



Published in final edited form as:

AIDS. 2025 October 01; 39(12): 1813–1819. doi:10.1097/QAD.0000000000004249.

Are we ending the HIV epidemic among persons who inject drugs?: key findings from 19 US cities, 2022

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Abstract

Objectives: National HIV Behavioral Surveillance (NHBS) conducts surveillance among key populations, including persons who inject drugs (PWID). NHBS data can be used to monitor progress toward national goals, including Ending the HIV Epidemic (EHE). EHE strategies include HIV testing (Diagnose), rapid linkage to HIV treatment (Treat), and increasing access to preexposure prophylaxis (PrEP), and syringe services programs (SSPs) (Prevent). This analysis aimed to concisely compare NHBS key findings among PWID to EHE goals.

Design/methods: Cross-sectional NHBS data were collected from PWID in 2018 ($n = 9786$) and 2022 ($n = 6574$) in 19 US cities. We compared key findings from 2022 NHBS to specified EHE goals for Diagnose (HIV testing) and Treat (linkage to care, current antiretroviral therapy (ART) use) or 2018 NHBS key findings for Prevent (PrEP and SSP use).

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Target Audience: Policymakers, public health leaders, including CDC DHP and health department leadership.

Conflicts of interest

There are no conflicts of interest.

Results: In 2022, 45% of PWID were tested for HIV; 45% of PWID with HIV were linked to care within 1 month of diagnosis, and 79% were currently taking ART; 1% of PWID without HIV used PrEP; and approximately half of all PWID received syringes from an SSP. PrEP and SSP use among PWID have not changed since 2018.

Conclusion: National HIV strategies are not yet adequately reaching PWID. To end the US HIV epidemic, multilevel solutions are needed to tailor interventions for PWID and dismantle barriers to testing, treatment, and prevention. Structural solutions to improve access to basic needs and SSPs may have downstream benefits across the EHE strategies.

Keywords

Ending the HIV Epidemic; HIV; national indicators; persons who inject drugs; surveillance

Introduction

Persons who inject drugs (PWID), who accounted for 1 in 14 (7%) new HIV diagnoses in 2022 [1], experience structural (e.g. policy), organizational (e.g. community attitudes), interpersonal (e.g. relationships with providers), and individual (e.g. behaviors) challenges to accessing HIV testing, prevention, and care [2,3]. As a priority population for HIV prevention and treatment, data from PWID are routinely collected by the Centers for Disease Control and Prevention's (CDC) National HIV Behavioral Surveillance (NHBS), which conducts HIV bio-behavioral surveillance in populations disproportionately affected by HIV. The latest NHBS data on HIV-related risk, prevention, and testing behaviors among PWID were collected in 2022 (NHBS-PWID2022) [4].

As the premier national data source describing HIV-related behaviors among PWID, NHBS data can be used to monitor national indicator progress [5], including the federal government initiative, Ending the HIV Epidemic (EHE) in the United States, which focuses on scaling up evidence-based strategies to reduce new HIV infections in the United States by 90% by 2030 across four pillars: Diagnose, Treat, Prevent, and Respond [6]. Official indicators are further described in the National HIV/AIDS Strategy (NHAS) 2022–2025 [7]; however, projection models have shown that the United States is not on track to meet these ambitious goals [8]. EHE strategies can be effective, but sufficient and tailored resources are needed [9,10].

This brief report examines key findings from the NHBS-PWID2022 report in relation to EHE goals across three of the four pillars: Diagnose, Treat, and Prevent. We highlighted common barriers that PWID face across the EHE pillars and identified potential solutions that could support progress towards national EHE goals.

Methods

NHBS-PWID was conducted from June to December in 2018 and 2022. We used respondent-driven sampling (RDS) methods to recruit PWID for an interview and HIV testing [11,12]. Local PWID communities were engaged in formative assessment before data collection. Eligible participants were 18 years or older, spoke English or Spanish, injected

drugs in the past 12 months, and lived in the participating project areas. Further details are available elsewhere [4].

For each EHE pillar, we selected a benchmark to assess progress (Table 1). Benchmarks were selected based on NHAS 2022–2025 indicators and goals [7] and available NHBS data that conceptually aligned with the pillar. Official indicators used by EHE to measure progress are from different sources [13]. As NHBS data did not measure outbreak clusters, we did not include the Respond pillar. Denominators were chosen to align with the NHBS-PWID2022 surveillance report denominators.

