framework of alveolar septae, a so-called "lepidic" growth pattern. The cells are well-differentiated.

http://www.pathologyoutlines.com

Under the microscope, an image such as that on the left shows thickened walls of the gas-exchanging sacs in the lungs called alveoli.

The classic description of this pattern is lepidic, meaning "scale-like."

X-rays and other imaging shows a picture that looks remarkably like pneumonia, as shown on the right.

Patients with BAC are routinely diagnosed as having pneumonia for weeks or months before a diagnosis of cancer is actually established.

Lung Cancer Histology Groups

http://stageiv.lies.wordpress.com
**Lung Cancer Screening**

*Low Dose Helical CT (LDCT or also known as spiral CT)*


---

**Lung Cancer Screening**

*August 2011 - National Lung Screening Trial (NLST) Results*
*Screening with low-dose spiral CT compared to CXR reduced lung cancer deaths among older heavy smokers by 20%.*
*Improved detection of lung cancer at early stage is key to increased survival and improved mortality.*
*Weigh Benefits/Risk of lung cancer screening using CT scan*

**Recommend Screening in High Risk Population:**
*Current/Former Smoker*
*Age 55-74 Years*
*Smoking History of at least 20-30 pack-years (varies by organization)*
*No personal history of lung cancer*

**Frequency of Screening - Annual**

---

**Lung Cancer Screening**

*Endorsement/Adoption of Guideline*
*American Cancer Society (ACS)*
*American Lung Association (ALA)*
*American College of Chest Physicians (ACCP)*
*American Association for Thoracic Surgery (AATS)*
*ASCO/NCCN Clinical Practice Guidelines (ASCO/NCCN)*
*United States Preventative Services Task Force*
ALA Developing an Educational Portfolio for Patients to Explain:

- The difference between a screening process and a diagnostic test
- Cancer Screening is testing for cancer before there are any symptoms
- The benefits, risks and costs (emotional, physical and economic)
- That not all lung cancers will be detected through use of low dose CT scanning

ALA issued a Call to Action for Hospitals and Screening Centers to:

- Establish ethical policies for advertising/promoting lung cancer screening services
- Develop educational materials to assist patients in having thoughtful discussions between patients and physicians regarding lung cancer screening
- Provide lung cancer screening services with access to multidisciplinary teams that can deliver the needed follow-up for evaluation of nodules.
Lung Cancer Workup

Chest X-ray vs. CT

- This X-ray shows a single lesion located in the upper right lung, which is not clearly visible on the left side of the bronchoscope.
- The CT scan shows a single lesion in the right lung, clearly visible in the right side of the bronchoscope.

If a mediastinal mass or mediastinal adenopathy is reported on x-ray or mediastinoscopy, assume that mediastinal lymph nodes are involved.

http://www.urmc.rochester.edu/encyclopedia

http://www.cancernews.com
Biomarkers

* Data show that targeted therapy is potentially very effective in patients with specific gene mutations or rearrangements.

* Several biomarkers have emerged as prognostic (patient survival) and predictive (therapeutic efficacy) for NSCLC.
Lung Cancer Workup  
Biomarkers

- EGFR  
  Epidermal Growth Factor Receptor

- ERCC1  
  Endonuclease of the nucleotide excision repair complex

- K-ras oncogene

- RRM1  
  Regulatory subunit of ribonucleotide reductase

- EML4-ALK Fusion Oncogene

---

Lung Cancer Workup  
Immunohistochemical Stains (IHC)

- TTF-1 is very important in distinguishing primary from metastatic adenocarcinoma.

- Most primary lung adenocarcinomas are TTF-1 positive.

- Squamous cell lung carcinomas are often TTF-1 negative

- Other squamous cell IHC tests: p63 positive and cytokeratin positive

  - These stains are negative for mesothelioma.

- Thyroglobulin is present in tumors from patients with thyroid cancer, but it is negative in lung cancer tumors.

- Pulmonary adenocarcinoma is usually CK7+ and CK20-, whereas metastatic adenocarcinoma of the colorectum is usually CK7- and CK20+.

