

# Strategies for a Successful Lung Screening Program

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# Moffitt Cancer Center Overview



## Mission:

*Moffitt is dedicated to one lifesaving mission: to contribute to the prevention and cure of cancer.*



## National Cancer Institute-designated:

*Moffitt is one of only 51 Comprehensive Cancer Centers, a distinction that recognizes scientific excellence, multidisciplinary research, and robust training and education.*



## Team:

*With more than 7,500 team members, Moffitt provides comprehensive treatment for over 60 cancer types and is home of Florida's largest clinical research unit with more than 450 clinical trials*

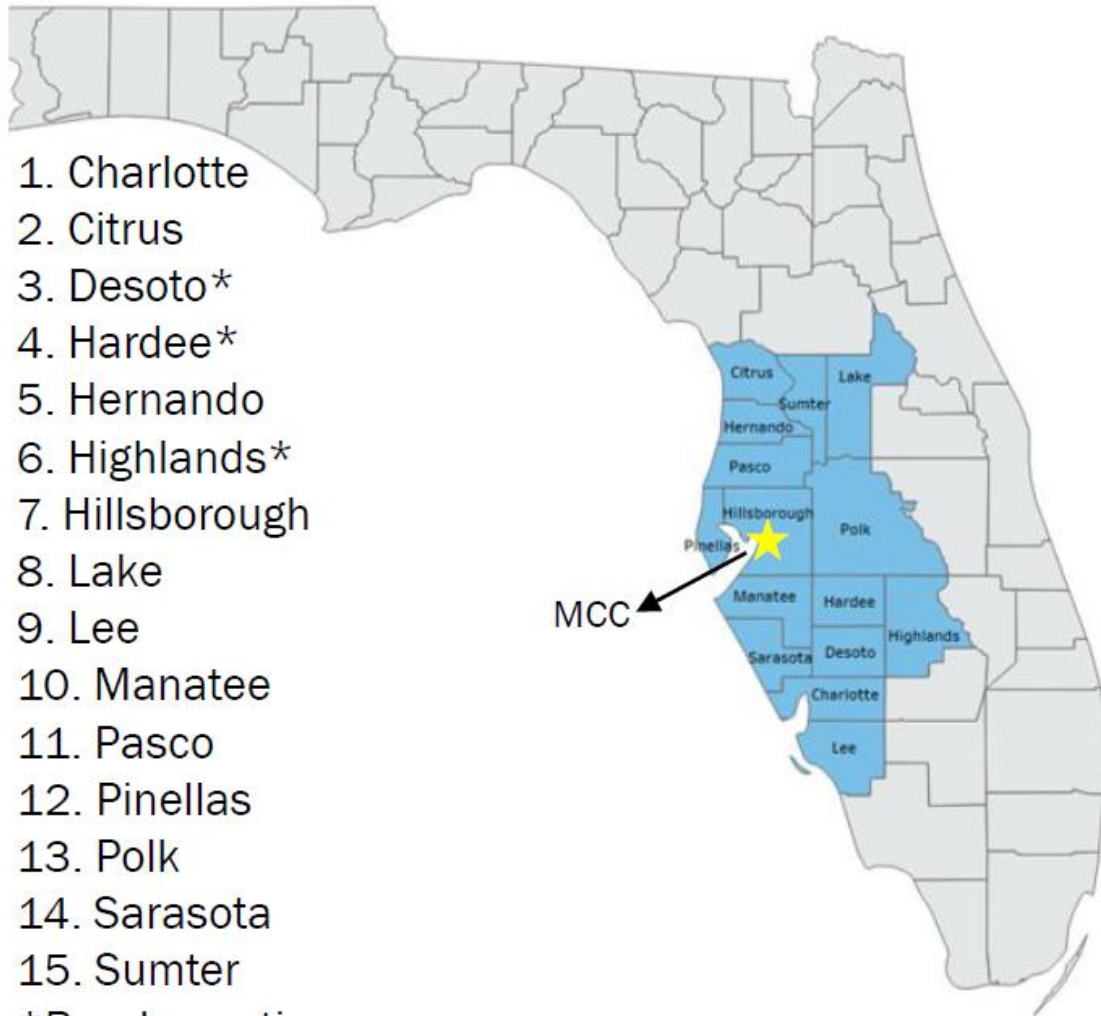


## Impact:

*Serving ~70,000 patients annually, Moffitt has an economic impact in the state of \$2.4 billion.*



# Moffitt Cancer Center Catchment Area Overview



\*Rural counties

## Catchment Area Characteristics

- 15 county region of West Central Florida
- 30% of Florida’s population (6.1M residents).
- ~50% of catchment counties have a higher cancer incidence rate than the state
- 6 catchment counties have a poverty rate higher than the state.

Group	Catchment Area	U.S.
Black	10.6%	12.7%
Hispanic	17.7%	18.3%
Seniors (>age 65)	24.1%	16.0%
Uninsured	12.4%	8.9%
Current Smokers	19.6%	16.1%



