Program Evaluation for Prevention: Minority AIDS Initiative (MAI) Cross-Site Evaluation

Final Report

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Disclaimer

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List of Exhibits

Acronym List

CBO	community-based organization
CDC	Centers for Disease Control and Prevention
CSAP	Center for Substance Abuse Prevention
DHAP	Division of HIV/AIDS Prevention
EBI	evidence-based intervention
EQ	Evaluation Question
FY	fiscal year
HIV CBI	HIV Capacity Building Initiative
MAI	National Minority SA/HIV Prevention Initiative [Minority AIDS Initiative]
MCBO	minority community-based organization
MSI	minority-serving institution
MSI CBO	Minority Serving Institutions Partnerships with Community-Based Organizations [program]
MSM	men who have sex with men
NIDA	National Institute on Drug Abuse
NREPP	National Registry of Evidence-based Programs and Practices
PEP-C	Program Evaluation for Prevention Contract
PrEP	pre-exposure prophylaxis
QPR	Quarterly Progress Report (data collection instrument)
SAMHSA	Substance Abuse and Mental Health Services Administration
SPARS	SAMHSA Performance Accountability and Reporting System
SPF	Strategic Prevention Framework
VH	viral hepatitis

Executive Summary

Introduction

The Minority AIDS Initiative (MAI) is designed to prevent substance use and HIV/AIDS infection among at-risk minorities in communities disproportionately affected by HIV/AIDS. All grantees are required to organize their funded activities around SAMHSA's Strategic Prevention Framework (SPF), a dynamic, data-driven prevention planning process that relies on a team approach to achieving population-level change. Grantees start the planning process by assessing the needs of their communities and identifying their populations of focus. Next, they develop a strategic plan to address those needs, including their populations of focus, evidence-based interventions tailored to those populations, and evaluation design. Once the plan is approved by SAMHSA, grantees implement their planned interventions, annually monitoring their outcomes and making updates and quality improvements based on this ongoing evaluation. All phases of the SPF are guided by the principles of sustainability and cultural competence.

This report focuses on evaluation data from five cohorts of grantees funded through two MAI grant programs: three cohorts of grantees awarded in 2013, 2014, and 2015 through the Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) program and two cohorts funded in 2015 and 2016 through the HIV Capacity Building Initiative (HIV CBI) program. During FY2017, the MSI CBO 2013 and 2014 grantees had completed their grant periods and submitted all the data they collected; the three cohorts funded in 2015 and 2016 continued to implement interventions.

The following evaluation questions frame the report:

EQ1: What are the population groups on which grantees are focusing their prevention efforts? What strategies and services are planned and delivered to these populations?

EQ2: How many people were served through direct-service interventions, reached through indirect strategies, tested for HIV and viral hepatitis (VH), and vaccinated against VH? How many referrals were made by the grantees and for which services?

EQ3: What were the sociodemographic characteristics of the participants who enrolled in direct-service interventions?

EQ4: How did participants' knowledge, attitudes, behaviors, and awareness of their community's health care resources change during the study period? Did some subgroups change more than others? What are the key outcomes?

Data and Methods

Data for this report come from three sources:

- Grantee-level process and implementation data from grantees' Quarterly Progress Reports (QPRs);
- Participant-level adult and youth questionnaires; and
- Participant-level service encounter records (henceforth, "dosage data").

Grantees submitted process and implementation data in the form of a QPR submitted online using the Substance Abuse and Mental Health Services Administration's (SAMHSA) data entry portal. These data were used to report information on grantees' activities to reduce health disparities and increase cultural competence, program capacity, and planned and implemented interventions.

For direct-service interventions, grantees submit participant-level self-reported survey data obtained from participants in direct-service interventions at program entry and exit. In addition, grantees collect service dosage data on the types and amount of direct services each participant received. For the cohorts included in this report, the participant-level database includes all records submitted through August 31, 2017. The overall sample includes survey data from a total of 23,203 people who participated in MAI-funded direct-service interventions. Grantees submit these data through online data entry or by uploading prepared databases to SAMHSA's data entry portal. All data extracted from the portal are subjected to a thorough quality assurance process to identify and resolve inconsistencies and apparent entry errors before any analysis is conducted.

The findings presented in the report are the results of two types of analysis:

1. Descriptive analyses of the grantees' organizational structure; planned targets and interventions; numbers of individuals served, reached, tested, and vaccinated against VH; and grantees' efforts to reduce health disparities and improve cultural competence;
2. Baseline characteristics of direct-service intervention participants and pre-post comparisons of their knowledge, attitudes, and behaviors associated with substance use and sexual risk behaviors.

The data used in the analysis include all information submitted by the grantees from the beginning of their grant periods through the end of FY2017. The only exceptions are the numbers of people served, reached, tested, vaccinated, and referred for further services, which are reported for the most recent fiscal year in response to SAMHSA's annual reporting requirements for these numbers.

At the participant level, descriptive analyses used all available survey and dosage data. Pre-post comparisons of participant outcomes were restricted to the subset of participants with both baseline and exit survey data.

Results

Populations of Focus and Planned/Implemented Activities

EQ1: What are the population groups on which grantees are focusing their prevention efforts? What strategies and services are planned and delivered to these populations?

On the basis of their needs assessment results and grant requirements, grantees identify the populations on which to focus their prevention efforts. This information, along with their planned strategies for addressing their communities' needs, is included in a detailed strategic plan submitted to their Government Project Officer. Once approved, the plan is put into action. The sources of information on populations of focus and planned interventions are grantees' approved strategic plans.

Populations of Focus

- Three quarters of grantees planned to focus on young adults age 18–24; some specifically targeted college students (80% of grantees), whereas others targeted this age group at large, regardless of college attendance.
- Grantees focused on serving African American/Black men (62%) and women (57%), Hispanic/Latino men (49%), and Hispanic/Latina women (44%).
- Other common populations of focus included people who identify as lesbian, gay, bisexual, transgender, or questioning (54%) and men who have sex with men (MSM; 43%).

Activities to Reduce Health Disparities

- 87% of grantees built organizational capacity for addressing health disparities.
- 86% of grantees involved community members of from underserved groups (e.g., demographic or sexual minorities) in their MAI-funded activities.
- 82% of grantees increased access to substance use and HIV prevention services to subpopulations experiencing health disparities and implemented prevention strategies to address health disparities.

Direct and Indirect Prevention Strategies

SAMHSA requires MAI grantees to implement a combination of evidence-based direct-service interventions and indirect strategies to address the needs of their communities, as documented in their needs assessment reports. Direct-service interventions involve services delivered directly to individuals in one-on-one or group format, such as counseling and health education sessions. Indirect strategies are those that have an impact on the entire community and are classified by SAMHSA as either (1) environmental strategies aimed at changing policies, standards, practices, and codes of an entire community to reduce risk factors or (2) information dissemination activities, such as media campaigns, aimed at enhancing public awareness and understanding of health-related issues.

- Grantees reported 88% of the implemented direct-service interventions as evidence based.
- The two most common direct-service interventions implemented were VOICES/VOCES (a single-session, video-based intervention to promote sexual health, delivered to small groups by a trained facilitator) and Alcohol Literacy Challenge (ALC, a 90-minute classroom-based prevention

intervention to prevent underage drinking and alcohol misuse).

- The greatest number of environmental strategies implemented were condom distribution and enhancing access to substance abuse, HIV, and VH prevention services.
- The greatest number of information dissemination interventions were health fairs and workshops, seminars, and symposiums.

Numbers Served, Reached, Tested, Vaccinated, and Referred

EQ2: How many people were served through direct-service interventions, reached through indirect strategies, tested for HIV and VH, and vaccinated against VH? How many referrals were made by the grantees and for which services?

People Served and Reached

In FY2017, grantees estimated serving 91,193 people through direct-service interventions. An estimated total of 2,373,389 people were reached with indirect strategies.[1]

HIV and Viral Hepatitis Testing & Vaccination

A total of 37,245 HIV tests were provided in FY2017. Of these:

- 20,420 tests were given to people being tested for the first time;
- 1,629 tests were given to people experiencing homelessness;
- 265 tests were positive; and
- 262 individuals who tested positive were referred to treatment.

A total of 8,514 VH tests were provided in FY2017. Of these:

- 6,050 tests were given to people being tested for the first time;
- 467 tests were given to people experiencing homelessness (a group prioritized for prevention by SAMHSA);
- 262 tests were positive; and
- 234 individuals who tested positive were referred to treatment.

A total of 370 hepatitis vaccines were purchased and 116 individuals were vaccinated in FY2017.

Referrals

During FY2017,

- 15,627 were referred to HIV testing and testing-related counseling services.
- Referrals to physical, social, and behavioral health services were common, with 7,230 referrals to substance use treatment; 4,439 to general health care services; 2,183 to mental health services; and 988 to wraparound social support services.
- Grantees made 441 referrals to pre-exposure prophylaxis (PrEP) services, in line with the National HIV/AIDS Strategy to increase access to PrEP services for individuals for whom it is medically appropriate and desired.

Characteristics of Direct-Service Program Participants

EQ3: What were the sociodemographic characteristics of the participants who enrolled in direct-service interventions?

Sociodemographic Characteristics

The participant-level sample was:

- 74% young adult (age 18–24);
- 68% African American/Black;
- 27% Hispanic/Latino; and
- 57% female and less than 1% transgender.

The *National HIV/AIDS Strategy* and SAMHSA identify several population groups as high priority for prevention, based on their elevated HIV incidence

[1] Numbers reached through indirect strategies are estimated according to the type of strategy. For example, estimates can be based on census statistics of the affected community, audience data provided by media outlets, or the number of people accessing a website or attending an event. Because of the population-based nature of indirect strategies, it was not possible for grantees to provide unduplicated counts of people they reached. Thus, an individual reached by multiple indirect strategies may be counted multiple times in this total.

rates and transmission risk. Membership of the MAI participants in these groups is as follows:

- 8% MSM;
- 15% gay, lesbian, or bisexual;
- 47% African American/Black, Latina, or Hispanic women;
- 2% homeless; and
- 69% residents of the southern United States.

Additionally, 17% of the participants had been released from prison or jail within the past 2 years, a period during which re-entry populations are especially vulnerable to substance use disorders and HIV/VH transmission.

Changes in Knowledge, Attitudes, and Behaviors

EQ4: How did participants' knowledge, attitudes, behaviors, and awareness of their community's health care resources change during the study period? Did some subgroups change more than others? What are the key outcomes?

In the following sections, change is reported as the difference between the baseline and exit values, expressed as a percentage of the baseline value. The calculation is made before rounding the baseline and exit values to the nearest whole number.

CHANGE IN KNOWLEDGE AND ATTITUDES

All knowledge and attitude measures showed statistically significant improvements from baseline to exit:

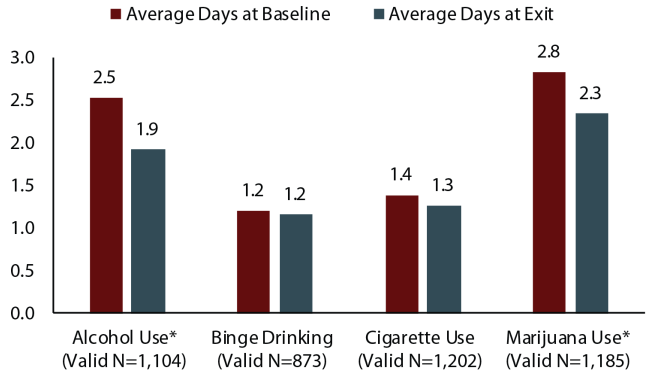
- 4% increase in perceived risk of harm from substance misuse;
- 33% increase in perceived risk of harm from risky sexual behaviors;
- 23% increase in adult disapproval of their peers' binge drinking;
- 16% increase in adult disapproval of their peers' unprotected sex;
- 6% increase in youth disapproval of their peers' substance use;
- 3% increase in sexual self-efficacy among adults, and a 4% increase among youth;
- 4% increase in HIV knowledge among adults, and a 23% increase among youth;
- 25% increase in the percentage of participants who know their HIV status (52% → 65%); and
- 22% increase in the percentage of participants who knew where to obtain health care services in their communities (66% → 81%).

Change in Behaviors

- Frequency of past-30-day alcohol and marijuana use declined significantly (24% decline between baseline and exit, ***Exhibit 1***).
- There was no significant reduction in levels of cigarette use and binge drinking in the overall sample (Exhibit 1); however, Hispanic participants reduced their cigarette use by 22%, a statistically significant change.
- There was no significant reduction in the percentage of participants who were classified as "potential problem drinkers," with the exception of African American/Black, Latina, or Hispanic women, who experienced a statistically significant decrease from 17% at baseline to 14% at exit.

Exhibit 1. Baseline-to-Exit Change in Past-30-Day Substance Use

Average Days of Substance Use During the Past 30 Days by Direct-Service Program Participants Age 12 or Older



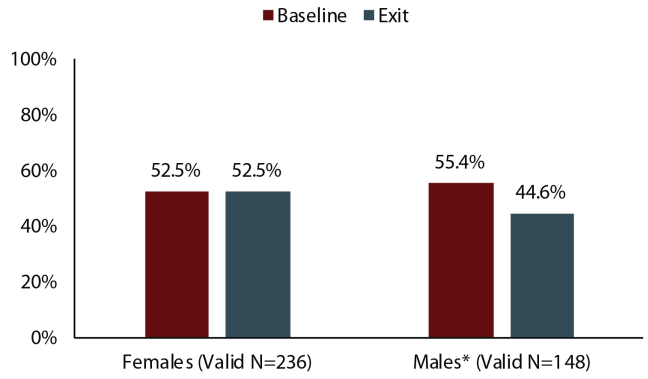
Note: *p ≤ 0.05; p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test).

Source: Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) 2013–2015 and HIV Capacity Building Initiative (HIV CBI) 2015–2016 participant-level data, matched cases only; data received through August 31, 2017.

- Prevalence of unprotected sex declined by 20% among male participants; the change was statistically significant. There was no change in this measure among female participants (***Exhibit 2***).

Exhibit 2. Baseline-to-Exit Change in Unprotected Sex

Percentage of Sexually Active, Direct-Service Program Participants Age 12 or Older Who Reported Having Unprotected Sex During the Past 30 Days (Vaginal, Anal, or Oral)



Note: *p ≤ 0.05; p-values were derived from paired comparisons (1-sided McNemar's test).

Source: Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) 2013–2015 and HIV Capacity Building Initiative (HIV) CBI 2015–2016 participant-level data, matched cases only, restricted to participants who were sexually active during the 30-day periods preceding both baseline and exit; data received through August 31, 2017.

Limitations

Several factors limited the analyses that could be conducted and the types of conclusions that can be drawn from the results. These include the following:

Sample size limitations. Data collection requirements vary depending on the duration of the services a participant receives, such that shorter services require that fewer sections of the questionnaire be administered. For services lasting a single day, brief surveys are administered at exit only. This protocol limits the sample sizes available for outcome analysis, especially for behavioral outcomes for which data are available for analysis only if there are at least 30 days between the baseline and exit surveys. For example, only 1,063 of the 23,203 participants in this year's data met the criteria for behavioral outcome analysis, either because they had not taken the exit survey by the end of the data cutoff date, or their services lasted less than 30 days. Another possible reason for exclusion from outcome analyses was reporting errors in survey data that are used to link participants' baseline and exit responses.

Measure of risky sexual behaviors. The questionnaires do not collect information on the type of sexual relationship. In constructing the measure of unprotected sex, therefore, we were unable to distinguish between unprotected casual sex and unprotected sexual activity within stable, monogamous relationships among HIV-negative partners.

Use of grant management data for evaluation. The process data from grantees' Quarterly Progress Reports (QPR)s are collected in a format designed for use by government project officers in monitoring and managing their grantees' activities. In some cases, this format created challenges for annual evaluation reports. For example, the only way to obtain annual totals from quarterly data is to sum up the numbers reported for the four quarters. This introduces inaccuracies into annual estimates of numbers exposed to indirect services, such as media campaigns, that span multiple quarters but reach the same population each quarter.

Absence of a comparison group. Grantees are not required to collect data from a comparable group of individuals who did not receive services. This limits the certainty with which the outcomes can be attributed to program participation.

Discussion and Conclusions

Most evidence-based health promotion interventions are based on a conceptual framework often described as "the knowledge-attitude-behavior continuum." The MAI data collection protocol and the design of this cross-site evaluation are also informed by this model. The framework, based on cognitive science, posits that behavior change in response to an intervention is a continuum initiated with improved knowledge and attitudes, which, in turn, get processed and internalized before any behavior change can be observed. The interventions evaluated in this report therefore aim to improve health-related knowledge and change participants' perceptions and attitudes. The underlying theoretical framework predicts that improvements in these factors will eventually result in healthier behaviors, given sufficient time for the cognitive process to play itself out. The process may be longer and more complex for some behaviors than for others.

Viewed in light of this framework, the evaluation results point to successful outcomes in all key domains. We observed statistically significant improvements in all knowledge and attitude measures associated with substance use and risky sexual behaviors. We were also able to detect changes in some behaviors: frequency of past-30-day alcohol and marijuana use declined significantly, and the prevalence of unprotected sex also declined among male participants.

The gender difference we observed in sexual behavior is hard to interpret because of the measurement issues discussed in the previous section. That is, we were unable to determine whether female participants were more likely to be in a stable, monogamous relationship to start with, which would explain the lack of increase in protective behavior. Future evaluations based on the revised questionnaires will be able to remove the effects of relationship type from the measure of risky sexual behaviors, shedding light on the gender difference we observed in the current data.

For substance use behaviors associated with dependence, the cognitive process between knowledge/attitude change and reduction or discontinuation of use would be expected to take longer. Substance use disorders frequently co-occur with mental health issues, introducing additional challenges in behavior change. These participants will often require treatment and recovery supports in addition to prevention interventions. This prediction is borne out by our results: at program exit, we did not detect reductions in levels of cigarette use, binge drinking, and other diagnostic factors associated with problem alcohol use, even though attitudes and knowledge associated with these behaviors improved significantly. We expect that the observed cognitive changes at program exit will continue to influence these behaviors, especially if individuals with substance dependence are provided with treatment services and recovery supports. In this context, it is encouraging that grantees reported making approximately 7,000 referrals to substance use treatment, 2,000 to mental health services, and 1,000 to wraparound support services during FY2017.

