Lung Cancer Screening Action Team Presents: *The Consortium in Action*

September 27, 2023  |  11 AM – 12:30 PM

New York State Cancer Consortium

NYSCC QUARTERLY MEETING SERIES
Housekeeping

Please mute your line.

If you have a question, please type it in the Chat Box.

Questions will be answered after the panel discussion.

This meeting is being recorded.

A link to the recording will be e-mailed to everyone who registered.
About Us

Working Together, Reducing Cancer, Saving Lives

We are New Yorkers from all walks of life who work together to reduce the burden of cancer.

www.nyscancerconsortium.org
Join Today!

- Learn about state-wide cancer prevention efforts
- Find resources to promote and implement Cancer Plan priorities and measure progress
- Collaborate with other members to achieve Cancer Plan goals and objectives

Join an Action Team to implement Cancer Plan priorities:

- Colorectal Cancer
- Environmental Carcinogens
- HPV Coalition
- Lung Cancer
- Skin Cancer
- Survivorship
- Lifestyle
NYSCC Quarterly Meeting Series

Upcoming Meetings

- Survivorship and Lifestyle Action Teams
  December 14, 2023 11:00 AM – 12:30 PM

- Environmental Carcinogens Action Team
  March 12, 2024 11:00 AM – 12:30 PM
Meeting Poll

What best describes your role related to lung cancer screening?
Whitney Mendel, MSW, PhD
Dr. Whitney Mendel is a Research Scientist in Cancer Screening within the Department of Medicine at Roswell Park Comprehensive Cancer Center. She also serves as the Coordinator of the NYS Cancer Consortium’s Lung Cancer Screening Action Team. As part of her work with the Action Team, Whitney is spearheading a NYS lung cancer screening environmental scan that seeks to enumerate every lung cancer screening site across the state, as well as to better understand the current capacity, barriers and facilitators related to lung cancer screening.

Mary Reid, BSN, MSPH, PhD
Dr. Reid is a cancer epidemiologist, Distinguished Professor of Oncology, Chief of Cancer Screening and Survivorship, and Director of Collaborative Research at Roswell Park Comprehensive Cancer Center (RPCCC). The lung cancer screening program at RPCCC has been in existence since 1998. The program has grown under her leadership to provide screening at three clinical sites, and most recently on a RPCCC owned mobile CT Unit, EDDY (Early Detection Driven to You). Dr. Reid’s research is focused on studies to identify early genetic and transcriptomic changes indicative of progression to lung cancer. Finally, Dr. Reid is leading several efforts to improve the rates of lung cancer screening as the leader of the statewide NYS Department of Health Cancer Consortium Lung Cancer Screening Action Team (LCSAT), is a founding member of the NCCN Lung Cancer Screening Panel, and as the PI on a federally-funded Lung Cancer Screening Registry, based at RPCCC.
Lung Cancer Screening
Objectives

- Explore the status of lung cancer screening (LCS) in NYS
- Examine the current efforts to increase screening:
  - Eligibility and risk modeling
    - Legislative action
    - Education and outreach
    - Access
Meeting Poll

From your experience, which of the following are barriers to lung cancer screening? (choose all that apply)
Lung Cancer Screening Action Team (LCSAT)

• Mission:
To combat the devastating effects of lung cancer on NYS by mobilizing multi-level resources to decrease lung cancer mortality by increasing lung cancer screening using guideline-driven, evidence-based strategies.

− We have 68 members from across the state and across a broad spectrum of disciplines related to lung cancer and LCS
− Partnerships with American Cancer Society, G02 Foundation, Genentech, American Lung Association, & Association of Community Cancer Centers
− Standing education and legislative subcommittees
Dr. Rivera is a Professor of Medicine in the Division of Pulmonary Diseases and Critical Care Medicine at University of Rochester Medical Center and the C. Jane Davis & C. Robert Davis Distinguished Professor in Pulmonary Medicine and the Chief of the Pulmonary and Critical Care Medicine Division, and the Associate Director of Diversity, Equity, and Inclusion at the Wilmot Cancer Institute. Her expertise includes screening, diagnosing, and staging lung cancer and managing treatment complications. For more than 20 years, Dr. Rivera has served and held leadership positions on National Pulmonary and Critical Care and Cancer societies, including the American Thoracic Society (ATS), The American College of Chest Physicians (CHEST), and the American Cancer Society National Lung Cancer Round Table. She currently serves as the President of ATS.
CURRENT STATE OF LUNG CANCER SCREENING (LCS)

M. Patricia Rivera, MD

The C. Jane Davis & C. Robert Davis Distinguished Professor in Pulmonary Medicine
Chief, Division of Pulmonary Diseases and Critical Care Medicine
Associate Director, Wilmot Cancer Institute
University of Rochester Medical Center
Co-Director, North Carolina Lung Screening Registry
<table>
<thead>
<tr>
<th>2013</th>
<th>United States Preventive Services Task Force</th>
</tr>
</thead>
</table>
| **Population** | - Asymptomatic aged 55 to 80 years  
- 30 pack-year smoking history  
- Currently smoking or quit ≤15 years |
| **Recommendation** | - Screen annually with low-dose CT  
- Discontinue screening:  
  - Quit for 15 years or  
  - Develops health problems limiting life expectancy |
| **Level of recommendation** | **GRADE B** |
- USPSTF 2013 excluded a high proportion of high-risk persons with lower smoking history (Black men, women)
  

