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Author manuscript

AIDS Educ Prev. Author manuscript; available in PMC 2022 November 08.

Published in final edited form as:

AIDS Educ Prev. 2021 August ; 33(4): 276–289. doi:10.1521/aeap.2021.33.4.276.

A Rapid Review of Disparities in HIV Prevention and Care Outcomes Among Hispanic/Latino Men Who Have Sex with Men in the United States

Nicole Crepaz[a], **Mary M. Mullins**[a], **Darrel Higa**[a], **Jayleen K.L. Gunn**[a,b], **Yamir Salabarría-Peña**[a]

[a]Division of HIV/AIDS Prevention, the U.S. Centers for Disease Control and Prevention, Atlanta, Georgia

[b]United States Public Health Service

Abstract

In the United States, Hispanic/Latino men who have sex with men (HLMSM) are disproportionally affected by HIV. We conducted a rapid review of national surveillance data to examine disparities in HIV prevention and care outcomes among HLMSM. Thirteen reports provided relevant data from 2011 to 2018. Compared to White MSM, a higher percentage of HIV-negative HLMSM reported not taking PrEP and engaging in condomless sex; a lower percentage of HIV-negative HLMSM at risk for HIV reported PrEP awareness and use; and a lower percentage of HIV-positive HLMSM were aware of their status, linked to HIV care, and virally suppressed. Viral suppression rates in HLMSM were better among Ryan White clients than the national rates, suggesting that access to comprehensive care/services reduce disparities. Findings also call for identifying individual, social and structural factors contributing to condomless sex without PrEP use and HIV status unawareness and identify best approaches for scaling-up comprehensive care/services.

Keywords

Hispanic/Latino; Men who have sex with men; condomless sex without PrEP; PrEP awareness and use; HIV status awareness; HIV care outcome

Introduction

In the United States, men who have sex with men (MSM) represent the population most affected by HIV. In 2018, adult and adolescent MSM made up 66% (24,699) of the 37,515 HIV diagnoses in the United States (Centers for Disease Control and Prevention, 2020a). Overall, the estimated HIV incidence (i.e., new HIV infection) among MSM remained stable from 2010 to 2016 (Centers for Disease Control and Prevention, 2019a) and from 2014 to

Corresponding Author: Nicole Crepaz, PhD, Division of HIV/AIDS Prevention, The U.S. Centers for Disease Control and Prevention, 1600 Clifton Rd., MS US8-5, Atlanta, Georgia, 30329, USA, Phone: 1-404-639-6149, ncrepaz@cdc.gov.

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2018 (Centers for Disease Control and Prevention, 2020b). However, Hispanic/Latino MSM (HLMSM) are the only racial/ethnic group with an increasing number of new HIV infections between 2010 and 2016, while the annual number of new HIV infections remained stable among Black MSM and decreased among White MSM (WMSM) during the same period (Centers for Disease Control and Prevention, 2019a). Beginning in 2014, the annual number of new HIV infections among HLMSM exceeded the annual number of new infections among WMSM. Compared with 2014, the annual number of new HIV infections in 2018 remained stable for HLMSM but decreased for WMSM (Centers for Disease Control and Prevention, 2020b), indicating a disparity pertaining to new HIV infection.

Advances in HIV prevention and treatment have resulted in several effective strategies for reducing new HIV infections (Fauci, Redfield, Sigounas, Weahkee, & Giroir, 2019; Giroir, 2020). Both the Ending HIV Epidemic (EHE) initiative and the recently released HIV National Strategic Plan call for preventing new HIV infections, improving HIV-related health outcomes of people with HIV, and reducing HIV-related disparities and health inequalities (Centers for Disease Control and Prevention, 2021; National Institutes of Health, 2021; U.S. Department of Health and Human Services, 2021). High-impact prevention strategies for reducing condomless sex and increasing pre-exposure prophylaxis [PrEP] awareness and use among HIV-negative persons at high risk for HIV infection, and increasing early diagnosis and treatment of persons with HIV infection to achieve viral suppression have been promoted over the years and continue to be emphasized in the EHE and the Plan (Centers for Disease Control and Prevention, 2013, 2014, 2015a, 2015b, 2017a, 2017b, 2017c). Behavioral and clinical data have been collected in several national surveillance systems to monitor the progress and impact of prevention strategies (Centers for Disease Control and Prevention, 2020c; Harris, 2019). Since the success of national goals is unlikely to be achieved until HIV-related health disparities are eliminated, we conducted a rapid review to assess the magnitude of disparities between HLMSM and WMSM on prevention and care outcomes over time that may affect HIV infection and transmission. A rapid review is “a type of knowledge synthesis in which components of the systematic review process are simplified or omitted to produce information in a short period of time” (Khangura, Konnyu, Cushman, Grimshaw, & Moher, 2012). To rapidly synthesize national surveillance data to make evidence more digestible and informative for alerting the magnitude of disparities, we streamlined the literature search to focus only on publicly available national surveillance data and narrowed the review scope to specifically answer the following questions: Is there a higher proportion of HIV-negative HLMSM who engage in condomless sex without being on PrEP than WMSM? Among HIV-negative MSM who are at risk for HIV infection, is there a lower proportion of HLMSM who are aware of PrEP or using PrEP than WMSM? Among persons with HIV, is there a lower proportion of HLMSM who are aware of their HIV status, linked to HIV care after HIV diagnosis, prescribed antiretroviral therapy (ART), and virally suppressed than WMSM?

