Turning the Tide on a Deadly Cancer:

What Every Clinician Needs to Know About Lung Cancer Screening

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MEDICAL SOCIETY OF THE STATE OF NEW YORK
ORGANIZED 1807

Commissioner's Medical Grand Rounds

Dr. James McDonald, MD, MPH
Commissioner, New York State Department of Health

OCTOBER 9, 2024 • NOON – 1 PM EDT

OPENING REMARKS

Dr. James McDonald, MD, MPH

Commissioner, New York State Department of Health

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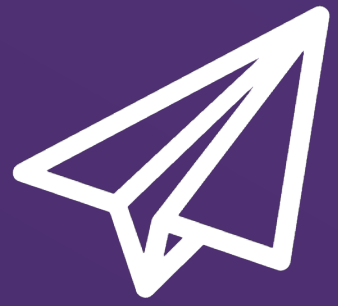
Q & A

Email us your questions: GrandRounds@health.ny.gov



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**John Maese, MD has disclosed that he owns stock in Eli Lilly, Johnson & Johnson, Danaher Corp, Takeda Pharmaceutical Co Ltd, and Bausch Health Companies Inc.

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PLEASE COMPLETE A QUICK ONE QUESTION POLL BEFORE WE CONTINUE:

THANK YOU!

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The “State” of Lung cancer

- Despite:
  - Lung cancer treatment advances
  - Reduced exposure to risk factors like cigarette smoking
  - Introduction of lung cancer screening recommendation in 2013 (updated in 2021)
  - Lung cancer screening is a covered benefit across most NYS health plans, including Medicaid Fee-for-Service

Burden of Lung cancer – United States

- Among all adults, it is the 3rd most common cancer
- Leading cause of cancer death
- 11.7% of all new cancers, but 20.4% of all cancer deaths
- Median age of diagnosis 71 yrs
- 80-90% of lung cancers are associated with cigarette smoking

How Common Is This Cancer?

Compared to other cancers, lung and bronchus cancer is fairly common.

	Common Types of Cancer	Estimated New Cases 2024	Estimated Deaths 2024
1.	Breast Cancer (Female)	310,720	42,250
2.	Prostate Cancer	299,010	35,250
3.	**Lung and Bronchus Cancer**	**234,580**	**125,070**
4.	Colorectal Cancer	152,810	53,010
5.	Melanoma of the Skin	100,640	8,290
6.	Bladder Cancer	83,190	16,840
7.	Kidney and Renal Pelvis Cancer	81,610	14,390
8.	Non-Hodgkin Lymphoma	80,620	20,140
9.	Uterine Cancer	67,880	13,250
10.	Pancreatic Cancer	66,440	51,750

Lung and bronchus cancer represents 11.7% of all new cancer cases in the U.S.

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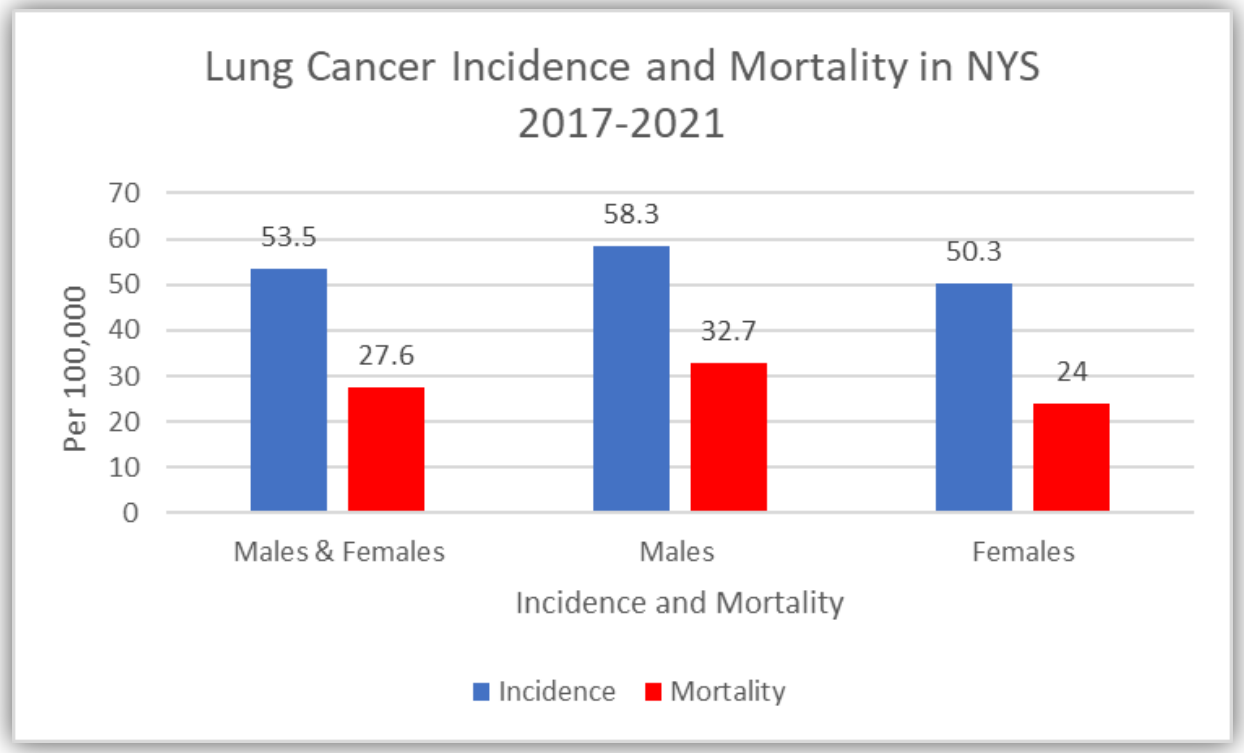
Source: https://seer.cancer.gov/statfacts/html/lungb.html

Burden of Lung Cancer - New York

- Every year in New York State:
  - About 14,000 individuals are diagnosed with lung cancer
  - Nearly 7,200 die from lung cancer
- Males have a higher incidence and mortality rate compared to females
- Lung cancer mortality rates have declined on average by 5.3% per year among all New Yorkers since 2012



Source: NYS Cancer Registry. Cancer Incidence and Mortality in New York State, 1976-2021. https://www.health.ny.gov/statistics/cancer/registry, released May 2024
And https://www.health.ny.gov/statistics/cancer/docs/screening_detectable_cancers_2015-2019.pdf

