

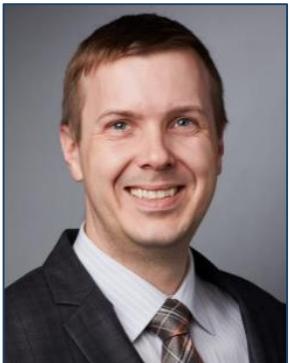
Disparities, Survivorship, Policy, and Practice in Lung Cancer Care



**Louise Henderson,
PhD**



Ruth Carlos, MD, MS



Brett Bade, MD



Devon Adams, RN, MPH



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ADDRESSING DISPARITIES IN LUNG CANCER SCREENING AND ACCESS

Louise M. Henderson, PhD

Professor, Departments of Radiology and Epidemiology

Program Co-Lead, Cancer Epidemiology

Lineberger Comprehensive Cancer Center

University of North Carolina at Chapel Hill

Disclosures

- Funding
 - NIH/NCI
 - Patient Centered Outcomes Research Institute
 - Yang Biomedical Scholars Program at UNC



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AMERICAN THORACIC SOCIETY DOCUMENTS

Addressing Disparities in Lung Cancer Screening Eligibility and Healthcare Access

An Official American Thoracic Society Statement

M. Patricia Rivera, Hormuzd A. Katki, Nichole T. Tanner, Matthew Triplett, Lori C. Sakoda, Renda Soylemez Wiener, Roberto Cardarelli, Lisa Carter-Harris, Kristina Crothers, Joelle T. Fathi, Marvella E. Ford, Robert Smith, Robert A. Winn, Juan P. Wisnivesky, Louise M. Henderson*, and Melinda C. Aldrich*; on behalf of the American Thoracic Society Assembly on Thoracic Oncology

- We defined a health care disparity in LCS as occurring when two people at equal lung cancer risk and who have an equal harm to benefit ratio from LCS are *not* managed equitably.
- Vulnerable populations from groups that are socially, economically, demographically, or geographically defined may need additional care or support to achieve health equity in LCS



Are current LCS guidelines applicable to all high-risk patients?



Is age and tobacco history good enough?

- Black men higher risk of lung cancer with less smoking history
- Women at risk at younger age and with less smoking history

Quit time

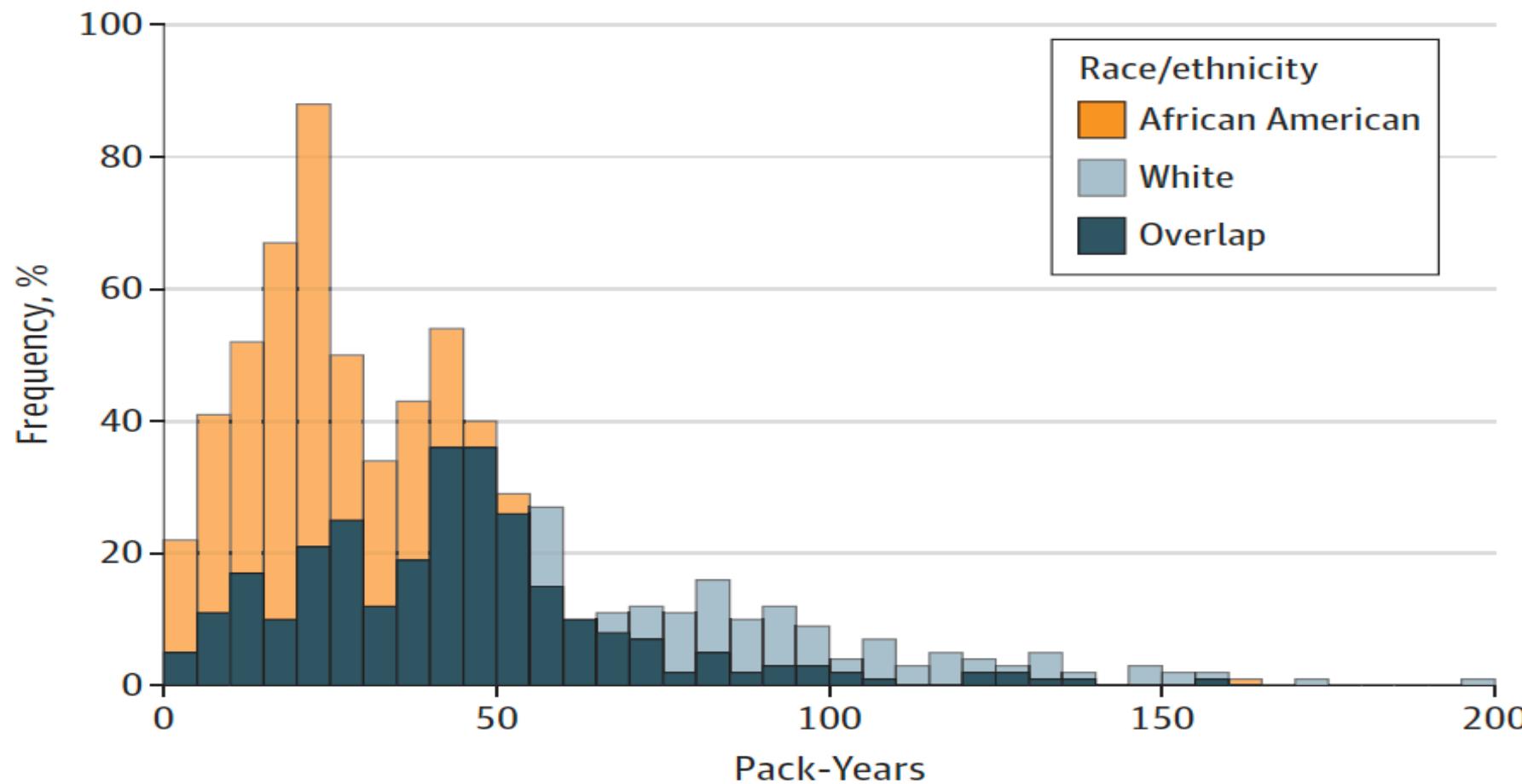
- When does risk really decrease?
- Is there a difference by race or by sex?

