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Lung cancer screening adherence among people living with and without HIV: An analysis of an integrated health system in Florida, United States (2012–2021)

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ABSTRACT

Although lung cancer is a leading cause of death among people living with HIV (PLWH), limited research exists characterizing real-world lung cancer screening adherence among PLWH. Our objective was to compare low-dose computed tomography (LDCT) adherence among PLWH to those without HIV treated at one integrated health system. Using the University of Florida's Health Integrated Data Repository (01/01/2012–10/31/2021), we identified PLWH with at least one LDCT procedure, using Current Procedural Terminology codes(S8032/G0297/71271). Lung cancer screening adherence was defined as a second LDCT based on the Lung Imaging Reporting and Data System (Lung-RADS®). Lung-RADS categories were extracted from radiology reports using a natural language processing system. PLWH were matched with 4 randomly selected HIV-negative patients based on (+/- 1 year) age, Lung-RADS category, and calendar year. Seventy-three PLWH and 292 matched HIV-negative adults with at least one LDCT were identified. PLWH were more likely to be male (66% vs.52%,$p < 0.04$), non-Hispanic Black (53% vs.23%,$p < 0.001$), and live in an area of high poverty (45% vs.31%,$p < 0.001$). PLWH were more likely to be diagnosed with lung cancer after first LDCT (8% vs.0%,$p < 0.001$). Seventeen percent of HIV-negative and 12% of PLWH were adherent to LDCT screenings. Only 25% of PLWH diagnosed with category 4A were adherent compared to 44% of HIV-negative. On multivariable analyses, those with older age (66–80 vs.50–64 years) and with either Medicaid, charity-based, or other government insurance (vs. Medicare) were less likely to be adherent to LDCT screenings. PLWH may have poorer adherence to LDCT compared to their HIV-negative counterparts.

1. Background

With the widespread use of antiretroviral therapy, overall survival among people living with HIV (PLWH) has improved life expectancy to levels comparable to the general US population (Ray et al., 2010 Jan 2; Cain et al., 2011 Apr 19). As the population of PLWH continues to age, chronic diseases, such as cancer, have become increasingly common. In fact, cancer is now the leading cause of non-AIDS death and the second leading cause of death overall in PLWH in the US (Smith et al., 2014). Lung cancer is a leading non-AIDS defining cancer and is the most frequent cause of cancer-related death among PLWH (Shiels et al., 2011; Hernández-Ramírez et al., 2017 Nov). Lung cancer currently constitutes 20% of the overall cancer burden among PLWH and is projected to be the second leading cause of cancer among PLWH by 2030 (Shiels et al., 2018 Jun 19). Lung cancer occurs at higher rates among PLWH largely due to higher smoking rates among PLWH compared to the general population, but also due to independent HIV-related increased lung cancer risk (Sigel et al., 2012). Age of lung cancer onset among PLWH is

Abbreviations: CI, Confidence Intervals; FL, Florida; LDCT, Low dose computed tomography; OR, Odds ratios; PLWH, People living with HIV.

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25–30 years earlier than the general population, with an average age at diagnosis between 38 and 57 years, compared to 70 years in the general population (Winstone et al., 2013 Feb 1). PLWH are mostly (75–90%) (Cadranel et al., 2006 Nov) diagnosed with lung cancer at the late stage, with only approximately one in ten presenting at the local, resectable stage, leading to median survival times of 3.5 (local stage) and 6.3 months (late stage) (Hulbert et al., 2014).