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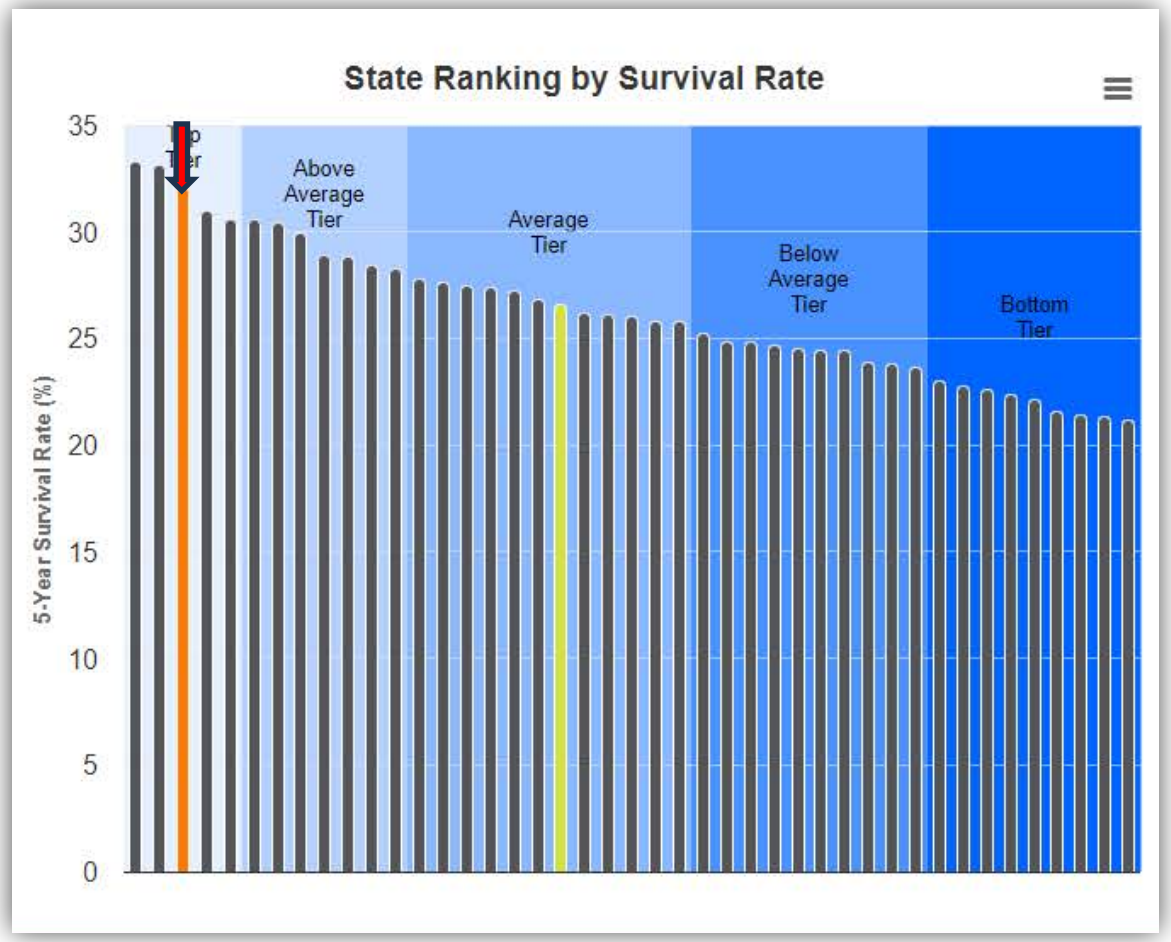
State Rankings by Survival Rate, 2023



According to the American Lung Association:

- In New York State, the 5-year survival rate is **32.1%**
  - **Significantly higher** than the national rate of 26.6%.
- Our state ranks **3rd** in the nation.
- Over the last five years, the survival rate in New York **improved by 22%.**

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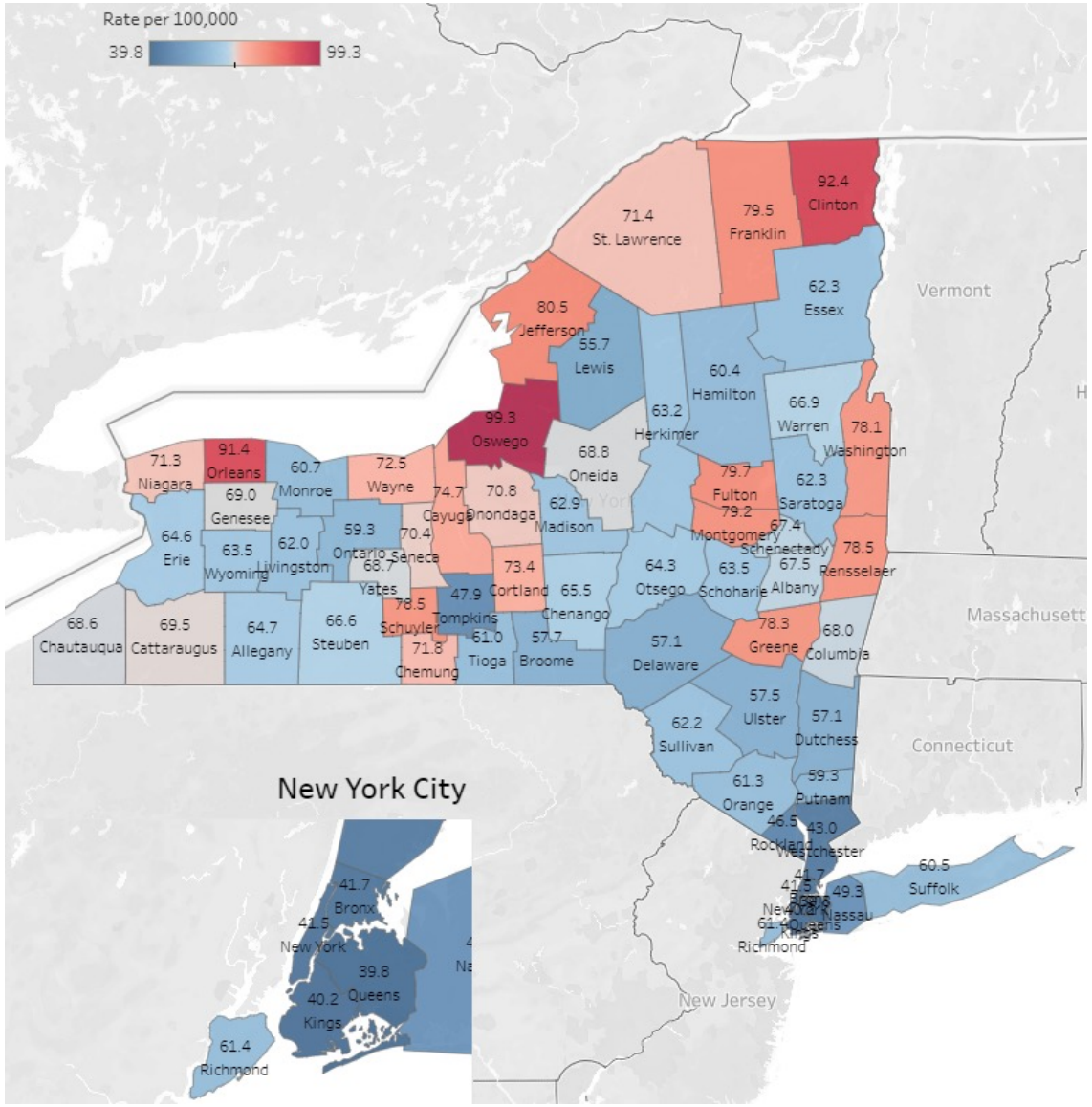
Source: https://www.lung.org/research/state-of-lung-cancer/states/new-york#:~:text=The%20percent%20of%20people%20alive,it%20in%20the%20top%20tier

The ‘state’ of New York – Lung Cancer Incidence, 2017-2021



- Lung cancer incidence rates are lower in New York City and surrounding areas compared to Upstate.
- Lung cancer mortality rates follow a similar pattern.
- These patterns follow the prevalence rates of smoking in NYS (slide to follow).

Source: New York State Cancer Statistics (ny.gov)

