Lahey Hospital
& Medical Center

When to Make the Recommendation: Educating Primary Care Clinicians on Guidelines-Based Lung Cancer Screening

April 2015

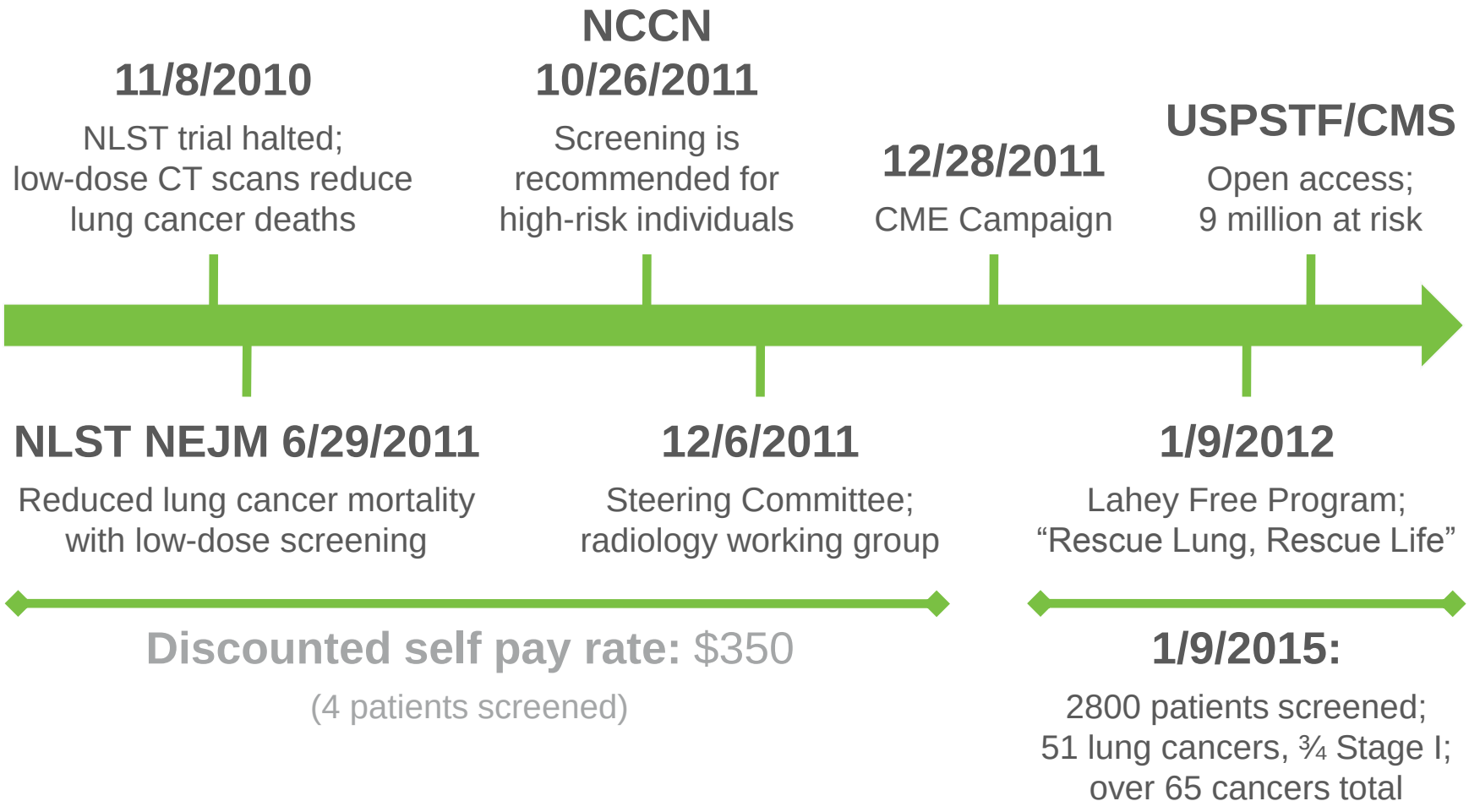
Andrea McKee, MD
Chairman Dept. of Radiation Oncology
Sophia Gordon Cancer Center
Lahey Hospital & Medical Center
Andrea.b.mckee@lahey.org

