Healthy Communities through Lung Cancer Screening

Cone Chest Center | Greensboro, NC

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LeBauer Pulmonary Critical Care

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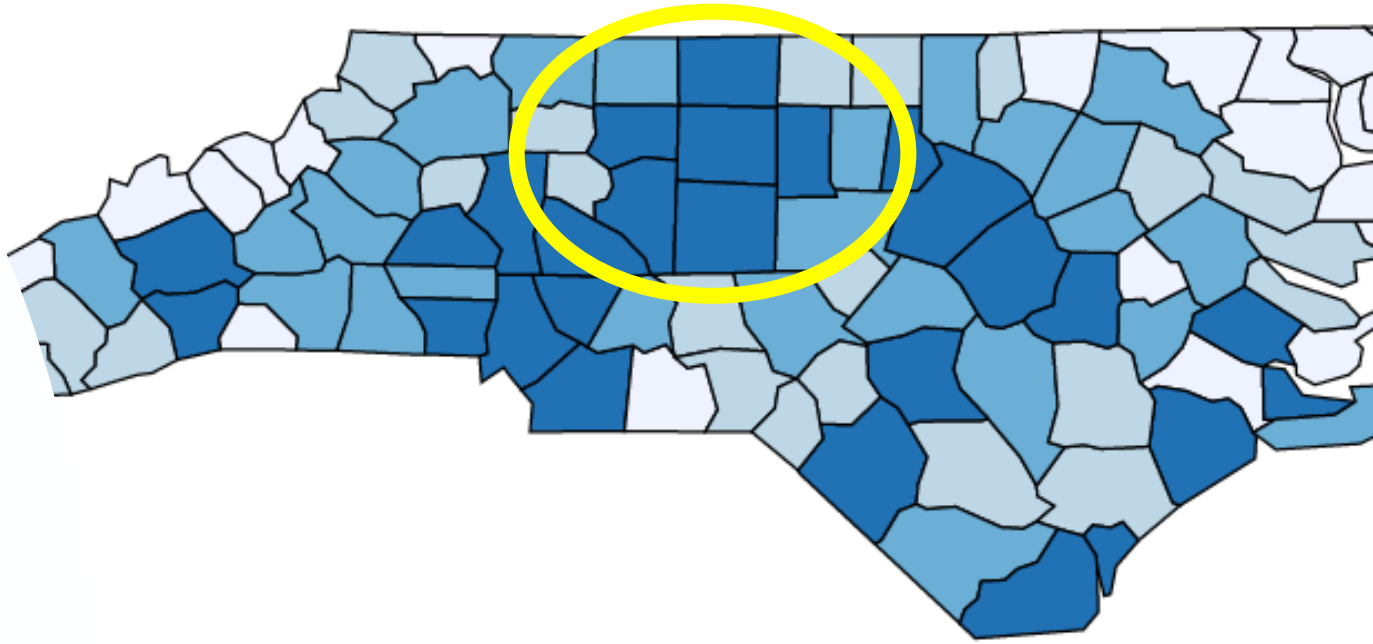
Disclosures

- Veracyte – Principle Investigator
- Intuitive – Key opinion leader, Medical advisory board
- Pulmonix, LLC – Principle Investigator

Daily US Death From Lung Cancer?

~382 Patients per day die from lung cancer

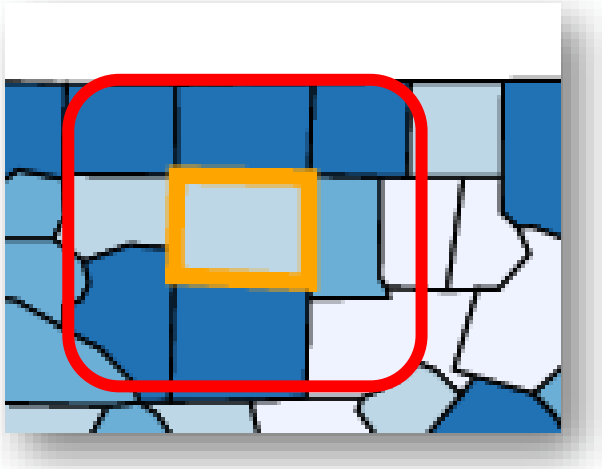
Lung Cancer in "Our Home"



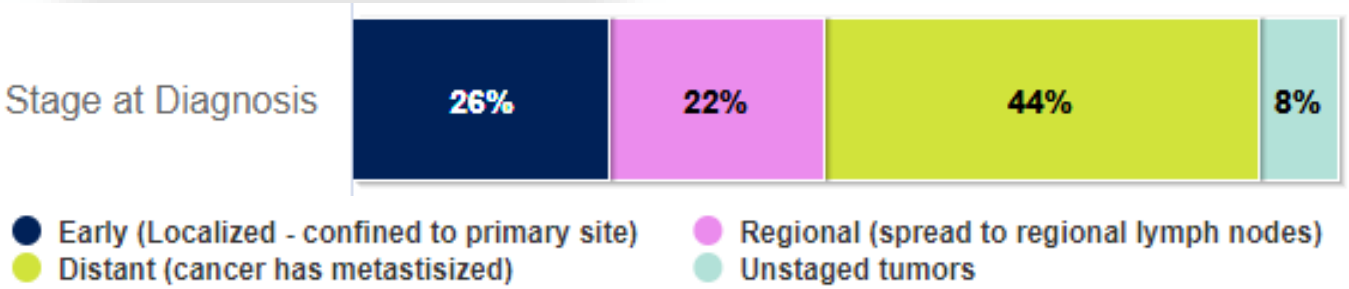
- #1 cancer related death
- More deaths than colon, prostate, and breast cancer combined
- #4 in Southeast for rate of new cases
- #11 in US for new age-adjusted lung cancer diagnoses, 67.7/100k.

U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2019 submission data (1999-2017): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; www.cdc.gov/cancer/dataviz, released in June 2020.