These positive evaluation findings notwithstanding, much remains to be done in the area of HIV and substance misuse prevention. Both HIV and substance use disorders remain a national priority. Close to a million people are living with an HIV infection in the United States, and 70% of them belong to a racial or ethnic minority group. In 2015, about 16,000 deaths were recorded for individuals infected with HIV; just under 70% of those deaths were in minority populations (CDC, 2017a). These numbers alone indicate the need for continued funding for interventions to prevent HIV and associated risk factors, including substance misuse. Furthermore, the national opioid crisis is threatening to increase the incidence of HIV and hepatitis C in the nation as a whole, with “mini epidemics” already occurring in communities with high opioid use, adding to the urgent need for prevention programs that integrate substance use and HIV prevention messages.

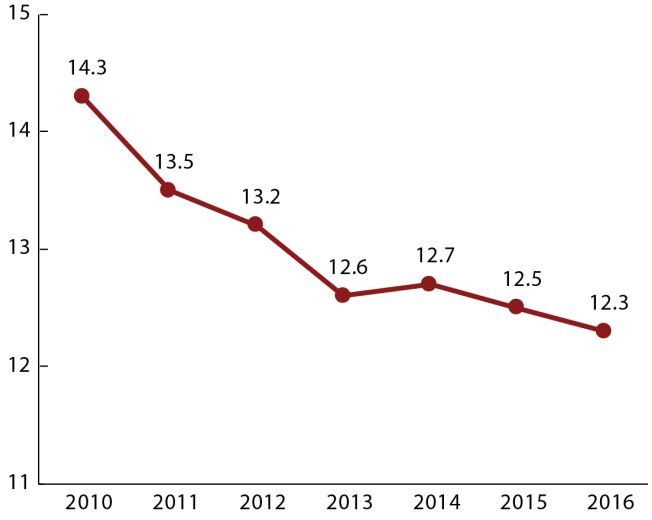
1. Introduction

1.1 Background

1.1.1 HIV/AIDS as a National Priority

Since the release of the *National HIV/AIDS Strategy for the United States* in 2010 (White House Office of National AIDS Policy, 2010), the Federal government has pursued a comprehensive nationwide plan to address the HIV epidemic in the United States and its territories. As ***Exhibit 3*** shows, the rate of new diagnoses decreased from 14.3 to 12.3 per 100,000 during the 6 years after the initiation of this strategy.

Exhibit 3. Rate of New HIV Diagnoses Per 100,000 Population in the United States, 2010–2016



Source: Centers for Disease Control and Prevention (2017). Diagnoses of HIV infection, by year of diagnosis and selected characteristics, 2010–2015—United States and 6 dependent areas. *HIV Surveillance Report, 28,* 18. Retrieved from http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html. The rate for 2010 is taken from Table 1b in the *HIV Surveillance Report, 27,* 19.

Despite the recent advances in HIV/AIDS prevention and treatment, the disease remains a serious and persistent problem. The number of new HIV infections in 2016 was estimated at 40,324. At the end of 2015, an estimated 991,289 people in the United States and its territories were living with HIV. The Centers for Disease Control and Prevention (CDC) cautions that this number is probably an underestimate due to uncertainty about the number of infected individuals who have not yet been tested. In 2015, there were 15,849 deaths among infected individuals, down from 17,140 in 2011 (CDC, 2017a). The *National HIV/AIDS Strategy* (White House Office of National AIDS Policy, 2015) aims to reduce the annual number of new diagnoses to 32,855 by 2020. Since 2015, the annual targets toward that goal have been met, suggesting that HIV deaths may also be expected to decrease in the coming years, provided prevention efforts continue.

Several population groups continue to experience especially high rates of HIV infection. For example, the rate of newly diagnosed HIV infections was over three times the national average among African Americans/Blacks, whereas Whites had a diagnosis rate of less than half the national average. The elevated rate of infection among young adults is also concerning: in 2016, the rate of new diagnoses among individuals age 20–24 was over twice that of the national average; in the 25–29 age group, it was even higher—close to three times the national average (CDC, 2017a). These figures indicate that some minority communities and young adults—the main groups targeted by Minority AIDS Initiative (MAI) grantees in response to program requirements and community needs assessments—are disproportionately affected by the spread of HIV.

HIV diagnosis rates also vary by region. As of the end of 2016, the highest HIV transmission rate was in the southern United States and the lowest was in the Midwest. In fact, 52% of all new HIV infections in 2016 were diagnosed among individuals residing in the South (CDC, 2017a).

Another subgroup disproportionately affected by HIV/AIDS is men who have sexual contact with men (MSM). In fact, infection was linked to male-to-male sexual contact (with or without injection drug use) for more than half of all people living with an HIV diagnosis. The (CDC, 2016) reports that among the 738,832 adult or adolescent males living with an HIV diagnosis at the end of 2015, 71% of the cases (526,456 infections) were attributed to male-to-male sexual contact.

Substance use is an important factor that elevates the chances of contracting HIV. Although injection drug use is a direct route of transmission, drinking, smoking, ingesting, or inhaling substances also increases the chances of HIV infection. For example, use of substances such as alcohol, crack/cocaine, or

methamphetamine decreases inhibition and careful decision making, increasing the chances that one will engage in sexual contact without protection, with multiple partners, or both. Certain drugs (e.g., crack/cocaine) are also associated with increased trading of sex for drugs or money. Some drugs, such as methamphetamine, have been found to directly affect the immune system and interfere with antiviral therapy (Altice et al., 2010; Massanella et al., 2015; Molitor et al., 1998). Conversely, antiviral medications can adversely interact with methadone therapy, an effective treatment for opioid dependence, complicating the treatment of either condition in patients with co-occurring disorders (McCance-Katz, 2005).

1.1.2 Viral Hepatitis as a National Priority

According to a report by the (Institute of Medicine (IOM), 2010), viral hepatitis (VH), and especially hepatitis C infection, is another growing concern in the United States. VH is transmitted through the exchange of bodily fluids. HIV and VH therefore share multiple behavioral risk factors, such as using infected needles to inject drugs and having unprotected sexual contact with an infected person. The CDC estimates that from 2010 through 2016, the annual number of acute hepatitis C cases increased from 850 to 2,967. Although the incidence rate increased among all adults, the largest increase was observed in the 20- to 29-year-old age group. Among racial/ethnic groups, American Indians/Alaska Natives had the highest incidence rate in 2016 (3.1 per 100,000), followed by non-Hispanic Whites (0.4 per 100,000); CDC (2017b). In 2014, SAMHSA/CSAP's MAI grant programs added the prevention of VH as a goal of the MAI program. Cohorts of grantees who received awards after that date include hepatitis-related testing, vaccination, and referrals among their funded activities.

1.1.3 HIV, Viral Hepatitis, and the Opioid Crisis

During the spring of 2015, an unexpected rise in new HIV infections in predominantly rural Scott County, Indiana, drew the attention of epidemiologists and public health officials. The "mini-epidemic" was traced to a closely knit network of drug users who injected prescription painkillers, often with shared needles. Since then, several other localities, all in areas with a high incidence of opioid use disorders, have experienced similar spikes in both HIV and VH infections.

A recent CDC study of acute hepatitis C infection rates by county found per capita drug overdose deaths and prescription opioid sales to be among the significant predictors of new infection rates. On the basis of the predictors identified by this analysis, the study identified counties most vulnerable to new HIV and VH infections. Most are rural counties with high levels of opioid use and high unemployment rates, and most are concentrated in a few Southern states (Brooks, 2017).

The CDC study mentioned above confirms the close link between the opioid crisis and infectious diseases transmitted through bodily fluids that was previously suggested by a growing body of circumstantial evidence. An additional link, as mentioned earlier, is the potential adverse interaction between antiviral and opioid treatment medications, complicating therapeutic efforts. These links suggest that prevention efforts targeting opioid use disorders and HIV/VH infections need to be integrated. Although the crisis has so far affected the White, non-Hispanic population more than minority communities, its impact among minorities has increased over time: From 2015 to 2016, the age-adjusted death rates from opioid overdose increased by 40% among non-Hispanic Blacks and by 23% among Hispanics living in the United States (CDC, 2018a). With its emphasis on integrated prevention interventions targeting both substance misuse and risky sexual behaviors and its design specifically for minority populations, the MAI is in a unique position to contribute to the national prevention efforts in response to the opioid crisis.

1.2 Overview of SAMHSA's Minority AIDS Initiative Program

The aims of the MAI and the goals of its evaluation align with several key components of the National HIV/AIDS Strategy: (1) intensifying efforts to provide HIV prevention in communities with high rates of HIV; (2) expanding the use of evidence-based approaches; (3) educating the public about HIV risks, prevention, and transmission; (4) supporting linkages to care; (5) reducing health inequities; and (6) monitoring and

reporting on progress (White House Office of National AIDS Policy, 2015).

All MAI grantees are required to organize their funded activities around SAMHSA's Strategic Prevention Framework (SPF), a dynamic, data-driven prevention planning process that relies on a team approach for achieving population-level change. Grantees start the planning process by assessing the needs of their communities and identifying their populations of focus. Next, they develop a strategic plan to address those needs, including their planned evidence-based interventions and their evaluation design. Once the plan is approved by SAMHSA, grantees implement their planned interventions, annually monitoring their outcomes and making updates and improvements based on this ongoing evaluation. All phases of the SPF are guided by the principles of sustainability (i.e., the ability of the grantee's program to continue if/when federal funding is no longer available) and cultural competence (SAMHSA, 2017).

SAMHSA strongly encourages grantees to integrate HIV- and substance use disorder-related prevention interventions into a seamless experience for the participants. Typically, grantees respond to this guidance in one of two ways: They either identify evidence-based interventions that integrate these two types of messages in their original design or they combine two evidence-based interventions (one designed for substance use disorders prevention and the other for HIV prevention) into a single integrated curriculum.

This report focuses on evaluation data from five cohorts funded through two MAI grant programs: three cohorts of grantees awarded in 2013, 2014, and 2015 through the Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) program and two cohorts funded in 2015 and 2016 through the HIV Capacity Building Initiative (HIV CBI) program. During FY2017, the MSI CBO 2013, and 2014 grantees had completed their grant periods and submitted all of the data they collected; the three cohorts funded in 2015 and 2016 continued to implement interventions.

Each member of the three MSI CBO cohorts (a total of 83 grantees) is an institution of higher education that serves minority populations (usually referred to as a "minority-serving institution" or MSI for short) in formal partnership with a community-based organization in the area surrounding the college campus. The program's focus on these organizations directly responds to a congressional mandate to "develop and improve the capacity of minority community-based organizations (MCBOs) to more effectively serve their communities."[2]

MSI CBO grantees were funded for 3 years to implement direct (face-to-face) and indirect (population-based) prevention strategies designed to reduce substance use disorders and the transmission of HIV/AIDS and VH among African American/Black, Hispanic/Latino, and American Indian/Alaska Native young adults (age 18–24). Their funded activities also include HIV and VH testing and referral services.

The 73 grantees in the HIV CBI 2015 and 2016 cohorts were awarded 5-year grants to build their infrastructure to deliver and sustain quality and accessible substance use and HIV prevention and testing services for young adults. The program engages community-based domestic public and private nonprofit entities in predominantly minority communities, to support direct substance abuse and HIV prevention services, environmental strategies, information dissemination, HIV/VH testing, and hepatitis vaccinations for vulnerable minority populations age 13–24. In 2017, 12 additional HIV CBI grantees were awarded grants, extendable through 2021. These grantees are currently in the assessment and planning stages of their grant projects; they have not yet implemented interventions or collected participant data.

Exhibit 4 details the target population, setting, and goals for the MSI CBO and HIV CBI grant programs evaluated in this report.

[2] Cited in the 2013 MSI CBO funding opportunity announcement (p. 5). Retrieved from https://archive.samhsa.gov/grants/2013/sp-13-006.aspx.

Exhibit 4. Description of Recently or Currently Active Minority AIDS Initiative Cohorts

Cohort	Funding Period	Number of Grantees	Target Population	Grantee Organizations	Status
MSI CBO 2013	2013–2016	29	Racial/ethnic minority young adults (age 18–24)	MSIs in partnership with community-based organizations	Closed out in 2016
MSI CBO 2014	2014–2017	21	Racial/ethnic minority young adults (age 18–24)	MSIs in partnership with community-based organizations	Closed out in 2017
MSI CBO 2015	2015–2018	33	Racial/ethnic minority young adults (age 18–24)	MSIs in partnership with community-based organizations	Implementation stage
HIV CBI 2015	2015–2020	54	Racial/ethnic minority youth and young adults (age 13–24)	Community-based organizations	Implementation stage
HIV CBI 2016	2016–2021	19	Racial/ethnic minority youth and young adults (age 13–24)	Community-based organizations	Implementation stage

Note: CBI = Capacity Building Initiative; MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations.

1.3 Report Overview

The goal of this cross-site evaluation is to explore what strategies were implemented by MAI grantees; who received MAI prevention services; and whether the services were effective in changing knowledge and attitudes about HIV, as well as behaviors that increase vulnerability to HIV. The results have the potential to spark changes in policies and practices related to HIV prevention and intervention. Results can assist in understanding who receives HIV- and substance use-related prevention and treatment services, as well as which subpopulations may be at risk but underserved. Results will also help us understand which services were provided and whether grantees used best practices in employing evidence-based approaches and providing multilevel (individual and environmental) change strategies.

The evaluation will further our understanding of behavioral health disparities in service availability and will provide insight into policy recommendations for ensuring behavioral health equity. Additionally, understanding participant outcomes for different population groups will help SAMHSA ensure that the special needs of vulnerable subpopulations are addressed across a full continuum of care. Findings from the evaluation may help to better equip clinicians, patient advocates, and community health workers with the tools to educate the public about behavior changes to reduce their vulnerability to HIV and VH. Finally, the answers to our evaluation questions may assist SAMHSA in advocating for additional and continued funding to reduce substance use, HIV/AIDS, and hepatitis infections, as well as to raise public awareness of these issues.

The next chapter describes the evaluation design and the cross-site data. The ***Appendix*** provides a more detailed technical description of the data and methods, including descriptions of the multi-item scales and composite variables used in the analysis.

Analysis results are presented in four chapters:

- ***Chapter 3*** describes the grantees' populations of focus and their planned and implemented activities.
- ***Chapter 4*** provides an overview of the numbers of participants receiving direct services, HIV and VH tests, hepatitis vaccinations, and referrals, as well as populations reached by information dissemination activities and environmental strategies.
- ***Chapter 5*** describes the demographic and socioeconomic characteristics of direct-service program participants.
- ***Chapter 6*** presents the results of analyses to assess changes between program entry and exit in participants' knowledge, attitudes, and behaviors.

The report concludes with a brief discussion of the limitations of this evaluation (***Chapter 7***) followed by a discussion of the key findings and conclusions (***Chapter 8***).

2. Data and Methods

Annual evaluation reports for the Minority AIDS Initiative (MAI) provide an overview of grantees' activities, their populations of focus, and participant-level outcomes, based on data submitted by the active and recently completed grants from the beginning of their grant periods through the end of the previous Federal fiscal year. This report is based on data submitted through FY2017.

2.1 Evaluation Questions and Data Overview

This report is structured around the following evaluation questions (EQ):

EQ1: What are the population groups on which grantees are focusing their prevention efforts? What strategies and services are planned and delivered to these populations?

EQ2: How many people were served through direct-service interventions, reached through indirect strategies, tested for HIV and viral hepatitis (VH), and vaccinated against VH? How many referrals were made by the grantees and for which services?

EQ3: What were the sociodemographic characteristics of the participants who enrolled in direct-service interventions?

EQ4: How did participants' knowledge, attitudes, behaviors, and awareness of their community's health care resources change during the study period? Did some subgroups change more than others? What are the key outcomes?

To address these questions, we used data from three sources:

- Participant questionnaires;
- Participant-level service encounter records (henceforth, "dosage data"); and
- Grantee-level process and implementation data from grantees' Quarterly Progress Reports (QPR).

Grantees submitted participant-level survey and dosage data through an online system developed and maintained by CSAP's Program Evaluation for Prevention Contract (PEP-C). They used SAMHSA's Performance Accountability and Reporting System (SPARS) to submit their QPRs online.

2.2 Description of Participant-Level Data

Standardized self-report questionnaires (one for youth and one for adults) were used to obtain information on participants' demographic characteristics, attitudes, knowledge, and behaviors related to substance use and HIV. The questionnaires are divided into three sections—(1) Demographics, (2) Attitudes and Knowledge, and (3) Behaviors—that are administered on the basis of the overall duration of services a participant receives. Participants receiving services for 30 days or longer complete all three sections of the questionnaire at program entry (baseline), program exit, and follow-up (90 days after exit). Participants engaging in services lasting 2–29 days receive only the first two sections on demographic characteristics, attitudes, and knowledge. These participants complete the questionnaire at baseline and exit only. Finally, participants who receive services lasting only a single day complete a reduced portion of the survey at exit only. They receive questions about their demographic characteristics and three to five questions measuring their knowledge and attitudes, selected by the grantee as appropriate to the content of the single-session intervention. For example, if the single-day intervention is focused on promoting protected sex, the questionnaire item on perceptions of risks of harm from unprotected sex would be administered to the participants.

In addition to self-reported questionnaire data, grantees collect and submit service dosage data for each participant. Dosage is a measure of the amount of contact, in minutes, that a participant has in each direct encounter with the program for a wide variety of service categories, such as substance use or HIV education, risk assessment and resiliency building, one-on-one or group counseling, case management, and peer mentoring. Typically, multiple dosage forms are submitted for any given participant, one for each service encounter. The cross-site evaluation team aggregates the dosage information and links these data to the participant's survey responses during data processing.

The participant-level data processed for this report include all submissions through August 31, 2017,[3] from five MAI cohorts: Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) awarded in 2013, 2014, and 2015 and HIV Capacity Building Initiative (HIV CBI) grantees awarded in 2015 and 2016.

The survey data analyzed for the report were provided by 23,203 participants. Of that total, 1,877 responded to the youth questionnaire and 21,326 to the adult questionnaire. The amount of available data varies from one analysis to another because, as mentioned above, not all participants respond to every survey question. In addition to receiving different sections of the questionnaires depending on the duration of their services, participants are informed that their participation in the survey is voluntary and that they may skip questions that they are not comfortable answering. The modular and voluntary nature of the questionnaires presents some challenges for data analysis. For example, sample size availability—and relatedly, statistical power—varies widely across outcome measures. For further details on sample sizes available for participant-level analyses, please see the ***Appendix***. The data notes accompanying the report tables also provide information about the data used to produce each table.

2.3 Description of Quarterly Progress Reports

Grantees submit quarterly online reports on their progress through the steps of the Strategic Prevention Framework. The sections of the QPRs that describe the grantee organization and its strategic planning information on goals, objectives, target populations, targeted risk and protective factors, and planned interventions are completed during the assessment and planning stages of the grant and are updated in subsequent quarters only if there are changes. The QPRs also include sections describing grantees' activities during each quarter: capacity-building activities, such as workforce development; implemented activities, such as services provided, number and characteristics of people served through direct-service interventions, HIV and VH tests, and VH vaccinations; people reached through indirect strategies (e.g., information dissemination to the public, environmental strategies); and referrals to services that were not funded through the MAI grant.

