

HIV and HCV Screening, and Pre-Exposure Prophylaxis Among Managed Care Beneficiaries with Substance Use Disorders: A Cross-Sectional Study from a Single State

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Purpose: Screening for HIV and Hepatitis C (HCV) is critical in caring for individuals with substance use disorders (SUD). This is particularly relevant in identifying prescribing habits for Pre-Exposure Prophylaxis (PrEP). The objectives were to examine HIV and HCV screening rates, and PrEP prescription among managed care beneficiaries with SUD and without an HIV diagnosis and determine the factors associated with the screenings and PrEP prescriptions.

Methods: We conducted a retrospective cross-sectional analysis (January–December 2021) of managed care claims for beneficiaries who visited either urban primary care clinics or emergency departments affiliated with an academic medical center. Sample included 2381 Medicaid and dually eligible for Medicare and Medicaid managed care beneficiaries with SUD, continuously enrolled for 12 months, 21 years or older, and without an HIV diagnosis. Substances included in the analysis were alcohol, opioid, cocaine, cannabis, and other psychoactive drugs. Univariate descriptive statistics and multivariable logistic models were used to address the objectives. Rates of HIV and HCV screening, and PrEP prescriptions were examined. Outcome variables for multivariable logistic regression were whether beneficiaries had HIV screening, HCV screening, and PrEP prescription. The predictors were age, gender, race, primary language, area of residence, insurance type, chronic conditions, tobacco use, polysubstance use, number of providers seen, primary care physician seen, emergency department visits, hospitalizations, and annual cost of care.

Results: About 22% of beneficiaries had HIV or HCV screening; PrEP prescriptions were non-existent in this sample. About 83% visited their primary care physician (PCP). The predictors of HIV and HCV screenings include gender, area of residence, polysubstance use disorder, PCP visits, and hospitalizations.

Conclusion: Results indicate low HIV and HCV screening rates and no PrEP prescriptions among the managed care population with SUD. Specifically, beneficiaries with rural residence, females, and Medicaid beneficiaries need targeted interventions and missed opportunities exist at PCP offices.

Keywords: substance use disorder, HIV screening, HCV screening, pre-exposure prophylaxis, managed care, Medicaid, dually eligible for Medicare and Medicaid

Introduction

Substance use disorders (SUD), HIV, and HCV (Hepatitis C) are intricately linked. According to the National Survey on Drug Use and Health, about 16.8% of the US population, ages 12 years and older had SUD in 2023.¹ SUD can impact behaviors such as needle sharing and condomless sex that may increase the probability of acquiring HIV and HCV, and



transmission to others.² Moreover, about 14% and 40% of individuals are unaware of their HIV and HCV positive status, respectively.^{3,4}

One of the strategies to reduce HIV and HCV incidence is to implement screenings and prescribe Pre-Exposure Prophylaxis (PrEP) for HIV prevention among individuals with SUDs. For HCV, no effective pre-exposure or post-exposure prophylaxis is available, but harm reduction education can be effective, and curative antiviral therapy is available.³ The United States Preventive Services Task Force (USPSTF) recommends at least one HIV and HCV screening annually or more frequent screenings for high-risk groups.^{5,6} These guidelines also recommend PrEP for persons who inject drugs (PWID) and have high-risk sexual behavior.⁷ The guidelines do not consider persons with a history of drug use but who are not PWID as high-risk. The use of PrEP reduces HIV risk by 74% for PWID and 99% for people with high-risk sexual behaviors.^{7,8} However, despite the guidelines, screening and PrEP prescribing rates are low in the SUD population. Although the number of SUD treatment facilities increased from 2017 to 2020, the proportion of facilities offering HIV and HCV screening did not increase during this period. Only half of the SUD treatment facilities offered the screenings⁹ and 36% of individuals were prescribed PrEP among people with PrEP indications.¹⁰

