

# Lung Cancer Screening

**Presented by: Marquis Demniak, RN, MSN, FNP-C, NCTTP**

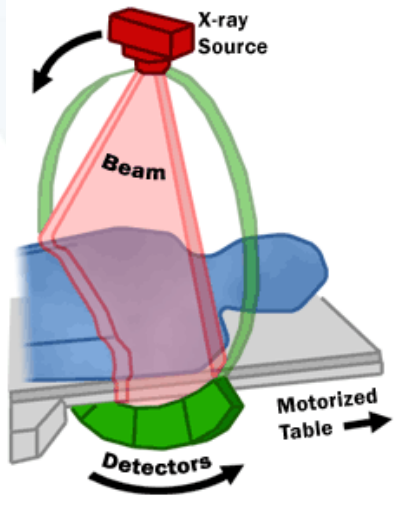
# Objectives

1. Describe the process of lung cancer screening.
2. Review data from NLST and NELSON trial supporting low dose CT (LDCT) lung screenings.
3. Review lung cancer screening program at WVU Cancer Institute.

# **1. Describe the process of lung cancer screening**

# Low Dose Computed Tomography (LDCT)

- ❑ Non-contrast. Multi detector CT scanner during a single maximal inspiratory breath-hold with a scanning time under 25 seconds.
- ❑ High resolution (1.0 to 2.5 mm interval) images are reconstructed using a soft tissue or thin-section algorithm
- ❑ CPT: G0297



# Eligibility

- Must be between the ages of 55-77 (private insurance 55-80).
- Have a >30 pack-year smoking history.
- Must be a current smoker or have quit smoking in the past 15 years.
- Have not received a CT chest scan in the last 12 months.
- No prior diagnosis or symptoms of lung cancer.
- Patients who are healthy enough to undergo curative robotic lung sparing surgery or radiation if lung cancer detected at screening.

(AHRQ, 2016)



# NCCN Guidelines Version 2.2019

## Lung Cancer Screening

### RISKS/BENEFITS OF LUNG CANCER SCREENING\*

#### RISKS

- Futile detection of small aggressive tumors or indolent disease
- Quality of life
  - Anxiety of test findings
- Physical complications from diagnostic workup
- False-positive results
- False-negative results
- Unnecessary testing and procedures
- Radiation exposure
- Cost
- Incidental lesions

#### BENEFITS

- Decreased lung cancer mortality<sup>1</sup>
- Quality of life
  - Reduction in disease-related morbidity
  - Reduction in treatment-related morbidity
  - Improvement in healthy lifestyles
  - Reduction in anxiety/psychosocial burden
- Discovery of other significant occult health risks (eg, thyroid nodule, severe but silent coronary artery disease, early renal cancer in upper pole of kidney, aortic aneurysm, breast cancer)

# Billing and Coding

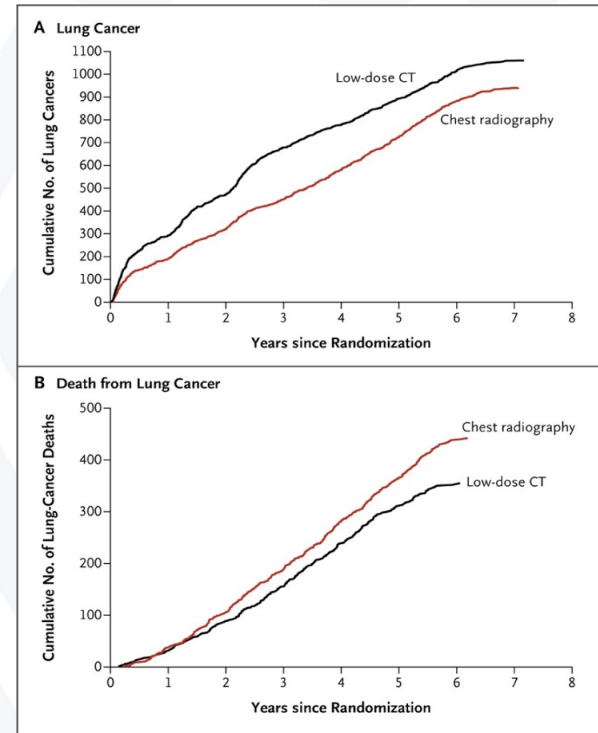
- ❑ Must select **ONE** ICD-10 code when placing LDCT (G0297) order
  - F17.210 Nicotine dependence, cigarettes, uncomplicated
  - F17.211 Nicotine dependence, cigarettes, in remission
  - F17.213 Nicotine dependence, cigarettes, with withdrawal
  - F17.218 Nicotine dependence, cigarettes, with other nicotine-induced disorders
  - F17.219 Nicotine dependence, cigarettes, with unspecified nicotine-induced disorders
  - Z87.891 Personal history of nicotine dependence
  
