

FIRST 5 YEARS OF A LUNG CANCER SCREENING PROGRAM IN A U.S. HEALTHCARE SYSTEM: LUNG CANCER SCREENING OPTIMIZATION IN THE US (LOTUS)

Robert T. Greenlee, PhD, MPH

Marshfield Clinic Research Institute, Marshfield, Wisconsin, United States

Co-Authors:

Oluwatosin Olaiya

Erik Kronholm

Kurt Schoen

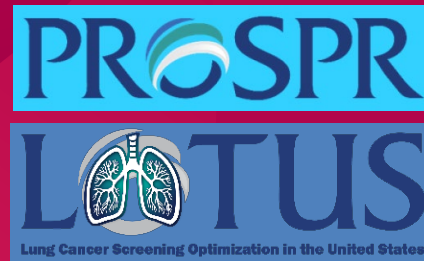
Lynda Kubacki-Meyer

DeeAnn Polacek

Diane Kohnhorst

Terry Foss

Roxy Eibergen

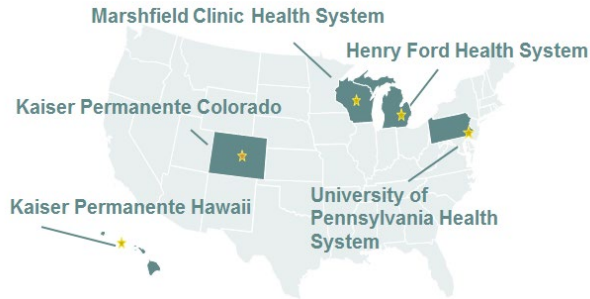


This work was supported by NIH/National Cancer Institute Grant #1UM1CA221939-01 Ritzwoller/Vachani Co-PIs, as part of the Population Based Research to Optimize the Screening Process (PROSPR) Initiative

LUNG CANCER SCREENING – U.S. CONTEXT

- In clinical trials, lung cancer screening (LCS) with low-dose CT imaging of the chest reduced mortality in long-term heavy smokers
 - Recommended as a preventive service in the US - Dec. 2013
- No organized national or statewide screening program
 - Implementation is health system-, or even provider-specific
 - Uptake in at-risk patients remains fairly low
- LOTUS (Lung cancer screening Optimization in The US)
 - Data platform across 5 health systems to conduct observational research on LCS delivery, effectiveness, and on disparities across demographic, clinical, and social subgroups
- This analysis summarizes the first 5+ years of LCS in one health system with a decentralized screening approach

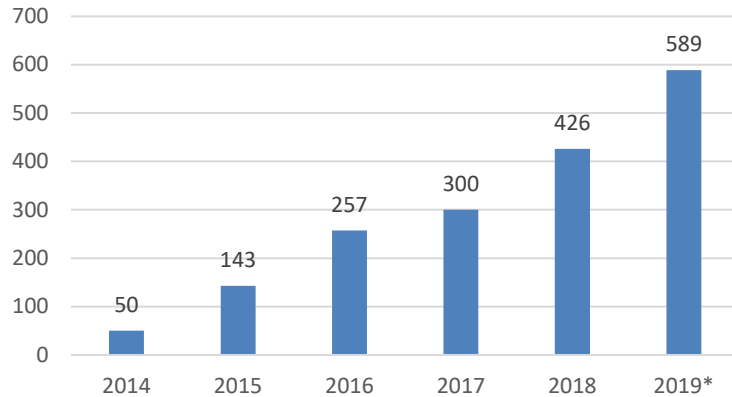
	USPSTF 2013	USPSTF 2021
Age	55-80	50-80
Pack-years	≥ 30	≥ 20
Currently smoke or quit:	<15 years	<15 years



