

Progress Along the HIV Care Continuum in a U.S. Sample of HIV-positive MSM Recruited Online

ABSTRACT

Background: Viral suppression (VS) achieved through HIV care and antiretroviral therapy (ART) adherence is associated with decreased HIV transmission. However, reaching and maintaining VS is difficult as demonstrated by large proportions of people who drop off at each stage of the HIV care continuum (HCC). Identifying men who have sex with men (MSM) disengaged from the HCC is critical to preventing forward HIV transmission.

Methods: In 2015, U.S. HIV-positive MSM (n=10,747) were recruited from MSM-oriented websites and applications to screen for eligibility in an eHealth intervention. Participants were categorized into three groups based on the HCC: engaged in care, on ART, or VS. Analyses assessed age and race/ethnicity within each HCC stage and compared to the Centers for Disease Control and Prevention (CDC) surveillance-based HCC estimates.

Results: Median age was 40; 52% were White, 28% Black, and 15% Hispanic. One-fifth of participants were diagnosed with HIV in the past year. At each step of the HCC, younger, Black, and Hispanic MSM had the lowest levels of care compared to older and white MSM. Those diagnosed ≤ 1 year were less likely to achieve VS (53% vs. 76%; $p < .0001$) and more likely to have engaged in serodiscordant condomless anal sex in the past six months (74% vs. 65%; $p < .0001$) compared to men diagnosed > 1 year ago. Participants who did not reach VS (n=3,019 [28%]) were significantly ($p < 0.05$) younger (25 – 34 vs. 45 – 54), Black (vs. White), and more likely to be diagnosed in the past year compared to participants reaching VS. Finally, when compared to CDC HCC estimates, we identified significantly ($p < 0.05$) more individuals engaged in care (99% vs. 51%), on ART (93% vs. 49.5%), and reaching VS (72% vs. 42%).

Conclusions: In a convenience sample of high-risk HIV-positive MSM recruited online, younger and ethnic/racial minority MSM were less likely to achieve VS. Moreover, there were significant differences in HCC progression by time since HIV diagnosis. Compared to CDC HCC estimates, men recruited online were more likely to be in care at each HCC step. Strategies to engage newly diagnosed MSM, especially younger non-White MSM, are necessary to reduce HIV transmission.

INTRODUCTION

- Antiretroviral therapy (ART) reduces the amount of virus in the body of people living with HIV and dramatically lowers their risk of transmitting the virus to others.
- In 2015, the National HIV/AIDS Strategy reiterated its goals to increase the number of individuals aware of their HIV status, engaged in care, and whose virus is suppressed.¹
- The CDC monitors the proportion of people with HIV at each step of the HIV Care Continuum (HCC)—a framework which describes the series of steps needed to achieve viral suppression.²
- Although men who have sex with men (MSM) made up 52% of persons living with HIV in 2010, the CDC reports that only 42% of HIV-positive MSM have achieved viral suppression.²
- We aimed to compare a U.S. sample of HIV-positive MSM recruited online to the CDC surveillance-based HCC estimates.

METHODS

SEX POSITIVE!^[+]

- Sex Positive!^[+] is an online, video-based intervention for high-risk HIV-positive MSM with suboptimal ART adherence designed to reduce serodiscordant condomless anal sex (CAS) and increase HIV status disclosure.
- In 2015, U.S. HIV-positive MSM (n=10,747) were recruited from MSM-oriented websites and mobile phone apps to screen for eligibility in Sex Positive!^[+].
- Participants were categorized into three groups based on the HCC.
- Analyses assessed age, race/ethnicity, and time since HIV diagnosis within each HCC stage and compared to the CDC surveillance-based HCC estimates.
- Chi-square tests were utilized to determine differences by self-reported viral suppression status. All statistical analyses were conducted using SAS v9.4 (Cary, North Carolina).