- ❑ Shared Decision Making Visit must be completed and documented prior to ordering of the LDCT scan along with Tobacco History in chart.
  - CPT: G0296

**2. Review data from NLST and  
NELSON trial supporting low dose CT  
(LDCT) lung screenings.**



# National Lung Screening Trial (NLST)

- ❑ Aug 2002 - April 2004
- ❑ 53,454 patients at high risk. 33 U.S. medical centers.
- ❑ Randomly assigned to three annual low-dose CTs (26,722 participants) or CXR (26,732).
- ❑ 6.5 years follow up.
- ❑ Positive screening in 24.2% with LDCT and 6.9% with CXR.
- ❑ 247 deaths from lung cancer (per 100,000 person-years) in the low-dose CT compared with 309 deaths in CXR group.
- ❑ **Relative reduction in mortality from lung cancer of 20.0% (P=0.004).**
- ❑ The rate of death from any cause by 6.7% (P=0.02).
- ❑ Deaths from lung cancer over 6.5 year f/u period (LDCT 18 in 1,000; CXR 21 in 1,000; 3 in 1,000 fewer deaths from lung cancer with LDCT)



(Maldonado & Edell NEJM 2012)

# NELSON Trial

- ❑ Began in August 2003 and is the 2<sup>nd</sup> largest trial in the world.
- ❑ Eligibility: 15,792 individuals at high risk for developing lung cancer
- ❑ Study design: Randomized 1:1 (study arm vs. control arm). Participants were offered CT screening at baseline, 1, 3, and 5.5 years after randomization with no screening offered to the control arm. Participants were followed for a min. of 10 years.
- ❑ Results:
  - 94% compliance rate (29,736 scans).
  - 2,503 (9.3%) were indeterminate
  - 598 (2.2%) were positive
  - 243 (0.9%) detected lung cancer
  - At time of diagnosis after 3<sup>rd</sup> round: 69% Stage 1A or 1B. 261 lung cancers (52 interval cancers) were detected before 4<sup>th</sup> round.
  - Surgical treatment 3x more prevalent in study lung cancer patients than in control arm patient (67.7% vs. 24.5%,  $p < 0.001$ ).
- ❑ Year 10 lung cancer deaths in men: 157 deaths in screened arm vs. 214 deaths in control arm. Lung cancer mortality rate ratio in the screened vs. unscreened over a 10 year period for men was 0.74 (26% reduction,  $P = .0003$ ) and for women, 0.61 (39% reduction,  $P = .0054$ ).

(H. De Koning, 2018)

**3. Review lung cancer screening program at WVU Cancer Institute.**

# WVUCI Lung Screening Program: Objectives

- Screening to Cure

# WVUCI Lung Screening Program

- ❑ Lung cancer screening counseling & shared decision-making visit prior to screening CT with the program's nurse practitioner, Marquis Demniak NP-C. Patient's may also complete this with their PCP or specialty provider.
- ❑ Low-dose chest CT (LDCT) will be scheduled at an accredited ACR center. ACR accreditation is recognized as the gold standard in medical imaging.
- ❑ If LDCT scan is abnormal, patients will be referred to WVUCI Lung Nodule Clinic for further evaluation and diagnosis.
- ❑ Tobacco Cessation Counseling included. This service is also offered to non-eligible patients as well.
- ❑ The Centers for Medicare & Medicaid Services (CMS) will cover the cost for the LDCT scan if patient meets all eligibility criteria.
- ❑ Accepting provider referrals, self-referrals, and uninsured self-pay patients.
- ❑ Patients and their provider will be notified of the scan result and will also be reminded accordingly of their next LDCT scan due date.