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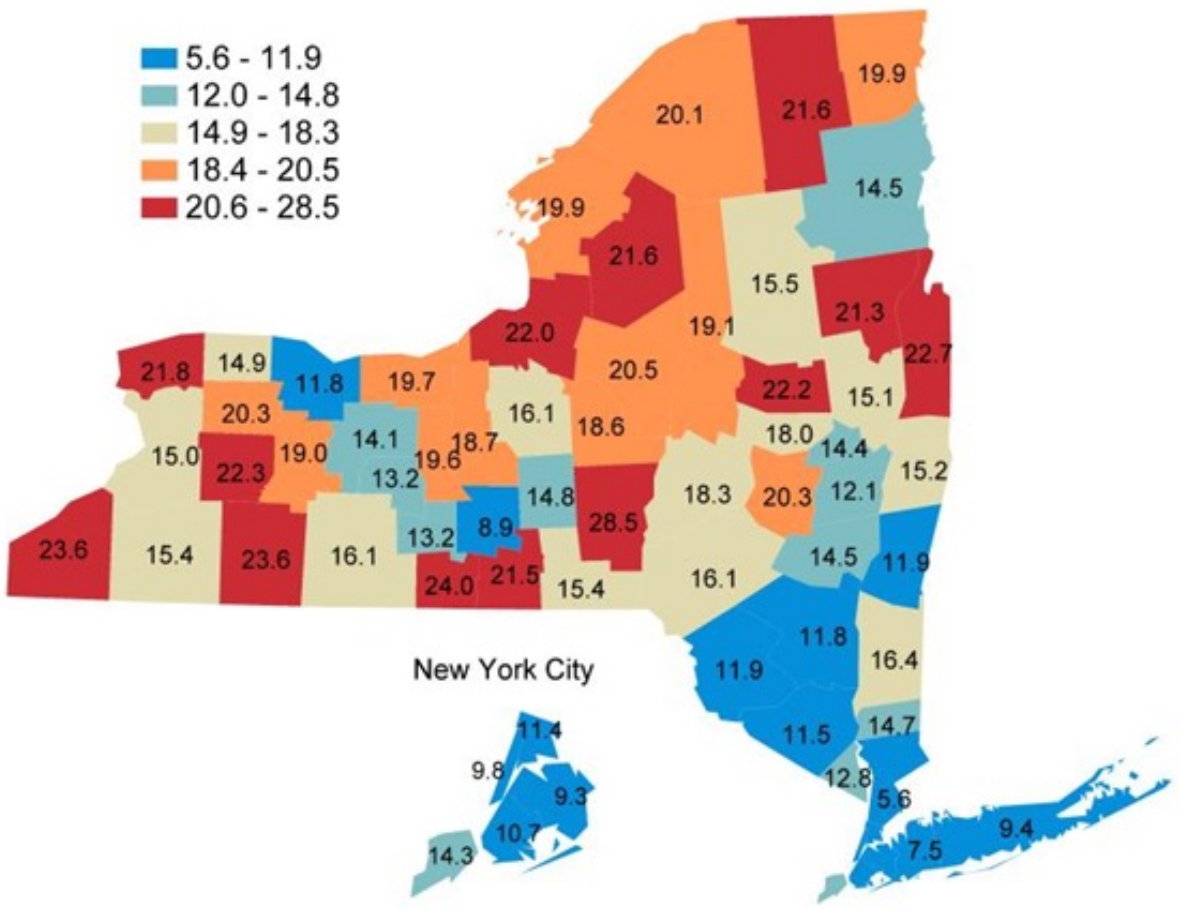
The ‘state’ of New York – Prevalence of Adult Smoking, 2022



- The prevalence of cigarette smoking among New York State adults is 11%
- But it is higher among those:
  - Reporting frequent mental distress (18.4%)
  - Enrolled in Medicaid (17.5%)
  - Living with a disability (15.4%)
  - Unemployed (16.7%)
  - Earning less than $25,000/year (18.4%)

- The prevalence of adult smoking is generally lower in New York City compared to Upstate.

Source: https://www.health.ny.gov/statistics/diseases/cancer/docs/tobacco_related_cancers_report_2016-2020.pdf and https://www.health.ny.gov/statistics/brfss/reports/docs/2024-09_brfss_cigarette_smoking.pdf

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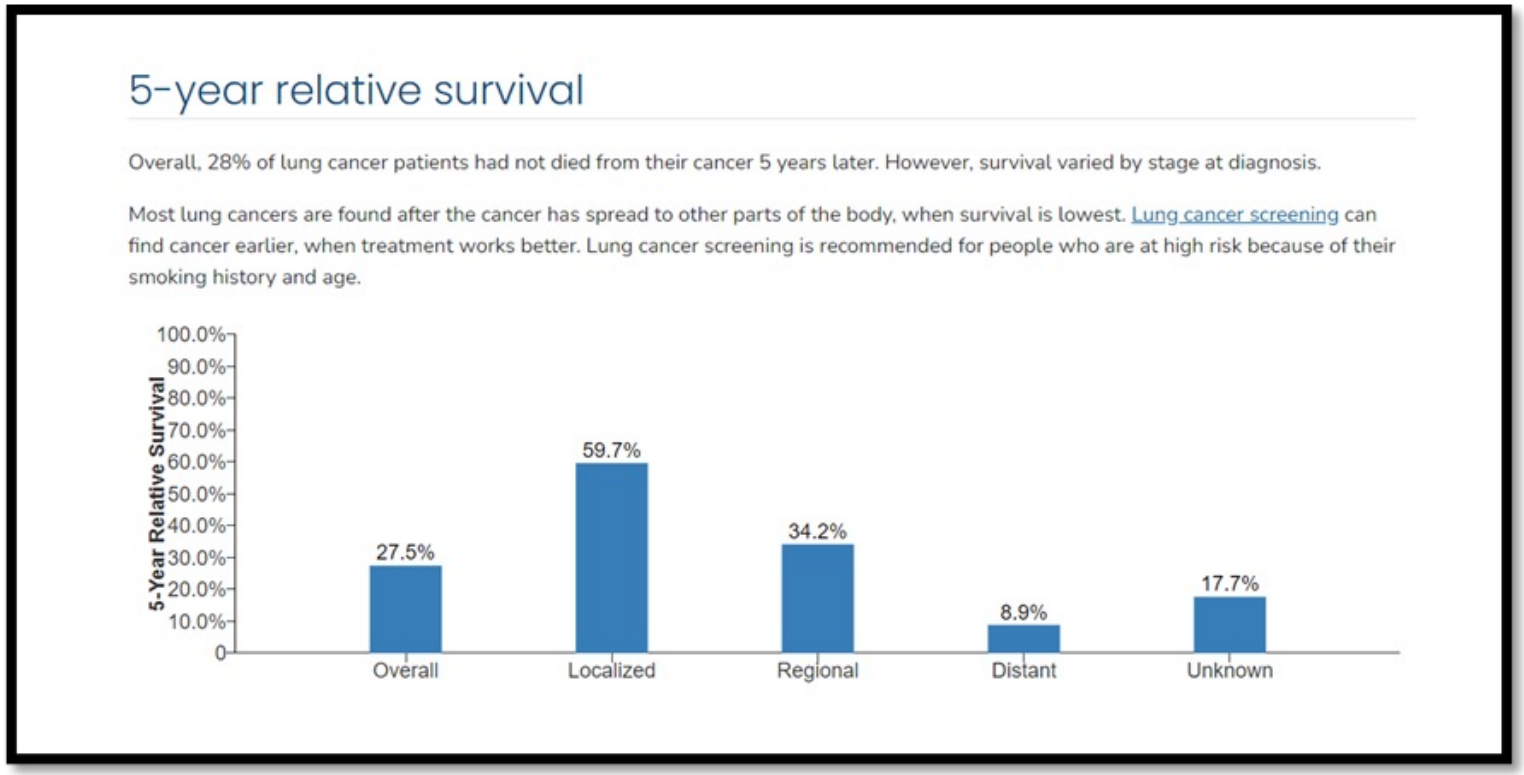
Screening can find lung cancers early and increase survival

- Effective lung cancer screening could prevent 48,000 lung cancer deaths/year in the US (Sands et al., 2021)
- Annual lung cancer screening decreased the relative risk of lung cancer death by 20% (Aberle et al., 2011)
- Reduction in treatment-related morbidity



Source: U.S. Cancer Statistics Lung Cancer Stat Bite | U.S. Cancer Statistics | CDC 2021 data
Centers for Disease Control and Prevention. U.S. Cancer Statistics Lung Cancer Stat Bite. U.S. Department of Health and Human Services; 2024.