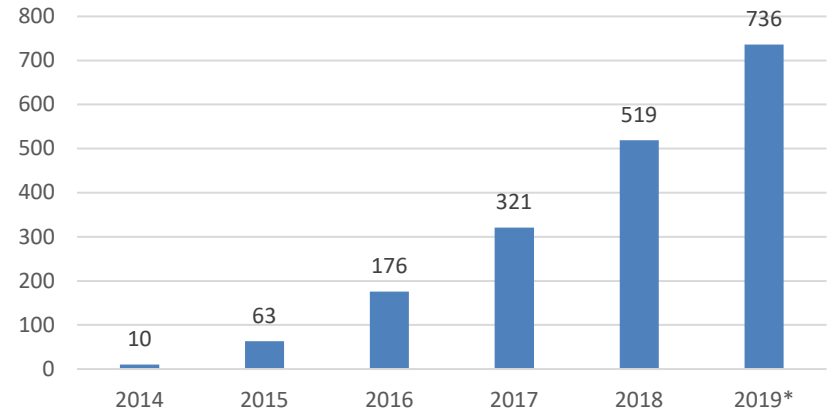
UNDERLYING PATIENT POPULATION AND LUNG CANCER SCREENS

- 187,696 health system patients age 30-89 in observational cohort
 - 1619 patients received a baseline LCS between 2014 and 2019
 - 50% of those screened have also received at least one post-baseline scan

Baseline Screenings by Year



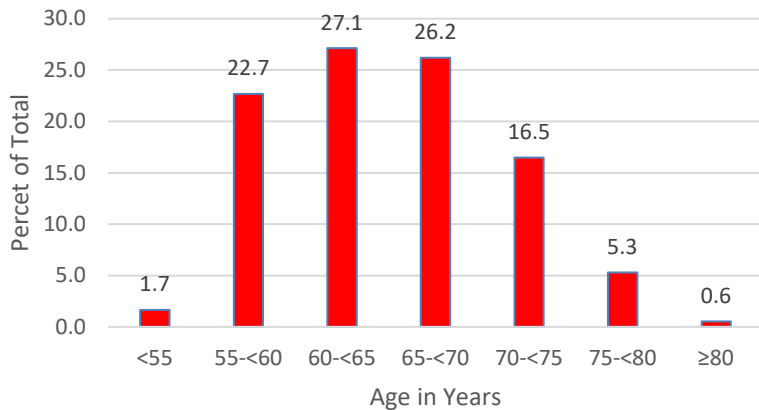
Post-Baseline scans by Year



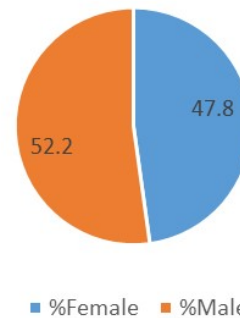
* 2019 Annualized from first 9 months of data