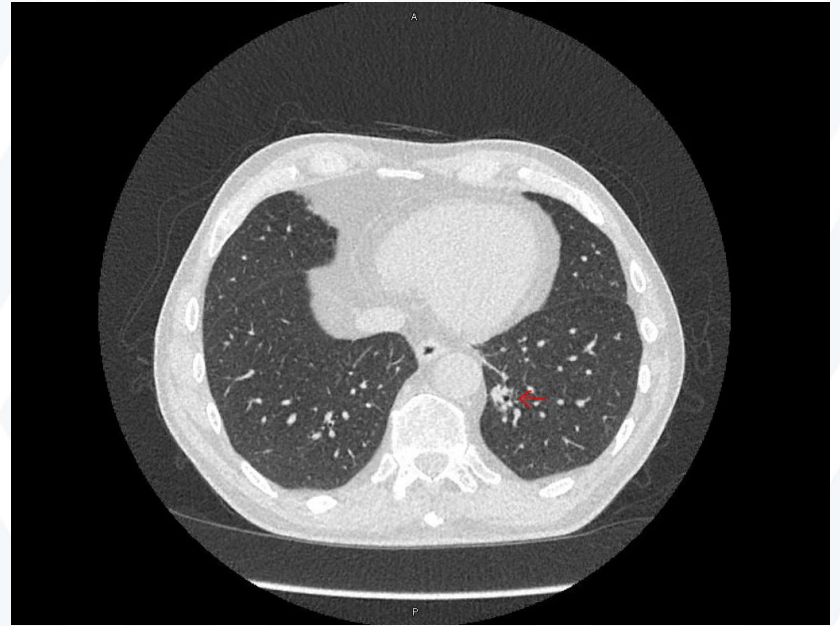


# WVUCI Lung Nodule Clinic

- ❑ Provides state-of-the-art diagnostic and therapeutic options for patient with lung nodules/cancers including robotic lung sparing surgery.
- ❑ Our program's protocol for patients with a Lung-RADS score of 4a or 4b result is to schedule the patient to be seen at our Lung Nodule Clinic for further evaluation and testing.
- ❑ The referring provider and patient will be given the following options:
  - Appointment with our thoracic surgeon, Dr. Abbas' APP **OR**
  - Referred to a different thoracic surgeon or pulmonologist of the original referring provider's choosing.

# Case Study

- ❑ 63 yo Male with 40 pack years smoking history (quit 09/2017) with COPD and multiple comorbidities.
- ❑ Feb 2018. Baseline LDCT showed a mixed density nodule in the left lower lobe (Lung RADS Category: Suspicious - 4B).