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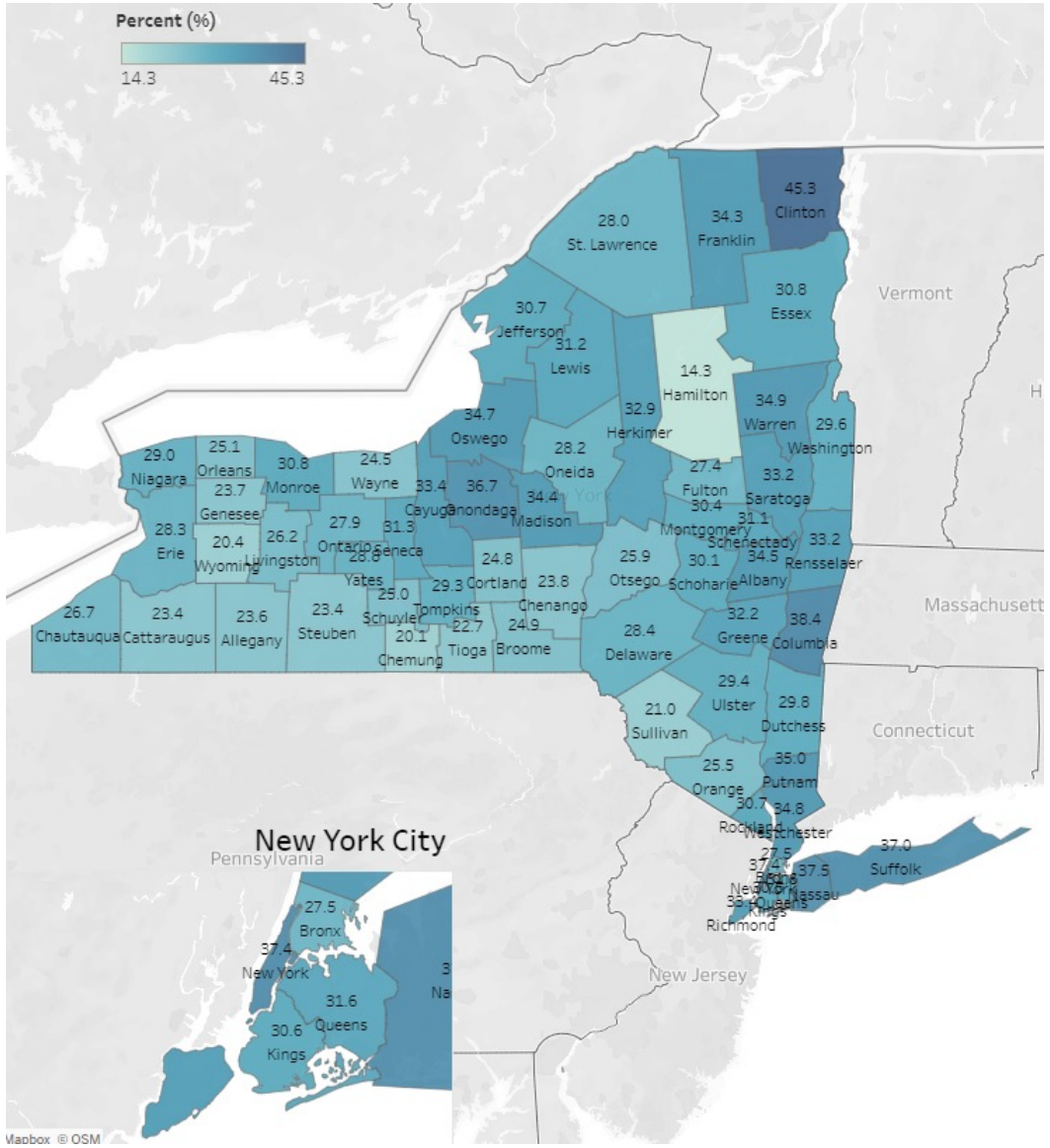
The ‘state’ of New York - % of Cases Diagnosed at Local Stage, 2017-2021



- **Statewide,** only **32.0%** of cases are diagnosed at local stage.
  - Non-Hispanic White individuals (33.2%)
  - Non-Hispanic Black individuals (25.6%)
  - Hispanic individuals (27.3%)

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Source: NYS Cancer Registry. Distribution of Stage at Cancer Diagnosis by County. https://www.health.ny.gov/statistics/cancer/registry/stagebyCounty.htm

The ‘state’ of Lung Cancer Screening in NYS?

Screening rates are being estimated in two ways

# of Adults Eligible for Lung Cancer Screening *Who Report* Screening as Recommended

# of Adults Eligible for Lung Cancer Screening based on 2021 USPSTF guidelines

20%*

# of Adults Screened for lung cancer *according to the American College of Radiology’s Lung Cancer Screening Registry*

# of Adults Eligible for Lung Cancer Screening based on 2021 USPSTF guidelines

4.9%**

* American Cancer Society – *Cancer Prevention & Early Detection Facts & Figures Tables and Figures 2024*
** American Lung Association - State of Lung Cancer Report, 2023 (New York)

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Key Takeaways

- Lung cancer is the leading cause of cancer mortality with a low 5-year survival rate.

- A lot of progress made to reduce the prevalence of cigarette smoking, but disparities in smoking rates remain.

- Lung cancer screening can find cancers early and increase survival.
  - The percent of cases diagnosed at an early stage is low across New York and varies by race and ethnicity.
  - **Screening prevalence estimates in New York State (somewhere between 5 and 20%) highlight a lot of room for improvement.**

References

- Aberle DR, Adams AM, Berg CD, Black WC, Clapp JD, Fagerstrom RM, Gareen IF, Gatsonis C, Marcus PM, Sicks JD. National Lung Screening Trial Research Team. (2011). Reduced lung-cancer mortality with low-dose computed tomographic screening. N Engl J Med. 2011 Aug 4;365(5):395-409. doi:10.1056/NEJMoa1102873.

- Sands, Jacob et al. (2021). Lung Screening Benefits and Challenges: A Review of The Data and Outline for Implementation. Journal of Thoracic Oncology, Volume 16, Issue 1, 37 – 53.

Lung Cancer Screening

Robert J. Fortuna, MD, MPH
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Medical Director – Quality & Population Health, Primary Care
University of Rochester

Evolution of Screening Recommendations

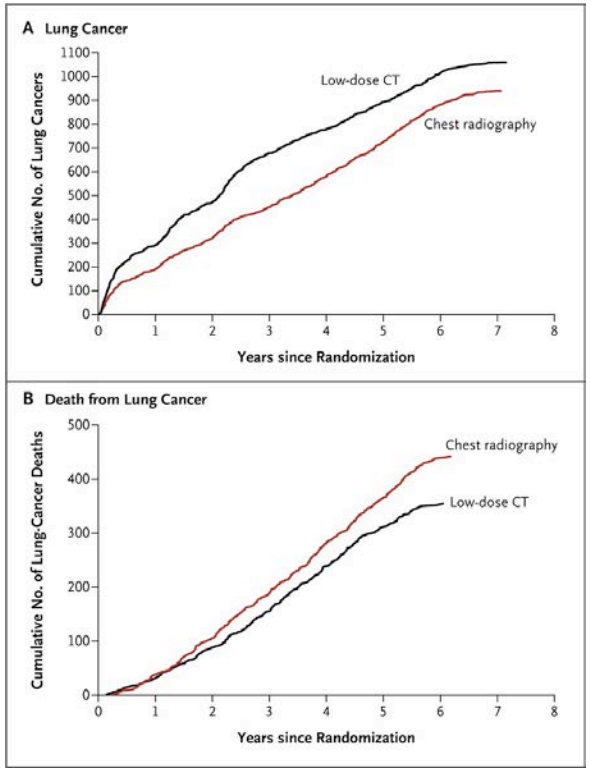
National Lung Cancer Screening Trial

The NEW ENGLAND JOURNAL of MEDICINE
ESTABLISHED IN 1812 AUGUST 4, 2011 VOL. 365 NO. 5

"The National Lung Screening Trial investigators report that persons undergoing three annual screening examinations with low-dose computed tomography had a 20% reduction in lung-cancer mortality as compared with those screened with annual chest radiography."