In Pennsylvania, access to HIV and HCV screenings and PrEP prescription for Medicaid beneficiaries is covered by the Office of Medical Assistance through managed care. Medicaid is the single largest payer for SUD and HIV treatment.^{11,12} Managed care organizations (MCOs) are now the dominant form of delivery system for Medicaid.¹³ Hence, MCOs are well positioned to support population health strategies to reduce HIV and HCV incidence in Medicaid beneficiaries. The Pennsylvania state Medical Assistance and the Medicaid MCOs do not require prior authorization for PrEP prescription^{14,15} and HCV treatment.¹⁶ Despite the coverage, the screenings and PrEP prescription rates are low. This could be attributed to lack of beneficiaries' awareness about the availability of services, lower risk perception, mistrust and negative patient-provider communication, and structural inequities such as housing instability, poverty, and incarceration.¹⁰ Early detection of HIV and HCV reduces associated morbidity and mortality and decreases transmission to others.^{17,18} Increasing screening rates in SUD treatment facilities could identify HIV and HCV positive individuals earlier and improve their linkage to appropriate care. Hence, the objective of the study is twofold. First, to estimate HIV and HCV screening rates and PrEP prescription rates among Medicaid and dually eligible for Medicare and Medicaid managed care beneficiaries with SUDs but without an HIV diagnosis. Second, to examine the factors associated with HIV and HCV screenings and PrEP prescription in this population.

One of the widely used theoretical frameworks to examine individuals' health care access and utilization is the Behavioral Model of Health Care Utilization.^{19,20} According to this model, beneficiaries' HIV and HCV screening behaviors can be explained by three groups of factors: predisposing factors (eg, socio-demographics), enabling factors (eg, access-related conditions that facilitate or hinder the use of health services), and need-related factors (eg, perceived or evaluated health needs) that motivate service use. We hypothesize that factors associated with beneficiaries' HIV and HCV screening and PrEP prescription are similarly related to their predisposing factors (eg, age, sex), enabling factors (eg, rural residence), and need-related factors (eg, comorbidities). The SUDs included in study are alcohol, opioid, cocaine, cannabis, and other psychoactive drugs. Although there are differences in risk based on mode of intake, the intoxication of any of these substances is high risk for HIV and HCV.

Materials and Methods

Data Source and Sample

We conducted a retrospective cross-sectional analysis of administrative claims data merged with the enrollment files from an MCO located in southwestern Pennsylvania that provides coverage in 93% of the 67 counties. The merged data had information on beneficiaries' health conditions, medication, health care utilization, and costs along with socio-demographics. The sample included beneficiaries who were enrolled in Medicaid or were dually eligible for Medicare and Medicaid with an SUD diagnosis, those who were 21 years or older without an HIV diagnosis. The study included only adult managed care beneficiaries and excluded pediatric population ages newborn to 20 years old. Ages under 21 years old are considered as pediatric population in Pennsylvania Medicaid. The beneficiaries included in the study were

continuously enrolled for 12 months in an MCO between January and December of 2021 and accessed care at any of the three high volume primary care practices or four emergency departments (ED) of an academic medical system that had addiction medicine specialists. This time frame was chosen as the high-risk group included in this study are required to be screened at least once annually.^{5,6} The overall sample size was 2381 beneficiaries with SUD but without an HIV diagnosis.

Variables and Measurements

Rates of HIV and HCV screening, and PrEP prescriptions were examined. The outcome variables were measured as dichotomous variables – whether beneficiaries had an HIV screening (screened/not screened), HCV screening (screened/not screened), and PrEP prescription (yes/no). The PrEP prescriptions included in the analysis were descovy (emtricitabine and tenofovir alafenamide), truvada (emtricitabine and tenofovir disoproxil fumarate), and apretude (cabotegravir). Please see [Table 1](#) for international classification of diseases (ICD)-10 codes, current procedural terminology (CPT) codes, and national drug code (NDC) for PrEP. Based on the Behavioral Model of Health Care Utilization, the predisposing factors included in the model were age, gender, and race/ethnicity. The enabling factors were primary language, rural/urban area of residence, and type of public insurance. The need-related factors included in the model were number of comorbidities, number of substances used, tobacco smoker status, number of providers seen, had a primary care physician (PCP) visit, number of ED visits, hospitalizations, and total cost of care during the year.

Age was categorized into three groups (ie, 21–44 years, 45–64 years, and ≥ 65 years). Both males and females were included in the analyses. Beneficiaries' race/ethnicity was categorized as White, Black, Hispanic, and "other" racial/ethnic group. The "other" racial/ethnic group consists of Native Americans, Alaskan Natives, Asians, Pacific Islanders, and Hawaiian Natives. Primary language was categorized as English, Spanish, and others. Area of residence was categorized as rural and urban based on the definition from the Center for Rural Pennsylvania. Beneficiaries' counties were classified as rural

Table 1 Diagnosis, Procedural and Drug Codes Used in the Study for Substance Use Disorders, HIV and HCV Screenings and Pre-Exposure Prophylaxis Drug