Groups under or not represented in the NLST

- Blacks / minority populations
- Patients with HIV

Evaluating USPSTF Guidelines by Race

A Histogram



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Table 2. Projected Performance by Race and Ethnicity of USPSTF LCS Entry Criteria in the NHIS: U.S. Population Who Ever Smoked, Ages 50–80 Years

Race and Ethnicity Percentages (NHIS 2015, <i>N=44 Million</i>)	Eligible* (%)	Preventable Deaths (%)	Life-Years Gained (%)	NNS (Effectiveness)
2013 USPSTF guidelines				
White (80%)	20	55	48	195
African American (9.8%)	13	40	33	135
Asian American (2.8%)	14	39	36	419
Hispanic American (7.1%)	9	30	25	325
2020 USPSTF draft guidelines				
White (80%)	36	67	64	282
African American (9.8%)	27	54	48	202
Asian American (2.8%)	22	48	45	550
Hispanic American (7.1%)	19	41	37	501

Definition of abbreviations: LCS = lung cancer screening; NHIS = National Health Interview Survey; NNS = number needed to screen to prevent one death; USPSTF = U.S. Preventive Services Taskforce.

Based on data from Reference 35.

*Estimated number of individuals who ever smoked aged 50–80 years in the NHIS 2015 who meet 2013 or 2020 Draft USPSTF criteria for LCS.

Are there disparities in who is screened? Conflicting evidence

Age, Race, and Income Are Associated With Lower Screening Rates at a Safety Net Hospital

Ann Thorac Surg 2020;109:1544-1550

Katrina Steiling, MD, MSc, Taylor Loui, MD, Sainath Asokan, MS, Sarah Nims, BS,
Paulo Moreira, MD, Anuradha Rebello, MBBS, Virginia R. Little, MD, and
Kei Suzuki, MD

Division of Pulmonary, Allergy, Sleep and Critical Care Medicine, Department of Medicine, Boston Medical Center, Boston, Massachusetts; Division of Computational Biomedicine Medicine, Boston University School of Medicine, Boston, Massachusetts; Department of Surgery, Boston University School of Medicine, Boston, Massachusetts; Department of Radiology, Boston University School of Medicine, Boston, Massachusetts; and Division of Thoracic Surgery, Department of Surgery, Boston University School of Medicine, Boston, Massachusetts



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Are there disparities in who is screened? Conflicting evidence

Age, Race, and Income Are Associated With Lower Screening Rates

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Table 1 Characteristics of USPSTF Criteria-Eligible Smokers for LDCT Screening