NCCN Guidelines

---

Lung Cancer Workup  
Small Cell Lung CA Biomarkers

- Nearly all SCLCs are immunoreactive for keratin, epithelial membrane antigen, and thyroid transcription factor-1 (TTF-1).

- Most SCLCs also stain positive for markers of neuroendocrine differentiation, including chromogranin A, neuron-specific enolase, neural cell adhesion molecule (NCAM; CD56), and synaptophysin.

- However, these markers alone cannot distinguish SCLC from NSCLC because approximately 10% of NSCLC will be immunoreactive for at least one of these neuroendocrine markers.
Lung Equivalent Terms: Definitions, Charts, Tables and Illustrations

Introduction

Use these tabs only with cases where Lung cancer.

Lung cancers may be broadly grouped into two categories: small cell and non-small cell cancers.

Small cell cancers are the most common type of lung cancer and are generally more aggressive.

Non-small cell cancers are less common but also more aggressive.

Terms and Definitions

Lung cancer terms, types, and stages may be daunting. This section will provide a brief overview of some common terms and definitions.

Lung cancer terms are often used interchangeably, so it's important to understand the context in which they are being used.

Lung cancer staging is done using the TNM system, which stands for Tumor, Node, and Metastasis.

TNM staging describes the size and spread of the tumor, as well as the presence of any metastatic lesions.

TNM staging is important for determining the appropriate treatment options for each patient.

Small cell cancer: A type of lung cancer that makes up about 15% of all lung cancers.

Small cell cancer is usually diagnosed in stages I and II, where it is localized to the lung.

Non-small cell cancer: A type of lung cancer that makes up about 85% of all lung cancers.

Non-small cell cancer is usually diagnosed in stages III and IV, where it has spread beyond the lung.

Stages of Lung Cancer

Stage I: The cancer is localized to the primary tumor and none of the regional lymph nodes are involved.

Stage II: The cancer has spread to the regional lymph nodes, but not to distant sites.

Stage III: The cancer has spread to the regional lymph nodes and distant sites.

Stage IV: The cancer has spread to distant sites, usually to the liver, brain, or bone.

Surgical Treatment

Surgery is often used to remove early-stage lung cancers.

The procedure may involve a minimally invasive approach, such as video-assisted thoracic surgery (VATS), or an open thoracotomy.

Surgical treatment may also be used as part of a multimodal approach, which may include chemotherapy and radiation therapy.

Chemotherapy

Chemotherapy is a type of treatment that uses drugs to kill cancer cells.

Chemotherapy is often used as part of a multimodal approach, which may include surgery and radiation therapy.

Radiation Therapy

Radiation therapy uses high-energy radiation to kill cancer cells.

Radiation therapy can be used as part of a multimodal approach, which may include surgery and chemotherapy.

Targeted Therapy

Targeted therapy is a type of treatment that uses drugs to target specific abnormalities in the cancer cells.

Targeted therapies may be used as part of a multimodal approach, which may include surgery, chemotherapy, and radiation therapy.

Staging and Prognosis

The stage of a lung cancer will affect the chosen treatment options.

Staging will also help determine the patient's prognosis, or likelihood of survival.

Survival rates vary depending on the stage of the cancer and the type of treatment used.

Conclusion

Lung cancer is a complex disease that requires a comprehensive approach to treatment.

Understanding the different types, stages, and treatment options is crucial for optimizing outcomes for patients with lung cancer.
Lung MPH Rules
Histology Coding Rules
CS and TNM

T1 is defined as a tumor 3 cm or less in greatest dimension, surrounded by lung or visceral pleura, without bronchoscopic evidence of invasion past pleural line. T1a is defined as a tumor 2 cm or less in greatest dimension (upper left). T1a is also defined as a superficial spreading tumor of any size with its invasive component limited to the bronchial wall, which may extend proximally to the main bronchus (lower left). T1b is defined as a tumor more than 2 cm but 3 cm or less in greatest dimension (right).

CS and TNM
Can you please clarify the difference between the two codes. For example, you are staging a case based on x-ray findings and the MD states there is a mass in RUL. He gives no further information on extension. I would think code 100 would apply. If so, when would be the proper time to use code 300?

