

# **BESURE 2018**

## HIV Infection Risk, Prevention, and Testing Behaviors Among Persons Who Inject Drugs

BALTIMORE HIV BEHAVIORAL SURVEILLANCE  
REPORT



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## Commentary

Lowering the annual number of new HIV infections is a major HIV prevention goal [1]. This goal can be achieved by implementing three important strategies for reducing HIV infections: (1) intensifying HIV prevention efforts in communities where HIV is most heavily concentrated, including gay, bisexual, and other men who have sex with men (hereafter referred to as MSM); Black or African Americans (hereafter referred to as Black/African Americans); Hispanics or Latinos; and persons who inject drugs (PWID); (2) expanding efforts to prevent HIV infection by using a combination of effective, evidence-based, scalable approaches (including substance use treatment and access to sterile needles and syringes); and (3) educating the general public about the threat of HIV infection and how to prevent it. State and local health departments, as well as federal agencies, are expected to monitor progress toward HIV prevention goals [1].

The Centers for Disease Control and Prevention's (CDC's) National HIV Behavioral Surveillance (NHBS) serves as a key component of its high-impact prevention (HIP) approach to reducing the spread of HIV in the United States [2]. NHBS provides data for monitoring behaviors among populations at risk of acquiring or transmitting HIV infection and identifies the populations for whom scientifically proven, cost-effective, and scalable interventions are most appropriate. Monitoring key indicators among members of high-risk populations is critical to achieving the goals of the Ending the HIV Epidemic: A Plan for America initiative [3] and CDC's HIP approach. The new initiative is aimed at reducing new HIV infections by 90 percent by 2030 by implementing evidence-based strategies for specific populations in geographic areas most affected by HIV. NHBS has previously proven effective at monitoring key indicators, such as risk behaviors, HIV testing, and linkage to care; access to, and use of, prevention interventions, including preexposure prophylaxis (PrEP) and syringe services programs (SSPs); and prevalence of HIV and other infections in areas with high HIV prevalence among populations at high risk of HIV infection: MSM, PWID, and heterosexually active persons at increased risk for HIV infection [4, 5].

In Baltimore, NHBS is operated as a partnership between Maryland Department of Health (MDH) and Johns Hopkins Bloomberg School of Public Health (JHSPH). The project is locally known as BESURE, The Behavioral Surveillance Research study. BESURE participants are from the Baltimore Metropolitan Statistical Area (MSA), which consists of Baltimore City, Baltimore, Anne Arundel, Carroll, Howard, Harford, and Queen Anne's counties;

however, the vast majority of participants are from Baltimore City.

This report summarizes findings from the fifth BESURE data collection among PWID, which was conducted in 2018. Data from previous years of national data collection among PWID have been published elsewhere [6–9]. Previous BESURE PWID data is available [here](#) and by request from Principal Investigators. This report provides descriptive, unweighted data that can be used to describe HIV infection among PWID and the percentages of PWID reporting specific risk behaviors, HIV testing, and participation in prevention programs. Monitoring these outcomes is useful for assessing risk behaviors, the use of prevention efforts over time, and for identifying new HIV prevention opportunities for this population.

### TABLE ORGANIZATION

The tables in this report are ordered by content and designed to align with those published by CDC to report national NHBS data. Tables 1 and 5–16 are stratified by HIV status; that is, data are presented separately for HIV-negative participants and HIV-positive participants (HIV status determined from BESURE HIV test result). A small percentage of the sample (1.4%) could not be classified by HIV status because they had no valid BESURE HIV test result; that is, they did not consent to the HIV test or had an indeterminate result. For data completeness, data from these participants are reported in a “No valid BESURE HIV test results” column (Table 1) or row (Tables 5–16b).

Unless otherwise noted in tables, measurement notes, or the following highlights, the period for all outcomes is in the 12 months before interview.

### HIGHLIGHTS

#### Demographic Characteristics, HIV Prevalence, and HIV Testing

This report describes data from 575 PWID who participated in BESURE in 2018, of whom 71 percent identified as male, 29 percent female, and less than one percent transgender; 41 percent were white, 53 percent were Black/African Americans, and one percent were Hispanic or Latino; 44 percent were aged ≥50 years (Table 1).

Among all participants, eight percent had no health insurance, 15 percent had not visited a healthcare provider. The household income of 81 percent of participants was at or below the federal poverty level, 33 percent had received less than a high school education. Sixty percent of participants reported being homeless; 22

percent reported incarceration (Table 1).

In 2018, 10 percent of participants with a valid BESURE HIV test result tested positive for HIV (Table 2). By sex, HIV prevalence was as follows: 11 percent among males, seven percent among females. By race and ethnicity, HIV prevalence was as follows: 17 percent among Black/African Americans and two percent among whites.

CDC recommends that persons at increased risk of HIV infection, including PWID, undergo HIV testing at least annually [10]. Among participants who did not report a previous HIV-positive test result or who received their first HIV-positive test result less than 12 months before the interview, 66 percent reported that they had been tested for HIV in the 12 months before the interview, and 93 percent reported that they had ever been tested (Table 3).

Among participants who reported being tested for HIV in the 12 months before the interview, 71 percent reported their most recent test was performed in a clinical setting while 26 percent reported being tested in a nonclinical setting, such as an HIV counseling and testing site, an HIV street outreach program or mobile unit, an SSP, or at home (Table 4).

### **Sexual Behaviors**

Among PWID who were HIV-positive, 26 percent of males and 42 percent of females reported condomless vaginal sex with a partner of the opposite sex (Tables 5 and 7). Male-male anal sex was 14 percent among HIV-positive men and 14 percent of HIV-positive men reported condomless anal sex with men (Table 5). These results are particularly concerning given increased risk of HIV transmission associated with condomless anal sex among MSM [11].

Condomless sex was common among female PWID: 78 percent reported condomless vaginal sex and 18 percent reported condomless anal sex (Table 7). As research suggests [12, 13], partner type may be an important factor in condom use. Among female PWID, condomless sex with a male main partner (65%) was more common than condomless sex with a male casual partner (39%; Table 8).

Sexual behaviors are an important mode of HIV transmission among male and female PWID. The percentages of PWID who engaged in condomless sex underscore the importance of using effective, evidence-based scalable combination HIV prevention strategies that include access to and use of condoms, PrEP, and risk-reduction counseling among PWID [14–16].

### **Injection Drug Use**

PWID who engage in frequent or unsafe injection drug use are at increased risk of acquiring and transmitting HIV and other bloodborne infections, including hepatitis B virus

infection and hepatitis C virus (HCV) infection [17–21]. Approximately 93 percent of participants reported injecting heroin, and a majority (76%) reported injecting heroin daily. Seventy percent of HIV-positive PWID reported daily heroin injection; among HIV-negative PWID, 77 percent reported daily heroin injection. Sixty-seven percent reported injecting speedball (heroin and cocaine together); 10 percent of participants reported injecting methamphetamines. Among HIV-negative participants, report of methamphetamine injection decreased with increasing age; the lowest percentage reporting methamphetamine injection was among Black/African American PWID (6%) (Table 9).

One-time use of sterile needles and syringes remains the safest, most effective way to limit HIV transmission during drug injection [22]. Approximately one in three PWID reported using a syringe that had been used by someone else (i.e., receptive syringe sharing); receptive syringe sharing was reported by approximately one in four HIV-positive PWID and one in three HIV-negative PWID (Table 10). Among HIV-negative PWID, the percentage reporting receptive syringe sharing was highest among young PWID aged 25–29 years (49%) and decreased with increasing age, for those 25 and older. Additionally, 43 percent of PWID reported giving a syringe they had already used to someone else (i.e., distributive syringe sharing); a greater percentage of HIV-negative PWID reported distributive syringe sharing (45%) than HIV-positive PWID (28%).

### **Receipt of HIV Prevention**

SSPs are community-based prevention programs that can provide a range of services, including linkage to substance use disorder treatment; access to, and disposal of, sterile syringes and injection equipment; and vaccination, testing, and linkage to care and treatment for infectious diseases. Receiving sterile syringes from SSPs reduces barriers to safer injection practices among PWID and increases access to other prevention services, including substance use disorder treatment [23]. More than half (60%) of participants reported receiving syringes from SSPs (Table 11). In 2014, CDC released clinical guidance recommending the use of PrEP for persons at increased risk of acquiring HIV [24]. In 2018, one-quarter (27%) of HIV-negative PWID were aware of PrEP, and a small percentage of HIV-negative PWID (1%) reported taking PrEP to prevent HIV infection (Table 11a).

### **Sexually Transmitted Infections and Hepatitis C Virus Infections**

Sexually transmitted infections (STIs) can increase the

likelihood of acquiring and transmitting HIV [25]. The percentage of PWID who reported a diagnosis of any bacterial STI (e.g., chlamydia, gonorrhea, or syphilis) was six percent among those who were HIV- negative (Table 12).

HCV testing is recommended at least once for anyone who has ever injected drugs; HCV testing is recommended at least annually for persons who currently inject drugs and who are thus at continued risk of infection [26]. Lifetime testing for HCV among all PWID was high (84%). Further, substantial percentages of participants reported a diagnosis of hepatitis C (58% of HIV-positive PWID, 43 percent of HIV-negative PWID) (Table 13). Diagnoses of STIs and HCV infection may be more common among PWID known to be HIV-positive because of increased screening for this group. Moreover, HIV-positive PWID may be more likely to be coinfecting with HCV [27].

### Substance Use

Table 14 presents data on non-injection use of drugs. HIV-positive PWID reported less non-injection use (60%) than HIV-negative PWID (80%). Crack was used the most by PWID, followed by heroin, marijuana, and cocaine. More than half (55%) of HIV-negative PWID and 42 percent of HIV- positive PWID reported crack use.

### Additional Outcomes

Table 15 presents data on outcomes related to the risk of HIV transmission and acquisition among PWID. Outcomes reported in Table 15 are of current relevance to HIV prevention among PWID.

Although exposure to HIV through injection practices is a primary concern, sexual risk factors also play a role in transmission to and from PWID. Exchange sex and condomless sex with an HIV-discordant partner were common. More than a quarter (26%) of PWID reported exchange sex with a casual partner. Exchange sex with a casual partner was more often reported by HIV-positive PWID (37% vs 26%). Giving or receiving money or drugs in exchange for sex is a recognized risk factor for HIV infection [28]. Condomless sex with an HIV-discordant partner at last sex was reported by 27 percent of HIV-negative PWID and 30 percent of HIV-positive PWID.

Treatment for substance use disorder is an important method of HIV risk reduction because it can reduce injection-related risk of HIV transmission, and treatment programs can provide access to HIV testing and treatment. Among all participants, 59 percent had received substance use disorder treatment.

Access to safe syringe disposal can decrease the number of used syringes in the community and reduce accidental needle sticks. Only 26 percent of PWID reported

always disposing of their used syringes safely, which could suggest a need for additional safe disposal options across the Baltimore MSA.