### Table 1. Smoking prevalence, lung cancer incidence, and mortality by race

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Smoking Prevalence*</th>
<th>Lung Cancer Incidence†</th>
<th>Lung Cancer Mortality†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>White</td>
<td>16.6</td>
<td>17.2</td>
<td>16.0</td>
</tr>
<tr>
<td>Black</td>
<td>16.7</td>
<td>20.9</td>
<td>13.3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.1</td>
<td>13.1</td>
<td>7.1</td>
</tr>
<tr>
<td>AI/AN</td>
<td>21.9</td>
<td>19.0</td>
<td>24.0</td>
</tr>
<tr>
<td>API</td>
<td>7.0</td>
<td>12.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Definition of abbreviations: AI/AN = American Indian/Alaskan Native; API = Asian/Pacific Islander; SEER = surveillance, epidemiology, and end results.

*Weighted percent, population adjusted; from 2015 National Health Interview Survey, United States (27).

†Age-adjusted per 100,000; SEER 21 Area Registry, 2012–2016 (2).

Haddad DN et al. Annals ATS 2020;17(4):399-405
Lowering age/smoking history to increase proportion of eligible Blacks

### Southern Community Cohort Study (12 states) 2002-2009- 48,364 individuals who smoke

#### Table 2. Reasons for USPSTF Lung Cancer Screening Ineligibility for SCCS Smokers With Lung Cancer

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>SCCS Smokers, No. (%)</th>
<th></th>
<th></th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>African American</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>All cancer cases</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>478</td>
<td>791</td>
<td>1269</td>
<td>NA</td>
</tr>
<tr>
<td>Age &lt;55 y</td>
<td>91 (19)</td>
<td>192 (24)</td>
<td>283 (22)</td>
<td>.03</td>
</tr>
<tr>
<td>&lt;30 Pack-years</td>
<td>77 (16)</td>
<td>358 (45)</td>
<td>435 (34)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Smoking cessation &gt;15 y</td>
<td>43 (9)</td>
<td>47 (6)</td>
<td>90 (7)</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ineligible lung cancer cases</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>208</td>
<td>536</td>
<td>744</td>
<td>NA</td>
</tr>
<tr>
<td>Age &lt;55 y</td>
<td>91 (44)</td>
<td>192 (36)</td>
<td>283 (38)</td>
<td>.046</td>
</tr>
<tr>
<td>&lt;30 Pack-years</td>
<td>77 (37)</td>
<td>358 (67)</td>
<td>435 (58)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Smoking cessation &gt;15 y</td>
<td>43 (21)</td>
<td>47 (9)</td>
<td>90 (12)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Aldrich M. et al. JAMA Oncology 2019; 5(9):1318–24
**What does the USPSTF recommend?**

**2021**

- Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years:
  - Screen for lung cancer with low-dose computed tomography (CT) every year.
  - Stop screening once a person has not smoked for 15 years or has a health problem that limits life expectancy or the ability to have lung surgery.

Grade: B

**USPSTF 2021 does not endorse risk-modeling assessment**

<table>
<thead>
<tr>
<th>To whom does this recommendation apply?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. (See below for definition of pack-year.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What’s new?</th>
</tr>
</thead>
<tbody>
<tr>
<td>The USPSTF has revised the recommended ages and pack-years for lung cancer screening. It expanded the age range to 50 to 80 years (previously 55 to 80 years) and reduced the pack-year history to 20 pack-years of smoking (previously 30 pack-years).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How to implement this recommendation?</th>
</tr>
</thead>
</table>
| **1. Assess risk based on age and pack-year smoking history:** Is the person aged 50 to 80 years and have they accumulated 20 pack-years or more of smoking?  
  a. A pack-year is a way of calculating how much a person has smoked in their lifetime. One pack-year is the equivalent of smoking an average of 20 cigarettes—1 pack—per day for a year.  
  
  **2. Screen:** If the person is aged 50 to 80 years and has a 20 pack-year or more smoking history, engage in shared decision-making about screening.  
  a. The decision to undertake screening should involve a discussion of its potential benefits, limitations, and harms.  
  b. If a person decides to be screened, refer them for lung cancer screening with low-dose CT, ideally to a center with experience and expertise in lung cancer screening.  
  c. If the person currently smokes, they should receive smoking cessation interventions. |

<table>
<thead>
<tr>
<th>How often?</th>
</tr>
</thead>
</table>
| • Screen every year with low-dose CT.  
  • Stop screening once a person has not smoked for 15 years or has a health problem that limits life expectancy or the ability to have lung surgery. |
2021 USPSTF criteria:

- 14.5 million US adults, **81%** increase

- Eligibility increase:
  - Women (96%)
  - Non-Hispanic Blacks (106%)
  - Hispanics (112%)
  - Asians (61%)

- Increase in screen-detected cancer by **21%**

- Greater gains in lung cancer deaths averted and life-years gained in women c/w men
• Uncertainty about the relevance of NLST findings to real-world populations, more research needed
  • USPSTF Recommendation Statement. JAMA. 2021;325(10):962

• Population eligible for lung cancer screening may be less likely to benefit from LCS than NLST participants because they face a high risk of death from competing causes, such as heart disease and stroke.
**Benefits and Harms of Lung Cancer Screening by Chest Computed Tomography: A Systematic Review and Meta-Analysis**

**A Lung Cancer-Related Mortality**

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>LDCT Screening Events</th>
<th>Total</th>
<th>NS or CXR Events</th>
<th>Total</th>
<th>Weight (%)</th>
<th>RR M-H, Random (95% CI)</th>
<th>RR M-H, Random (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LDCT v NS</strong></td>
<td></td>
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</tr>
<tr>
<td>DANTE</td>
<td>59</td>
<td>1,264</td>
<td>55</td>
<td>1,186</td>
<td>8.8</td>
<td>1.01 (0.70 to 1.44)</td>
<td></td>
</tr>
<tr>
<td>DLCST</td>
<td>15</td>
<td>2,052</td>
<td>11</td>
<td>2,052</td>
<td>2.2</td>
<td>1.36 (0.63 to 2.96)</td>
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</tr>
<tr>
<td>ITALUNG</td>
<td>43</td>
<td>1,613</td>
<td>60</td>
<td>1,593</td>
<td>7.8</td>
<td>0.71 (0.48 to 1.04)</td>
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</tr>
<tr>
<td>LUSI</td>
<td>29</td>
<td>2,029</td>
<td>40</td>
<td>2,023</td>
<td>5.4</td>
<td>0.72 (0.45 to 1.16)</td>
<td></td>
</tr>
<tr>
<td>MILD</td>
<td>40</td>
<td>2,376</td>
<td>40</td>
<td>1,723</td>
<td>6.3</td>
<td>0.73 (0.47 to 1.12)</td>
<td></td>
</tr>
<tr>
<td>NELSON</td>
<td>160</td>
<td>6,683</td>
<td>210</td>
<td>6,612</td>
<td>20.6</td>
<td>0.77 (0.62 to 0.94)</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td>15,917</td>
<td>416</td>
<td>15,189</td>
<td>51.1</td>
<td></td>
<td>0.80 (0.69 to 0.92)</td>
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</tr>
<tr>
<td><strong>Total events</strong></td>
<td></td>
<td>346</td>
<td></td>
<td></td>
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<tr>
<td>Heterogeneity: $\chi^2 = 4.33, df = 5 (P = .60); I^2 = 0%$</td>
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<tr>
<td>Test for overall effect: $Z = 3.16 (P = .002)$</td>
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<tr>
<td><strong>LDCT v CXR</strong></td>
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</tr>
<tr>
<td>LSS</td>
<td>32</td>
<td>1,660</td>
<td>26</td>
<td>1,658</td>
<td>4.7</td>
<td>1.23 (0.74 to 2.05)</td>
<td></td>
</tr>
<tr>
<td>NLST</td>
<td>1,147</td>
<td>26,722</td>
<td>1,236</td>
<td>26,730</td>
<td>44.2</td>
<td>0.93 (0.86 to 1.00)</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td>28,382</td>
<td>1,262</td>
<td>28,388</td>
<td>48.9</td>
<td></td>
<td>0.95 (0.82 to 1.10)</td>
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<tr>
<td><strong>Total events</strong></td>
<td></td>
<td>1,179</td>
<td></td>
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<tr>
<td>Heterogeneity: $\chi^2 = 1.13, df = 1 (P = .29); I^2 = 11%$</td>
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<tr>
<td>Test for overall effect: $Z = 0.71 (P = .48)$</td>
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<tr>
<td><strong>Total (95% CI)</strong></td>
<td>44,299</td>
<td>43,577</td>
<td>100.0</td>
<td></td>
<td></td>
<td>0.87 (0.78 to 0.98)</td>
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</tr>
<tr>
<td><strong>Total events</strong></td>
<td></td>
<td>1,525</td>
<td></td>
<td>1,678</td>
<td></td>
<td></td>
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<tr>
<td>Heterogeneity: $\chi^2 = 9.21, df = 7 (P = .24); I^2 = 24%$</td>
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<tr>
<td>Test for overall effect: $Z = 2.30 (P = .02)$</td>
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<tr>
<td>Test for subgroup differences: $\chi^2 = 2.83, df = 1 (P = .09); I^2 = 64.6%$</td>
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</tbody>
</table>
A early-stage tumor diagnosis rate