Project officers review each QPR and may require revisions before approving it. Revisions to a report will generate multiple entries for a single question. For this reason, the most recently approved information available for any given data field is the most accurate. Thus, for the relatively "stable" information such as goals, objectives, planned activities, and organizational structure, we used data from the most recent QPR that was approved by the project officer.

We used all available QPR data reported by the grantees included in this year's report, with the exception of data on people served, reached, referred, tested, and vaccinated. Grantees report these numbers separately for each quarter, and SAMHSA uses annual totals to meet its reporting requirements. We added the numbers reported for the four quarters of FY2017 to obtain the annual totals, reported in ***Chapter 4***.

In interpreting these numbers, it is useful to keep in mind the ways in which grantees obtain and report them. For example, numbers reached through indirect strategies are, by necessity, estimates. Grantees may use data provided by the media outlet to estimate the number of people that receive their media messages, such as radio or television advertisements or newspaper editorials. For environmental strategies targeting the entire community, grantees typically use census data to estimate the size and composition of the population reached. It is impossible to obtain a *unique count* of individuals exposed to these population-based strategies. In reporting total numbers reached by indirect strategies, we summed estimates for each reported strategy. A community member exposed to multiple such strategies implemented by the grantee may appear multiple times in the estimated numbers reached. In that sense,

[3] During 2017, SAMHSA's online data entry systems were consolidated into a single portal (SPARS). The PEP-C online tools for submitting MAI participant data went offline on August 31, 2017, and became available in the SPARS portal shortly thereafter. Because of this data platform transition, data submitted after the end of August required additional harmonization efforts and are therefore not included in this report. This is described in detail in the ***Appendix***.

the reported totals reached are best interpreted as the estimated numbers of *person-exposures*.

Similarly, most grantees do not track individuals they test over time because of privacy and anonymity concerns. This means that individuals tested multiple times may be counted multiple times in the reported totals. Strictly speaking, the testing data should be interpreted as referring to the *number of tests* provided rather than to the *number of unique individuals* tested.

2.4 Analytic Methods

2.4.1 Data Validation

Before data analysis, all participant-level data underwent a validation and cleaning procedure to address data quality issues while retaining as much valid data as possible for analysis. An initial diagnostic review of the raw data, conducted separately for each grantee, identified the quality issues that were most likely to create data loss or threats to evaluation validity. Grantees with these data issues were individually contacted for clarification and correction of their data. Their data were edited based on their responses. This procedure enables the cross-site evaluation team to address serious threats to validity in collaboration with the grantees while at the same ensuring that these quality issues are eliminated from their local evaluations as well. When the issues resulted from the local evaluation design or the data collection processes at the grant site, the grantee was offered customized technical assistance to avoid the recurrence of the issues in the future.

After the feedback loop with grantees, we reviewed the data a second time and addressed any remaining inconsistencies according to a set of standard cleaning rules, based on best practices in survey research, such that the resulting cleaned dataset contained no conflicting information on the measures used in the evaluation. Please see the ***Appendix*** for technical details of the pre-analysis data processing procedures.

2.4.2 Data Analysis

Descriptive statistics on participants' demographic characteristics are based on all available survey data. Analyses of change in attitudes and knowledge are based on data from all participants whose baseline and exit survey data could be compared. Assessment of changes in substance use and risky sexual behaviors is based on a more restricted sample. Because these questions ask about behaviors "during the past 30 days," these analyses were conducted only for participants age 12 or older who had at least 30 days between their baseline and exit surveys. This additional restriction ensures that the behavior change being reported occurred during program attendance.

Change in attitudes, knowledge, and behaviors is reported as the percent change between baseline and exit—that is, the difference between baseline and exit responses expressed as a percentage of the baseline value. Results of the statistical analyses are provided in the columns labeled "p-value." These numbers represent the probability that a change of this or a larger magnitude could have been observed because of statistical error, even if there were no change in the actual participant population. Thus, the smaller the p-value, the more significant is the change. By convention, p-values smaller than 0.05 indicate a statistically significant change. Technical details of the statistical tests used in the pre-post comparisons are provided in the ***Appendix***.

Where sample sizes are sufficient, results of outcome analyses are presented by demographic group, including gender, age group, and race/ethnicity. Additionally, outcomes are examined separately for a list of vulnerable population groups of special interest to SAMHSA.

If a subgroup has a small sample size, its result is suppressed for privacy protection purposes, given the sensitive nature of the data and the need to rule out misleading conclusions resulting from the larger-than-acceptable margins of error. The minimum sample size of 55 was selected to balance the need to present results for subsamples of interest against the need to suppress results that appeared unstable or unreliable. Wherever numbers are suppressed, a note is inserted after the table to indicate which of the two criteria necessitated this action.

For precision, all of the calculations are conducted on numbers carried to more than 10 decimal places. The results are rounded to the nearest tenth place for tabulation and, in most cases, further rounded to the nearest whole number in the text. Thus, for example, percent change calculated from the reported baseline and exit numbers will not be exactly equal to the value in the "percent change" column of the table.

3. Populations of Focus and Planned/Implemented Activities (EQ1)

In this chapter, we address Evaluation Question #1: What are the population groups on which grantees are focusing their prevention efforts? What strategies and services are planned and delivered to these populations? Unless otherwise noted, data for this chapter come from grantees' Quarterly Progress Reports (QPRs) extracted from SAMHSA's Performance Accountability and Reporting System (SPARS). The structure of the QPR reflects the Strategic Prevention Framework (SPF), which structures the funded activities of all Minority AIDS Initiative (MAI) grantees. Grantees reported on each of the five SPF steps—needs assessment, strategic planning, capacity building, intervention implementation, and evaluation—and on their activities to address health disparities.

3.1 Populations of Focus

As part of their strategic planning process, grantees are required to identify one or more populations of focus for their direct-service interventions by selecting population categories from a standard list provided by SAMHSA. As seen in ***Exhibit 5***, grantees chose populations of focus that are appropriate specifically to the MAI program. About three quarters of grantees planned to focus on young adults age 18–24; some specifically targeted college students (80% of grantees), whereas others targeted this age group at large, regardless of college attendance. Reflective of the target populations of their grants, 53% of HIV Capacity Building Initiative (HIV CBI) grantees planned to focus on youth age 12–17, but only one Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) grantee reported this younger age group as a population of focus, probably because most of the interventions of these grantees were implemented on college campuses. There was a notable focus on African American/Black men (62%) and women (57%) and on Hispanic/Latino men (49%) and Hispanic/Latina women (44%). Other common populations of focus included people who identify as lesbian, gay, bisexual, transgender, or questioning (54%) and men who have sex with men (43%). Typically, grantees selected multiple populations, resulting in percentages adding up to more than 100%.

Exhibit 5. Planned Populations of Focus

Number and Percentage of Grantees Reporting Each Planned Population of Focus

Population of Focus	MSI CBO		HIV CBI		Total	
	N	%	*N*	%	*N*	%
Age						
Age 12–17	1	1.4	31	53.4	32	25.2
Age 18–24 in college	64	92.8	38	65.5	102	80.3
Age 18–24 not in college	54	78.3	41	70.7	95	74.8
Age 50 or older	5	7.2	3	5.2	8	6.3
Ethnicity						
Hispanic/Latina women	31	44.9	25	43.1	56	44.1
Hispanic/Latino men	32	46.4	30	51.7	62	48.8
Race						
African American/Black women	41	59.4	31	53.4	72	56.7
African American/Black men	43	62.3	36	62.1	79	62.2
American Indian or Alaska Native	10	14.5	14	24.1	24	18.9
Asian American or Pacific Islander	12	17.4	13	22.4	25	19.7

(continued)

Exhibit 5. Planned Populations of Focus (continued)

Number and Percentage of Grantees Reporting Each Planned Population of Focus

Population of Focus	MSI CBO		HIV CBI		Total	
	N	%	*N*	%	*N*	%
Special Populations						
Men who have sex with men	26	37.7	29	50.0	55	43.3
Lesbian, gay, bisexual, transgender, or questioning	36	52.2	33	56.9	69	54.3
Military/veterans	11	15.9	7	12.1	18	14.2
Re-entry populations	3	4.3	10	17.2	13	10.2
Homeless individuals	12	17.4	14	24.1	26	20.5
Sex workers	4	5.8	9	15.5	13	10.2
Low income	17	24.6	20	34.5	37	29.1
Other	6	8.7	10	17.2	16	12.6
Total Number of Grantees Reporting	**69**	—	**58**	—	**127**	—

Note: CBI = Capacity Building Initiative; MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018.

3.2 Activities to Address Health Disparities

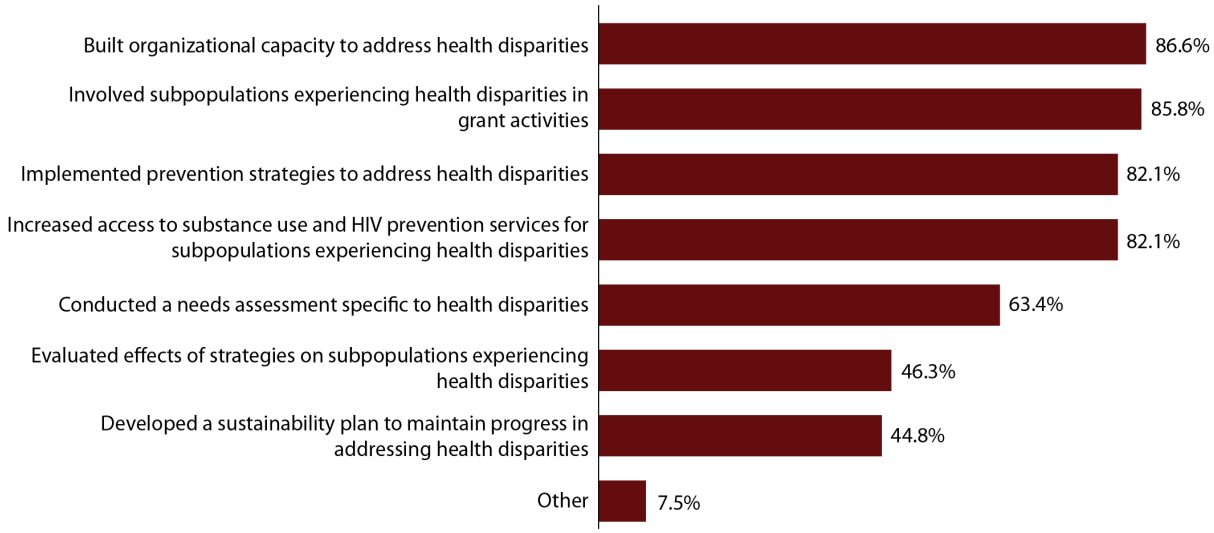
To support the *Action Plan to Reduce Racial and Ethnic Health Disparities* (U.S. Department of Health and Human Services, 2011), SAMHSA requires its grantees to implement strategies to decrease differences in access, service use, and outcomes among subpopulations who are vulnerable to health disparities. In line with this priority, MAI grantees work to reduce disparities and inequities among populations at risk of substance misuse, HIV, and viral hepatitis (VH) infection. This effort includes serving people who experience limited access to behavioral health services or who experience worse substance use or HIV prevention outcomes than the general population.

Exhibit 6 displays the proportion of grantees engaging in various activities that address health disparities.

Over half of the grantees implemented the following activities: built organizational capacity to address health disparities (87%), involved members of subpopulations experiencing health disparities in grant activities (86%), implemented prevention strategies to address health disparities (82%), increased access to substance use and HIV prevention services for subpopulations experiencing health disparities (82%), and conducted a needs assessment specific to health disparities (63%). Fewer grantees reported evaluation and sustainability efforts that focused specifically on disparities (46% and 45%, respectively). This difference is likely due to where grantees were in the SPF process at the time of reporting; both activities are typically prioritized later in a project's timeline. Overall, the high proportion of grantees reporting at least one disparity-related activity is proof of their efforts to address and ultimately reduce health disparities.

Exhibit 6. Accomplished Activities to Address Health Disparities

Percentage of Grantees Conducting Activities to Address Health Disparities



Note: A total of 134 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015: 63; HIV Capacity Building Initiative 2015 & 2016: 71) provided data for this table.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018.

3.3 Characteristics of Direct and Indirect Prevention Strategies

MAI grantees are expected to implement direct-service interventions to address substance misuse and prevent HIV and VH among their target populations. Direct-service interventions are bundles of services offered directly to participants in either a group format or a one-on-one session. The interventions aim to change individuals' knowledge, attitudes, and behaviors. SAMHSA encourages MAI grantees to implement evidence-based interventions, identified as such on the Centers for Disease Control and Prevention (CDC) Effective Interventions website and on SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP) website. Often, grantees select multiple direct-service interventions to meet the unique needs of their target populations and to address their prevention goals. Thus, it is rare that any two grantees are implementing exactly the same combination of interventions. As a result, it has not been possible to single out, with sufficient statistical certainty, the specific strategy combinations that produce better outcomes than others.

According to the QPRs, 88% of the direct-service interventions grantees planned to implement were evidence based. Slightly under a third of these interventions were adapted from the original. Reported reasons for adapting an intervention include to integrate it with other evidence-based interventions, to adjust it to the needs of the population served, and to include additional information on prevention topics that were not covered in the original curriculum. Although adapting interventions detracts from implementation fidelity, it is often necessary to properly serve the population of focus in the context within which the intervention is being provided. For example, grantees often respond to the SAMHSA requirement to *integrate* substance use and HIV prevention messages by implementing two separate evidence-based interventions and adjusting their curricula to integrate them into a single program.

In addition to direct-service interventions, grantees were also required to implement at least one indirect strategy with the intention of reaching the entire community rather than specific individuals or groups. Indirect strategies are categorized into two types: environmental strategies and information dissemination. *Environmental strategies* are activities aimed to change policies, standards, practices, and codes of an entire community to reduce risk factors. For instance, both training environmental influencers (such as health care providers, law enforcement

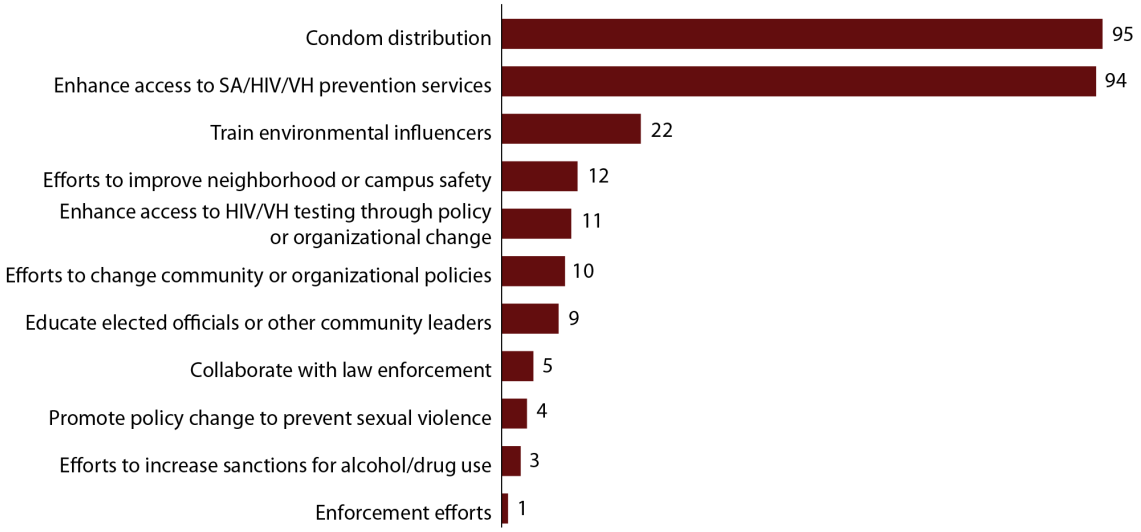
officials, and beverage servers) and promoting policy change to reduce substance misuse are considered environmental strategies because they affect systems and lead to community-level change. *Information dissemination* activities provide knowledge about undesirable behaviors and their effects, along with information on behavioral health services. Distributing informational brochures and conducting social media campaigns are common examples of information dissemination activities.

Exhibits 7 and ***8***, respectively, display the number of environmental strategies and information dissemination activities that grantees planned to implement. Exhibit 7 displays the number of planned environmental strategies by type. The most common environmental strategies were condom distribution (95) and the enhancement of access to substance misuse, HIV, or VH prevention services (94). Compared to environmental strategies, information dissemination activities were more numerous and more varied (Exhibit 8). There were over 100 planned health fairs (148) and workshops, seminars, or symposiums (123), indicating that public and interactive events were the preferred way to reach the community. Grantees also reported a high number of dissemination activities that used both printed and electronic materials, including the distribution of booklets, brochures, flyers, and newsletters (89); social media posts (85); and social marketing and social norms campaigns (72). In addition, 27 grantees implemented activities classified in Exhibit 8 as "Other," such as theater productions, film screenings, and participation in community days sponsored by organizations such as churches, schools, Boys & Girls Clubs, and tribal agencies. Overall, the numbers reported in Exhibit 8 suggest that grantees are optimizing their reach by using mixed-media approaches to communicate with their populations of focus.

In addition to reporting on direct- and indirect-service interventions in their QPRs, the grantees recorded the names of the interventions each participant received on the adult and youth questionnaires; the data displayed in ***Exhibit 9*** come from participant questionnaires. The exhibit lists interventions implemented by at least 2 grantees and received by at least 100 participants. The two most common interventions implemented were VOICES/VOCES and Alcohol Literacy Challenge (ALC). Both interventions, and most of the interventions listed in Exhibit 9, are listed in Federal registries including the CDC's Effective Interventions website and SAMHSA's NREPP.