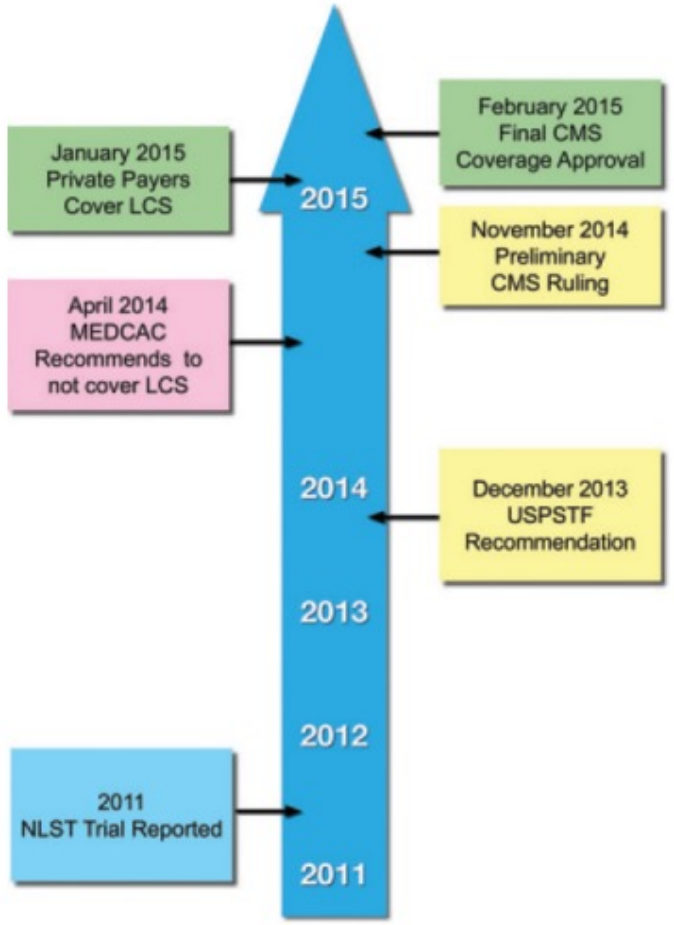
Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening

The National Lung Screening Trial Research Team*



N Engl J Med
Volume 365(5):395-409
August 4, 2011

Evolution of Guidelines



The 10 Pillars of Lung Cancer Screening: Rationale and Logistics of a Lung Cancer Screening Program. Radiographics. 2015 Nov-Dec;35(7):1893-908. PMID: 26495797.

Screening Guidelines

	USPSTF Guidelines 2013-2021	USPSTF Guidelines 2021
Age	55-80 years	50-80 years
Smoking History	30 or more pack years (this means 1 pack a day for 30 years, 2 packs a day for 15 years, etc.)	20 or more pack years (this means 1 pack a day for 20 years, 2 packs a day for 10 years, etc.)
Smoking Status	Current smoker or quit within the last 15 years	

Grade
B

American Lung Association
State of Lung Cancer

Screening Offers Clear Benefits.. But it is not a no-brainer

Screening does have potential harms

- False positive rates – 20-25% per scan
- Radiation exposure
- Follow-up invasive procedures
- Incidental findings
- Patient stress

Harm: What problems did CT scans cause compared to chest X-ray?

223 in 1,000 more had at least one **false alarm**

18 in 1,000 more had a **false alarm leading to an invasive procedure,** such as bronchoscopy, biopsy, or surgery

2 in 1,000 more had a **major complication** from Invasive procedures

NLSTstudyGuidePatientsPhysicians_508.pdf

NLST Research Team, NEJM 2011; Bach, Jama 2012; Pinsky, Cancer, 2014

Counseling & Shared Decision

For the initial LDCT lung cancer screening service: **a beneficiary must receive counseling and a shared decision-making visit**

- Shared decision-making, including the use of one or more decision aids;
- Counseling on the importance of adherence to annual lung cancer LDCT screening, impact of comorbidities and ability or willingness to undergo diagnosis and treatment; and
- Counseling on the importance smoking cessation / abstinence

https://www.cms.gov/medicare-coverage-database/view/ncacal-decision-memo.aspx?proposed=N&ncaid=304

Shared Decision-Making Models

Required documentation

- Lung cancer counseling session with shared decision making has taken place (G0296)