Lung Cancer in Our Home



- 2015-2019 NC = 41,723 New Diagnoses
- Guilford (G+8) = 7459 New Dx (17.9%)
- ~1500 New diagnoses per year G+8



Estimating (per year):

390 early staged

330 regional disease

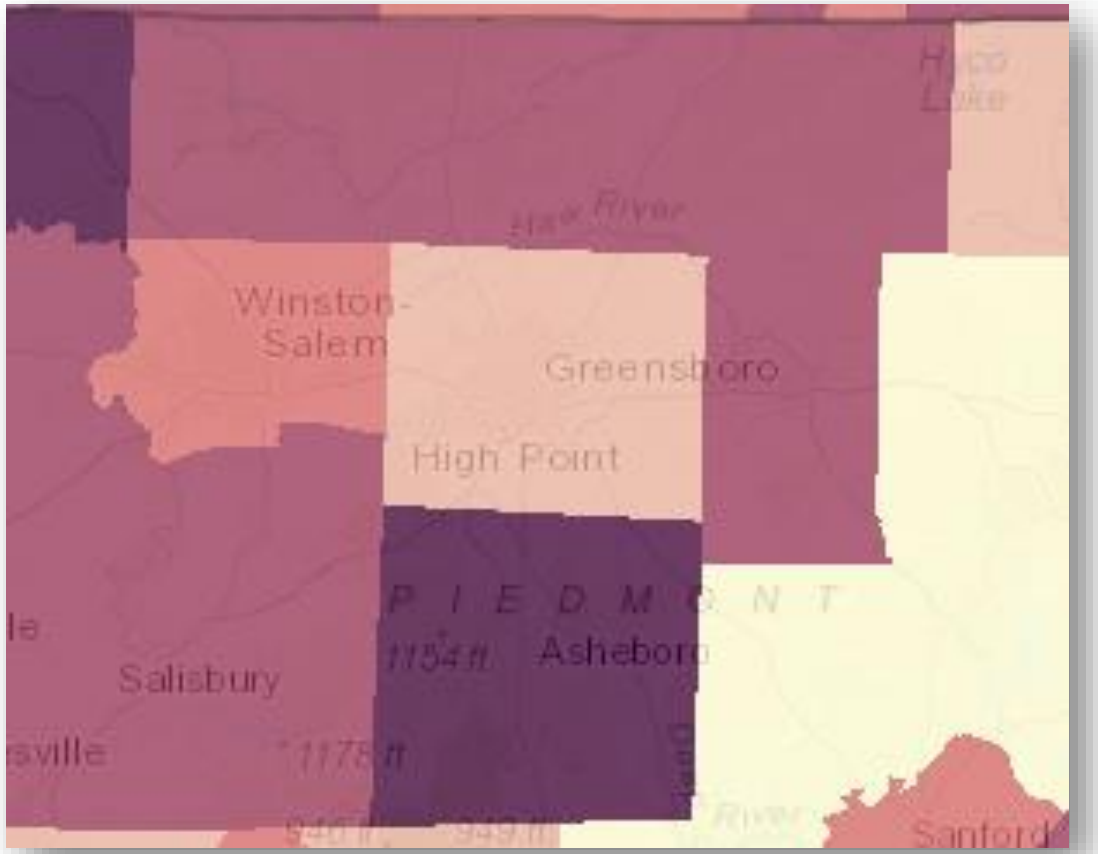
780 advanced staged disease

State Data | North Carolina | American Lung Association

NLCRT Lung Cancer Dashboard - 2022 version updated HFL (arcgis.com)

USCS Data Visualizations - CDC

5yr Mortality | Incidence Rate /100,000 population



County:	5yr Mo.	Incid.
Guilford	36.6	65.0
Stokes	47.8	80.4
Rockingham	49.5	81.0
Caswell	50.6	89.3
Alamance	47.1	75.3
Chatham	25.8	44.9
Randolph	56.9	85.0
Davidson	52.4	83.5
Forsyth	40.2	67.0

2021 UPSTF Lung Cancer Screening Guidelines

- Age 50-80 years
- >20 pack year history
- Current smoker – or –
- Quit within the past 15 years
- No CT imaging within the past year
- Yearly Low Dose CT imaging

Recommendation: Lung Cancer: Screening | United States Preventive Services Taskforce (uspreventiveservicestaskforce.org)

U.S. Preventive Services TASK FORCE

Pack-year calculation

×

10 years

=

20 pack years

Benefits of Lung Cancer Screening

- Early detection of stage 1 lung cancers
- Higher probability of resection/cure
- 5-year overall survival for lung cancer ~22%
- Combined data from 7 RCTS (NLST, NELSON, CISNET Modeling, …)
- With New Criteria:
  - 13% vs 9.8% lung cancer mortality reduction

US Preventive Services Task Force. Screening for Lung Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA.* 2021;325(10):962–970. doi:10.1001/jama.2021.1117

Benefits of Lung Cancer Screening

Our Message to the Community:

Screening Saves Lives

Early Detection is key

~1 in 16 people are affected

US Preventive Services Task Force. Screening for Lung Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA.* 2021;325(10):962–970. doi:10.1001/jama.2021.1117

Harms of Lung Cancer Screening

- False-positive imaging (~20% in major trials)
- Unnecessary tests, invasive procedures,
- Overdiagnosis, radiation-induced cancer,
- Incidental findings *(TA, ILD, Thyroid nodule)*
- Increases in distress or anxiety
- NLST Trial 1.7% of false+ had invasive testing
- Retrospective analysis of NLST trial with use of Lung-RADS (2015)
  - 23.4% reduction invasive testing
  - 26.3 dropped to 12.8% false positive rate

Pinsky PF, Gierada DS, Black W, et al. Performance of Lung-RADS in the National Lung Screening Trial: a retrospective assessment. *Ann Intern Med*. 2015;162(7):485-491. doi:10.7326/M14-2086

Harms of Lung Cancer Screening

Our Message to the Community:

Sometimes we find things…

Sometimes its **NOT** cancer…

It can create anxiety…

Pinsky PF, Gierada DS, Black W, et al. Performance of Lung-RADS in the National Lung Screening Trial: a retrospective assessment. *Ann Intern Med*. 2015;162(7):485-491. doi:10.7326/M14-2086

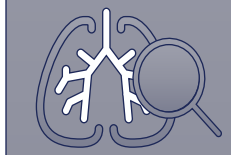
Under Utilization of Screening & Health Disparities

- 8% of high risk eligible are screened in NC
- Higher probability for uninsured
- >50% of US 31 million uninsured are people of color
- 15% less likely to receive an early-stage diagnosis

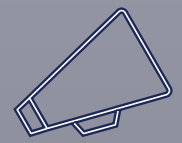
State of Lung Cancer | Racial and Ethnic Disparities | American Lung Association
State Data | North Carolina | American Lung Association

Under Utilization of Screening & Health Disparities

Our Message to the Community:



