Lung Cancer Screening: Building A Program of Excellence

Deborah Meyers RN, BSN, OCN
May 3, 2017
Objectives

• Health care professionals will demonstrate knowledge of lung cancer incidence and risk factors.
• Health care professionals will identify evidence based lung cancer screening recommendations.
• Health care professionals will describe elements of a screening program of excellence.
Nebraska Methodist Hospital

- 423 bed acute care hospital serving the Metro Omaha area
- Over 2,000 full time employees
- Over 400 physicians on active staff
- Magnet designation for nursing excellence
- Estabrook Cancer Center received the CoC 2016 Outstanding Achievement Award
- Lung Cancer Screening program is a
  - ACR screening center of excellence
  - LCA screening center of excellence
LUNG CANCER FACTS

• Lung Cancer is the #1 leading cause of cancer death in the United States

• Second most common cancer after:
  • Women – breast cancer
  • Men – prostate cancer
### Estimated Leading Sites of New Cancer Cases and Deaths 2017

<table>
<thead>
<tr>
<th></th>
<th>New Cases</th>
<th>Estimated Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>161,360</td>
<td>26,730</td>
</tr>
<tr>
<td>Breast</td>
<td>255,180</td>
<td>41,070</td>
</tr>
<tr>
<td>Lung</td>
<td>222,500</td>
<td>155,870</td>
</tr>
<tr>
<td>Colon</td>
<td>135,430</td>
<td>50,260</td>
</tr>
</tbody>
</table>

American Cancer Society, Cancer facts and Figures 2017
## Most Common Cancers: 5 year Survival

<table>
<thead>
<tr>
<th></th>
<th>1960-63</th>
<th>2006-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>8%</td>
<td>17.7%</td>
</tr>
<tr>
<td>Colon</td>
<td>43%</td>
<td>66%</td>
</tr>
<tr>
<td>Breast</td>
<td>63%</td>
<td>91%</td>
</tr>
<tr>
<td>Prostate</td>
<td>50%</td>
<td>99%</td>
</tr>
</tbody>
</table>

SEER DATA, National Cancer Institute 2016
Trends in death rates, 1930-2014
Males
Per 100,000, age adjusted to the 2000 US standard population.

Data Sources: National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention, 2016
© 2017 American Cancer Society
CancerStatisticsCenter.cancer.org
20,679* Physicians say "LUCKIES are less irritating"

"It's toasted"

Your Throat Protection against irritation against cough
Trends in death rates, 1930-2014
Females
Per 100,000, age adjusted to the 2000 US standard population.

Data Sources: National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention, 2016
© 2017 American Cancer Society CancerStatisticsCenter.cancer.org
“Cigarette smoking is a health hazard of sufficient importance in the United States to warrant immediate action,” Surgeon General, 1964
"What are you insane? Those things'll kill you!"
SMOKING

• Smoking is the single most preventable cause of premature death in the U.S.
• Smokers die 7 years earlier than nonsmokers
• 80% OF ALL LUNG CANCERS ARE ATTRIBUTED TO SMOKING
• Risk increases with quantity, and duration

• American Cancer Society 2017
Smoking

• **Primary prevention is key**

• 70% of all smokers have expressed a desire to stop smoking and have the potential to quit

• As health care providers we all have a responsibility to identify tobacco users at each visit and intervene with those who are willing to quit.
OTHER RISK FACTORS

- Passive tobacco exposure
- Occupational exposure - Asbestos
- Environmental exposure - Radon

- Radiation exposure
- Previous tobacco related cancer
- Previous lung cancer
- Family history of lung cancer
- COPD

- American Cancer Society 2017
LUNG CANCER FIVE YEAR SURVIVAL RATES

– Local 55%
– Regional 28%
– Distant 4%
– Overall 17.7%

– SEER DATA, National Cancer Institute 2016
Stage at Time of Diagnosis

- Local: 16%
- Regional: 22%
- Distant: 57%
- Unknown: 5%

SEER DATA, National Cancer Institute 2016
Radiographic Evidence Linking Tobacco Use and Lung Cancer
NLST Finds Lung CT Screening Leads to Reductions in Mortality
A Key Turning Point

<table>
<thead>
<tr>
<th>Total Cases</th>
<th>26,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>72.7%</td>
</tr>
<tr>
<td>Positive</td>
<td>27.3%</td>
</tr>
<tr>
<td>Incidental Findings</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