SCREENED POPULATION CHARACTERISTICS

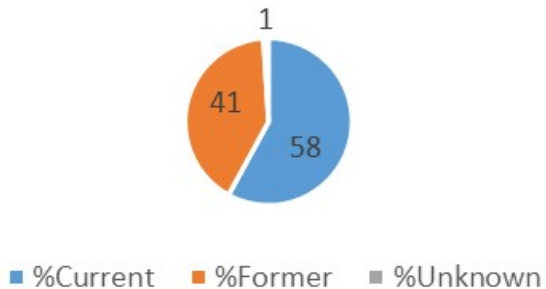
Age at Baseline Screen



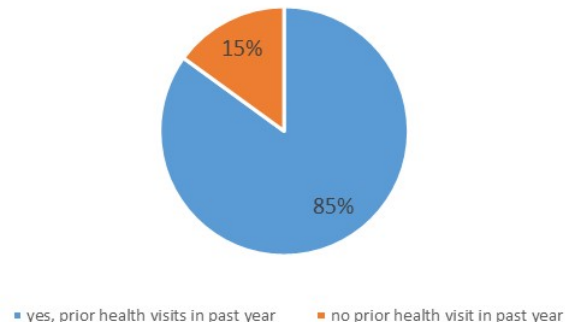
Sex Distribution of Screened Patients



Smoking Status Distribution of Screened Patients

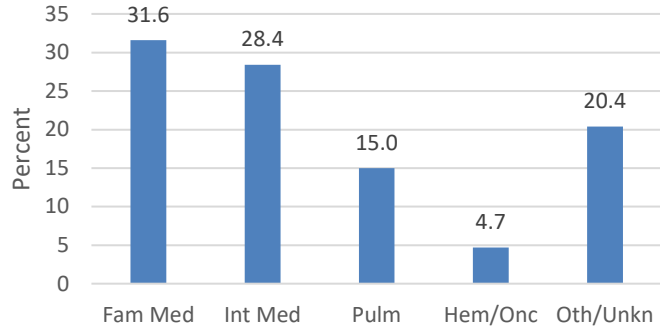


Other recent health care visits

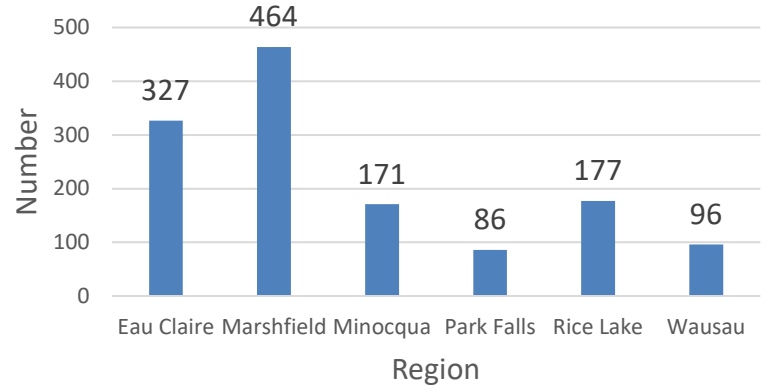


SCREENING CHARACTERISTICS

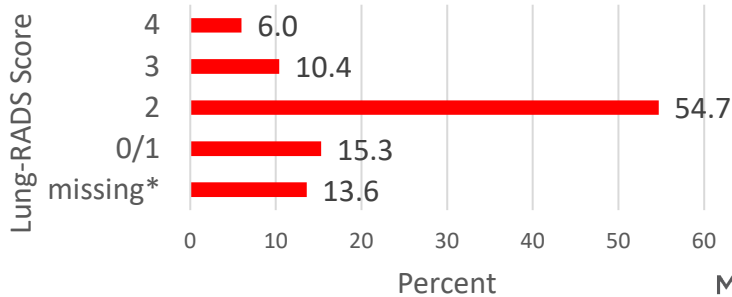
Ordering Provider Specialty/SubSpecialty



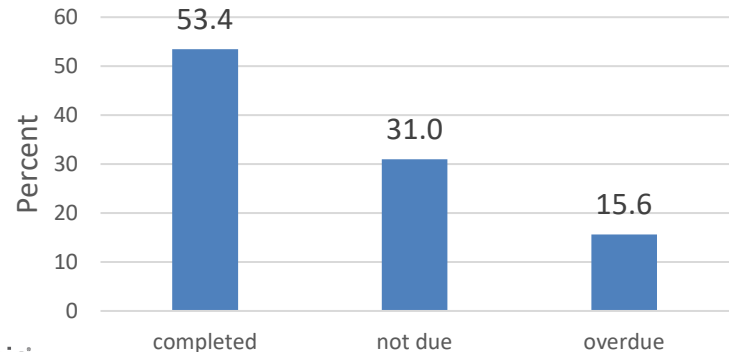
Baseline Screens by MCHS Region



Lung-RADS Score Distribution of Baseline Screens



Up to Date Status of Post Baseline Scan



* Screenings delivered by provider external to the health system

NEXT STEPS: PLANNED LOTUS-WIDE RESEARCH PAPERS

- Impact of changing LCS eligibility guidelines
- Disparities in uptake
- Patient and provider correlates of LCS test results
- Predictors of post-screening follow-up adherence
- Extent of clinical harms and other burdens following LCS
- Stage shift in screen detected lung cancers
- Smoking status, treatment, and lung cancer survival
- Social determinants of health across the LCS care continuum
- Health System level and clinic level factors that influence screening
- Systematic Review of LCS improvement interventions
- Imaging Biomarkers for high risk lung nodules