Lowest rate of cancer screening



There is a stigma and we can break that

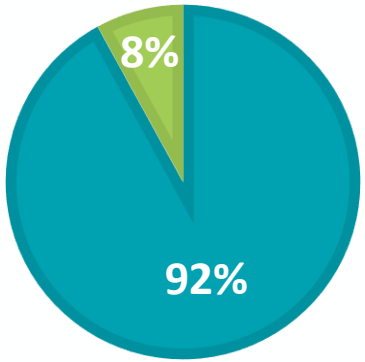
People of color are at increased risk

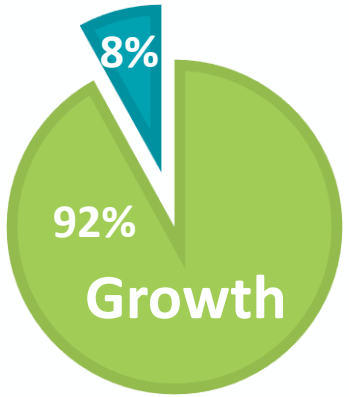
State of Lung Cancer | Racial and Ethnic Disparities | American Lung Association
State Data | North Carolina | American Lung Association

Cancer Screening Comparisons

Type of Screening:	# Number Needed to Save 1 LIFE:
A. Colonoscopies	A. >650 - 1500
B. Mammograms	B. ~860
C. Low Dose CTs	C. ~320

Only **8%** of High Risk patients receive LDCT screening in North Carolina

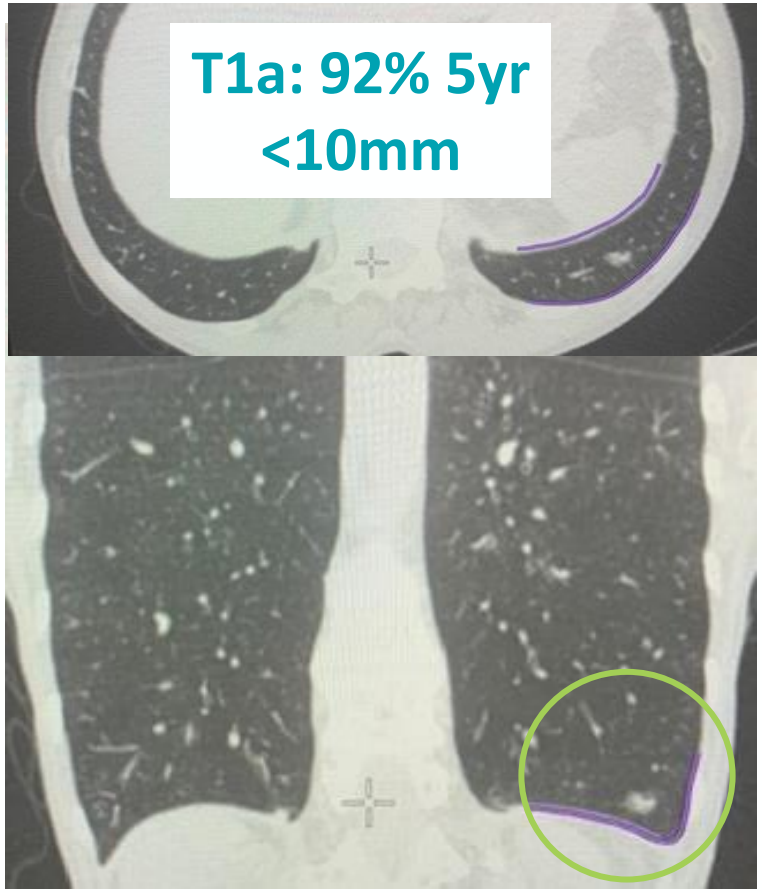


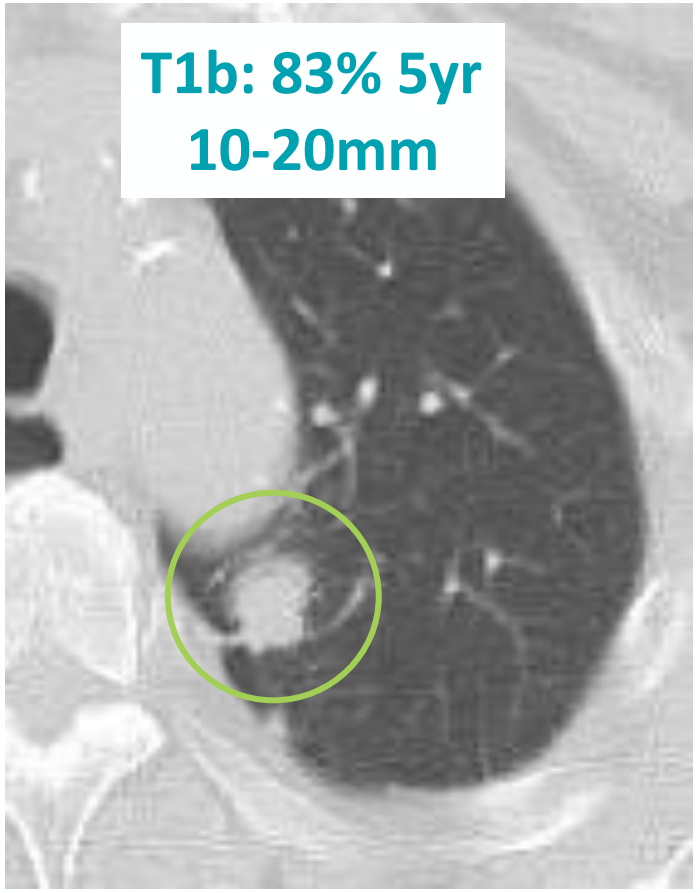


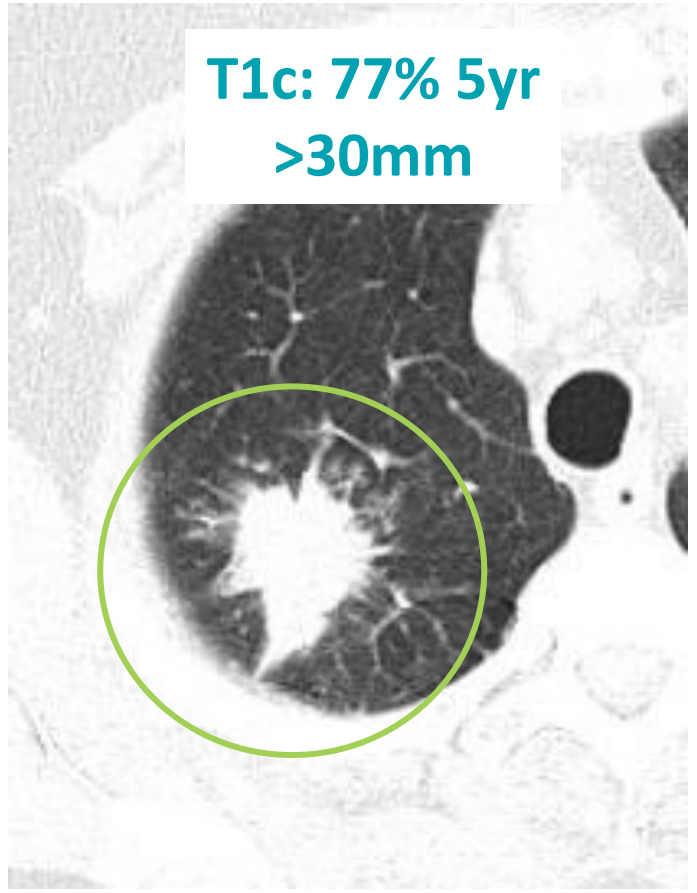
UPSTF March 2021:
Age 50-80
20 py h/o smoking
Current smoker –or-
Quit w/in 15 years