Exhibit 7. Types of Environmental Strategies

Number of Environmental Strategies by Service Type

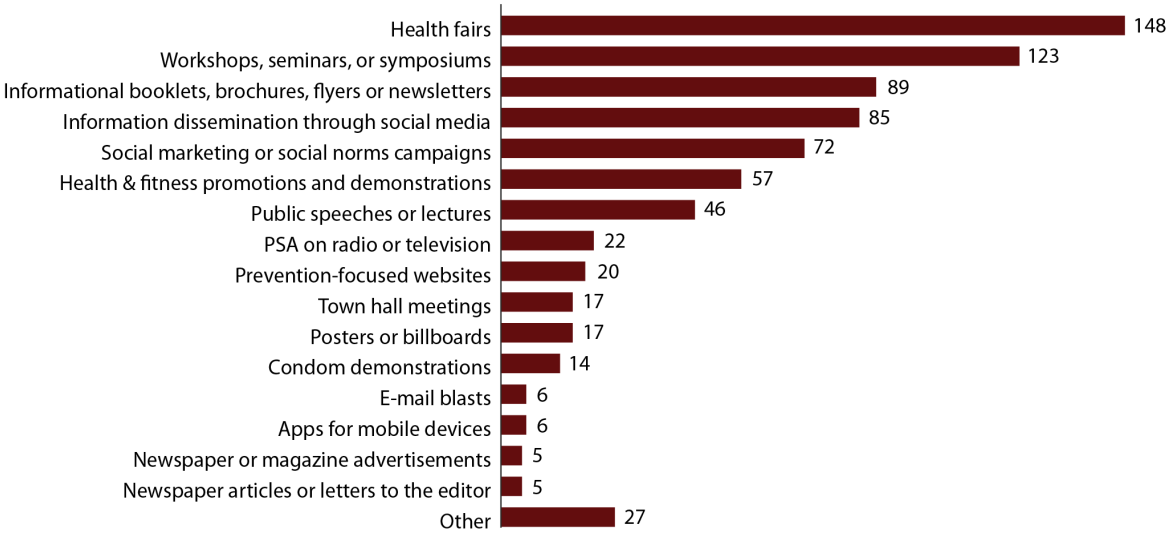


Note: A total of 136 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015: 67; HIV Capacity Building Initiative 2015 & 2016: 69) provided data for this chart. SA = substance abuse; VH = viral hepatitis.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018. These data come from the Planning module of the Quarterly Progress Reports.

Exhibit 8. Types of Information Dissemination Interventions

Number of Information Dissemination Interventions by Service Type



Note: A total of 136 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015: 67; HIV Capacity Building Initiative 2015 & 2016: 69) provided data for this chart. PSA = public service announcement.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018. These data come from the Planning module of the Quarterly Progress Reports.

Exhibit 9. Common Interventions

Interventions Implemented by at Least 2 Grantees and Attended by at Least 100 Participants

Intervention Name	Grantees		Participants	
	N	%	*N*	%
HIV Interventions				
VOICES/VOCES	19	20.7	7,092	36.8
Rapid HIV testing	11	12.0	3,126	16.2
Motivational Interviewing-based HIV Risk Reduction	8	8.7	790	4.1
Protocol-Based HIV Counseling and Testing (PBC)	7	7.6	1,454	7.5
RESPECT	6	6.5	796	4.1
Popular Opinion Leader (environmental)	5	5.4	869	4.5
SISTA	4	4.3	257	1.3
Mpowerment	3	3.3	204	1.1
Many Men, Many Voices	3	3.3	157	0.8
Be Proud! Be Responsible!	3	3.3	130	0.7
Safety Counts	2	2.2	224	1.2
Safe in the City	2	2.2	124	0.6
Substance Use Interventions				
Alcohol Literacy Challenge (ALC)	12	13.0	3,347	17.4
Brief Alcohol Screening and Interventions for College Students (BASICS)	5	5.4	686	3.6
Challenging College Alcohol Abuse (environmental)	4	4.3	401	2.1
Adolescent Community Reinforcement Approach (A-CRA)	3	3.3	118	0.6
Project Towards No Drug Abuse	2	2.2	427	2.2
Coping with Work and Family Stress	2	2.2	314	1.6
Storytelling for Empowerment	2	2.2	252	1.3

(continued)

Exhibit 9. Common Interventions (continued)

Interventions Implemented by at Least 2 Grantees and Attended by at Least 100 Participants

Intervention Name	Grantees		Participants	
	N	%	*N*	%
HIV and Substance Use Interventions				
Street Smart	7	7.6	408	2.1
PROMISE	6	6.5	841	4.4
Choosing Life: Empowerment! Action! Results! (CLEAR)	5	5.4	153	0.8
Say it Straight (SIS)	4	4.3	443	2.3
NIDA Community Outreach Model	3	3.3	174	0.9

Notes: A total of 92 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations [MSI CBO] 2013: 11; MSI CBO 2014: 13; MSI CBO 2015: 22; HIV Capacity Building Initiative [HIV CBI] 2015: 42; HIV CBI 2016: 4) provided participant-level data on interventions. Data were available for 19,288 participants. NIDA = National Institute on Drug Abuse; VH = viral hepatitis; SA = substance abuse.

Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017.

Interventions comprise prevention messages that focus exclusively on HIV prevention, exclusively on substance use prevention, or on prevention of both HIV and substance use. Exhibit 9 shows that the common interventions had all three prevention messages, with slightly more interventions designed for HIV prevention than for substance use. ***It is important to keep in mind that grantees often provide a combination of interventions; that is, they may provide an HIV-focused intervention along with a substance use-focused intervention. Therefore, Exhibit 9 underrepresents grantees' efforts to provide participants with multidimensional services that integrate both types of prevention messages***.

4. Numbers Served, Reached, Tested, Vaccinated, and Referred (EQ2)

In this chapter, we address Evaluation Question #2: How many people were served through direct-service interventions, reached through indirect strategies, tested for HIV and viral hepatitis (VH), and vaccinated against VH? How many referrals were made by the grantees and for which services? Like those in ***Chapter 3***, data for this chapter come from grantees' Quarterly Progress Reports extracted from SAMHSA's Performance Accountability and Reporting System (SPARS). As mentioned earlier, these program output measures serve SAMHSA's annual reporting requirements. This and earlier cross-site reports therefore provide them as annual rather than cumulative totals.

4.1 People Served and Reached

Every quarter, grantees reported the number of people they served through each direct-service intervention, and the number of people reached through each indirect strategy, implemented during the quarter. These numbers are estimates because, first, grantees cannot always count or track the actual numbers of people receiving or being exposed to a service. For example, the number of people reached through a public service announcement cannot be accurately counted; rather, it is an estimate based on data of the population within the broadcast area. Second, grantees without the ability to track service recipients may count a person multiple times for receiving multiple services during a single quarter, a single service during multiple quarters, or both. For these reasons, the numbers reported in this section should be interpreted not only as estimates but also as "person-contacts" rather than unduplicated counts of individuals. For the sake of brevity, we refer to "people" rather than the more accurate "person-contacts" in the rest of the section.

In FY2017, 132 grantees reported serving 91,193 people through direct-service interventions. This amounts to an average of 691 people served per grantee. ***Chapters 5*** and ***6*** of this report delve further into the characteristics and outcomes of people receiving direct services through the analysis of participant-level survey data.

Collectively, grantees estimated reaching over 2 million people[4] through indirect strategies in FY2017. ***Exhibit 10*** displays the estimated number of people reached, broken out by their demographic characteristics. Demographic characteristics were predominately reported as "unknown," which is not surprising given the challenges involved in accurately identifying people exposed to indirect strategies.

Exhibit 10. People Reached Through Indirect-Service Interventions, FY2017

Number and Percentage of People Reached Through Indirect-Service Interventions in FY2017, by Demographic Characteristics

Demographic Characteristic		MSI CBO	HIV CBI	Total
Gender				
Female	*N*	175,502	335,691	511,193
	%	20.0	29.0	25.1
Male	*N*	111,109	347,692	458,801
	%	12.7	30.1	22.5
Unknown	*N*	591,705	473,018	1,064,723
	%	67.4	40.9	52.3
Age				
Age 12–17	*N*	4,992	112,222	117,214
	%	0.5	10.2	5.8
Age 18 or older	*N*	553,486	534,139	1,087,625
	%	60.9	48.7	54.2
Unknown	*N*	350,136	450,709	800,845
	%	38.5	41.1	39.9
Ethnicity				
Hispanic/Latino	*N*	128,782	120,153	248,935
	%	14.6	15.3	14.9
Non-Hispanic/Latino	*N*	158,633	85,791	244,424
	%	17.9	10.9	14.6
Unknown	*N*	597,449	579,810	1,177,259
	%	67.5	73.8	70.5
Race				
African American/Black	*N*	145,471	89,754	235,225
	%	17.0	7.9	11.8
American Indian or Alaska Native	*N*	2,951	8,600	11,551
	%	0.3	0.8	0.6
Asian	*N*	2,098	15,072	17,170
	%	0.2	1.3	0.9
Native Hawaiian or other Pacific Islander	*N*	96	678	774
	%	0.0	0.1	0.0
White	*N*	45,854	410,465	456,319
	%	5.4	36.0	22.9
More than one race	*N*	8,856	41,058	49,914
	%	1.0	3.6	2.5
Other	*N*	8,017	19,393	27,410
	%	0.9	1.7	1.4
Unknown	*N*	640,181	554,746	1,194,927
	%	75.0	48.7	59.9

(continued)

[4] Because of the population-based nature of indirect strategies, it was not possible for grantees to provide unduplicated counts of people they reached. Thus, an individual reached by multiple indirect strategies may be counted multiple times in this total.

Exhibit 10. People Reached Through Indirect-Service Interventions, FY2017 (continued)

Number and Percentage of People Reached Through Indirect-Service Interventions in FY2017, by Demographic Characteristics

Demographic Characteristic		MSI CBO	HIV CBI	Total
Total Number of People Reached	***N***	**1,025,698**	**1,347,691**	**2,373,389**

Notes: A total of 129 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations [MSI CBO] 2013–2015: 62; HIV Capacity Building Initiative [CBI] 2015 & 2016: 67) provided data for this table. The number reached through population-based services is not a unique count. Individuals receiving multiple services during the study period were counted multiple times. The numbers, therefore, should be interpreted as "person-exposures" rather than counts of unique individuals.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018. The data on people reached were adjusted using a statistical technique known as Winsorization, to prevent the overall demographic distributions from being unduly skewed in the direction of a single grantee identified as an "outlier" because it reported unusually high numbers.

4.2 Testing and Vaccination

All Minority AIDS Initiative (MAI) grantees are required to provide HIV testing services and to report the numbers of people they test every quarter. During FY2017, MAI grantees jointly provided 37,245 HIV tests; 55% of the tests were provided to individuals who had never been tested before (***Exhibit 11***). The positivity rate was under 1%, with 265 tests yielding positive results. Nearly all of the individuals who tested positive (99%) were referred to treatment. HIV tests were typically administered directly by the grantee or a partner organization (90%). The large number of people tested for the first time is a noteworthy program accomplishment in line with the goals of the *National HIV/AIDS Strategy*: The strategy aims to increase the percentage of people living with HIV who know their serostatus from 83% in 2010 to 90% by 2020 (White House Office of National AIDS Policy, 2015).

Exhibit 11. HIV Testing Overview, FY2017

HIV Tests Provided, Characteristics of Tested Individuals, HIV-Positive Test Results, and Referrals to Treatment Reported in FY2017

Testing Characteristic		MSI CBO 2013	MSI CBO 2014	MSI CBO 2015	HIV CBI 2015	HIV CBI 2016	Total
Tested for the first time	*N*	692	3,477	6,500	8,015	1,736	20,420
	%	41.1	58.9	49.5	57.0	70.4	54.8
Homeless individuals tested	*N*	0	78	336	967	248	1,629
	%	0.0	1.3	2.6	6.9	10.1	4.4
Tested directly by grantee or partner organization	*N*	682	5,767	12,312	12,435	2,465	33,661
	%	40.5	97.7	93.8	88.4	100.0	90.4
HIV-positive individuals	*N*	6	18	79	147	15	265
	%	0.4	0.3	0.6	1.0	0.6	0.7
HIV positive individuals referred to treatment	*N*	6	18	78	145	15	262
	%	100.0	100.0	98.7	98.6	100.0	98.9
Total Tested	***N***	**1,682**	**5,902**	**13,125**	**14,071**	**2,465**	**37,245**

Notes: A total of 125 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations [MSI CBO] 2013: 4; MSI CBO 2014: 19; MSI CBO 2015: 33; HIV Capacity Building Initiative [HIV CBI] 2015: 52; HIV CBI 2016: 17) provided data for this table.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018.

The requirement for grantees to offer VH testing services differed by grant program; VH testing was optional for Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) grantees but required for HIV CBI grantees. During FY2017, 100 grantees collectively tested 8,514 individuals for VH. Of those tested, 71% were tested for the first time; 262 tests were positive, and most of those testing positive (89%) were referred to treatment (***Exhibit 12***).

Exhibit 12. Viral Hepatitis Testing Overview, FY2017

VH Tests Provided, Characteristics of Tested Individuals, VH-Positive Test Results, and Referrals to Treatment Reported in FY2017

Testing Characteristic		MSI CBO 2013	MSI CBO 2014	MSI CBO 2015	HIV CBI 2015	HIV CBI 2016	Total
Tested for the first time	*N*	31	1,180	1,531	3,140	168	6,050
	%	100.0	81.4	90.2	63.1	47.2	71.1
Homeless individuals tested	*N*	0	33	136	290	8	467
	%	0.0	2.3	8.0	5.8	2.2	5.5
Tested directly by grantee or partner organization	*N*	31	1,450	1,573	3,226	347	6,627
	%	100.0	100.0	92.6	64.8	97.5	77.8
VH-positive individuals	*N*	0	24	33	172	33	262
	%	0.0	1.7	1.9	3.5	9.3	3.1
VH-positive individuals referred to treatment	*N*	0	24	33	154	23	234
	%	—	100.0	100.0	89.5	69.7	89.3
Total Tested	***N***	**31**	**1,450**	**1,698**	**4,979**	**356**	**8,514**

Notes: A total of 100 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations [MSI CBO] 2013: 2; MSI CBO 2014: 12; MSI CBO 2015: 26; HIV Capacity Building Initiative [HIV CBI] 2015: 46; HIV CBI 2016: 14) provided data for this table. VH = viral hepatitis.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018.

Two cohorts—HIV CBI 2015 and HIV CBI 2016—could also use grant funds for hepatitis vaccinations. During FY2017, seven grantees provided hepatitis vaccination. A total of 370 vaccines were purchased and 116 individuals were vaccinated (not tabulated).

4.3 Referrals to Non-MAI-Funded Services

Grantees reported the number of referrals made to services that were not delivered directly by them or their partner organizations and that were not funded using MAI funds. The total number of these referrals in FY2017 is displayed in ***Exhibit 13*** by service category. By far the greatest number of referrals (15,627) were to HIV testing and counseling services. This suggests that grantees influence an even larger number of people in receiving an HIV test than noted in Exhibit 11; the only difference between the testing referrals reported in the two exhibits is the source of funding and place of service. The same is applicable for the number of referrals to VH testing and counseling, which was also notably high (7,972).

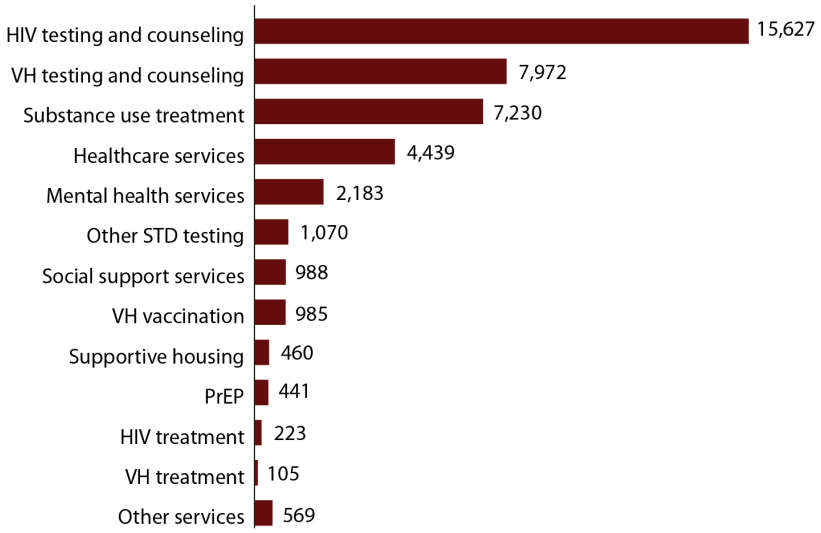
Referring individuals to physical, social, and behavioral health services was common, highlighting the spectrum of individuals' health care needs. Among these services, the number of referrals made to substance use treatment (7,230) was the highest. Referrals to mental health services (2,183) and to wraparound social support services (988)—which includes clothing assistance, benefit enrollment, and job training—were somewhat common but less frequent than substance use treatment and physical health care services.

Grantees made 441 referrals to pre-exposure prophylaxis (PrEP) to reduce the risk of HIV infection. According to the CDC (2018b), regularly taking PrEP medicines can reduce the risk of HIV transmission through sexual contact by more than 90% and through sharing needles among injection drug users by more than 70%. Grantees' efforts to refer

participants to PrEP services align with the National HIV/AIDS Strategy's goal to increase access to comprehensive PrEP services for those for whom it is appropriate and desired (White House Office of National AIDS Policy, 2015).

Exhibit 13. Referrals to Non-MAI-Funded Services, FY2017

Number of referrals made to services that were not funded through MAI funds and were not delivered by MAI grantees or their partner organizations in FY2017



Notes: A total of 98 grantees (Minority Serving Institutions Partnerships with Community-Based Organizations [MSI CBO] 2013–2015: 41; HIV Capacity Building Initiative 2015 & 2016: 57) provided data for this table. "Mental health services" excludes HIV and viral hepatitis (VH) testing and counseling. "Health care services" excludes substance abuse, HIV, and VH treatment. PrEP = pre-exposure prophylaxis.

Source: Grantee Quarterly Progress Reports; data extracted from SAMHSA's Performance Accountability and Reporting System (SPARS) on January 10, 2018.

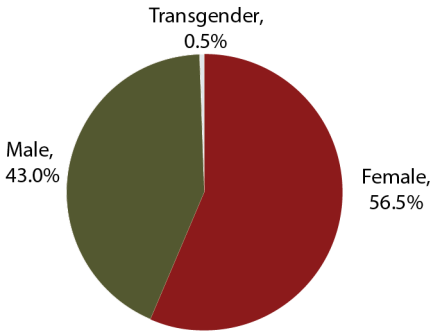
5. Characteristics of Direct-Service Program Participants (EQ3)

In this chapter, we address Evaluation Question #3: What were the sociodemographic characteristics of the participants who enrolled in direct-service interventions? The tables in this section are based on baseline survey data whenever that information was available. In most cases when baseline information was missing for a given characteristic, data from the exit survey were used for reporting purposes. For example, a participant who left the question on gender blank in the baseline survey, but reported being female in the exit survey, was counted as female. Doing so allowed us to provide as full a description of the participants' sociodemographic characteristics as possible. An inventory of available participant data is provided in the ***Appendix***.