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>LDCT Screening Events</th>
<th>Total</th>
<th>NS or CXR Events</th>
<th>Total</th>
<th>Weight (%)</th>
<th>M-H, Random (95% CI)</th>
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<tbody>
<tr>
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<td></td>
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</tr>
<tr>
<td>DANTE</td>
<td>54</td>
<td>1,264</td>
<td>21</td>
<td>1,186</td>
<td>12.9</td>
<td>2.41 (1.47 to 3.97)</td>
<td></td>
</tr>
<tr>
<td>DLCST</td>
<td>47</td>
<td>2,052</td>
<td>5</td>
<td>2,052</td>
<td>7.9</td>
<td>9.40 (3.75 to 23.59)</td>
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</tr>
<tr>
<td>ITALUNG</td>
<td>29</td>
<td>1,613</td>
<td>13</td>
<td>1,593</td>
<td>10.9</td>
<td>2.20 (1.15 to 4.22)</td>
<td></td>
</tr>
<tr>
<td>LUSI</td>
<td>54</td>
<td>2,029</td>
<td>14</td>
<td>2,023</td>
<td>11.7</td>
<td>3.85 (2.14 to 6.90)</td>
<td></td>
</tr>
<tr>
<td>MILD</td>
<td>53</td>
<td>2,376</td>
<td>18</td>
<td>1,723</td>
<td>12.4</td>
<td>2.14 (1.26 to 3.63)</td>
<td></td>
</tr>
<tr>
<td>NELSON</td>
<td>138</td>
<td>6,583</td>
<td>71</td>
<td>6,612</td>
<td>15.6</td>
<td>1.95 (1.47 to 2.59)</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td><strong>15,917</strong></td>
<td><strong>15,189</strong></td>
<td><strong>71.4</strong></td>
<td></td>
<td></td>
<td><strong>2.73 (1.91 to 3.90)</strong></td>
<td></td>
</tr>
<tr>
<td>Total events</td>
<td></td>
<td>375</td>
<td></td>
<td>142</td>
<td></td>
<td></td>
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<tr>
<td>Heterogeneity: $\tau^2 = 0.12; \chi^2 = 13.49, df = 5 (P = .02); I^2 = 63%$</td>
<td></td>
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<tr>
<td>Test for overall effect: $Z = 5.52 (P &lt; .00001)$</td>
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<tr>
<td><strong>LDCT v CXR</strong></td>
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<tr>
<td>DESPICAN</td>
<td>3</td>
<td>336</td>
<td>1</td>
<td>285</td>
<td>2.1</td>
<td>2.54 (0.27 to 24.33)</td>
<td></td>
</tr>
<tr>
<td>LSS</td>
<td>22</td>
<td>1,660</td>
<td>9</td>
<td>1,658</td>
<td>9.4</td>
<td>2.44 (1.13 to 5.29)</td>
<td></td>
</tr>
<tr>
<td>NLST</td>
<td>805</td>
<td>26,722</td>
<td>606</td>
<td>26,730</td>
<td>17.1</td>
<td>1.33 (1.20 to 1.47)</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td><strong>28,718</strong></td>
<td><strong>28,673</strong></td>
<td><strong>28.6</strong></td>
<td></td>
<td></td>
<td><strong>1.52 (1.04 to 2.23)</strong></td>
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</tr>
<tr>
<td>Total events</td>
<td></td>
<td>830</td>
<td></td>
<td>616</td>
<td></td>
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<tr>
<td>Heterogeneity: $\tau^2 = 0.05; \chi^2 = 2.65, df = 2 (P = .27); I^2 = 24%$</td>
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<tr>
<td>Test for overall effect: $Z = 2.14 (P &lt; .03)$</td>
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<tr>
<td>Total (95% CI)</td>
<td></td>
<td><strong>44,635</strong></td>
<td><strong>43,862</strong></td>
<td><strong>100.0</strong></td>
<td><strong>1,205</strong></td>
<td><strong>758</strong></td>
<td><strong>2.42 (1.71 to 3.44)</strong></td>
</tr>
<tr>
<td>Total events</td>
<td></td>
<td>1,205</td>
<td></td>
<td>758</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Heterogeneity: $\tau^2 = 0.18; \chi^2 = 42.30, df = 8 (P &lt; .00001); I^2 = 81%$</td>
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</tr>
<tr>
<td>Test for overall effect: $Z = 4.94 (P &lt; .00001)$</td>
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<tr>
<td>Test for subgroup differences: $\chi^2 = 4.83, df = 1 (P = .03); I^2 = 79.3%$</td>
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</tr>
</tbody>
</table>
late-stage tumor diagnosis rate