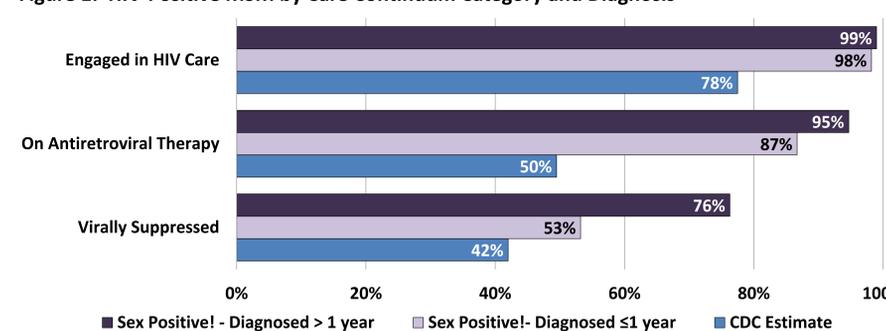
References:
1- National HIV/AIDS Strategy for the United States: Updated to 2020, 2015. White House Office of National AIDS Policy. Available from: <https://www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-update.pdf>
2- Singh S, et al. Men living with diagnosed HIV who have sex with men: progress along the continuum of HIV care—United States, 2010. MMWR Morb Mortal Wkly Rep. 2014 Sep 26;63(38):829-33.

RESULTS

Table 1: HIV-positive Men Who Have Sex with Men by Viral Suppression Status

	Living with HIV (N = 10,747) n (col %)	Virally Suppressed (N = 7,728) n (col %)	Not Virally Suppressed (N = 3,019) n (col %)	p-value
Age (years)				<.0001
18 – 24	838 (7.8)	461 (6.0)	377 (12.5)	
25 – 34	3,176 (29.6)	2,076 (26.9)	1,100 (36.4)	
35 – 44	2,549 (23.7)	1,864 (24.1)	685 (22.7)	
45 – 54	2,886 (26.9)	2,257 (29.2)	629 (20.8)	
≥ 55	1,298 (12.1)	1,070 (13.8)	228 (7.6)	
Race/Ethnicity				<.0001
Black/African American	2,987 (27.8)	1,983 (25.7)	1,004 (33.3)	
Hispanic	1,583 (14.7)	1,173 (15.2)	410 (13.6)	
White	5,630 (52.4)	4,204 (54.4)	1,426 (47.2)	
Other	547 (5.1)	368 (4.8)	179 (5.9)	
Condomless anal sex in the past 6 months				0.7642
Yes	8,679 (80.8)	6,268 (81.1)	2,411 (79.9)	
No	1,640 (15.3)	1,178 (15.2)	462 (15.3)	
Serodiscordant condomless anal sex in the past 6 months				0.2733
Yes	5,658 (52.6)	4,105 (53.1)	1,553 (51.4)	
No	2,977 (27.7)	2,126 (27.5)	851 (28.2)	
Diagnosed in the past year				<.0001
Yes	2,049 (19.1)	1,091 (14.1)	958 (31.7)	
No	8,698 (80.9)	6,637 (85.9)	2,061 (68.3)	

Figure 1: HIV-Positive MSM by Care Continuum Category and Diagnosis



RESULTS

- Participants screened had a median age of 40 years, over half (52%) were White, 28% Black, and 15% Hispanic. One-fifth of participants were diagnosed with HIV in the past year.
- The majority of participants (80.8%) reported at least one condomless anal sex (CAS) event in the past 6 months. Among these participants, 52.6% reported a CAS event with an HIV-negative partner in the past 6 months.
- We identified significantly ($p < 0.05$) more individuals engaged in care, on ART, and reaching viral suppression (Figure 1) compared to CDC's surveillance-based HCC estimates.
- Individuals in our sample who were diagnosed ≤ 1 year, identified as Black or Hispanic, and 18-24 years of age were significantly ($p < 0.0001$) less likely to be engaged in care, be on ART, and report viral suppression (Figures 1-3 and Table 1).
- The number of individuals reporting CAS and sexual activity with a serodiscordant partner did not differ by viral suppression status (Table 1).