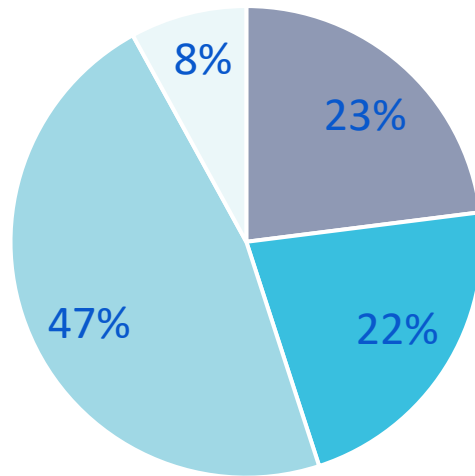
# Lung Cancer Statistics, 2009-2015

## Incidence Rate

- US Rate: 83.04
- Florida Rate: 80.84
- **Catchment Rate: 85.74**

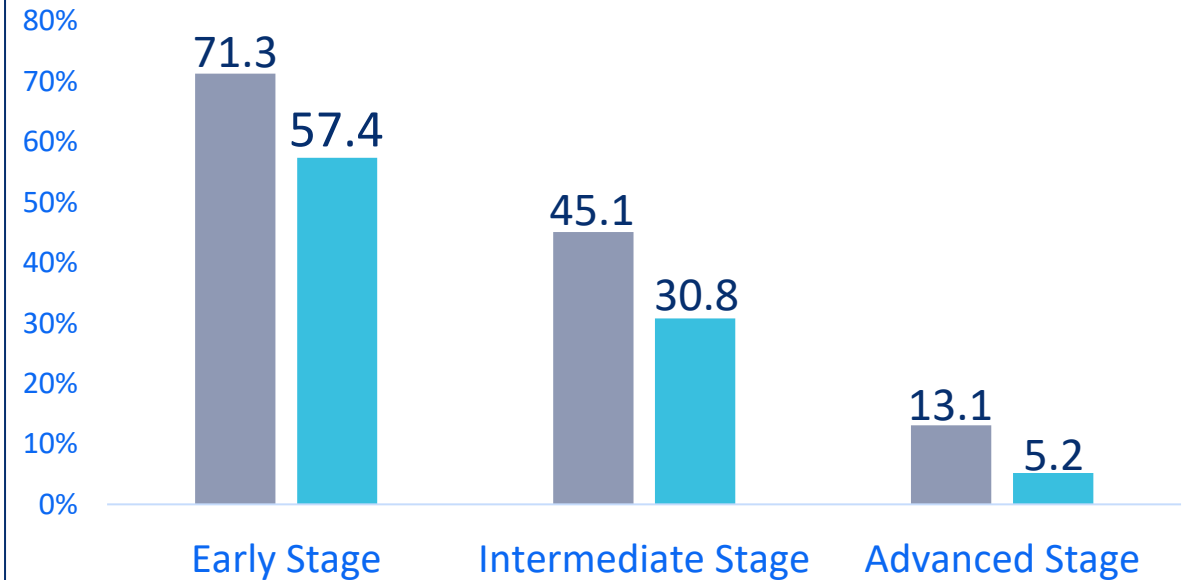
## Diagnosis by Stage

■ Early ■ Intermediate ■ Advanced ■ Unstaged



## Five-Year Survival Rate, 2009-2015

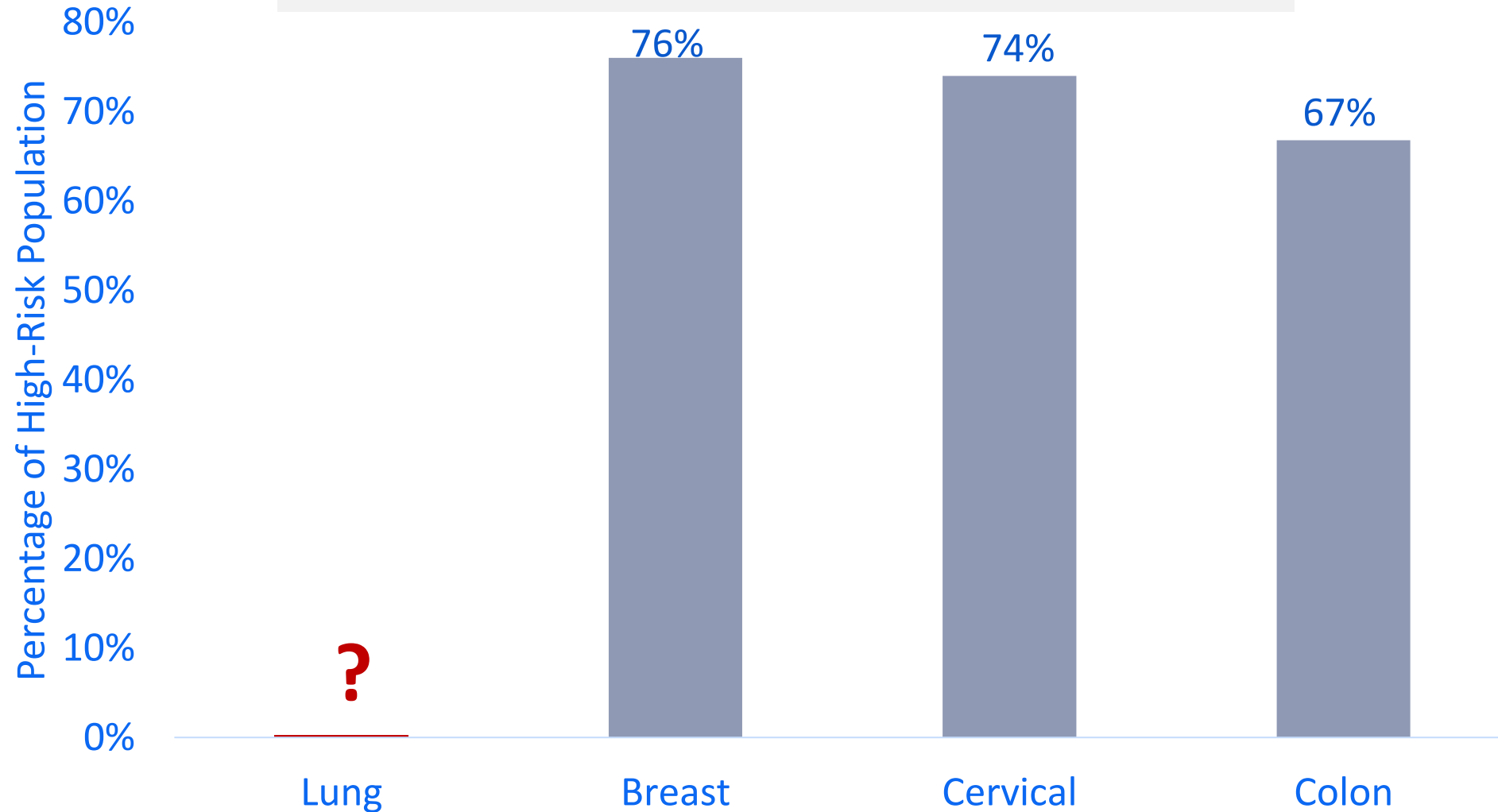
■ Moffitt ■ National (SEER)