Substance use can occur across the lifespan and may include long periods of injection drug use. Among all participants, the median number of years between the year of their first injection and the BESURE interview was 21 years. Among HIV-negative participants aged 50 years or older, the median time since first injection was 33 years.

### Opioid Use

Opioid use continues to be a major public health concern in the United States. Medication-assisted treatment (MAT) is an effective, evidence-based treatment for opioid use disorder that decreases opioid use, opioid-related overdoses, and infectious disease transmission [30–32]. Table 16 presents data on opioid use–related outcomes, including MAT and nonfatal opioid overdoses among participants who reported injection or non-injection use of heroin or other opioids not prescribed for them (includes 99 percent of all participants).

Overall, being “hooked on” prescription opioids before initiating injection drug use was common (41%), suggesting that use of prescription opioids preceded injection drug use for many participants. Among HIV-negative participants, report of being “hooked on” prescription opioids was most frequent among participants aged 25–29 years (78%), followed by 30–39 years (70%). More than one-quarter (32%) of participants reported experiencing an overdose. The percentage reporting an overdose was higher among HIV-negative participants (33%) compared to HIV-positive participants (18%). Seventy percent of participants reported having used MAT in the 12 months before the interview; however, more than one-quarter (26%) of participants reported an unmet need for MAT.

### Receipt of HIV Care

Achieving viral suppression through antiretroviral treatment can improve clinical outcomes and reduce the likelihood of HIV transmission [33]. In 2015, a national goal for linkage to care changed from increasing the percentage of persons with newly diagnosed HIV linked to care within three months of diagnosis to within one month of diagnosis [1]. In 2018, among self-reported HIV-positive PWID, 95 percent reported having ever visited a healthcare provider for HIV, 54 percent reported that they did so within one month after diagnosis, and 79 percent reported visiting a healthcare provider for HIV care in the six months before interview. Current use of antiretroviral therapy was reported by 81 percent of self- reported HIV-positive PWID (Table 17).

## Technical Notes

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In accordance with the NHBS national protocol, BESURE conducts rotating cycles of biobehavioral surveys among MSM, PWID, and heterosexually active persons at increased risk of HIV infection [5]; data are collected in annual cycles from one risk group per year so that each population is surveyed once every three years. The same general eligibility criteria are used in each cycle: age 18 years or older, current residence in Baltimore MSA, no previous participation in BESURE during the current survey cycle, ability to complete the survey in either English or Spanish, and ability to provide informed consent. In addition to these basic NHBS eligibility criteria, participation in the 2018 BESURE cycle was limited to persons who (1) reported injecting a drug that was not prescribed for them in the past 12 months, and (2) presented physical evidence of recent injection (e.g., track marks) or adequately described their injection practices.

A standardized questionnaire is used to collect information about behavioral risks for HIV infection, HIV testing, and use of HIV prevention services. The anonymous, in-person survey is administered by a trained interviewer using a portable computer. All participants are offered an anonymous HIV test, which is linked to the survey data through a unique survey identifier.

Activities for BESURE were approved by CDC [34, 35] and by the Johns Hopkins University and Maryland Department of Health institutional review boards (IRBs).

### SAMPLING METHOD

The stigma associated with injection drug use presents challenges to sampling strategies for surveillance and research efforts among PWID. Participants in the 2018 BESURE cycle were recruited by using respondent-driven sampling (RDS) [37, 38]. Recruitment started with a limited number of initial participants who were chosen by referrals from people who knew the local population of PWID or through outreach to areas where PWID could be found. Initial participants who completed the eligibility screener and were found eligible were administered the survey, and those who completed the survey were asked to recruit up to five persons whom they knew personally and who injected drugs. Those persons, in turn, completed the survey and were asked to recruit others by using a system of coded coupons. This recruitment process continued until the sample size was reached or the sampling period ended. Participants received incentives for participating in the survey and for recruiting others.

### DATA COLLECTION

Persons who brought a valid coupon to a BESURE field site were escorted to a private area for eligibility screening. For those who met eligibility requirements, trained interviewers obtained informed consent and conducted face-to-face interviews, which took approximately 40 minutes and consisted of questions concerning participants' demographic characteristics, HIV testing history, sexual and substance use behaviors, HCV testing and diagnosis of hepatitis C virus infection, STI testing and diagnosis, and use of HIV prevention services and programs. In exchange for the time spent taking part in the interview, participants received \$50.

HIV testing was performed for participants who consented; blood specimens were collected for rapid testing in the field or laboratory-based testing. A non-reactive rapid test result was considered HIV-negative; a reactive rapid test result was considered HIV-positive if supported by supplemental laboratory-based testing. In exchange for participating in HIV testing, participants received \$25. Participants also received \$15 for participating in STI testing, including gonorrhea, and chlamydia, and an additional \$10 for returning to receive their STI test results.

Participants who agreed to recruit others received an additional incentive of \$10 for each recruit (up to 5) who completed the interview. The goal was to interview 500 PWID who reported injecting a drug that was not prescribed for them in the past 12 months.

### DATA ANALYSIS

This surveillance report presents descriptive data; no statistical tests were performed. In addition, these data are cross-sectional; we did not attempt to infer causal relationships. Small numbers, and percentages based on these numbers, should be interpreted with caution because the numbers are considered unreliable.

Data for this report are not weighted. The purpose of this report is to provide a detailed summary of surveillance data collected as part of the BESURE 2018 cycle; unweighted data provide an efficient and transparent way to do so. Further, unweighted analysis allows for detailed reporting of outcomes among small subgroups of the population of interest.

Seven hundred and forty-six persons were recruited to participate in BESURE in 2018. Of those, 168 were excluded from the survey because they did not meet BESURE eligibility criteria. Three interviews were not included due to incomplete survey data or survey responses

of questionable validity. Four interviews from participants who reported being transgender were not included in this report because the sample size was smaller than our data suppression policy would allow. There is a dearth of behavioral surveillance data about the health of transgender individuals in Baltimore and elsewhere. To address this gap, the CLEAR study, a current MDH-funded project of BESURE, is designed to generate comparable data and identify the strengths and assets, and understand health, social, and service needs of transgender and non-binary individuals living in and around Baltimore City.

The full analysis sample for this report includes 2018 BESURE cycle participants who consented to and completed the survey (n=571, Table 1). Additional inclusion criteria were applied for certain analyses of HIV infection, HIV-associated behaviors, and opioid use-related outcomes; details of each analysis sample can be found in the footnotes of each table.

### **DATA SUPPRESSION**

In order to protect the confidentiality of BESURE study participants, data are suppressed in the following instances: 1) All data describing less than five people; 2) If any cell is suppressed, additional cells are also suppressed as necessary to prevent back calculation of the suppressed cell(s).

### **SUPPLEMENTAL MATERIAL**

Infographic: HIV infection risk, prevention, and testing behaviors among persons who inject drugs— National HIV Behavioral Surveillance, Baltimore MD, 2018

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**Table 1. Selected characteristics of persons who inject drugs—BESURE, 2018**

	HIV-negative <sup>a</sup>		No valid BESURE HIV test result <sup>c</sup>				Total	
	No.	%	No.	%	No.	%	No.	%
<b>Sex</b>								
Male	356	70.1	43	78.2	8	100.0	407	71.3
Female	152	29.9	12	21.8	--	--	164	28.7
<b>Age at interview (yr)</b>								
18–24	14	2.8	--	--	--	--	14	2.5
25–29	55	10.8	***	***	***	***	56	9.8
30–39	113	22.2	***	***	***	***	116	20.3
40–49	117	23.0	14	25.5	***	***	133	23.3
≥50	209	41.1	39	70.9	***	***	252	44.1
<b>Race/ethnicity</b>								
American Indian/Alaska Native	***	***	--	--	--	--	***	***
Asian	***	***	--	--	--	--	***	***
Black/African American	249	49.0	***	***	***	***	303	53.1
Hispanic/Latino <sup>d</sup>	8	1.6	--	--	--	--	8	1.4
White	225	44.3	***	***	***	***	233	40.8
Multiple races	18	3.5	***	***	***	***	19	3.3
<b>Education</b>								
Less than high school	170	33.5	17	30.9	***	***	190	33.3
High school diploma or equivalent	215	42.3	27	49.1	***	***	244	42.7
Some college or technical degree	111	21.9	***	***	***	***	124	21.7
College degree or more	12	2.4	***	***	***	***	13	2.3
<b>Household income<sup>e</sup></b>								
At or below the federal poverty level	408	80.3	***	***	***	***	460	80.6
Above the federal poverty level	93	18.3	***	***	***	***	104	18.2
Unknown	7	1.4	--	--	--	--	7	1.2
<b>Health insurance</b>								
Yes	462	90.9	***	***	***	***	522	91.4
No	***	***	***	***	***	***	***	***
Unknown	***	***	--	--	--	--	***	***
<b>Visited a health care provider, past 12 months</b>								
Yes	430	84.6	***	***	***	***	488	85.5
No	78	15.4	***	***	***	***	83	14.5
<b>Homeless,<sup>f</sup> past 12 months</b>								
Yes	316	62.2	***	***	***	***	343	60.1
No	192	37.8	***	***	***	***	228	39.9
<b>Incarcerated,<sup>g</sup> past 12 months</b>								
Yes	118	23.2	***	***	***	***	127	22.2
No	390	76.8	***	***	***	***	444	77.8
<b>Total</b>	<b>508</b>	<b>100.0</b>	<b>57</b>	<b>100.0</b>	<b>8</b>	<b>100.0</b>	<b>575</b>	<b>100.0</b>

Note. “Past 12 months” refers to the 12 months before interview.

<sup>a</sup> Participants with a valid negative BESURE HIV test result.

<sup>b</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

<sup>c</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test or had an indeterminate laboratory result.

<sup>d</sup> Hispanics/Latinos can be of any race.

<sup>e</sup> Poverty level is based on household income and household size.

<sup>f</sup> Living on the street, in a shelter, in a single-room–occupancy hotel, or in a car.

<sup>g</sup> Having been held in a detention center, jail, or prison for more than 24 hours.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 2. HIV prevalence among persons who inject drugs, by sex—BESURE, 2018**

	Male			Female			Full sample		
	HIV-positive <sup>a</sup>		Total	HIV-positive <sup>a</sup>		Total	HIV-positive <sup>a</sup>		Total
	No.	%	No.	No.	%	No.	No.	%	No.
<b>Age at interview (yr)</b>									
18–24	--	--	***	--	--	***	--	--	14
25–29	***	***	***	***	***	***	***	***	56
30–39	***	***	77	--	--	37	***	***	114
40–49	10	11.9	84	***	***	47	14	10.7	131
≥50	32	16.8	190	7	12.1	58	39	15.7	248
<b>Race/ethnicity</b>									
American Indian/Alaska Native	***	***	***	--	--	--	--	--	***
Asian	***	***	***	--	--	--	--	--	***
Black/African American	40	18.6	215	***	***	84	50	16.7	299
Hispanic/Latino <sup>b</sup>	--	--	8	--	--	--	--	--	8
White	***	***	152	***	***	***	5	2.2	230
Multiple races	--	--	16	--	--	***	--	--	18
<b>Total</b>	<b>43</b>	<b>10.8</b>	<b>399</b>	<b>12</b>	<b>7.3</b>	<b>164</b>	<b>55</b>	<b>9.8</b>	<b>563</b>

Note. Data include all participants with a valid BESURE HIV test result.