Disclosures

Covidien advisory panel

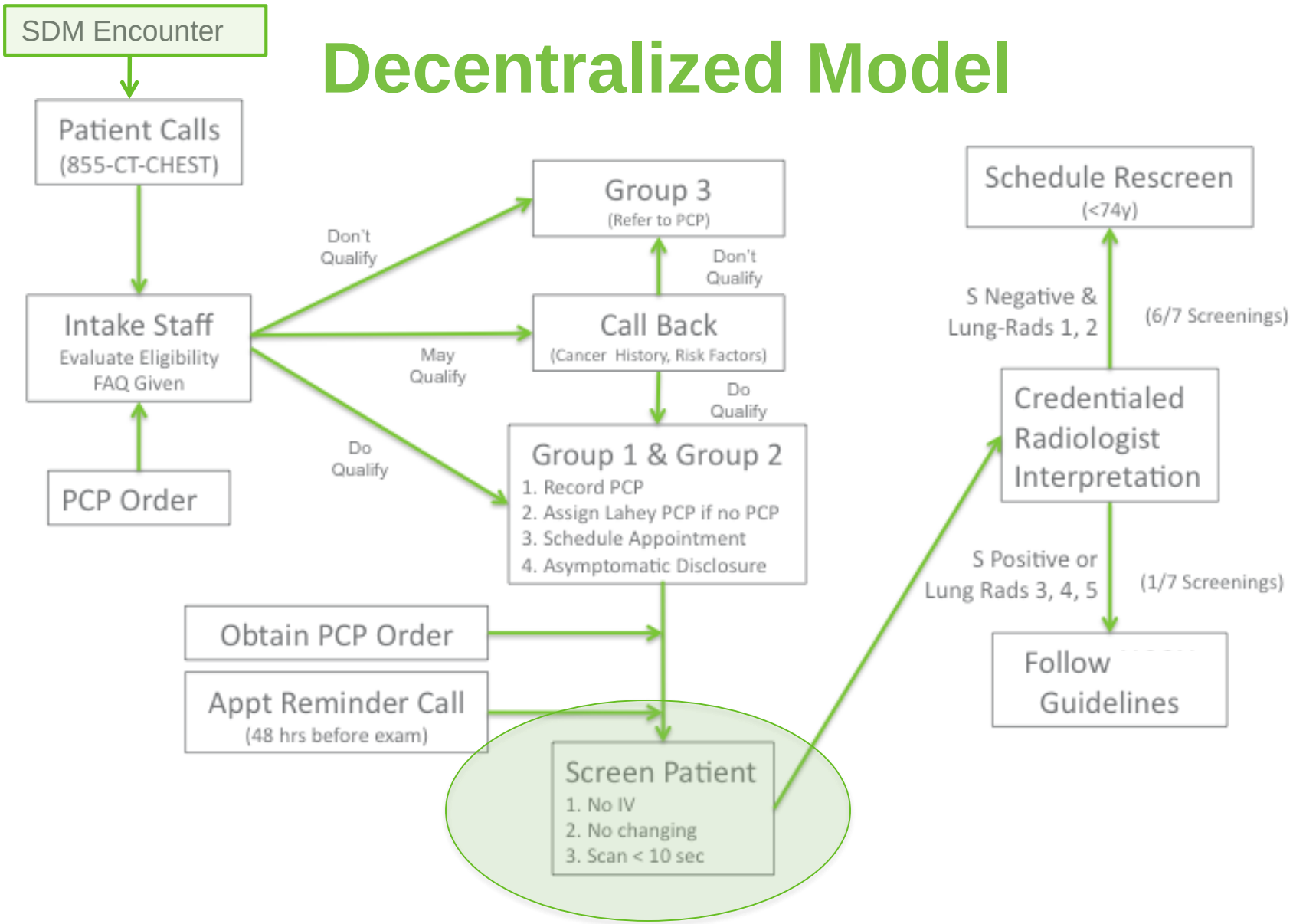
Mevis on-line radiology “Lung Academy” (Lahey)

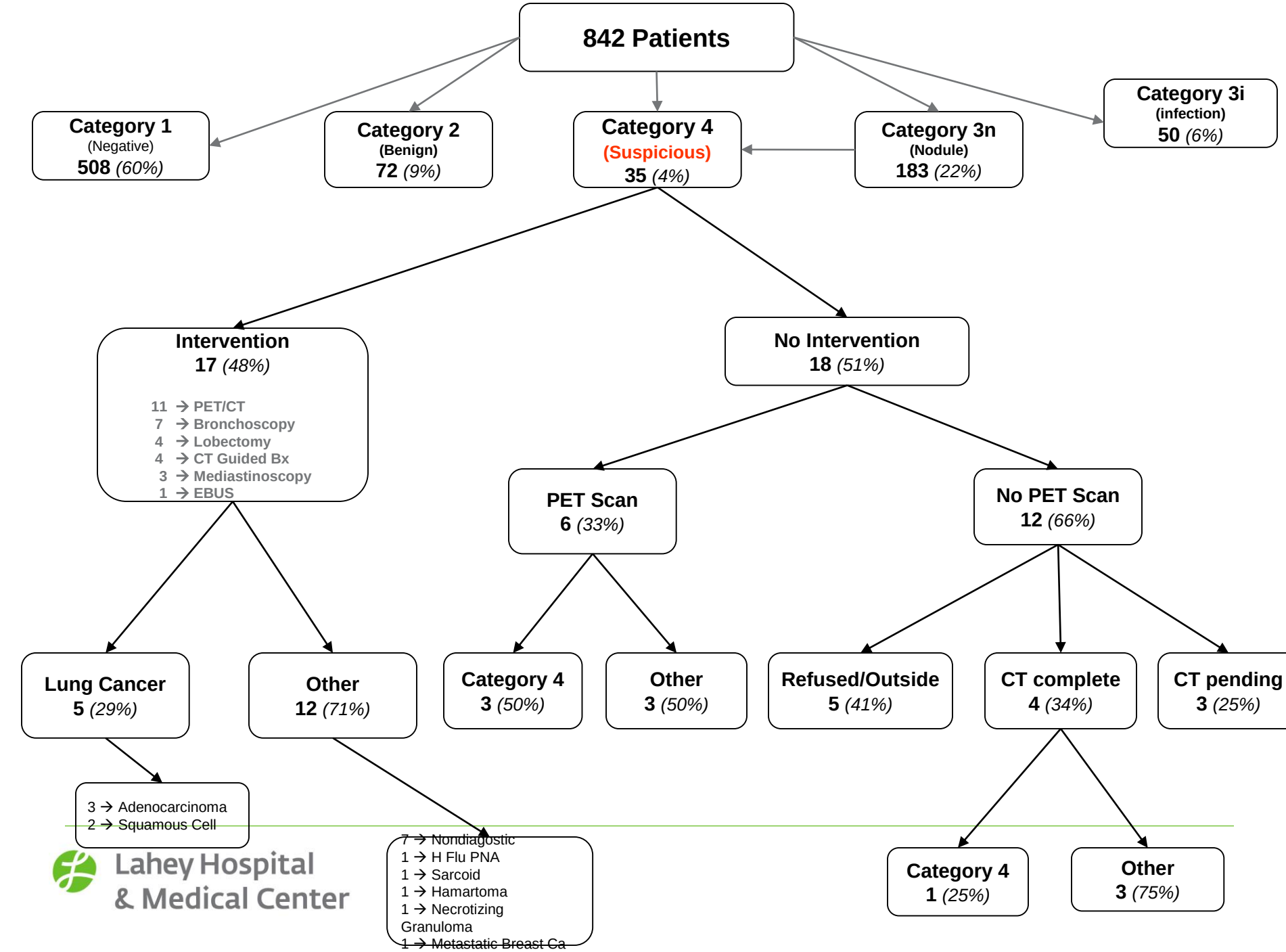
CMS Payment Will Drive Adoption and Access