The first EHE pillar is to diagnose all people with HIV as early as possible [14,15]. CDC recommends annual HIV testing for people with certain risk factors for HIV [16], including PWID [7,17]. Therefore, a 100% benchmark was selected. HIV testing is the pathway to engaging in status-neutral HIV prevention and treatment services.

The second EHE pillar is to treat people with HIV rapidly and effectively to achieve sustained viral suppression, which requires adherence to antiretroviral therapy (ART) [18]. In NHBS-PWID2022, 6% of PWID tested positive for HIV. The benchmark is to link 95% of persons with HIV to care within 1 month of diagnosis [7,15], which was limited to persons who received an HIV diagnosis in 2015 or later, when this guideline was initiated [18]. The second benchmark for the treat pillar is to increase viral suppression to 95% [9,14]. NHBS does not measure viral suppression; however, current ART use is measured and was selected as a proxy, because ART use is necessary to achieve viral suppression.

The third EHE pillar is to prevent new HIV transmissions using proven interventions, such as increasing the availability of PrEP and SSPs. PrEP ‘reduces the risk of getting HIV from sex by 99% and reduces the risk of getting HIV from injection drug use by at least 74%’ [14,19]. PrEP awareness is a necessary precursor to PrEP use and has historically been low among PWID; therefore, it is included. SSPs [14] are a high-impact, structural, well tolerated and cost-effective strategy that prevents HIV through harm reduction, safe syringe disposal and distribution, and comprehensive testing and social services [20,21]. The Prevent pillar benchmarks measure increases; therefore, we selected a benchmark of any increase over time using 2018 ($n = 9786$) and 2022 ($n = 6574$) NHBS-PWID data. Thus, this report was limited to the 19 project areas that participated in both cycles (NHBS-PWID 2018 and 2022 project areas: Atlanta, Georgia; Baltimore, Maryland; Chicago, Illinois; Denver, Colorado; Detroit, Michigan; Houston, Texas; Los Angeles, California; Memphis, Tennessee; New Orleans, Louisiana; New York City, New York; Newark, New Jersey; Norfolk, Virginia; Philadelphia, Pennsylvania; Portland, Oregon; San Diego, California; San Francisco, California; San Juan, Puerto Rico; Seattle, Washington; and Washington, District of Columbia).

Results

For the Diagnose pillar, only 45% of PWID in NHBS-PWID2022 were tested for HIV in 12 months prior to the interview, falling short of the goal of 100% (Fig. 1). For the Treat pillar, only 60% of PWID diagnosed since 2015 reported an HIV care visit within 1 month of

diagnosis. In NHBS-PWID2022, only 78% of PWID with diagnosed HIV reported currently taking ART. Although ART use alone is not sufficient to fully measure viral suppression, consistent ART adherence is necessary to achieve undetectable viral loads, which help keep persons with HIV healthy and avoid transmission to others [22].

For the Prevent pillar, we reported data on PrEP and SSP use. In both 2018 and 2022, only 1% of PWID without HIV had used PrEP in 12 months prior to the interview. Although PrEP awareness among PWID has increased from 2018 to 2022 (26–35%), recent PrEP use has not changed. In both 2018 and 2022, 55% of PWID received syringes from an SSP, illustrating no increase in SSP use, although there were some differences by city [4].

Discussion

Despite EHE's potential for success [9], the NHBS-PWID2022 report shows that the national strategies to end the HIV epidemic are not adequately reaching PWID, impeding progress towards national goals. PWID experience multilevel (individual, interpersonal, organizational, and structural) barriers to HIV testing, treatment, and prevention; therefore, multilevel, innovative, and well funded solutions tailored to PWID are needed [23–25], including those addressing stigma [3]. In synthesis, common themes emerge across the three pillars, highlighting opportunities for high-impact success.

Our results align with previous literature, reinforcing that HIV testing [26], treatment [27], and PrEP use [28] have been persistently suboptimal in this population. For all these outcomes, there are common contexts, barriers, and opportunities. At an individual level, many PWID lack basic needs, such as housing and food; therefore, HIV prevention may not be a priority [29]. Many PWID have low self-perception of HIV risk [30,31]; however, HIV outbreaks among PWID highlight the need for prevention in this population [32,33].