Lung Cancer Screening: The Cost of Inaction (lungambitionalliance.com)
State Data | North Carolina | American Lung Association

Lung Cancer Survival Stage 1 Disease

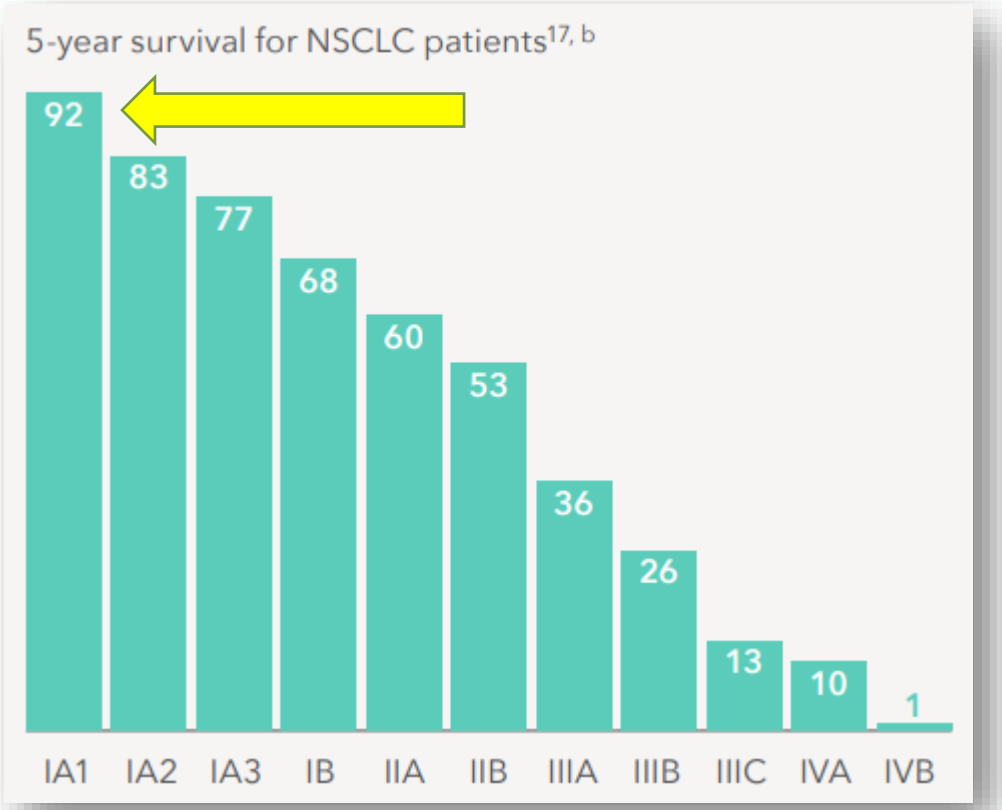


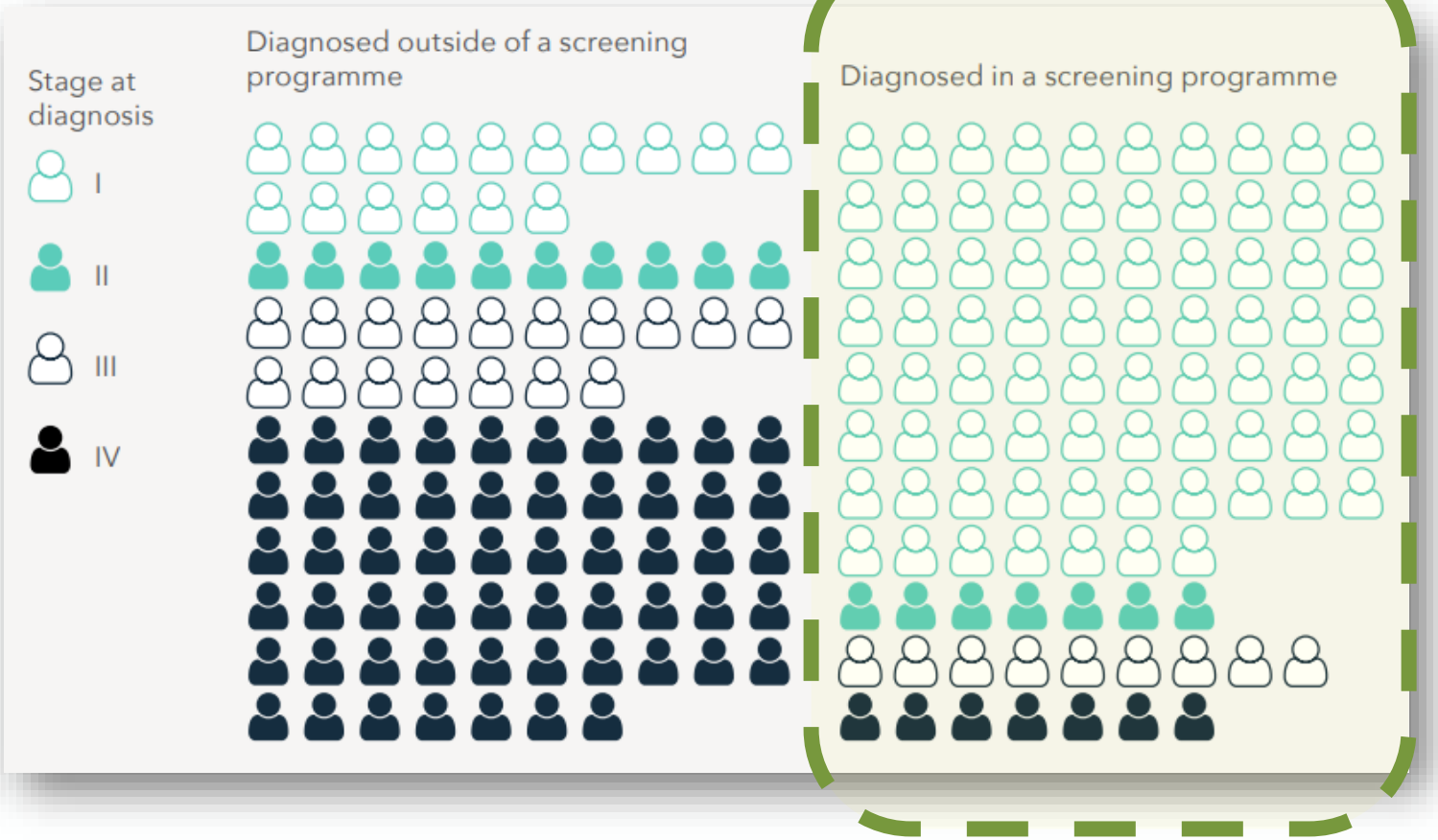




Rami-Porta R et al. IASLC Staging and Prognostic Factors Committee, Advisory Boards and Participating Institutions. The IASLC Lung Cancer Staging Project: Proposals for the Revisions of the T Descriptors in the Forthcoming Eighth Edition of the TNM Classification for Lung Cancer. J Thorac Oncol. 2015 Jul;10(7):990-1003. PMID: 26134221.
Goldstraw P, Chansky K, Crowley J, et al. 2016. The IASLC lung cancer staging project: proposals for revision of the TNM stage groupings in the forthcoming (eighth) edition of the TNM classification for lung cancer. J Thorac Oncol 11(1): 39-51

5-yr Survival NSCLC by Stage