Code 100 is generally used when there is a tumor size and the lesion/mass is clearly confined to the lung. Code 300 would be used when you have limited information, such as this case. Do you have a size from the x-ray or any other type of report?

If you can find a size, then you could use 100 with that size. Based on the information you have given, you would not get a T value on this case unless you can find a tumor size.

Code 300 would also be used if the only information you had was “tumor confined to lung.”
15mm mass in left lung apex highly suspicious for malignancy.

There is massive left sided pleural effusion with atelectasis and collapse of the left lung.

Would I use code 550 for CS Ext if atelectasis is caused by pleural effusion and the pleural effusion is malignant?

Extension code 550 is the appropriate code, based on the atelectasis and the collapse of the left lung.

The pleural effusion, now coded in CS Mets at DX, would be code 15 since malignant pleural effusion is on the same side as the primary malignancy.

Atelectasis

The collapse or closure of the lung resulting in reduced or absent gas exchange (not same as pneumothorax)

May affect part or all of one lung

May be acute or chronic

Respiratory distress

Bronchopneumonia

Acute inflammation of the walls of the bronchioles

Characterized by multiple foci of isolated, acute consolidation in one or more pulmonary lobules

Consolidation is the swelling (edema or inflammatory exudate) or hardening of the lung tissue
A tumor that fails short of completely traversing the elastic layer of the visceral pleura is defined as PL0. A tumor that traverses through the elastic layer is defined as PL1, and one that extends to the surface of the visceral pleural as PL2. Extension of the tumor to the parietal pleura is defined as PL3.

**Layers of the Pleura**

**Pleural and Pericardial Effusion**

**CS and TNM**

T3 includes separate tumor nodule(s) in the same lobe. T4 includes separate tumor nodule(s) in a different ipsilateral lobe.
T4 is defined as tumor of any size that invades any of the following: mediastinum, heart, great vessels (upper right), thoracic (upper left), recurrent laryngeal nerves, esophagus (lower right), vertebral body (lower left), carina (middle left and right), separate tumor nodule(s) in a different ipsilateral lobe.

T4 includes tumor invasion of the superior vena cava and heart.
CS and TNM

T4 includes tumor invasion of the aorta, esophagus, and vertebral body.

CS TS/Ext Eval

CS Lymph Nodes
**CS Lymph Nodes**

**REGIONAL LYMPH NODES**

* **NX** Regional lymph nodes cannot be assessed
* **N0** No regional lymph node metastases
* **N1** Metastasis in ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes, including involvement by direct extension
* **N2** Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s)
* **N3** Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph node(s)

---

**CS Lymph Nodes**

**REGIONAL LYMPH NODES**

* **NX** Regional lymph nodes cannot be assessed
* **N0** No regional lymph node metastases
* **N1** Same side
  * Direct Extension
  * Hilar lymph node(s)
  * Intrapulmonary lymph node(s)
  * Peribronchial lymph node(s)
* **N2** Same side
  * Mediastinal lymph node(s)
  * Subcarinal lymph node(s)
* **N3** Contralateral
  * Hilar lymph node(s)
  * Mediastinal lymph node(s)
  * Any scalene lymph node(s)
  * Any supraclavicular lymph node(s)

---

Additional information:

- N2 Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s)
- N3 Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph node(s)

---

**CS Site-Specific Factor 1**

Separate Tumor Nodes - Ipsilateral Lung

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>999</td>
<td>No separate tumor nodes listed</td>
</tr>
<tr>
<td>392</td>
<td>Separate tumor nodes in postbronchial, same side</td>
</tr>
<tr>
<td>492</td>
<td>Separate tumor nodes in postbronchial, different side</td>
</tr>
<tr>
<td>592</td>
<td>Separate tumor nodes, postbronchial, same side and different side</td>
</tr>
<tr>
<td>792</td>
<td>Separate tumor nodes, postbronchial, unilateral or different side</td>
</tr>
<tr>
<td>999</td>
<td>Separate tumor nodes, postbronchial, unilateral or different side, not applicable for this site</td>
</tr>
<tr>
<td>999</td>
<td>Separate tumor nodes, postbronchial, not applicable for this site</td>
</tr>
<tr>
<td>199</td>
<td>Separate tumor nodes, postbronchial, documented in patient record</td>
</tr>
</tbody>
</table>