Methods:

The reporting guidelines for rapid reviews are currently under development (https://www.equator-network.org/wp-content/uploads/2018/02/PRISMA-RR-protocol.pdf) and the methods of conducting rapid reviews varies widely. Per Khangura et al. (2012) and Tricco

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et al. (2015) (Khangura et al., 2012; Tricco et al., 2015), we modified the systematic review processes (e.g., simplified screening, narrowed the scope of questions, conducted descriptive summary, omitted risk of bias assessment) for this rapid review. We followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) statement to report our rapid review (Moher et al., 2015).

To locate publicly available HIV surveillance data, we used citations from a larger systematic review effort that examines factors associated with prevention and care outcomes for HLMSM, and also conducted hand searches of surveillance reports routinely published by government agencies. For the larger review effort, a systematic literature search was developed to broadly identify HIV-related citations focused on Hispanic/Latino MSM. A subject matter expert identified 10 “gold standard” citations to locate in the literature. A librarian examined these citations to identify possible keywords and phrases. Search terms were tested to pinpoint essential keywords and proprietary indexing terms (e.g. MeSH, Emtree). The full search was first developed in MEDLINE (OVID) (Appendix 1). The finalized MEDLINE search was tailored to the unique indexing in EMBASE (OVID), PsycINFO (OVID), CINAHL (EBSCOhost), and Sociological Abstracts (ProQuest). The search strategy identified citations published from January 2008 to May 2019 by cross-referencing terms used for HIV, Hispanic/Latino population, and MSM. There were no language restrictions. An updated search was conducted on January 9, 2020 to identify additional reports published in 2018 and 2019. For searching surveillance reports routinely published by government agencies, we conducted hand searches in the Centers for Disease Control and Prevention’s (CDC’s) HIV Resource Library (https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html), the Health Resources and Services Administration’s (HRSA’s) Ryan White HIV/AIDS Program (RWHAP) Data Reports (https://hab.hrsa.gov/data/data-reports), and Atlas Plus (https://gis.cdc.gov/grasp/nchhstpatlas/main.html) in August, 2020.

Inclusion criteria were reports from national surveillance systems in the United States that provide data from 2011 to present on at least one relevant outcome for HLMSM and WMSM. Relevant outcomes include high-risk sex among HIV-negative MSM using the definition from the National HIV Behavioral Surveillance (i.e., not taking PrEP and reporting condomless anal or vaginal sex with a partner who was HIV-positive or of unknown status at last sex); PrEP awareness and use among HIV-negative MSM at risk for HIV infection; knowledge of HIV-positive status (defined as persons with HIV infection know their HIV status); linkage to HIV care (defined as documentation of ≥1 CD4 or viral load tests performed ≤1 month after HIV diagnosis); on ART (defined as having ART prescription in the past 12 months); and viral suppression (defined as a viral load result of <200 copies/mL at the most recent viral load test in a calendar year).

Using DistillerSR (Evidence Partners, Ottawa, Ontario), a reviewer first screened citations by title and abstract to identify potentially relevant reports and then reviewed full reports of relevant reports for inclusion/exclusion. Excluded reports were confirmed by a second reviewer. Disagreements in coding were resolved through discussion. We abstracted and qualitatively summarized the descriptive data for HLMSM and WMSM from eligible reports. Statistical tests were not conducted in this rapid review because surveillance data

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constitute a census of persons in the population and statistical tests are generally used for making inferences by which to make results from sampled data be valid in the population. We reported the percentage difference between HLMSM and WMSM. The percentage difference was calculated as the difference between two values divided by the average of the two values and was shown as a percentage. Risk of bias in individual reports was not assessed because publicly available surveillance reports synthesized in this rapid review have provided detailed limitations of each surveillance system.