Exhibits 14 through ***17*** present the basic demographic characteristics of the participants. The sample is 57% female and 43% male, with less than 1% self-identifying as transgender. Almost three-quarters of the participants (74%) are young adults age 18–24, in line with the main target population of the Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) cohorts. Most participants who provided race information identified as African American/Black (68%); 27% of the participants whose ethnicity was known identified as Hispanic/Latino.

Exhibit 14. Participants: Gender

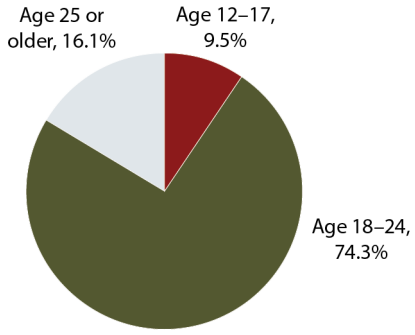
Gender Distribution of Direct-Service Program Participants



Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017.

Exhibit 15. Participants: Age

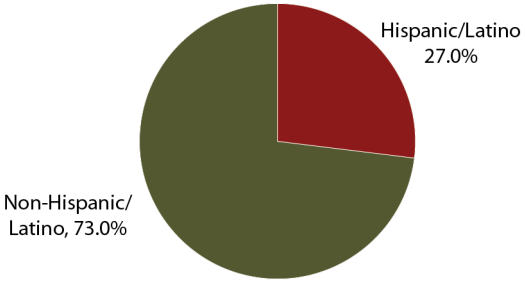
Age Distribution of Direct-Service Program Participants



Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017.

Exhibit 16. Participants: Ethnicity

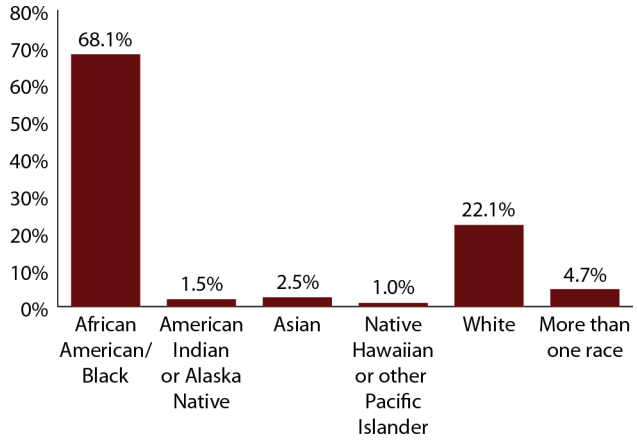
Ethnic Distribution of Direct-Service Program Participants



Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017.

Exhibit 17. Participants: Race

Racial Distribution of Direct-Service Program Participants



Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017.

Given the minority focus of the initiative, we examined the racial/ethnic composition of the participants in detail. ***Exhibit 18*** is a detailed cross-tabulation of participants' Hispanic/Latino ethnicity and race, including counts of individuals whose race or ethnicity information was missing.

One minority group whose numbers are partially masked in Exhibit 17 is American Indian or Alaska Native participants. This group is among the most likely to report multiple racial affiliations. For example, out of the over 5 million American Indian/Alaska Natives in the U.S. population, only half selected this category as their only racial affiliation in the American Community Survey (U.S. Census Bureau, 2015). The other half selected at least one other race, placing themselves in the "two or more races" category. In line with this national trend, only 317 Minority AIDS Initiative (MAI) program participants selected American Indian/Alaska Native as their only racial affiliation; another 421 selected at least one additional racial category and are counted in the "More than one race" row of Exhibit 17. That is, a total of 738 participants, or approximately 4% of all participants who provided race information, reported at least one of their racial affiliations as American Indian or Alaska Native.

Exhibit 18. Participants: Detailed Race/Ethnicity

Racial Distribution of Direct-Service Program Participants, by Race and Hispanic/Latino Ethnicity

Race		Hispanic or Latino	Not Hispanic or Latino	Hispanic/ Latino Ethnicity Not Provided	Overall Sample
African American/Black	*N*	493	9,561	3,965	14,019
	%	2.1	41.2	17.1	60.4
American Indian or Alaska Native	*N*	128	100	89	317
	%	0.6	0.4	0.4	1.4
Asian	*N*	43	395	77	515
	%	0.2	1.7	0.3	2.2
Native Hawaiian or other Pacific Islander	*N*	156	39	9	204
	%	0.7	0.2	0.0	0.9
White	*N*	2,636	1,519	399	4,554
	%	11.4	6.5	1.7	19.6
More than one race	*N*	339	501	127	967
	%	1.5	2.2	0.5	4.2
Race not provided	*N*	942	697	988	2,627
	%	4.1	3.0	4.3	11.3
Overall Sample	***N***	**4,737**	**12,812**	**5,654**	**23,203**
	%	**20.4**	**55.2**	**24.4**	**100.0**

Notes: *N* refers to the number of participants represented by the row and column and % represents their share in the overall sample (*N* = 23,203).

Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017.

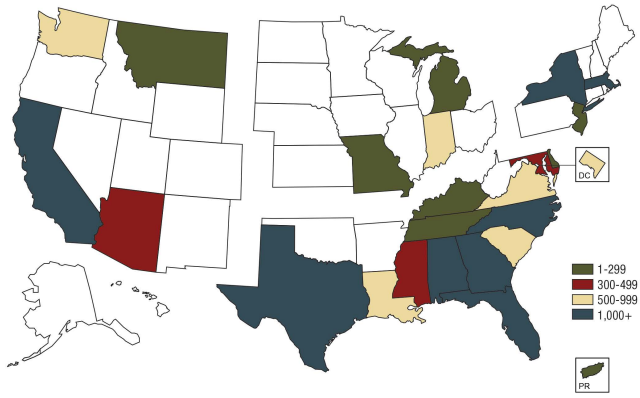
Exhibit 19 shows the geographic distribution of the participants, based on the grantee organization's location. Over 90% of the 36,956 participants for whom geographic information was available resided either in the Northeast or the South; almost 70% were in the southern United States, the region with the highest HIV incidence rate (CDC, 2016).

We next turn to participant characteristics closely associated with the risks of substance misuse and HIV transmission. ***Exhibit 20*** displays the self-reported sexual orientation of the program participants. Fifteen percent of the participants identified as either gay, lesbian, or bisexual. Compared to the national estimate of 4.1% among the adult population (Gates, 2017), this figure suggests that grantees have made a special effort to reach out to this community.

Community re-entry after incarceration increases the risks of substance misuse and STD transmission (Larney et al., 2018; Luther et al., 2011). ***Exhibit 21*** shows that 17% of the participants who provided their incarceration history had spent more than 3 days in jail or prison with release dates less than 2 years before program attendance.

Exhibit 19. Participants: Geographic Distribution

Number of Direct-Service Program Participants Age 12 or Older, by State of Residence



Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017. Information on participants' state of residence was obtained from grantee organizations' addresses.

Exhibit 20. Participants: Sexual Orientation

Direct-Service Program Participants Age 12 or Older, by Sexual Orientation

Sexual Orientation		MSI CBO	HIV CBI	Total
Straight or heterosexual	*N*	12,908	3,588	16,496
	%	85.3	78.4	83.7
Bisexual	*N*	1,005	436	1,441
	%	6.6	9.5	7.3
Gay or lesbian (total)	*N*	1,008	447	1,455
	%	6.7	9.8	7.4
Male	*N*	624	353	977
	%	63.1	81.9	68.8
Female	*N*	365	78	443
	%	36.9	18.1	31.2
Unsure	*N*	216	105	321
	%	1.4	2.3	1.6
Total	***N***	**15,137**	**4,576**	**19,713**
	%	**100.0**	**100.0**	**100.0**

Notes: *N* refers to the total number of participants identifying with the corresponding category on the questionnaires. For the gender categories, *N* refers to the total number identifying with the corresponding gender category and reporting sexual orientation as "Gay or Lesbian" on the questionnaire. Percentages for the gender categories are calculated by dividing each category by the total number reporting sexual orientation as "Gay or Lesbian" and gender. MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data received through August 31, 2017.

Exhibit 21. Participants: Incarceration History

Number and Percentage of Direct-Service Program Participants Age 12 or Older, by Incarceration History Reported at Baseline

Incarceration Status		MSI CBO	HIV CBI	Total
Never been to jail/prison for more than 3 days	*N*	7,425	3,079	10,504
	%	79.2	76.7	78.5
Spent time in jail/prison and less than 2 years since release (re-entry)	*N*	1,604	724	2,328
	%	17.1	18.0	17.4
Spent time in jail/prison and more than 2 years since release	*N*	342	213	555
	%	3.6	5.3	4.1
Total	***N***	**9,371**	**4,016**	**13,387**
	%	**100.0**	**100.0**	**100.0**

Notes: *N* refers to the total number of participants identifying with the corresponding category on the questionnaires at baseline. MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data received through August 31, 2017.

Exhibit 22 displays the numbers and percentages of participants from additional high-risk populations. Men who have sex with men (MSM) constituted 8% of the sample. HIV Capacity Building Initiative (HIV CBI) grantees served a much higher percentage of MSM than the grantees in MSI CBO cohorts (19% vs. 7%). Black MSM, the group most affected by HIV in the United States, constituted 5% of the participants. Men who have sex with both men and women made up 4% of the participants. Just under half of the program participants (47%) were African American/Black, Latina, or Hispanic women, a group at high risk of HIV and other STDs (CDC, 2016).

Exhibit 22. Participants: High-Risk Groups

Distributions of Direct-Service Program Participants Age 12 or Older Across High-Risk Groups of Special Interest to the MAI Program

High-Risk Population		MSI CBO	HIV CBI	Total
Adult men who have sex with men (total)	Valid *N*	16,765	2,763	19,528
	%	6.6	19.0	8.4
African American/Black	Valid *N*	16,835	2,810	19,645
	%	4.2	8.4	4.8
Hispanic/Latino	Valid *N*	17,146	2,849	19,995
	%	1.5	5.8	2.1
Adult men who have sex with both men and women	Valid *N*	12,710	2,344	15,054
	%	3.1	9.4	4.1
African American/Black, Latina, or Hispanic women	Valid *N*	17,576	2,831	20,407
	%	50.1	28.1	47.0
Homeless individuals	Valid *N*	5,868	3,762	9,630
	%	0.9	3.4	1.9
Residents of southern states	Valid *N*	30,196	6,718	36,914
	%	74.9	44.3	69.4

Notes: The above categories are not mutually exclusive. Therefore, the columns will add to a number greater than 100%. In addition, percentages represent those participants with all relevant participant-level data required to be included in each category. Valid *N* refers to the total number of participants with valid responses to the survey items used to calculate the target groups. Percentages represent the percentage of participants with data who belong to the category represented by each row. Southern states include Alabama, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. Three southern states (Arkansas, Oklahoma, and West Virginia) did not have any of the grantees whose data are included in this year's sample. Homeless individuals represent participants who reported that they were "homeless or in a shelter" at baseline or exit. MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data received through August 31, 2017

6. Baseline-to-Exit Change in Knowledge, Attitudes, and Behaviors (EQ4)

Minority AIDS Initiative (MAI) program participants who received direct services lasting more than one day completed surveys at the beginning and end of their service duration.[5] Participants were given unique ID numbers to use on these surveys, and the responses to the pre- and post-intervention surveys were linked and compared for each participant. This chapter reports the results of this analysis. The tables display the pretest (baseline) and posttest (exit) values and the percent change between the two, calculated as the change expressed as a percentage of the baseline value. The p-values assess the statistical significance of the change such that a p-value of 0.05 or smaller indicates a significant difference. Positive change indicates an increase from baseline to exit; a negative change indicates a decrease.

In reporting participant-level outcomes, we did not display numbers for subgroups smaller than 55 to prevent conclusions based on insufficient information. Additionally, outcomes are not reported for individuals who self-identify with more than one race because this group comprises individuals from widely varying cultural and socioeconomic backgrounds; their behavioral health needs also vary.

6.1 Perceptions of Risk of Harm From Unhealthy Behaviors

One of the strongest protective factors in preventing substance use disorders and high-risk sex is awareness

[5] In this year's sample, 4,184 participants had matching baseline and exit survey data.

of the risks of harm from such behaviors. Results discussed in this section suggest that the MAI program was successful in increasing participants' perceptions of risk of harm from substance misuse and risky sexual behaviors.

The Perception of Risk of Harm from Substance Misuse Scale is a composite measure consisting of responses to multiple questions about the respondent's perception of risk of harm from using various substances. The questions and the method of scale calculation are discussed in detail in the ***Appendix***. The scale ranges from 1 (no risk) to 4 (great risk).

Exhibit 23 shows a 4% increase in the average substance misuse risk score between baseline and exit, from an average perception of risk of harm from substance misuse score of 3.3 to 3.4. All subgroups, except for American Indian or Alaska Native and homeless individuals, experienced highly significant improvements. Adults age 25 or older gained more than youth participants (12–17) or young adults (18–24), and non-Hispanic/Latino participants improved more than their Hispanic/Latino counterparts.

Exhibit 23. Baseline-to-Exit Change in Perceived Risk of Harm From Substance Misuse

Average Perception of Risk of Harm From Substance Misuse Scores of Direct-Service Program Participants Age 12 or Older [Scores range from 1 (No Risk) to 4 (Great Risk)]

Participant Characteristic	Valid *N*	Avg. Risk Score at Baseline	Avg. Risk Score at Exit	Percent Change	p-value
Cohort					
MSI CBO	2,358	3.4	3.5	3.8	≤ 0.001
HIV CBI	1,537	3.2	3.3	3.5	≤ 0.001
Gender					
Female	2,176	3.4	3.5	3.5	≤ 0.001
Male	1,677	3.2	3.4	4.0	≤ 0.001
Age					
Age 12–17	691	3.2	3.4	3.8	≤ 0.001
Age 18–24	2,738	3.3	3.4	3.1	≤ 0.001
Age 25 or older	435	3.4	3.6	7.5	≤ 0.001
Ethnicity					
Hispanic/Latino	983	3.4	3.4	2.7	≤ 0.001
Non-Hispanic/Latino	2,652	3.3	3.4	3.7	≤ 0.001
Race					
African American/Black	2,308	3.3	3.4	3.8	≤ 0.001
American Indian or Alaska Native	67	3.4	3.3	-1.8	0.356
Asian	133	3.3	3.5	5.4	0.002
Native Hawaiian or other Pacific Islander	55	3.3	3.4	3.9	0.022
White	801	3.4	3.5	4.3	≤ 0.001
High-Risk Groups of Special Interest					
Men who have sex with men (adults only)	346	3.2	3.3	5.0	≤ 0.001
African American/Black, Latina, or Hispanic women	1,531	3.4	3.5	3.4	≤ 0.001
Homeless individuals	93	3.3	3.4	3.7	0.084
Residents of southern states	2,984	3.3	3.5	3.6	≤ 0.001
Total	**3,895**	**3.3**	**3.4**	**3.7**	**≤ 0.001**

Notes: p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

The Perceived Risk of Harm From Risky Sexual Behaviors Scale is a composite measure that combines the respondent's perception of risk of harm from having unprotected sex and having sex while drunk or high. The items and method used to construct this composite variable are provided in the ***Appendix***.

MAI programs were successful in increasing perceptions of risk associated with risky sexual behaviors (see ***Exhibit 24***). Across all participants with matched baseline and exit data, 43% perceived great risk of harm associated with risky sexual behaviors at baseline; this percentage increased to 57% at exit, a 33% improvement. All subgroups that had a large enough sample size to allow reliable inference showed significant improvement, though some subgroups improved more than others. Males showed greater improvement than females, though their risk perceptions were lower than those of females at baseline and remained lower at exit. Youth (age 12–17) showed the greatest improvement among the age groups: the percentage of youth perceiving great risk of harm from risky sexual behaviors increased from 28% at baseline to 53% at exit, an 88% increase; the increase among young adults age 18–24 was 33% (this group composes the majority of the sample), and the increase among adults age 25 or older was 30%.

Hispanic/Latino participants had slightly lower risk perceptions at baseline than non-Hispanic/Latino participants but had higher risk perceptions at exit, thus showing greater improvement. African American/Black and White participants had similar risk perceptions at baseline, and although both groups showed significant improvement, White participants showed greater improvement.

Exhibit 24. Baseline-to-Exit Change in Perceived Risk of Harm From Risky Sexual Behaviors

Percentage of Direct-Service Program Participants Age 12 or Older Perceiving Great Risk of Harm From Unprotected Sex and Having Sex While Drunk or High

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
Cohort					
MSI CBO	2,332	42.2	57.2	35.5	≤ 0.001
HIV CBI	702	45.6	56.6	24.1	≤ 0.001
Gender					
Female	1,734	49.0	62.7	28.0	≤ 0.001
Male	1,274	34.8	49.3	41.8	≤ 0.001
Age					
Age 12–17	61	27.9	52.5	88.2	≤ 0.001
Age 18–24	2,593	41.3	54.7	32.6	≤ 0.001
Age 25 or older	358	57.8	74.9	29.5	≤ 0.001
Ethnicity					
Hispanic/Latino	772	41.3	57.5	39.2	≤ 0.001
Non-Hispanic/Latino	2,030	43.9	56.6	28.8	≤ 0.001
Race					
African American/Black	1,879	43.9	56.8	29.5	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	77	32.5	49.4	52.0	0.005
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	606	43.2	59.9	38.5	≤ 0.001

(continued)

Exhibit 24. Baseline-to-Exit Change in Perceived Risk of Harm From Risky Sexual Behaviors (continued)

Percentage of Direct-Service Program Participants Age 12 or Older Perceiving Great Risk of Harm From Unprotected Sex and Having Sex While Drunk or High

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
High-Risk Groups of Special Interest					
Men who have sex with men (adults only)	343	42.6	53.9	26.7	≤ 0.001
African American/Black, Latina, or Hispanic women	1,516	48.5	62.3	28.4	≤ 0.001
Homeless individuals	88	46.6	60.2	29.3	0.010
Residents of southern states	2,524	44.2	57.7	30.6	≤ 0.001
Total	**3,034**	**43.0**	**57.1**	**32.7**	**≤ 0.001**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided McNemar's test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

6.2 Disapproval of Peers' Unhealthy Behaviors

Perceived attitudes and behaviors among peers can directly influence sexual behaviors and substance use, particularly among youth. Peer norms associated with the risky behaviors targeted by the MAI program are measured by a group of survey questions that rate the participants' disapproval of peers' engaging in these behaviors.