# National Screening Rates, 2019

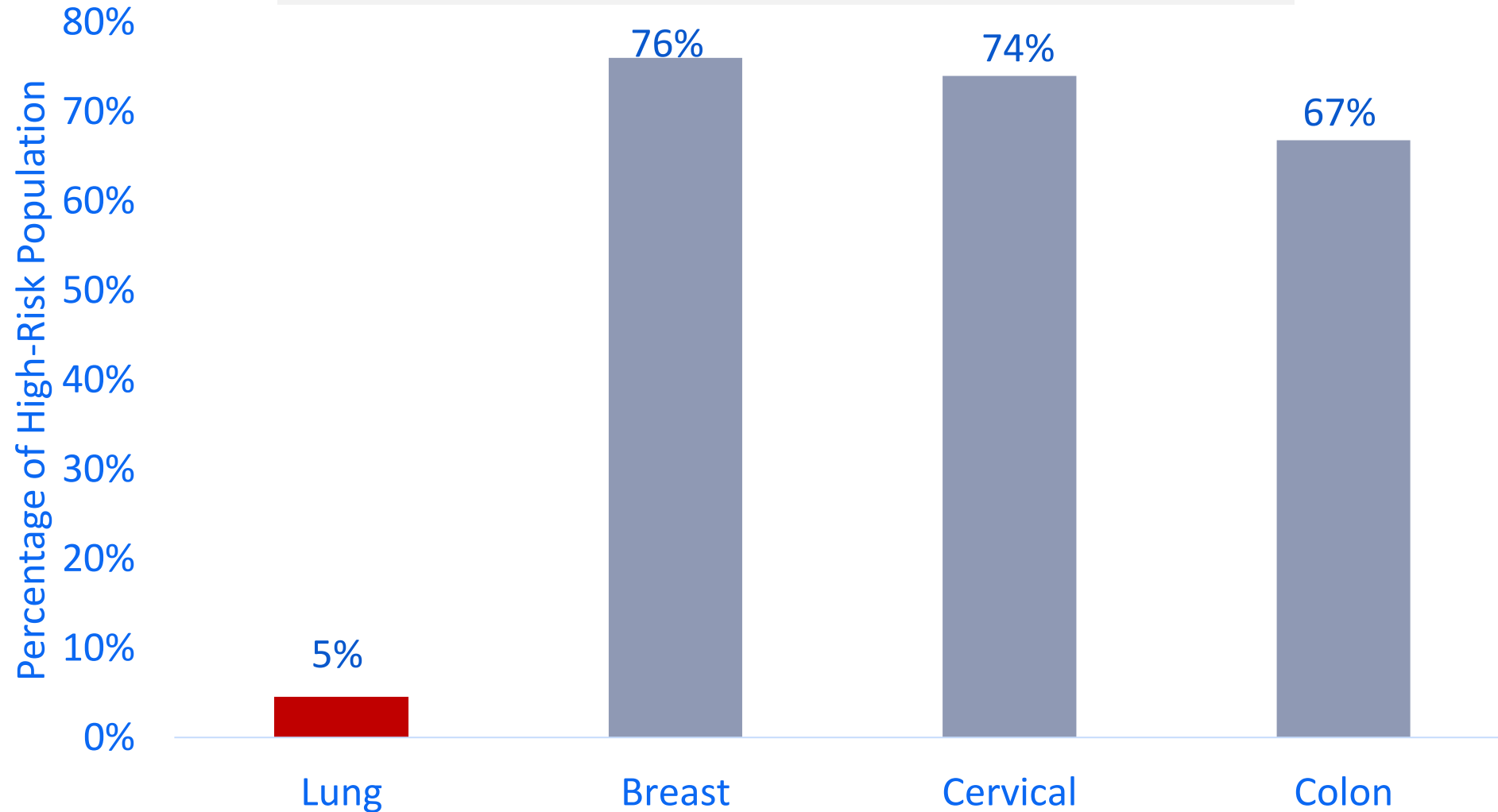
What is the national screening rate is for lung cancer?





# National Screening Rates, 2019

In Florida, only 3.2% of those at high risk were screened – ranking 40<sup>th</sup> among all states.





# MCC's Lung Cancer Screening Program Overview

## Program Insights

- Developed in 2012 as research protocol
- Currently housed in Thoracic Oncology
- Conducts ~500 screenings annually
- Accredited by the American College of Radiology and GO2 Foundation as a Center of Excellence

## Lung Screening Program Steering Committee

- |                       |                      |
|-----------------------|----------------------|
| • Thoracic Surgery    | • Research           |
| • Medical Oncology    | • Physician Liaisons |
| • Radiology           | • Diversity Outreach |
| • Epidemiology        | • Marketing          |
| • Tobacco Specialists | • Public Relations   |

*Vision: Provide a comprehensive lung screening program that streamlines patient management and continuity of care from screening to treatment*

## Lung Screening Program Key Stakeholders

Medical Director



**Tawee Tanvetyanon, MD, MPH**  
Thoracic Medical Oncologist

Navigator/  
Community Outreach



**Haley Tolbert, MHA**  
Lung Screening Coordinator

Shared Decision Making



**Deanna Grubbs, PA-C**  
Thoracic Oncology APP

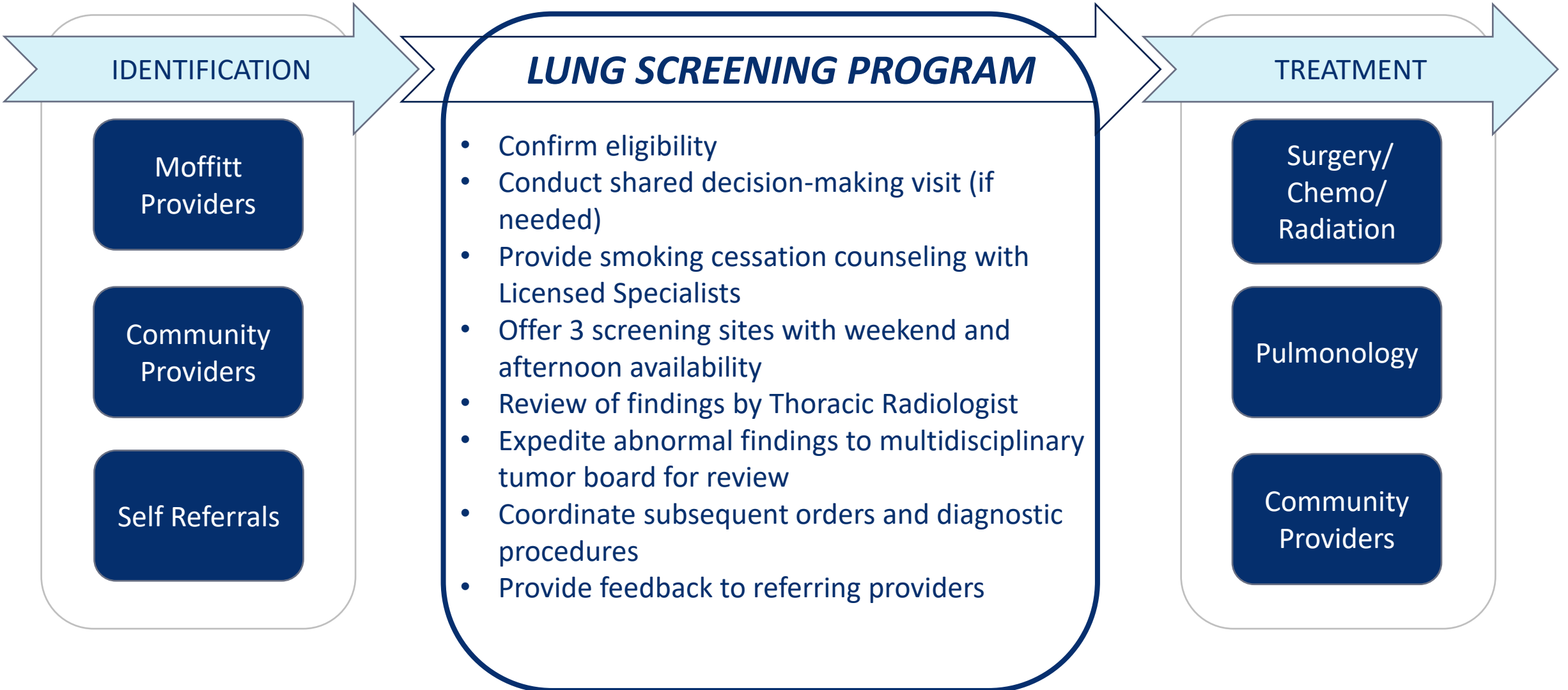
Results/  
Clinical Coordinator



**Bernadette Shields**  
Thoracic Clinic Manager



# MCC's Lung Cancer Screening Program Overview





# Challenges in the Utilization of Lung Cancer Screening

## Program Level

- Lack of organizational buy-in
- Uncertain return on investment
- Requires multidisciplinary collaboration