Screening Flow:

Decentralized Model





Lahey Hospital & Medical Center

Defining CT Lung Screening Success

Primary Goal → ***Save lives***

✓Do it **safely**

✓Do it **cost-effectively**

✓Do it in ***high volume***

(NLST NNS → 320)*

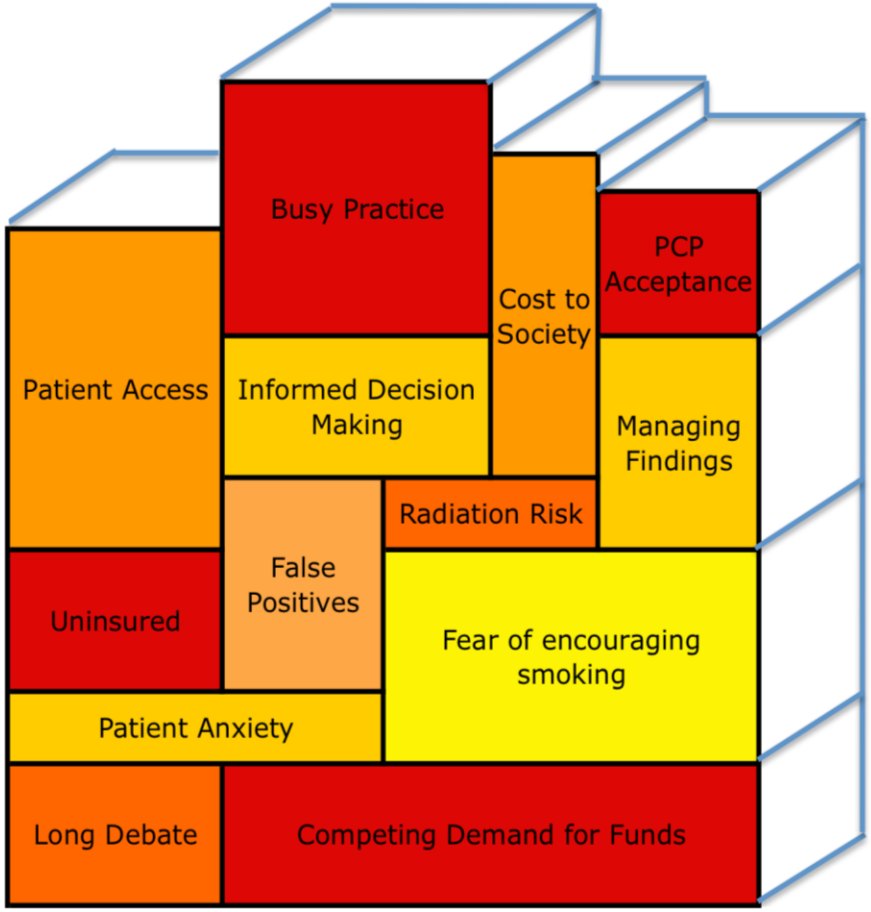
*NLST Research Team. Reduced lung-cancer mortality with low-dose computed tomographic screening. N Engl J Med. 2011 Aug4;365(5):395-409.

Measures of Success

Program Volume

- # referred
- # qualified
- ***# screened***

Is your program accessible?



McKee, B et al. Low-dose Computed Tomography Screening for Lung Cancer in a Clinical Setting: Essential Elements of a Screening Program. J Thorac Imaging. 2015 Mar;30(2):115-29.

Referral Sources
(First 12 Months ~700 patients)

- Lahey PCP – 463 (65%)
- Lahey Spec. Provider – 92 (13%)
  - Pulmonary – 63
  - Radiation Oncology – 11
  - Cardiovascular – 3
  - Breast – 2
  - EIH – 13
- Outside MD – 21 (3%)
  - Outside PCP – 20
  - Outside Pulmonary MD – 1
- Lahey Employees – 33 (5%)
- Lahey Web/Facebook – 11 (1.5%)
- Global Email – 36 (5%)
- Newspaper Articles – 18 (2.5%)
  - Lowell Sun – 16
  - Burlington Times – 1
  - Other newspaper 1
- Other – 37 (5%)
  - Family Member/Friend – 20
  - Brochure/Flyer/Spectrum – 11
  - Women's Fair at Mall – 1
  - Word of Mouth – 1
  - Wellness fair – 3
  - Smoking Cessation - 1