Tools

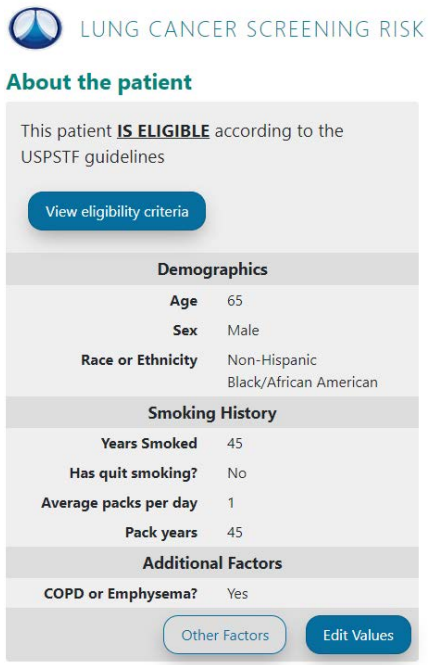
LUNG CANCER SCREENING RISK CALCULATOR

https://screenlc.com/

Should I Screen

Created by University of Michigan

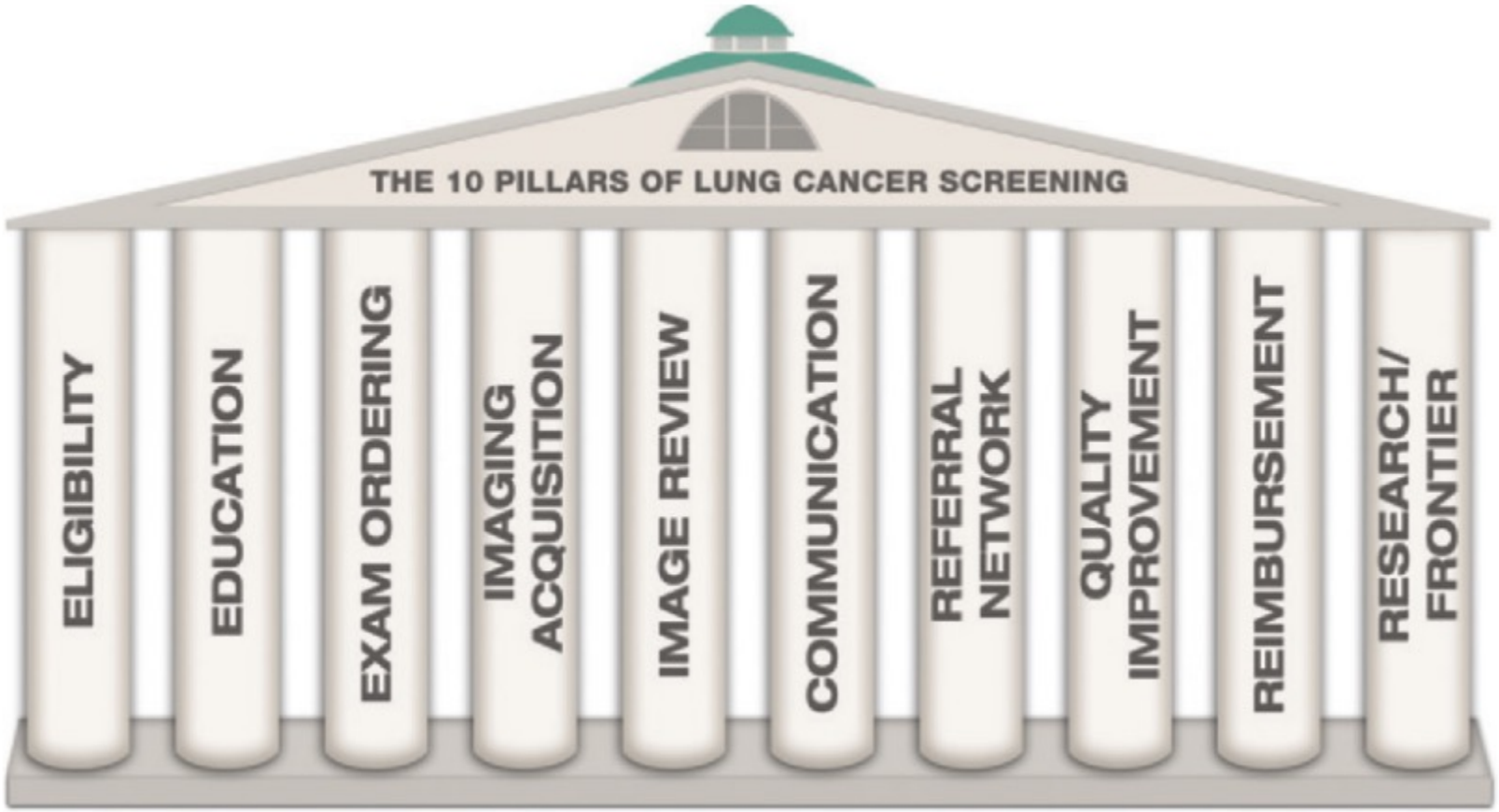
Shared Decision-Making Models



https://screenlc.com/

Broad Framework to Develop Lung Cancer Screening Program

10-Pillars of Lung Cancer Screening



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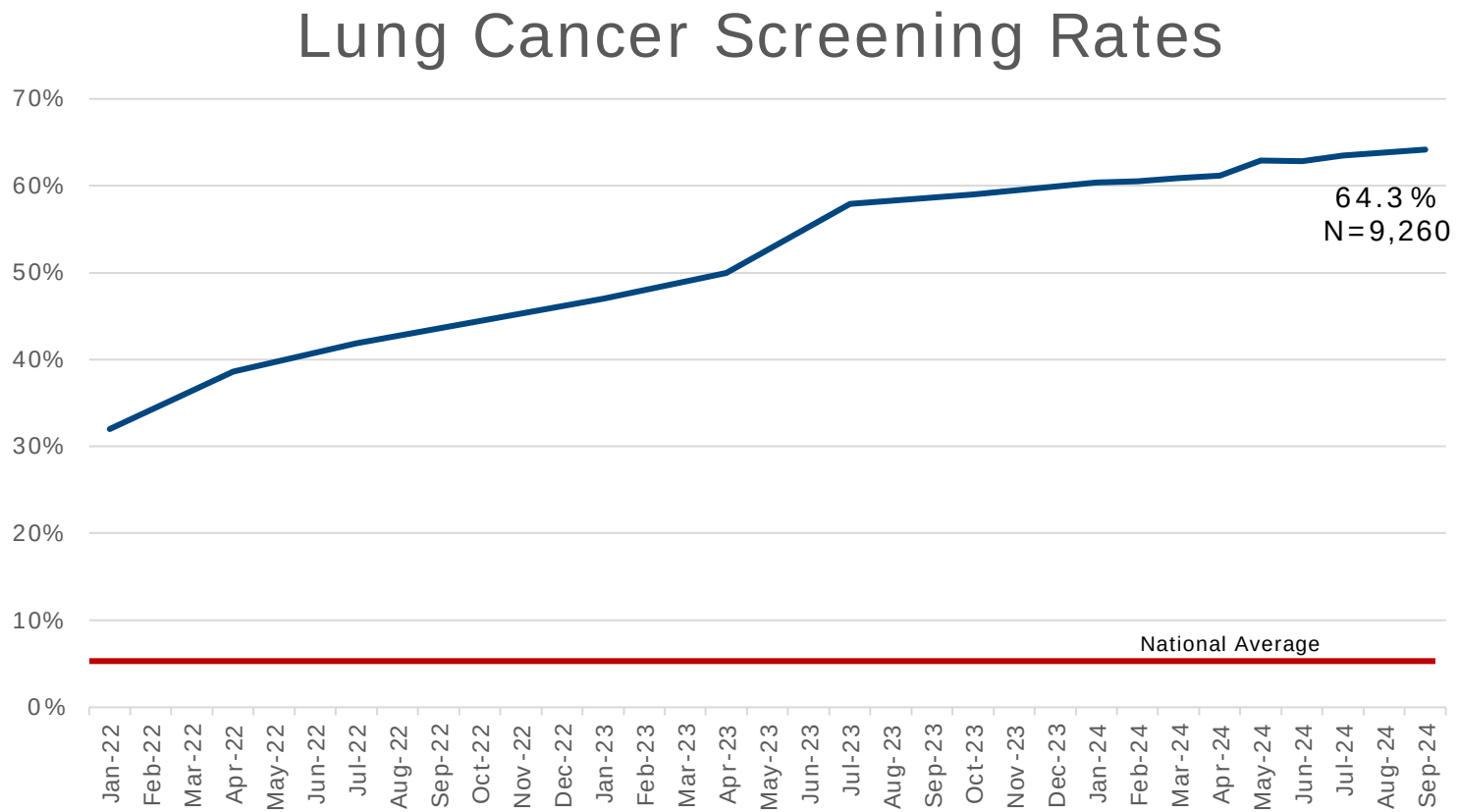
Experiences with a Local Initiative

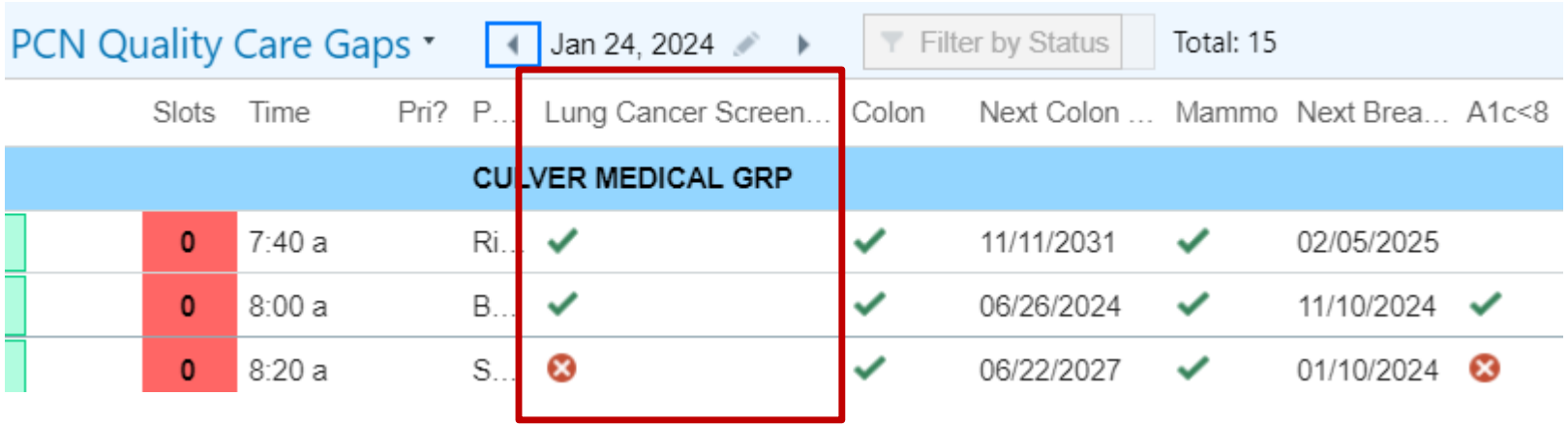
Local Initiatives Drive Screening Over 60%