20%
percentage reduction in lung cancer mortality in participants that received low-dose CT scans as compared to participants who received standard chest X-rays

Study in Brief: National Lung Cancer Screening Trial

- 2011 study to assess effectiveness of low-dose lung CT screening
- 53,454 current and former smokers were randomly assigned to be screened once a year for three years with low-dose CT or chest X-ray
- Participants who received low-dose CT scans had a 20% lower risk of dying from lung cancer than participants who received standard chest X-rays

### Timeline for CT Lung Cancer Screening Approval

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>June, 2011 NLST¹ releases initial findings for CT lung cancer screening for high-risk individuals</td>
</tr>
<tr>
<td>2013</td>
<td>June, 2013 USPSTF² releases draft recommendation</td>
</tr>
<tr>
<td>2014</td>
<td>April, 2014 MEDCAC³ recommends against Medicare coverage for lung screening</td>
</tr>
<tr>
<td>2015</td>
<td>January, 2015 lung cancer screening with commercial reimbursement began</td>
</tr>
<tr>
<td>2015</td>
<td>Feb 5, 2015 CMS approves LDCT</td>
</tr>
</tbody>
</table>

- A grade “B” by the USPSTF means that the USPSTF recommends the service and that there is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.
- The Affordable Care Act requires that all new private health insurance plans cover all preventative services that are rated at a grade “B” or higher by the USPSTF.

Source: Screening for Lung Cancer: USPSTF Recommendation Statement Dec 2013
• Grade B Recommendation
• The USPSTF has found moderate level evidence for
  • moderate level benefit for lung cancer screening with CT
• The population recommended to be screened annually
  – Ages 55 – 80
  – 30 pack years;
  – if former smoker quit within 15 years
  – no symptoms of lung cancer
• Coverage without a deductible, started January 2015 for
  – ACA identified plans
  – Co-pays for follow-up CTs and procedures
CMS Guidelines

- CMS has added a lung cancer screening counseling and shared decision making visit, screening for lung cancer LDCT, once per year, as a preventive service benefit if all criteria are met:
  - 55-77 years of age
  - 30 pack/year smoking
  - Current smoker or quit in the last 15 years
  - No symptoms of lung cancer
  - Shared decision making visit with PCP prior to screening
  - Written order for Low Dose Lung Cancer Screening that meets specific criteria as outlined in decision memo
  - All patient information entered in a national registry
  - Annual screening will need written MD order and screening discussion at annual visit
Guidelines For Hospitals

- Performs LDCT with volumetric CT dose index of $\leq 3.0 \text{ mGy}$.
- Utilizes a standardized lung nodule identification, classification and reporting system;
- Makes available smoking cessation interventions for current smokers; and
- Collects and submits data to a CMS-approved registry for each LDCT lung cancer screening performed.
  - Indication
  - Lung cancer LDCT screening – absence of signs or symptoms of lung cancer
  - Lung nodule identification, classification and reporting system
  - Smoking history
  - smoking cessation interventions Effective radiation dose
  - CT Dose volume
  - Screen date Initial screen or subsequent screen
  - Follow up and outcomes
“The number of deaths that potentially could be prevented and the number of life years gained with lung cancer screening using LDCT is greater than any new treatment modality offered over the last 2 decades”
Screening

- ACS Report JAMA Oncology Feb 2017
  - 3.3% in 2010
  - 3.9% in 2015
  - 262,700 out of 6.8 million people eligible for lung cancer screening in 2015 received it
Your Goal
Get People Screened!
Nebraska Cancer Plan

• Objective: To increase access to safe, responsible screening by increasing the number of lung cancer screening program that comply with best practice
  – Measurement: Number of CoC Cancer Centers who are Lung Cancer Screening Centers of Excellence through the Lung Cancer Alliance.
Nebraska Cancer Plan

• Current Centers of Excellence
  – Mary Lanning, Hastings NE
  – CHI Good Samaritan, Kearney NE
  – Nebraska Medicine, Omaha NE
  – Bryan, Lincoln NE
  – Methodist, Omaha NE
Screening Centers of Excellence

- American College of Radiologists
- Lung Cancer Alliance
• Dedicated to saving lives and advancing research for those at risk for lung cancer
  – Proved free education, support
  – Advocate for increased lung cancer research funding, access, coverage and reimbursement for screening, treatment, diagnostics and testing,
  – Conduct nationwide education campaigns about the disease, risk and early detection
Screening Programs of Excellence