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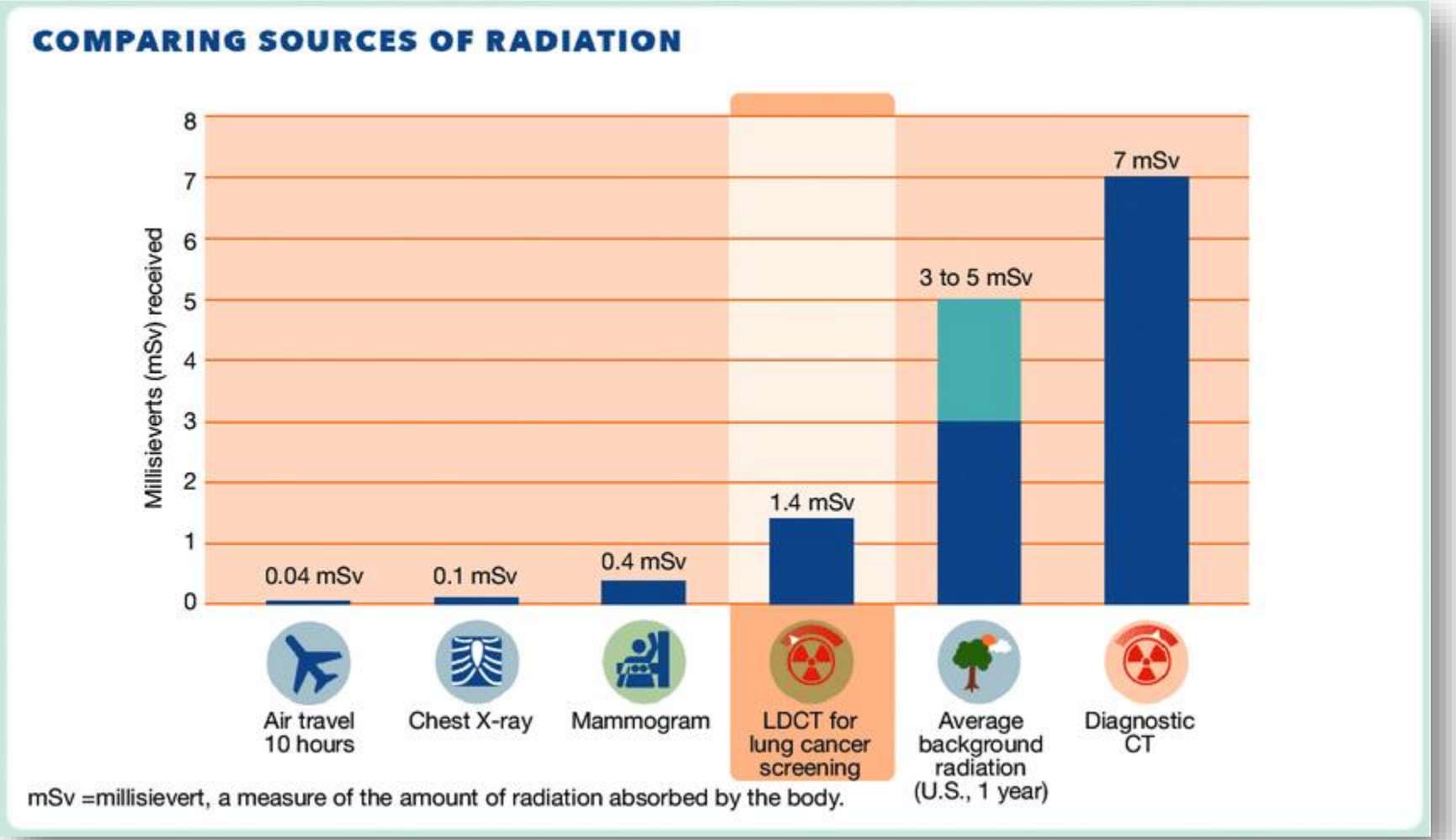
Lung cancer screening: the cost of inaction (lungambitionalliance.com)

Sands J, Tammemägi MC, Couraud S, et al. 2021. Lung screening benefits and challenges: a review of the data and outline for implementation. J Thorac Oncol 16(1): 37-53

What does LDCT Screening include?

- Share Decision Making Visit
- Low Dose Computed Tomography
  - Painless
  - No injections
  - Less radiation exposure
  - Less than 10 mins to complete

How much radiation will I receive?



Lowenstein, Lisa & Deyter, Gary & Nishi, Shawn & Wang, Tianhao & Volk, Robert. (2018). Shared decision-making conversations and smoking cessation interventions: Critical components of low-dose CT lung cancer screening programs. Translational Lung Cancer Research. 7. 254-271. 10.21037/tlcr.2018.05.10.