## Provider Level

- Misinformation in the effectiveness of screening
- Limited training in Shared-Decision Making
- Management of results and coordination of care

## Community & Patient Level

- Cost due to conflicting eligibility criteria
- Lack of awareness
- Adhering to annual screenings



## Strategies to Overcome **Program** Challenges

# Creating Buy-In

## Evidence-Based:

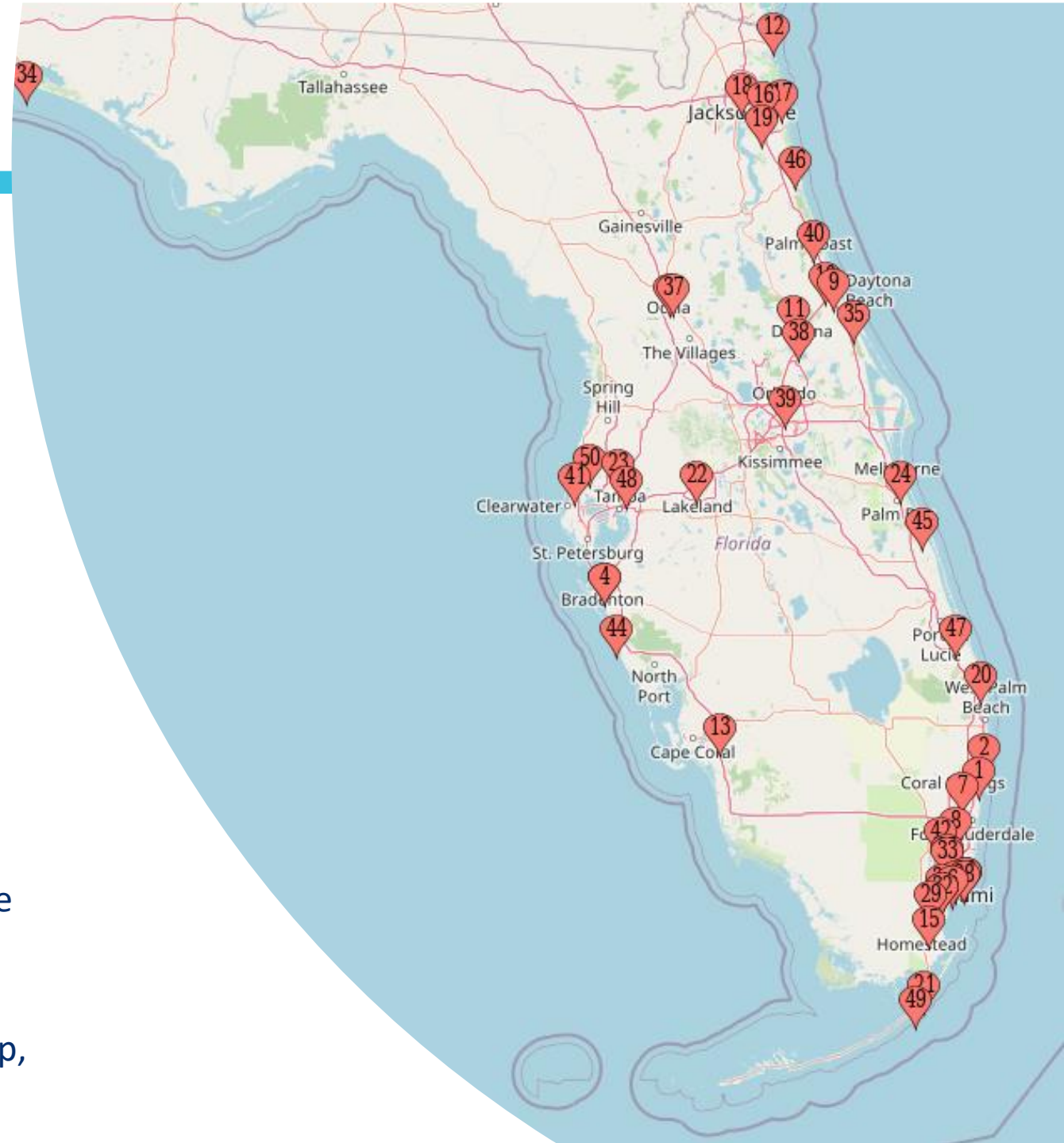
- NLST showed that screening with CT compared to chest radiography results in a 20% mortality reduction.
- NELSON Trial showed that compared to no screening at all, screening with LDCT results in a 26% mortality reduction in men and up to 61% mortality reduction in women.

## Untapped Market:

- Only 3.2% of Floridians considered high-risk for developing lung cancer receive annual screening
- The 2021 United States Preventive Service Task Force recommendations expands eligibility to an additional 14.5 million Americans, an increase of 81%.
- Geographical gaps in access to GO2 Center of Excellence screening centers

## Down Stream Revenue:

- Down stream revenue associated with diagnostic workup, incidental findings, and treatment costs.





# Return on Investment

## Significant Initial Investment Costs:

- Salary support (nursing, navigator, etc.)
- Imaging infrastructure
- Software
- Marketing

## Direct Revenue:

- Reimbursement for LDCT imaging
- Shared Decision-Making Counseling
- Smoking Cessation Counseling

## Downstream Revenue:

- Diagnostic Workup (imaging, PET, biopsy, etc.)
  - 4% of lung screenings will have a Lung-RADS 4
- Treatment (doctor, hospital, pharmacy)
  - 15.0% of cases requiring workup will result in cancer diagnosis



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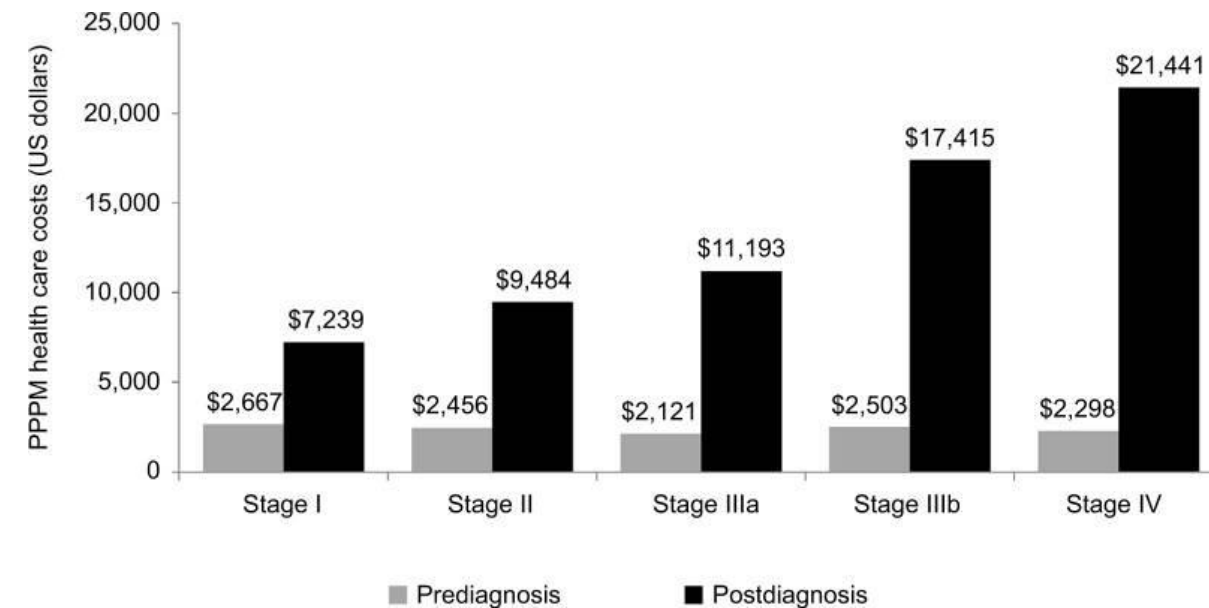
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## Treatment Costs by Stage for NSCLC, 2007-2011