Results

Thirteen reports from CDC's National HIV Behavioral Surveillance (NHBS), National HIV Surveillance System (NHSS) and Medical Monitoring Project (MMP), and HRSA's RWHAP Service Reports provided relevant data from 2011 to 2018 (Figure 1). A brief description of each system is illustrated in Table 1.

Is there a higher proportion of HIV-negative HLMSM who engage in condomless sex without being on PrEP than WMSM?

The data from the NHBS 2011, 2014, and 2017 MSM cycles (Centers for Disease Control and Prevention, 2019b) showed that the proportion of HIV-negative MSM who reported not taking PrEP and having condomless sex with a partner who was HIV-positive or of unknown HIV status at last sex decreased for both HLMSM and WMSM from 2014 to 2017 (Table 2). However, a consistently higher proportion of HIV-negative HLMSM than WMSM reported this high-risk behavior during 2011, 2014, and 2017 (percentage difference: 34.4% in 2011 and 2014; 35.1% in 2017).

Among HIV-negative MSM who are at risk for HIV infection, is there a lower proportion of HLMSM who are aware of PrEP or using PrEP than WMSM?

The data from the NHBS 2014 and 2017 MSM cycles (Finlayson et al., 2019) collected in 20 U.S. urban areas that covered 26 of the geographic areas included in Phase I of the EHE initiative showed that the proportion of HIV-negative MSM who reported awareness of PrEP and using PrEP increased for both HLMSM and WMSM from 2014 to 2017 (Table 2). While PrEP awareness increased substantially in both groups, reporting PrEP use remains below the 50% national target. In addition, there were consistent differences in PrEP awareness and use between the two groups. In 2017, 86.6% of HLMSM were aware of PrEP compared to 94.5% of WMSM (percentage difference: 8.7%) and 30.0% of HLMSM reported using PrEP compared to 42.4% (percentage difference: 34.3%).

Among persons with HIV, is there a lower proportion of HLMSM who are aware of their HIV status than WMSM?

The data from NHSS (Centers for Disease Control and Prevention, 2019a) revealed that the proportion of persons who had knowledge of their HIV infection increased from 2011 to 2018 in both HLMSM and WMSM (Table 3). However, a lower proportion of HLMSM were aware of their HIV-positive status than WMSM in 2018 (79.8% vs. 89.3%, respectively; percentage difference: 11.2%) and knowledge of HIV-positive status among HLMSM has also been consistently lower since 2011.

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Among persons with HIV, is there a lower proportion of HLMSM who are linked to HIV care after diagnosis than WMSM?

The NHSS data from jurisdictions with complete laboratory reporting (Centers for Disease Control and Prevention, 2019c) indicated an increased proportion of HLMSM and WMSM who were linked to HIV medical care within one month of diagnosis among persons with HIV infection diagnosed in 2018, compared with 2017 (Table 3). The linkage to HIV care rate among HLMSM was slightly lower than that among WMSM; however, the rates exceeded 80% for both groups in 2018 (HLMSM vs. WMSM: 82.6% vs. 84.5%; percentage difference: 2.3%).

Among persons with HIV, is there a lower proportion of HLMSM in HIV medical care who had a prescribed ART than WMSM?

The data from MMP (Beer et al., 2016) showed that among persons in HIV care, the proportion of HLMSM and WMSM who *had been prescribed ART* were comparable during 2011 to 2013 (Table 4). Greater than 90% of both groups reported having an ART prescription.

Among persons living with diagnosed HIV, is there a lower proportion of HLMSM who were virally suppressed than WMSM?

The NHSS data from jurisdictions with complete laboratory reporting (Centers for Disease Control and Prevention, 2020d) presented in Table 3 showed that a lower proportion of HLMSM were virally suppressed than WMSM in 2016 (63.6% vs. 70.1%, respectively; percentage difference: 9.7%) and 2018 (65.9% vs. 72.9%, respectively; percentage difference: 10.1%). Another NHSS report (Crepaz, Dong, Hess, & Bosh, 2020) found that among persons aged 13–29 years with HIV infection, 49.6% of HLMSM and 55.3% of WMSM (percentage difference: 10.9%) had sustained viral suppression (defined as all viral load test results <200 copies/mL in 2016).

However, the rates of viral suppression were higher in both HLMSM and WMSM who received medical care and services from RWHAP (Table 4) than those shown in the NHSS data (Table 3). During 2014–2018, viral suppression rates increased for both HLMSM and WMSM who received RWHAP care or services (Health Resources and Services Administration, 2015, 2016, 2017, 2018, 2019). In 2018, both groups reached the national 90% goal (Table 4).