How to engage Primary Care

Build a program they can trust

Invite participation and elicit their input

Help facilitate patient identification

Prepare them to perform shared decision making

Assess and provide feedback – transparency is key

How to engage Primary Care

Provide volume reassurance

Protect their interest

Build a program they can trust

Assist them with smoking cessation

Show them the tools for success

Draw comparisons to mammography

Key Lung Screening Program Elements

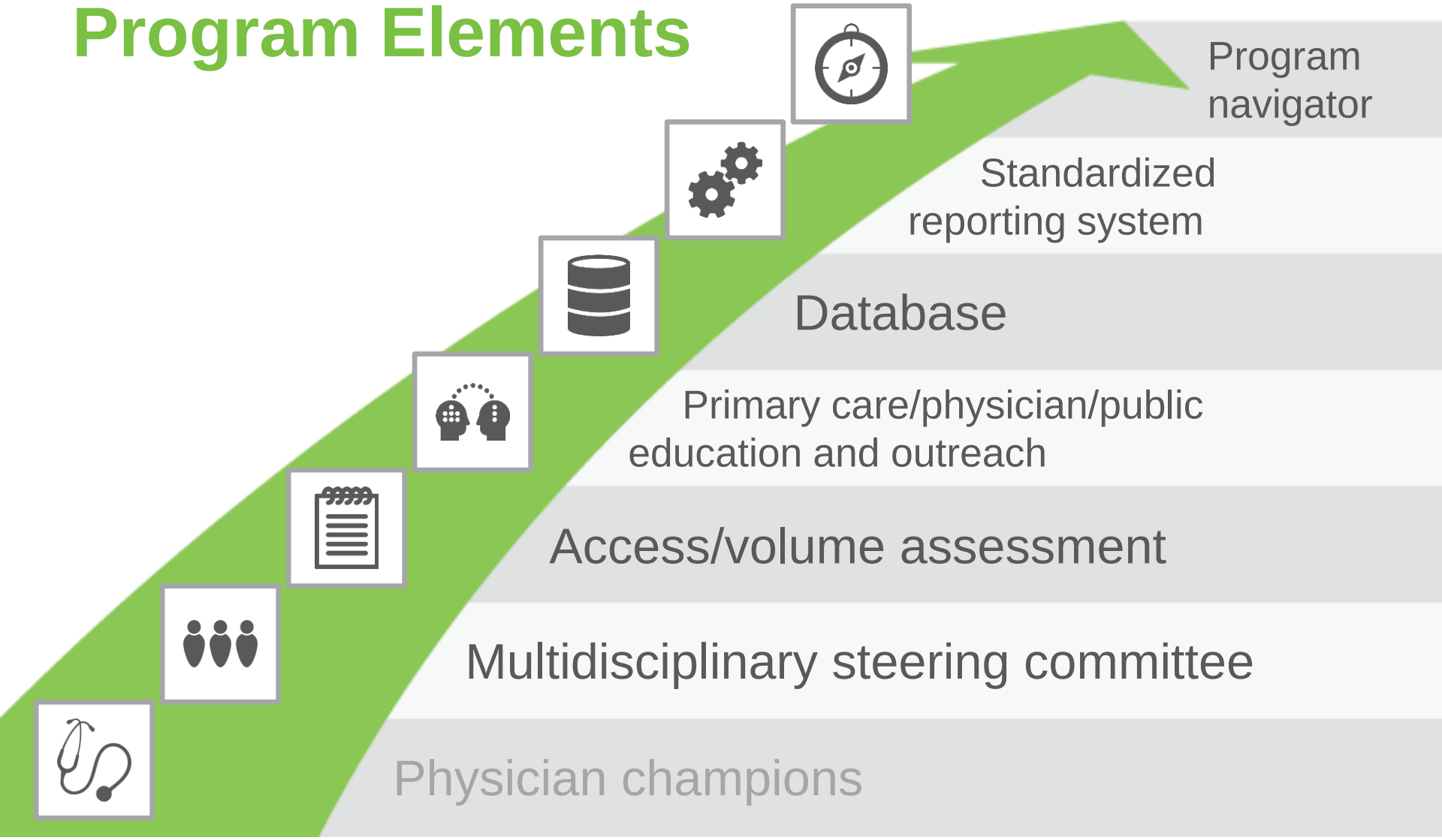


Figure 2. Rescue Lung, Rescue Life Steering Committee Members	
CLINICAL	**ADMINISTRATION**
Radiology • Section Head Thoracic Imaging • Vice Chair Clinical Services • Vice Chair Research • Section Head Interventional Radiology • Chief Resident	**Senior** • VP Hospital-Based Clinical Services • VP Cancer Services • Associate Chief Nursing Officer
Primary Care • Chair General Internal Medicine • Resident Representative	**Radiology** • Administrative Director • Rescue Lung, Rescue Life Program Coordinator • Department Manager, CT • Department Manager, Nuclear Medicine
Pulmonary Medicine • Chair & Chief Medical Officer • Director of Interventional Pulmonology • Residency Director	**Cancer Services** • Department Manager, Radiation Oncology • Specialty Program Coordinator, Radiation Oncology • Rescue Lung, Rescue Life Program Coordinator
Oncology • Chair Radiation Oncology • Cancer Center Medical Director	**Marketing**
Thoracic Surgery	**Business Development**
Laboratory Medicine	**Philanthropy**

Lahey Hospital & Medical Center

Invite participation

McKee, *Oncology Issues,* March 2014 p20-29

NCCN Guidelines®: High-Risk Groups

Group 1 **(Category 1 Recommendation)**	**Group 2** **(Category 2A Recommendation)**
55–74 years old	> 50 years old
Are currently a smoker or have quit within the past 15 years	Have smoked at least a pack of cigarettes a day for 20+ years
Have smoked at least a pack of cigarettes a day for 30+ years	Have one additional lung cancer risk factor, not to include secondhand smoke exposure

NCCN Group 2 Risk Factors

Personal Cancer History

Family History Lung Cancer in 1st Degree Relative

Chronic Lung Disease

Lung Carcinogen Exposure

Excludes exposure to second hand smoking.