Comprehensive Approach

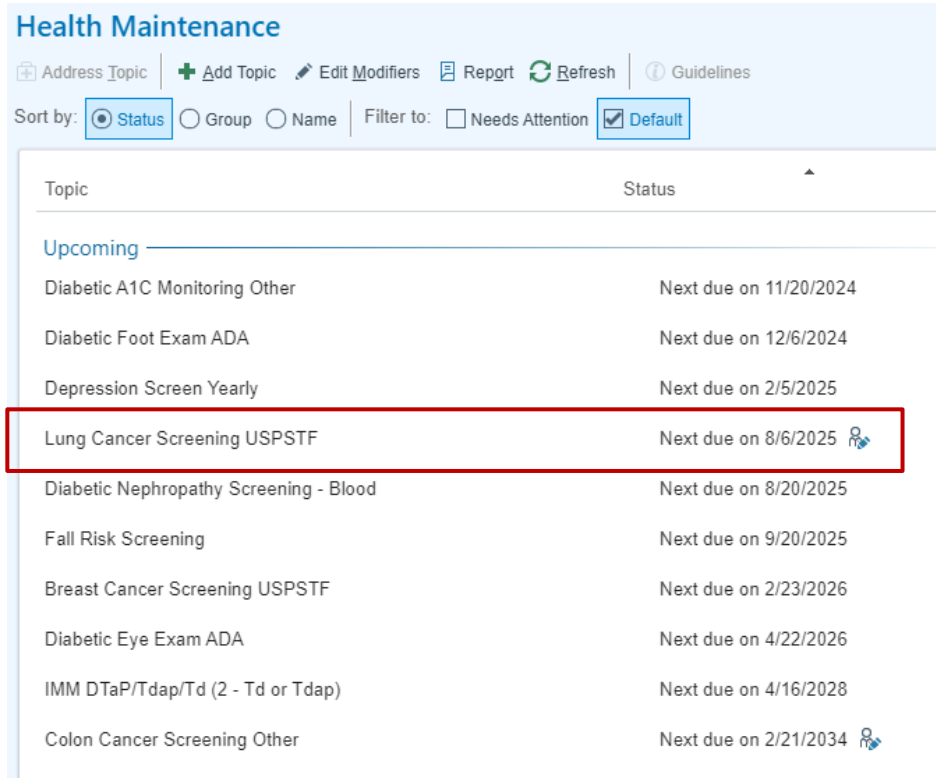
Education & Population health outreach	
Education	The primary care pop health team has travelled to practices through the network to provide educations and refine lung cancer screening process in offices
Population Health Initiatives	
Pre-Visit Care	Pre-Visit Reports built in Electronic Health Record to quickly identify patients eligible for cancer screening. This guides clinical team at "huddles" before the patient visit.
Intra-visit Point of Care	Health maintenance flags, real-time alerts, and best practices advisories built in EHF to alert clinicians to patients eligible and due for lung cancer screening. This guides clinical teams at the point of care.
Inter-visit Care	Dashboards built to guide outreach to patients due or overdue for lung cancer screening. These dashboards support population health teams in between patient visits.
Recall Process	
Recall	An extensive "backstop" program was implemented to facilitate and coordinate recall for annual screening. Patients are enrolled in the program and population health team performs outreach to patients due for repeat annual screening.
Centralized Resource for Counseling / Shared Decision Making	
Counseling	A centralized team was developed in pulmonary medicine to support counseling and shared decision-making regarding lung cancer screening.

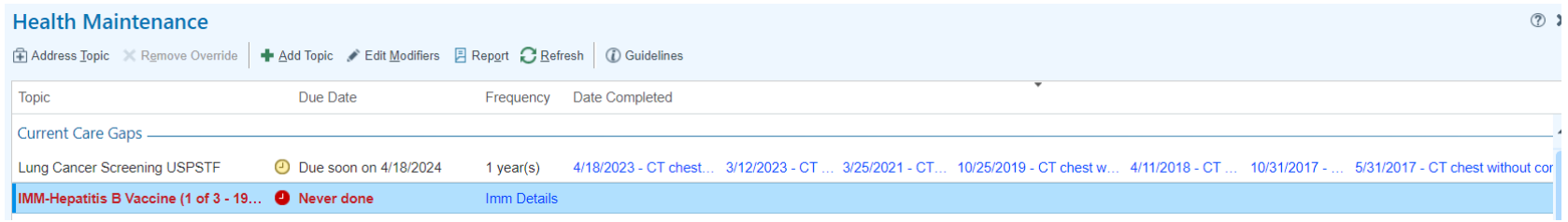
Pre-Visit Planning



	Slots	Time	Pri?	P...	Lung Cancer Screen...	Colon	Next Colon ...	Mammo	Next Brea...	A1c<8
				CULVER MEDICAL GRP						
	0	7:40 a		Ri...	✓	✓	11/11/2031	✓	02/05/2025	
	0	8:00 a		B...	✓	✓	06/26/2024	✓	11/10/2024	✓
	0	8:20 a		S...	✗	✓	06/22/2027	✓	01/10/2024	✗

Intra-Visit Support





Inter-Visit Support Drives Outreach

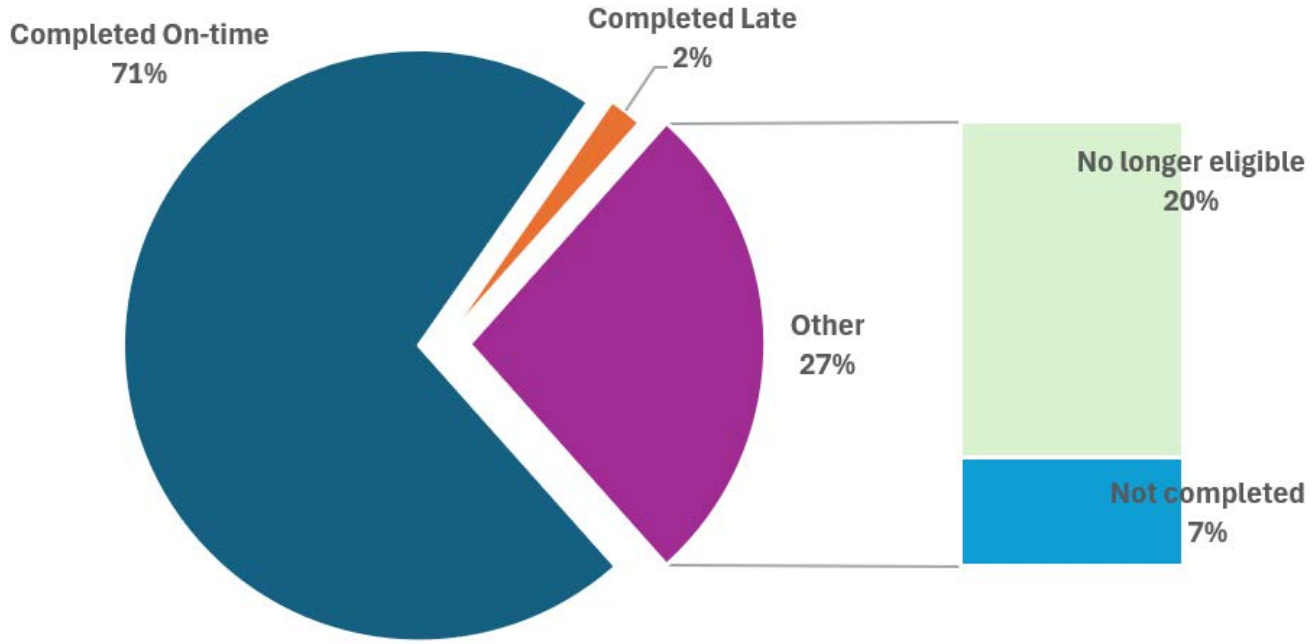
PCN Adult Preventive Care

	Q3 '23	Q4 '23	Q1 '24	Q2 '24	QTD
Breast Cancer Screening	83.77%	83.93%	83.69%	84.02%	84.15%
Colon Cancer Screening	74.29%	75.86%	76.88%	77.45%	77.76%
Lung Cancer Screening *	58.95%	60.32%	60.88%	62.84%	64.30%

Recall for Annual Screening

Central Team

- Data coordinator performs outreach
- Sends reminders
- Support orders



Always Keep an Eye on Disparities

White	63.99%
Black	63.13%
Non-Hispanic	64.03%
Hispanic	57.21%
Female	63.07%
Male	64.18%

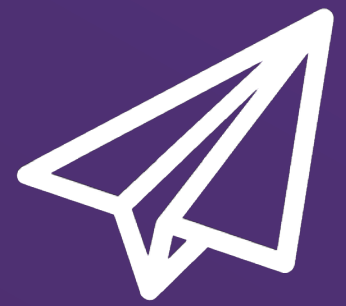
Challenges

Challenges

1. Capturing Tobacco Data
2. Calculating Smoking Pack Years
3. Shared Decision Making

CASE STUDY PANEL

Email us your questions: GrandRounds@health.ny.gov



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CASE ONE: BACKGROUND

62-year-old White female, current smoker, who has smoked for the past 40 years with an average of 1 pack per day, comes in for a routine primary care visit with her daughter.