Discussion

Our synthesis of publicly available national surveillance data shows several racial/ethnic disparities in behavioral and HIV care outcomes. Compared to WMSM, there was a higher percentage of HIV-negative HLMSM who reported condomless sex and not taking PrEP and a lower percentage of HLMSM who are at risk for HIV infection reported awareness of PrEP and using PrEP. These findings indicate a missed opportunity for HIV-negative HLMSM to fully benefit from an effective prevention strategy such as PrEP for reducing the potential risk of HIV infection. While the awareness and use of PrEP have increased in HLMSM over the years, PrEP use remained below the 50% national target (Harris, 2019;

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U.S. Department of Health and Human Services, 2021). Among persons with HIV, a lower percentage of HLMSM were aware of their HIV-positive status than WMSM, indicating a missed opportunity for HLMSM to fully benefit from early treatment for protecting one's health and reducing the risk of HIV transmission.

Among MSM living with diagnosed HIV, the care outcomes differ depending on HIV care status. MMP data showed that HLMSM and WMSM in HIV care were comparable in having been prescribed ART. RWHAP data showed better viral suppression rates for both HLMSM and WMSM and the difference between these two groups was narrower than the viral suppression rates observed in NHSS data which include persons living with diagnosed HIV regardless of care status. RWHAP, which serves more than 50% of all persons living with diagnosed HIV infection in the United States, offers not only medical care but also ancillary services such as housing, transportation, and translation services which address structural barriers that are associated with health outcomes commonly faced by HLMSM. These findings confirm that making care accessible and offering comprehensive care and services like RWHAP can improve care outcomes of HLMSM and reduce racial/ethnic disparities. (U.S. Department of Health and Human Services, 2021)

Disparities in prevention and care outcomes between HLMSM and WMSM are likely to have resulted from inequalities in social determinants of health. Factors such as insurance, health care access (Eklund, Dillon, & Ebersole, 2020; Levison et al., 2019), communication and language barriers (Guilamo-Ramos et al., 2020; Levison et al., 2019; Painter et al., 2019), employment (Guilamo-Ramos et al., 2020; Levison et al., 2019), experiences with housing instability or homelessness (Guilamo-Ramos et al., 2020), racism, stigma (Brooks, Landrian, Nieto, & Fehrenbacher, 2019; Guilamo-Ramos et al., 2020; Levison et al., 2019; Painter et al., 2019), discrimination (Guilamo-Ramos et al., 2020; Levison et al., 2019; Painter et al., 2019), immigration status (Guilamo-Ramos et al., 2020; Levison et al., 2019) and medical mistrust (Brooks et al., 2019; García & Harris, 2017; Graham et al., 2013; Kimball, Rivera, Gonzales, & Blashill, 2020; Martinez et al., 2016; Rhodes et al., 2010) have been cited as barriers to HIV testing, prevention, and care among Hispanic/Latino men. Barriers vary by individuals and thus an integrated and coordinated prevention and care effort is critical (U.S. Department of Health and Human Services, 2021). Multi-level or multi-component interventions are needed to tackle structural inequalities. Addressing basic and immediate needs (e.g., safety, food, shelter, transportation, language service), promoting programs that destigmatize HIV, supporting person-centered care, adopting policies that reduce cost, payment, and coverage barriers to improve the delivery and receipt of services, and increasing the number of skilled and culturally competent medical and service providers are some of the multi-level, multi-component strategies that would help with reducing disparities (U.S. Department of Health and Human Services, 2021).

Our synthesis results are subject to the following limitations. First, this rapid review was intended to have a narrowed scope with specific questions to provide a rapid synthesis of health disparities faced by HLMSM. We only synthesized publicly available surveillance data (either from peer-reviewed publications or regularly released surveillance reports) that provided stratified results on HLMSM and WMSM. Data that are not publicly available or reports that do not stratify by racial/ethnic groups and transmission category were

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not included in this review (e.g., Centers for Disease Control and Prevention, 2020c; Huang, Zhu, Smith, Harris, & Hoover, 2018; Substance Abuse and Mental Health Services Administration (SAMHSA), 2020a, 2020b, 2020c). Second, outcomes were assessed based on data from different national surveillance systems, which have their own limitations (e.g., reporting delay, completeness of laboratory reporting, response rates). Third, data were not available for every year and some outcomes did not have more recent data from publicly available reports (e.g., ART data only available up to 2013).