• Programs Will provide
  – clear evidence based information on screening with risks and benefits.
  – Comply with best practices for controlling screening quality, radiation dose and diagnostic procedures such as those developed by the National Comprehensive Cancer Network (http://www.nccn.org) and the International Early Lung Cancer Action Program (http://www.ielcap.org).
Screening Programs of Excellence

- Works with a multi-disciplinary clinical team to carry out a coordinated continuum of care for screening, diagnosis and disease management based on best practices which include:
  - Experienced radiologists, pathologists and pulmonologists to evaluate the images and specimens obtained in screening and treatment work-ups;
  - Trained thoracic surgeons with experience in minimally invasive techniques who are committed to annual reporting on surgical outcomes
  - Oncologists and radiation oncologists experienced in the care of patients with lung cancer;
  - Nurses and support staff who will assist patients with coordination of their care within the continuum.
LCA Screening Programs of Excellence

• Will include a comprehensive smoking cessation program.
• Will report results in a timely manner.
• Will provide those screened with information on how they can donate images and biospecimens to advance research in the prevention, diagnosis and treatment of all types of lung cancer.
• Will participate in outcome data collection in order to further refine risk evaluation, screening and diagnostic protocols
LCA Expectations

• Clear evidence based information on screening risks and benefits
  – Screening decision aides
    • http://www.shouldiscreen.com/
  – Others available at
    • https://www.acr.org/Quality-Safety/Resources/Lung-Imaging-Resources
HELPFUL SUPPORT RESOURCES FOR SMOKING CESSATION:

ONLINE AND PHONE SUPPORT
BecomeAnEX.org (EX) is a free, easy and confidential online quit smoking program that helps smokers “re-learn” life without cigarettes. Based on personal experiences from ex-smokers as well as the latest scientific research, it will show you a whole new way to think about quitting.

1-800-QUIT-NOW
www.smokefree.gov

1-877-270-STOP
www.becomeanex.org

CLASSES
QuitSmart is a program offered by Methodist for those who are trying to quit smoking. For more information on these group sessions or to enroll in QuitSmart, call (402) 354-5237.

MEDICATION
Your physician may prescribe medications that can help reduce your nicotine cravings. You may also find over-the-counter gums and patches helpful. Medications are often more effective when combined with other treatment and behavior therapies.

1). Pack year is calculated by multiplying the amount of cigarettes packs smoked per day by the number of years smoked. For example, someone who smoked 1.5 packs daily for 20 years would be a 30 pack year smoker (1.5 x 20 = 30)


TO MAKE AN APPOINTMENT OR FOR MORE INFORMATION, CALL:

Methodist Lung/Thoracic Oncology Clinic
(402) 354-5855 or (888) 888-0506 or visit bestcare.org

Methodist Estabrook Cancer Center
8303 Dodge Street
Omaha, NE 68114

SUSTAINING LUNG CANCER DEPENDS ON EARLY DETECTION.
Take a test that can identify cancer at its earliest stages.
SHARED DECISION MAKING GUIDE FOR LUNG CANCER SCREENING

Screening for lung cancer uses a low-dose CT scan of the chest to help find cancerous lung nodules. People with early-stage lung cancer may not have any symptoms, which is why screening is so important. Lung cancer is highly curable if found early.

Screening is not a one-size-fits-all. It’s a process of repeat chest CT exams to look for suspicious lung nodules that develop or change over time. The exam uses a low-radiation dose chest CT or “CAT Scan” which is quick, painless and does not involve any needles or intravenous contrast dye.

Is lung cancer screening right for me?

Screening is recommended for people who are most likely to develop lung cancer. There are benefits and risks to screening, so speak with your healthcare provider about starting a screening program if either of these describes you:

A) Age 55-80 with a 30-pack year smoking history and currently smoke or quit within 15 years or ago.
B) You may enroll in our L-FECAT screening clinical trial if you are:
   a. Age 40 and over with a 20-pack year smoking history or smoking.
   b. Age 40 with one of the following additional risk factors:
      1. Family history of lung cancer in first degree relative such as a parent, sibling, grandparent or child.
      2. Significant second-hand smoke exposure.

