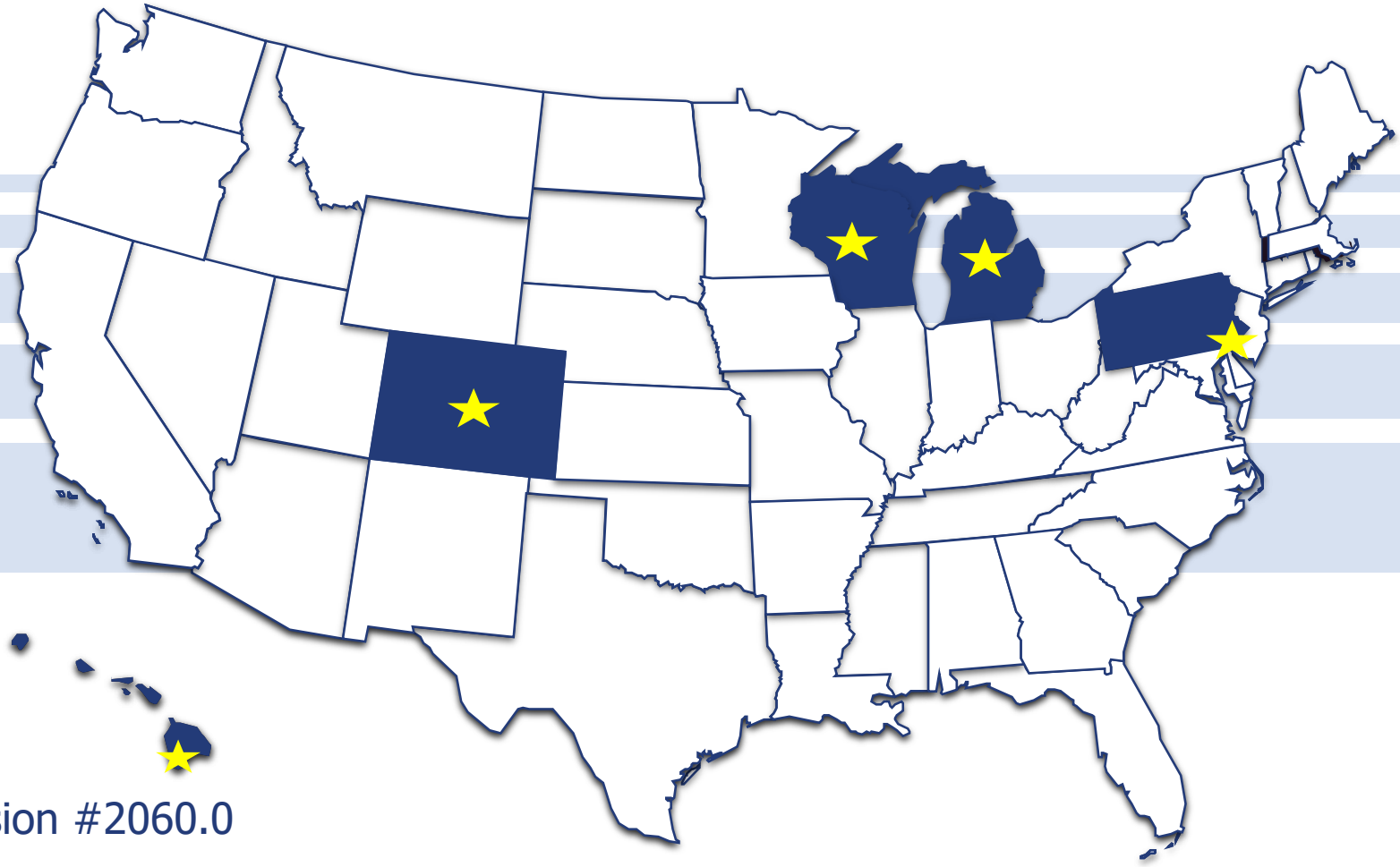

October, 2020

APHA 2020 – Session #2060.0

Questions about the Application of Guidelines to Discontinue Lung Cancer Screening (LCS) in those with Limited Life Expectancy

Presented By: Erica Blum-Barnett, MSPH

LOTUS
Lung Cancer Screening Optimization in the United States

Main Findings

- Across 5 U.S. integrated healthcare systems, Non-White and Hispanic groups are differentially impacted by guidelines that suggest discontinuation of lung cancer screening (LCS) for those with limited life expectancy.