ICD-10 Codes	
HIV	B20, B97.35, Z21
HCV	B17.1, B17.10, B17.11, B18.2, B19.2, B19.20, B19.21
Opioids	F11.21, F11.20, F11.28, F11.29, F11.220, F11.229, F11.221, F11.23, F11.24, F11.25, F11.250, F11.259, F11.251, F11.9, F11.90, F11.93, F11.99, F11.1, F11.11, F11.18, F11.14, F11.10, F11.19, F11.12, F11.129
Alcohol use	F10.1, F10.12, F10.129, F10.120, F10.121, F10.10, F10.11, F10.15, F10.151, F10.159, F10.150, F10.18, F10.181, F10.180, F10.182, F10.188, F10.14, F10.19, F10.9, F10.929, F10.920, F10.2, F10.23, F10.239, F10.230
Cannabis	F12, F12.2, F12.20, F12.220, F12.222, F12.229, F12.221, F12.21, F12.25, F12.251, F12.23, F12.29, F12.28, F12.280, F12.288, F12.9, F12.90, F12.93, F12.99, F12.98, F12.988, F12.1, F12.10, F12.18, F12.12, F12.19, F12.11, F12.188, F12.180
Cocaine	F14.1, F14, F14.12, F14.120
Other Psychotropic Drug Abuse	F19, F19.2, F19.20, F19.21, F19.1, F19.11, F19.12, F19.121, F19.129, F19.120, F19.122, F19.15, F19.150, F19.159, F19.151, F19.18, F19.14, F19.17, F19.19, F19.16
CPT Codes	
HIV Screening	86318, 86689, 86701, 86702, 86703, 87389, 87390, 87391, 87535, 87536
HCV Screening	81596, 86803, 86804

(Continued)

Table 1 (Continued).

NDC for Pre-exposure Prophylaxis	
Brand name: Descovy (generic name: emtricitabine and tenofovir alafenamide)	61958200201, 61958200202, 61958200501, 66336003203, 70518023000
Truvada (generic name: emtricitabine and tenofovir disoproxil fumarate)	00093760756, 00093770456, 00378193093, 00904717207, 16714053401, 31722056030, 33342010607, 35356007003, 35356007030, 42385095330, 42543071904, 50090087000, 50090087002, 50090087003, 50090595701, 50436070101, 51407011230, 52959096903, 54569558800, 54569558802, 54569558803, 54868514100, 55045348103, 60505420203, 61919066902, 61958070101, 61958070301, 61958070401, 61958070501, 61958200201, 63629758101, 63629758102, 69097074102, 69238209203, 69238209303, 69238209403, 69238209503, 70518009700, 70518009701, 70710136403, 70710136503, 70710136603, 70710136703, 72189015602, 72189022702, 72189031203, 76282067730
Apretude (generic name: cabotegravir)	49702023803, 49702026423

Abbreviations: ICD-10, International Classification of Diseases Codes 10th Revision; CPT, Current Procedural Terminology; NDC, National Drug Codes.

if its population density was fewer than 291 people per square mile; otherwise, it was considered urban.²¹ Beneficiaries enrolled in Medicaid and dually eligible for Medicare and Medicaid public health insurance were included. Co-morbid health conditions were identified by using ICD-10 codes. Co-morbidities included asthma, diabetes, obesity, coronary artery disease, stroke, chronic obstructive pulmonary disease, chronic kidney disease, cancer, hepatitis C, gonorrhea, syphilis, chlamydia, anxiety, depression, bipolar disorder, schizophrenia, and severe mental illness. The number of co-morbidities ranged from none to 17. Tobacco smoking behavior was measured as yes/no. Polysubstance use was categorized as beneficiaries on one substance and others who were on multiple substances (≥ 2). Number of unique providers seen was categorized as none, 1, 2, and ≥ 3 . Although providers are careful in prescribing schedule I drugs, individuals with multiple providers are more likely to obtain concurrent prescription opioids.^{22,23} Beneficiaries' PCP visits were defined as encounters with providers in family medicine and general internal medicine specialty working in the primary care settings. PCP visits were categorized as a binary variable (yes/no). Emergency Department visits were defined as any ED encounter that did not include an observation stay and did not result in hospitalization. Hospitalizations were defined as inpatient stays lasting 24 hours or longer. Both ED visits and hospitalizations were analyzed as count variables in the study. The total cost of care includes annual cost incurred on beneficiaries' health care utilization and prescription drugs.