NCCN Lung Cancer Risk Factors for Group 2 Qualification (one required)

1. Family history of lung cancer		2. Personal history of chronic lung disease	
○ Mother	○ Sibling	○ COPD	○ Emphysema
○ Father	○ Child	○ Chronic bronchitis	○ Pulmonary fibrosis

3. Occupational exposure to 8 lung carcinogens		4. Radon Exposure
○ Arsenic	○ Chromium	○ Documented Residential
○ Asbestos	○ Diesel Fumes	○ Occupational (Mining)
○ Beryllium	○ Nickel	
○ Cadmium	○ Silica	

5. Personal history of cancer (excluding known metastatic disease)	
○ Lung Cancer (greater than five years ago)	○ Colon
○ Lymphoma	○ Kidney
○ Head and neck	○ Pancreas
○ Esophageal	○ Stomach
○ Bladder	○ Other smoking related cancer (_____)
○ Cervix	

Facilitate patient identification

Volume Assessment

- Build a plan to project volumes
- Impact on operations
- Decentralization

Volume Assessment

	Mammography	LDCT Screen
US Population	60,000,000	9,000,000 (high-risk)
Lahey	30,000	4500

100 screenings per week

PCP Reassurance (1 of 3)

Example Individual PCP: 2500 Patient Panel

~75 patients: Qualify for lung screening (NCCN high-risk)

~10 patients: Positive for a lung nodule

~5 patients: Potentially significant incidental findings

PCP Reassurance (2 of 3)

Example Individual PCP: 2500 Patient Panel

Lahey Hospital Size:
100 screenings per week

1
cancer
per week

10
positives

7
potentially
significant
findings

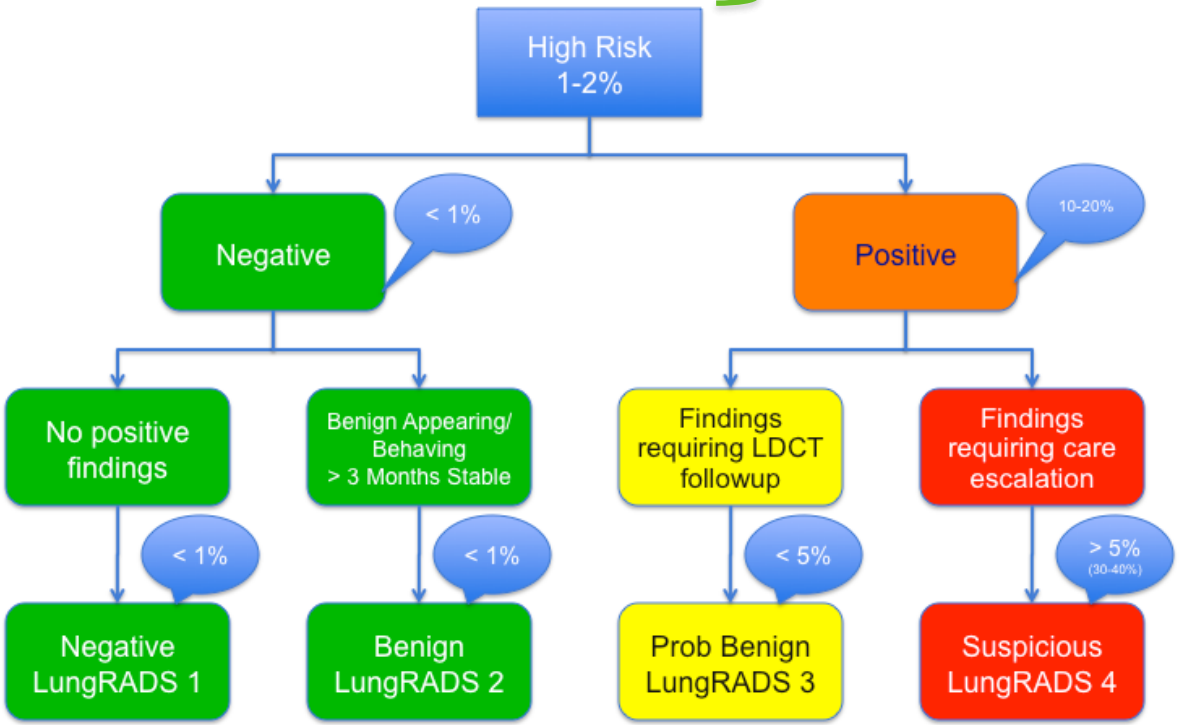
PCP Reassurance (3 of 3)

After 2 years we will save at least 1 life every 3 weeks.