Study or Subgroup | LDCT Screening | NS or CXR | Total | Weight (%) | RR | M-H, Random (95% CI) | RR | M-H, Random (95% CI)
--- | --- | --- | --- | --- | --- | --- | --- | ---
LDCT screening v no LDCT screening
DANTE | 26 | 1,264 | 33 | 1,186 | 3.9 | 0.74 (0.44 to 1.23) | 0.74 (0.44 to 1.23) |
DLCST | 6 | 2,052 | 7 | 2,052 | 0.8 | 0.86 (0.29 to 2.55) | 0.86 (0.29 to 2.55) |
ITALUNG | 24 | 1,613 | 35 | 1,593 | 3.8 | 0.68 (0.40 to 1.13) | 0.68 (0.40 to 1.13) |
LUSI | 17 | 2,029 | 30 | 2,023 | 2.9 | 0.56 (0.31 to 1.02) | 0.56 (0.31 to 1.02) |
MILD | 29 | 2,376 | 32 | 1,723 | 4.0 | 0.66 (0.40 to 1.08) | 0.66 (0.40 to 1.08) |
NELSON | 92 | 6,583 | 139 | 6,612 | 14.7 | 0.66 (0.51 to 0.86) | 0.66 (0.51 to 0.86) |
Subtotal (95% CI) | 15,917 | 15,189 | 30.1 | 0.67 (0.56 to 0.80) | 0.67 (0.56 to 0.80) |
Total events | 194 | 276 | 0 | 1 | 0.67 (0.56 to 0.80) | 0.67 (0.56 to 0.80) |
Heterogeneity: $\chi^2 = 0.00; \chi^2 = 0.67, df = 5 (P = .98); I^2 = 0$
Test for overall effect: $Z = 4.32 (P < .00001)$

LDCT v CXR
DESPICAN | 1 | 385 | 0 | 380 | 0.1 | 2.96 (0.12 to 72.46) | 2.96 (0.12 to 72.46) |
LSS | 3 | 1,660 | 0 | 1,658 | 0.1 | 6.99 (0.36 to 135.25) | 6.99 (0.36 to 135.25) |
NLST | 468 | 26,722 | 597 | 26,730 | 69.7 | 0.78 (0.70 to 0.88) | 0.78 (0.70 to 0.88) |
Subtotal (95% CI) | 28,767 | 28,768 | 69.9 | 1.21 (0.38 to 3.89) | 1.21 (0.38 to 3.89) |
Total events | 472 | 597 | 0 | 1 | 1.21 (0.38 to 3.89) | 1.21 (0.38 to 3.89) |
Heterogeneity: $\chi^2 = 0.46; \chi^2 = 2.75, df = 2 (P = .25); I^2 = 27$
Test for overall effect: $Z = 0.32 (P = .75)$

Total (95% CI) | 44,684 | 43,957 | 100.0 |
Total events | 666 | 873 |
Heterogeneity: $\chi^2 = 0.00; \chi^2 = 5.60, df = 8 (P = .69); I^2 = 0$
Test for overall effect: $Z = 5.62 (P < .00001)$
Test for subgroup differences: $\chi^2 = 0.96, df = 1 (P = .33); I^2 = 0$
Joint project with the ACS Lung Cancer Roundtable and the American College of Radiology (ACR)

2015 CMS required all patients have information entered into a registry. ACR only approved registry

Age, sex, and smoking status distributions computed among 1,159,092 individuals received baseline LDCT between 2015 and 2019 and had no missing data and respondents in the 2015 National Health Interview Survey (NHIS) eligible for screening (8 million).

Prevalence between the LCSR and the NHIS (8million eligible) was compared

Adherence to annual screening was defined as having a follow-up test within 11 to 15 months of an initial LDCT
WHO IS UNDERGOING LCS COMPARED TO THE 8 MILLION ELIGIBLE?

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Adults, n (%)</th>
<th>Prevalence Ratio (95% CI) for Screened vs. Eligible†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eligible* (n = 1257)</td>
<td>Screened† (n = 1 052 591)</td>
</tr>
<tr>
<td><strong>Sex‡</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>535 (41.8)</td>
<td>544 482 (48.1)</td>
</tr>
<tr>
<td>Male</td>
<td>722 (58.2)</td>
<td>505 318 (51.9)</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>2791</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55-64 y</td>
<td>636 (57.1)</td>
<td>504 794 (49.6)</td>
</tr>
<tr>
<td>65-74 y</td>
<td>560 (34.7)</td>
<td>379 841 (44.8)</td>
</tr>
<tr>
<td>75-80 y</td>
<td>61 (8.1)</td>
<td>67 956 (5.5)</td>
</tr>
<tr>
<td><strong>Smoking status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>678 (52.3)</td>
<td>645 875 (61.4)</td>
</tr>
<tr>
<td>Former</td>
<td>579 (47.7)</td>
<td>406 700 (38.6)</td>
</tr>
</tbody>
</table>
Outcomes From More Than 1 Million People Screened for Lung Cancer With Low-Dose CT Imaging

Gerard A. Silvestri, MD; Lenka Goldman; Nichole T. Tanner, MD, MSCR; Judy Burleson; Michael Gould; Ella A. Kazerooni, MD; Peter J. Mazzone, MD, MPH; M. Patricia Rivera, MD; V. Paul Doria-Rose, DVM, PhD; Lauren S. Rosenthal, MPH; Michael Simanowith; Robert A. Smith, PhD; and Stacey Fedewa, PhD

- Adherence to annual screening
- Factors associated with adherence
- Lung-RADS performance
- Cancer detection rate
ADHERENCE TO ANNUAL SCREENING