Data Source: Optum Health Research Database (n=1,507)



### Key Takeaway:

- Diagnostic costs for a single patient is ~\$2,400/month
- Treatment costs are much higher for patients with Stage IV lung cancer (\$21,000/month) compared with Stage I lung cancer (\$7,000/month).



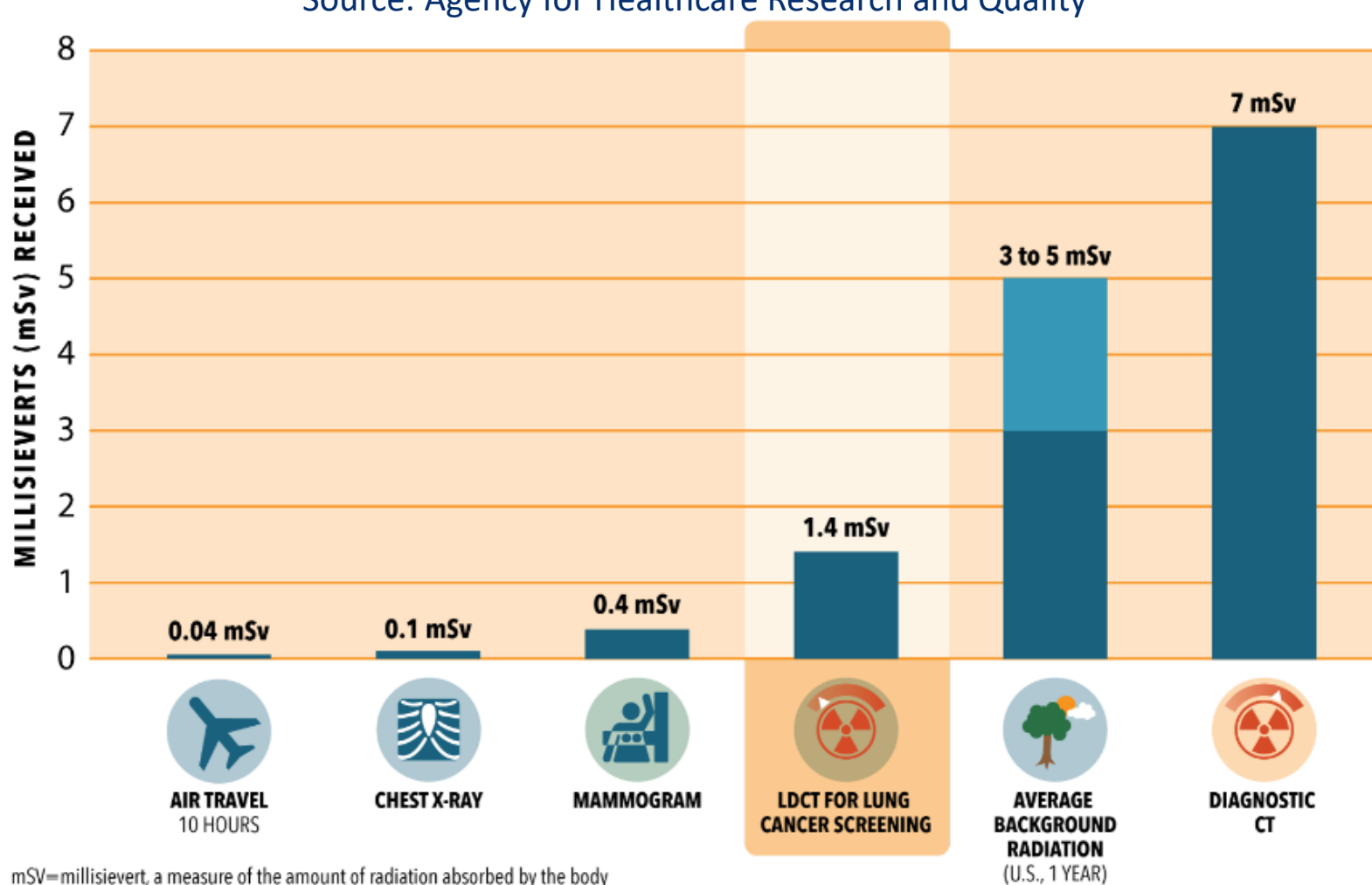
## Strategies to Overcome **Provider** Challenges

# Misinformation in the Effectiveness of Screening



## Radiation Exposure

Source: Agency for Healthcare Research and Quality



# Misinformation in the Effectiveness of Screening



## False-Positive Rate

National Lung Screening Trial	23.3%
Lung-RADS	10.4%

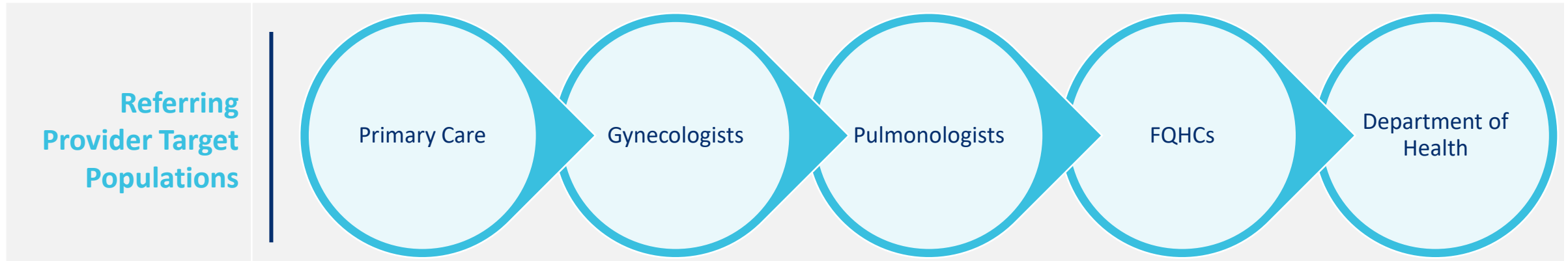


To decrease the high false-positive rate of the NLST, the ACR developed Lung-RADS in 2014 to standardize assessment categories, confer probability of cancer, and provide management recommendations.





