Lung Cancer Screening Eligibility and Uptake Among People with HIV: A Decade of Missed Opportunities

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INTRODUCTION

- Lung cancer is the leading cause of malignancy-related death among people with HIV (PWH)
- It is diagnosed at younger ages, with fewer pack-years (p-y) and is associated with shorter survival than among those without HIV
- Lung cancer screening (LCS) with annual low-dose chest CT (LDCT) in PWH may reduce mortality by as much as 20%
- The US. Preventive Services Task Force (USPSTF) released initial guidelines in 2013 that were updated in 2021

Year introduced	Age	P-y History	Smoking status
2013	55-80	≥30	Current or quit within 15 years
2021	50-80	≥20	Current or quit within 15 years

- Little is known about LCS eligibility and uptake in PWH

OBJECTIVE

- Evaluate LCS eligibility and uptake among PWH in the Southeastern US from 2014-2023 and contrast annual prevalence of screening by patient characteristics

METHODS

- Study Population:
  - University of North Carolina CFAR HIV Clinical Cohort (UCHCC)
  - Integrates electronic health records (EHR), patient-reported outcomes (PRO), and external data sources
- Inclusion:
  - PWH aged ≥ 18 with at least one clinic visit from January 1, 2014 and December 31, 2023
- LCS Eligibility Determination
  - Tobacco cigarette smoking history determined using PRO and HER data
  - 2013 criteria applied between January 1, 2014 and December 31, 2021
  - 2021 criteria applied between January 1, 2022 and December 31, 2023
- LCS Uptake Determination
  - Determined by EHR CPT codes per each calendar year
- Statistical Analyses
  - Annual prevalences of LCS eligibility, stratified by clinic-demographic factors
    - Denominator – patients with at least one HIV care appointment in calendar year
    - Numerator – patients who met relevant USPSTF criteria in that same year
  - Annual prevalences of LCS utilization, stratified by clinical-demographic factors
    - Denominator – patients who met relevant screening guidelines per year
    - Numerator – patients who received a screening CT
  - Unadjusted Poisson regression used to calculate prevalence ratios (PR) and 95% confidence intervals (95%)

RESULTS

Although the change in recent USPSTF lung cancer screening guidelines increased eligibility among PWH, only 37% of eligible patients were screened at least once. This represents a critical missed opportunity to detect early-stage lung cancers and reduce mortality.

TABLE. Demographics and clinical characteristics of full cohort and eligible subjects

	Calendar Years					
	2014-2017		2018-2021		2022-2023	
Characteristic	**Overall (%)**	**Eligible (%)**	**Overall (%)**	**Eligible (%)**	**Overall (%)**	**Eligible (%)**
Overall N	2475	5%	2452	6%	2209	12%
Age (years), Median (IQR)	45 (33,53)		46 (33,55)		51 (37, 60)	
Women	28%	4%	27%	7%	27%	13%
Men	71%	5%	72%	6%	71%	11%
White race	30%	9%	28%	11%	28%	19%
Black race	57%	3%	58%	5%	58%	10%
Hispanic, any race	8%	1%	9%	1%	9%	2%
Rural residence	22%	6%	20%	7%	20%	13%
Non-rural residence	72%	4%	74%	6%	75%	12%
Insured	63%	6%	65%	7%	66%	13%
Uninsured	37%	2%	35%	5%	34%	9%
HIV RNA <200 copies/mL	72%	6%	79%	8%	86%	13%
HIV RNA ≥ 200 copies/mL	10%	1%	7%	2%	4%	5%
CD4 count ≥250 copies/mm3	84%	5%	86%	7%	88%	12%
CD4 count<250 cells/mm3	16%	5%	12%	5%	11%	8%

FIGURE 1. Lung cancer screening eligibility and uptake per calendar year

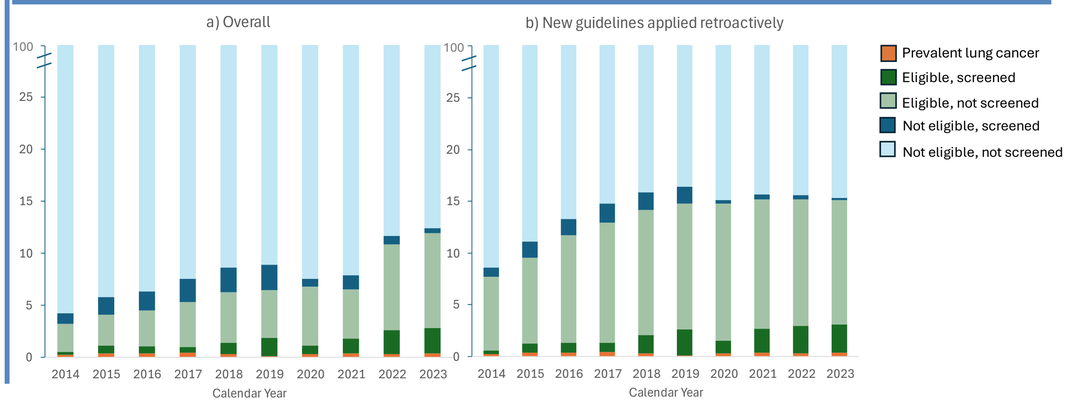
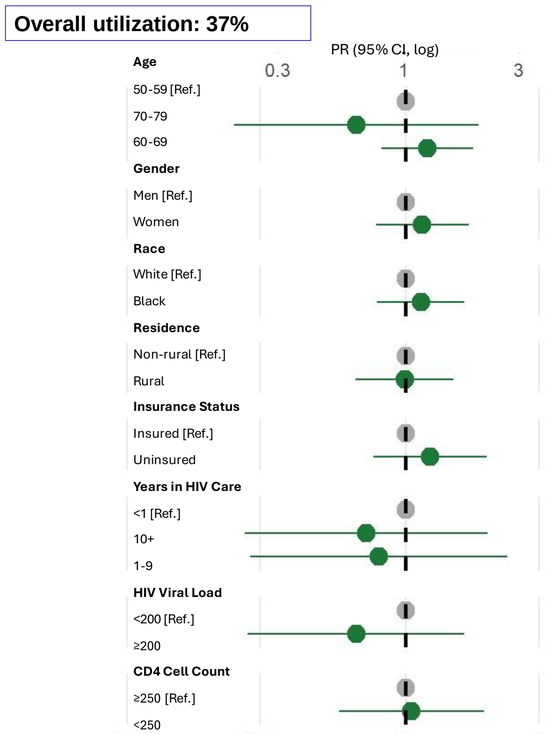


FIGURE 2. LCS utilization, unadjusted and stratified by demographic and clinical characteristics, PR (95%CI)



CONCLUSIONS

- The 2021 USPSTF guidelines significantly expanded eligibility for LCS among PWH, from 3% in 2014 to 12% in 2022
- Despite this, only 37% of eligible patients received at least one LDCT during the study period
- Expanded eligibility alone is insufficient to drive meaningful improvements in screening utilization
- Addressing barriers to screening – particularly among underserved populations – will be essential to realizing the full potential of LCS in this high-risk group
- Further work in a larger cohort is ongoing to enhance our ability to detect meaningful differences in screening utilization by clinical and demographic factors and other social determinants of health

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