- 22% Between 11-15 month
- 34% Between 16-24 months
- 40% >24 months

Factors associated with low adherence:

Race and Ethnicity:
- Black Individuals: 0.79 (95% CI .76-.82)
- Hispanic Individuals: 0.69 (95% CI 60-.70)

Socioeconomic:
- < high school degree: 0.88 (95% CI .82-.95)
- Self-pay/uninsured: 0.45 (95% CI .40-.50)
- Residency in the South: 0.72 (95% CI .72-.74)

Smoking status:
- Currently smoking: 0.82 (95% CI .81-.83)

Low-Dose CT findings:
- Lung-RADS 3 findings on LDCT (probably benign) 3.6 (95% CI 2.9-4.7)

Silvestri G et al. Chest 2023; In Press
RISK STRATIFICATION: CAN IT IMPROVE ELIGIBILITY ASSESSMENT?

Age and total pack years are a practical way to identify those eligible for LCS.

This approach may be overly simplistic because LC risk varies among individuals.

Logistic-regression prediction models of risk may improve risk assessment.
<table>
<thead>
<tr>
<th>Race or ethnic group</th>
<th>1.000</th>
<th>Reference group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>1.484 (1.083–2.033)</td>
<td>0.01</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.475 (0.195–1.160)</td>
<td>0.10</td>
</tr>
<tr>
<td>Asian</td>
<td>0.627 (0.332–1.185)</td>
<td>0.15</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>2.793 (0.992–7.862)</td>
<td>0.05</td>
</tr>
<tr>
<td>Education, per increase of 1 level†‡</td>
<td>0.922 (0.874–0.972)</td>
<td>0.003</td>
</tr>
<tr>
<td>Body-mass index, per 1-unit increase†</td>
<td>0.973 (0.955–0.991)</td>
<td>0.003</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease (yes vs. no)</td>
<td>1.427 (1.162–1.751)</td>
<td>0.001</td>
</tr>
<tr>
<td>Personal history of cancer (yes vs. no)</td>
<td>1.582 (1.172–2.128)</td>
<td>0.003</td>
</tr>
<tr>
<td>Family history of lung cancer (yes vs. no)</td>
<td>1.799 (1.471–2.200)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Smoking status (current vs. former)</td>
<td>1.297 (1.047–1.605)</td>
<td>0.02</td>
</tr>
<tr>
<td>Smoking intensity¶</td>
<td>-1.822606</td>
<td></td>
</tr>
<tr>
<td>Duration of smoking, per 1-yr increase†</td>
<td>1.032 (1.014–1.051)</td>
<td>0.001</td>
</tr>
<tr>
<td>Smoking quit time, per 1-yr increase†</td>
<td>0.970 (0.950–0.990)</td>
<td>0.003</td>
</tr>
<tr>
<td>Model constant</td>
<td></td>
<td>-4.532506</td>
</tr>
</tbody>
</table>

PLCOM2012 Model. NEJM 2013;368:728-36
Chicago Race Eligibility for Screening Cohort (CREST)

- 883 lung cancer cases (>50% B, 8% H)
- Sensitivity of USPSTF 2013 and 2021 vs PLCOm2012 eligibility criteria
Risk-based strategies

- Select individuals with higher 5-year lung cancer risk (3.2% vs. 1.3%)
  - Lower number needed to screen to prevent 1 death (226 vs 647)

- Preferentially select:
  - Black persons
  - Currently smoking
  - Low-intensity currently smoking
    - 61% of whom smoke $\leq$ half a pack/day
  - 67% women and 25% Black
  - Individuals who formerly smoked with high intensity, quit $\geq$ 15 years
  - Older individuals (70-80 years)
  - Individuals with more co-morbidities

Katki H et al. Ann Inter Med 2018;169:10-19
Incorporating Coexisting Chronic Illness into Decisions about Patient Selection for Lung Cancer Screening
An Official American Thoracic Society Research Statement


Conceptual framework for net benefit of LCS according to baseline lung cancer risk

- **Low Lung Cancer Risk**: Low LCS benefit due to low risk of lung cancer death. Harms outweigh benefit.
- **Medium Lung Cancer Risk**: Greatest LCS benefit as rising risk of lung cancer death outweighs LCS harms.
- **High Lung Cancer Risk**: Net LCS benefit decreases as harms (competing cause of death, decreased ability to tolerate treatment) rise.
CHALLENGES IN LUNG CANCER SCREENING

■ Have we eliminated disparities in eligibility?

■ How to optimize risk-based assessment
  – Balance of enrollment criteria and screening efficiency
  – Impact of comorbidities
  – Individuals not represented in screening trials

■ Low rates of uptake and adherence to follow-up screening

■ Lung cancer risk heterogeneity
  – How best to combine image screening with novel biomarkers

■ Tobacco control policy
LOW RATES OF LUNG CANCER SCREENING
Early Diagnosis:

- In NYS, 30% of cases are diagnosed at an early stage, significantly higher than the national rate of 26%.

- NYS ranks 4th among the 49 states with data on diagnosis at an early stage, placing it in the top tier.

