Anal Cancer Screening Rates Among Gay, Bisexual, and Other Men Who Have Sex With Men and Transgender Women Presenting for Services at a Community-Based Clinic

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ABSTRACT

PURPOSE: To evaluate anal cancer screening rates among men who have sex with men (MSM), transgender women (TGW), and people living with HIV (PLWH) at a community-based lesbian, gay, bisexual, transgender, and queer (LGBTQ+) clinic.

METHODS: We reviewed anal cancer screening rates from April 2023 to April 2025 among MSM, TGW and PLWH receiving care at an LGBTQ+ clinic in Providence, Rhode Island. Bivariate analyses and logistic regression were used to explore factors associated with anal cancer screening.

RESULTS: A total of N=302 individuals were eligible for anal cancer screening based on clinical guidelines during the evaluation period. Anal cancer screening was performed in 14.2% of eligible individuals, with 6.3% reporting abnormal results. In the multivariate analysis, after adjusting for age, race, and ethnicity, being a PLWH was associated with anal cancer screening (OR: 2.60; 95% CI: 1.31-5.52). A total of N=17 individuals had a high-resolution anoscopy performed (N=9 with atypical squamous cells of undetermined significance and N=8 with low-grade squamous intraepithelial lesions on cytology). Of those with anoscopy performed, 59% had abnormal pathology (N=4 Anal intraepithelial neoplasia [AIN] stage 1; N=4 AIN2; N=2 AIN3). No individuals were diagnosed with anal cancer.

CONCLUSION: Improved efforts are needed to screen at-risk populations for anal cancer in community settings.

KEYWORDS: Anal cancer screening; Men who have sex with men; Transgender women; HIV and LGBTQ+

INTRODUCTION

In 2023, there were nearly 10,000 anal cancer cases diagnosed in the United States (US).[1] Anal cancer disproportionately impacts select subpopulations in the US, including people living with HIV, particularly gay, bisexual, and other men who have sex with men (MSM), and transgender women (TGW). Although the overall cases in the general population are low, MSM and TGW have a substantially higher risk of developing anal cancer, primarily due to human papillomavirus (HPV) infection and other risk factors associated with sexual behavior.[2] The incidence rate of anal cancer is 85 per 100,000 person-years for HIV-positive MSM and 19 per 100,000 for HIV-negative MSM.[3] Among HIV-negative MSM, anal cancer incidence increases significantly with age, reaching 34 cases per 100,000 men at age 60 years or older. This compares to HIV-negative heterosexual men who have sex with women (MSW), where the incidence is fewer than 3 cases per 100,000 men at all ages.

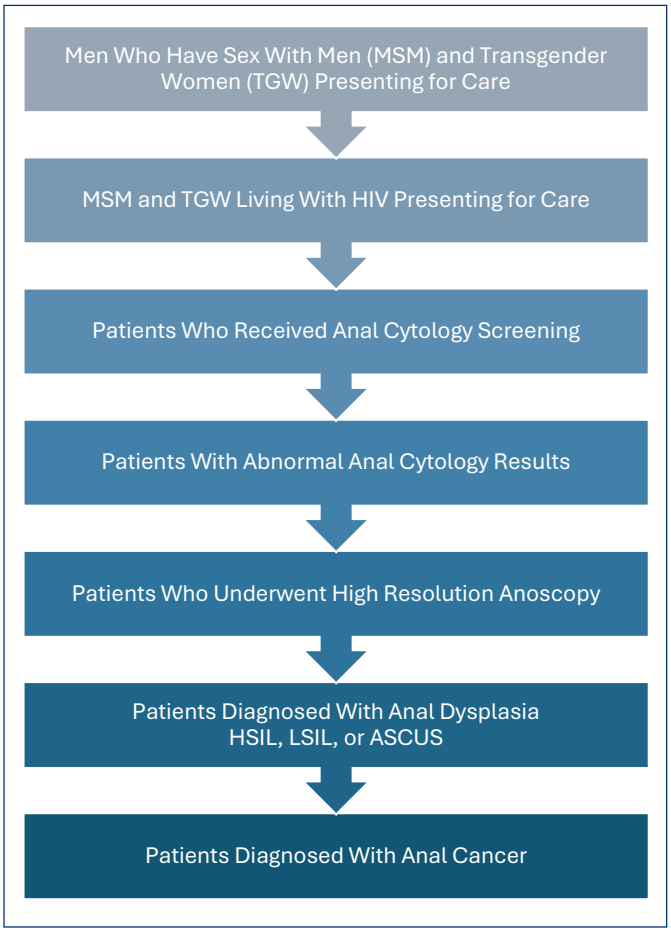
Screening for anal cancer is the first step in addressing the burden of anal cancer among sexual and gender minority populations, including MSM and TGW. The International Anal Neoplasia Society (IANS) released updated clinical guidelines in 2024 regarding anal cancer screening. Guidelines state that screening initiation at age 35 years is recommended for MSM and TGW living with HIV. For other people living with HIV and for men who have sex with men and transgender women without HIV, screening initiation at age 45 years is recommended. Data on screening rates are limited, and existing studies suggest that anal cancer screening among men who have sex with men and transgender women remains low. Less than 50% of MSM have had anal cancer screening, and rates are far lower among Black/African American men. For individuals with anal dysplasia, including high-grade intraepithelial lesions (HSIL), further intervention is warranted with high-resolution anoscopy and targeted interventions to reduce anal cancer.