---

http://www.chestvascularsurgerypc.com/images/haruka.jpg
A tumor that falls short of completely traversing the elastic layer of the visceral pleura is defined as PL0. A tumor that extends through the elastic layer is defined as PL1 and one that extends to the surface of the visceral pleura as PL2. Extension of the tumor to the parietal pleura is defined as PL3.
Small Cell Lung Cancer

<table>
<thead>
<tr>
<th>LIMITED STAGE</th>
<th>EXTENSIVE STAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any T</td>
<td>Any T</td>
</tr>
<tr>
<td>Any N</td>
<td>Any N</td>
</tr>
<tr>
<td>MO</td>
<td>M1a</td>
</tr>
<tr>
<td>Confined to Chest</td>
<td>Includes: T3-4 due to multiple lung nodules or tumor/nodal volume too large to be encompassed in a tolerable radiation plan</td>
</tr>
</tbody>
</table>

Exception: T3-4 due to multiple lung nodules that do not fit in a tolerable radiation field

Small Cell Lung Cancer

<table>
<thead>
<tr>
<th>LIMITED STAGE</th>
<th>EXTENSIVE STAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Combination chemotherapy and radiation therapy to the chest.</td>
<td>* Combination chemotherapy.</td>
</tr>
<tr>
<td>* Combination chemotherapy for patients with lung problems or who are very ill.</td>
<td>* Radiation therapy to the brain, spine, bone, or other parts of the body where the cancer has spread, as palliative therapy to relieve symptoms and improve quality of life.</td>
</tr>
<tr>
<td>* Surgery followed by chemotherapy or chemotherapy plus radiation therapy to the chest.</td>
<td>* Clinical trials of new chemotherapy treatments.</td>
</tr>
<tr>
<td>* Clinical trials of new chemotherapy, surgery, and radiation treatments</td>
<td></td>
</tr>
</tbody>
</table>
Lung Treatment Options by Stage

Stage I Non-Small Cell Lung Cancer

- Surgery (wedge resection, segmental resection, sleeve resection, or lobectomy).
- External radiation therapy (for patients who cannot have surgery or choose not to have surgery).
- A clinical trial of chemotherapy or radiation therapy following surgery.
- A clinical trial of surgery followed by chemoprevention.
- A clinical trial of treatment given through an endoscope, such as photodynamic therapy (PDT).

Stage II Non-Small Cell Lung Cancer

- Surgery (wedge resection, segmental resection, sleeve resection, lobectomy, or pneumonectomy).
- Chemotherapy followed by surgery.
- Surgery followed by chemotherapy.
- External radiation therapy (for patients who cannot have surgery or choose not to have surgery).
- A clinical trial of radiation therapy following surgery.
## Stage (TNM Staging Criteria) and Standard Treatment Options

<table>
<thead>
<tr>
<th>Stage (TNM Staging Criteria)</th>
<th>Standard Treatment Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occult NSCLC</td>
<td>Surgery</td>
</tr>
<tr>
<td>Stage II NSCLC</td>
<td>Surgery, Endobronchial therapies</td>
</tr>
<tr>
<td>Stage I NSCLC</td>
<td>Surgery, Radiation therapy</td>
</tr>
<tr>
<td>Stage II NSCLC</td>
<td>Surgery, Neoadjuvant chemotherapy, Adjuvant chemotherapy, Radiation therapy</td>
</tr>
</tbody>
</table>

### Non-Small Cell Lung Cancer

**Stage IIIA Non-Small Cell Lung Cancer**
- Surgery followed by chemotherapy.
- Chemotherapy followed by surgery.
- Surgery followed by chemotherapy combined with radiation therapy.
- Surgery followed by radiation therapy.
- A clinical trial of new combinations of treatments