Statistical Analysis

Analyses included univariate statistics to examine HIV and HCV screening rates, PrEP prescription rates, and socio-demographic characteristics of the managed care beneficiaries. Multivariable logistic regression was used to examine the factors associated with HIV and HCV screening. Factors associated with PrEP prescription were not examined as we did not find any beneficiaries with the prescription in our data. We used IBM SPSS Statistics Version 30 for data management and analysis. The data accessed complied with data protection and privacy regulations. The Allegheny Health Network Research Institute Institutional Review Board (FWA # 000015120) reviewed the study and provided it with an exempt status for the project as it was deemed a quality improvement project. Quality improvement projects aim to improve performance of institutional practices in relation to an established standard and are considered an integral part of normal health care operations.

Results

Table 2 shows descriptive characteristics of the overall sample and by screening status of beneficiaries. The types of SUDs found in the overall sample were opioid (51.2%), cannabis (35.4%), alcohol (32.8%), other psychoactive drugs (10.6%), and cocaine (>1%). Polysubstance use was found among 23% of beneficiaries. Beneficiaries' average age was 43 years. About 58% were females, 31% were Black, 15% resided in rural areas, and 83% had a PCP visit. More than

Table 2 Descriptive Characteristics of the Overall Sample and by Screening Status Among Managed Care Beneficiaries with Substance Use Disorders

Variables	Measurement	Overall Sample (n=2381)	HIV Screening		HCV Screening	
			Not Screened (n=1859)	Screened (n=522)	Not Screened (n=1859)	Screened (n=522)
Types of substance use ^a	Opioids	51.2	49.7	56.7	49.4	57.9
	Cannabis	35.4	33.9	41.0	34.3	39.5
	Alcohol	32.8	34.3	27.4	33.8	29.1
	Other psychoactive drugs	10.6	9.2	15.7	8.9	16.9
	Cocaine	0.1	0.1	–	0.1	–
Polysubstance use	1	76.9	78.9	69.7	79.0	69.7
	≥2	23.1	21.1	30.3	21.0	30.3
Age	Mean (SD)	43.2(13.4)	44.6(13.6)	37.6(11.3)	44.3(13.6)	38.9(12.1)
Age groups	21-44 years	56.2	51.0	74.3	52.2	74.3
	45-64 years	38.3	42.1	24.9	41.2	24.9
	≥65 years	5.5	6.8	0.8	6.6	0.8
Sex	Male	42.4	44.7	34.3	44.1	34.3
	Female	57.6	55.3	65.7	55.9	65.7
Race/Ethnicity	White	64.5	65.5	60.7	63.8	60.7
	African American	30.5	29.6	33.9	31.3	33.9
	Hispanic	1.4	1.2	2.1	1.2	2.1
	Others	3.6	3.7	3.3	3.7	3.3
Primary language	Others	13.5	13.4	13.8	13.3	13.8
	English	86.5	86.6	86.2	86.7	86.2
Area of residence	Rural	14.7	16.1	9.4	15.5	9.4
	Urban	85.3	83.9	90.6	84.5	90.6
Insurance type	Dually eligible for Medicare and Medicaid	20.2	23.0	10.0	22.3	10.0
	Medicaid	79.8	77.0	90.0	77.7	90.0
Number of chronic conditions	Mean (SD)	1.8(1.6)	1.8(1.6)	1.6(1.5)	1.8(1.6)	2.0(1.6)
Smoker	No	45.9	48.0	38.3	46.9	38.3
	Yes	54.1	52.0	61.7	53.1	61.7
No. of unique providers seen	None or 1	37.9	24.9	23.6	25.2	23.6
	2	21.8	13.5	13.0	14.0	13.0
	≥3	40.3	61.6	63.4	60.8	63.4

(Continued)

Table 2 (Continued).

Variables	Measurement	Overall Sample (n=2381)	HIV Screening		HCV Screening	
			Not Screened (n=1859)	Screened (n=522)	Not Screened (n=1859)	Screened (n=522)
Primary care physician seen	No	17.0	18.1	12.6	18.0	12.6
	Yes	83.0	81.9	87.4	82.0	87.4
Emergency department visits	Median (25th, 75th)	1(0, 3)	1(0, 3)	2(1, 4)	1(0, 3)	2(1, 4)
Hospitalization count	Median (25th, 75th)	0(0, 1)	0(0, 1)	0(0, 1)	0(0, 1)	0(0, 1)
Emergency department cost (\$)	Median (25th, 75th)	507.5 (0, 1347.8)	441.0 (0, 1225.5)	782.8 (282.3, 1703.3)	449.3 (0, 1225.5)	738.2 (286.9, 1684.3)
Hospitalization cost (\$)	Median (25th, 75th)	0 (0, 6615.2)	0 (0, 7281.2)	0 (0, 4882.9)	0 (0, 7602.1)	0 (0, 4838.4)
Annual total cost of care (\$)	Median (25th, 75th)	10,451.5 (4334.5, 25605.9)	38,385.0 (4172.6, 25597.7)	10,673.9 (4973.9, 25718.7)	36,957.2 (4106.5, 25191.8)	10,964.9 (5101.8, 27967.3)