The goal of this study was to evaluate baseline rates of anal cancer screening and subsequent anoscopy in MSM and TGW with anal dysplasia at a lesbian, gay, bisexual, transgender, and queer (LGBTQ+) clinic, in order to identify gaps in services and guide subsequent efforts to improve anal cancer screening and treatment rates.

METHODS

We reviewed demographic and behavioral data from April 2023 to April 2025 on all patients receiving primary care at Open Door Health, a community-based LGBTQ+ clinic in Providence, Rhode Island. In addition, we reviewed patients who received anal cancer screening and had subsequent high-resolution anoscopy. Open Door Health provides care to over 7,000 patients, the majority of whom identify as LGBTQ+. This clinic provided a unique setting and opportunity to evaluate anal cancer screening among MSM and TGW. We developed a cascade to characterize screening

Figure 1. HSIL indicates high-grade squamous intraepithelial lesions. LSIL indicates low-grade squamous intraepithelial lesions. ASCUS indicates atypical squamous cells of undetermined significance.



opportunities and patient progression through this process. This "Anal Health Cascade" represents key points in patient engagement with anal cancer screening, from initial presentation for care through diagnostic evaluation and detection of anal dysplasia or cancer [**Figure 1**].

Bivariate analyses were conducted to examine differences in characteristics between individuals who received anal cancer screening and those who did not. Chi-square tests were used for categorical variables, and the Kruskal-Wallis test was used for continuous variables. Fisher's exact test was applied to variables with zero-cell counts or small cell sizes (N<5). To assess factors associated with receipt of anal cancer screening, we performed logistic regression analyses. First, bivariate logistic regression models were fitted for each independent variable. Then, a multivariable logistic regression model was constructed, adjusting for age, race, and ethnicity. Adjusted odds ratios (aORs) and 95% confidence intervals (CIs) were reported. Exact logistic regression was used when needed to account for sparse data and zero-cell counts. Review of deidentified data was approved by the local institutional review board.

Table 1. Participant Demographics by Receipt of Anal Cancer Screening

Variable	Receiving anal pap test			p-value
	No (%)	Yes (%)	Total (%)	
Age (Median, Interquartile range)	54 (48, 60)	55 (45, 61)	54 (47, 60)	0.75
Race				
White	188 (74.90%)	34 (82.93%)	222 (76.03%)	0.359
Black	31 (12.35%)	2 (4.88%)	33 (11.30%)	
Other	32 (12.75%)	5 (12.20%)	37 (12.67%)	
Missing	8	2	10	
Assigned Sex at Birth				0.375*
Male	247 (95.74%)	43 (100.00%)	290 (96.35%)	
Female	11 (4.26%)	0 (0.00%)	11 (3.65%)	
Missing	1	0	1	
Ethnicity				
Non-Hispanic	217 (87.85%)	36 (83.72%)	253 (87.24%)	0.453
Hispanic	30 (12.15%)	7 (16.28%)	37 (12.76%)	
Missing	12	0	12	
PLWH				
No	182 (70.27%)	22 (51.16%)	204 (67.55%)	0.013
Yes	77 (29.73%)	21 (48.84%)	98 (32.45%)	
Missing	0	0	0	
MSM				
MSM/TGW	212 (85.83%)	36 (83.72%)	248 (85.52%)	0.717
Heterosexual	35 (14.17%)	7 (16.28%)	42 (14.48%)	
Missing	12	0	12	

*Fisher exact test for p-value

RESULTS

A total of 302 individuals were included. **Table 1** presents the bivariate analyses comparing demographics and anal cancer screening. The median age was 54 years (IQR: 47–60). Most participants were assigned male at birth (96.4%), and 3.6% were female. The majority identified as White (76.0%) and non-Hispanic (87.2%). Nearly one-third (32.5%) were living with HIV. Among participants with complete sexual behavior data (N=290), 85.5% identified as MSM or TGW, and 14.5% as heterosexual.