Characteristic	Total eligible	Received screening	p value
LDCT screening eligible	n = 3007; weighted n = 1,273,013	n = 405; weighted n = 224,679	
Total (%), 95% CI	63.68 (10.44)	17.65 (13.05–22.25)	0.17
Age (median, IQR)	49.22 (44.10–54.35)	62.57 (10.07)	0.48
Male (%), 95% CI	50.86 (45.68–56.05)	44.09 (29.19–58.99)	
Married (%), 95% CI	85.96 (81.45–90.46)	46.37 (31.90–60.84)	
Race (%), 95% CI	5.42 (3.85–6.98)	*	0.42
White	*	84.12 (71.09–97.14)	
Black	*	5.16 (1.48–8.83)	
Asian	*	*	
American Indian/Alaskan native	1.83 (0.82–2.83)	1.09 (0.00–2.18)	
Hispanic	*	*	
Other	1.59 (0.32–2.86)	0.29 (0.04–0.53)	0.68
Education: attend college and higher (%), 95% CI	46.63 (41.88–51.39)	42.39 (27.67–57.11)	0.69
Income > 15,000 (%), 95% CI	74.02 (69.60–78.45)	79.20 (66.58–91.82)	
Pack years (median, IQR)	45.80 (22.26)	48.28 (29.80)	
Current smoker (%), 95% CI	55.77 (51.01–60.53)	58.98 (44.58–73.38)	0.63
Health plan coverage (%), 95% CI	91.89 (89.39–94.40)	97.01 (94.50–99.52)	0.008
COPD (%), 95% CI	35.36 (30.18–40.54)	52.63 (37.49–67.78)	0.007
PCP (%), 95% CI	88.64 (85.30–91.99)	97.65 (95.12–100.00)	<0.001

Source: Kee D, et al. Lung Cancer Screening Uptake: Analysis of BRFSS data, 2018. JGIM 2020.



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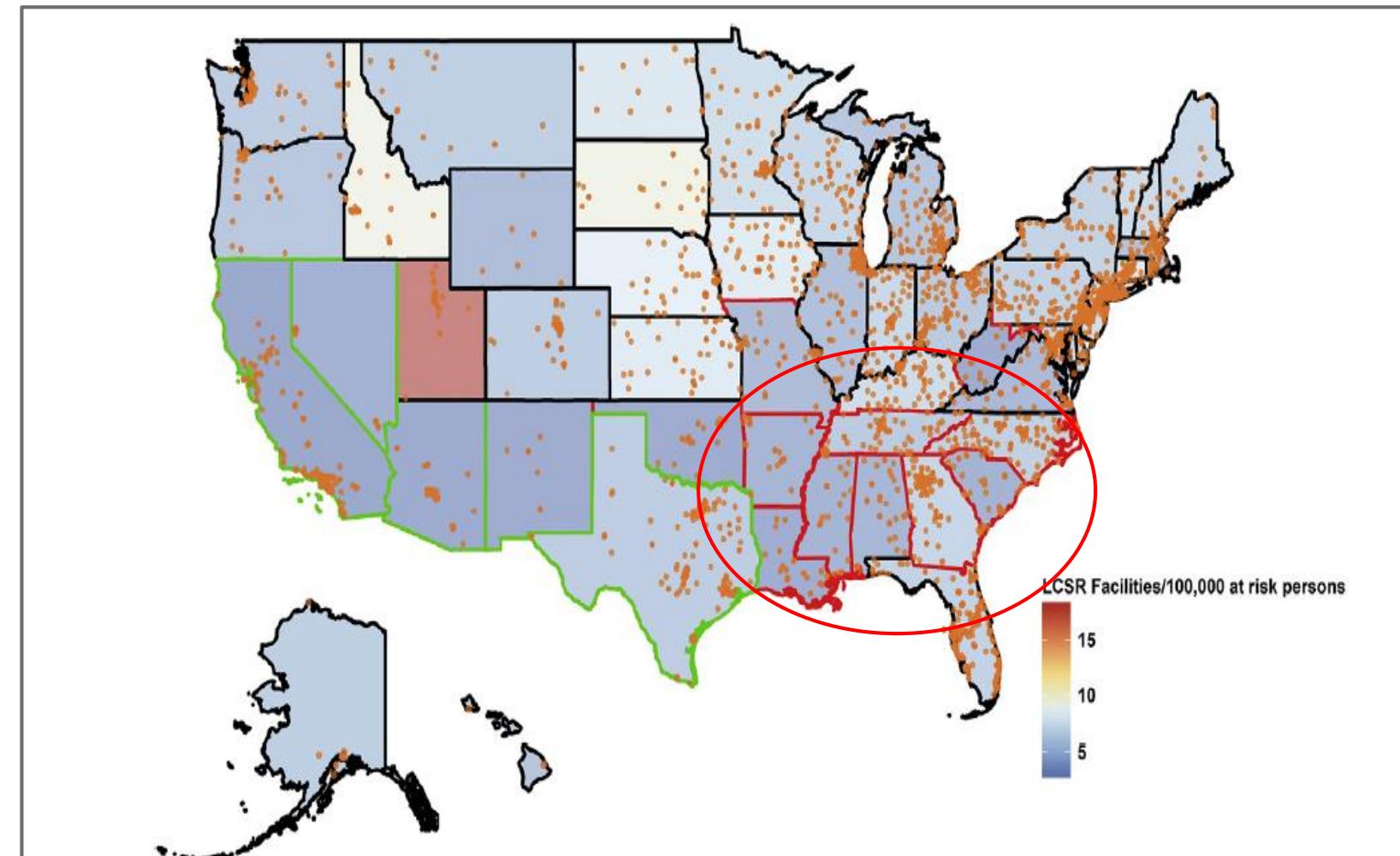
Lack of Access to Lung Cancer Screening Programs: Perpetuating the Inverse Care Law