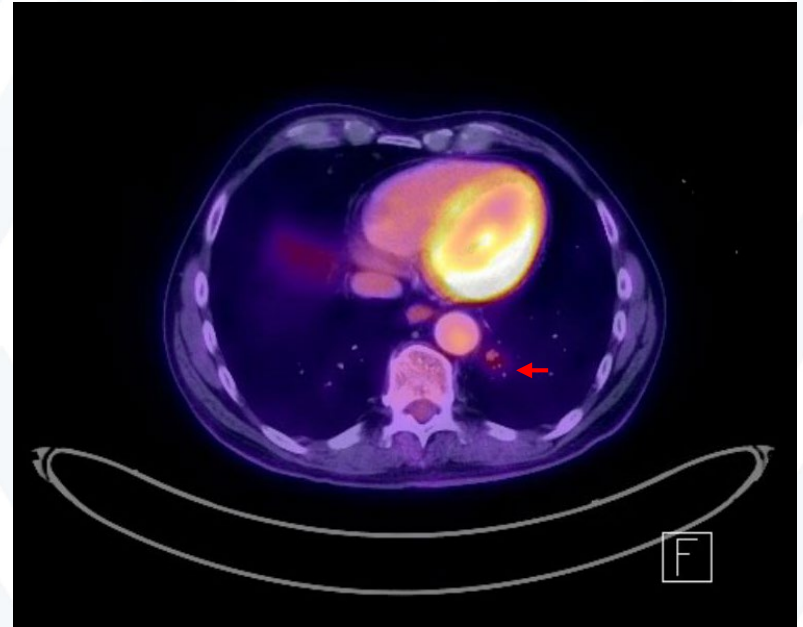
Category Descriptor	Lung-RADS Score	Findings	Management	Risk of Malignancy	Est. Population Prevalence
Incomplete	0	Prior chest CT examination(s) being located for comparison Part or all of lungs cannot be evaluated	Additional lung cancer screening CT images and/or comparison to prior chest CT examinations is needed	n/a	1%
Negative No nodules and definitely benign nodules	1	No lung nodules Nodule(s) with specific calcifications: complete, central, popcorn, concentric rings and fat containing nodules	Continue annual screening with LDCT in 12 months	< 1%	90%
Benign Appearance or Behavior Nodules with a very low likelihood of becoming a clinically active cancer due to size or lack of growth	2	Solid nodule(s): < 6 mm new < 4 mm			
		Part solid nodule(s): < 6 mm total diameter on baseline screening			
		Non solid nodule(s) (GGN): <30 mm OR ≥ 30 mm and unchanged or slowly growing			
Probably Benign Probably benign finding(s) - short term follow up suggested, includes nodules with a low likelihood of becoming a clinically active cancer	3	Category 3 or 4 nodules unchanged for ≥ 3 months	6 month LDCT	1-2%	5%
		Solid nodule(s): ≥ 6 to < 8 mm at baseline OR new 4 mm to < 6 mm			
		Part solid nodule(s) ≥ 6 mm total diameter with solid component < 6 mm OR new < 6 mm total diameter			
Probably Suspicious Findings for which additional diagnostic testing is recommended	4A	Non solid nodule(s) (GGN) ≥ 30 mm on baseline CT or new	3 month LDCT; PET/CT may be used when there is a ≥ 8 mm solid component	5-15%	2%
		Solid nodule(s): ≥ 8 to < 15 mm at baseline OR growing < 8 mm OR new 6 to < 8 mm			
		Part solid nodule(s): ≥ 6 mm with solid component ≥ 6 mm to < 8 mm OR with a new or growing < 4 mm solid component			
Suspicious Findings for which additional diagnostic testing and/or tissue sampling is recommended	4B	Endobronchial nodule	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. For new large nodules that develop on an annual repeat screening CT, a 1 month LDCT may be recommended to address potentially infectious or inflammatory conditions	> 15%	2%
	4X	Solid nodule(s) ≥ 15 mm OR new or growing, and ≥ 8 mm Part solid nodule(s) with: a solid component ≥ 8 mm OR a new or growing ≥ 4 mm solid component			
Other Clinically Significant or Potentially Clinically Significant Findings (non lung cancer)	S	Modifier - may add on to category 0-4 coding	As appropriate to the specific finding	n/a	10%
Volumetric measurements		1.5 mm = 1.8 mm <sup>3</sup> 4 mm = 33.5 mm <sup>3</sup> 6 mm = 113.1 mm <sup>3</sup> 8 mm = 268.1 mm <sup>3</sup>			10 mm = 523.6 mm <sup>3</sup> 15 mm = 1767.1 mm <sup>3</sup> 20 mm = 4188.8 mm <sup>3</sup> 30 mm = 14137.2 mm <sup>3</sup>

(ACR, 2019)



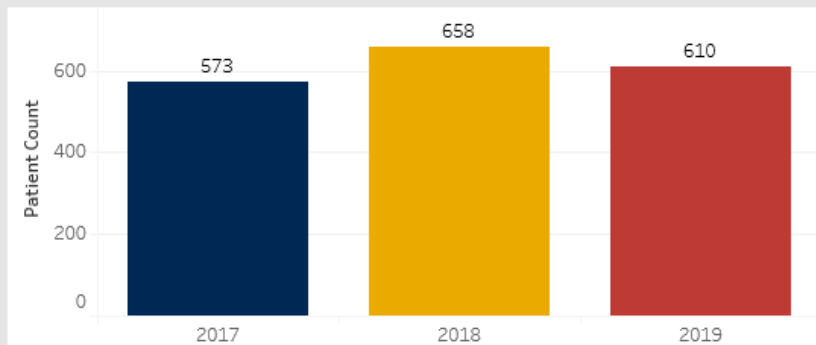
# Case Study cont'd

- ❑ Referred to Lung Nodule clinic. PET/CT and PFTs ordered.
- ❑ PET/CT: Mildly metabolically active, mixed ground glass and solid density nodule in LLL (18 x 15 mm).
- ❑ April 2018. Patient underwent a robotic left lower lobe basal segmentectomy. Pathology positive for Stage IA adenocarcinoma. No adjuvant therapy indicated.