Death due to lung cancer is preventable through routine screening with low-dose computed tomography (LDCT). In 2011, the New England Journal of Medicine published promising results of using LDCT for lung cancer screening (LCS) from the National Lung Screening Trial (NLST) (National Lung Screening Trial Research Team et al., 2011 Jan). This landmark trial showed that LDCT is an effective approach to reduce lung cancer mortality by 16% compared to chest x-ray in the general population (National Lung Screening Trial Research Team et al., 2011 Jan). Following the release of the results from the NLST, the American Cancer Society, National Comprehensive Cancer Network, American Society of Clinical Oncology, and many other organizations published guidelines to recommend LDCT-based screening for individuals at high risk (based on age and pack-year smoking history) for lung cancer (Wender et al., 2013; Wood et al., 2018), based on the demonstrated efficacy of using LDCT as a screening modality for lung cancer control. The American College of Radiology (ACR) spearheaded efforts to standardize the reporting of LDCT screening results to define a positive result on lung cancer screening CT in the most effective manner (i.e., reducing false-positivity result rate while maximizing test sensitivity for lung cancer detection) leading to the development of Lung-RADS positivity criteria and definitions, which guide recommended screening intervals (National Lung Screening Trial Research Team et al., 2013 May 23; Aberle et al., 2013; Horeweg et al., 2013; Chelala et al., 2021 Jun). Although current guidelines recommend screening all high-risk current and former smokers, living with HIV is currently not included in these guideline recommendations (Robbins, 2018 Jun 19; Kong et al., 2018).

To our knowledge, no data exists comparing patterns of LDCT use, including adherence, among those with and without HIV in the US. Contemporary utilization patterns of lung cancer screening using LDCT among PLWH are necessary to inform clinical practice and policy efforts to better address the barriers to cancer care access among this vulnerable target population. To fill this gap, our objective was to compare LDCT adherence based on ACR Lung-RADS recommended follow-up after a positive LDCT examination among those with and without HIV, as well as to identify sociodemographic factors associated with adherence study among patients treated at a large, integrated health system in Florida, a state with a high HIV burden (The HIV/AIDS Epidemic in the United States: The Basics | KFF [Internet]. [cited, 2022). Quantifying screening adherence and understanding factors associated with guideline adherent lung cancer screening across the cancer care continuum is a critical first step in improving screening access and reducing lung cancer death among PLWH.

2. Methods

Our study population was drawn from the University of Florida (UF) Health Integrated Data Repository (IDR) which contains data from patients seen at UF affiliated health facilities (over one million patients). The UF-IDR is a secure, clinical data warehouse (CDW) that aggregates data sources from the various UF Health clinical and administrative information systems, including the Epic EHR system. The IDR contains records of more than 1 million patients with over 1 billion observation facts since 2012. The UF IDR holds structured data including patients' demographics, diagnoses, medical procedures, medical findings (e.g., pain scores and vital signs), laboratory tests, and medications, as well as unstructured clinical narratives such as discharge summary, order notes, and pathology reports among others. We identified individuals who underwent at least one LDCT procedure in the UF Health IDR between January 1, 2012, and October 31, 2021, using Current Procedural Terminology (CPT) codes based on effective data range (S8032, effective up to 09/30/2016; G0297, effective from 02/05/2015–12/31/2020; and 71271, effective from 01/01/2021 onwards). We identified 5,215 patients, of whom 100 had a prior HIV diagnosis (based on ICD-9-CM diagnosis codes 04200–044.90, 07593, and V0800 and ICD-10-CM codes B20-B22, B24, and Z21).

The categories of the LDCT results were defined based on the Lung Imaging Reporting and Data System (Lung-RADS®), (Martin et al., 2017 Dec) which standardizes results of lung cancer screening reporting to inform recommendations for follow-up testing. Lung-RADS categories were determined using a natural language processing (NLP) system that extracts pulmonary nodule characteristics from free-text clinical narratives (Yang et al., 2022 Jun). Lung cancer screening adherence was defined as a second LDCT within the recommended observation window (Table 1) defined by Lung-RADS® (Martin et al., 2017 Dec) categories. For Lung-RADS categories 1, 2 and 3, we defined LCS adherence as undergoing the second LDCT within +/- 3 months the recommended follow-up window. For Lung-RADS category 4, we defined LCS adherence as undergoing the second screening (LDCT or PET/CT) within +/- 1 month the recommended window. We excluded those with LDCT results above category 4A given the lack of standardized care recommendations.