Geospatial cluster analysis

Distribution of comprehensive LCS programs in US meeting all requirements

- Kale MS et al. *Chest* 2019;155:900-07
 - **Southeastern U.S. (cluster 2, red borders):** highest distribution of smokers and lung cancer burden but lowest number of LCS programs

Geographic barriers propagate inverse care law “availability of good medical care varies inversely with the need for it in the population”



Challenges to Decreasing Disparities in Cancer Screening and Follow-up of Abnormal Screening Results

Patient Factors	Lack of insurance Under-insurance and uncovered costs Non-financial barriers: <ul style="list-style-type: none">- Lower levels of knowledge- Mistrust of health care- Limited English proficiency- Less self efficacy- Lower health literacy- Lack of a usual source of primary care
Practice Factors	Poor reimbursement for primary care, especially for publicly insured patient who present at safety-net practices Competing demands during 15-minute visits Lack of resources to support team-based care such as patient navigators or community health workers Lack of adequate health information technology Lack of systems for referring uninsured patients to screening promotion programs (e.g. NCCEDP)

Proposed Strategies to Reduced Lung Cancer Screening Disparities

Overall:

- Address existing multilevel barriers to LCS using a multipronged approach
- Propose quality metrics to evaluate equity in LCS dissemination and implementation

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
- Offer 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

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Survivorship among patients with NSCLC and the
COVID-19 related response.