<sup>a</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

<sup>b</sup> Hispanics/Latinos can be of any race.

\*\*\* Cells containing fewer than five have been suppressed

**Table 3. HIV testing among persons who inject drugs—BESURE, 2018**

	Ever tested		Tested in past 12 months <sup>a</sup>		Total No.
	No.	%	No.	%	
<b>Sex</b>					
Male	350	92.6	249	65.9	378
Female	148	96.1	104	67.5	154
<b>Age at interview (yr)</b>					
18–24	12	85.7	7	50.0	14
25–29	54	96.4	41	73.2	56
30–39	107	92.2	78	67.2	116
40–49	115	91.3	88	69.8	126
≥50	210	95.5	139	63.2	220
<b>Race/ethnicity</b>					
American Indian/Alaska Native	***	***	***	***	***
Asian	***	***	***	***	***
Black/African American	259	96.3	187	69.5	269
Hispanic/Latino <sup>b</sup>	8	100.0	***	***	8
White	205	89.9	139	61.0	228
Multiple races	18	94.7	16	84.2	19
<b>Total</b>	<b>498</b>	<b>93.6</b>	<b>353</b>	<b>66.4</b>	<b>532</b>

Note. CDC recommends that all persons who inject drugs be tested for HIV at least annually. Data include all participants who did not report a previous HIV-positive test result and participants who received their first HIV-positive test result less than 12 months before interview.

<sup>a</sup> “Past 12 months” refers to the 12 months before interview.

<sup>b</sup> Hispanics/Latinos can be of any race.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 4. Setting of most recent HIV test among persons who inject drugs and who were tested for HIV in the 12 months before interview—BESURE, 2018**

	Clinical setting <sup>a</sup>		Nonclinical setting <sup>b</sup>		Total No.
	No.	%	No.	%	
<b>Sex</b>					
Male	170	68.3	69	27.7	249
Female	80	76.9	22	21.2	104
<b>Age at interview (yr)</b>					
18–24	6	85.7	***	***	7
25–29	31	75.6	***	***	41
30–39	60	76.9	17	21.8	78
40–49	58	65.9	28	31.8	88
≥50	95	68.3	37	26.6	139
<b>Race/ethnicity</b>					
American Indian/Alaska Native	***	***	***	***	***
Asian	***	***	--	--	***
Black/African American	121	64.7	57	30.5	187
Hispanic/Latino <sup>c</sup>	***	***	***	***	***
White	113	81.3	23	16.5	139
Multiple races	6	37.5	10	62.5	16
<b>Total</b>	<b>250</b>	<b>70.8</b>	<b>91</b>	<b>25.8</b>	<b>353</b>

Abbreviation: HMO, health maintenance organization [footnotes only].

Note. Data report setting of most recent HIV test. Data include participants who reported an HIV test during the 12 months before interview. Percentages may not add to 100 because of missing data and “Other” locations, which could not be classified as clinical/nonclinical settings.

<sup>a</sup> Clinical settings include private doctor’s office (including HMO), emergency department, hospital (inpatient), public health clinic or community health center, family planning or obstetrics clinic, correctional facility, or drug treatment program.

<sup>b</sup> Nonclinical settings include HIV counseling and testing site, HIV street outreach program, mobile unit, syringe services program, or home.

<sup>c</sup> Hispanics/Latinos can be of any race.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 5. Sexual behavior with female and male sex partners in the 12 months before interview among males who inject drugs—BESURE, 2018**

	With female sex partners								With male sex partners						With males and females—sex of any type <sup>a</sup>		Total males
	Vaginal sex		Condomless vaginal sex		Anal sex		Condomless anal sex		Oral or anal sex		Anal sex		Condomless anal sex		No.	%	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
<b>HIV-negative<sup>b</sup></b>	297	83.4	254	71.3	102	28.7	88	24.7	8	2.2	***	***	***	***	7	2.0	356
<b>Age at interview (yr)</b>																	
18–24	10	90.9	10	90.9	***	***	***	***	--	--	--	--	--	--	--	--	11
25–29	33	89.2	32	86.5	***	***	***	***	***	***	***	***	***	***	***	***	37
30–39	68	89.5	62	81.6	28	36.8	25	32.9	***	***	***	***	***	***	***	***	76
40–49	60	81.1	49	66.2	19	25.7	14	18.9	***	***	--	--	--	--	***	***	74
≥50	126	79.7	101	63.9	41	25.9	35	22.2	***	***	--	--	--	--	***	***	158
<b>Race/ethnicity</b>																	
American Indian/Alaska Native	***	***	***	***	***	***	***	***	--	--	--	--	--	--	--	--	5
Asian	***	***	***	***	--	--	--	--	--	--	--	--	--	--	--	--	***
Black/African American	142	81.1	111	63.4	46	26.3	36	20.6	***	***	***	***	--	--	***	***	175
Hispanic/Latino <sup>c</sup>	7	87.5	7	87.5	***	***	***	***	***	***	--	--	--	--	***	***	8
White	129	86.6	117	78.5	43	28.9	39	26.2	***	***	***	***	***	***	***	***	149
Multiple races	11	68.8	11	68.8	5	31.3	5	31.3	***	***	***	***	***	***	--	--	16
<b>HIV-positive<sup>d</sup></b>	21	48.8	11	25.6	7	16.3	***	***	7	16.3	***	***	***	***	***	***	43
<b>Age at interview (yr)<sup>e</sup></b>																	
30–39	--	--	--	--	--	--	--	--	***	***	***	***	***	***	--	--	***
40–49	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
≥50	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	32
<b>Race/ethnicity<sup>e</sup></b>																	
Black/African American	***	***	***	***	7	17.5	***	***	7	17.5	***	***	***	***	***	***	***
White	***	***	***	***	--	--	--	--	--	--	--	--	--	--	--	--	***
<b>No valid BESURE HIV test result<sup>f</sup></b>	5	62.5	***	***	***	***	***	***	--	--	--	--	--	--	--	--	8
<b>Total</b>	<b>323</b>	<b>79.4</b>	<b>269</b>	<b>66.1</b>	<b>112</b>	<b>27.5</b>	<b>93</b>	<b>22.9</b>	<b>15</b>	<b>3.7</b>	<b>10</b>	<b>2.5</b>	<b>9</b>	<b>2.2</b>	<b>9</b>	<b>2.2</b>	<b>407</b>

a Participants who reported oral, vaginal, or anal sex with at least 1 female partner and oral or anal sex with at least 1 male partner in the 12 months before interview.

b Participants with a valid negative BESURE HIV test result.

c Hispanics/Latinos can be of any race.

d Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

e Categories with no data have been omitted from the table.

f Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test or had an indeterminate laboratory result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 6. Sexual behavior with female sex partners in the 12 months before interview among males who inject drugs, by partner type— BESURE, 2018**

	Main female partner				Casual female partner				Main and casual female partners- sex of any type <sup>a</sup>		Total males No.
	Vaginal or anal sex		Condomless vaginal or anal sex		Vaginal or anal sex		Condomless vaginal or anal sex		No.	%	
	No.	%	No.	%	No.	%	No.	%			
<b>HIV-negative<sup>b</sup></b>	209	58.7	189	53.1	162	45.5	123	34.6	78	21.9	356
<b>Age at interview (yr)</b>											
18–24	9	81.8	9	81.8	***	***	***	***	***	***	11
25–29	25	67.6	25	67.6	***	***	***	***	***	***	37
30–39	48	63.2	46	60.5	40	52.6	32	42.1	20	26.3	76
40–49	39	52.7	34	45.9	39	52.7	27	36.5	20	27	74
≥50	88	55.7	75	47.5	61	38.6	44	27.8	25	15.8	158
<b>Race/ethnicity</b>											
American Indian/Alaska Native	***	***	***	***	***	***	***	***	***	***	***
Asian	***	***	***	***	***	***	***	***	***	***	***
Black/African American	107	61.1	90	51.4	71	40.6	45	25.7	39	22.3	175
Hispanic/Latino <sup>c</sup>	5	62.5	5	62.5	***	***	***	***	***	***	8
White	82	55	79	53	77	51.7	66	44.3	30	20.1	149
Multiple races	7	43.8	7	43.8	8	50	7	43.8	***	***	16
<b>HIV-positive<sup>d,e</sup></b>	14	32.6	8	18.6	10	23.3	5	11.6	***	***	43
<b>Age at interview (yr)</b>											
30–39	--	--	--	--	--	--	--	--	--	--	***
40–49	***	***	--	--	***	***	***	***	***	***	***
≥50	***	***	8	25	***	***	***	***	***	***	32
<b>Race/ethnicity<sup>e</sup></b>											
Black/African American	13	32.5	7	17.5	9	22.5	***	***	***	***	***
White	***	***	***	***	***	***	***	***	--	--	***
<b>No valid BESURE HIV test result<sup>f</sup></b>	***	***	***	***	***	***	***	***	***	***	8
<b>Total</b>	<b>226</b>	<b>55.5</b>	<b>200</b>	<b>49.1</b>	<b>175</b>	<b>43</b>	<b>131</b>	<b>32.2</b>	<b>325</b>	<b>79.9</b>	<b>407</b>

<sup>a</sup> Participants who reported oral, vaginal, or anal sex with at least one female main partner and at least one female casual partner in the 12 months before interview.

<sup>b</sup> Participants with a valid negative BESURE HIV test result.

<sup>c</sup> Hispanics/Latinos can be of any race.

<sup>d</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

<sup>e</sup> Categories with no data have been omitted from the table.