# Misinformation in the Effectiveness of Screening



## Effective Ways to Reach Referring Providers:

- Hospital Grand Rounds
- Sponsor/present at medical conferences
- Physician liaison-based newsletters and email blasts
- Clinic specific outreach through Lunch and Learns or brief presentations at routine meetings
- Mailed “Lung Screening Toolkits” that contain flyers, direct program contacts, smoking cessation resources, etc.
- Important! Share success stories of patients with early-stage lung cancer detected through screening



# Shared Decision-Making

- **Who needs a Shared-Decision Making Visit?**

- Medicare patients receiving their first (baseline) lung screening

- **Who can complete a Shared-Decision Making Visit?**

- Physician or qualified nonphysician practitioner (physician assistant, nurse practitioner, clinical nurse specialists)

- **What are the components of a Shared Decision-Making Visit?**

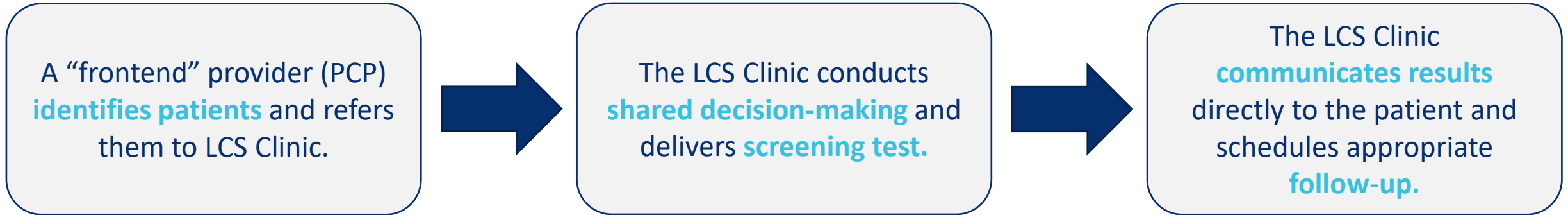
1. Determination of eligibility: Age, absence of symptoms, calculation of pack-years, number of years since quit
2. Shared Decision Making: Benefits, harms, follow-up diagnostic testing, over-diagnosis, false positive rate, total radiation exposure
3. Counseling on importance of adherence to annual LDCT, impact of comorbidities, and ability or willingness to undergo diagnosis and treatment.
4. Counseling on importance of maintaining cigarette abstinence or furnishing information about tobacco cessation services.

Although CMS estimated the mean cost of providing shared decision making was \$130.44, the payment rate for was set at \$70.23 (2017).

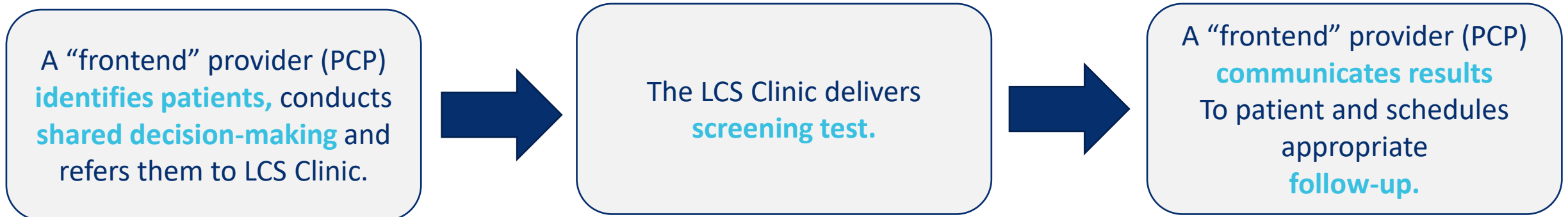


# Shared Decision-Making Models

## Centralized Model



## Decentralized Model





# Management of Results & Coordination of Care

## Need for Support in Management of Abnormal Results

- 68% of PCPs report needing additional information on follow-up recommendations for nodules
- 50% report “don’t know” or “unsure” regarding whether Lung-RADS is important in nodule follow-up

## Impact of Mismanaged Abnormal Results

- 40% of PCPs follow guidelines for lung nodule management
- 39% of identified pulmonary nodules are unfollowed due to gaps in coordination of care between radiology and PCP.
- 65 days, on average, is the length of time between an abnormal CT scan to a diagnosis. A 6-week delay in lung cancer treatment results in a 13% reduction in 5-year survival.

## Moffitt Solutions for Coordination of Care

- Provide clear communication to referring provider with structured LDCT reports that provide Lung-RADS category and management plan (automatically faxed).
- Incidental findings that can not be managed/treated at Moffitt are communicated to referring provider both written by fax and orally over phone.
- Various vendors provide software that assist in the evaluation and management of incidental findings and lung nodules



## Strategies to Overcome Community and Patient Challenges

# Nuanced Eligibility Criteria and Insurance Coverage



## United States Preventive Service Task Force



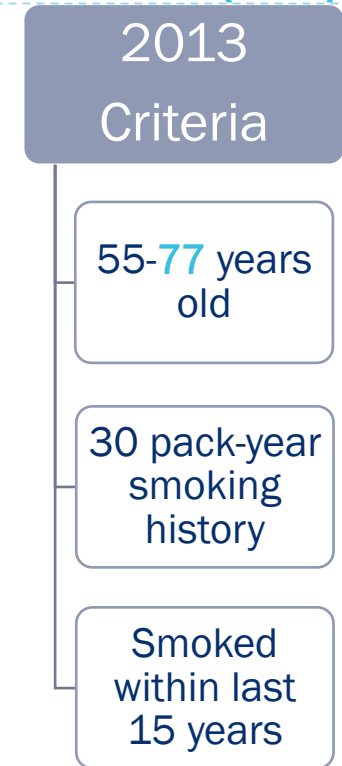
Payer Type: Commercial and Medicaid

## National Comprehensive Cancer Network



Payer Type: N/A

## Centers for Medicare & Medicaid Services (CMS)



Payer Type: Medicare

Payers are given up to one year from the start of the next plan year to update their coverage policies to 2021 USPSTF guidelines.

Expanded recommendation due to 37% of new cases found in individuals aged 75 or older and 40% of new cases found in the  $\geq 15$  YSQ pop.

CMS expects to finalize new recommendations before Feb 2022.