The United States Preventive Services Task Force recommends screening stop once a person has never smoked for 15 years or develops a health problem that limits life expectancy or the ability to have curative lung surgery. You may enroll in our L-FECAT screening clinical trial if you are:

A) Age 55-80 with a 30-pack year smoking history and currently smoke or quit within 15 years or ago.
B) You may enroll in our L-FECAT screening clinical trial if you are:
   a. Age 40 and over with a 20-pack year smoking history or smoking.
   b. Age 40 with one of the following additional risk factors:
      1. Family history of lung cancer in first degree relative such as a parent, sibling, grandparent or child.
      2. Significant second-hand smoke exposure.

What should I know about screening?

Like many medical procedures, the potential benefits from screening must be balanced with its inherent risks and limitations. Considering the lifetime probability of developing lung cancer is 1 in 16 people 1, and the 5-year lung cancer survival rate is 15-25%, the risks of screening high-risk people through an organized program are generally considered not to be material compared to the benefits of early detection.

Benefits

CT screening has been proven to find lung cancer when it is smaller and more curable. In the absence of screening, the lung cancer majority of cancers found are advanced-stage, while for those found with screening, the majority are early-stage and early-stage cancers are highly curable.

Risks and limitations

• False alarms
  Screening may find something suspicious, leading to further testing that ultimately turns out not to be cancer. This is called a “false positive.”
• Complications of further testing
  Most of the time, the additional tests or repeat CT scans however, occasionally more invasive procedures such as a bronchoscopy or biopsy may become necessary. Some invasive procedures can lead to complications like a collapsed lung or rarely, death.
• Radiation
  This test uses a low-dose of radiation and will expose you to less than 1.5 millirem (mSv). This is much less radiation than a conventional chest x-ray, which would expose you to about 7-10 mSv. To put this perspective, the average person in the U.S. is exposed to approximately 2 mSv of natural background radiation every year.
• Stress/anxiety
  It is normal to feel anxious while waiting for your results. Most patients with findings on their scan that require additional testing are reassured when they learn that most of these tests are not as serious and that you should talk with your healthcare provider or the lung screening care coordinator who can help.
• Over-diagnosis
  Sometimes screening tests find cancers that are very slow growing and would have never caused problems. This is called over-diagnosis. There is a small chance someone may need to be treated for a cancer of this type, which had it been left alone, would not have harmed them.
• No guarantee early detection will avoid death
  This screening cannot detect all lung cancers and cannot guarantee early detection will avoid death from lung cancer. Lung cancer found early increases your chance of cure through early treatment, however, some cancer can occur even when found early and spread to other parts of the body (referred to as metastasis). Research continues to show early detection is the best hope for cure.

How is a low-dose CT scan different from a chest x-ray?

A CT scan uses x-rays from all angles around the chest giving hundreds of detailed images of the lungs. This allows the radiologist to see tiny abnormalities, which are often too small to be seen on a standard chest x-ray, which only takes two flat images.

How do I prepare for the exam?

There is no special preparation for the exam. You may eat and drink prior to your test. The test is quick, painless and does not involve any invasive injections.

How are results reviewed?

All lung screening is initially interpreted by a radiologist (a person with expertise in reading medical images) and findings are then reviewed by a team of doctors who specialize in the diagnosis and treatment of lung cancer. Results are promptly communicated to you and your healthcare provider. When a lung cancer is suspected, arrangements are made for a prompt evaluation.

How long will it take to get the results?

Results will be mailed to you and your healthcare provider within one week. If a lung cancer is suspected, an immediate follow-up will be made by telephone and immediate arrangements will be made for a physician specializing in lung cancer treatment to meet with you.

My screening shows I have a lung nodule. Should I be concerned?

You should not be overly concerned if your report indicates you have a small lung nodule. Most people who most people are likely to develop lung cancer, and health professionals recommend starting a screening program if either of these describes you:

A) Age 55-80 with a 30-pack year smoking history and currently smoke or quit within 15 years or ago.
B) You may enroll in our L-FECAT screening clinical trial if you are:
   a. Age 40 and over with a 20-pack year smoking history or smoking.
   b. Age 40 with one of the following additional risk factors:
      1. Family history of lung cancer in first degree relative such as a parent, sibling, grandparent or child.
      2. Significant second-hand smoke exposure.

What should I know about screening?