<sup>f</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test, had an indeterminate laboratory result, or reported a previous HIV-positive test result but had a negative BESURE HIV test result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 7. Sexual behavior with male sex partners in the 12 months before interview among females who inject drugs—BESURE, 2018**

	Vaginal sex		Condomless vaginal sex		Anal sex		Condomless anal sex		Total females
	No.	%	No.	%	No.	%	No.	%	No.
<b>HIV-negative<sup>a</sup></b>	129	84.9	123	80.9	39	25.7	27	17.8	152
<b>Age at interview (yr)</b>									
18 - 24	***	***	***	***	--	--	--	--	***
25 - 29	***	***	***	***	5	27.8	***	***	***
30 - 39	32	86.5	31	83.8	12	32.4	8	21.6	37
40 - 49	39	90.7	37	86	14	32.6	10	23.3	43
>=50	37	72.5	36	70.6	8	15.7	***	***	51
<b>Race/ethnicity<sup>b</sup></b>									
Black/African American	***	***	***	***	***	***	***	***	***
White	69	90.8	63	82.9	22	28.9	15	19.7	76
Multiple races	***	***	***	***	***	***	***	***	***
<b>HIV-positive<sup>b,c</sup></b>	8	66.7	5	41.7	***	***	***	***	12
<b>Age at interview (yr)</b>									
25–29	***	***	--	--	--	--	--	--	***
40–49	***	***	***	***	***	***	***	***	***
≥50	***	***	***	***	--	--	--	--	7
<b>Race/ethnicity<sup>b</sup></b>									
Black/African American	***	***	***	***	***	***	***	***	***
White	***	***	***	***	***	***	***	***	***
<b>Total</b>	<b>137</b>	<b>83.5</b>	<b>128</b>	<b>78</b>	<b>41</b>	<b>25</b>	<b>29</b>	<b>17.7</b>	<b>164</b>

<sup>a</sup> Participants with a valid negative BESURE HIV test result.

<sup>b</sup> Categories with no data have been omitted from the table.

<sup>c</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 8. Sexual behavior with male sex partners in the 12 months before interview among females who inject drugs, by partner type— BESURE, 2018**

	Main male partner				Casual male partner				Main and casual male partners-sex of any type <sup>a</sup>		Total females No.
	Vaginal or anal sex		Condomless vaginal or anal sex		Vaginal or anal sex		Condomless vaginal or anal sex		No.	%	
	No.	%	No.	%	No.	%	No.	%			
<b>HIV-negative<sup>b</sup></b>	106	69.7	104	68.4	74	48.7	61	40.1	53	34.9	152
<b>Age at interview (yr)</b>											
18–24	***	***	***	***	***	***	***	***	***	***	***
25–29	***	***	***	***	***	***	***	***	***	***	***
30–39	27	73	27	73	17	45.9	15	40.5	13	35.1	37
40–49	35	81.4	34	79.1	22	51.2	16	37.2	18	41.9	43
≥50	27	52.9	27	52.9	17	33.3	15	29.4	8	15.7	51
<b>Race/ethnicity<sup>c</sup></b>											
Black/African American	50	67.6	50	67.6	28	37.8	22	29.7	21	28.4	74
White	***	***	***	***	***	***	***	***	***	***	***
Multiple races	***	***	***	***	***	***	***	***	***	***	***
<b>HIV-positive<sup>d</sup></b>	5	41.7	***	***	5	41.7	***	***	***	***	12
<b>Age at interview (yr)<sup>c</sup></b>											
25–29	--	--	--	--	***	***	--	--	--	--	***
40–49	***	***	***	***	***	***	***	***	***	***	***
≥50	***	***	--	--	***	***	***	***	***	***	7
<b>Race/ethnicity<sup>c</sup></b>											
Black/African American	***	***	***	***	***	***	***	***	***	***	***
White	***	***	***	***	***	***	***	***	***	***	***
<b>Total</b>	<b>111</b>	<b>67.7</b>	<b>107</b>	<b>65.2</b>	<b>79</b>	<b>48.2</b>	<b>64</b>	<b>39</b>	<b>55</b>	<b>33.5</b>	<b>164</b>

<sup>a</sup> Participants who reported oral, vaginal, or anal sex with at least 1 male main partner and at least 1 male casual partner in the 12 months before interview.

<sup>b</sup> Participants with a valid negative BESURE HIV test result.

<sup>c</sup> Categories with no data have been omitted from the table.

<sup>d</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 9. Injection drug use in the 12 months before interview, by selected drugs—BESURE, 2018**

	Heroin		Speedball <sup>a</sup>				Powdered or crack cocaine				Methamphetamine				Prescription opioids				Other drug		Total No.		
	Injected, past 12 months		Injected daily		Injected, past 12 months		Injected daily		Injected, past 12 months		Injected daily		Injected, past 12 months		Injected daily		Injected, past 12 months						
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%					
<b>HIV-negative<sup>b</sup></b>	476	93.7	394	77.6	334	65.7	199	39.2	288	56.7	125	24.6	54	10.6	19	3.7	109	21.5	29	5.7	42	8.3	508
<b>Sex</b>																							
Male	336	94.4	278	78.1	251	70.5	147	41.3	224	62.9	100	28.1	42	11.8	***	***	73	20.5	18	5.1	33	9.3	356
Female	140	92.1	116	76.3	83	54.6	52	34.2	64	42.1	25	16.4	12	7.9	***	***	36	23.7	11	7.2	9	5.9	152
<b>Age at interview (yr)</b>																							
18–24	14	100.0	13	92.9	7	50.0	***	***	8	57.1	***	***	***	***	***	***	***	***	***	***	***	***	14
25–29	51	92.7	46	83.6	34	61.8	***	***	32	58.2	***	***	12	21.8	***	***	***	***	***	***	7	12.7	55
30–39	109	96.5	93	82.3	78	69.0	43	38.1	74	65.5	29	25.7	19	16.8	***	***	36	31.9	14	12.4	14	12.4	113
40–49	108	92.3	91	77.8	79	67.5	52	44.4	60	51.3	26	22.2	***	***	***	***	22	18.8	***	***	12	10.3	117
≥50	194	92.8	151	72.2	136	65.1	82	39.2	114	54.5	53	25.4	12	5.7	7	3.3	30	14.4	7	3.3	***	***	209
<b>Race/ethnicity</b>																							
American Indian/Alaska Native	***	***	***	***	***	***	***	***	***	***	***	***	--	--	--	--	***	***	--	--	--	--	***
Asian	***	***	***	***	***	***	***	***	***	***	***	***	--	--	--	--	--	--	--	--	--	--	***
Black/African American	223	89.6	172	69.1	168	67.5	113	45.4	119	47.8	55	22.1	15	6.0	***	***	37	14.9	14	5.6	***	***	249
Hispanic/Latino <sup>c</sup>	8	100.0	7	87.5	***	***	***	***	5	62.5	***	***	***	***	--	--	--	--	--	--	--	--	8
White	220	97.8	194	86.2	145	64.4	73	32.4	149	66.2	62	27.6	35	15.6	10	4.4	64	28.4	***	***	24	10.7	225
Multiple races	17	94.4	13	72.2	10	55.6	7	38.9	10	55.6	***	***	***	***	***	***	***	***	***	***	***	***	18
<b>HIV-positive<sup>d</sup></b>	52	94.5	38	69.1	40	72.7	25	45.5	32	58.2	16	29.1	***	***	***	***	5	9.1	***	***	***	***	55
<b>Sex</b>																							
Male	40	93.0	29	67.4	32	74.4	19	44.2	25	58.1	11	25.6	***	***	***	***	5	11.6	***	***	***	***	43
Female	12	100.0	9	75.0	8	66.7	6	50.0	7	58.3	5	41.7	***	***	***	***	--	--	***	***	***	***	12
<b>Age at interview (yr)<sup>e</sup></b>																							
25–29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	--	--	--	--	--	--	--	--	***
30–39	***	***	***	***	***	***	***	***	***	***	***	***	***	***	--	--	--	--	--	--	--	--	***
40–49	14	100.0	11	78.6	11	78.6	7	50.0	9	64.3	5	35.7	***	***	***	***	***	***	***	***	***	***	14
≥50	36	92.3	26	66.7	27	69.2	17	43.6	21	53.8	10	25.6	***	***	***	***	***	***	***	***	***	***	39
<b>Race/ethnicity<sup>e</sup></b>																							
Black/African American	47	94.0	33	66.0	***	***	***	***	***	***	***	***	***	***	***	***	5	10.0	***	***	***	***	50
White	5	100.0	5	100.0	***	***	***	***	***	***	***	***	***	***	***	***	--	--	***	***	***	***	5
<b>No valid BESURE HIV test result<sup>f</sup></b>	8	100.0	7	87.5	5	62.5	***	***	5	62.5	***	***	***	***	--	--	--	--	--	--	--	--	8
<b>Total</b>	<b>536</b>	<b>93.9</b>	<b>439</b>	<b>76.9</b>	<b>379</b>	<b>66.4</b>	<b>227</b>	<b>39.8</b>	<b>325</b>	<b>56.9</b>	<b>144</b>	<b>25.2</b>	<b>60</b>	<b>10.5</b>	<b>20</b>	<b>3.5</b>	<b>114</b>	<b>20.0</b>	<b>30</b>	<b>5.3</b>	<b>43</b>	<b>7.5</b>	<b>571</b>

Note. "Past 12 months" refers to the 12 months preceding interview.

<sup>a</sup> Heroin and cocaine being injected together.

<sup>b</sup> Participants with a valid negative BESURE HIV test result.

<sup>c</sup> Hispanics/Latinos can be of any race.

<sup>d</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based

testing.

<sup>e</sup> Categories with no data have been omitted from the table.

<sup>f</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test or had an indeterminate laboratory result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 10. Sharing of injection equipment in the 12 months before interview among persons who inject drugs—BESURE, 2018**

	Receptive sharing							Distributive sharing			Total No.
	Syringes <sup>a</sup>		Injection equipment <sup>b</sup>		Syringes to divide drugs <sup>c</sup>		Any <sup>d</sup>		Syringes <sup>e</sup>		
	No.	%	No.	%	No.	%	No.	%	No.	%	
<b>HIV-negative<sup>f</sup></b>	172	33.9	304	59.8	203	40.0	327	64.4	229	45.1	508
<b>Sex</b>											
Male	117	32.9	211	59.3	136	38.2	227	63.8	159	44.7	356
Female	55	36.2	93	61.2	67	44.1	100	65.8	70	46.1	152
<b>Age at interview (yr)</b>											
18–24	5	35.7	7	50.0	7	50.0	8	57.1	7	50.0	14
25–29	27	49.1	37	67.3	25	45.5	40	72.7	35	63.6	55
30–39	45	39.8	78	69.0	53	46.9	81	71.7	64	56.6	113
40–49	36	30.8	72	61.5	50	42.7	77	65.8	58	49.6	117
≥50	59	28.2	110	52.6	68	32.5	121	57.9	65	31.1	209
<b>Race/ethnicity</b>											
American Indian/Alaska Native	***	***	***	***	***	***	***	***	***	***	***
Asian	***	***	***	***	***	***	***	***	***	***	***
Black/African American	51	20.5	127	51.0	76	30.5	140	56.2	69	27.7	249
Hispanic/Latino <sup>g</sup>	6	75.0	8	100.0	7	87.5	8	100.0	7	87.5	8
White	103	45.8	153	68.0	108	48.0	162	72.0	139	61.8	225
Multiple races	8	44.4	11	61.1	8	44.4	12	66.7	9	50.0	18
<b>HIV-positive<sup>h</sup></b>	14	25.5	30	54.5	21	38.2	32	58.2	15	27.3	55
<b>Sex</b>											
Male	***	***	23	53.5	16	37.2	24	55.8	***	***	43
Female	***	***	7	58.3	5	41.7	8	66.7	***	***	12
<b>Age at interview (yr)<sup>i</sup></b>											
25–29	***	***	***	***	***	***	***	***	--	--	***
30–39	***	***	***	***	***	***	***	***	--	--	***
40–49	7	50.0	8	57.1	9	64.3	9	64.3	7	50.0	14
≥50	6	15.4	21	53.8	11	28.2	21	53.8	8	20.5	39
<b>Race/ethnicity<sup>j</sup></b>											
Black/African American	***	***	***	***	***	***	***	***	***	***	50
White	***	***	***	***	***	***	***	***	***	***	5
<b>No valid BESURE HIV test result<sup>j</sup></b>	***	***	***	***	***	***	***	***	***	***	8
<b>Total</b>	<b>188</b>	<b>32.9</b>	<b>336</b>	<b>58.8</b>	<b>226</b>	<b>39.6</b>	<b>361</b>	<b>63.2</b>	<b>247</b>	<b>43.3</b>	<b>571</b>

<sup>a</sup> Used a syringe or needle that had already been used by someone else for injection.