Screening for Non-Smokers

Risks for development of lung cancer

- Radon (Second leading cause)
- Exposure to secondhand smoke
- Occupational carcinogens (Asbestos, Aluminum, Steel, Paint)
- Air pollution (Smog, inner city)
- Chronic obstructive pulmonary disease
- Interstitial lung diseases
- Age, Genetic predisposition

Kerpel-Fronius A, Tammemägi M, Cavic M, Henschke C, Jiang L, Kazerooni E, Lee CT, Ventura L, Yang D, Lam S, Huber RM; members of the Diagnostics Working Group; ED and Screening Committee. Screening for Lung Cancer in Individuals Who Never Smoked: An International Association for the Study of Lung Cancer Early Detection and Screening Committee Report. J Thorac Oncol. 2022 Jan;17(1):56-66. doi: 10.1016/j.jtho.2021.07.031. Epub 2021 Aug 27. PMID: 34455065.

Radon

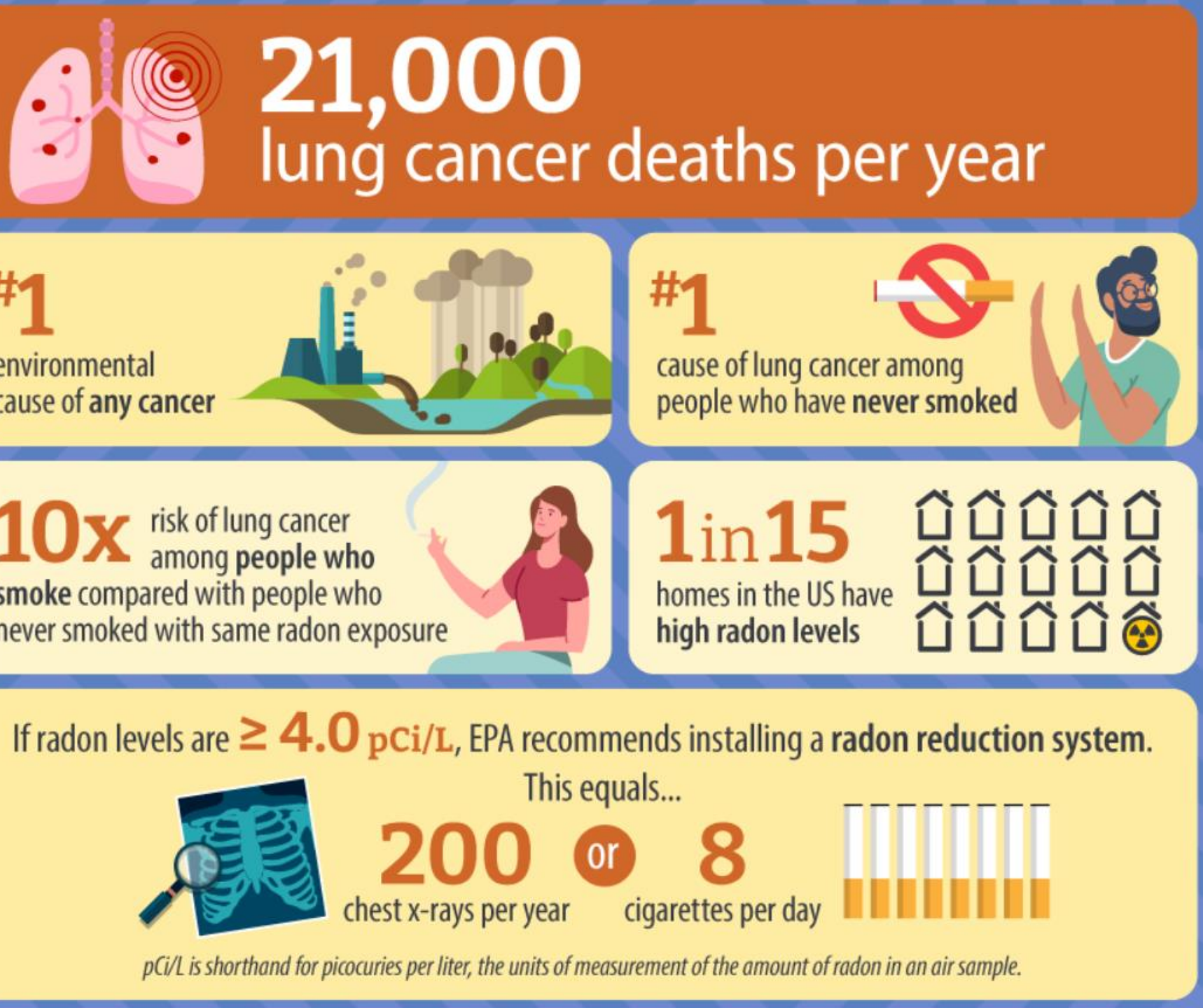
Role of Radon is important

Test your home

>4.0pCi/L

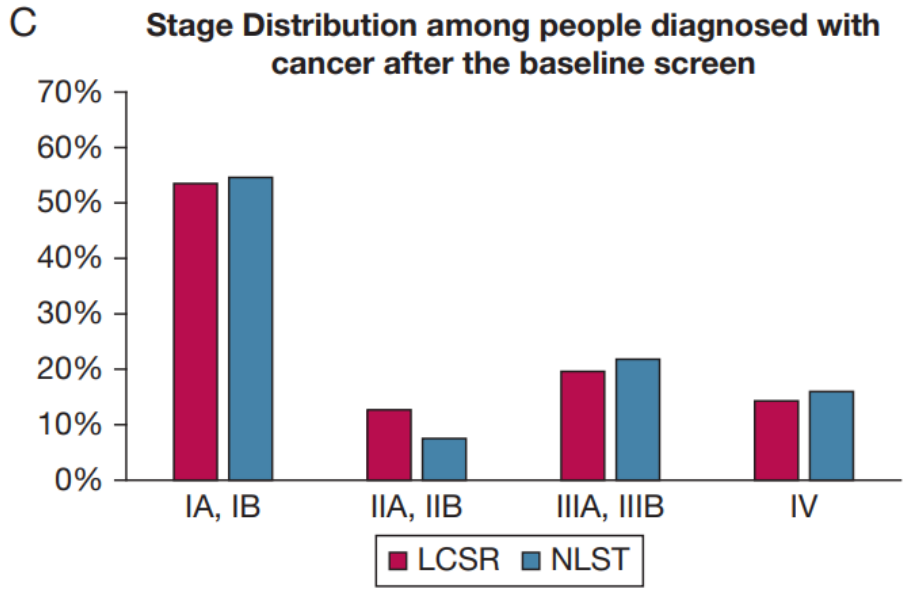
[Get the Facts on Radon | NCEH | CDC]