Conclusion

This rapid review of publicly available national surveillance data offers the assessment of the magnitude of disparities between HLMSM and WMSM on prevention and care outcomes that may affect HIV infection and transmission. There is still room for improvement in reducing disparities in PrEP awareness and use among HIV-negative HLMSM at risk for HIV infection and awareness of HIV status among HLMSM with HIV. Disparity in viral suppression could be reduced if HLMSM living with diagnosed HIV receive comprehensive HIV care and ancillary services that address structural barriers such as housing and transportation. Development of studies to identify and address individual, social and structural factors contributing to racial/ethnic disparities among HLMSM as well as conducting implementation research to find the best approaches for scale up of comprehensive care and services could foster the success of reaching national prevention goals.

Funding.

This work was supported by the Division of HIV/AIDS Prevention at the U.S. Centers for Disease Control and Prevention and was not funded by any other organization.

Appendix 1

MEDLINE

HIV among Hispanic/Latino MSM

Target Population MeSH and keywords

1. Hispanic Americans/
2. Mexican Americans/
3. “Emigrants and Immigrants”/
4. Hispanic*.ti,ab
5. Latin*.ti,ab
6. Puerto Rican*.ti,ab
7. Cuban*.ti,ab
8. Mexican*.ti,ab
9. Central American*.ti,ab

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10. South American*.ti,ab
11. (Belizean* OR Costa Rican* OR Dominican* OR Salvadoran* OR Guatemalan* OR Honduran* OR Nicaraguan* OR Panamanian*).ti,ab
12. (Argentine* OR Argentinian* OR Bolivian* OR Brazilian* OR Chilean* OR Colombian* OR Ecuadorian* OR Paraguayan* OR Peruvian* OR Uruguayan* or Venezuelan*).ti,ab
13. Boricua*.ti,ab
14. (Spanish adj2 speak*).ti,ab
15. (chicano* or chicana*).ti,ab
16. (Ethnic* adj2 minorit*).ti,ab
17. Emigrant*.ti,ab
18. Immigrant*.ti,ab
19. (color or colour).ti,ab
20. or/1–19

MSM

21. **"Sexual and Gender Minorities"/** (2018)
22. Homosexuality, Male/
23. Bisexuality/
24. MSM.ti,ab
25. MSMW.ti,ab
26. Men who have sex with men.ti,ab
27. Gay*.ti,ab
28. Queer*.ti,ab
29. Sexual minorit*.ti,ab
30. Gender minorit*.ti,ab
31. Homosexual*.ti,ab
32. Bisexual*.ti,ab
33. Bi-sexual*.ti,ab
34. (transmen* or trans-men*).ti,ab
35. (transman* or trans-man).ti,ab
36. (transmale* or trans-male*).ti,ab
37. (transmasculine or trans-masculine).ti,ab

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38. (FTM OR FTMS).ti,ab
39. (Female-to-Male).ti,ab
40. ((men or man) adj4 transaction* sex*).ti,ab
41. (same gender adj2 lov*).ti,ab
42. (sex* adj2 orientation*).ti,ab
43. Pansexual*.ti,ab
44. (down-low or down low).ti,ab
45. (LGBT or GLBT).ti,ab
46. OR/21–45

HIV MeSH and Keywords

47. Exp HIV Infections/
48. HIV*.ti,ab
49. (AIDS not hearing).ti,ab
50. or/47–49
51. 20 AND 46 AND 50

2008 – Current (10 yrs. +)

Please Note:

Limiting to United States MUST be done through screening NOT the search:

- United States/ MeSH has not been uniformly attached to citations and only a small percentage of citations will be indexed with this designation.
- Authors do not always mention the United States designations in the title or abstract. Some authors may mention a city or state, but this will not be the rule leaving the search to losing important potential citations.

Latin*.mp : Captures Latino, Latina, Latinx, Latin American.

Removed: Migrant*.ti,ab

Reasoning: This term captures a high number of the excluded citations. This term does not specifically apply to Hispanic/Latin Populations and brings in citations about migrants in other countries or migrants from non-Hispanic countries into the US. This term does not seem to add value to the search.

Transients and Migrants/ also not used.