Patients were excluded from the present analysis if (Ray et al., 2010 Jan 2) the first LDCT report did not include Lung-RADS information in their clinical notes, (Cain et al., 2011 Apr 19) the first LDCT report results demonstrated a Lung-RADS category of 0 (as follow-up was not applicable) or greater than 4A, or (Smith et al., 2014) the follow-up time after their first LDCT was early according to the Lung-RADS screening intervals (Núñez et al., 2021) (e.g., the follow-up time for Lung-RADS categories 1 or 2 was 7 months after the first LDCT). Based on these exclusion criteria, our final HIV-seropositive sample included 73 patients (Supplementary Fig. 1). We matched each case with 4 control (HIV-seronegative) patients randomly selected from patients who underwent an LDCT without any HIV based on age (+/- 1 year), Lung-RADS category, and year of LDCT. This study was approved by the University of Florida Institutional Review Board.

We used descriptive statistics to compare sociodemographic characteristics and lung cancer screening related outcomes among those with HIV to those without. We used a stepwise conditional logistic regression approach to evaluate associations of demographic data with lung cancer screening adherence. Specifically, we included the following variables in our analyses: HIV status, age group, sex, race/ethnicity, insurance type, Charlson comorbidity index (CCI) score, smoking status, number of outpatient visits during observation period, area of residence (urban/rural), and area-level poverty level. We assessed smoking status,

Table 1
Definition of Lung-RADS category and recommended observation for management.

Category	Follow-up procedure	Observation window
0	Additional lung cancer screening CT images and/or comparison to prior chest CT examinations is needed	Not applicable
1	Continue annual screening with LDCT	9 to 15 months
2		
3	6-month LDCT	3 to 9 months
4A	3-month LDCT or PET/CT	2 to 4 months
4B/4X	Chest CT with or without contrast PET/CT tissue sampling, 1 month LDCT	Not applicable
S-Clinically Significant or Potentially Clinically Significant Findings	As appropriate to the specific finding	Not applicable

*Abbreviations: LDCT – low dose computed topography; CT – computed topography; PET – positron emission tomography.

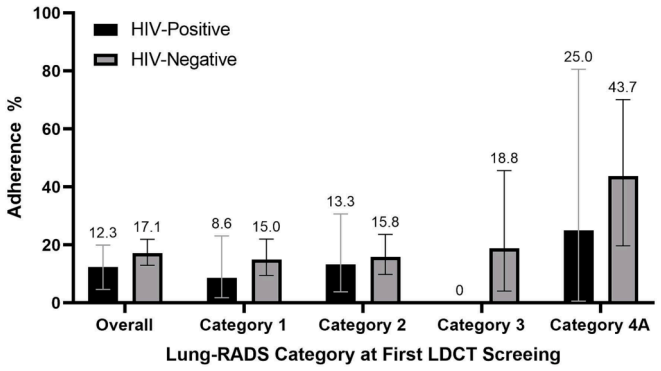

Fig. 1. Adherence to low dose computed tomography (LDCT) for lung cancer screening among people living with (n = 73) and without HIV (n = 292) in an integrated health system in Florida (2012–2021).

collected from structured EHR data, based on the latest recorded smoking status before the first LDCT date. The CCI scores were grouped as 0 for no comorbidity, 1 for mild, and 2 or higher for moderate to severe. We defined rurality using the patient's residential 5-digit zip code mapped to the Rural-Urban Commuting Area Codes (RUCA) codes (USDA ERS - Rural-Urban Commuting Area Codes [Internet]. [cited, 2022). Additionally, area-level poverty was defined by mapping the patient's residential 5-digit zip code to U.S. Census Bureau's estimated poverty rate (B, 2013). Based on the exploratory nature of this analysis, we did not include an adjustment for multiple comparisons (Rothman, 1990 Jan). All statistical analyses were conducted using the Python programming language.