12/7/20

Brett Bade, MD

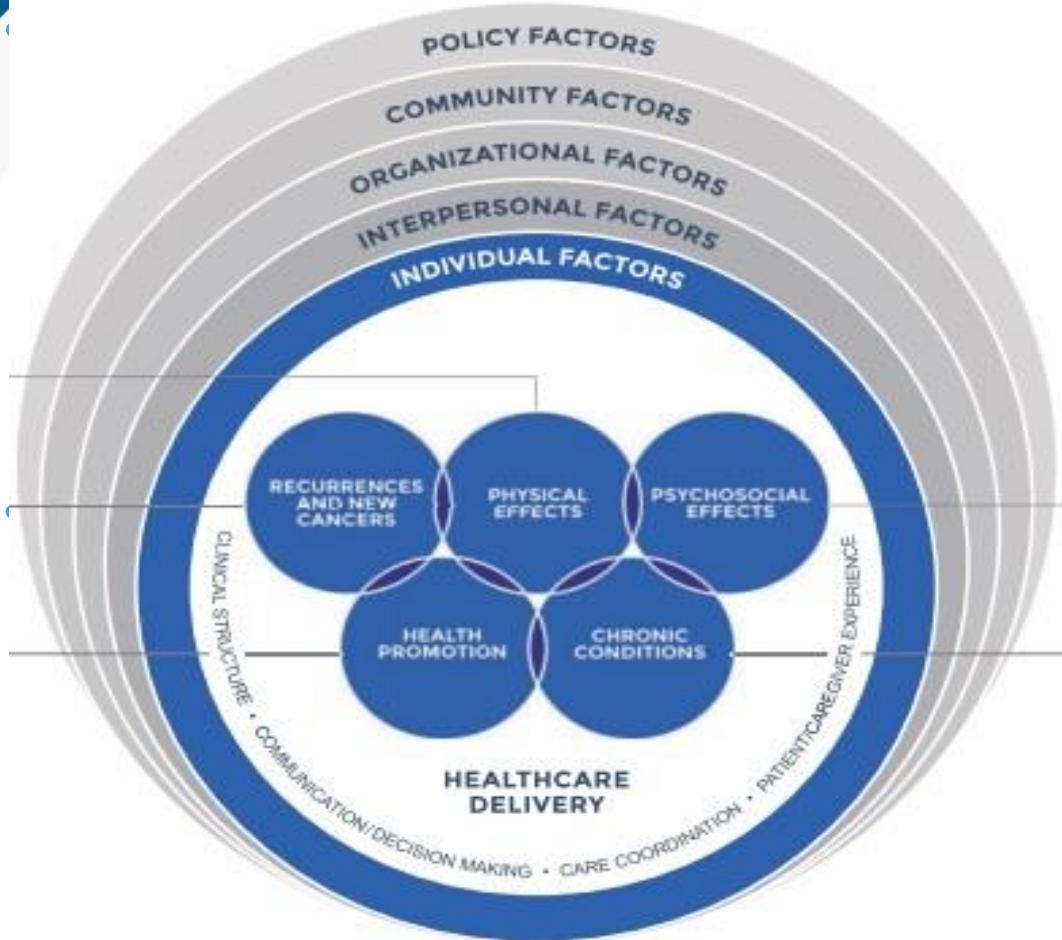
Assistant Professor

Yale School of Medicine

West Haven VA Medical Center

Section of Pulmonary, Critical Care, and Sleep Medicine

Cancer Survivorship Care



Lung cancer survivorship is challenging

- Frequent comorbidity
- More severe symptom burden and quality of life (QoL) impairments

NCCN Guidelines

- Cancer surveillance
- Immunizations
- Health monitoring: BP, cholesterol, bone health

Health Promotion

- Physical activity
- Maintain a healthy weight
- Diet



Sugimura H and Yang P, *CHEST*, 2006

Clauser SB, *Health Care Financ Rev*, 2008

NCCN. https://www.nccn.org/professionals/physician_gls/pdf/nscl.pdf. Accessed 11.7.20

Nekhlyudov L et al. *J Natl Cancer Inst*, 2019.

Why is Health Promotion so Important?

QoL

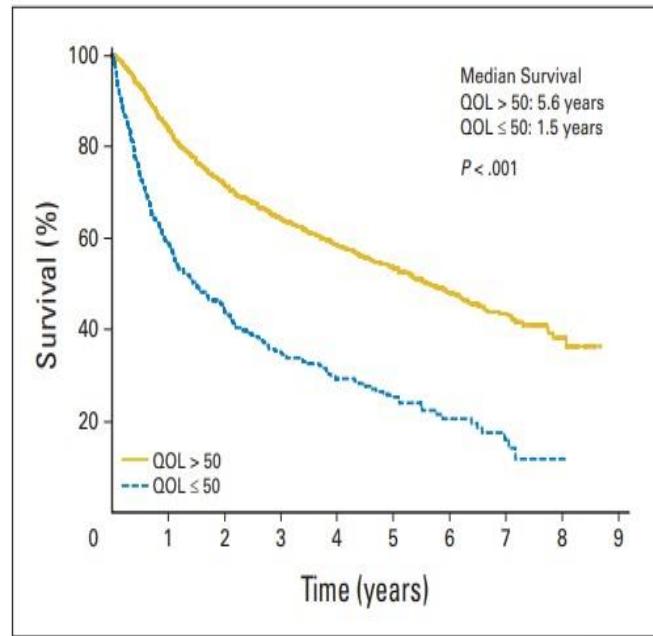


Fig 1. Kaplan-Meier survival curves for 2,442 patients with non-small-cell lung cancer by overall quality-of-life (QoL) categorization into clinically meaningful deficit versus no deficit.

Physical Activity

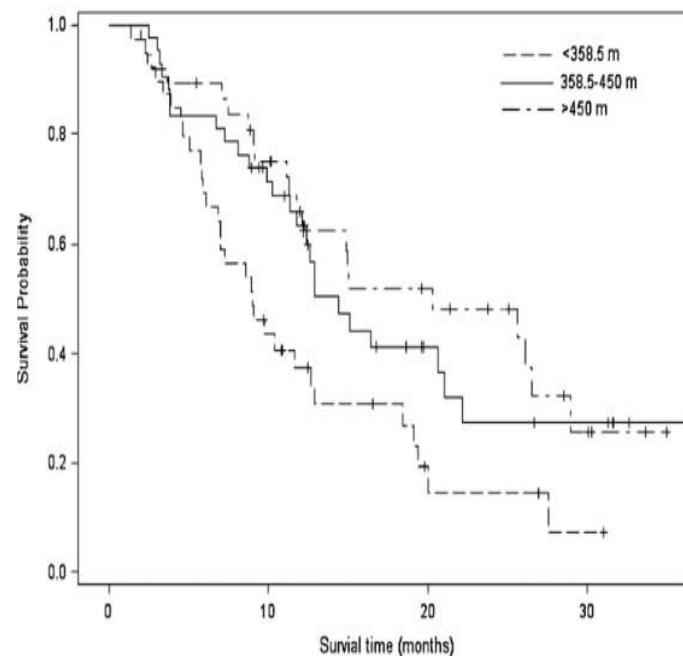
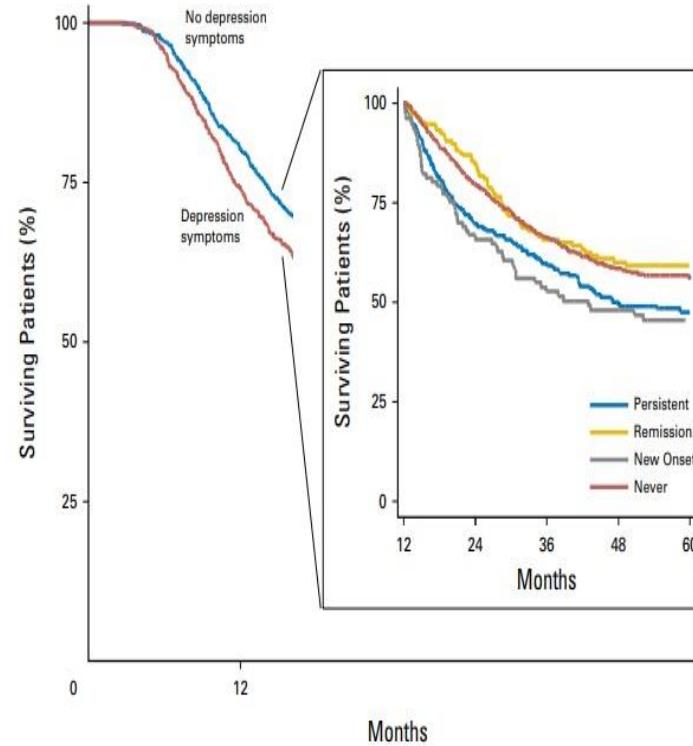