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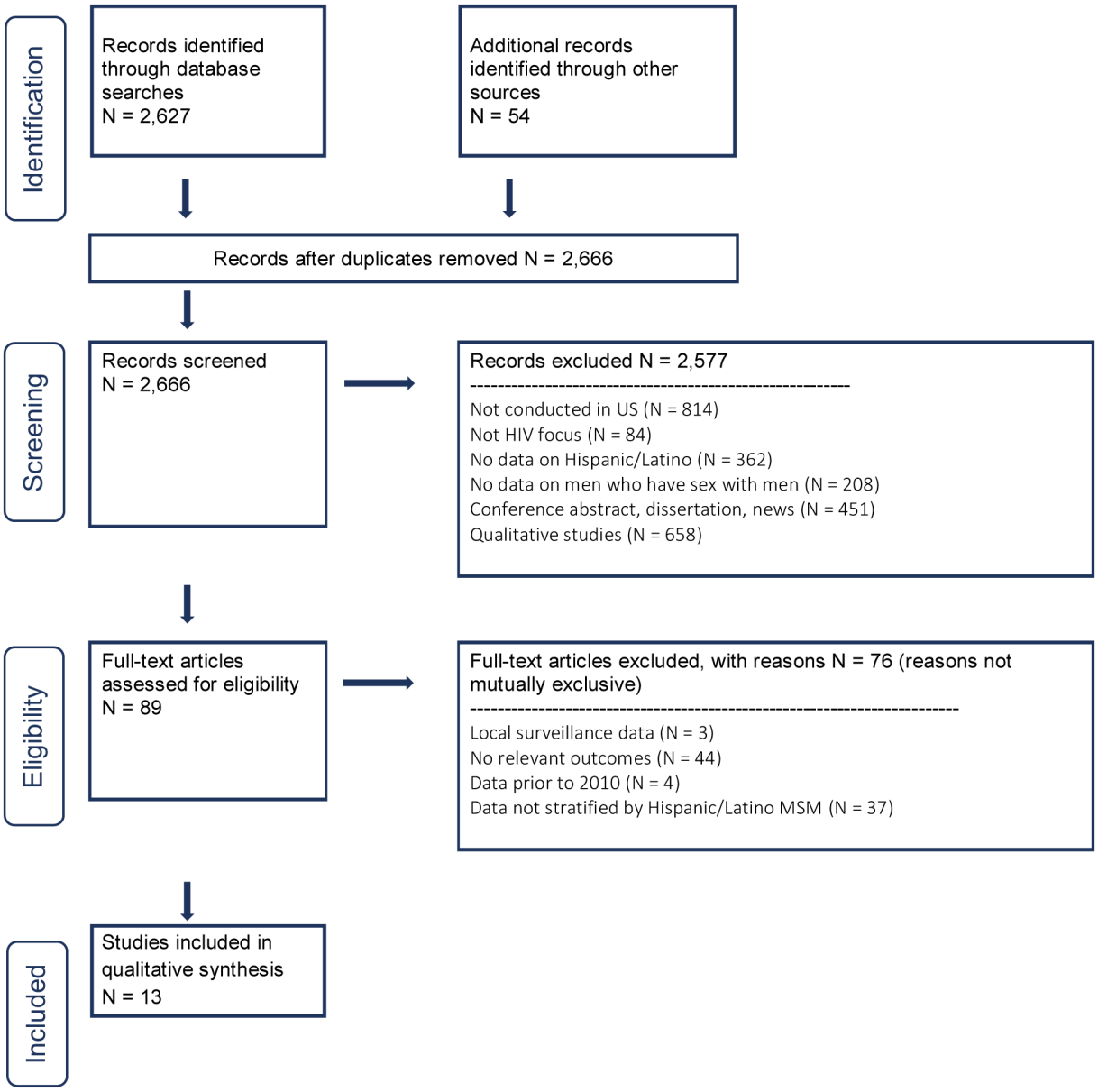

Figure 1.
PRISMA Study Flow Diagram

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Table 1.

Description of 4 national surveillance systems in 12 reports that provide HIV risk behavior and care outcomes for Hispanic/Latino and White men who have sex with men

Surveillance System Name	Included Report in Rapid Review	Description
National HIV Behavioral Surveillance (NHBS) https://www.cdc.gov/hiv/statistics/systems/nhbs/index.html	Centers for Disease Control and Prevention, 2019b	A surveillance system for conducting behavioral surveillance among persons at highest risk for HIV infection: MSM, persons who inject drugs, and heterosexuals. Surveillance is conducted in rotating annual cycles in those three different populations. Funded health departments sample MSM using venue-based, time-space sampling methods and conduct fact-to-face interviews using a standardized anonymous questionnaire.
National HIV Surveillance System (NHSS) https://www.cdc.gov/hiv/statistics/surveillance/systems/index.html	Centers for Disease Control and Prevention, 2019a, 2019c, 2020b, 2020c; Crepaz et al. 2020	A surveillance system where health departments use a uniform surveillance case definition and report information on demographics, transmission category, initial immune status, and viral load among all persons with diagnosed HIV infection in 50 states and 6 dependent areas.
Medical Monitoring Project (MMP) https://www.cdc.gov/hiv/statistics/systems/mmp/index.html	Beer et al. 2016	A population-based surveillance system for collecting information on the experiences, behaviors, medical care, and health needs of persons living with HIV in United States.
Ryan White HIV/AIDS Program (RWHAP) https://hab.hrsa.gov/data/data-reports	Health Resources and Services Administration, 2015, 2016, 2017, 2018, 2019	A program supporting direct health care and support services for approximately half of all persons living with diagnosed HIV infection in the United States and collects client-level data on demographics, retention and viral suppression reported by more than 2,000 grant recipients and sub-recipients.