3. Results

Overall, we identified 73 PLWH and 292 matched HIV-negative adults with a history of at least one LDCT seen at one UF-affiliated clinic. PLWH were more likely to be male (66% vs. 52%, $p < 0.04$), non-Hispanic Black (53% vs. 23%, $p < 0.001$), live in urban areas (86% vs. 60%, $p < 0.001$), and live in an area of high poverty (45% vs. 31%, $p < 0.001$) (Table 2). Forty-eight percent of PLWH were current smokers and 10% had a CCI score of 1 or greater. PLWH were more likely to be diagnosed with lung cancer after first LDCT (8% vs. 0%, $p < 0.001$). Overall, 48% and 41% of adults were diagnosed with 1 or 2 Lung-RADS categories, respectively, among both people living with and without HIV as it was a matching factor.

Fig. 1 summarizes adherence to LDCT based on the recommended observation windows as outlined in Table 1. We observed that 17% of HIV-negative and 12% of PLWH were adherent to LDCT screenings ($p = 0.20$). About nine percent of PLWH were diagnosed with Lung-RADS Category 1, while 15% of HIV-negative adults received the same diagnosis ($p = 0.32$). Zero percent of PLWH diagnosed with Category 3 were adherent to LDCT, compared to 19% of HIV negative adults ($p = 1.00$). Importantly, only 25% of PLWH diagnosed with category 4A were adherent compared to 44% of HIV-negative ($p = 0.494$). The median follow-up time from first LDCT to follow-up LDCT was 23.7 months among PLWH and 22.3 months among people without HIV (Supplementary Table 1).

Table 3 summarizes the multivariable logistic regression model results. As demonstrated in Model 1, compared to those without HIV, PLWH had 40% lower odds of being adherent to LDCT, although not statistically significant (95% CI: 0.27–1.32). Across each model, odds of LDCT adherence among PLWH compared to those without HIV were consistent. Model 3 demonstrates that NH-Black adults were less likely to be adherent to LDCT compared to their non-Hispanic White counterparts (OR: 0.36, 95% CI: 0.14–0.92)In the final model, this association was no longer observed after we also adjusted for area-level poverty levels and rurality. In the final model, we observed that compared to those aged 50–65 years, adults aged 66–80 years of age had lower odds of LDCT adherence (OR: 0.29, 95% CI: 0.09–0.91). Additionally, compared to those with Medicare insurance, those with Medicaid, no insurance, or other federal insurance (e.g., Veteran's Affairs) were less likely to adhere to LDCT for lung cancer screening (OR: 0.28; 95% CI: 0.09–0.89).

Table 2
Sociodemographic and lung cancer screening characteristics of people living with and without HIV who underwent LDCT at an integrated health care system in Florida (January 1, 2012, and October 31, 2021).

	People Living with HIV Adults (n = 73)	People Living without HIV Adults (n = 292)	*P*
Characteristics	**N (%)**	**N (%)**	
Sex			0.04
Male	48 (65.7%)	153 (52.40%)	
Female	25 (34.2%)	139 (47.60%)	
Age in Years			0.75
50–60	30 (41.1%)	130 (44.52%)	
>60–70	38 (52.1%)	138 (47.26%)	
>70–80	5 (6.85%)	24 (8.21%)	
Race/Ethnicity			<0.001
Non-Hispanic White	30 (41.1%)	209 (71.57%)	
Non-Hispanic Black	39 (53.4%)	67 (22.94%)	
Hispanic	2 (2.7%)	6 (2.05%)	
Non-Hispanic Other	2 (2.7%)	5 (1.71%)	
Unknown	0	5 (1.71%)	
Smoking Status			
Current smoker	35 (47.9%)	149 (51.03%)	0.78
Former smoker	38 (52.1%)	143 (48.97%)	
CCI-Score[a]			
0	65 (89.1%)	263 (90.07%)	0.79
≥1	8(10.9%)	29 (9.93%)	
Residence[b]			
Urban residence	63 (86.3%)	176 (60.27%)	<0.001
Rural residence	10 (13.7%)	116 (39.73%)	
Area-level Poverty[c]			
<10%	7 (9.6%)	63 (21.57%)	<0.001
10.1–19.9%,	30 (41.1%)	149 (51.03%)	
≥20.0%	33 (45.2%)	60 (30.55%)	
Unknown	3 (4.1%)	20 (6.85%)	
Lung-RADs category at first LDCT screening			
1	35 (47.9%)	140 (47.9%)	1.00
2	30 (41.1%)	120 (41.1%)	
3	4 (5.5%)	16 (5.5%)	
4A	4 (5.5%)	16 (5.5%)	
Lung cancer diagnosis after first LDCT			
Yes	6 (8.2%)	0	<0.001
No	67 (91.8%)	292 (100%)	