Like many medical procedures, the potential benefits from screening must be balanced with its inherent risks and limitations. Considering the lifetime probability of developing lung cancer is 1 in 16 people 1, and the 5-year lung cancer survival rate is 15-25%, the risks of screening high-risk people through an organized program are generally considered not to be material compared to the benefits of early detection.

Benefits

CT screening has been proven to find lung cancer when it is smaller and more curable. In the absence of screening, the lung cancer majority of cancers found are advanced-stage, while for those found with screening, the majority are early-stage and early-stage cancers are highly curable.

Risks and limitations

• False alarms
  Screening may find something suspicious, leading to further testing that ultimately turns out not to be cancer. This is called a “false positive.”
• Complications of further testing
  Most of the time, the additional tests or repeat CT scans however, occasionally more invasive procedures such as a bronchoscopy or biopsy may become necessary. Some invasive procedures can lead to complications like a collapsed lung or rarely, death.
• Radiation
  This test uses a low-dose of radiation and will expose you to less than 1.5 millirem (mSv). This is much less radiation than a conventional chest x-ray, which would expose you to about 7-10 mSv. To put this perspective, the average person in the U.S. is exposed to approximately 2 mSv of natural background radiation every year.
• Stress/anxiety
  It is normal to feel anxious while waiting for your results. Most patients with findings on their scan that require additional testing are reassured when they learn that most of these tests are not as serious and that you should talk with your healthcare provider or the lung screening care coordinator who can help.
• Over-diagnosis
  Sometimes screening tests find cancers that are very slow growing and would have never caused problems. This is called over-diagnosis. There is a small chance someone may need to be treated for a cancer of this type, which had it been left alone, would not have harmed them.
• No guarantee early detection will avoid death
  This screening cannot detect all lung cancers and cannot guarantee early detection will avoid death from lung cancer. Lung cancer found early increases your chance of cure through early treatment, however, some cancer can occur even when found early and spread to other parts of the body (referred to as metastasis). Research continues to show early detection is the best hope for cure.

How is a low-dose CT scan different from a chest x-ray?

A CT scan uses x-rays from all angles around the chest giving hundreds of detailed images of the lungs. This allows the radiologist to see tiny abnormalities, which are often too small to be seen on a standard chest x-ray, which only takes two flat images.

How do I prepare for the exam?

There is no special preparation for the exam. You may eat and drink prior to your test. The test is quick, painless and does not involve any invasive injections.

How are results reviewed?

All lung screening is initially interpreted by a radiologist (a person with expertise in reading medical images) and findings are then reviewed by a team of doctors who specialize in the diagnosis and treatment of lung cancer. Results are promptly communicated to you and your healthcare provider. When a lung cancer is suspected, arrangements are made for a prompt evaluation.

How long will it take to get the results?

Results will be mailed to you and your healthcare provider within one week. If a lung cancer is suspected, you will be notified by telephone and immediate arrangements will be made for a physician specializing in lung cancer treatment to meet with you.

My screening shows I have a lung nodule. Should I be concerned?

You should not be overly concerned if your report indicates you have a small lung nodule. Most people who most people are likely to develop lung cancer, and health professionals recommend starting a screening program if either of these describes you:

A) Age 55-80 with a 30-pack year smoking history and currently smoke or quit within 15 years or ago.
B) You may enroll in our L-FECAT screening clinical trial if you are:
   a. Age 40 and over with a 20-pack year smoking history or smoking.
   b. Age 40 with one of the following additional risk factors:
      1. Family history of lung cancer in first degree relative such as a parent, sibling, grandparent or child.
      2. Significant second-hand smoke exposure.

How often should I have a lung cancer screening?

For those at risk, screening should be done once a year. Depending on the findings, some patients may have more than ten exams.

I've never smoked, or quit years ago. Am I at risk for lung cancer?

Smoking is the leading cause of lung cancer: however, it is not the only cause. Statistics show one in five women and one in ten men diagnosed with lung cancer never smoked. The longer you have stopped smoking, the lower your risk of lung cancer: however, smoking does permanent damage to the lungs, so the increase in risk of lung cancer never totally resolves. In addition, smoke exposure to other people who are smoking (second-hand exposure) is also a risk factor.

I currently smoke and want to quit.