Programs implementing HIV testing, treatment, and prevention can integrate wraparound services, such as housing, employment, food, clothes, and safety [34]. Meeting basic needs empowers PWID to manage HIV risk and treatment in their daily lives, experience better quality of life, and reduce injection frequency [35]. A Housing First model that prioritizes immediate, stable housing without sobriety requirements [36] can have far-reaching benefits for PWID across the EHE pillars, as well as facilitating substance use disorder (SUD) and mental health treatment [29,37]. For PWID ready for treatment, previous research found that SUD treatment facilitates HIV treatment and PrEP adherence [30]. Telehealth models can facilitate low-barrier access to life-saving prevention and care services [38].

PWID experience stigma in healthcare settings, which can foster mistrust and deter them from engaging with healthcare systems, including HIV treatment [39]. When PWID engage with healthcare systems, there are interpersonal provider-level barriers including poor patient-provider relationships [27], stigmatizing attitudes about the ability of PWID to adhere to medication [40], and lack of provider knowledge about HIV risk or PrEP indication among PWID [30,41]. Providers who actively promote HIV testing and assess PrEP indications [19] in a stigma-free environment could alleviate these barriers, which may require PWID-focused communication to PrEP providers [30].

PrEP use is persistently low among PWID. Although PrEP awareness has increased among PWID, it is suboptimal, and attitudes towards PrEP among and for PWID are mixed [30,41]. For PWID who are interested in PrEP, biomedical strategies that require adherence and frequent provider visits can be challenging when also managing daily hardships, mental health, substance use, and healthcare discrimination [28,30,31]. Although long-acting PrEP options may address some challenges [42], access is low. PrEP efforts should be tailored to PWID's needs (e.g. text message reminders [43] and medication lockers [31,44]), advertised to PWID communities, and have community buy-in [30]. Integrating PrEP into community settings popular with PWID, such as SSPs, may reduce structural barriers [43]. Multiple HIV prevention tools are needed for PWID, including but not limited to PrEP.

Community-based SSPs integrate harm reduction, basic needs assistance, and health services [20], which can be especially helpful for PWID who have experienced stigma in conventional healthcare settings [45]. Despite efforts to increase SSP access and use [46], we found no change in SSP use overall between 2018 and 2022. COVID-19- interrupted SSPs [47]; that there was no change in SSP use highlights the dedicated efforts and adaptability from SSP staff [48]. NHBS' SSP use estimate aligns with other research (49–64% [49–51]). Barriers hinder SSP access, including distance [52,53], state and local laws [24,54], lack of awareness [49], fear of police encounters [49,55], and stigma [45,49,56]. PWID may prefer other resources for obtaining sterile syringes, such as pharmacies [56] or vending machines [56]. Some solutions include SSP staffing peers with lived experience [49], mobile units [50], increasing geographic coverage [56], and consistent and increased funding, such as EHE [46,56]. State and local laws are needed to authorize SSPs to operate, purchase sterile syringes, and distribute syringes based on need [56]. Improving structural access to SSPs could facilitate downstream improvements on HIV testing, treatment, and PrEP [56].

Finally, across all pillars, adequate funding for EHE is essential to its success [46]; however, EHE has never been fully funded [57] and funding has not been adjusted for inflation [58]. Budget constraints have hindered progress [58,59], and recent threats of funding loss jeopardize national goals [60]. Even if EHE's ambitious goals are not fully met, the effort to achieve them could still make a difference for PWID, if these proven and effective strategies are tailored to PWID's needs [57].

Limitations of this analysis include only representing PWID in large cities; unmeasured factors (e.g. ART adherence and viral load) and self-report biases (e.g. recall and social desirability). PrEP factors were not limited to those indicated for PrEP eligibility. Lastly, comparisons between 2018 and 2022 were not statistically tested. Strengths include geographically diverse project areas, standardized administration, community engagement via formative assessment, and rigorous recruitment methods.

In conclusion, the NHBS-PWID2022 key findings paint a portrait of unmet need and vulnerability to HIV among PWID. Although many analyses have discussed PWID's barriers to HIV testing, treatment, PrEP use, and SSP use separately, we encourage the public health system, including public health leaders and professionals to consider these topics holistically. Many of these important topics have similar barriers – and, often,

similar solutions – including prioritizing housing and SSPs. Whole-person [61], community-centered, and equitable approaches help EHE succeed [61]. Ending the HIV epidemic for PWID requires tailored approaches: the strategies that work well for different groups may not be ideal for PWID. In public health practice, we meet people where they are. It is time for us to reflect on whether the current strategies are adequate for meeting PWID where they are and how we can best support PWID in our nation’s aspirational HIV goals. We cannot End the HIV Epidemic in the United States if we continue to leave PWID behind.