Lung cancer screening has been offered over the past several years and she continues to decline stating, “if it’s going to happen, it’s going to happen”. She again declines today.

She has no current signs or symptoms of lung cancer. She currently takes atorvastatin for cholesterol and is otherwise healthy.

CASE ONE

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Question #1:

How do you counsel the patient and her daughter to make sure they are aware of the benefits of lung cancer screening?

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Question #2:

She is worried about the potential risks of screening such as yearly radiation exposure and the need for follow-up procedures.
How should the patient be counseled on the risks of screening?

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Question #3:

She is worried about cost. Is low-dose computed tomography (LDCT) usually a covered service through most insurances?

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Question #4:

The patient states she will discuss screening with her daughter and get back to you. What other counseling should be done at this point since the patient continues to smoke?

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Question #5:

Are there guidelines for result reporting and management of **Low-dose computed tomography (LDCT)** scan findings?

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American College of Radiology™

Lung-RADS® v2022

Release Date: November 2022

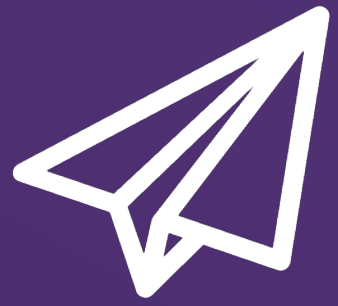
Lung-RADS	Category Descriptor	Findings	Management
0	**Incomplete** Estimated Population Prevalence: ~ 1%	Prior chest CT examination being located for comparison (see note 9)	Comparison to prior chest CT;
		Part or all oflungs cannot be evaluated	Additional lung cancer screening CT imaging needed;
		Findings suggestive of an inflammatory or infectious process (see note 10)	1-3 month LDCT
1	**Negative** Estimated Population Prevalence: 39%	**No lung nodules OR**	12-month screening LDCT
		Nodule with benign features: • Complete, central, popcorn, or concentric ring calcifications **OR** • Fat-containing	
2	**Benign -** Based on imaging features or indolent behavior Estimated Population Prevalence: 45%	**Juxtapleural nodule:** • < 10 mm (524 mm^3) mean diameter at baseline or new **AND** • Solid; smooth margins; and oval, lentiform, or triangular shape	
		Solid nodule: • < 6 mm (< 113 mm^3) at baseline **OR** • New < 4 mm (< 34 mm^3)	
		Part solid nodule: • < 6 mm total mean diameter (< 113 mm^3) at baseline	
		Non solid nodule (GGN): • < 30 mm (< 14,137 mm^3) at baseline, new, or growing **OR** • ≥ 30 mm (≥ 14,137 mm^3) stable or slowly growing (see note 7)	
		Airway nodule, subsegmental - at baseline, new, or stable (see note 11)	
		Category 3 lesion that is stable or decreased in size at 6-month follow-up CT **OR** Category 4B lesion proven to be benign in etiology following appropriate diagnostic workup	
3	**Probably Benign -** Based on imaging features or behavior Estimated Population Prevalence: 9%	**Solid nodule:** • ≥ 6 to < 8 mm (≥ 113 to < 268 mm^3) at baseline **OR** • New 4 mm to < 6 mm (34 to < 113 mm^3)	6-month LDCT
		Part solid nodule: • ≥ 6 mm total mean diameter (≥ 113 mm^3) with solid component < 6 mm (< 113 mm^3) at baseline **OR** • New < 6 mm total mean diameter (< 113 mm^3)	
		Non solid nodule (GGN): • ≥ 30 mm (≥ 14,137 mm^3) at baseline or new	
		Atypical pulmonary cyst: (see note 12) • Growing cystic component (mean diameter) of a thick-walled cyst	
		Category 4A lesion that is stable or decreased in size at 3-month follow-up CT (excluding airway nodules)	

Lung-RADS	Category Descriptor	Findings	Management
4A	**Suspicious** Estimated Population Prevalence: 4%	**Solid nodule:** • ≥ 8 to < 15 mm (≥ 268 to < 1,767 mm^3) at baseline **OR** • Growing < 8 mm (< 268 mm^3) **OR** • New 6 to < 8 mm (113 to < 268 mm^3)	3-month LDCT; PET/CT may be considered if there is a ≥ 8 mm (≥ 268 mm^3) solid nodule or solid component
		Part solid nodule: • ≥ 6 mm total mean diameter (≥ 113 mm^3) with solid component ≥ 6 mm to < 8 mm (≥ 113 to < 268 mm^3) at baseline **OR** • New or growing < 4 mm (< 34 mm^3) solid component	
		Airway nodule, segmental or more proximal - at baseline (see note 11)	
		Atypical pulmonary cyst: (see note 12) • Thick-walled cyst **OR** • Multilocular cyst at baseline **OR** • Thin- or thick-walled cyst that becomes multilocular	
4B	**Very Suspicious** Estimated Population Prevalence: 2%	**Airway nodule**, segmental or more proximal - stable or growing (see note 11)	Referral for further clinical evaluation
		Solid nodule: • ≥ 15 mm (≥ 1767 mm^3) at baseline **OR** • New or growing ≥ 8 mm (≥ 268 mm^3)	Diagnostic chest CT with or without contrast; PET/CT may be considered if there is a ≥ 8 mm (≥ 268 mm^3) solid nodule or solid component; tissue sampling; and/or referral for further clinical evaluation Management depends on clinical evaluation, patient preference, and the probability of malignancy (see note 13)
		Part solid nodule: • Solid component ≥ 8 mm (≥ 268 mm^3) at baseline **OR** • New or growing ≥ 4 mm (≥ 34 mm^3) solid component	
		Atypical pulmonary cyst: (see note 12) • Thick-walled cyst with growing wall thickness/nodularity **OR** • Growing multilocular cyst (mean diameter) **OR** • Multilocular cyst with increased loculation or new/increased opacity (nodular, ground glass, or consolidation)	
		Slow growing solid or part solid nodule that demonstrates growth over multiple screening exams (see note 8)	
4X	Estimated Population Prevalence: < 1%	Category 3 or 4 nodules with additional features or imaging findings that increase suspicion for lung cancer (see note 14)	
S	**Significant or Potentially Significant** Estimated Population Prevalence: 10%	**Modifier:** May add to category 0-4 for clinically significant or potentially clinically significant findings unrelated to lung cancer (see note 15)	As appropriate to the specific finding

https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/Lung-Rads

Q & A

Email us your questions: GrandRounds@health.ny.gov



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RESOURCES FOR PROVIDERS

USPSTF Lung Cancer Screening Recommendation

uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening

NYS Smokers Quitline

1-866-NY-QUITS (1-866-697-8487), text QUITNOW to 333888, or visit nysmokefree.com

New York State Lung Cancer Screening Locator

nylungcancerscreening.com

American Cancer Society lung cancer screening flyer

cancer.org/content/dam/cancer-org/cancer-control/en/booklets-flyers/lung-cancer-screening-patient-decision-aid.pdf

American Academy of Family Physicians, Help Your Patients Quit Tobacco Now

aafp.org/family-physician/patient-care/care-resources/tobacco-and-nicotine/help-your-patients-quit-tobacco.html

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Veterans Administration Tobacco Cessation Handbook

mentalhealth.va.gov/quit-tobacco/docs/Primary-Care-Smoking-Handbook-PROVIDERS-508.pdf

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