Figure 1. Lung Cancer Screening Optimization in the United States (LOTUS) Research Center

Wisconsin
Marshfield Clinic Health System - Mixed Model
Robert Greenlee, PhD, MPH

Metropolitan Detroit, MI
Henry Ford Health System – Mixed Model
Christine Neslund-Dudas, PhD

Greater Philadelphia, PA
University of Pennsylvania – Academic Med Ctr
Anil Vachani, MD, MS & Katharine A. Rendle, PhD, MSW, MPH

Colorado
Kaiser Permanente Colorado – Integrated Care
Debra P. Ritzwoller, PhD

Hawaii
Kaiser Permanente Hawaii – Managed Care
Stacey A. Honda, MD, PhD

Intro

- Populations at risk for developing lung cancer due to an intensive smoking history tend to have a higher comorbidity burden relative to individuals at risk for other types of screening detected cancers. This includes many historically marginalized populations that are at high risk for lung cancer due to their smoking history but who also have a large comorbidity burden that limits life expectancy.
- This study examines whether guidelines that recommend discontinuation of LCS for those with limited life expectancy may result in increased disparities.

Table 1. 2014 USPSTF* guidelines for LCS

Age	Age 55 to 80 years
Tobacco Smoking History	30 pack-year smoking history
Smoking Status	Current smoker or quit within the past 15 years
Symptoms	N/A
Discontinue Screening	Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery

All LOTUS sites follow USPSTF guidelines to implement LCS

*United States Preventive Services Taskforce

Methods

We calculated the Charlson/Deyo comorbidity index for each patient and stratified those with 4 co-morbidities or more by:

- Race/Ethnicity
- Education and Percent Poverty level *(as measured by Census SES proxies)*
- Age
- Sex
- Health system

Differences in the distribution of patient characteristics between co-morbidity categories was evaluated using the chi-square test.

Results

Figure 2. Study eligibility waterfall based on USPSTF guidelines for LCS Screening

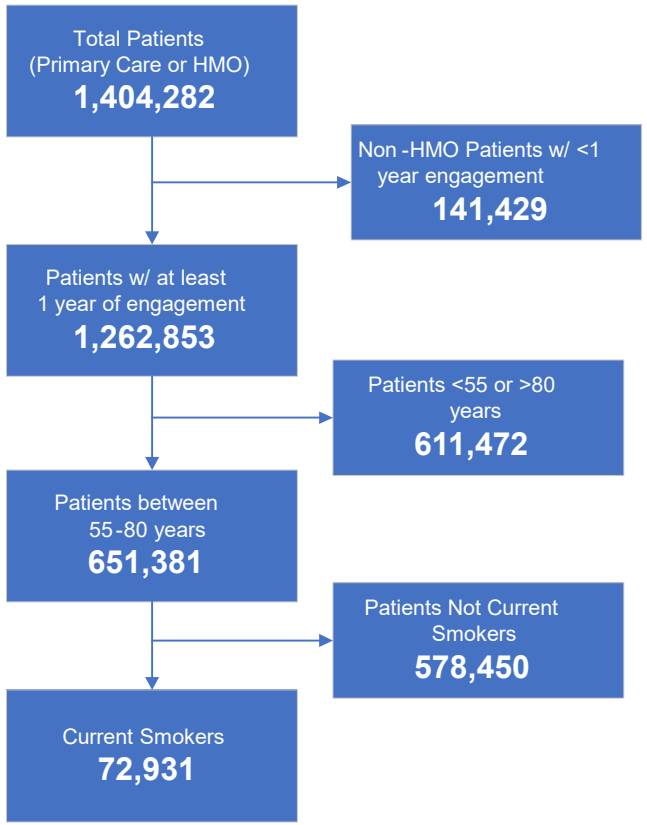

Figure 3. Income: Percent of population with 4 or more comorbidities stratified by percent households below poverty level income