# Nuanced Eligibility Criteria and Insurance Coverage



## Moffitt Strategies to Increase Access to Newly Eligible and Uninsured Populations:

### 1. Patient Education & Communication

- Develop standardized workflow to ensure eligibility criteria is reviewed with patients on a case-by-case basis to ensure there is no surprise billing

### 2. Multiple Payment Options

- Offer a self-pay rate
- Evaluate opportunities to provide discounted or no cost lung screenings through charity care, grant writing, or the development of research protocols

**LOW DOSE CT LUNG CANCER SCREENING VOUCHER**  
PROVIDED BY: Moffitt Cancer Center

MOFFITT CANCER CENTER

1-888-MOFFITT (1-888-883-3488) www.Moffitt.org

Referral Date: \_\_\_\_\_ (Voucher is valid for 90 days from referral date)  
Patient Name: \_\_\_\_\_ DOB: \_\_\_\_\_  
Patient Address: \_\_\_\_\_  
Zip Code: \_\_\_\_\_ Patient Phone Number: \_\_\_\_\_  
Name of Referring Clinic: \_\_\_\_\_  
Name of Referring Provider: \_\_\_\_\_  
Clinic or Provider Phone Number: \_\_\_\_\_

Patients who meet the following criteria may be eligible to receive a voucher, which provides an annual Low Dose CT Lung Screening at no cost.  
Provider signature below indicates that the patient meets the criteria to the best of your knowledge.

Please indicate which lung cancer risk factors impact this patient: (check all that apply)

- Smoking History
- Personal Cancer History
- Strong family history of lung cancer (one or more first degree relatives)
- Radon or Occupational Exposure
- Disease History (COPD or pulmonary fibrosis)
- Other: \_\_\_\_\_

To qualify for the voucher, one must:

Meet all Financial Guidelines:

- No health insurance AND
- Live in Pinellas, Hillsborough, Pasco, or Polk County AND
- Not on a student or tourist Visa AND
- Meet the income guideline (<200% of FPL)

Meet all National Comprehensive Cancer Network (NCCN) Clinical Guidelines:

- Be asymptomatic with no hemoptysis, coughing up blood or unexplained weight loss
- Be 50 years of age or older
- Current or former smoker with a 20 pack year smoking history; as determined by: pack year = total # of years smoked X # of packs smoked per day

Provider Signature: \_\_\_\_\_

Please email any questions to [LungScreening@Moffitt.org](mailto:LungScreening@Moffitt.org).

Patient or clinic should call Moffitt Cancer Center at 813-745-3880 to schedule the appointment and indicate that the patient has a lung voucher. Please fax the voucher to 813-448-8077.

Patient, please bring this voucher with you to your appointment. For favor traigan este vale a su cita.

# Lack of Awareness







# Lack of Awareness

## Moffitt Marketing and PR Strategies to Increase Awareness in the Community

- Consider community demographics when designing collateral that is racially and linguistically diverse
- Decrease stigma of lung screening by avoiding cigarette graphics
- Maximize search engine exposure to drive self-referrals
- Leverage access to existing patients (posters/flyers in clinic, education material in portal, etc.)
- Utilize social media to broadcast live events, campaigns, and blog posts
- Focus on hope and benefits of lung screening and avoid “scare tactics” such as lung cancer mortality
- Share success stories and patient advocate testimonials
- Leverage attention of November Lung Cancer Awareness Month
- Engage City officials through City Proclamations



# Adhering to Continued Screening

## Moffitt Strategies to Increase Adherence to Screening

FY 2021 Retention Rate	75%
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### 1. Communication

- Provide clear explanation of findings - Results are communicated and explained to the patient in both writing and oral communication, regardless of findings.
  - Orally: Nurse calls patient to provide results. At this time, an appointment may be scheduled with a provider if the patient prefers a detailed review of images.
  - Writing: The detailed lung screening report is automatically uploaded to the patient chart. A letter containing findings and recommended treatment plan is mailed to the patient's home address.

### 2. Scheduling

- Proactively schedule annual screenings - The order for subsequent screenings is placed at the time of providing results to the patient.

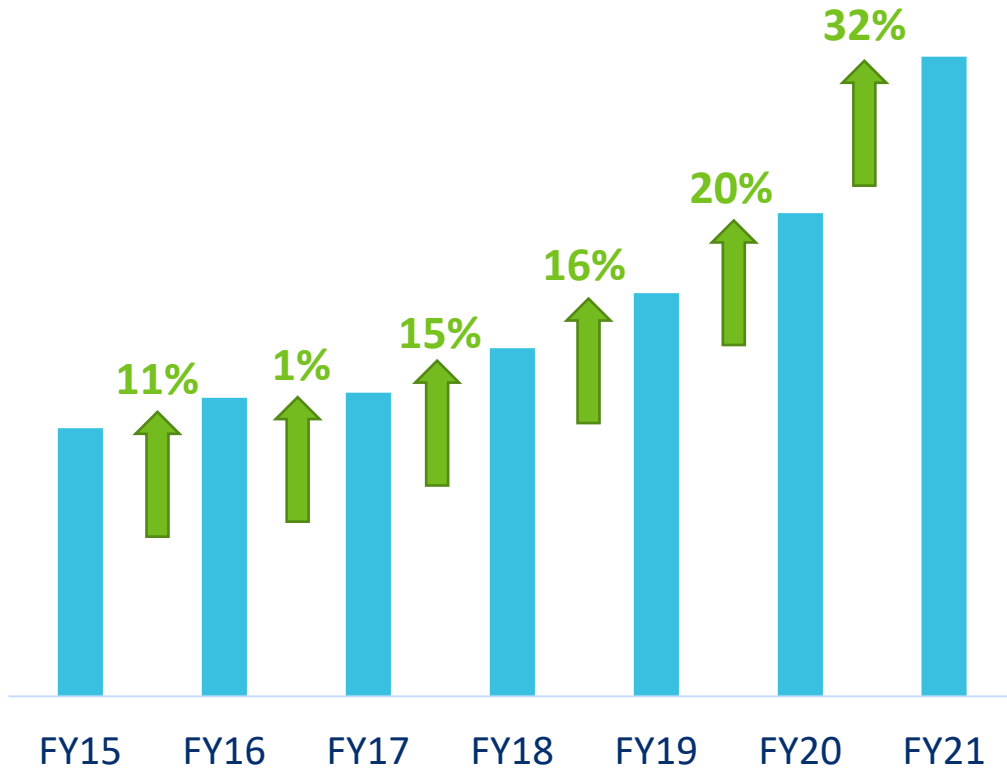
### 3. Reminders

- Provide multiple channels of communication - All patients receive automatic reminders via the patient portal, call, and text. Patients who were scheduled prior to six months before the date of service will receive an additional call from the coordinator.