Notes: ^aThe percentages do not add up to 100, as beneficiaries may have more than one substance use disorder.

Abbreviation: SD, Standard Deviation.

half of those screened had opioid use disorder. Nearly three-fourth of the screened beneficiaries belonged to 21–44 years of age group and 82% of the beneficiaries who were not screened had seen a PCP (Table 2).

Prevalence of HIV and HCV screening were 22% (n=522) and none in our data had PrEP prescriptions. Results from multivariable logistic regression indicated females (AOR: 0.69; 95% CI: 0.56–0.86), rural beneficiaries (AOR: 0.57; 95% CI: 0.40–0.79), Medicaid enrollees (AOR: 0.67; 95% CI: 0.47–0.98), and beneficiaries with higher number of hospitalizations (AOR: 0.87; 95% CI: 0.78–0.97) were less likely to receive HIV screening compared with their comparators. Beneficiaries who had PCP visit (AOR: 2.00; 95% CI: 1.44–2.76), and those with higher number of ED visits (AOR: 1.03; 95% CI: 1.01–1.05) were more likely to receive HIV screening compared with their comparators (Figure 1).

Similar to the results from HIV screening, females (AOR: 0.75; 95% CI: 0.61–0.93) and rural beneficiaries (AOR: 0.68; 95% CI: 0.50–0.93) were less likely to receive HCV screening; while those who had a PCP visit (AOR: 1.71; 95% CI: 1.25–2.35), and with higher number of ED visits (AOR: 1.03; 95% CI: 1.02–1.06) were more likely to receive HCV screening compared with their comparators (Figure 2).