Figure 2: HIV-Positive MSM by Care Continuum Category and Race

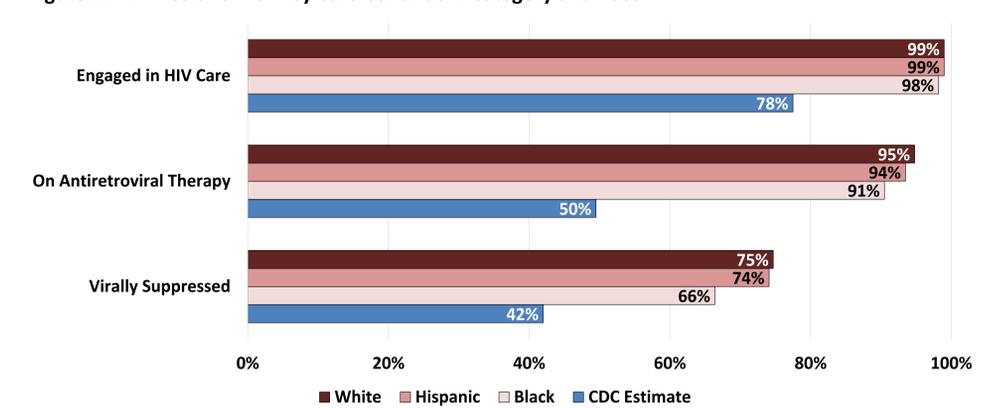
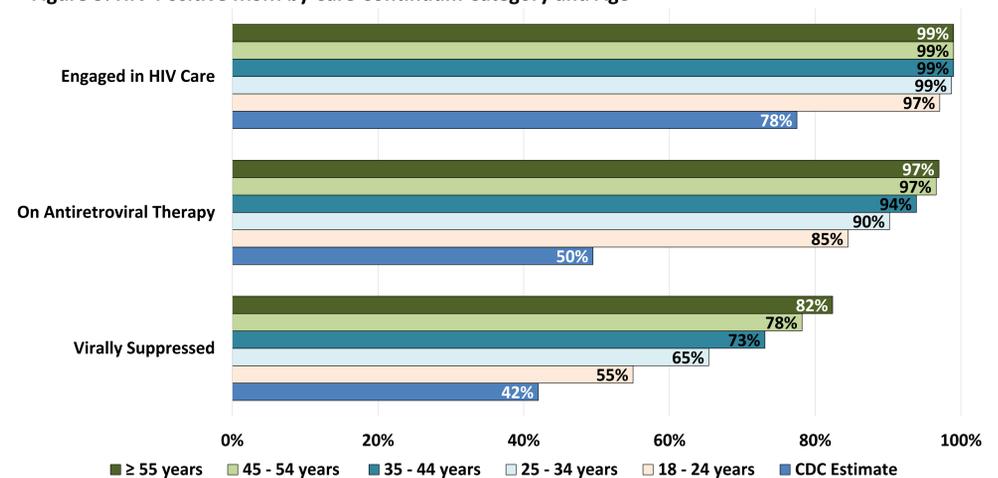


Figure 3: HIV-Positive MSM by Care Continuum Category and Age



CONCLUSIONS

- Compared to CDC surveillance-based HCC estimates, men recruited from MSM-oriented websites and mobile phone apps were more likely to be engaged in care, on ART, and virally suppressed.
- Similar to CDC's estimates, our analysis identified younger and ethnic/racial minority MSM to be less likely to achieve viral suppression.
- Identifying high-risk MSM disengaged from care and who are not virally suppressed is critical to preventing the forward transmission of HIV.
- Recruiting men online provides an additional avenue for researchers and clinicians to (1) study HIV-positive MSM sexual behavior by reaching thousands of HIV-positive men, (2) identify men disengaged from HIV-related care, and (3) implement behavioral interventions to improve HIV-related care and outcomes.

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