- Over the last five years, the early diagnosis rate in New York improved by 22%.
Screening for High Risk:

• In New York, 6% of those at high risk were screened, **significantly higher** than the national rate of 6%.
• It ranks **27th** among all states, placing it in the **average tier**.

<table>
<thead>
<tr>
<th>Healthcare-system and provider level</th>
<th>Patient level</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Multidisciplinary buy-in for implementation</td>
<td>• Individuals who smoke tend to be less educated and less likely to have a PCP, reducing access to LCS</td>
</tr>
<tr>
<td>• Investment by health systems in additional resources (personnel, information technology, etc.)</td>
<td>• Smoking carries a stigma, with many who smoke having a high level of nihilism</td>
</tr>
<tr>
<td>• Provider time constraints preventing SDM</td>
<td>• Cost and lack of health insurance</td>
</tr>
<tr>
<td>• Level of provider familiarity with LCS eligibility criteria and SDM requirements</td>
<td>• Travel to LCS facility</td>
</tr>
<tr>
<td>• Implicit bias and differences in trust and perception based on sex, race, ethnicity, and socioeconomic status</td>
<td>• Medical mistrust</td>
</tr>
<tr>
<td></td>
<td><strong>Geographic location</strong></td>
</tr>
<tr>
<td></td>
<td>• An inverse relationship exists between individuals at highest risk for lung cancer and availability of accredited LCS programs</td>
</tr>
<tr>
<td></td>
<td>• The southeastern United States has a disproportionately low number of accredited sites compared with the number of individuals who smoke and are at risk for lung cancer</td>
</tr>
</tbody>
</table>
LDCT screening centers and percentage of population aged 55-79 without access to a center

- LDCT Centers
- % Without Access
  - 0%–22%
  - 23%–42%
  - 44%–65%
  - 66%–86%

Eberth JM et al. Prev Chronic Dis 2018;15:E119-
• 263 screening locations in New York
  • California 141
  • Texas 169
  • Massachusetts 98
  • Florida 206

https://www.acr.org/Clinical-Resources/Lung-Cancer-Screening-Resources/LCS-Locator-Tool
PROPOSED STRATEGIES TO REDUCE LCS DISPARITIES: ACCESS TO CARE

1. Strategies to ensure equity in LCS based on screening individuals with equal risk:
   - Generate evidence on the benefits and risks of LCS in diverse populations
   - Consider an approach to LCS eligibility assessment that includes both USPSTF guidelines and risk and/or gained-based assessment for high-risk, high-benefit individuals

2. Strategies to improve tobacco treatment:
   - Provide access to tobacco treatment and develop programs that address differences in cultural beliefs, language, and literacy

3. Strategies to address healthcare system-level barriers:
   - Integrate patient navigators within LCS programs to increase the uptake and adherence among vulnerable populations

4. Strategies to address provider-level barriers:
   - Commit resources toward provider-level support and education to increase awareness and uptake of LCS
   - Provide provider-level training on communication techniques to build and improve patient trust

5. Strategies to address patient-level barriers:
   - Develop SDM tools that are culturally sensitive and understandable by those with lower literacy and numeracy and those with SMI
   - Launch culturally adapted LCS marketing and outreach campaigns to reach vulnerable populations

6. Strategies to reduce geographic barriers:
   - Determine feasibility of mobile LCS units to reach populations confronting geographic barriers
   - Consider telehealth as a pragmatic approach to provide access to LCS services for rural populations

7. Proposed policies to improve LCS access:
   - Mandate expansion of Medicaid coverage for LCS
   - Propose federal mandates similar to the 1990 Breast and Cervical Cancer Mortality Prevention Act and the Mammography Quality Standards Act to ensure that all high-risk adults have access to high-quality LCS for the detection of lung cancer in its earlier, most treatable stages

8. Engage advocacy groups and organizations:
   - Advocacy groups and organizations should leverage their resources to promote strategic planning, research funding, and advocacy to ensure equitable access to high-quality LCS in all populations
SUMMARY

• Several randomized trials reinforced value of LCS = **reduces lung cancer mortality in high-risk individuals**

• **USPSTF 2021**: lower age (50-80) and pack year history (20 P-Y), quit within 15 yrs
  - More Blacks and women
  - Not likely to ensure equity in screening eligibility

• LCS is complex
  - Variation in stakeholder buy-in, patient selection, delivery across health care systems
  - **Multiple barriers exist**
    - Difficulty in identifying screening eligible patients
    - Limited resources to support screening
    - Competing demands for limited resources
    - Access to facilities/payment of LDCT

• Continued effort to develop and support interventions that address
  - Improvement in eligibility assessment
  - Improved uptake and adherence (centralized programs)
  - Dissemination of LCS to vulnerable communities
  - Barriers across the LCS pipeline
Thank you
Andy Hyland, PhD