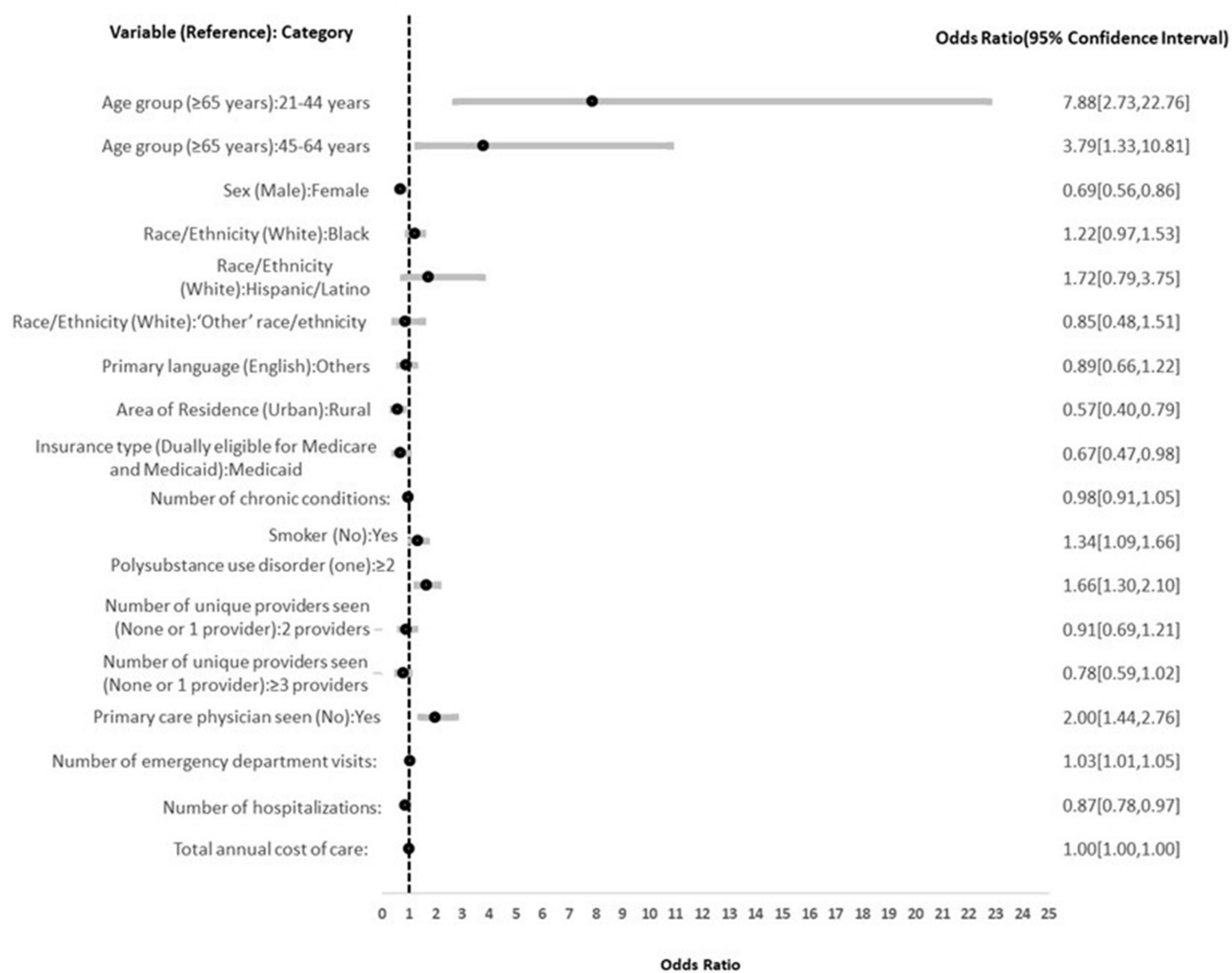


Figure 1 Results from Multivariable Logistic Regression Indicating Factors Associated with HIV Screening among Medicaid and Dually Eligible Managed Care Beneficiaries with Substance Use Disorders and Without a HIV diagnosis.