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Table 2.

Percentage of HIV-negative men who have sex with mem (MSM) who reported high-risk sexual behavior,[1] and percentages of HIV-negative MSM who are at risk for HIV infection[2] and reported awareness of PrEP and reported using PrEP, by race/ethnicity, National HIV Behavioral Surveillance (NHBS) – MSM Cycle 2011, 2014, and 2017[a–d]

	% HIV-negative MSM reported high-risk sexual behavior[1,a–c]		% HIV-negative MSM who are at risk for HIV infection and reported awareness of PrEP[2,d]		% HIV-negative MSM who are at risk for HIV infection and reported using PrEP[2,d]	
	HLMSM	WMSM	HLMSM	WMSM	HLMSM	WMSM
2011	15.3%	10.8%				
2014	15.3%	10.8%	48.9%	71.7%	3.8%	8.3%
2017	12.4%	8.7%	86.6%	94.5%	30.0%	42.4%

HLMSM = Hispanic/Latino MSM; WMSM = White MSM

[1] High-risk sex was defined by NHBS as “during the 12 months before interview, did not take PrEP and at the most recent sexual encounter had vaginal or anal sex without a condom with a partner who was HIV-positive or of unknown status”.

[2] MSM who were at risk for HIV infection and likely to meet clinical indications for HIV PrEP was defined by NHBS as “men who had a negative HIV test result at the time of the interview, did not report a previous HIV-positive test result, had either one male sex partner who was HIV-positive or multiple male sex partners in the past 12 months, and reported either condomless anal sex or a sexually transmitted bacterial infection in the past 12 months.”

[a] In 2011, NHBS was conducted in 20 metropolitan statistical areas (MSAs) using venue-based, time space sampling. Details of the 2011 sample are reported in: Centers for Disease Control and Prevention. (2011). HIV infection risk, prevention, and testing behaviors among men who have sex with men - National HIV Behavioral Surveillance 20 US Cities, 2011. HIV Surveillance Report Special Report 8. Retrieved from https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-special-report-number-8.pdf

[b] In 2014, NHBS was conducted in 20 MSAs using venue-based, time space sampling. Details of the 2014 sample are reported in: Centers for Disease Control and Prevention. (2016). HIV infection risk, prevention, and testing behaviors among men who have sex with men - National HIV Behavioral Surveillance 20 US Cities, 2014. HIV Surveillance Report Special Report 15. Retrieved from https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-special-report-number-15.pdf.

[c] In 2017, NHBS was conducted in 23 MSAs using venue-based, time space sampling. Details of the 2014 sample are reported in: Centers for Disease Control and Prevention. (2019b). HIV infection risk, prevention, and testing behaviors among men who have sex with men - National HIV Behavioral Surveillance 23 US Cities, 2017. HIV Surveillance Report Special Report 22. Retrieved from https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-special-report-number-22.pdf

[d] Data from NHBS were collected in 20 U.S. urban areas in 2014 and 2017, covering 26 of the geographic areas included in Phase I of the Ending the HIV Epidemic initiative, and were compared to assess changes in PrEP awareness and use among MSM. See Teresa Finlayson, Susan Cha, Ming Xia, Lindsay Trujillo, Damian Denson, Joseph Prejean, Dafna Kanny, Cyprian Wejnert, National HIV Behavioral Surveillance Study Group. Changes in HIV Preexposure Prophylaxis Awareness and Use Among Men Who Have Sex with Men - 20 Urban Areas, 2014 and 2017. MMWR Morb Mortal Wkly Rep. 2019 Jul 12;68(27):597–603. https://www.cdc.gov/mmwr/volumes/68/wr/mm6827a1.htm.

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Table 3.