Acknowledgements

A.R.B. (lead): conceptualization, formal analysis, methodology, writing-original draft, writing – review and editing, visualization; C.W.: conceptualization, methodology, supervision, writing – review and editing; D.K.: conceptualization, methodology, writing – review and editing; J.F.: conceptualization, methodology, writing – review and editing; R.B.H.: conceptualization, methodology, writing – review and editing; J.B.: conceptualization, methodology, writing – review and editing; J.C.B.: conceptualization, methodology, writing – review and editing; M.H.: conceptualization, methodology, visualization, writing – review and editing; T.F.: conceptualization, methodology, writing – review and editing; J.P.: conceptualization, methodology, supervision, writing – review and editing.

We acknowledge the contributions of NHBS participants, project area staff, contractors, the Behavioral and Clinical Surveillance Branch, and the NHBS-PWID 2022 and 2018 Study Group: **Atlanta, GA:** Pascale Wortley, Jeff Todd, David Melton, Genetha Mustaafta, Dena Elimam; **Baltimore, MD:** Colin Flynn, Danielle German; **Boston, MA:** Monina Klevens, Rose Doherty, Conall O’Cleirigh; **Chicago, IL:** Antonio D. Jimenez, Thomas Clyde, Darlene Nolasco Magana, Irina Tabidze; **Dallas, TX:** Jonathon Poe, Margaret Vaaler, Jie Deng; **Denver, CO:** Alia Al-Tayyib, Daniel Shodell, Jessica Forsyth, Megan Duffy; **Detroit, MI:** Emily Higgins, Vivian Griffin, Corrinne Sanger; **Houston, TX:** Salma Khuwaja, Zaida Lopez, Paige Padgett; **Indianapolis, IN:** Daniel Hillman, Evan Tiffany, Conner Tiffany; **Los Angeles, CA:** Ekow Kwa Sey, Yingbo Ma, Hugo Santacruz; **Memphis, TN:** Meredith Brantley, Christopher Mathews, Jack Marr, Monica Tate, Riley Gulbranson; **Miami, FL:** Emma Spencer, Willie Nixon, David Forrest; **Nassau-Suffolk, NY:** Bridget Anderson, Ashley Tate, Meaghan Abrego; **New Orleans, LA:** William T. Robinson, Narquis Barak, Jeremy M. Beckford, Meredith Booth; **New York City, NY:** Sarah Braunstein, Alexis Rivera, Sidney Carrillo, Pablo Martinez, Kristina Rodriguez; **Newark, NJ:** Abdel R. Ibrahim, Afework Wogayehu, Corey Rosmarin-DeStefano, Anindita Fahad; **Philadelphia, PA:** Kathleen A. Brady, Jennifer Shinefeld, Chrysanthus Nnumolu, Tanner Nassau, David Tomlinson; **Portland, OR:** Timothy W. Menza, E. Roberto Orellana, Amisha Bhattari, Lauren Lipira; **San Diego, CA:** Anna Flynn, Onika Chambers, Marisa Ramos, Stuart Watson, Stephanie Sanz, Nabeeh Hasan; **San Francisco, CA:** Willi McFarland, Jessica Lin, Desmond Miller, Moranda Tate, Erin C Wilson; **San Juan, PR:** Sandra Miranda De León, Yadira Rolón-Colón, María Pabón Martínez, Jesus Vargas-Franco; **Seattle, WA:** Tom Jaenicke, Sara Glick, Steven Erly; **Virginia Beach, VA:** Jennifer Kienzle, Brandie Smith, Toyah Reid, Jamell James, Gregg Fordham; **Washington, DC:** Jenevieve Opoku, Irene Kuo, Brittany Wilbourn, Hannah Latif; **CDC:** Monica Adams, Christine Agnew Brune, Amy Baugher, Julie Berg, Dita Broz, Janet Burnett, Susan Cha, Johanna Chapin-Bardales, Paul Denning, Patrick Eustaquio, Lyssa Faucher, Teresa Finlayson, Senad Handanagic, Savannah Harris, Maya Haynes, Rebecca Hershow, Terence Hickey, Dafna Kanny, Kathryn Lee, Rashunda Lewis, Xinyi Li, Valerie Madera-Garcia, Elana Morris, Evelyn Olansky, Ebony Respress, Taylor Robbins, Catlainn Sionean, Amanda Smith, Larshie Sutter, Anna Teplinskaya, Jeffery Todd, Lindsay Trujillo, Cyprian Wejnert, Ari Whiteman, Mingjing Xia.