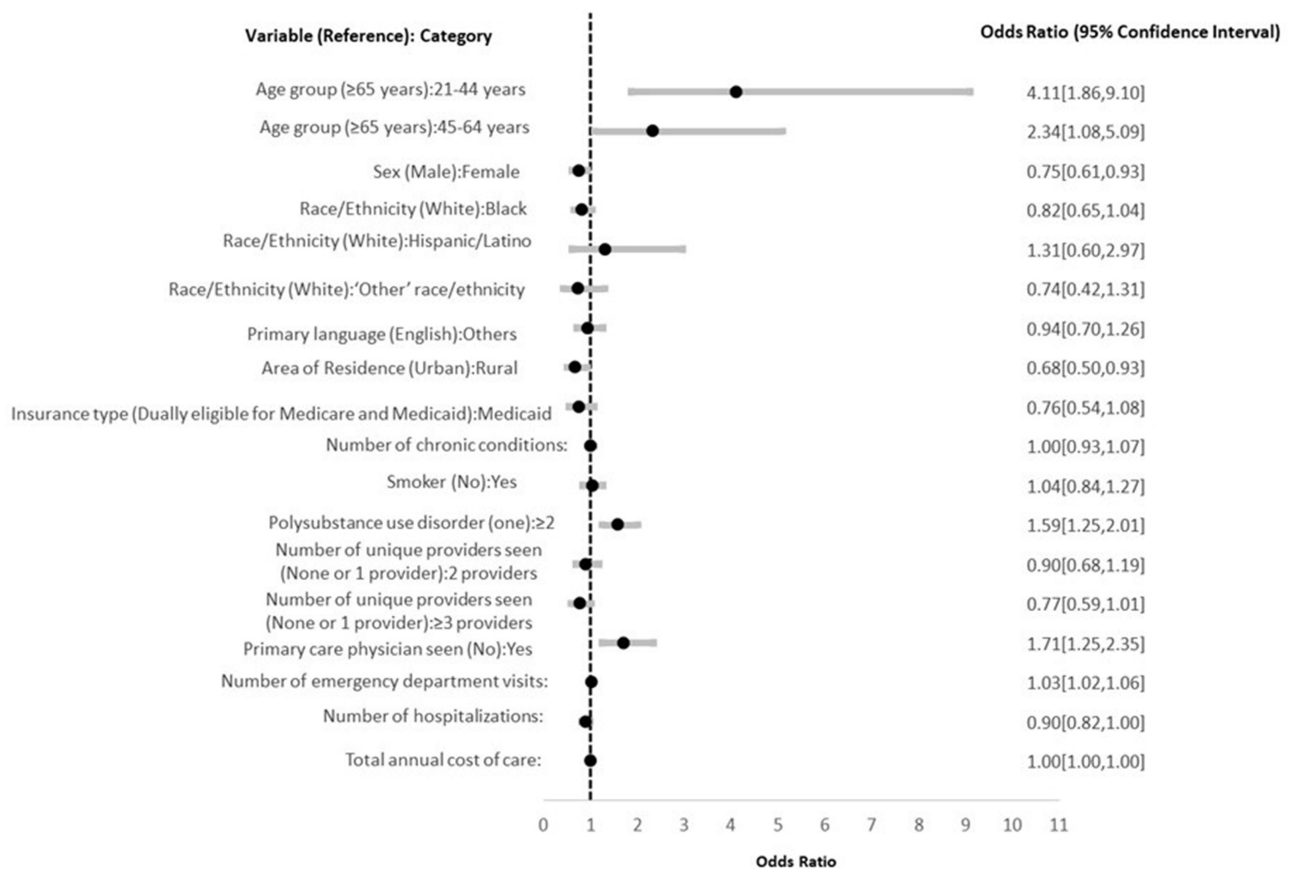


Figure 2 Results from Multivariable Logistic Regression Indicating Factors Associated with HCV Screening among Medicaid and Dually Eligible Managed Care Beneficiaries with Substance Use Disorders and Without a HIV diagnosis.

Discussion

In this cross-sectional analysis, we found an increasing need for HIV and HCV screening and PrEP prescriptions among managed care beneficiaries with SUD and without an HIV diagnosis. One of the key findings from the study is that despite the clinical practice guidelines,⁵⁻⁷ HIV and HCV screening rates were low, and PrEP prescriptions were non-existent in our sample of beneficiaries with SUD. In addition, 17% of beneficiaries with SUD had an HCV diagnosis and about 23% had polysubstance use disorders which further underscores the need to improve HIV and HCV screening rates and PrEP prescriptions among beneficiaries with SUD. Similar to our results, very low PrEP prescription rates (0.1%) were found in a commercially insured population of persons with opioid and/or other SUD.²⁴ The low HIV and HCV screening rates may be associated with the lack of availability of screening in SUD treatment facilities.^{9,25} In 2020, only half of the SUD treatment facilities in the US offered HIV and HCV screening.⁹ The lack of availability of an on-site laboratory may also contribute to SUD treatment facilities' inability to screen individuals for HIV and HCV.²⁵ Rapid testing assays for HIV and HCV screening has the potential to address the barriers faced by SUD treatment facilities as they do not need a laboratory and can be completed in 20 minutes, allowing testing and result notification in the same visit.^{25,26} In a randomized trial, on-site bundled rapid HIV and HCV screenings in SUD treatment facilities increased awareness of HIV and HCV infection among people with SUD.²⁷

Second, although our results indicate beneficiaries who had higher number of ED visits or saw their PCP were more likely to be screened for HIV and HCV, the screening rates were low. We believe there exists missed opportunities at the provider level to offer the screenings and PrEP prescriptions. Studies have suggested lack of time, training, funding for testing, and capacity to treat or knowledge of referrals among providers as some of the reasons for not screening.^{28,29} Although the reasons for not prescribing PrEP are limited, we assume the USPSTF guidelines on PrEP prescriptions specifically identifies PWID and those with high-risk sexual behavior, and not persons with drug use who are not PWID.⁵

This may be a contributing factor for limited PrEP prescription by health care providers. Future studies should focus on providers' perspectives on barriers and facilitators to PrEP prescription. Further, HIV infection spread among persons with drug use who are not PWID is overlooked.^{30–32} Although PWID continue to account for majority of HIV infections, studies have observed infection rates to be similar among persons with drug use who are PWID and not-PWID.^{30–32} Explanations for this include mixing of the two populations, sharing pipes, and inhalers to use drugs, and high-risk sexual behavior between PWID and persons with drug use who are not PWID.³¹ Hence, PWID and persons with drug use who are not PWID should be equally targeted for HIV and HCV screening and PrEP prescription. Moreover, it is imperative to bundle HIV and HCV screening services and offer opt out testing policy at SUD treatment facilities to reduce stigma surrounding HIV, and to ensure early screening, diagnosis, and linkage to care for both conditions.^{25,33} The opt out approach for HIV and HCV screenings in an ED setting allowed for stigma-free screenings.³⁴ Evidence from a syringe service program showed bundled HIV and HCV testing increased screening rates by 42% after implementation of an opt out testing policy.³⁵ Some of the facilitators for HIV and HCV screening are implementing standardized written protocols, bundled on-site testing, and identification of a testing champion in health care settings.³³