Quitting smoking is the single best thing you can do to improve your health. In addition to damaging the lungs, tobacco smoke also impairs many other parts of the body such as blood vessels and the heart. As a smoker, your risk of death from heart attack or stroke continues to increase even if your CT scan does not show lung cancer. Quitting smoking is tough and there is no way to quit effectively. The best approach is one that addresses the physical, social and behavioral aspects of smoking. See back panel for support options.
LCA Expectations

• Comply with best practices for quality, dose and diagnostic procedures
  – NCCN guidelines
  – IELCAP guidelines
# NCCN Guidelines Version 1.2017

## Lung Cancer Screening

### Risk Assessment

**High risk:**
- Age 55–74 y and ≥30 pack-year history of smoking and smoking cessation <15 y (category 1) or
- Age ≥50 y and ≥20 pack-year history of smoking and additional risk factor(s) (other than second-hand smoke)

**Moderate risk:**
- Age ≥50 y and ≥20 pack-year history of smoking or second-hand smoke exposure and no additional risk factors

**Low risk:**
- Age <50 y and/or <20 pack-year history of smoking

### Risk Status

**In candidates for screening, shared patient/physician decision making is recommended, including a discussion of benefits/risks:**
- **Low-dose CT (LDCT)** (category 1) → See Screening Findings (LCS-2)

**In candidates for screening, shared patient/physician decision making is recommended, including a discussion of benefits/risks:**
- **Low-dose CT (LDCT)** → See Screening Findings (LCS-2)

### Screening

- Lung cancer screening not recommended

---

**Note:** All recommendations are category 2A unless otherwise indicated.

**Clinical Trials:** NCCN believes that the best management of any patient with cancer is in a clinical trial. Participation in clinical trials is especially encouraged.
I-ELCAP: Baseline regimen
July 1, 2016

**Initial low-dose CT**

- **Negative result**
  - No non-calciﬁed nodules (NCNs)

- **Semi-positive result**
  - Nonsolid NCNs of any size,
  - All solid and part-solid NCNs < 8.0 mm,
  - Any NCN, solid or part-solid (solid component) 6.0-14.9 mm with CT scan 3 months later NOT showing growth at a malignant rate

- **Option B**
  - if solid nodule ≥ 10 mm or
  - solid component of a part-solid nodule ≥ 10 mm
  - PET scan
  - Negative for lung cancer
  - Positive or indeterminate

- **Positive result**
  - NCN, solid or part-solid (solid component) 6.0-14.9 mm, showing growth at a malignant rate on CT scan 3 months later
  - Biopsy
  - POSITIVE for lung cancer
  - NEGATIVE

- **OPTION A**
  - Biopsy
  - POSITIVE for lung cancer
  - NEGATIVE

- **Document as screen-dx baseline lung cancer**

**Interim baseline cancer**: symptom-promoted diagnosis made prior to 1st annual repeat

- If a lung cancer is ultimately diagnosed in semi-positive results regardless of when, it is still classified as a screen-dx baseline cancer

- **1st Annual repeat CT**

- **Positive result**
  - Solid endobronchial nodule
  - Cough vigorously and Repeat CT scan immediately if possible, otherwise

- **CT scan 1 month later**
  - Did not resolve even after vigorous coughing
  - Pulmonary consult and bronchoscopy if needed
  - Resolved, with vigorous coughing if necessary
  - Negative for lung cancer