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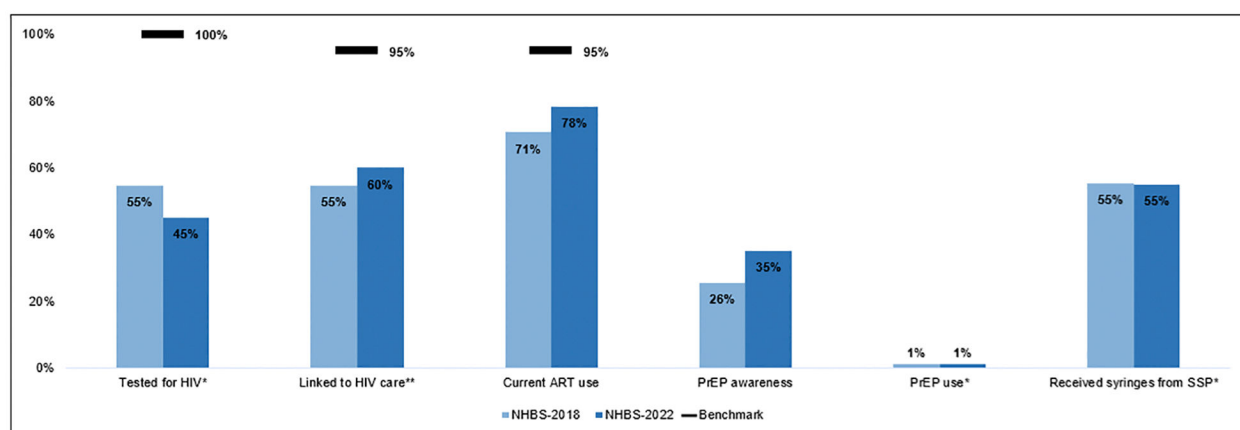


Fig. 1. Progress towards Ending the HIV Epidemic goals among persons who inject drugs – National HIV Behavioral Surveillance (NHBS) in 19 US Cities, 2018 and 2022

Abbreviations: ART = antiretroviral therapy; PrEP = preexposure prophylaxis; SSP = syringe services programs

*In the 12 months prior to interview

**Within 1 month of HIV diagnosis (2015–2022)

Benchmarks for assessing progress along the Ending the HIV Epidemic in the US Diagnose, Treat, and Prevent Pillars for persons who inject drugs.

Table 1.

EHE pillar	National HIV/AIDS Strategy (NHAS) 2022–2025 Strategy/Indicator [7]	Benchmark	Aligned National HIV Behavioral Surveillance (NHBS) self-reported variable	Denominator
Diagnose	Strategy 1.2.1: test all people for HIV according to guidelines [17]	100% of PWID received an HIV test in the past year	Received an HIV test in the 12 months prior to interview	PWID who did not report a previous HIV-positive test result or who received their first HIV-positive test result in the 12 months before interview
Treat	Indicator 5: increase linkage to care within 1 month of diagnosis [18] to 95%	95% of PWID with HIV linked to care within 1 month of diagnosis	Saw a healthcare provider for HIV care within 1 month of diagnosis	PWID who self-reported an HIV-positive diagnosis 2015 or later
	Indicator 6: increase viral suppression among people with diagnosed HIV [18] to 95%	95% of PWID with HIV achieved viral suppression	Currently taking antiretroviral therapy	PWID who self-reported HIV positive
Prevent	Strategy 1.3: expand and improve implementation of safe, effective prevention interventions, including preexposure prophylaxis (PrEP) [19] and syringe services programs (SSPs)	Increase in PrEP use from 2018 to 2022	Awareness of PrEP Used PrEP in the 12 months prior to interview	HIV-negative PWID
		Increase in SSP use from 2018 to 2022	Received a syringe from an SSP in the 12 months prior to interview	All PWID

PWID, persons who inject drugs.