### Lung Treatment Options by Stage

**Cancer Cannot be Removed w/ Surgery**
- Chemotherapy and radiation therapy given as separate treatments over the same period of time.
- External radiation therapy alone (for patients who cannot be treated with combined therapy, as palliative treatment to relieve symptoms / improve quality of life).
- Internal radiation therapy or laser surgery, as palliative treatment to relieve symptoms and improve the quality of life.
- A clinical trial of new combinations of treatments
### Non-Small Cell Lung Cancer

<table>
<thead>
<tr>
<th>Stage (TNM Staging Criteria)</th>
<th>Standard Treatment Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage IIIA NSCLC</strong></td>
<td></td>
</tr>
<tr>
<td>Resected or resectable disease</td>
<td>Surgery</td>
</tr>
<tr>
<td>Unresectable disease</td>
<td>Radiation therapy</td>
</tr>
<tr>
<td>Superior sulcus tumors</td>
<td>Radiation therapy</td>
</tr>
<tr>
<td>Chest wall tumors</td>
<td>Surgery</td>
</tr>
<tr>
<td>Unresectable disease</td>
<td>Radiation therapy</td>
</tr>
<tr>
<td>Surgery</td>
<td>Adjuvant therapy</td>
</tr>
<tr>
<td>Neoadjuvant therapy</td>
<td>Adjuvant therapy</td>
</tr>
</tbody>
</table>

#### Standard Treatment Options
- Surgery
- Neoadjuvant therapy
- Adjuvant therapy
- Radiation therapy
- Chemoradiation therapy
- Radiation therapy alone
- Radiation therapy and surgery

**Stage IIIB NSCLC**
- Sequential or concurrent chemotherapy and radiation therapy
- Chemotherapy followed by surgery (for selected patients)
- Radiation therapy alone

**Stage IV NSCLC**
- Combination chemotherapy
- Combination chemotherapy with bevacizumab or cetuximab
- Epidermal growth factor receptor tyrosine kinase inhibitors (for patients with EGFR mutations)
- Maintenance therapy following first-line chemotherapy
- External-beam radiation therapy (for palliation)
- Endobronchial laser therapy and/or brachytherapy (for obstructing lesions)

### Coding Lung Cancer Surgery

**Florida Cancer Data System**

**Data Acquisition Manual 2013**
Surgical Removal

Wedge or Segmental Resection
Removal of one or more lung segment

Lobectomy
Removal of entire lobe of the lung

Pneumonectomy
Removal of entire lung

Note: If a lobectomy was performed, assume that the tumor was more than 2 cm distal to the carina.

Surgery Codes DAM Appendix F
Text Documentation

- Avoid non-standard text
- Keep it simple
- No repetition
- Justify coded items
- FCDS DAM Appendix L

- DEFENSIVE ABSTRACTING
- CYA-Cover your abstract

Support ALL codes and dates with text - primary site, histology, staging workup, tumor size, nodal status, stage of disease, first course of RX

Text Documentation

- Date(s) - include date(s) references - this allows the reviewer to determine event chronology
- Date(s) - note when date(s) are estimated [i.e. Date of DX 1/15/2011 (est.)]
- Location - include facility/physician/other location where the event occurred (test/study/treatment/other)
- Abbreviated text, be brief but complete - use abbreviations correctly.
- Text fields, If information is missing from the record, state that it is missing type not available (NA)

- Edit your text documentation
- DO NOT REPEAT INFORMATION from section to section
- Operative text - DO not enter the pathology info in the Op TEXT
  Ex: 8/26/12 ABC Facility Liver biopsy this should be part of pathology
- Pathology text - Example 8/26/12 ABC Facility Liver biopsy metastatic adenocarcinoma
References

* National Cancer Institute
* FCDS Data Acquisition Manual
* American Society of Clinical Oncology
* American Society for Radiation Oncology
* 2013 Cancer Facts and Figures, American Cancer Society
* Collaborative Stage Data Collection System
* 2007 MPH Rules for Solid Tumors
* National Lung Screening Trial (NLST)

Questions

http://media.mlive.com/health_impact/photo/6057757_large.jpg