- **1st Annual repeat**

- **Document as screen-dx baseline lung cancer**

*Percentage change consistent with malignancy = (diameter at time 2 - diameter at time 1) / diameter at time 1
  a) if nodule < 8 mm in diameter, % change ≥ 60% growth;
  b) nodules ≥ 8 mm, % change ≥ 30% growth;
  c) nodules ≥ 10 mm, % change ≥ 20% growth
  (see calculator on I-ELCAP website)
<table>
<thead>
<tr>
<th>Category</th>
<th>Category Descriptor</th>
<th>Findings</th>
<th>Management</th>
<th>Probability of Malignancy</th>
<th>Estimated Population Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete</td>
<td></td>
<td>prior chest CT examination[s] being located for comparison</td>
<td>Additional lung cancer screening CT images and/or comparison to prior chest CT examination is needed</td>
<td>n/a</td>
<td>1%</td>
</tr>
<tr>
<td>Negative</td>
<td>No nodules and definitely benign nodules</td>
<td>no lung nodules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>nodules[s] with specific calcifications: complete, central, popcorn, concentric rings and fat containing nodules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benign Appearance or Behavior</td>
<td>Nodules with a very low likelihood of becoming a clinically active cancer due to size or lack of growth</td>
<td>solid nodule(s): &lt; 6 mm new &lt; 6 mm</td>
<td>Continue annual screening with LDCT in 12 months</td>
<td>&lt;1%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>part solid nodule(s): &lt; 6 mm total diameter on baseline screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>non solid nodule(s) [GGN]: &lt; 20 mm OR ≥ 20 mm and unchanged or slowly growing category 3 or 4 nodules unchanged for ≥ 3 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probably Benign</td>
<td>Probably benign finding[s] - short term follow up suggested; includes nodules with a low likelihood of becoming a clinically active cancer</td>
<td>solid nodule(s): ≥ 6 mm to &lt; 8 mm at baseline OR new 4 mm to &lt; 6 mm</td>
<td>6 month LDCT</td>
<td>5-2%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>part solid nodule(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 6 mm total diameter with solid component &lt; 6 mm OR new &lt; 6 mm total diameter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>non solid nodule(s) [GGN] ≥ 20 mm on baseline CT or new</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspicious</td>
<td>Findings for which additional diagnostic testing and/or tissue sampling is recommended</td>
<td>solid nodule(s): ≥ 8 to &lt; 15 mm at baseline OR growing &lt; 8 mm OR new 6 to &lt; 8 mm</td>
<td>3 month LDCT; PET/CT may be used when there is a ≥ 8 mm solid component</td>
<td>5-15%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>part solid nodule(s): ≥ 6 mm with solid component ≥ 6 mm to &lt; 8 mm OR with a new or growing &lt; 4 mm solid component</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>endobronchial nodule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>solid nodule(s): ≥ 15 mm OR new or growing, and ≥ 8 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>part solid nodule(s) with: ≥ 8 mm OR ≥ 4 mm solid component</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Clinically Significant or Potentially Clinically Significant Findings [non-lung cancer]</td>
<td>Category 3 or 4 nodules with additional features or imaging findings that increases the suspicion of malignancy</td>
<td>chest CT with or without contrast, PET/CT and/or tissue sampling depending on the probability of malignancy and comorbidities. PET/CT may be used when there is a ≥ 8 mm solid component.</td>
<td>&gt; 15%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>modifier - may add on to category 0-4 coding</td>
<td></td>
<td>n/a</td>
<td>10%</td>
</tr>
<tr>
<td>Prior Lung Cancer</td>
<td>Modifier for patients with a prior diagnosis of lung cancer who return to screening</td>
<td>modifier - may add on to category 0-4 coding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LCA Expectations

• Works with multi-disciplinary team to carry out coordinated care for screening, diagnosis and disease management based on best practice
Team and Resources

Team
- Thoracic Surgery
- Pulmonology
- Medical Oncology
- Radiation Oncology
- Radiology/IR
- Pathology
- Oncology Navigators

Technology
- Radiosurgery
- VATS
- Molecular testing
- EBUS
- Navigational bronchoscopy
- LDCT

Community
- Clinics
- Outreach
- Charity care
- Retirement centers
- Community Presence
- Employee Programs
Lung Screening Coordinator

- Schedule Patients, Obtain Orders and Authorization
- Coordinate Screening Day
- Data Collection and Registry Input
- Tracking Patients for Follow-up or Annual Scans
- Communicate Results and Plan with PCP and patient
- Monitor Program Development
- Navigate Patients Through the Program with Handoff to Lung Cancer Navigator
- Report to Disease Site Team
- Marketing of Program
Thoracic Conference

• Weekly conference
• Coordinated by Lung Navigator
• All lung Rads 3 and 4 seen in MDC and discussed at conference
• Follow NCCN guidelines for workup and treatment of cancers
• Attended by multidisciplinary team
LCA Expectations

• Smoking Cessation Program
  – Screening personnel trained in Quit Smart Smoking Cessation Program
  – Meets with each patient at each screening
  – Documents smoking cessation rates
LCA Expectations

• Will report results in a timely manner
• Will report outcome data
  – Annual report to LCA
  – ACR registry
  – Registry for Lung Screening Excellence
    RLSE (formerly IELCAP)
LCA Expectations