Fig 1. Association between six-minute walk distance and survival.

Depression



Sloan JA, *J Clin Oncol*, 2012
Jones LW, *Lung Cancer*, 2012
Sullivan DR, *J Clin Oncol*, 2016

Physical Activity

BOX 1. List of common acute, long-term, and late effects of cancer for review of evidence for therapeutic efficacy of exercise and subsequent exercise prescriptions

- Anxiety
- Bone health
- Cardiotoxicity
- Chemotherapy-induced peripheral neuropathy
- Cognitive function
- Depressive symptoms
- Falls
- Fatigue
- Health-related quality of life
- Lymphedema
- Nausea
- Pain
- Physical function
- Sexual function
- Sleep
- Treatment tolerance

Recommend PA Prescription Referral

Pulmonary rehabilitation
Physical Therapy
Community Exercise programs
Silver Sneakers
LiveStrong
Home-based interventions

Bade BC, *Integ Cancer Ther*, 2018
Campbell KL, *Med Sci Sports Exerc*, 2019
Schmitz KH. *CA Cancer J Clin*, 2019.
Bade BC. *J Thorac Oncol*, 2015



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Options during COVID-19.

Care has been greatly impacted by the pandemic.

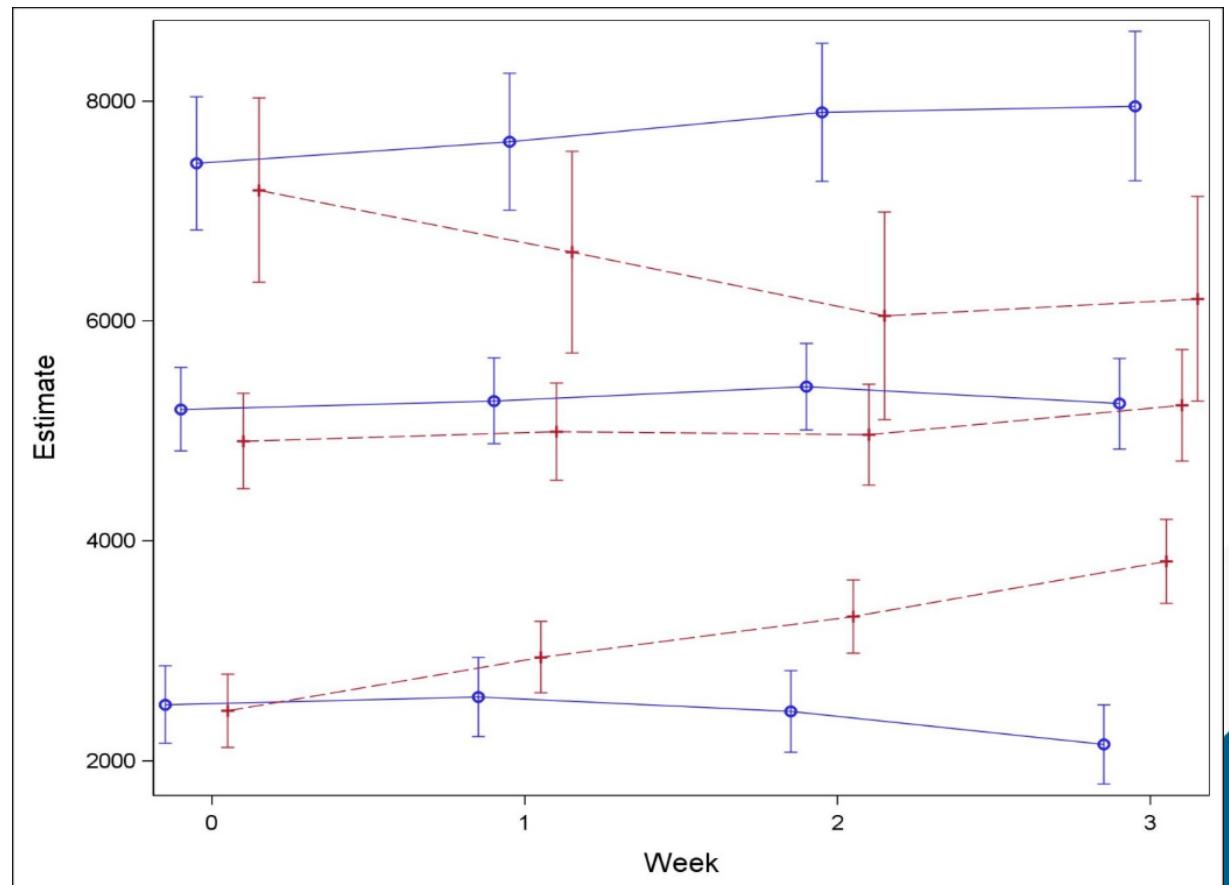
- Stress, potential delays
- Triage of needs
- Alternative care models