<sup>b</sup> Used a cooker (e.g., spoon, bottle cap) or cotton (to filter particles from drug solution) that had already been used by someone else or shared water for rinsing.

<sup>c</sup> Divided a drug solution by using a syringe that had already been used by someone else for injection.

<sup>d</sup> Used a syringe or needle that had already been used by someone else for injection, used a cooker or cotton that had already been used by someone else, shared water for rinsing, or divided a drug solution by using a syringe that had already been used by someone else for injection.

<sup>e</sup> Participants who gave their syringe or needle to someone else to use after they had already used it for injection.

<sup>f</sup> Participants with a valid negative BESURE HIV test result.

<sup>g</sup> Hispanics/Latinos can be of any race.

<sup>h</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

<sup>i</sup> Categories with no data have been omitted from the table.

<sup>j</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test or had an indeterminate laboratory result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 11. Receipt of HIV prevention materials and services in the 12 months before interview among persons who inject drugs—BESURE, 2018**

	Syringes from SSPs		Syringes from pharmacy		Injection equipment from SSPs		Free condoms <sup>a</sup>		Individual- or group-level intervention <sup>b</sup>		PrEP awareness <sup>c</sup>		PrEP use <sup>d</sup>		Total No.
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<b>HIV-negative<sup>e</sup></b>	304	59.8	103	20.3	260	51.2	289	56.9	220	43.3	137	27.0	6	1.2	508
<b>Sex</b>															
Male	220	61.8	71	19.9	182	51.1	202	56.7	146	41.0	97	27.2	***	***	356
Female	84	55.3	32	21.1	78	51.3	87	57.2	74	48.7	40	26.3	***	***	152
<b>Age at interview (yr)</b>															
18–24	7	50.0	9	64.3	6	42.9	6	42.9	***	***	***	***	--	--	14
25–29	37	67.3	11	20.0	35	63.6	30	54.5	***	***	***	***	***	***	55
30–39	65	57.5	31	27.4	66	58.4	63	55.8	46	40.7	46	40.7	***	***	113
40–49	78	66.7	22	18.8	66	56.4	68	58.1	60	51.3	25	21.4	***	***	117
≥50	117	56.0	30	14.4	87	41.6	122	58.4	89	42.6	38	18.2	***	***	209
<b>Race/ethnicity</b>															
American Indian/Alaska Native	***	***	***	***	***	***	***	***	***	***	***	***	--	--	5
Asian	***	***	***	***	***	***	***	***	***	***	***	***	--	--	2
Black/African American	158	63.5	23	9.2	122	49.0	143	57.4	109	43.8	49	19.7	***	***	249
Hispanic/Latino <sup>f</sup>	6	75.0	***	***	6	75.0	***	***	***	***	***	***	--	--	8
White	127	56.4	69	30.7	120	53.3	129	57.3	97	43.1	74	32.9	***	***	225
Multiple races	11	61.1	***	***	9	50.0	10	55.6	9	50.0	10	55.6	***	***	18
<b>HIV-positive<sup>g</sup></b>	29	52.7	***	***	24	43.6	40	72.7	36	65.5	--	--	--	--	55
<b>Sex</b>															
Male	20	46.5	***	***	17	39.5	31	72.1	26	60.5	--	--	--	--	43
Female	9	75.0	***	***	7	58.3	9	75.0	10	83.3	--	--	--	--	12
<b>Age at interview (yr)<sup>h</sup></b>															
25–29	***	***	***	***	***	***	***	***	***	***	--	--	--	--	***
30–39	***	***	***	***	***	***	***	***	***	***	--	--	--	--	***
40–49	11	78.6	***	***	10	71.4	9	64.3	7	50.0	--	--	--	--	14
≥50	17	43.6	***	***	13	33.3	30	76.9	27	69.2	--	--	--	--	39
<b>Race/ethnicity<sup>h</sup></b>															
Black/African American	***	***	***	***	***	***	***	***	***	***	--	--	--	--	50
White	***	***	***	***	***	***	***	***	***	***	--	--	--	--	5
<b>No valid BESURE HIV test result<sup>i</sup></b>	6	75.0	***	***	6	75.0	5	62.5	6	75.0	--	--	--	--	8
<b>Total</b>	<b>339</b>	<b>59.4</b>	<b>109</b>	<b>19.1</b>	<b>290</b>	<b>50.8</b>	<b>334</b>	<b>58.5</b>	<b>262</b>	<b>45.9</b>	<b>137</b>	<b>24.0</b>	<b>6</b>	<b>1.1</b>	<b>571</b>

Abbreviations: SSPs, syringe services programs; PrEP, preexposure prophylaxis.

<sup>a</sup> Excludes condoms received from friends, relatives, or sex partners.

<sup>b</sup> Individual-level intervention defined as a one-on-one conversation with an outreach worker, a counselor, or a prevention program worker about ways to prevent HIV. Group-level intervention defined as a small-group discussion that is part of an organized session about ways to prevent HIV; excludes informal discussions with friends. Conversations that were part of obtaining an HIV test were excluded.

<sup>c</sup> Ever heard of PrEP, an antiretroviral medicine taken for months or years by a person who is HIV-negative to reduce the risk of getting HIV.

<sup>d</sup> Took PrEP at any point in the 12 months before interview to reduce the risk of getting HIV.

<sup>e</sup> Participants with a valid negative BESURE HIV test result.

<sup>f</sup> Hispanics/Latinos can be of any race.

<sup>g</sup> Participants with a reactive rapid BESURE HIV test result supported by a second rapid test or supplemental laboratory-based testing.

<sup>h</sup> Categories with no data have been omitted from the table.

<sup>i</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test or had an indeterminate laboratory result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 12. Diagnosis of sexually transmitted infections among persons who inject drugs—BESURE, 2018**

	Diagnosis during the 12 months preceding interview								Diagnosis, ever				Total No.
	Any bacterial STI <sup>a</sup>		Chlamydia		Gonorrhea		Syphilis		Genital warts		Genital herpes		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<b>HIV-negative<sup>b</sup></b>	29	5.7	11	2.2	16	3.1	11	2.2	23	4.5	21	4.1	508
<b>Sex</b>													
Male	16	4.5	***	***	9	2.5	5	1.4	12	3.4	8	2.2	356
Female	13	8.6	***	***	7	4.6	6	3.9	11	7.2	13	8.6	152
<b>Age at interview (yr)</b>													
18–24	***	***	***	***	***	***	--	--	--	--	--	--	14
25–29	6	10.9	***	***	***	***	***	***	***	***	***	***	55
30–39	6	5.3	***	***	***	***	***	***	***	***	6	5.3	113
40–49	***	***	***	***	***	***	***	***	6	5.1	6	5.1	117
≥50	12	5.7	***	***	5	2.4	7	3.3	12	5.7	***	***	209
<b>Race/ethnicity</b>													
American Indian/Alaska Native	--	--	--	--	--	--	--	--	--	--	--	--	***
Asian	--	--	--	--	--	--	--	--	--	--	--	--	***
Black/African American	16	6.4	***	***	11	4.4	6	2.4	13	5.2	7	2.8	249
Hispanic/Latino <sup>c</sup>	--	--	--	--	--	--	--	--	--	--	***	***	8
White	***	***	6	2.7	5	2.2	***	***	***	***	***	***	225
Multiple races	***	***	***	***	--	--	***	***	***	***	***	***	18
<b>HIV-positive<sup>d</sup></b>	***	***	***	***	***	***	***	***	***	***	***	***	55
<b>Sex</b>													
Male	***	***	***	***	***	***	***	***	***	***	***	***	43
Female	***	***	***	***	***	***	***	***	***	***	***	***	12
<b>Age at interview (yr)<sup>e</sup></b>													
25–29	--	--	--	--	--	--	--	--	--	--	--	--	***
30–39	--	--	--	--	--	--	--	--	***	***	--	--	***
40–49	--	--	--	--	--	--	--	--	***	***	--	--	14
≥50	***	***	***	***	***	***	***	***	***	***	***	***	39
<b>Race/ethnicity<sup>e</sup></b>													
Black/African American	***	***	***	***	***	***	***	***	***	***	***	***	50
White	--	--	--	--	--	--	--	--	--	--	***	***	5
<b>No valid BESURE HIV test result<sup>f</sup></b>	--	--	--	--	--	--	--	--	***	***	***	***	8
<b>Total</b>	<b>33</b>	<b>5.8</b>	<b>13</b>	<b>2.3</b>	<b>18</b>	<b>3.2</b>	<b>14</b>	<b>2.5</b>	<b>27</b>	<b>4.7</b>	<b>26</b>	<b>4.6</b>	<b>571</b>

Abbreviations: STI, sexually transmitted infection

<sup>a</sup>Any bacterial STI includes having received a diagnosis of gonorrhea, chlamydia, or syphilis in the 12 months before interview.

<sup>b</sup>Participants with a valid negative BESURE HIV test result.

<sup>c</sup>Hispanics/Latinos can be of any race.

<sup>d</sup>Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

<sup>e</sup>Categories with no data have been omitted from the table.