CDC
Centers for Disease Control and Prevention



1 Million Screened

- Study looked at outcomes of 1M+ patients
- 2015-19’ from ACR Registry vs NLST
- Lung-RADS Scoring of LDCTs
  - 22% Adherence rate, 17% Positive Screening
  - 53% of cancer diagnoses – Stage 1
  - Improved cancer detection rates with Lung-RADS Scoring
- Significant “**Stage Shift**”



Silvestri GA, et al. CHEST Volume 164 Issue 1 Pages 241-251 (July 2023) DOI: 10.1016/j.chest.2023.02.003

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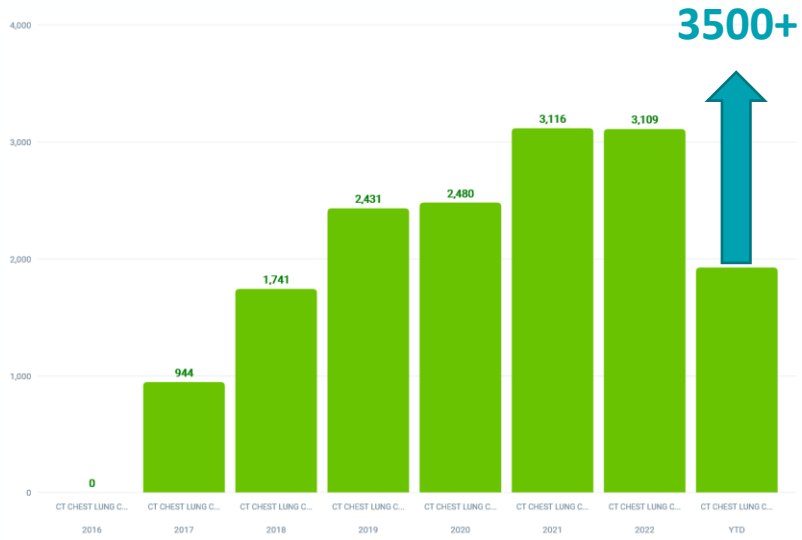
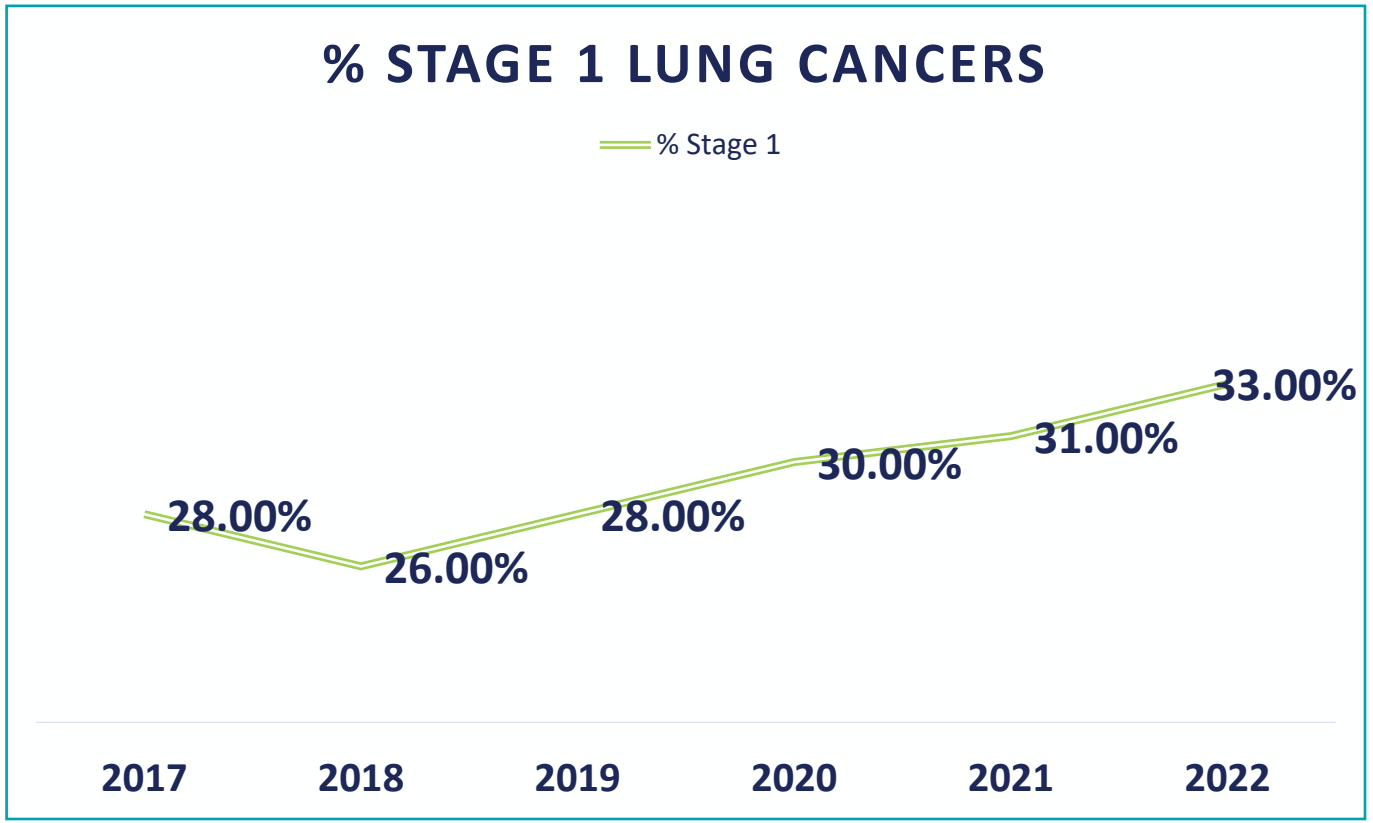
AMERICAN COLLEGE of CHEST PHYSICIANS