Anal cancer screening was performed in 14.2% of individuals, with 6.3% reporting abnormal results. A total of N=17 individuals had a high-resolution anoscopy performed (N=9 with ASCUS and N=8 with LSIL on cytology). Of those with high-resolution anoscopy performed, 59% had abnormal pathology (N=4 Anal intraepithelial neoplasia [AIN] stage 1; N=4 AIN2; N=2 AIN3). No individuals were diagnosed with anal cancer.

There were no significant differences in age (p = 0.75), race (p = 0.359), or ethnicity (p = 0.453) by anal cancer screening.

Table 2. Factors Associated with Anal Cancer Screening

Variables	Crude odds ratio (95% confidence interval)	Adjusted odds ratio (95% CI)*
Age	0.98 (0.95, 1.02)	—
Assigned sex at birth		
Male	ref	
Female	0.38 (0, 2.39)#	
Race		
White	ref	
Black	0.36 (0.08, 1.56)	
Other	0.86 (0.31, 2.37)	
Ethnicity		
No	ref	
Yes	1.41 (0.57, 3.44)	
Being MSM/TGW		
MSM/TGW	ref	ref
Heterosexual men	1.18 (0.49, 2.85)	1.17 (0.45, 3.06)
Living with HIV		
No	ref	ref
Yes	2.26 (1.17,4.34)	2.69 (1.31, 5.52)

*Adjusted for age, race, and ethnicity
#exact logistic regression to account for sparse data and zero-cell counts

Although no females received anal cancer screening, statistical significance was not observed due to the small sample size (p = 0.375), while Fisher's exact test was used to account for having no people in the category. Individuals living with HIV were significantly more likely to receive anal cancer screening than those not living with HIV (48.8% vs. 29.7%; p = 0.013). Being MSM/TGW was not associated with a higher likelihood of receiving anal cancer screening (p = 0.717).

In multivariable logistic regression analyses adjusted for age, race, and ethnicity, individuals living with HIV had significantly higher odds of receiving anal cancer screening compared to those not living with HIV (adjusted OR: 2.60; 95% CI: 1.31–5.52). Assigned sex at birth, race, ethnicity, and sexual behavior (MSM/TGW vs. heterosexual men) were not significantly associated with anal cancer screening. Although none of the female participants received screening, this association did not reach statistical significance after adjusting for sparse data using exact logistic regression. [See **Table 2**]

DISCUSSION

Despite important need for anal cancer screening in this LGBTQ+ population, few individuals were screened for services. High-resolution anoscopy was performed in the majority of people with abnormal anal cytology. This is among the few studies to evaluate anal cancer screening rates in populations that are at higher risk of anal cancer, including MSM, TGW, and PLWH. Given accumulating data and release of clinical guidelines in 2024, anal cancer screening in these populations is warranted. Despite this, we found that anal cancer screening rates are low in LGBTQ+ populations. In those that did have anal cancer screening performed, the rates of abnormal results were high. Fortunately, no anal cancer was found in our population, although the overall number of patients was low. These data suggest that significant efforts are needed to implement anal cancer screening in clinical settings focused on LGBTQ+ populations.

Anal cancer screening is an acceptable practice among those at higher risk of anal cancer.[8-10] However, awareness of the importance of anal cancer screening is low.[9-13] Most studies of anal cancer screening have been conducted at academic HIV clinics.[10,14] Consistent with these results and others,[15,16] our study found low anal cancer screening rates despite strong institutional support for the program, likely due to the need to prioritize other timely health issues and the fact that guidelines are more recent.[14] These results suggest that improved efforts are needed to both increase anal cancer screening and subsequent follow-up high-resolution anoscopy in patients with abnormal results. In contrast to other studies among patients with abnormal findings,[15] follow-up anoscopy was high in patients reporting abnormal anal cytology on screening. Onsite high-resolution anoscopy services at our clinic may have facilitated these high rates.

There were several limitations of our study. The study was performed at a single site, which may limit generalizability. Our study focused only on populations aged 35 years and older given clinical recommendations and that existing studies do not recommend screening under this age.[17] All data reviewed was part of clinic medical records. However, patients could have had clinical care outside of the clinic that may have been missed during the review process, which would have underestimated anal cancer screening rates. Despite these limitations, these data characterize gaps in anal cancer screening among higher-risk populations.

In summary, improved efforts are needed to increase anal cancer screening rates among MSM, TGW, and PLWH at this LGBTQ+ clinic. Numerous implementation questions remain related to anal cancer screening, including cost-effectiveness and optimal approaches to screening.[18,19] New screening guidelines present a public health opportunity to expand anal cancer screening at LGBTQ+ clinics. Our experience demonstrates that staff training and institutional commitment is necessary to expand anal cancer and anoscopy at busy community clinics. However, our baseline data suggests this is feasible, and screening policies identify patients at high risk for developing anal cancer.

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