<sup>f</sup>Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test, had an indeterminate laboratory result, or reported a previous HIV-positive test result but had a negative BESURE HIV test result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 13. Lifetime testing for, and diagnosis of, hepatitis C among persons who inject drugs—  
BESURE, 2018**

	HCV testing		HCV diagnosis <sup>a</sup>		Total No.
	No.	%	No.	%	
<b>HIV-negative<sup>b</sup></b>	430	84.6	218	42.9	508
<b>Sex</b>					
Male	297	83.4	148	41.6	356
Female	133	87.5	70	46.1	152
<b>Age at interview (yr)</b>					
18–24	14	100.0	5	35.7	14
25–29	49	89.1	22	40.0	55
30–39	95	84.1	46	40.7	113
40–49	95	81.2	47	40.2	117
≥50	177	84.7	98	46.9	209
<b>Race/ethnicity</b>					
American Indian/Alaska Native	***	***	***	***	***
Asian	***	***	***	***	***
Black/African American	207	83.1	92	36.9	249
Hispanic/Latino <sup>c</sup>	7	87.5	***	***	8
White	194	86.2	113	50.2	225
Multiple races	15	83.3	9	50.0	18
<b>HIV-positive<sup>d</sup></b>	44	80.0	31	56.4	55
<b>Sex</b>					
Male	33	76.7	23	53.5	43
Female	11	91.7	8	66.7	12
<b>Age at interview (yr)<sup>e</sup></b>					
25–29	***	***	***	***	***
30–39	***	***	***	***	***
40–49	9	64.3	6	42.9	14
≥50	34	87.2	24	61.5	39
<b>Race/ethnicity<sup>e</sup></b>					
Black/African American	39	78.0	26	52.0	50
White	5	100.0	5	100.0	5
<b>No valid BESURE HIV test result<sup>f</sup></b>	***	***	***	***	8
<b>Total</b>	<b>480</b>	<b>84.1</b>	<b>252</b>	<b>44.1</b>	<b>571</b>

Abbreviations: HCV, hepatitis C virus

<sup>a</sup> Self-reported diagnosis.

<sup>b</sup> Participants with a valid negative BESURE HIV test result.

<sup>c</sup> Hispanics/Latinos can be of any race.

<sup>d</sup> Participants with a reactive rapid BESURE HIV test result supported by a second rapid test or supplemental laboratory-based testing.

<sup>e</sup> Categories with no data have been omitted from the table.

<sup>f</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test, had an indeterminate laboratory result, or reported a previous HIV-positive test result but had a negative BESURE HIV test result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 14. Non-injection drug use in the 12 months before interview and binge drinking in the 30 days before interview among persons who inject drugs—BESURE, 2018**

	Used drug	
	No.	%
<b>HIV-negative<sup>a</sup></b>		
Binge drinking (past 30 days) <sup>b</sup>	108	21.2
Any non-injection drugs (excludes binge drinking)	407	80.1
Cocaine	230	45.3
Crack	280	55.1
Downers <sup>c</sup>	218	42.9
Ecstasy	52	10.2
Heroin	274	53.9
Marijuana	270	53.1
Methamphetamine	54	10.6
Prescription opioids <sup>d</sup>	184	36.2
<b>HIV-positive<sup>e</sup></b>		
Binge drinking (past 30 days) <sup>b</sup>	7	12.7
Any non-injection drugs (excludes binge drinking)	32	58.2
Cocaine	18	32.7
Crack	22	40
Downers <sup>c</sup>	12	21.8
Ecstasy	2	3.6
Heroin	21	38.2
Marijuana	19	34.5
Methamphetamine	4	7.3
Prescription opioids <sup>d</sup>	10	18.2

Disclaimer: The use of trade names is for identification only and does not imply endorsement by the Johns Hopkins Bloomberg School of Public Health or the Maryland Department of Health.

Note. Denominator is the total number of participants in the category; HIV-negative participants: n = 508; HIV-positive participants: n = 55; participants without a valid BESURE HIV test result: n = 8. Responses are not mutually exclusive; percentages may not add to 100.

<sup>a</sup> Participants with a valid negative BESURE HIV test result.

<sup>b</sup> Defined as 5 or more drinks within about 2 hours (males) or 4 or more drinks within about 2 hours (females) in the 30 days before interview.

<sup>c</sup> Benzodiazepines, such as Valium, Ativan, or Xanax.

<sup>d</sup> Painkillers, such as Oxycontin, Vicodin, morphine, or Percocet.

<sup>e</sup> Participants with a reactive rapid BESURE HIV test result supported by a second rapid test or supplemental laboratory-based testing.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 15. Additional outcomes among persons who inject drugs—BESURE, 2018**

	Sexual behaviors						Substance use behaviors					
	Number of opposite sex partners Median (Q1–Q3)	Exchange sex <sup>a</sup>		Condomless sex with an HIV-discordant partner at last sex <sup>b</sup>		Total No.	Substance use disorder treatment <sup>c</sup>		Safe syringe disposal only <sup>d</sup>		Years since first injection Median (Q1–Q3)	Total No.
		No.	%	No.	%		No.	%	No.	%		
<b>HIV-negative<sup>e</sup></b>	1(1-3)	133	26.2	138	27.2	508	296	58.3	127	25.0	20(9-31)	508
<b>Sex</b>												
Male	1(1-3)	73	20.5	105	29.5	356	207	58.1	93	26.1	22(10-33)	356
Female	1(1-5)	60	39.5	33	21.7	152	89	58.6	34	22.4	18(8-29)	152
<b>Age at interview (yr)</b>												
18–24	2(1-3)	***	***	***	***	14	9	64.3	***	***	6(4-7)	14
25–29	1(1-3)	***	***	***	***	55	34	61.8	***	***	6(2-9)	55
30–39	1(1-3)	25	22.1	36	31.9	113	73	64.6	32	28.3	11(6-16)	113
40–49	1(1-3)	37	31.6	28	23.9	117	66	56.4	29	24.8	22(14-27)	117
≥50	1(1-3)	55	26.3	56	26.8	209	114	54.5	50	23.9	33(24-40)	209
<b>Race/ethnicity</b>												
American Indian/Alaska Native	1(1-3)	***	***	***	***	***	***	***	***	***	15(9-33)	***
Asian	2(1-3)	***	***	***	***	***	***	***	***	***	27(6-47)	***
Black/African American	1(1-3)	73	29.3	61	24.5	249	133	53.4	62	24.9	28(18-38)	249
Hispanic/Latino <sup>g</sup>	1(1-2)	***	***	***	***	8	6	75.0	***	***	9(5-20)	8
White	1(1-3)	53	23.6	68	30.2	225	141	62.7	58	25.8	13(6-21)	225
Multiple races	2(0-4)	5	27.8	5	27.8	18	13	72.2	***	***	17(7-24)	18
<b>HIV-positive<sup>h</sup></b>	1(0-1)	13	23.6	13	23.6	55	40	72.7	15	27.3	31(20-39)	55
<b>Sex</b>												
Male	1(0-1)	***	***	8	18.6	43	30	69.8	10	23.3	35(19-40)	43
Female	1(0-3)	***	***	5	41.7	12	10	83.3	5	41.7	27(22-31)	12
<b>Age at interview (yr)<sup>i</sup></b>												
25–29	3(3-3)	***	***	***	***	***	***	***	***	***	11(11-11)	***
30–39	0(0-0)	***	***	***	***	***	***	***	***	***	14(14-14)	***
40–49	1(0-3)	5	35.7	7	50.0	14	9	64.3	***	***	20(16-28)	14
≥50	1(0-1)	6	15.4	5	12.8	39	29	74.4	9	23.1	36(27-43)	39
<b>Race/ethnicity<sup>i</sup></b>												
Black/African American	1(0-1)	***	***	***	***	50	35	70.0	***	***	32(20-40)	50
White	1(1-3)	***	***	***	***	5	5	100.0	***	***	25(20-31)	5
<b>No valid BESURE HIV test result<sup>j</sup></b>	2(0-7)	--	--	***	***	8	***	***	***	***	30(7-45)	8
<b>Total</b>	<b>1(1-3)</b>	<b>146</b>	<b>25.6</b>	<b>154</b>	<b>27.0</b>	<b>571</b>	<b>339</b>	<b>59.4</b>	<b>146</b>	<b>25.6</b>	<b>21(10-33)</b>	<b>571</b>

Abbreviations: Q, quartile; SSP, syringe services program [footnotes only].

Note. BESURE sexual behavior questions assume anatomy based on reported sex (male or female).

<sup>a</sup> For females, "exchange sex" refers to receiving money or drugs from a male casual partner in exchange for sex. For males, "exchange sex" refers to giving money or drugs to a female casual partner in exchange for sex, or giving or receiving money or drugs from a male casual partner in exchange for sex.

<sup>b</sup> "Condomless sex" refers to whether the participant reported engaging in vaginal or anal sex without a condom at any time during his or her most recent sexual encounter with an opposite-sex partner. "HIV-discordant partner" refers to a partner of different or unknown HIV status.

<sup>c</sup> Participated in a substance use treatment program (including outpatient, inpatient, residential, detox, or 12-step program) in the 12 months before interview.

<sup>d</sup> Syringes were disposed of by putting them in a medical waste container and/or by exchanging

them at an SSP, and no unknown or unsafe disposal method was indicated in the 12 months before interview.

<sup>e</sup> Participants with a valid negative BESURE HIV test result.

<sup>g</sup> Hispanics/Latinos can be of any race.

<sup>h</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

<sup>i</sup> Categories with no data have been omitted from the table.

<sup>j</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test or had an indeterminate laboratory result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 16. Opioid use–related outcomes among persons who reported injection or non-injection use of opioids—  
BESURE, 2018**

	Hooked on opioids before first injection		Medication-assisted treatment (MAT)						Total No.
			Used MAT <sup>a</sup>		Unmet need for MAT <sup>b</sup>		Nonfatal opioid overdose <sup>c</sup>		
	No.	%	No.	%	No.	%	No.	%	No.
<b>HIV-negative<sup>d</sup></b>	221	43.7	355	70.2	131	25.9	165	32.6	506
<b>Sex</b>									
Male	140	39.4	245	69.0	89	25.1	118	33.2	355
Female	81	53.6	110	72.8	42	27.8	47	31.1	151
<b>Age at interview (yr)</b>									
18–24	9	64.3	12	85.7	***	***	8	57.1	14
25–29	43	78.2	38	69.1	***	***	16	29.1	55
30–39	79	69.9	86	76.1	29	25.7	36	31.9	113
40–49	45	38.5	80	68.4	33	28.2	46	39.3	117
≥50	45	21.7	139	67.1	58	28.0	59	28.5	207
<b>Race/ethnicity</b>									
American Indian/Alaska Native	***	***	***	***	***	***	***	***	***
Asian	***	***	***	***	***	***	***	***	***
Black/African American	64	25.9	166	67.2	72	29.1	69	27.9	247
Hispanic/Latino <sup>e</sup>	5	62.5	***	***	***	***	***	***	8
White	138	61.3	165	73.3	51	22.7	79	35.1	225
Multiple races	9	50.0	15	83.3	***	***	11	61.1	18
<b>HIV-positive<sup>f</sup></b>	9	16.7	40	74.1	12	22.2	10	18.5	54
<b>Sex</b>									
Male	***	***	29	69.0	***	***	10	23.8	42
Female	***	***	11	91.7	***	***	--	--	12
<b>Age at interview (yr)</b>									
25–29	***	***	***	***	--	--	--	--	***
30–39	***	***	***	***	--	--	--	--	***
40–49	***	***	11	78.6	***	***	***	***	14
≥50	5	13.2	27	71.1	***	***	***	***	38
<b>Race/ethnicity</b>									
Black/African American	***	***	35	71.4	***	***	***	***	49
White	***	***	5	100.0	***	***	***	***	5
<b>No valid BESURE HIV test result<sup>g</sup></b>	***	***	5	62.5	***	***	5	62.5	8
<b>Total</b>	<b>231</b>	<b>40.7</b>	<b>400</b>	<b>70.4</b>	<b>147</b>	<b>25.9</b>	<b>180</b>	<b>31.7</b>	<b>568</b>

Note. Data include all participants who reported any injection or non-injection use of opioids in the 12 months before interview. Opioids include heroin and painkillers.