Dr. Hyland is the Chair of the Department of Health Behavior at Roswell Park Comprehensive Cancer Center as well as the Director of the New York Quitline. Dr. Hyland’s primary research interests lie in evaluating the impact of policies aimed at reducing the morbidity and mortality associated with the use of tobacco products. Dr. Hyland also serves as Multiple Principle Investigator for a P01 that provides major support for the International Tobacco Control Policy Evaluation Project, which is conducting nationally representative surveys of tobacco use in 7 countries (including the US) to evaluate novel policies such as menthol bans in Canada and England, heated tobacco product policies in Japan and South Korea, and the reduced cigarette nicotine policy expected to be implemented in New Zealand. Dr. Hyland’s research program is focused on providing an evidence base to inform interventions to reduce the disease burden caused by tobacco by as much and as quickly as possible.
Nikia Clark, BS

Nikia is the Senior Community Outreach and Engagement Manager, and the staff lead for the Community Advisory Board (CAB) in the Office of Community Outreach and Engagement at Roswell Park Comprehensive Cancer Center. Nikia develops and nurtures strong partnerships with community organizations and key stakeholders who help champion and support the mission of health equity for cancer education, resources and cancer screenings to those underserved and most in need. Nikia manages a 12-member Community Advisory Board, a diverse group of community stakeholders that meet quarterly and help to strategically plan and advise the research and outreach efforts of the Office of Community Outreach and Engagement. She also holds the position of Program Manager for the ROCKstars (Research Oncology Community Knowledge) Advocate Program, where she leads the day-to-day operations as well as recruits and trains cancer survivors, community members and caregivers to become active research advocates.
Michael Davoli

Michael is the Senior Director of Government Relations New York at American Cancer Society Cancer Action Network, Inc. For more than 25 years, he has been a passionate advocate working on a variety of national, state and local policy campaigns across issues—from education to health care reform. Ensuring equitable access to cancer prevention and care has been a defining feature in 2022 and 2023. In the last year, Michael has built multiple coalitions of patient and provider groups, working to improve access to precision medicine through biomarker testing and expand access to cancer screening. Michael has mobilized stakeholders across the state and captured the attention of the media, resulting in bipartisan support for legislation to improve access to biomarker testing and cancer screening, help patients pay for prescription drugs, and curb tobacco use.
49% of people calling the Quitline are eligible for lung cancer screening.

- Quit sessions with coaches: Call, Chat, Text.
- A supply of nicotine patches, gum, and lozenge.
- Texting program (Learn2QuitNY).
- Web-based information and interactive tools
- Print materials.

**Accessing Quitline Services:**

- Direct:
  - Call: 1-866-697-8487,
  - Chat, Text: NYSmokeFree.com/TalkNow
  - Learn2QuitNY: QUITNOW to 333888

- Patient Referral Program
- Community-Based Organizations
Education and Outreach

Strategic Planning Process:

• **SURVEY & ASSESS** community demographics

• **IDENTIFY** who is already there doing the work
  - Support and enhance those efforts

• **BUILD** new partnerships/nurture existing ones

• **ENGAGE** - community stakeholders, faith-based organizations, housing developments, support groups, advocates, block clubs, social service orgs, FQHCs, Council members, etc.

• **SHOW UP** - tabling events, community events, etc.
Education and Outreach

• **EDUCATE** - Lung AIR (Awareness, Information and Resources) program, tailored handouts and outreach materials

• **EXPAND** reach through social media platforms, text messaging, newspaper, local radio, direct mailings, networks, etc.

• **BE PREPARED** - outreach budget
  Staffing, travel, vendor fees, giveaways, program refreshments

• **TIMING** is everything!

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**Lung AIR** evidence-based educational intervention
Bouchard, E. et al. (2023) J Can Ed
Prevent Cancer Foundation Grant: PI Bouchard

**EDDY** – Early Detection
Driven to You
• Mobile low-dose CT for lung cancer screening
Quitline Services

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- Community-Based Organizations
Introducing EDDY (Early Detection Driven to You)
Lung Cancer Screening: Mobile Low-Dose CT

- Reaching underserved populations (urban and rural)
- Reaching high risk populations:  
  – Fire Fighters and First Responders
- Providing navigation from PCP to LCS with recommendations for follow-up and management of lung nodules
- Utilizing local facilities to provide follow-up for highest risk
Meet Eddy (Early Detection Driven to You)

- Opened: November 7, 2022
- Screened to Date: 980
- Patients/Day: capacity of 20-30
- Focus on High Risk/High Burden of cancer
  - Fire Fighters, HIV survivors, Rural and Urban communities
  - Integrate into community networks
  - Provide medical support on the unit (PA, RN)
Poll Question

What action are you most likely to take to help increase LCS?
Question & Answer
Join the Consortium and Attend Upcoming Meetings

**Upcoming Meetings**

- **Survivorship and Lifestyle Action Teams**
  December 14, 2023, 11:00 AM – 12:30 PM

- **Environmental Carcinogens Action Team**
  March 12, 2024, 11:00 AM – 12:30 PM
Poll Question

If you aren’t already a NYS Cancer Consortium member, did today’s meeting influence you to join?
Thank you for Attending

cancerconsortium@health.ny.gov