As shown in ***Exhibit 25***, participants who responded to the baseline questionnaire had low rates of disapproval of their age peers' binge drinking (this question item was asked only on the adult questionnaire); only 23% of adult participants strongly disapproved of this behavior by their peers. All groups showed significant improvement from baseline to exit except for Asian participants, whose baseline level of disapproval was higher than those of all other groups. Disapproval at baseline was lowest among male participants who have sex with men (MSM; 15%); however, this subgroup showed significant improvement at exit (to 20%), a 36% increase. Males had lower disapproval rates than did females at both baseline and exit. Hispanic/Latino and White participants showed lower disapproval than the other race/ethnicity groups at both time points. Although the sample size was relatively small for homeless individuals (82 participants), they experienced the largest gains from baseline to exit, from 21% expressing strong disapproval at baseline to 34% at exit (an increase of 65%).

Participants who responded to the adult questionnaire showed significant increases in disapproval of their peers' regularly engaging in unprotected sexual activity, from 38% expressing strong disapproval at baseline to 44% at exit, reflecting a 16% increase (***Exhibit 26***; this question item was asked only on the adult questionnaire). Although all demographic subgroups increased their level of disapproval, the increase was not statistically significant among participants age 25 or older. Among the high-risk groups of special interest to the program, MSM and homeless participants did not show statistically significant improvements. Females increased their disapproval more than males, and at exit females' disapproval of unprotected sex was 51%, whereas males' disapproval was 37%. Hispanic/Latino participants had a lower disapproval rate than non-Hispanic/Latino participants at both baseline and exit but experienced a larger increase. African American/Black participants had a higher disapproval rate than the overall sample at both baseline and exit; these participants experienced a 15% increase during program attendance.

Exhibit 25. Baseline-to-Exit Change in Disapproval of Peer Binge Drinking

Percentage of Direct-Service Adult Program Participants Who Strongly Disapprove of Their Peers' Frequently Having Five or More Drinks in One Sitting

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
Cohort					
MSI CBO	792	20.7	26.9	29.9	≤ 0.001
HIV CBI	779	25.7	30.2	17.5	≤ 0.001
Gender					
Female	797	26.7	32.0	19.7	≤ 0.001
Male	759	19.8	24.9	26.0	≤ 0.001
Age					
Age 18–24	1,209	21.9	26.9	22.6	≤ 0.001
Age 25 or older	341	27.3	34.3	25.8	≤ 0.001
Ethnicity					
Hispanic/Latino	479	17.1	23.4	36.6	≤ 0.001
Non-Hispanic/Latino	1,003	26.8	32.1	19.7	≤ 0.001
Race					
African American/Black	792	27.9	33.6	20.4	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	82	31.7	29.3	-7.7	0.425
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	425	16.7	22.4	33.8	≤ 0.001
High-Risk Groups of Special Interest					
Men who have sex with men	288	14.6	19.8	35.7	0.010
African American/Black, Latina, or Hispanic women	620	27.1	33.1	22.0	≤ 0.001
Homeless individuals	82	20.7	34.1	64.7	0.020
Residents of southern states	1,057	23.2	29.0	25.3	≤ 0.001
Total	**1,571**	**23.2**	**28.5**	**23.1**	**≤ 0.001**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided McNemar's test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Exhibit 26. Baseline-to-Exit Change in Disapproval of Peer Unprotected Sex

Percentage of Direct-Service Adult Program Participants Who Strongly Disapprove of Their Peers' Regularly Engaging in Unprotected Sexual Activity

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
Cohort					
MSI CBO	796	40.6	46.0	13.3	≤ 0.001
HIV CBI	700	35.7	42.3	18.4	≤ 0.001
Gender					
Female	753	44.0	51.3	16.6	≤ 0.001
Male	729	32.5	37.2	14.3	0.005
Age					
Age 18–24	1,211	36.8	43.3	17.5	≤ 0.001
Age 25 or older	266	44.7	48.1	7.6	0.180
Ethnicity					
Hispanic/Latino	475	36.8	41.9	13.7	0.015
Non-Hispanic/Latino	931	41.2	45.8	10.9	≤ 0.001
Race					
African American/Black	774	41.5	47.5	14.6	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	S	S	S	S	—
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	423	35.2	41.8	18.8	0.005
High-Risk Groups of Special Interest					
Men who have sex with men	287	37.6	41.1	9.3	0.130
African American/Black, Latina, or Hispanic women	616	45.5	51.6	13.6	≤ 0.001
Homeless individuals	82	31.7	40.2	26.9	0.130
Residents of southern states	1,058	41.2	47.0	14.0	≤ 0.001
Total	**1,496**	**38.3**	**44.3**	**15.5**	**≤ 0.001**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided McNemar's test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

The Disapproval of Peer Substance Use Scale consists of three questions on the youth questionnaire about the respondents' disapproval of substance use by someone their age. The questions and the method of scale calculation are discussed in detail in the ***Appendix***. The scale ranges from 1 (neither approve nor disapprove) to 3 (strongly disapprove).

Exhibit 27 shows a 6% increase in disapproval of peer substance use between baseline and exit, from a score of 2.0 to 2.1. All subgroups increased their average disapproval score, and the increase was statistically significant among almost all groups with sufficient data for statistical analysis; Hispanic/Latino youth were the exception. Figures were suppressed for more than half of the race subgroups because of small sample sizes.

Exhibit 27. Baseline-to-Exit Change in Disapproval of Peer Substance Use

Average Peer Disapproval Scores of Direct-Service Youth Program Participants [Scores range from 1 (neither approve nor disapprove) to 3 (strongly disapprove)]

Participant Characteristic	Valid *N*	Average Disapproval Score at Baseline	Average Disapproval Score at Exit	Percent Change	p-value
Gender					
Female	367	2.0	2.1	6.8	≤ 0.001
Male	335	1.9	2.0	5.2	0.006
Ethnicity					
Hispanic/Latino	183	2.0	2.0	1.9	0.200
Non-Hispanic/Latino	515	2.0	2.1	7.9	≤ 0.001
Race					
African American/Black	373	2.0	2.1	7.2	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	S	S	S	S	—
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	177	1.9	2.1	9.7	≤ 0.001
Total	**711**	**2.0**	**2.1**	**6.0**	**≤ 0.001**

Note: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test).

Source: HIV Capacity Building Initiative 2015–2016 participant-level data, matched cases only, data received through August 31, 2017. These are the only grantees that implemented youth programs during this period.

6.3 Sexual Self-Efficacy

The Sexual Self-Efficacy Scale is constructed by combining responses to several questions about the respondent's level of self-confidence in avoiding undesirable or risky sexual situations. The questions differ between the youth and adult questionnaires. The items and the method of scale calculation for the youth and adult versions of the scale are provided in the ***Appendix***. The adult scale ranges from 0 (no confidence) to 18 (complete confidence), and the youth scale ranges from 0 (no confidence) to 12 (complete confidence).

Exhibit 28 shows a 3% increase in the average sexual self-efficacy score of the overall adult sample between baseline and exit. All subgroups with sufficient sample size for statistical analysis experienced significant improvements. Males and females had 4% and 2% increases, respectively, though males had lower average scale scores than did females at both baseline and exit. Participants age 25 or older gained more than young adults (18–24), and Hispanic/Latino participants gained more than their non-Hispanic/Latino counterparts. Homeless individuals experienced the largest gains in sexual self-efficacy out of all subpopulations (a 10% increase).

Youth program participants experienced a statistically significant 4% overall increase in the average sexual self-efficacy score between baseline and exit (***Exhibit 29***). On average, female youth had higher self-efficacy scores than their male peers at both baseline and exit. Male youth experienced a 6% increase from baseline to exit, whereas the female average score remained close to its baseline level; the improvement among males thus narrowed the gender gap in sexual self-efficacy observed at baseline. Non-Hispanic/Latino participants, African American/Black participants, and White participants all experienced a 4% increase; the improvement was statistically significant in all four racial/ethnic groups with sufficient sample sizes.

Exhibit 28. Baseline-to-Exit Change in Sexual Self-Efficacy Among Adults

Average Sexual Self-Efficacy Scale Scores for Direct-Service Adult Program Participants [Scores range from a minimum of 0 to a maximum of 18]

Participant Characteristic	Valid *N*	Avg. Scale Score at Baseline	Avg. Scale Score at Exit	Percent Change	p-value
Cohort					
MSI CBO	2,277	14.8	15.2	3.0	≤ 0.001
HIV CBI	704	13.2	13.7	3.5	≤ 0.001
Gender					
Female	1,702	15.3	15.6	2.3	≤ 0.001
Male	1,250	13.2	13.7	4.2	≤ 0.001
Age					
Age 18–24	2,537	14.5	14.9	2.8	≤ 0.001
Age 25 or older	361	13.6	14.4	5.8	≤ 0.001
Ethnicity					
Hispanic/Latino	765	14.6	15.1	3.7	≤ 0.001
Non-Hispanic/Latino	1,984	14.3	14.7	2.8	≤ 0.001
Race					
African American/Black	1,832	14.3	14.6	2.4	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	76	14.6	15.5	5.9	0.015
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	604	14.9	15.6	4.6	≤ 0.001
High-Risk Groups of Special Interest					
Men who have sex with men	335	14.1	14.8	5.2	≤ 0.001
African American/Black, Latina, or Hispanic women	1,483	15.3	15.6	2.3	≤ 0.001
Homeless individuals	89	12.3	13.5	9.6	0.024
Residents of southern states	2,471	14.5	14.9	2.5	≤ 0.001
Total	**2,981**	**14.4**	**14.8**	**3.1**	**≤ 0.001**

Note: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Exhibit 29. Baseline-to-Exit Change in Sexual Self-Efficacy Among Youth

Average Sexual Self-Efficacy Scale Scores for Direct-Service Youth Program Participants [Scores range from a minimum of 0 to a maximum of 12]

Participant Characteristic	Valid *N*	Avg. Scale Score at Baseline	Avg. Scale Score at Exit	Percent Change	p-value
Gender					
Female	417	10.2	10.3	0.9	0.124
Male	418	9.1	9.7	6.4	≤ 0.001
Ethnicity					
Hispanic/Latino	227	9.4	9.6	2.4	0.025
Non-Hispanic/Latino	602	9.8	10.2	4.2	≤ 0.001
Race					
African American/Black	447	9.8	10.1	3.7	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	S	S	S	S	—
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	208	9.6	10.0	4.2	0.004
Total	**845**	**9.7**	**10.0**	**3.5**	**≤ 0.001**

Note: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test).

Source: HIV Capacity Building Initiative 2015–2016 participant-level data, matched cases only, data received through August 31, 2017. These are the only grantees that implemented youth programs during this period.

6.4 Health-Related Knowledge

Accurate knowledge regarding the causes of HIV transmission is critical for prevention, and many MAI-supported programs included an educational component stressing this point. Both adult and youth program participants were tested on their knowledge of HIV before and after the intervention. The knowledge questions differed between the youth and adult questionnaires; we therefore discuss their results separately. Both versions of the scale range from 0 (none of the responses correct) to 100 (all of the responses correct). The ***Appendix*** provides detailed information about the questions constituting the youth and adult HIV/AIDS knowledge scales and the method used in calculating them.

Overall, adult participants increased their knowledge of HIV by 4%, from an average of 81% of responses correct at baseline to 84% correct at exit (***Exhibit 30***). All subgroups for which there was a large enough sample size for statistical inference improved significantly. Males enhanced their HIV knowledge more than females. Adults age 25 or older had higher average scores than those age 18–24 at both baseline and exit, and both age groups significantly increased their knowledge during program participation. Hispanic/Latino participants improved their knowledge more than participants who were not Hispanic or Latino. Asian participants had the largest gains of all demographic subgroups, a 10% increase from baseline to exit, although they remained the racial group with the lowest score at exit. The greatest gain in knowledge among the high-risk groups of interest were homeless participants, whose average score increased from 78% to 85%, an 8% increase.

Exhibit 30. Baseline-to-Exit Change in HIV/AIDS Knowledge Among Adults

Average HIV Knowledge Scale Scores of Direct-Service Adult Program Participants [Scores range from a minimum of 0 to a maximum of 100]

Participant Characteristic	Valid *N*	Average Percent Correct at Baseline	Average Percent Correct at Exit	Percent Change	p-value
Cohort					
MSI CBO	2,200	80.5	83.5	3.7	≤ 0.001
HIV CBI	683	80.4	85.5	6.4	≤ 0.001
Gender					
Female	1,632	82.2	85.0	3.4	≤ 0.001
Male	1,224	78.1	82.6	5.7	≤ 0.001
Age					
Age 18–24	2,445	79.6	82.9	4.1	≤ 0.001
Age 25 or older	351	87.3	92.3	5.7	≤ 0.001
Ethnicity					
Hispanic/Latino	702	77.3	82.7	7.1	≤ 0.001
Non-Hispanic/Latino	1,977	81.3	83.9	3.2	≤ 0.001
Race					
African American/Black	1,803	81.1	83.4	2.8	≤ 0.001
American Indian or Alaska Native	55	77.8	83.3	7.0	≤ 0.001
Asian	75	69.1	76.0	10.0	≤ 0.001
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	558	81.5	86.7	6.4	≤ 0.001
High-Risk Groups of Special Interest					
Men who have sex with men	329	83.5	87.7	5.0	≤ 0.001
African American/Black, Latina, or Hispanic women	1,419	81.6	84.4	3.4	≤ 0.001
Homeless individuals	85	78.1	84.5	8.1	0.022
Residents of southern states	2,392	80.9	83.6	3.3	≤ 0.001
Total	**2,883**	**80.5**	**83.9**	**4.3**	**≤ 0.001**

Note: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Exhibit 31 shows a 23% increase in the HIV knowledge score of the overall youth sample, from getting 62% of responses correct at baseline to 76% of responses correct at exit. Similar to the adult findings, males and Hispanic/Latino participants showed a greater knowledge gain than females and non-Hispanic/Latino participants, respectively. The two racial subgroups with sufficient sample size—African American/Black and White participants—improved significantly; African American/Black participants had a 19% increase in HIV knowledge from baseline to exit while White participants had a 27% increase.

Exhibit 31. Baseline-to-Exit Change in HIV/AIDS Knowledge Among Youth

Average HIV Knowledge Scale Scores of Direct-Service Youth Program Participants [Scores range from a minimum of 0 to a maximum of 100]

Participant Characteristic	Valid *N*	Average Percent Correct at Baseline	Average Percent Correct at Exit	Percent Change	p-value
Gender					
Female	423	63.4	76.3	20.4	≤ 0.001
Male	419	59.4	74.7	25.8	≤ 0.001
Ethnicity					
Hispanic/Latino	229	54.0	71.8	33.0	≤ 0.001
Non-Hispanic/Latino	609	64.3	77.1	20.0	≤ 0.001
Race					
African American/Black	448	63.6	75.7	19.0	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	S	S	S	S	—
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	210	61.2	77.6	26.7	≤ 0.001
Total	**852**	**61.5**	**75.6**	**22.9**	**≤ 0.001**

Note: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test).

Source: HIV Capacity Building Initiative 2015–2016 participant-level data, matched cases only, data received through August 31, 2017. These are the only grantees that implemented youth programs during this period.

As seen in ***Exhibit 32***, MAI programs successfully increased participants' knowledge of their HIV status. At baseline, 52% of participants who responded to the adult questionnaire were aware of their HIV status; at exit, this figure was 65%, a 25% increase. However, this value underrepresents the overall impact of MAI programs on individuals' knowledge of their HIV status, because those who receive HIV testing only without other direct services do not receive surveys, and therefore are not included in these numbers. A fuller assessment of that impact is provided by aggregate numbers tested, reported by grantees in their Quarterly Progress Reports and discussed in ***Chapter 4*** (a total of 37,245 individuals tested during FY2017). Examining pre-post change among participants of direct-service interventions with outcome data (a total of 2,721 participants) simply provides an additional way to assess the MAI's impact on participants' knowledge of their status, on the basis of data from a relatively small sample of the total numbers tested by the grantees.

Participants in all subgroups with sufficient sample size significantly increased their awareness of their HIV status. Females showed higher gains than males, young adults age 18–24 showed higher gains than adults age 25 or older, and Hispanic/Latino participants showed higher gains than those who were not Hispanic or Latino. Of the racial subgroups with a large enough sample size to allow reliable inference, White participants had the highest gains, followed by Asian participants. Among the high-risk groups of interest, African American/Black, Latina, or Hispanic women had the highest gains in knowledge of their HIV status, closely followed by homeless participants. At exit, 88% of adult MSM had knowledge of their HIV status, compared with 80% at baseline.

Exhibit 32. Baseline-to-Exit Change in Knowledge of HIV Status

Percentage of Direct-Service Adult Program Participants Reporting That They Have Been Informed of Their HIV Status

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
Cohort					
MSI CBO	2,092	48.5	59.6	23.0	≤ 0.001
HIV CBI	629	62.8	80.6	28.4	≤ 0.001
Gender					
Female	1,551	51.4	65.8	28.0	≤ 0.001
Male	1,147	52.1	62.6	20.1	≤ 0.001
Age					
Age 18–24	2,313	49.7	62.8	26.4	≤ 0.001
Age 25 or older	333	73.0	85.3	16.9	≤ 0.001
Ethnicity					
Hispanic/Latino	711	40.1	61.2	52.6	≤ 0.001
Non-Hispanic/Latino	1,825	55.7	65.4	17.4	≤ 0.001
Race					
African American/Black	1,660	56.7	65.5	15.5	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	82	25.6	39.0	52.4	≤ 0.001
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	555	41.6	68.5	64.5	≤ 0.001
High-Risk Groups of Special Interest					
Men who have sex with men	316	79.4	87.7	10.4	≤ 0.001
African American/Black, Latina, or Hispanic women	1,352	51.3	65.6	27.8	≤ 0.001
Homeless individuals	72	62.5	79.2	26.7	≤ 0.001
Residents of southern states	2,262	52.0	64.8	24.7	≤ 0.001
Total	**2,721**	**51.8**	**64.5**	**24.5**	**≤ 0.001**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided McNemar's test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Improving access to comprehensive health services is a goal identified by *Healthy People 2020* (Office of Disease Prevention and Health Promotion, 2017). Moreover, SAMHSA is charged with decreasing health disparities among racial/ethnic minorities; lesbian, gay, bisexual, transgender, and questioning populations; and other groups vulnerable to HIV infection and substance use disorders. In line with this directive, MAI grantees implement community outreach and information dissemination strategies to inform the public of available behavioral health resources in their communities.

Exhibit 33 shows changes in participants' knowledge of available health care services in their communities, on the basis of responses to two questions on the adult questionnaire. The questions ask whether the participant would know where to go to receive substance use disorder- and HIV/STD-related health services. The table shows the percentages of participants who responded in the affirmative to both questions. The questions and method used to construct this composite variable are discussed in more detail in the ***Appendix***.