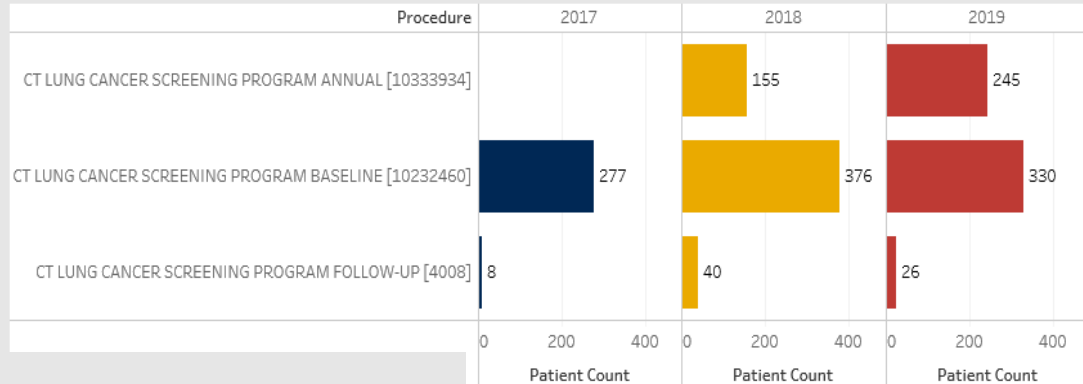


# Our Numbers

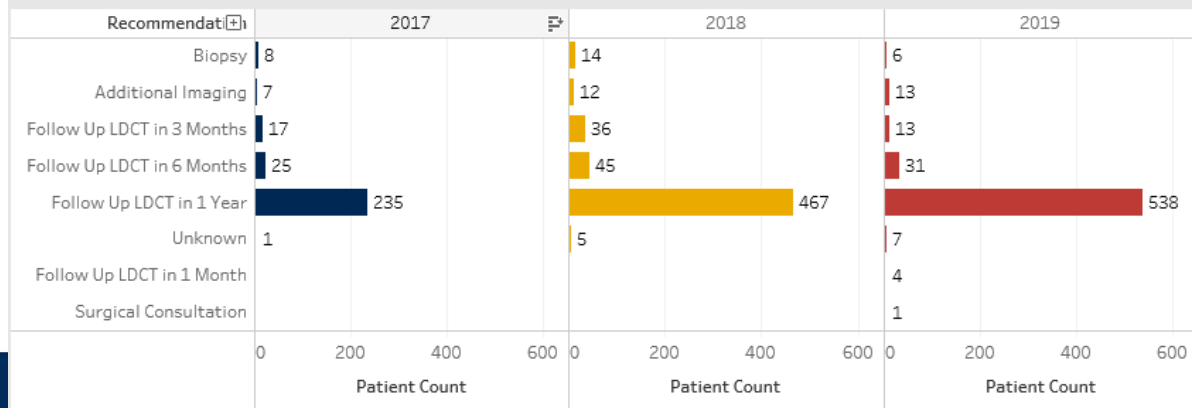
CT Order Patient Count



CT Scan Patient Count



CT Scan Patient Count by Recommendation



285

571

601

As of 10/01/2019

# Role of the Nurse Navigator

WVUCI Lung Screening Program

Presented by: Brianne Leichter, RN, BSN, OCN

# Role of the Nurse Navigator

- Guide patients through entire screening process
- Patient engagement
  - Determine eligibility
  - Contact patient to ensure adequate level of understanding
- Coordination of care
  - Scheduling appointments
  - Assisting with referrals
- Data collection
- Entry of annual and follow up protocol orders
- Increase screening rates and retention
- Provide culturally competent care
- Meet with patient at time of LDCT scan
- Educate patients/staff

# Contact Information

## Address:

Mary Babb Randolph Cancer Center  
1 Medical Center Drive  
Morgantown, WV 26505

University Town Center  
6040 University Town Centre Drive  
Morgantown, WV 26501

**MBRCC:** 304-598-4500

**Scheduling:** 304-598-6516

## Clinic Appointments Available: By appointment

### Leadership



**Ghulam Abbas** MD, MHCM, FACS  
Chief, Division of Thoracic Surgery,  
Surgical Director of Thoracic Oncology

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### Advanced Practice Professional



**Marquis Demniak** MSN, APRN, NP-C  
WVU Medicine Hematology/Oncology  
Lung Cancer Screening Program

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### Nurse Navigator



**Brianne Leichter** RN  
Lung Cancer Screening Program

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