Tools of the Trade

- ***Nodule follow-up algorithms***
- ***Reporting and data system***

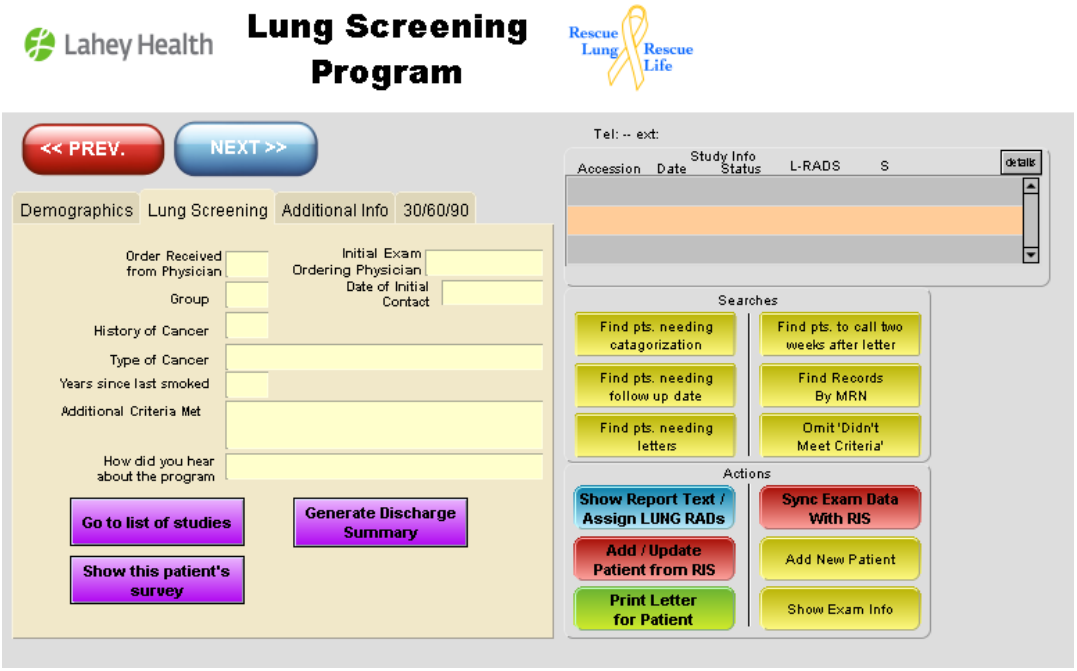
Lung-RADS™



http://www.acr.org/~/media/ACR/Documents/PDF/QualitySafety/Resources/LungRADS/AssessmentCategories.pdf

Tools of the Trade

- Nodule follow-up algorithms
- Reporting and data system
- **Database/Program management system**



CME Campaign
Messages Delivered

Create a sense of urgency

Risks and potential benefits

- Mortality benefit
- Radiation risk
- Overdiagnosis
- False positives
- Anxiety

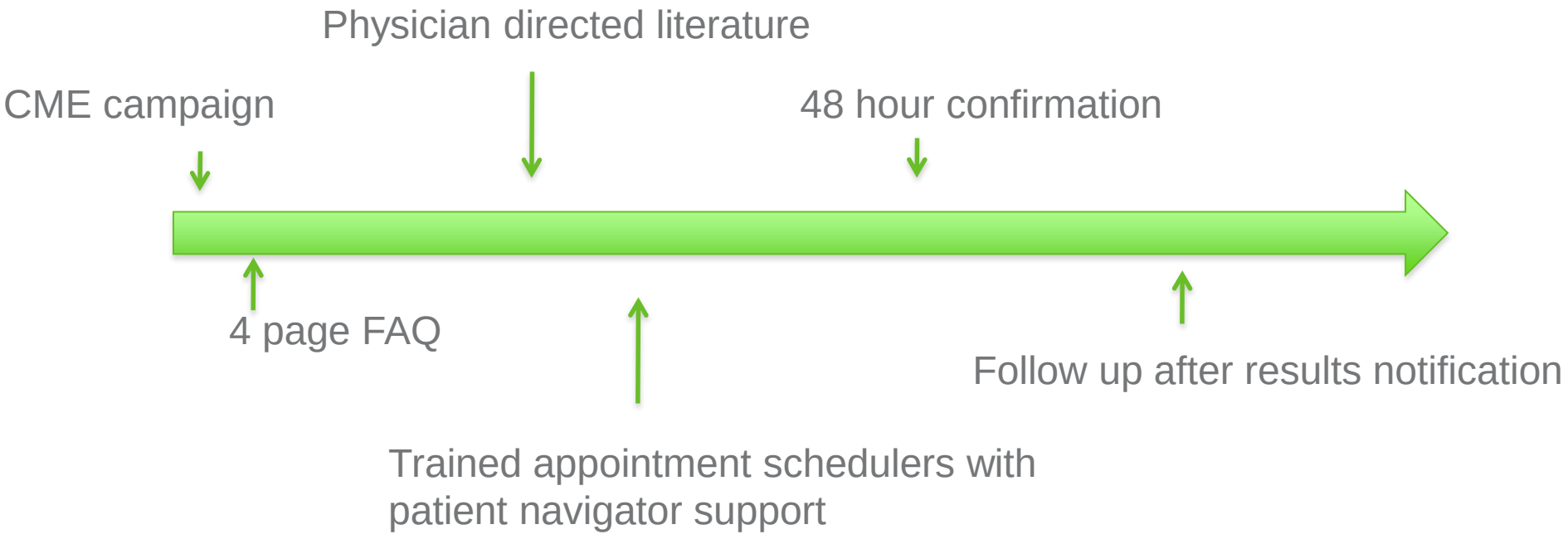
How program is run

- Who to screen
- LungRADS
- Quality metrics
- Steering committee oversight

Role of PCP

- Informed decision making
- Smoking cessation
- Management of findings

Informed Decision



Integrated Smoking Cessation Decentralized Model

CME Campaign:

- Lung cancer facts
- Teachable moment
- Nelson

All patient communications and correspondence

Mayo:

- **3+** = 41.9%
- **2+** = 28%
- **1+** = 19.8%

Telephone intervention study

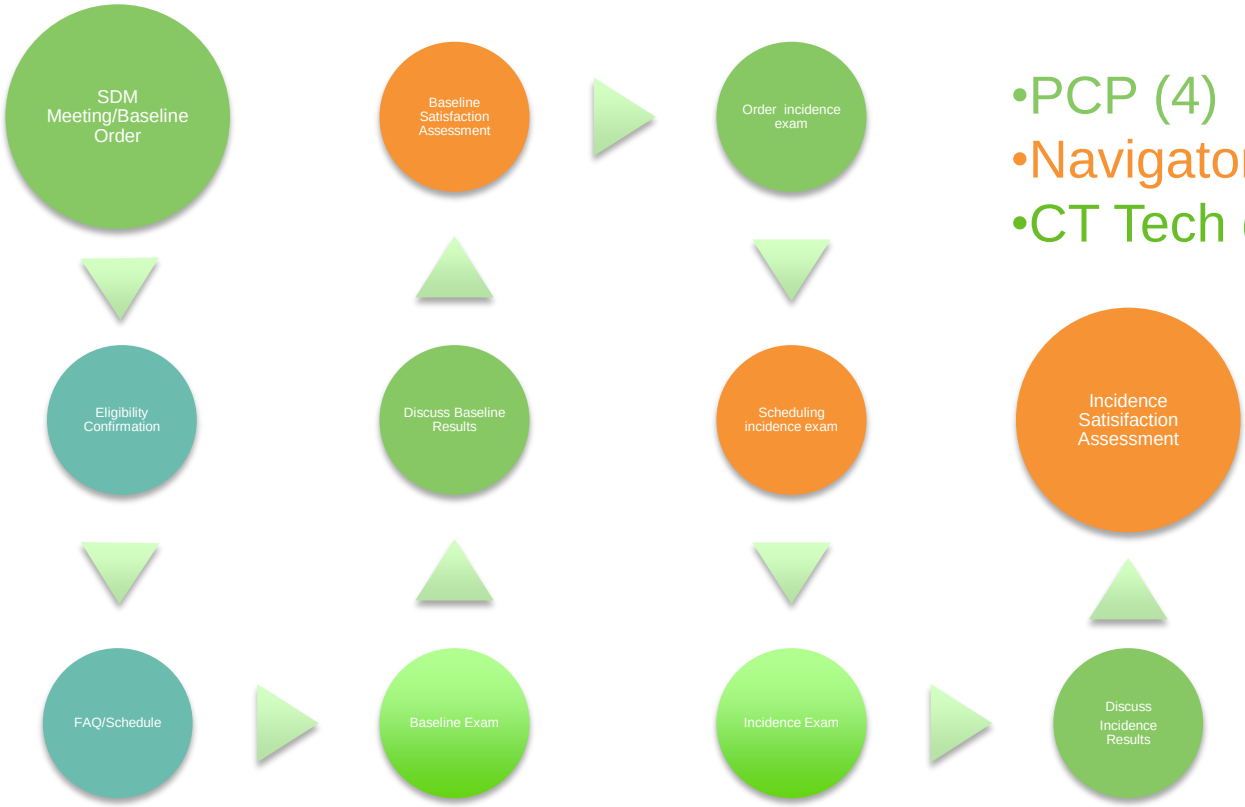
3 week following results notification:

- Freedom from smoking
- PCP referral
- Tobacco-free workshops

Presentation for follow up testing or annual screen

Opportunities for Smoking Cessation

(Over two screening rounds)



- PCP (4)
- Navigator (5)
- CT Tech (2)

11 chances

Measures of Success

Program Volume

- # referred
- # qualified
- # screened

Exam Results

- ***# positive***
- ***# suspicious***
- ***# cancers***
- ***# false pos/neg***
- # S positive

			Positive Thresholds			
			NCCN v1.2012 (~NLST)		ACR LungRADS™	
Overall (n=2180)	**Negative/Benign**	(LungRADS 1 & 2)	1579	72.4%	1949	89.4%
	Positive	(LungRADS 3 & 4)	601	27.6%	231	10.6%
	Probably Benign	(LungRADS 3)	508	23.3%	138	6.3%
	Suspicious	(LungRADS 4)	93	4.3%	93	4.3%
Clinical Follow-up (n=1603)	**Negative/Benign**	(LungRADS 1 & 2)	1185	73.9%	1435	89.5%
	Positive	(LungRADS 3 & 4)	418	26.1%	168	10.5%
	Probably Benign	(LungRADS 3)	352	22.0%	102	6.4%
	Suspicious	(LungRADS 4)	66	4.1%	66	4.1%
	Diagnosed lung cancer • Positive exam result • Includes 3 cases of presumed malignancy[1]		29 (1.8%)		29 (1.8%)	
	Positive Predictive Value:		6.9%		17.3%	
	Biopsy-proven lung cancer • Positive exam result • Excludes 3 cases of presumed malignancy[1]		26 (1.6%)		26 (1.6%)	
	Positive Predictive Value:		6.2%		15.5%	

[1]Patients unable to tolerate biopsy were diagnosed with presumed lung cancer based on PET positivity, suspicious growth rate, and multidisciplinary consensus.