<sup>a</sup> Used medicines, such as methadone or buprenorphine, to treat drug use in the 12 months before interview.

<sup>b</sup> Tried but unable to obtain medicines, such as methadone or buprenorphine, to treat drug use in the 12 months before interview.

<sup>c</sup> Passed out, turned blue, or stopped breathing from using heroin or painkillers in the 12 months before interview.

<sup>d</sup> Participants with a valid negative BESURE HIV test result.

<sup>e</sup> Hispanics/Latinos can be of any race.

<sup>f</sup> Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.

<sup>g</sup> Categories with no data have been omitted from the table.

<sup>h</sup> Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test, had an indeterminate laboratory result, or reported a previous HIV-positive test result but had a negative BESURE HIV test result.

\*\*\* Cells containing fewer than five have been suppressed.

**Table 17. Receipt of HIV care and treatment among self-reported HIV-positive persons who inject drugs—  
BESURE, 2018**

	Visited health care provider about HIV						Currently taking anti-HIV medicines		Total No.
	Ever		Within 1 month after diagnosis		During past 6 months		No.	%	
	No.	%	No.	%	No.	%	No.	%	
<b>Sex</b>									
Male	28	93.3	13	43.3	23	76.7	24	80.0	30
Female	11	100.0	9	81.8	9	81.8	9	81.8	11
<b>Age at interview (yr)<sup>a</sup></b>									
25–29	***	***	***	***	***	***	***	***	***
40–49	***	***	***	***	***	***	***	***	***
≥50	31	100.0	17	54.8	26	83.9	27	87.1	31
<b>Race/ethnicity<sup>a</sup></b>									
Black/African American	34	94.4	***	***	***	***	***	***	***
White	5	100.0	***	***	***	***	***	***	***
<b>Total</b>	<b>39</b>	<b>95.1</b>	<b>22</b>	<b>53.7</b>	<b>32</b>	<b>78.0</b>	<b>33</b>	<b>80.5</b>	<b>41</b>

*Note.* Data include all participants who reported having ever received an HIV-positive test result (which may include those who did not have a valid BESURE HIV test result, positive or negative, or who did not consent to the HIV test). “Past 6 months” refers to the 6 months before interview.

<sup>a</sup> Categories with no data have been omitted from the table.

\*\*\* Cells containing fewer than five have been suppressed.

## Appendix: Measurement Notes

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### **SOCIODEMOGRAPHIC CHARACTERISTICS**

- Age: Calculated from the reported date of birth; age categories were chosen for epidemiologic relevance and consistency of reporting across all 3 National HIV Behavioral Surveillance (NHBS) populations.
- Race/ethnicity: Participants reported 1 or more race categories (American Indian or Alaska Native, Asian, Black/African American, Native Hawaiian or other Pacific Islander, and white). Hispanic or Latino ethnicity was asked separately; participants reporting Hispanic or Latino ethnicity were considered Hispanic or Latino, regardless of reported race. Participants reporting multiple races (but not Hispanic or Latino ethnicity) were classified as multiple races.
- Education: Highest level of education completed.
- Household income: Participants were asked about their combined monthly or yearly household income (in US\$) from all sources for the calendar year before interview. Poverty was determined by using the U.S. Department of Health and Human Services poverty guidelines for 2018. These guidelines are issued yearly for the United States and are one of the indicators used for determining eligibility for many federal and state programs. The 2018 guidelines [1] were used for participants interviewed in 2018. Participants were asked to identify the range of their income by selecting from a list of income ranges and the number of dependents on that income. If the participant's income range and household size resulted in an ambiguous determination of poverty level, the participant's household income was assumed to be the low-point of the income range.
- Health insurance: Currently having some form of health insurance.
- Homeless: Living on the street, in a shelter, in a single-room-occupancy hotel, or in a car at any time in the 12 months before interview.
- Incarcerated: Having been held in a detention center, jail, or prison, for more than 24 hours in the 12 months before interview.
- City: Throughout this report, the Baltimore MSA is referred to as Baltimore, but is inclusive of Baltimore City, Baltimore, Anne Arundel, Carroll, Howard, Harford, and Queen Anne's counties.

- State and local health departments eligible to participate in NHBS are those in jurisdictions that included an MSA or a specified division within an MSA with high prevalence of HIV. This report presents 2018 data for the Baltimore MSA, which represented approximately 54 percent of all persons living with diagnosed HIV in Maryland in 2019.

### **HIV STATUS**

HIV testing was performed for participants who consented to testing; blood specimens were collected for rapid testing in the field or supplemental laboratory-based testing.

- HIV-negative: Participants with a valid negative BESURE HIV test result.
- HIV-positive: Participants with a reactive rapid BESURE HIV test result supported by supplemental laboratory-based testing.
- No valid BESURE HIV test result: Participants who did not have a valid positive or negative BESURE HIV test result, including those who did not consent to the HIV test, had an indeterminate laboratory result or reported a previous HIV-positive test result but had a negative BESURE HIV test result.

### **HIV TESTING**

- Ever tested: Having had an HIV test during one's lifetime.
- Tested in past 12 months: Having had an HIV test in the 12 months before interview.
- Clinical setting: Participants reported the location of their most recent HIV test—private doctor's office (including health maintenance organizations), emergency department, hospital (inpatient), public health clinic or community health center, family planning or obstetrics clinic, correctional facility (jail or prison), or drug treatment program.
- Nonclinical setting: Participants reported the location of their most recent HIV test—HIV counseling and testing site, HIV street outreach program or mobile unit, SSP, or home.
- "Other" locations could not be classified and are excluded from the clinical/nonclinical setting classification.

### **SEXUAL BEHAVIORS**

- Any sex: Includes vaginal, oral, or anal sex.
- Vaginal sex: Penis inserted into a partner's vagina.
- Oral sex: Mouth on a partner's vagina or penis.

- Anal sex: Penis inserted into a partner's anus.
- Condomless sex: Vaginal or anal sex during which a condom is either not used or is not used at any time throughout the sex act.
- Main partner: Person with whom the participant has sex and to whom he or she feels most committed (e.g., girlfriend/boyfriend, wife/husband, significant other, or life partner).
- Casual partner: Person with whom the participant has sex, but to whom he or she does not feel committed or whom he or she does not know very well.

### **INJECTION DRUG USE AND BEHAVIORS**

Participants were asked about their injection of specific drugs (excluding those prescribed for them) in the 12 months before interview.

- Injected in the past 12 months: The participant reported injecting the specified drug at least once in the 12 months before interview.
- Injected daily: The participant reported injecting the specified drug daily in the 12 months before interview.
- Heroin: Injection of heroin by itself.
- Speedball: Injection of heroin and cocaine together through a single injection.
- Powder or crack cocaine: Injection of crack or powdered cocaine.
- Methamphetamine: Injection of methamphetamine.
- Prescription opioids: Injection of painkillers not prescribed for the participant, such as Oxycontin, Dilaudid, morphine, Percocet, or Demerol.
- Other drug: Injection of any drug not prescribed for the participant, other than those listed above.
- Receptive sharing of syringes: Injecting with a syringe or needle that had already been used by someone else for injection.
- Receptive sharing of injection equipment: Using a cooker or cotton (used to filter particles from drug solution) that had already been used by someone else, or using shared water for rinsing or injection.
- Receptive sharing of syringes to divide drugs: Dividing a drug solution by using a syringe that had already been used by someone else for injection.
- Any receptive sharing: Any combination of the 3 measures listed above.
- Distributive sharing: A participant giving his or her syringe or needle to someone else to use after he or she had already used it for injection.

### **RECEIPT OF HIV PREVENTION MATERIALS**

- Syringes from SSPs: Having received any new, sterile syringes from SSPs in the 12 months before interview.
- Syringes from pharmacy: Having received any new, sterile syringes from a pharmacy in the 12 months before interview.
- Injection equipment from SSPs: Having received injection equipment from SSPs in the 12 months before interview. Injection equipment includes items such as cookers, cotton, or water for rinsing needles; does NOT include syringes or needles.
- Free condoms: Having received free condoms in the 12 months before interview, not including those given by a friend, relative, or sex partner.
- Individual- or group-level intervention: A composite measure based on having received individual- or group-level HIV interventions. An individual-level intervention is a one-on-one conversation with an outreach worker, a counselor, or a prevention program worker about ways to prevent HIV, excluding conversations that were part of HIV testing. A group-level intervention is a small-group discussion (as part of an organized session) about ways to prevent HIV, excluding informal discussions with friends.
- PrEP awareness: Ever heard of PrEP, an antiretroviral medicine taken for months or years by a person who is HIV negative to reduce the risk of getting HIV.
- PrEP use: Took PrEP at any point in the 12 months before interview to reduce the risk of getting HIV.

### **SEXUALLY TRANSMITTED INFECTIONS**

- Chlamydia: Having received a diagnosis of chlamydia in the 12 months before interview.
- Gonorrhea: Having received a diagnosis of gonorrhea in the 12 months before interview.
- Syphilis: Having received a diagnosis of syphilis in the 12 months before interview.
- Any bacterial STI: Having received a diagnosis of chlamydia, gonorrhea, or syphilis in the 12 months before interview.
- Genital warts: Having received a diagnosis of genital warts during one's lifetime.
- Genital herpes: Having received a diagnosis of genital herpes during one's lifetime.

### **HEPATITIS C VIRUS INFECTION**

- Hepatitis C testing: Having had a hepatitis C test during one's lifetime.
- Hepatitis C diagnosis: Having ever been told that he or she had hepatitis C infection by a doctor, nurse, or other health care provider.

## NON-INJECTION SUBSTANCE USE

Participants were asked about their non-injection use of drugs (excluding those prescribed for them) in the 12 months before interview and their use of alcohol during the 30 days before interview. Participants were not limited in the number of substances they could report. Participants were considered to have used a substance if they reported using that substance with any frequency other than “never.”