Tele-health visits have been utilized by most.

- Survivorship care can be provided remotely
- Mobile health (mHealth) interventions

Strengths of mHealth interventions in NSCLC:

- Feasible
- High interest
- Impact patients' physical activity



Chan A, *Support Care Cancer*, 2020
Nekhlyudov L, *J Cancer Surviv*, 2020.
Denis F, *JAMA*, 2019
Bade BC, *Integr Cancer Ther*, 2018

Summary

- As survival continues to improve, lung cancer survivorship care is now an imperative.
- Survivorship guidelines recommend interventions to improve physical activity to potentially improve:
 - symptom, quality of life, and depression scores.
- The COVID-19 pandemic has limited patients' options to increase their physical activity.
- Mobile health interventions present opportunities to overcome these challenges.

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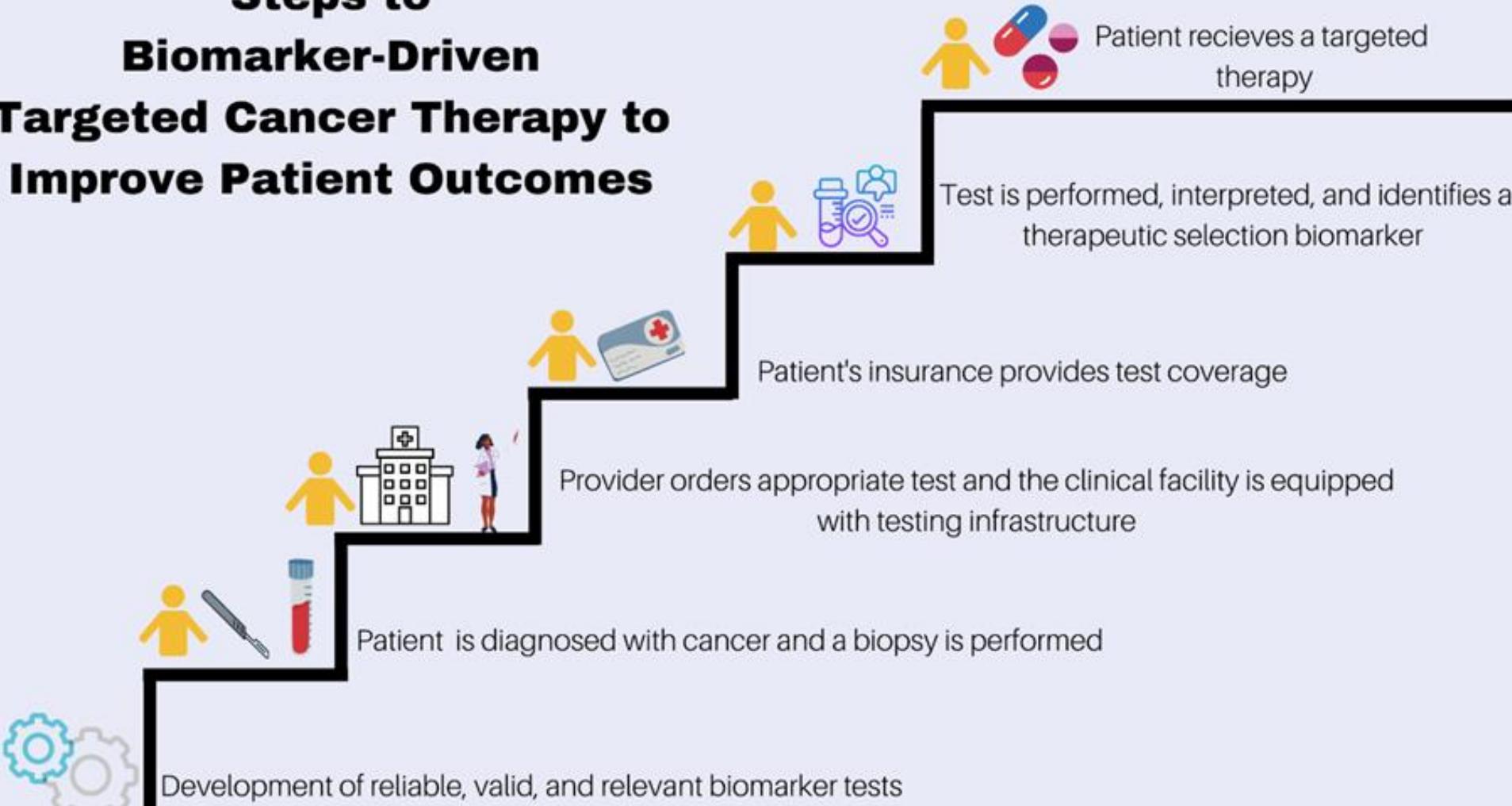
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IMPROVING ACCESS TO BIOMARKER TESTING