Percentage of persons with HIV who had knowledge of HIV status, were linked to care, and had viral suppression among Hispanic/Latino MSM (HLMSM) and White MSM (WMSM) in the United States, National HIV Surveillance System, 2011–2018[a–d]

	% of persons with HIV who had knowledge of their HIV status[1,a,c]		% of persons with HIV who were linked to HIV medical care within 1 months of diagnosis[2,b,d]		% of persons living with diagnosed HIV who had viral suppression[3,b,d] (VL <200)	
	HLMSM	WMSM	HLMSM	WMSM	HLMSM	WMSM
2011	76.5%	86.4%				
2012	77.3%	86.9%				
2013	77.8%	87.4%				
2014	77.1%	87.7%				
2015	77.8%	88.1%				
2016	78.4%	88.5%			63.6%	70.1%
2017	79.1%	88.9%	79.3%	82.7%		
2018	79.8%	89.3%	82.6%	84.5%	65.9%	72.9%

[1]Knowledge of HIV-positive status among persons with HIV was estimated using the first CD4 test result after HIV diagnosis and a CD4-depletion model using data from 50 states and the District of Columbia for persons aged ≥13 years.

[2]Linkage to HIV medical care was based on data for persons with infection diagnosed during a specified year and was measured by documentation of at least one CD4 or viral load test performed ≤1 month among persons aged ≥13 years residing in jurisdictions with complete laboratory reporting (NOTE: the jurisdictions that meet complete laboratory reporting may differ year by year).

[3]Viral suppression was measured for persons with HIV infection diagnosed by one year prior to the assessment year (e.g., for 2018, diagnosed by year-end 2017 and alive at year-end 2018) and was measured by a viral load test result of <200 copies/mL during the assessment year (e.g., 2018) among persons aged ≥13 years residing in jurisdictions with complete laboratory reporting (NOTE: the jurisdictions that meet complete laboratory reporting may differ year by year).

[a]Centers for Disease Control and Prevention. (2019a). Estimated HIV incidence and prevalence in the United States, 2010–2016. *HIV Surveillance Report 2019*. [24 (No.1)]. Retrieved from https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-supplemental-report-vol-24-1.pdf.

[b]Centers for Disease Control and Prevention. (2019c). Monitoring selected national HIV prevention and care objectives by using HIV surveillance data: United States and 6 Dependent Areas, 2017. *HIV Surveillance Report 2019*. [24(No.3)]. Retrieved from https://stacks.cdc.gov/view/cdc/79991.

[c]Centers for Disease Control and Prevention. (2020b). Estimated HIV incidence and prevalence in the United States 2014 – 2018. *HIV Surveillance Supplemental Report* 2020. [25(No. 1)]. Retrieved from https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-supplemental-report-vol-25-1.pdf.

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Table 4.

Percentage of persons receiving HIV care or services who had an ART prescription and had viral suppression among Hispanic/Latino men who have sex with men (HLMSM) and White MSM (WMSM) in the United States, Medical Monitoring Program (MMP)[a] and Ryan White HIV/AIDS Program,[b–f] 2011–2018

	% had ART prescription among persons in HIV care[a]		% had viral suppression (VL <200)[b–f]	
Data Source	**MMP**		**Ryan White**	
	HLMSM	**WMSM**	**HLMSM**	**WMSM**
2011	92%	93%		
2012	91%	92%		
2013	94%	95%		
2014			85.4%	88.2%
2015			86.6%	90.0%
2016			88.2%	91.0%
2017			88.8%	91.8%
2018			90.2%	92.6%

[a]Beer, L., Bradley, H., Mattson, C. L., Johnson, C. H., Hoots, B., & Shouse, R. L. (2016). Trends in racial and ethnic disparities in antiretroviral therapy prescription and viral suppression in the United States, 2009–2013. *Journal of Acquired Immune Deficiency Syndromes, 73*(4), 446–453. doi: 10.1097/qai.0000000000001125.

[b]Health Resources and Services Administration. (2015). Ryan White HIV/AIDS program annual client-level data report 2014. Retrieved from https://hab.hrsa.gov/sites/default/files/hab/data/datareports/2014rwhapdatareport.pdf.

[c]Health Resources and Services Administration. (2016). Ryan White HIV/AIDS program annual client-level data report 2015. Retrieved from https://hab.hrsa.gov/sites/default/files/hab/data/datareports/2015rwhapdatareport.pdf.

[d]Health Resources and Services Administration. (2017). Ryan White HIV/AIDS program annual client-level data report 2016. Retrieved from https://hab.hrsa.gov/sites/default/files/hab/data/datareports/RWHAP-annual-client-level-data-report-2016.pdf.

[e]Health Resources and Services Administration. (2018). Ryan White HIV/AIDS program annual client-level data report 2017. Retrieved from https://hab.hrsa.gov/sites/default/files/hab/data/datareports/RWHAP-annual-client-level-data-report-2017.pdf.

[f]Health Resources and Services Administration. (2019). Ryan White HIV/AIDS program annual client-level data report 2018. Retrieved from https://hab.hrsa.gov/sites/default/files/hab/data/datareports/RWHAP-annual-client-level-data-report-2018.pdf.