Exhibit 33. Baseline-to-Exit Change in Knowledge of Where to Go for Services

Percentage of Direct-Service Adult Program Participants Reporting That They Know Where to Go in Their Neighborhood to See a Health Care Professional Regarding HIV/AIDS, Other STDs, and a Drug or Alcohol Problem

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
Cohort					
MSI CBO	2,304	64.3	79.6	23.8	≤ 0.001
HIV CBI	693	73.2	84.1	15.0	≤ 0.001
Gender					
Female	1,711	64.8	82.1	26.7	≤ 0.001
Male	1,262	68.3	78.5	15.0	≤ 0.001
Age					
Age 18–24	2,551	64.9	79.9	23.1	≤ 0.001
Age 25 or older	360	76.9	88.3	14.8	≤ 0.001
Ethnicity					
Hispanic/Latino	765	53.3	79.5	49.0	≤ 0.001
Non-Hispanic/Latino	1,997	72.1	81.6	13.2	≤ 0.001
Race					
African American/Black	1,846	70.9	80.0	12.9	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	79	53.2	73.4	38.1	≤ 0.001
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	598	57.2	82.9	45.0	≤ 0.001
High-Risk Groups of Special Interest					
Men who have sex with men	343	71.4	82.8	15.9	≤ 0.001
African American/Black, Latina, or Hispanic women	1,492	64.5	82.2	27.3	≤ 0.001
Homeless individuals	88	78.4	84.1	7.2	0.200
Residents of southern states	2,481	66.1	79.7	20.6	≤ 0.001
Total	**2,997**	**66.3**	**80.6**	**21.5**	**≤ 0.001**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided McNemar's test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

As seen in Exhibit 33, awareness of available health care services in the community increased significantly among participants responding to the adult questionnaire: the overall percentage reporting that they would know where to go in their neighborhood to obtain both substance use disorder and HIV/STD services increased from 66% at baseline to 81% at exit (a 22% increase). At baseline, female participants had slightly lower knowledge than their male counterparts (65% vs. 68%). However, they enhanced their knowledge more than males to surpass males at exit (82% vs. 79%). Young adults age 18–24 showed higher gains than adults age 25 or older (23% increase vs. 15% increase). Hispanic/Latino participants experienced the largest gains, from only 53% knowing where to go at baseline to 80% knowing where to go at exit, a 49% increase. Of the racial subgroups with a large enough sample size to allow reliable analysis, White participants had the highest gains, followed by Asian participants. Among the high-risk groups of interest, African American/Black, Latina, or Hispanic women had the highest gains in knowledge of where to go for HIV or other STD services and where to go for a drug or alcohol problem (27% increase).

6.5 Substance Use

Participants report on their substance use during the 30 days preceding program entry, and again at program exit. To validly assess change in these behaviors, we restricted the pre-post comparisons for these measures to participants who had at least 30

days between the two surveys. This restriction eliminates from analysis all participants whose services lasted less than 30 days, resulting in smaller sample sizes than for the knowledge and attitude measures reported in the previous sections.[6] In interpreting changes in substance use, it is useful to keep in mind that the smaller the sample size, the harder it is to detect significant change through statistical analysis. The reason is that statistical significance, indicated by the p-values in the tables, depends both on the size of the pre-post difference *and* on the sample size. As mentioned earlier, a p-value of 0.05 or smaller is conventionally accepted as a significant result. A p-value larger than 0.05 suggests that we were unable to detect a change with sufficient statistical certainty. This could be either because the change is too small or the sample size is not sufficient to detect the change.

MAI program participants whose services lasted at least 30 days were asked at program entry and exit the number of days they had engaged in any of the following substance use behaviors in the past 30 days: any alcohol use, binge drinking, cigarette use, marijuana use, illicit drug use other than marijuana, injection drug use, and nonmedical use of prescription drugs. The adult instrument also includes screening questions on problem alcohol use, which we used to report the percentage of participants with potential alcohol-related problems. We discuss this screening tool and the outcomes based on it in further detail in the ***Appendix***.

There are multiple measures of substance use, such as percentages reporting *any* use during the past month or year, and number of days of use during a specified period. In this section, we report the average number of days of use during the 30 days preceding the baseline and exit surveys. Participants who reported no use of the substance are included in the average as zero days of use. This measure allows us to detect change in the frequency of use among users (e.g., fewer days of use at exit) as well as change in the prevalence of use (reflected as a larger proportion of zero values in the exit average).

Although alcohol use is legal over age 21, HIV prevention interventions typically include information about the risks of engaging in sexual behavior while intoxicated. We therefore anticipated that the overall impact of program participation would include reductions in the frequency of alcohol use, even among adults. ***Exhibit 34*** shows the average number of days of alcohol use during the past 30 days. Overall, this number decreased from 3 days at baseline to 2 days at exit. The change was statistically significant in all of the participant subgroups whose outcomes were evaluated separately, with the exception of youth (age 12–17). This age group started out with less than a day of drinking on average, with little room for decrease. Adult men who have sex with men (MSM) had the highest frequency of alcohol use at baseline (on average, 4.2 days of use during the 30 days before program entry). Although this figure significantly decreased to 3.1 days at program exit, this group's frequency of use at program exit was still higher than the baseline levels of the rest of the participants.

Exhibit 35 shows the average number of days during which participants binged on alcohol during the past 30 days, defined as having had five or more drinks on a single occasion. For all subgroups, the average was around one day at program entry, with not much decrease at exit. As with alcohol use, MSM had the highest average frequency of binge drinking at both baseline and exit (2.2 days).

[6] In this year's sample, 1,374 participants had 30 days or more between their baseline and exit surveys.

Exhibit 34. Baseline-to-Exit Change in Past-30-Day Alcohol Use

Average Days of Alcohol Use During the Past 30 Days by Direct-Service Program Participants Age 12 or Older

Participant Characteristic	Valid *N*	Average Days at Baseline	Average Days at Exit	Percent Change	p-value
Cohort					
MSI CBO	650	2.7	2.1	-22.0	≤ 0.001
HIV CBI	454	2.3	1.6	-28.2	≤ 0.001
Gender					
Female	687	2.3	1.8	-21.2	≤ 0.001
Male	403	2.8	2.1	-25.7	≤ 0.001
Age					
Age 12–17	219	0.8	0.5	-37.9	0.066
Age 18–24	836	2.8	2.2	-22.1	≤ 0.001
Age 25 or older	S	S	S	S	—
Ethnicity					
Hispanic/Latino	496	2.5	1.9	-23.4	≤ 0.001
Non-Hispanic/Latino	584	2.6	1.9	-25.9	≤ 0.001
Race					
African American/Black	415	2.7	2.0	-24.3	≤ 0.001
American Indian or Alaska Native	S	S	S	S	—
Asian	68	1.8	1.1	-38.3	0.004
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	420	2.5	2.1	-17.6	0.007
High-Risk Groups of Special Interest					
Men who have sex with men (adults only)	96	4.2	3.1	-26.1	0.014
African American/Black, Latina, or Hispanic women	482	2.6	2.1	-20.7	≤ 0.001
Homeless individuals	S	S	S	S	—
Residents of southern states	787	2.7	2.1	-22.5	≤ 0.001
Total	**1,104**	**2.5**	**1.9**	**-24.3**	**≤ 0.001**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Exhibit 35. Baseline-to-Exit Change in Past-30-Day Binge Drinking

Average Days of Binge Alcohol Use During the Past 30 Days by Direct-Service Program Participants Age 12 or Older

Participant Characteristic	Valid *N*	Average Days at Baseline	Average Days at Exit	Percent Change	p-value
Cohort					
MSI CBO	378	1.1	1.1	-3.9	0.181
HIV CBI	495	1.3	1.2	-4.0	0.281
Gender					
Female	507	1.0	0.9	-7.8	0.069
Male	353	1.5	1.5	-0.2	0.455
Age					
Age 12–17	233	0.6	0.6	-2.8	0.471
Age 18–24	589	1.3	1.3	-3.0	0.209
Age 25 or older	S	S	S	S	—
Ethnicity					
Hispanic/Latino	390	1.4	1.4	-2.3	0.381
Non-Hispanic/Latino	457	1.0	1.0	-5.6	0.082
Race					
African American/Black	345	1.0	1.0	3.7	0.333
American Indian or Alaska Native	S	S	S	S	—
Asian	S	S	S	S	—
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	339	1.3	1.3	-1.8	0.373
High-Risk Groups of Special Interest					
Men who have sex with men (adults only)	92	2.2	2.2	0.5	0.159
African American/Black, Latina, or Hispanic women	322	1.2	1.1	-3.2	0.152
Homeless individuals	S	S	S	S	—
Residents of southern states	541	1.3	1.2	-5.6	0.238
Total	**873**	**1.2**	**1.2**	**-3.9**	**0.171**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Exhibit 36 shows the percentage of participants who were identified as "potential problem drinkers" on the basis of four questions on the adult survey that make up the CAGE inventory. CAGE is a validated tool widely used to screen for problem drinking and potential alcohol-related problems. The four screening questions each focus on a common symptom (or consequence) of problem alcohol use. The diagnostic criterion established by prior research is exhibiting two or more of these symptoms (Dhalla & Kopec, 2007). Further detail about question wording and the calculation of the index is provided in the ***Appendix***.

Exhibit 36. Baseline-to-Exit Change in Problem Drinking

Percentage of Direct-Service Adult Program Participants With Potential Alcohol Problems

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
Cohort					
MSI CBO	365	15.3	15.9	3.6	0.435
HIV CBI	673	28.5	28.5	0.0	0.500
Gender					
Female	507	20.3	18.1	-10.7	0.090
Male	518	27.4	29.7	8.5	0.095
Age					
Age 18–24	845	19.2	18.7	-2.5	0.380
Age 25 or older	183	45.9	49.7	8.3	0.130
Ethnicity					
Hispanic/Latino	420	22.6	22.9	1.1	0.500
Non-Hispanic/Latino	597	25.6	25.6	0.0	0.500
Race					
African American/Black	415	20.7	19.3	-7.0	0.240
American Indian or Alaska Native	S	S	S	S	—
Asian	S	S	S	S	—
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	392	26.3	26.8	1.9	0.440
High-Risk Groups of Special Interest					
Men who have sex with men	194	29.4	27.3	-7.0	0.295
African American/Black, Latina, or Hispanic women	385	16.9	14.0	-16.9	0.050
Homeless individuals	82	37.8	36.6	-3.2	0.500
Residents of southern states	651	22.4	21.4	-4.8	0.255
Total	**1,038**	**23.9**	**24.1**	**0.8**	**0.465**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided McNemar's test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Overall, about 24% of the adult participants were classified as potential problem drinkers at both baseline and exit, with no notable change. Among participants age 25 or older, this figure was 46% at baseline compared to 19% in the 18- to 24-year-old age group. Neither group experienced a significant change. The only exception to this outcome pattern was African American/Black, Latina, or Hispanic women, who experienced a statistically significant decrease from 17% at baseline to 14% at exit.

Past-30-day cigarette use was low at program entry and did not significantly decrease by exit (***Exhibit 37***). Participants reported an average of one day of use at both baseline and exit. The only subgroup with any significant change was Hispanic/Latino participants, whose average days of smoking declined by 22% (from 1.2 to 1.0 days). Although smoking poses a general health risk and increases vulnerability to all infections, unlike the use of intoxicating substances, it does not directly affect sexual risk-taking behavior. It therefore does not play as prominent a role in HIV prevention messages, which may at least partially explain this lack of change.

Exhibit 37. Baseline-to-Exit Change in Past-30-Day Cigarette Use

Average Days of Cigarette Use During the Past 30 Days by Direct-Service Program Participants Age 12 or Older

Participant Characteristic	Valid *N*	Average Days at Baseline	Average Days at Exit	Percent Change	p-value
Cohort					
MSI CBO	708	1.0	0.8	-16.9	0.135
HIV CBI	494	1.9	1.8	-3.5	0.454
Gender					
Female	756	1.1	0.9	-17.3	0.110
Male	431	1.7	1.7	1.8	0.309
Age					
Age 12–17	239	1.0	0.9	-5.8	0.410
Age 18–24	914	1.4	1.2	-7.8	0.314
Age 25 or older	S	S	S	S	—
Ethnicity					
Hispanic/Latino	525	1.2	1.0	-22.4	0.040
Non-Hispanic/Latino	654	1.5	1.5	-3.7	0.337
Race					
African American/Black	475	1.6	1.3	-15.2	0.413
American Indian or Alaska Native	S	S	S	S	—
Asian	69	0.2	0.3	25.0	0.393
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	444	1.4	1.5	7.7	0.485
High-Risk Groups of Special Interest					
Men who have sex with men (adults only)	106	3.1	2.7	-12.6	0.319
African American/Black, Latina, or Hispanic women	534	1.1	0.9	-17.3	0.205
Homeless individuals	S	S	S	S	—
Residents of southern states	872	1.4	1.3	-6.2	0.481
Total	**1,202**	**1.4**	**1.3**	**-9.3**	**0.238**

Notes: S: The cell size is too small ($n < 55$) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test. MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

Marijuana use has adverse effects on risky sexual behaviors. ***Exhibit 38*** shows an overall decrease in participants' average days of use during the past 30 days from 2.8 to 2.3 days; the change was statistically significant. Although declines were observed in all subgroups with sufficient numbers for valid analysis, the change was significant only among females, youth (age 12–17), and African Americans/Blacks. Looking at outcomes by ethnicity, we find that the decline was not significant among Hispanic/Latino participants, in contrast to the significant decline observed in the non-Hispanic/Latino group. Within the high-risk groups for which outcome analysis was conducted separately, MSM were the only group whose decline did not reach statistical significance.

Exhibit 38. Baseline-to-Exit Change in Past-30-Day Marijuana Use

Average Days of Marijuana Use During the Past 30 Days by Direct-Service Program Participants Age 12 or Older

Participant Characteristic	Valid *N*	Average Days at Baseline	Average Days at Exit	Percent Change	p-value
Cohort					
MSI CBO	700	2.1	1.7	-20.2	0.070
HIV CBI	485	3.8	3.2	-14.9	0.064
Gender					
Female	745	2.3	1.7	-25.1	0.004
Male	426	3.5	3.2	-8.5	0.338
Age					
Age 12–17	233	2.3	1.7	-26.6	0.049
Age 18–24	902	3.0	2.5	-15.0	0.078
Age 25 or older	S	S	S	S	—
Ethnicity					
Hispanic/Latino	520	2.1	2.1	-3.9	0.243
Non-Hispanic/Latino	640	3.4	2.5	-25.5	0.005
Race					
African American/Black	468	3.7	2.7	-26.7	0.006
American Indian or Alaska Native	S	S	S	S	—
Asian	70	1.0	1.4	47.8	0.222
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	442	2.0	1.8	-6.5	0.328
High-Risk Groups of Special Interest					
Men who have sex with men (adults only)	101	5.3	4.2	-20.2	0.129
African American/Black, Latina, or Hispanic women	528	2.5	1.9	-23.6	0.011
Homeless individuals	S	S	S	S	—
Residents of southern states	856	2.3	1.9	-19.0	0.024
Total	**1,185**	**2.8**	**2.3**	**-17.2**	**0.017**

Notes: S: The cell size is too small (n < 55) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided Wilcoxon's signed rank test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, submitted through August 31, 2017.

Use of all illicit substances other than marijuana was infrequent, with fewer than 90 participants reporting any past-30-day use at baseline and average days of use at about half a day. We investigated injection drugs separately, given their direct association with HIV and viral hepatitis transmission, and found that the level of use was very low; around 10 participants reported any use at baseline. Likewise, nonmedical use of prescription drugs was reported by fewer than 60 participants, with less than half a day of use on average. Given the small number of users and little room for decrease in use, no outcome tables are reported for these three substances.

6.6 Sexual Behavior

As with substance use measures, outcome data on the prevalence of unprotected sexual intercourse is restricted to participants who had at least 30 days between their baseline and exit surveys. One additional data restriction in assessing change in sexual behavior is to use only data from participants who were sexually active during the 30-day periods preceding both the baseline and exit surveys. These

two restrictions, in combination, guarantee that the most recent intercourse that participants report at baseline and exit do not refer to the same occasion. Overall, 420 participants met these criteria and were included in the results reported in ***Exhibit 39***. This relatively small sample size makes it harder to detect significant change than for measures for which larger sample sizes are available for analysis.

Of the 420 participants whose data are shown in Exhibit 39, slightly over half (53%) reported at program entry that their most recent intercourse was unprotected. This figure was down to 50% at program exit, a decline that approached but did not quite reach statistical significance. When we look at the outcomes of subgroups, we find significant declines in unprotected sex among males in general (from 55% to 45%) and, importantly, among adult MSM (from 56% to 35%). The decline is also significant among African American/Black participants (from 51% to 44%). These improvements among the participants at highest risk of HIV transmission are very encouraging.

Exhibit 39. Baseline-to-Exit Change in Unprotected Sex

Percentage of Sexually Active, Direct-Service Program Participants Age 12 or Older Who Reported Having Unprotected Sex During the Past 30 Days (Vaginal, Anal, or Oral)

Participant Characteristic	Valid *N*	Baseline Percent	Exit Percent	Percent Change	p-value
Cohort					
MSI CBO	234	54.7	50.9	-7.0	0.160
HIV CBI	186	51.6	47.8	-7.3	0.165
Gender					
Female	263	52.5	52.5	0.0	0.500
Male	148	55.4	44.6	-19.5	0.005
Age					
Age 12–17	S	S	S	S	—
Age 18–24	356	52.2	48.0	-8.1	0.075
Age 25 or older	S	S	S	S	—
Ethnicity					
Hispanic/Latino	160	55.0	58.1	5.7	0.240
Non-Hispanic/Latino	252	53.2	44.0	-17.2	≤ 0.001
Race					
African American/Black	208	50.5	43.8	-13.3	0.040
American Indian or Alaska Native	S	S	S	S	—
Asian	S	S	S	S	—
Native Hawaiian or other Pacific Islander	S	S	S	S	—
White	137	55.5	54.0	-2.6	0.430
High-Risk Groups of Special Interest					
Men who have sex with men (adults only)	72	55.6	34.7	-37.5	≤ 0.001
African American/Black, Latina, or Hispanic women	208	53.8	54.3	0.9	0.500
Homeless individuals	S	S	S	S	—
Residents of southern states	306	53.3	51.3	-3.7	0.280
Total	**420**	**53.3**	**49.5**	**-7.1**	**0.070**

Note: S: The cell size is too small (n < 55) to allow reliable inference. The number is suppressed to rule out misleading conclusions. p-values were derived from paired comparisons (1-sided McNemar's test). MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data, matched cases only, data received through August 31, 2017.