p-value: < .0001

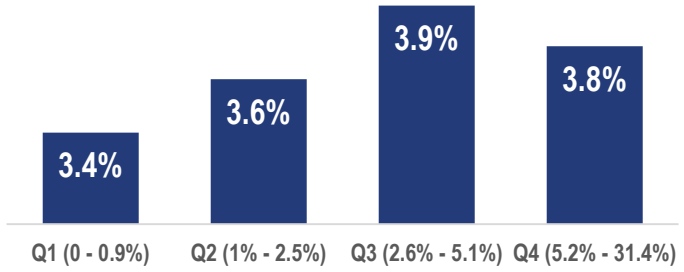

Figure 4. Education: Percent of population with 4 or more comorbidities stratified by percent attainment of associate's degree or greater

p-value: < .0001

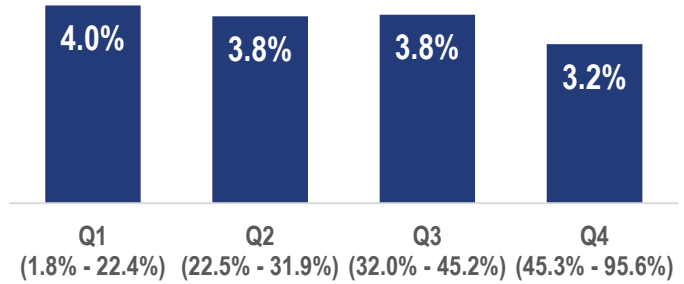

Figure 5. Percent of population with 4 or more comorbidities stratified by Race/Ethnicity

p-value: < .0001

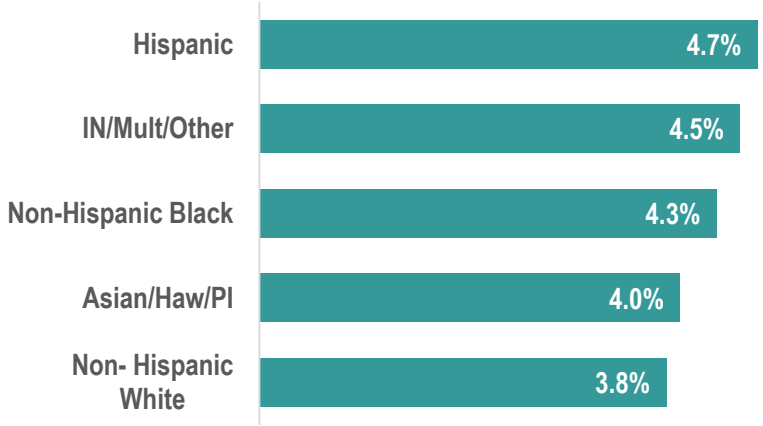

Figure 6. Percent of population with 4 or more comorbidities stratified by Sex and Age

p-value: < .0001

	% 4 or more Co-Morbid Conditions
Sex	
Female	3.5%
Male	4.3%
Age as of 1/1/2019	
55 – 59 years	1.7%
60 – 64 years	2.9%
65 – 69 years	4.7%
70 + years	8.4%

Future Direction

As health systems work to follow USPSTF guidelines that recommend stopping LCS in those with limited life expectancy, they need to ensure that the implementation of LCS does not exacerbate lung cancer morbidity and mortality disparities in historically marginalized populations.

Consideration of ethics, personal decision-making, LCS risks, and LCS benefits is needed to implement LCS programs that are patient-centered and promote equity.

Authors and Acknowledgments

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LOTUS Lung Cancer Screening Optimization in the United States

PROSPR Population-based Research to Optimize the Screening PRocess