P calculated using weighted chi-square test or fisher exact test.
Four randomly selected HIV negative adults were matched to each patient living with HIV who underwent an LDCT without any HIV based on age (+/- 1 year), Lung-RADS category, and year of LDCT.
a.Charlson comorbidity index scores were grouped as 0 for no comorbidity, 1 for mild, and 2 or higher for moderate to severe.
b. Residence: Mapping the patients living address 5-digit zip code to the Rural-Urban Commuting Area Codes (RUCA) codes. https://www.ers.usda.gov/data-products/rural–urban-commuting-area-codes.aspx.
c. Poverty: Mapping the patients living address 5-digit zip code to the Census Bureau estimated poverty rate. https://www.socialexplorer.com/data/ACS2017_5yr/metadata/?ds = ACS17_5yr&table = B17001.

4. Discussion

Lung cancer is a leading cause of non-AIDS death among PLWH, particularly among PLWH over the age of 60 (Haas et al., 2022). In this study, we demonstrated that only 12% or about one in ten patients with HIV were adherent to LDCT screenings based on their initial Lung-RADS diagnosis. We observed that 17% or almost 1 in 5 HIV-negative adults matched on age, Lung-RADS category, and calendar year were adherent

Table 3
Associations of sociodemographic characteristics with lung cancer screening adherence among people living with and withotu HIV who underwent LCDCT at an integrated health care system in Florida (January 1, 2012 - October 31, 2021).

	Model 1				Model 2				Model 3				Model 4			
	OR	95% CI	Category P	Overall P	OR	95% CI	Category P	Overall P	OR	95% CI	Category P	Overall P	OR	95% CI	Category P	Overall P
HIV Status				0.21				0.35				0.37				0.68
Yes vs. No	0.60	0.27–1.32	0.21		0.67	0.29–1.56	0.35		0.67	0.28–1.61	0.37		0.80	0.29–2.25	0.68	
Age Group								0.17				0.09				0.03
66–80 years vs.50–65 years	–				0.53	0.21–1.30	0.17		0.44	0.17–1.14	0.09		0.29	0.09–0.91	0.03	
Sex								0.34				0.44				0.69
Male vs. Female	–				1.41	0.70–2.85	0.34		1.33	0.64–2.77	0.44		1.20	0.48–3.03	0.69	
Race								0.07				0.06				0.13
Black vs. White	–				0.36	0.14–0.92	0.03		0.36	0.14–0.92	0.03		0.36	0.11–1.20	0.1	
Other vs. White					1.60	0.37–7.17	0.51		1.87	0.42–8.37	0.41		2.62	0.48–14.19	0.26	
Number of outpatient visits during observation period	–				–				0.99	0.93–1.07	0.96	0.96	0.96	0.87–1.05	0.35	0.35
Insurance Type												0.44				0.07
Private insurance Vs. Medicare	–				–				0.75	0.28–2.01	0.56		0.42	0.12–1.41	0.16	
Others[a] vs Medicare	–				–				0.59	0.26–1.33	0.21		0.28	0.09–0.89	0.03	
Residence																0.86
Urban vs Rural	–				–				–				0.92	0.34–2.49	0.86	
Poverty-level (% of adults residing below poverty level in patient's zip code)																0.71
~10–19.99% vs <=10%	–				–				–				0.89	0.33–2.49	0.82	
>20% vs <=10%	–				–				–				0.57	0.14–2.32	0.43	

a. Others payer: Medicaid, Self-pay, workers compliments, charity, managed care, federal insurance.