Third, we observed disparities in screenings by beneficiaries' area of residence, gender, and type of public health insurance. Beneficiaries residing in rural areas lack treatment availability and linkage to care and often travel to urban clinics to obtain care. About 15% of the beneficiaries who accessed care at our study clinics and EDs had rural residence, and we found that rural beneficiaries were less likely to be screened for HIV and HCV compared with their urban comparators. Although, our analysis indicated (not shown here) that a higher percentage of rural beneficiaries (87%) had a PCP visit than urban beneficiaries (82.4%), reasons for disparities in screenings by area of residence are unknown. We also observed that women were less likely to receive HIV and HCV screenings than men. This is in contrary to the expectation that women have higher health care services utilization.^{36,37} One of the explanations might be stigma associated with the screenings or lower risk perception.³⁸ The opt out screening approach reduces stigma associated with the screenings. When routine opt out screenings were provided in health care settings (hospital outpatient clinics, EDs, and inpatient services and community health centers) more women received screenings than men.³⁸ Further, Medicaid beneficiaries were less likely to be screened than dually eligible beneficiaries. A 2016–2019 study of Medicaid beneficiaries with opioid use disorder from 11 US states indicated that although the screenings increased over the three years from 20% to 25% for HIV and 22% to 27% for HCV, yet the majority were not tested.³⁹ In addition, lower risk perception, lack of continuity of care, and provider bias may be other factors that may influence lower screenings among beneficiaries.^{40,41} Stigma exists among health care providers towards individuals with specific health conditions such as SUD and HIV, and the degree of stigma varies based on membership in marginalized groups, which contributes to lack of HIV and HCV screening in these populations.^{41,42} Future studies should address stigma among healthcare providers to improve patient engagement and retention in care.⁴¹ We also observed that beneficiaries with higher number of hospitalizations were less likely to get HIV screening; however, association between hospitalizations and HCV screenings were not significant. Hospital stays may be an ideal opportunity to screen and establish linkage to outpatient care for beneficiaries high-risk for HIV and HCV.⁴³

Limitations

Our study has certain limitations. First, in our sample of beneficiaries with SUD, we did not have information on their sexual orientation, gender identity, and injection drug usage. As studies show that prevalence of HIV and HCV is higher in these sub-populations,^{44,45} and excluding these variables in our analytical model may have biased the results. Second, we did not account for counts of PCP visits and provider specialty in the analysis. Differences may exist between beneficiaries who had one PCP visit versus those with repeated visits and by provider specialty. Third, in Pennsylvania, Medicaid, behavioral health benefits are carved out. The beneficiaries in our sample are from a physical health MCO. The lack of data on beneficiaries' behavioral health care utilization may have underestimated our results on the screenings. Fourth, the study was conducted using data from a single MCO in one U.S. state, therefore the findings may not be generalizable to Medicaid or dually eligible managed care populations in other states. Fifth, PrEP prescription uptake is slow. The cross-sectional design of the study limits us to capture the prescriptions in this sample beyond the study year. Sixth, beneficiaries may have received screenings from public health department or other facilities not in network with the MCO. Hence, our screening rates may be underreported.

Conclusions

The low HIV and HCV screening rates and no PrEP prescription indicate the need for targeted interventions in our sample of Medicaid and dually eligible for Medicare and Medicaid managed care beneficiaries with SUD. Specifically, rural beneficiaries, females, and Medicaid beneficiaries attending urban clinics and ED of the health care system need attention. Missed opportunities exist at PCP offices to screen high-risk beneficiaries for both HIV and HCV. Strategies to improve screening rates and PrEP prescription include opt out bundled HIV and HCV screening in PCP offices, use of mobile medical vans, provider- and member- level education, and value-based contracting models. Future studies should examine the above strategies for their effectiveness in improving the screening rates and PrEP prescription. The study also has implications for national guidelines to work towards encouraging screenings and PrEP prescription in people with SUDs who are not injection drug users.

Acknowledgment

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Disclosure

Shamly Austin, Yuan Zhang, Michael Madden, and Anita Edwards are employees of Highmark Wholecare, a Managed Care Organization where the study was conducted. The authors report no other conflicts of interest in this work.

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