- Binge drinking: Consumed 5 or more drinks (males) or 4 or more drinks (females) in about 2 hours in the 30 days before interview.
- Any non-injection drug: Used any non-injection drug, excluding alcohol, in the 12 months before interview.
- Cocaine: Used powdered cocaine in the 12 months before interview.
- Crack: Used crack cocaine in the 12 months before interview.
- Downers: Used downers (benzodiazepines), such as Klonopin, Valium, Ativan, or Xanax, by means other than injection in the 12 months before interview.
- Ecstasy: Used X or ecstasy in the 12 months before interview.
- Heroin: Used heroin (smoked or snorted) in the 12 months before interview.
- Marijuana: Used marijuana in the 12 months before interview.
- Methamphetamine: Used methamphetamines, including meth, crystal meth, speed, or crank, by means other than injection in the 12 months before interview.
- Prescription opioids: Used pain killers, such as Oxycontin, Vicodin, morphine, or Percocet, in the 12 months before interview.

## ADDITIONAL OUTCOMES

Table 15 includes outcomes that were of interest at the time of publication but were not included in other tables.

- Number of sex partners: Median number of opposite sex partners in the 12 months before interview; first and third quartiles (25th and 75th percentiles) are also reported.
- Exchange sex: For females, refers to receiving money or drugs from a male casual partner in exchange for sex in the 12 months before interview. For males, refers to giving money or drugs to a female casual partner in exchange for sex, or giving or receiving money or drugs in exchange for sex with a male casual partner in the 12 months before interview.

- Condomless sex with an HIV-discordant partner at last sex: A composite measure based on self-reported HIV status of the participant (positive, negative, or unknown), the participant’s knowledge of the HIV status of his or her most recent sex partner (positive, negative, or unknown), and whether the participant reported engaging in vaginal or anal sex without a condom during his or her most recent sexual encounter. A partner was considered to be of discordant or unknown HIV status if the participant reported that one member of the partnership was known to be HIV-positive and the other was known to be HIV-negative, or if he or she did not know the HIV status of at least one member of the partnership (participant or partner). The result of the BESURE HIV test completed after the interview was not factored into this measure.
- Substance use disorder treatment: Participated in a substance use treatment program (including outpatient, inpatient, residential, detox, or 12- step program) in the 12 months before interview.
- Safe syringe disposal only: Disposed of syringes by putting them in a medical waste container or by exchanging them at an SSP, and no unknown or unsafe disposal method was indicated in the 12 months before interview.
- Years since first injection: Number of years since the participant first injected drugs not prescribed to him or her, based on the participant’s reported age at first injection.

## OPIOID USE–RELATED OUTCOMES

Opioid use–related outcomes were assessed for participants who reported injection or non-injection use of heroin or other opioids not prescribed for them in the 12 months before the interview.

- Hooked on opioids before first injection: Participant reported being “hooked on painkillers” before injecting drugs for the very first time.
- Used MAT: Having taken medicines like methadone, buprenorphine, Suboxone, or Subutex to treat drug use in the 12 months before interview.
- Unmet need for MAT: Participant reported trying but being unable to obtain medicines such as methadone, buprenorphine, Suboxone, or Subutex to treat drug use in the 12 months before interview.
- Nonfatal opioid overdose: Having passed out, turned blue, or stopped breathing from using heroin or painkillers in the 12 months before interview.

## RECEIPT OF HIV CARE

Participants who reported having received a positive HIV

test result before interview were asked about their receipt of HIV care. Specifically, participants were asked: the date of their first HIV-positive test result; if they had ever visited a doctor, nurse, or other health care provider for a medical evaluation or care related to their HIV infection; the date of their first visit to a health care provider for HIV care after learning they had HIV; the date of their most recent visit to a health care provider for HIV care; and whether they were currently taking any antiretroviral medicines.

- Visited health care provider about HIV, ever:  
Having ever visited a health care provider for HIV care.
- Visited health care provider about HIV, within 1 month after diagnosis: Having visited a health care provider for HIV care within 1 month after the date of his or her first HIV-positive test result.
- Visited health care provider about HIV, in the past 6 months: Having visited a health care provider for HIV care in the 6 months before date of interview.
- Currently taking antiretroviral HIV medications:  
Taking antiretroviral medicines at the time of interview.

#### **REFERENCE**

1. Department of Health and Human Services. 2018 poverty guidelines. <https://aspe.hhs.gov/2018-poverty-guidelines>. Published 2018. Accessed February 14, 2020.

## Addendum: Infographic and National HIV Prevention Progress Indicators

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Tables A1 and A2 present results overall for 3 outcomes reported in the infographic accompanying this surveillance report. The measures are equivalent to those presented in Tables 10, 11, and 15 of this report, but aggregated across HIV status and include participants without a valid HIV test result.

Table A3 presents data for indicators used to monitor progress toward HIV prevention goals outlined in the CDC Division of HIV/AIDS Prevention (DHAP) Strategic Plan (<http://www.cdc.gov/hiv/pdf/dhap/cdc-hiv-dhap-external-strategic-plan.pdf>). Similar indicators were published previously in the National HIV Prevention Progress Report, 2015 (<http://www.cdc.gov/hiv/pdf/policies/progressreports/cdc-hiv-nationalprogressreport.pdf>). For consistency with National HIV Prevention Progress reports, data reported in Table A3 are reported for persons who did not report a previous HIV-positive test result and are stratified by the following age categories: 18–24, 25–34, 35–44, 45–54, and ≥55. Numbers and percentages may differ from those for similar outcomes included in this and other reports of NHBS data due to differences in indicator definition, analysis sample, or strata. Data for DHAP Strategic Plan indicators from NHBS will be included in future DHAP HIV Prevention Progress reports. Published DHAP reports of NHBS data are available at <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>.

**Table A1. Additional injection-related indicators among persons who inject drugs, by age and area of residence—National HIV Behavioral Surveillance, Baltimore, 2018**

	Receptive syringe sharing <sup>a</sup>		Received syringes from SSPs		Received syringes from pharmacy		Total No.
	No.	%	No.	%	No.	%	
<b>Age at interview (yr)</b>							
18–29	33	47.1	45	64.3	20	28.6	70
30–39	46	39.7	66	56.9	33	28.4	116
≥40	109	28.3	228	59.2	56	14.5	385
<b>Total</b>	<b>188</b>	<b>32.9</b>	<b>339</b>	<b>59.4</b>	<b>109</b>	<b>19.1</b>	<b>571</b>

Abbreviation: SSPs, syringe services programs.

Note. Data not presented in the infographic are suppressed.

<sup>a</sup> Used a syringe or needle that had already been used by someone else for injection.

**Table A2. Exchange sex in the 12 months before interview among persons who inject drugs, by sex—BESURE, 2018**

	Exchange sex <sup>a</sup>		Total No.
	No.	%	
<b>Sex</b>			
Male	83	20.4	407
Female	63	38.4	164
<b>Total</b>	<b>146</b>	<b>25.6</b>	<b>571</b>

<sup>a</sup> For females, “exchange sex” refers to receiving money or drugs from a male casual partner in exchange for sex. For males, “exchange sex” refers to giving money or drugs to a female casual partner in exchange for sex, or giving or receiving money or drugs from a male casual partner in exchange for sex.

**Table A3. Progress indicators of HIV acquisition risk among persons who inject drugs—BESURE, 2012, 2015, and 2018**

	2012 <sup>a</sup>			2015 <sup>a</sup>			2018		
	Nonsterile injection <sup>b</sup>		Total No. <sup>c</sup>	Nonsterile injection <sup>b</sup>		Total No. <sup>c</sup>	Nonsterile injection <sup>b</sup>		Total No. <sup>c</sup>
	No.	%		No.	%		No.	%	
<b>Sex</b>									
Male	222	62.2	357	224	58.6	382	236	62.8	376
Female	115	65.7	175	79	52.3	151	101	66	153
<b>Age at interview (yr)</b>									
18–24	***	***	***	6	66.7	9	8	57.1	14
25–34	***	***	***	39	78.0	50	89	73	122
35–44	60	73.2	82	62	63.3	98	63	70	90
45–54	163	62.5	261	121	58.7	206	109	63	173
≥55	98	59.4	165	75	44.1	170	68	52.3	130
<b>Race/ethnicity</b>									
American Indian/Alaska Native	***	***	***	***	***	5	***	***	***
Asian	--	--	--	--	--	--	***	***	***
Black/African America	295	64.0	461	216	54.5	396	149	55.8	267
Hispanic/Latino <sup>d</sup>	***	***	***	***	***	8	8	100	8
Native Hawaiian/Other Pacific Islander	--	--	--	--	--	--	--	--	--
White	29	64.4	45	78	72.2	108	163	71.8	227
Multiple races	10	47.6	21	5	31.2	16	12	63.2	19
<b>Total</b>	<b>337</b>	<b>63.3</b>	<b>532</b>	<b>303</b>	<b>56.8</b>	<b>533</b>	<b>337</b>	<b>63.7</b>	<b>529</b>

<sup>a</sup> Details of the 2012 and 2015 sample, conducted using respondent-driven sampling, are available upon request from the investigators and on the MDH website (<https://phpa.health.maryland.gov/OIDEOR/CHSE/pages/behavioral-surveillance.aspx>)

<sup>b</sup> In the 12 months before interview, used a needle that had already been used by someone else for injection, used a cooker or cotton that had already been used by someone else, shared water for rinsing, or divided a drug solution by using a syringe that had already been used by someone else for injection.

<sup>c</sup> Male and female participants who injected drugs in the 12 months before interview and who did not report a previous HIV-positive test result.

<sup>d</sup> Hispanics/Latinos can be of any race.

\*\*\* Cells containing fewer than five have been suppressed.

# HIV Infection Risk, Prevention, and Testing Behaviors Among Persons Who Inject Drugs (PWID)



National HIV Behavioral Surveillance • 2018

Baltimore • MD

575 PWID were interviewed | 10% were HIV-positive



Sharing syringes puts PWID at high risk for HIV and other infections.

33% used a syringe after someone else used it.

Access to sterile syringes is critical for preventing HIV and other infections.

**Syringe services programs (SSPs)** are community-based prevention programs that can provide a range of services, including linkage to substance use disorder treatment; access to and disposal of sterile syringes and injection equipment; and vaccination, testing, and linkage to care and treatment for infectious diseases.

**Some pharmacies** sell or provide syringes without a prescription and are an additional prevention partner in increasing access to sterile syringes.

Percentage of people who obtained a sterile syringe from:



SSPs:  
59%



Pharmacies:  
19%

Exchanging sex for money or drugs may increase the risk for HIV.

 38% women received money or drugs in exchange for sex

 20% men received or gave money or drugs in exchange for sex

PWID should get tested for HIV at least once a year.



66% tested for HIV in the past 12 months.



1 in 3 PWID overdosed in the past 12 months.

**Medication-assisted treatment (MAT)** combines medications (such as buprenorphine and methadone) and behavioral therapy to treat substance use disorders and prevent overdose.

26% of PWID tried but were unable to obtain MAT for opioid use treatment.

NHBS collects data to guide HIV prevention efforts at local and national levels by characterizing and monitoring HIV risk behaviors and use of testing and other prevention services among people at highest risk for HIV infection. Read full report: <https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-special-report-number-24.pdf>