# Lung Cancer Screening at Moffitt

Patient Volume % Increase per Fiscal Year

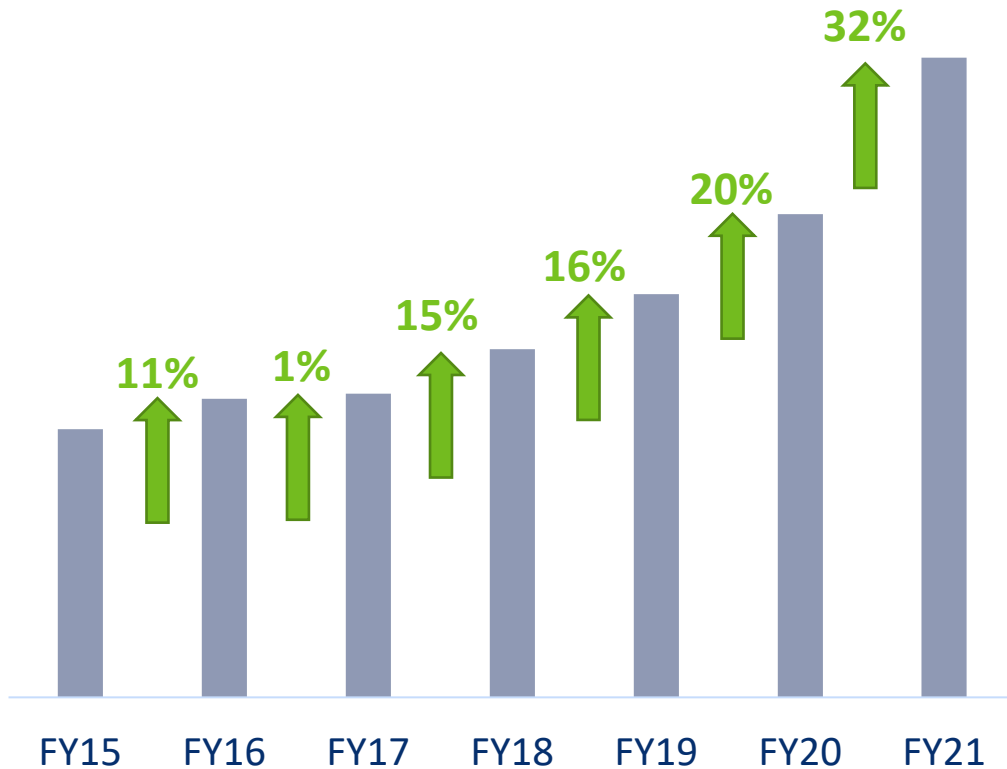


With evidence-based strategies focused on patient retention, community outreach, and provider engagement, it is possible to build and grow a successful lung screening program!



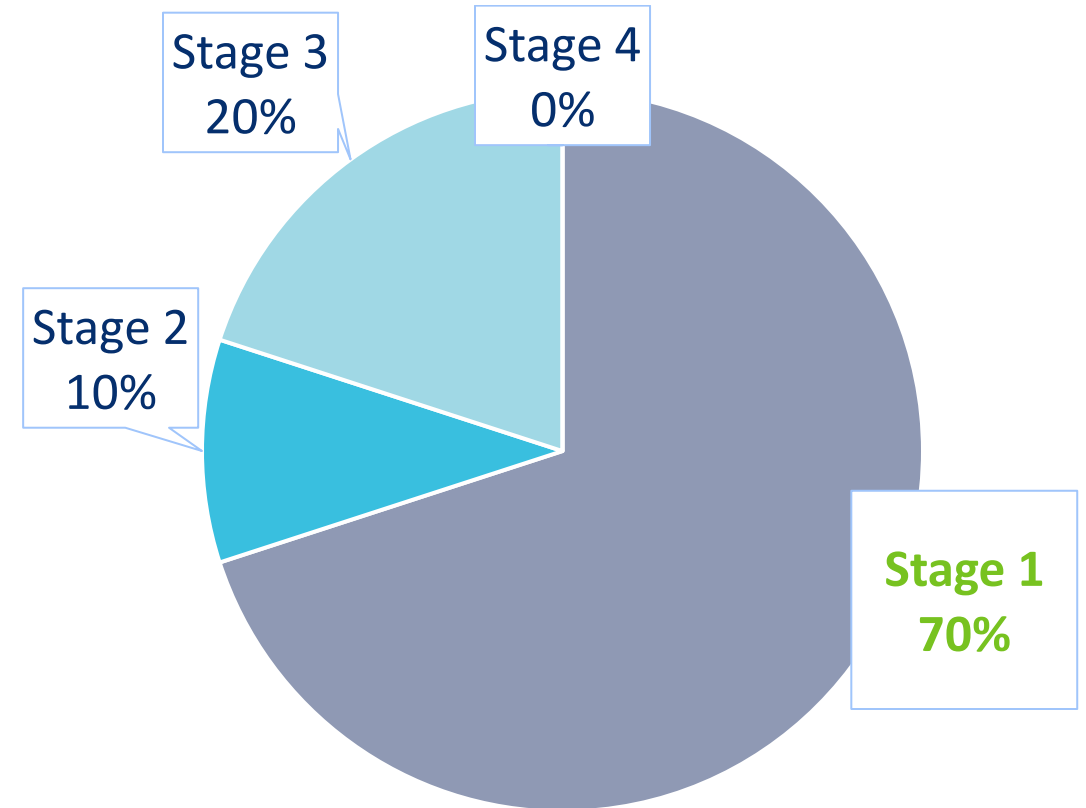
# Lung Cancer Screening at Moffitt

### Patient Volume % Increase per FY



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### % of Lung Cancers Diagnosed by Staged, FY 2019-2021



Lung screening is effective and saves lives! Providing coordinated and streamlined care through screening and management of diagnosis is key to early diagnosis and patient-centered care.



Thank you for your time!

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Questions?



# Bibliography

1. NCI Seer Population Data, 2014, All Ages
2. Florida Cancer Data System, 2012-2016 Cancer Diagnoses, Invasive Cases, Adults Aged >20+. Rates represent years average per 100,000. U.S. HHS, CDC and NCI. United States Cancer Statistics – Incidence: 1999-2016, Invasive Cases, Adults Aged >20+ from WONDER Online Database.
3. <https://www.lung.org/research/state-of-lung-cancer/states/florida>
4. <https://moffitt.org/about-moffitt/outcomes/lung-cancer/>
5. <https://progressreport.cancer.gov/tables/breast-cervical>
6. The National Lung Screening Trial Research Team. Reduced lung-cancer mortality with low-dose computed tomographic screening. N Engl J Med 2011;365:395-409.
7. De Koning H, Van Der Aalst C, Ten Haaf K, et al: Effects of volume CT lung cancer screening: Mortality results of the NELSON randomized-controlled population based trial. 2018 World Conference on Lung Cancer. [Abstract PL02.05](#). Presented September 25, 2018.
8. <https://jamanetwork.com/journals/jama/fullarticle/2777223>
9. ACR Lung Rad Version 1.1. (2019)
10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5440037/>



# Bibliography

11. <https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S1546144018308585?returnurl=https:%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1546144018308585%3Fshowall%3Dtrue&referrer=https:%2F%2Fpubmed.ncbi.nlm.nih.gov%2F30146484%2F>
12. <https://effectivehealthcare.ahrq.gov/decision-aids/lung-cancer-screening/patient.html>
13. <https://pubs.rsna.org/doi/full/10.1148/radiol.2018180212>
14. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7757426/>
15. <https://seer.cancer.gov/statfacts/html/lungb.html>
16. <https://academic.oup.com/jnci/article/110/11/1201/4996947?login=true>
17. How health care organizations implement shared decision making when it is required for reimbursement: the case of lung cancer screening. *Chest*. 2021; 159: 413-425