McKee, B et al. Performance of ACR Lung-RADS in a Clinical CT Lung Screening Program. *JACR 2015 Mar; 12(3) 273-6.*

“Right to Know”

THE RIGHTS OF THE PEOPLE

- You have the right to know if you are at risk for lung cancer.
- You have the right to know that well-organized low-dose CT screening has been shown to significantly reduce the possibility of dying from lung cancer.
- You have the right to clear and unbiased information on the risks and benefits of CT screening.
- You have the right to fair and equitable access to medically appropriate CT screening.
- You have the right to timely and compassionate care if you are diagnosed with lung cancer.
- You have the right to donate your scans and biological specimens to lung cancer research to help find additional life-saving cures.
- You have the right to ask screening sites if they follow the Guiding Principles for Lung Cancer Screening Excellence and provide care in a multi-disciplinary continuum.

Screening Endorsements: Risk Management

Following *NLST* publication and the NCCN Guidelines® many additional medical societies have recommended LDCT screening (0 before the *NLST*):

- National Comprehensive Cancer Network ***(NCCN)***
- American Lung Association (***ALA)***
- American Thoracic Society ***(ATS)***
- American College of Chest Physicians ***(ACCP)***
- American Society of Clinical Oncology ***(ASCO)***
- American Association for Thoracic Surgery ***(AATS)***
- American Cancer Society ***(ACS)***
- American Association of Bronchology and Interventional Pulmonology ***(AABIP)***
- Society of Thoracic Radiology ***(STR)***
- Society of Thoracic Surgeons ***(STS)***
- International Association for the Study of Lung Cancer ***(IASLC)***
- Oncology Nursing Society ***(ONS)***
- European Society of Thoracic Surgeons ***(ESTS)***
- American College of Radiology ***(ACR)***
- Cancer Care Ontario ***(CCO***
- ***United States Preventative Services Task Force (USPSTF)***

Failure to Screen Lawsuits: Risk Management

"…juries confronted with a plaintiff patient who develops cancer or other serious disease for which a screening test was available but not ordered by the patient's physician, tend to find that the physician's failure to order the test was negligent."

Berlin, L. AJR December 2002 vol. 179 no. 6 1401-1405

"Lawsuit Follows Death of Woman When Doctors Failed to Screen Her As Per Cancer Screening Guidelines"

DC Jury Awards $5M for Failure to Screen for cancer – June 25, 2012

"…family claimed that his Washington-based doctor, Dr. …, failed to perform the full scope of screening laid out in guidelines from national health organizations."

Invite participation and elicit their input

Align goals

Help facilitate patient identification

Prepare them to perform shared decision making

Assess and provide feedback – transparency is key

How to engage Primary Care

Provide volume reassurance

Protect their interest

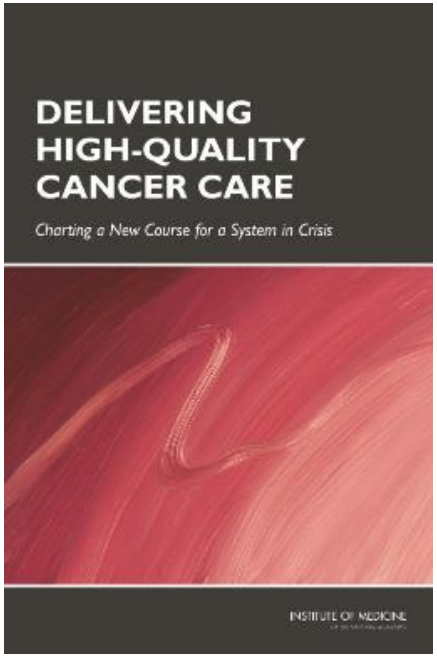
Build a program they can trust

Assist them with smoking cessation

Show them the tools for success

Draw comparisons to mammography

Institute of Medicine Report 2013: System in Crisis Align Goals



Engaged patients

Adequately staffed, trained, and coordinated workforce

Evidence-based cancer care

A learning health care IT system for cancer

Translation of evidence into clinical practice, quality, measurement, and performance improvement

Accessible, affordable cancer care

IOM Report 2013

CMS Measure Domains : Align Goals

Domains	Value based delivery system
Safety	Reduce potential for patient harm Unnecessary testing in LungRADS category 3 Group Wrong Screening Test Fabrication of symptoms
Patient/Family Experience and Outcomes	Reduce cost to patient Lower burden of Stage IV disease
Care Coordination	Standardize communication among providers Coordinate care among providers
Clinical Care	Prevention Improved outcomes
Population of Community Health	Reduce healthcare disparities Improved access with PCP involvement Integrated smoking cessation
Efficiency and Cost Reduction	Avoid high cost specialty clinics for cases not needing that level of care Centralized specialty clinics resource intense High marketing costs Limit litigation risk

Making a case to screen: Align Goals

Save lives – unprecedented opportunity

Self sustaining

Save money - ACO

Teamwork and innovative treatment delivery system – Senior leadership support

- Multidisciplinary Approach
- Build infrastructure to improve efficiency overall

In other words: Fulfill Hospital Mission

Save Lives, Growth, Innovation, Sustainability, Teamwork

Take Home

Access to quality CT lung screening represents one of the greatest opportunities to improve outcomes for patients diagnosed with lung cancer in the history of the disease

Primary care plays a CRITICAL role in well run decentralized CT lung screening program development and operations

Most patients diagnosed with lung cancer are former smokers looking for an opportunity to improve health outcomes through secondary prevention

Enormous opportunity to improve outcomes through primary care programmatic integrated smoking cessation and primary prevention

Opportunity to fulfill goals set forth by the IOM, CMS, and your Institution