• Will provide those screened who can donate images and biospecimens to advance research in prevention, diagnosis and treatment of all types of lung cancer.
  – Our images sent to RLSE for continued research
  – Have active research program
To Grow your Program

• Market
  – Brochures
  – Flyers
  – Detailed order forms
  – Provider letters
  – Website
• Educate Your Providers
  – Office Visits
    • PCPs
    • Pulmonologists
  – Symposiums

• Educate the community
  – Social Media
  – Lung Cancer Screening Website
  – Highlight survivors
  – Ad Campaigns
  – Posters
LCA Resources

- **Best Practice Screening Guidance**
- **Patient Education**
  - [What You Need to Know about Lung Cancer Screening](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
  - [Myths and Facts about Lung Cancer Screening](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
  - [Understanding Lung Cancer Risk and Screening](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
  - [Understanding Lung Nodules](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
  - [USPSTF Guide: Talking with Your Patients about Lung Cancer](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
- **Smoking Cessation Resources**
  - [The Ex Plan](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
  - [1-800-QUIT-NOW: Telephone QuitLine available in all states](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
  - [Why Quit Now? A Resource for Those at High Risk for Lung Cancer](http://www.lungcanceralliance.org/am-i-at-risk/screening-center-resources/)
Lung Cancer Alliance

- 3rd Annual Screening & Care Conference
- October 6-7, 2017
- The Washington Court Hotel
  525 New Jersey Ave NW
  Washington, DC 20001
- Join other healthcare professionals to learn best practices and lessons learned in lung cancer screening and care programs across the US!
- Registration and hotel reservations will open May 1, 2017.
Methodist Screening

- Program started in 2006 as a site for the IELCAP screening trial
Through 2016 we have screened 1,322 patients resulting in 4,942 scans. 615 f/u scans with 100 biopsies and 52 lung cancers diagnosed.
52 Patients Diagnosed With Lung Cancer

- 40 have survived
- 77% survival rate
- 75% 5 year survival rate
Referral Source

- Primary Care 80%
- Self Referral 10%
- Pulmonology 5%
- Oncology 5%
The Lung Cancer Screening Tool is now available for documentation in the Provider View Dynamic Documentation.
The smoking history will populate the note from the social history. When you sign the note it will automatically print in the Lung Cancer Clinic the next day at 8AM.
CT Lung Screening Decision Making Tool

Name ___________________________________________ DOB ______________________

Packs/day (20cigs in a pack): __________ Years smoked ___________ Pk/years ________

Currently smoking Y N If not smoking, year quit__________________________

(Pk/day x years smoked)

By signing this, you are certifying that the patient is:
- Age 55-77
- Asymptomatic for signs and symptoms of lung cancer
- 30pk year history of smoking
- Current smoker or one who has quit within the last 15 years
- The patient has participated in shared decision making including:
  - Benefits of screening
    - Identifies suspicious findings for lung cancer.
  - Risks of screening
    - False positives/additional testing: LDCT often finds something in the lung that could be cancer but is not. These tests can cause anxiety and on some occasions lead to invasive procedures such as biopsy to further determine whether a finding is a cancer.
    - False negatives: it is possible to have a medical condition including lung cancer that is not found during your exam.
    - Radiation exposure: LDCT uses radiation to create images of your lungs. Radiation can increase the risk of cancer. By using special techniques, the amount of radiation is small, similar to a mammogram.
    - Over-diagnosis
      - The patient was informed of the importance of adherence to annual screening, impact of comorbidities, and ability to undergo diagnosis and treatment
      - The patient was informed of the importance of smoking cessation and/or maintaining smoking abstinence.

If patient 40-54, current or former smoker with 20pk year history, call the Lung Cancer Clinic for enrollment in IELCAP clinical study. 402-354-5858

Provider Signature _____________________________________________________________

Date ________________________ Time ________________________

Fax form to: 402-354-5079

Scan form into patient office episode for documentation of screening visit.

_____________________________________ ________________________________

_____________________________________ ________________________________

_____________________________________ ________________________________

_____________________________________ ________________________________

_____________________________________ ________________________________

_____________________________________ ________________________________

Patient Label

PERMANENT PART OF MEDICAL RECORD

CC.CTLUNGDECMAK

Rev 03/2015
Future Goals

• Increase physician outreach
• Continue to gain feedback from physicians
• Market to employer groups
• Find ways to reach the underserved.