Advancing Precision Medicine in Cancer Care

Devon Adams, RN, MPH

Steps to Biomarker-Driven Targeted Cancer Therapy to Improve Patient Outcomes



fightcancer.org/biomarkers

Common Barriers

Payer Coverage

- Coverage of tests differ greatly across payers
- NSCLC
 - Most payers pay for select individual biomarkers
 - Large gaps for multi-gene panels
 - Liquid biopsies in certain scenarios

Provider & Institutional

- Testing rates lag behind guideline recommendations and coverage
- Knowledge gaps
- Infrastructure and resources
- Tissue insufficiency

Patient

- Lack of awareness
- Cost

ACS CAN Recommendations

Patient Considerations

1. Payers should provide **coverage for all FDA-cleared or -approved companion and complementary diagnostics** as necessary to evaluate patient eligibility for a given targeted cancer therapy **and all NCCN guideline-indicated biomarker tests**.
2. Payers should provide **coverage and access to genetic counseling** prior to, and after the interpretation of biomarker tests.
3. Comprehensive biomarker testing provides value beyond therapy selection and results from testing should be utilized to **inform patients of relevant clinical trial opportunities**.



ACS CAN Recommendations

Provider and Institutional Considerations

1. Biomarker tests should be reliable, valid, and relevant to a patient's cancer diagnosis. This should be realized with a **harmonized system of regulatory oversight** for all biomarker tests that features tiered requirements based on the risk posed by a given biomarker test.
2. **Providers and institutions should be equipped with tools** (e.g. clinical decision support), **resources** (e.g. access to a tumor board), **and training** for the efficient and sufficient collection and handling of tissue for testing, and for proper test selection, administration, and interpretation.

Takeaway

Missed opportunities in biomarker testing potentially prevent cancer patients from receiving therapies that can improve outcomes.

Improving Access to Biomarker Testing

Advancing Precision Medicine in Cancer Care

September 2020



Recommendations to Improve Access to Biomarker Testing in Cancer



Barriers to biomarker testing can arise beginning at test development and persist through the interpretation of test results in the clinic. As precision medicine shifts the way health care providers and patients think about cancer treatments, it will be important to identify and address obstacles to appropriate biomarker testing. Addressing these barriers will require buy-in from diverse stakeholders across the health care system. ACS CAN proposes the following recommendations to increase the uptake of testing and advance the use of precision medicine in cancer care:

Payer Coverage Policies of Tumor Biomarker Testing

September 2020

Commissioned By: American Cancer Society Cancer Action Network and LUNGevity Foundation

Conducted By: ADVI

ADVI

Survivor Views: Biomarker Testing Survey Findings Summary



Overview:

The American Cancer Society Cancer Action Network (ACS CAN) established Survivor Views in January 2019. The project has established a cohort of 3,057 cancer patients and survivors diagnosed with and/or treated for cancer within the last five years who are willing to share their opinions and experiences through a series of surveys focused on policy issues impacting cancer patients and survivors.

fightcancer.org/biomarkers



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Q&A Session



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2020 Annual Meeting



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December 7 - 8, 2020

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