Health Communities Initiative

- Local Stage Shift
- ~6% Increase in Stage 1 diagnoses
- ~3500 Screened

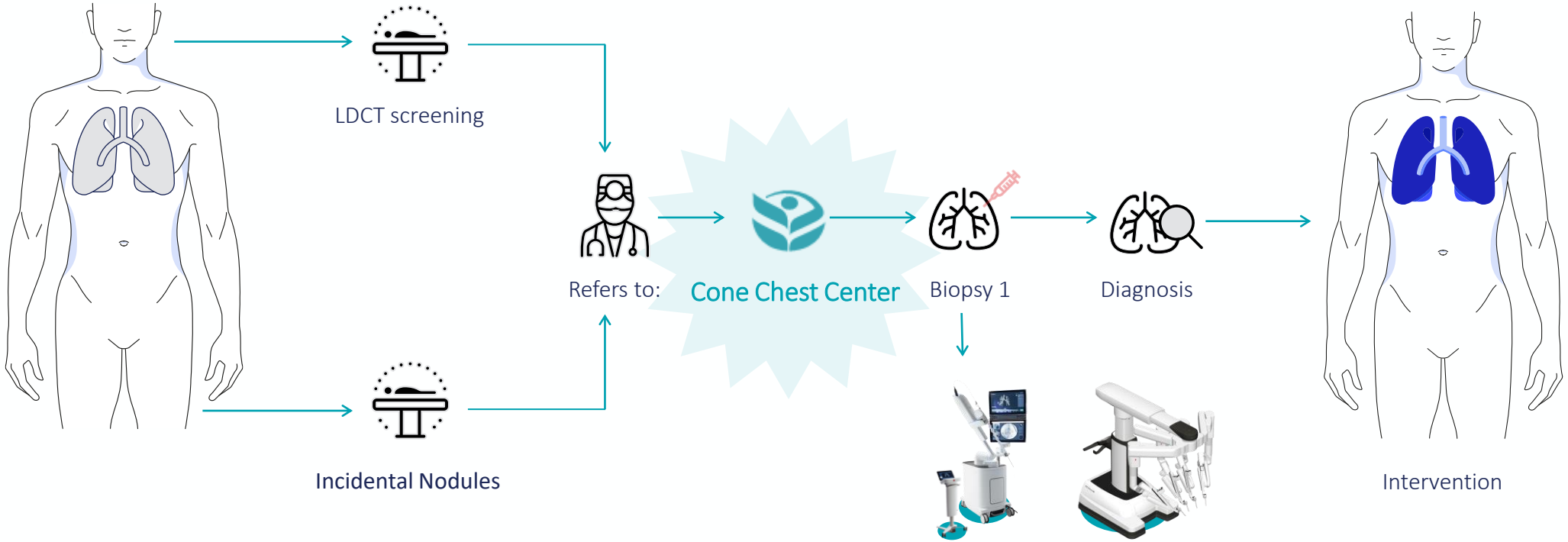




**data from Cone Health cancer registry*

Sustaining the Impact: Cone Chest Center

System-Wide Lung Cancer LDCT Program

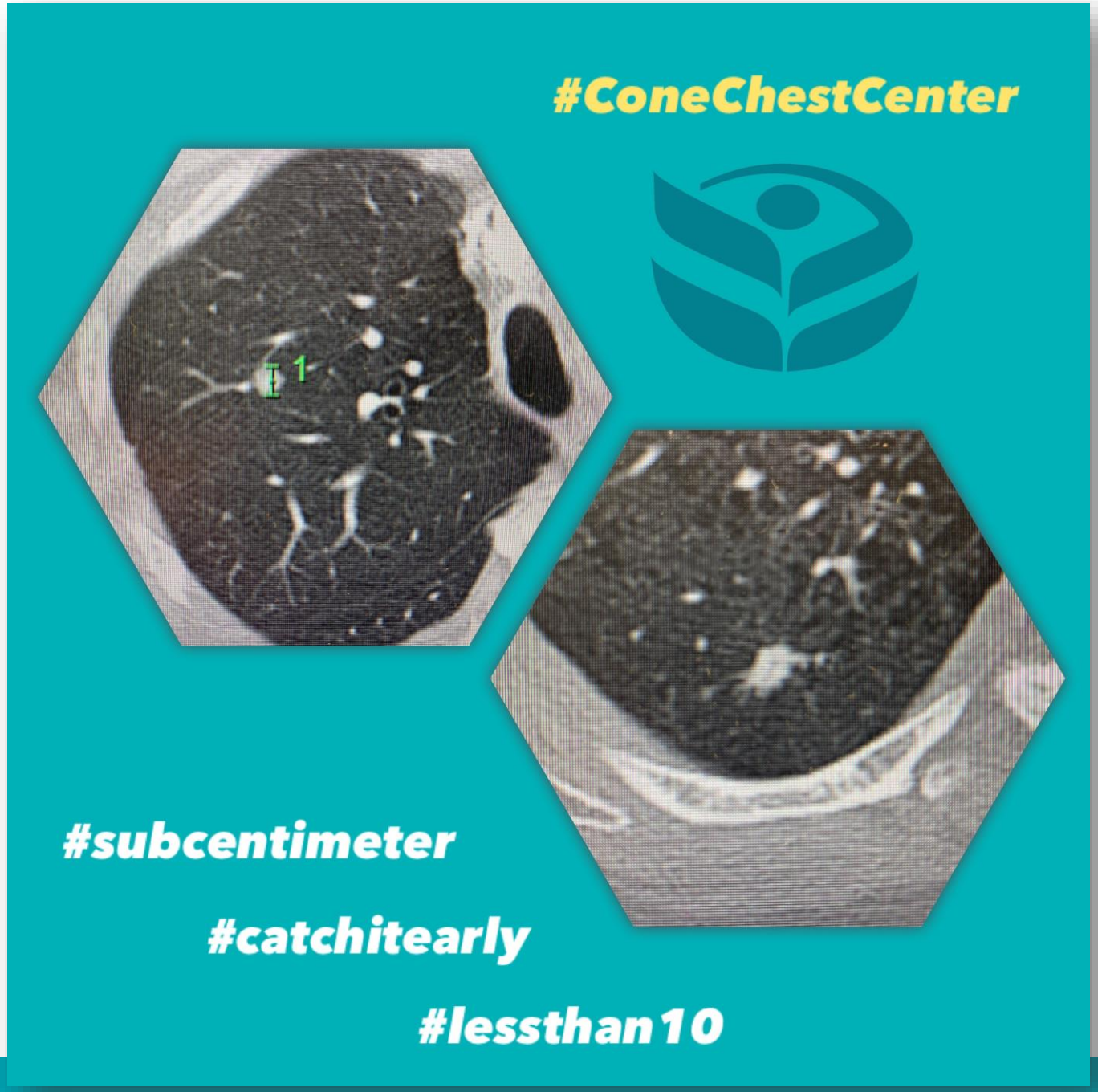


System-Wide Incidental Nodule Program

Single Anesthetic Events

Biopsy + Diagnosis + CURE + Discharge <48hrs

CURE!



Thank You

Bradley Icard, DO

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