to their LDCT. While statistically significant differences were not observed across Lung-RADS categories due to small sample sizes, when we compared LDCT adherence among people living with and without HIV, PLWH had consistently lower prevalence of follow-up, which suggests they may experience barriers to care. Importantly, compared to HIV-negative adults, PLWH were more likely to be diagnosed with lung cancer at their first LDCT. This is of particularly importance given that prior epidemiologic descriptive work has demonstrated that PLWH are more likely to be diagnosed with lung cancer at an advanced stage and at younger ages compared to their HIV-negative counterparts. Given that Florida has among the highest burdens of HIV in the US (Cohen, 2018), understanding trends and opportunities in this context for intervention development to improve LDCT use is crucial to reducing the burden of lung cancer in this vulnerable population.

Prior work has been conducted to characterize adherence to LDCT among different demographic populations in the US, including racial/ethnic minorities (Kim et al., 2022) and adults with low socioeconomic status (Kim et al., 2023). However, our work is the among the first to examine LDCT use among PLWH, a vulnerable population in the US with documented barriers to care in several contexts (Geter et al., 2018 Apr; Pleuhs et al., 2020 Mar), including cancer care (Corrigan et al., 2019 Mar 15). Several systematic reviews have been conducted to summarize the rate of adherence to LDCT. Lam and colleagues summarized patient nonadherence to returning for LDCT screening using data from global clinical studies (n = 12), and reported a pooled nonadherence rate of 28% (95% CI: 20–37%) at the first screen (Lam et al., 2020). Lopez-Olivo and colleagues reported a pooled adherence rate of 55% (95% CI: 44–55%) across 15 studies with a range of follow-up periods, including any follow-up after first screen (Lopez-Olivo et al., 2020). Finally, Lin et. al. conducted a review and *meta*-analysis of patient adherence to Lung-RADS recommended screening intervals, similar to the approach used in the present analysis. Lin and colleagues found that across 24 eligible studies, the pooled adherence rate was 57% (95% CI: 46–69%) (Lin et al., 2022 Jan). They observed significantly higher adherence rates in patients with Lund-RADS 3 (risk for lung cancer at 1–2%) and 4 (risk greater than 5%) than Lung-RADS 1 and 2 (risk < 1%). The overall adherence rates we observed among both PLWH and HIV-negative adults included in this study were significantly lower than that reported in each of the systematic reviews. This finding suggests that there may be unique barriers to LDCT adherence that are specific to Florida's context and to PLWH in the state, warranting further study.

We observed that higher Lung-RADS category was associated with increased adherence to LDCT among both adults living with and without HIV. This is similar to prior work conducted that demonstrated that patient's with Lung-RADS 3 and 4 were more adherent compared with those with Lung-RADS 1 ($p < 0.001$) (Bellinger et al., 2020 Nov; Bernstein et al., 2019; Triplette et al., 2021). Patients with higher Lung-RADS stage at initial LDCT screening are likely more concerned and in turn, are more adherent to provider-based follow-up recommendations. Although our findings were not statistically significant due to small sample sizes, we demonstrated that PLWH had consistently lower prevalence across Lung-RADS categories and overall. This is of major concern, particularly among those with Lung-RADS 4A, given that only one in four PLWH were adherent to follow-up guidelines despite the risk of developing lung cancer is higher than 5%. The reason for these differences in adherence by HIV status warrant further study using a larger cohort of PLWH. Prior work evaluating disparities in cancer treatment receipt among PLWH demonstrate that patients with HIV and cancer are less likely to receive both curative (Suneja et al., 2016 Aug 1) and palliative (Islam et al., 2022 Oct) cancer treatment compared to their HIV-negative counterparts (Suneja and Coghill, 2017 Jan). Qualitative work to further investigate these findings suggest that barriers such as HIV-related stigma, lack of social support, and financial barriers potentially may contribute to inequities (Knettel et al., 2021). It is likely that similar barriers exist in the cancer prevention setting among PLWH, particularly in cancer prevention of cancers not traditionally linked with HIV such as lung, breast, and colorectal cancers. However, as suggested by a systematic review conducted by Corrigan et al (Corrigan et al., 2019 Mar 15), further work is needed to characterize inequities in cancer prevention of non-AIDS defining cancers that have been on the rise among PLWH in the past decade.

In our population of adults living with and without HIV in Florida, we found that older age groups and those with Medicaid, no insurance, or those on governmental insurance such as the VA-sponsored insurance were less likely to be adherent. Our finding of older age groups being less adherent is in contrast to prior work that has shown that older age is a predictor of adherence to LDCT (Bernstein et al., 2019; Alshora et al., 2018; Seastedt et al., 2020). As we sampled a population of PLWH in our study, the focus on this population may have led to these contradictory findings. However, further study into this finding specific to Florida's population is warranted to investigate any potential barriers to care among older adults without Medicare insurance or potentially those who are dually insured with Medicaid due to low-income. Additionally, we observed that non-Hispanic Black adults were also less likely to be adherent, however, this association was no longer significant when we adjusted for area-level poverty, suggesting that socioeconomic status of minoritized communities plays a significant role in access to lung cancer prevention. Our finding is similar to prior work that have extensively demonstrated such racial/ethnic inequity in the US (Kunitomo et al., 2022). Racial/ethnic inequities in lung cancer screening adherence have been attributed to low socioeconomic status and poor trust in the health care system (Kunitomo et al., 2022). Given that the US PLWH are largely part of racially minoritized communities, similar social barriers likely impact the adults living with HIV in the context of access to lung cancer screening care.

An important limitation of this work to consider is the small sample size of patients living with HIV who performed LDCT at UF Health. Additionally, we were unable to consider important social determinants of health that may impact uptake of cancer preventive services such as educational status or income-level, however, we were able to consider area-level poverty. Future work leveraging state-level data resources with detailed data regarding SDOH should be prioritized to identify a large sample of PLWH with a history of lung cancer screening and characterize barriers to care for intervention. In the present analysis, in lieu of screening uptake, we focused on examining adherence to rather than uptake of lung cancer screening due to the unavailability of fine-grained smoking history (e.g., pack-years and quit year, which are critical information to determine lung cancer screening eligibility) in structured electronic heath records (EHR). Nevertheless, NLP tools may help us extract such information from unstructured clinical notes in the EHRs (Yang et al., 2020). Future holistic work should examine methods to identify people living with HIV eligible for LDCT using EHRs to contextualize trends in uptake, follow-up after an abnormal finding, and to identify determinants of non-uptake among eligible adults without a history of LDCT screening.

In conclusion, despite the rising burden of lung cancer among PLWH in the US and inequities in mortality outcomes, we observed poor adherence to LDCT screenings based on the Lung-RADS screening recommendations. Optimizing delivery of LDCT screening to PLWH is an important population-level opportunity to reduce deaths attributable to lung cancer. The present work provides new insights into potential differences in LDCT adherence among those with and without HIV. Further study is warranted expanding across the state of Florida to capture a larger population of PLWH. Tailored interventions to improve lung cancer screening adherence, as well as access to LDCT overall, are needed to improve cancer screening coverage, and ultimately improve quality of life and lung cancer outcomes among people living with HIV in the United States.

Footnotes

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.pmedr.2023.102334.

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