The fact that almost half of the sexually active participants reported their most recent intercourse to be unprotected may raise concerns. It is, however, important to note that this group includes individuals in stable, mutually monogamous relationships for whom unprotected sex does not pose high risk of transmission. We discuss this point in more detail in ***Chapter 7, Limitations of the Evaluation***.

7. Limitations of the Evaluation

The Minority AIDS Initiative (MAI) grantees awarded between 2013 and 2016 successfully collected data from more than 23,000 participants in direct-service programs through FY2017. These data provide important insights into effective substance use and HIV prevention efforts; however, the data also have limitations that should be considered for this and future evaluation efforts.

First, although data on basic demographic and socioeconomic characteristics are collected from all survey respondents, only parts of the survey are administered to participants whose services last less than 30 days. This limits the sample sizes available for outcome analysis, particularly for behavioral outcomes. As discussed in ***Chapter 2***, the data collection protocol links the portions of the survey to be administered to the duration of the participant's services. Participants receiving a single day of services are required to complete only an exit survey to collect demographic data and a limited number of attitudinal or knowledge measures that are directly related to the content of the intervention. Services lasting 2–29 days require collection of the full set of cross-site survey items on attitudes and knowledge, in addition to demographic data. Only participants receiving services lasting 30 days or more complete all items, including the behavioral items, on the survey. The behavioral items have a past-30-day time reference that necessitates at least 30 days between surveys to assess change attributable to program participation. As shown in ***Exhibit A-2***, there were 7,043 participants for whom only exit data were available and 11,488 participants for whom only baseline data were available; although 4,184 participants had both baseline and exit data, only 1,374 had 30 days or more between surveys needed to assess behavior change. Sample sizes were therefore limited for some outcomes and subgroup analyses.

Second, the measure of unprotected sex has limited validity and reliability because we are unable to eliminate participants whose last intercourse was within a stable, mutually monogamous relationship, which substantially reduces the risk of harm from unprotected sex. This suggests that the prevalence of unprotected sex we currently report likely overestimates the prevalence of risky sexual behavior among program participants. In the instrument revisions currently under way, SAMHSA has addressed this issue by adding a question on the nature of the sexual relationship. This addition will allow future evaluations to restrict the measure to relationships where unprotected sex poses health risks.

Third, because there is no comparison/control group, it is impossible to conclude with certainty that baseline-to-exit changes are due to participation in MAI programs and not to extraneous factors. However, given that grantees used effective behavioral interventions with demonstrated effectiveness in changing knowledge, attitudes, and behaviors, the likelihood that the implemented interventions helped reduce risk levels is reasonably high. This observation is supported by the positive trends seen across multiple subgroups that show relatively consistent positive change, at least in the case of knowledge and attitudes.

Data analyses based on the Quarterly Progress Reports (QPRs) also have some limitations. QPRs are designed primarily as grant monitoring and management tools and therefore have limited utility for the cross-site evaluation. For example, the quarterly number of people reached through indirect strategies, such as media campaigns, is vital information for monitoring and, if needed, improving grantees' implementation. However, quarterly data may pose challenges for annual reporting, especially in cases where a single strategy spans multiple quarters. In such cases, adding up quarterly numbers to obtain an annual total may result in overestimation. This challenge could be addressed by asking the grantees to report the numbers reached between the start of the fiscal year and the end of each quarter. The numbers reported for the fourth quarter of each year could then provide a more valid annual total.

In addition, there were some inconsistencies in the indirect-service data. For example, the total number of people reached did not always equal the number reached within each demographic dimension (e.g., the sum of males and females reached sometimes exceed the total number reported in response to a separate question). Online validation checks within the QPR system could reduce the occurrence of this type of inconsistency.

Overall, future evaluation efforts should revisit the data collection protocol, given grantees' increasing reliance on brief interventions often lasting a single day. A requirement for a brief baseline survey in addition to the currently required exit survey would allow pre-post comparisons of knowledge and attitude measures for single-day interventions, not possible under the current protocol. Revisions to the participant-level surveys, currently under way at SAMHSA, are expected to enhance outcome data collection by reducing the number of questions and focusing on key outcomes, thus minimizing burden on participants and grantees.

8. Discussion and Conclusions

8.1 Overview of Key Outcomes

In this section, we provide a brief overview of the key findings of the report. In the rest of this chapter, we discuss the evaluation results in more detail, within the context of prevailing theoretical approaches to health behavior and behavior change. Changes in participants' health-related knowledge, attitudes, and behaviors were assessed by comparing pre- and postintervention survey responses. We compared program entry (baseline) and exit levels of perceptions of risk of harm from unhealthy behaviors; disapproval of peers who engage in these behaviors; level of sexual self-efficacy; knowledge of HIV transmission, one's own HIV status, and availability of health services in the community; levels of substance use; and prevalence of unprotected intercourse.

All knowledge and attitude measures showed statistically significant increases from baseline to exit. The knowledge/attitudinal measure with the largest improvement was perception of risk of harm from risky sexual behaviors—from 43% perceiving "great risk" at baseline to 57% providing this response at exit.

Frequency of alcohol and marijuana use significantly decreased. Average days of alcohol use during the preceding month decreased by 24% between the baseline and exit surveys; for marijuana, the decline was 17%. Both changes were statistically significant. These two substances are known correlates of sexual risk-taking (Andrade et al., 2013; Cooper, 2002), making these outcomes especially notable in the context of HIV prevention.

There was a significant decrease in unprotected sex among male participants and, more importantly, among men who have sex with men (MSM). No similar change was observed among female participants. **African American/Black participants also experienced a significant decline in the incidence of unprotected sex.**

Overall, these findings suggest that grantees collectively achieved the key Minority AIDS Initiative (MAI) goals of reducing risks and enhancing protections associated with substance use and HIV transmission.

8.2 Evaluation Results in Light of the Knowledge-Attitude-Behavior Continuum of Change

Most evidence-based health promotion interventions are informed by behavioral theories that link improved knowledge and attitudes to reduced risky behaviors, increased protective measures, or both (Davidson et al., 2013; Madala et al., 2016). These models of behavior change, often referred to as "the knowledge-attitude-behavior continuum," have been applied to public health initiatives at least since the early 1980s (Bettinghaus, 1986; Griffin et al., 1999). The underlying notion is that people process newly acquired knowledge (e.g., about the consequences of behavioral risk factors and ways of avoiding them), experience attitude and intention changes, and, in the end, change their behavior. This process takes some time to unfold. How much time depends on the type of behavior, individual and environmental factors, and intervention characteristics.

The MAI data collection protocol and evaluation plan are also informed by these models. For example, the questions on behaviors are grouped into the last section of the questionnaires; grantees are not

required to administer this section to participants whose service duration is shorter than 30 days, and the evaluation of behavioral outcomes includes only participants with pre-post periods of 30 days or more. This 30-day threshold is somewhat arbitrary, adopted to accommodate the widespread practice of collecting data about recent behaviors by asking questions about actions "during the past 30 days." Behavioral change between baseline and exit surveys can only be attributed to program participation if there are at least 30 days between the responses. Although cognitive science does not provide us with a "magic number" for the length of time needed for behavior change—that would depend on the specific behavior and its context—this data collection and analysis protocol allows some time for the cognitive process between exposure to new information and behavior change to play itself out. Behavioral models based on the knowledge-attitude-behavior continuum posit that change in knowledge and attitudes typically occurs soon after exposure to new information; therefore, we assess changes in those domains even for participants exposed to interventions lasting as little as 2 days.

When viewed in light of this framework, the evaluation results look especially promising: across-the-board improvements in knowledge and attitude measures related to health behaviors predict reduced risky behaviors and increased protective actions once the new information is processed and internalized. No doubt, some behaviors are more resistant to change than others and typically take longer to change after receiving new information. We discuss this variation in more detail in the next two sections.

One final point of note in this context is that behavior change also depends on how the new information is communicated and how convincing it is to the populations of focus. SAMHSA's emphasis on evidence-based interventions stems from this consideration; effectively communicated prevention messages that are shown by systematic evidence to be convincing have a much higher likelihood of resulting in behavior change. MAI grantees have responded to SAMHSA's guidelines: As discussed in ***Chapter 3***, close to 90% of the direct-service interventions selected by grantees were evidence-based strategies. Furthermore, a substantial number of the strategies most commonly adopted by the grantees included narrative components such as storytelling and role playing (e.g., the *PROMISE* model [Peers Reaching Out and Modeling Intervention Strategies]; *Many Men, Many Voices*; *Storytelling for Empowerment*; *Say It Straight*). Evidence suggests that this type of communication is more persuasive, and has a higher likelihood of sparking changes in health behavior, than nonnarrative messages (Hinyard & Kreuter, 2007). These factors support our expectation that the significant improvements in relevant knowledge and attitudes we observed among participants of MAI programs will likely lead to improvements in health-related behaviors beyond those that we were able to capture within the data time frame that was available for analysis.

8.3 Pre- and Postintervention Substance Use

As mentioned above, we observed statistically significant improvements in knowledge and attitudes associated with substance use, such as increases in awareness of the risks of harm from substances and disapproval of peers' substance use. As predicted by the knowledge-attitude-behavior framework, these changes were accompanied by significant declines in the frequency with which participants used alcohol and marijuana, the two substances most commonly associated with risky sexual behaviors.

In addition to the frequency of any alcohol use, we examined two measures of heavy use: the frequency of binge drinking and a diagnostic measure of problem alcohol use. We did not find changes in these measures within the bounds of statistical certainty. Neither did we find significant reductions in cigarette use.

Why did these measures not show any improvements within the time between program entry and exit, even among participants who had at least 30 days between the two surveys? One possible explanation is that the behaviors underlying these measures are more likely to be accompanied by substance dependence. Problem alcohol use is an indicator of dependence, or at least high risk of dependence, on alcohol. Recent evidence also suggests that binge drinking, even in the absence of diagnostic signs of dependence, causes some brain changes that may add to the difficulty of reducing use, especially for young people (Lopez-Caneda et al., 2017). Finally, nicotine is a highly

addictive substance. One national study estimates the overall probability of transition from first use to dependence as 68% for nicotine, 23% for alcohol, and 9% for cannabis (Lopez-Quintero et al., 2011). Our evaluation findings suggest that substance use behaviors strongly associated with dependence are less likely to show significant change during attendance in prevention interventions than are those associated with lower likelihood of dependence.

Substance use disorder treatment services can further help individuals with substance dependence; these services are not typically funded by prevention programs. However, SAMHSA strongly encourages MAI grantees to refer their participants with treatment or other support needs to providers qualified to offer these services. Participant-level data collection ends upon exiting the funded prevention intervention; however, SAMHSA collects quarterly data on referrals made by grantees. As mentioned earlier (Exhibit 13), FY2017 data show that grantees made 7,230 referrals to substance use disorder services. Substance dependence frequently co-occurs with mental health disorders that increase the likelihood of relapse (Bradizza et al., 2006), further complicating prevention outcomes. During 2017, grantees referred 2,183 individuals to treatment for mental health disorders. These referrals to treatment suggest that grantees' impact in addressing substance use issues reaches beyond the outcomes captured by this evaluation. This point underscores the importance of linking prevention, treatment, and recovery services to offer a seamless service continuum.

8.4 Pre- and Postintervention Sexual Behaviors

The measures of knowledge and attitudes related to sexual health that we examine in this report include awareness of the risks of unprotected sex and sex while intoxicated, knowledge of HIV transmission, sexual self-efficacy, and knowledge of one's HIV status, all of which improved significantly between program entry and exit. The conceptual models of behavior change predict that these changes will initiate a cognitive process resulting in increased protective measures against STDs. Whether this behavior change is reflected in our evaluation data depends on several factors.

To ensure evaluation validity, we restricted the pre-post comparison of sexual behavior to individuals who reported being sexually active during the 30 days preceding the baseline and exit surveys. This reduced the number of participants in the analysis to just over 400 participants, over 80% of whom were age 18–24. Overall, there was a 7% decrease in the prevalence of unprotected intercourse, not large enough to reach statistical significance. However, there was a 20% decline among the male participants, which was highly significant. More importantly, the likelihood of unprotected intercourse declined by 38% among MSM, again a highly significant improvement in protection among this vulnerable group. There was no similar improvement among female participants, slightly over half of whom reported, at both the baseline and exit surveys, that their most recent intercourse was unprotected. At program exit, 53% of all women, 45% of all men, and 35% of MSM reported that their last intercourse was unprotected (Exhibit 39).

The gender difference in use of protection requires further consideration. We cannot conclude from these results that women are, in general, less likely than men to use protection and less likely to adopt protection in response to prevention interventions. We caution against drawing firm policy-related conclusions from these results for several reasons. First, there are measurement issues related to this outcome, as discussed earlier in ***Chapter 7, Limitations of the Evaluation***: Some of the sexually active participants included in this analysis could be in stable, monogamous relationships with both partners free of STDs. In such cases, unprotected intercourse does not pose as much risk as it does in more casual encounters among individuals with limited knowledge of each other's sexual history and health status. Evidence suggests that women are less likely than men to engage in casual sex (Petersen & Hyde, 2010), further underscoring the need for caution in drawing conclusions from these findings. The evaluation data did not allow us to make a distinction in sexual risk based on relationship status; all sexually active participants were included in the analysis. Therefore, it is not possible to tell if women engaged in more risky behaviors and responded less to prevention messages or if they were more likely to be in monogamous intimate relationships and therefore felt no need to use protection.

Another relevant point to consider is that even among sexually active participants, intercourse may not be a frequent enough event for us to capture behavior change. Although we restrict our outcome analysis to cases where "the last intercourse" reported at the baseline and exit surveys refer to different encounters, it is quite possible for the episode reported at the exit survey to have occurred shortly after program entry, not allowing sufficient time for knowledge/attitude changes to complete the cognitive process leading to behavior change. The extent to which this happens will depend on the frequency of sexual activity. The higher the frequency, the likelier it is that the time between the encounters reported at the two surveys provides sufficient time for us to observe behavior change. The Petersen & Hyde study (2010) found that, overall, men report more sexual activity than do women, an additional factor that may influence the gender differences in our results.

In sum, evaluation results indicate significant improvements in knowledge and attitudes predictive of sexual behavior and increases in protective measures among men in general, and among MSM in particular. These represent the groups with higher frequencies of casual sexual activity. We further found significant decreases in the incidence of unprotected sex among men. The lack of change in sexual behavior among women is hard to interpret because of methodological issues. However, the improvements in sexual health-related knowledge and attitudes among both men and women are promising signs that both genders are likely to develop protective behaviors given sufficient time.

The adult questionnaire is currently under revision by SAMHSA; the new version will include a question about relationship status, which will allow future evaluations to restrict the pre-post comparison of unprotected sex to participants for whom intercourse poses high risks of disease transmission.

8.5 Conclusions

Evidence-based health promotion interventions are typically based on a model of behavior change that links exposure to new information and attitude change to eventual behavior change via a cognitive process. This evaluation was also designed with this framework in mind. We found strong evidence that the prevention strategies adopted by MAI grantees were predominantly evidence based and that their interventions were successful in initiating the knowledge-attitude-behavior continuum of change in participants in direct-service programs. The evaluation data also allowed us to observe behavior change in some important domains (reductions in alcohol and marijuana use and increases in use of protection against STDs among men). Revisions to the data collection protocol currently under way will improve the evaluation's capacity to observe even broader behavior change. In addition to these participant-level impacts, grantees provided free testing and vaccination services and implemented environmental strategies and information dissemination campaigns targeting community-level changes. These are important contributions to national strategic goals in population health (SAMHSA, 2014; White House Office of National AIDS Policy, 2015).

Evaluation results also highlight areas in need of continued prevention efforts. For example, MSM, the group of program participants with the highest vulnerability to HIV and other STDs, remained at high levels of risk at exit, even though they showed significant improvements from their baseline levels in most outcomes. For example, MSM had the highest frequency of any alcohol use as well as binge drinking at exit (Exhibits 34 and 35). They also had the high prevalence of problem drinking (Exhibit 36). Furthermore, MSM were the least likely group to disapprove of their peers' binge drinking (Exhibit 25). Evidence suggests that among young gay and bisexual men, heavy alcohol use and polydrug use are related to having multiple sex partners (Greenwood, 2001), underscoring the importance of continued substance use prevention tailored to MSM.

On the other hand, MSM showed higher levels of protection associated with sexual activity. For instance, at program exit, 35% of MSM reported that their last intercourse was unprotected, a 38% decrease from their baseline report of 56%. (The overall participant group reported a decrease from 53% to 50%, a 7% decrease.) This strong improvement in sexual behavior is probably explained by the heavy emphasis on sexual health in interventions designed specifically for MSM, such as *Many Men, Many Voices*. Increasing the emphasis on substance use prevention in these

interventions would help increase their overall impact on the sexual health of MSM.

The successes of the MAI program notwithstanding, much remains to be done in the area of HIV and substance misuse prevention. Close to a million people are living with an HIV infection in the United States, and 70% of them belong to a racial or ethnic minority group. In 2015, about 16,000 deaths were recorded for individuals infected with HIV; just under 70% of those deaths were in minority populations (CDC, 2017a). These numbers alone indicate the need for continued funding for interventions to prevent HIV and associated risk factors, including substance misuse. Furthermore, as discussed in ***Chapter 1, Introduction***, the national opioid crisis is threatening to increase the incidence of HIV and hepatitis C in minority communities as well as in the nation as a whole. "Mini epidemics" are already occurring in communities with high opioid use, increasing the urgency for prevention programs that integrate substance use and HIV prevention messages, such as those implemented by MAI grantees.

References

Altice, F. L., Kamarulzaman, A., Soriano, V. V., Schechter, M., & Friedland, G. H. (2010). Treatment of medical, psychiatric, and substance-use comorbidities in people infected with HIV who use drugs. *The Lancet, 376*(9738), 367-387. http://dx.doi.org/10.1016/s0140-6736(10)60829-x

Andrade, L. F., Carroll, K. M., & Petry, N. M. (2013, Jul). Marijuana use is associated with risky sexual behaviors in treatment-seeking polysubstance abusers. *American Journal of Drug and Alcohol Abuse, 39*(4), 266-271. http://dx.doi.org/10.3109/00952990.2013.803112

Bettinghaus, E. P. (1986). Health promotion and the knowledge-attitude-behavior continuum. *Preventive Medicine, 15*(5), 475-491. http://dx.doi.org/10.1016/0091-7435(86)90025-3

Bradizza, C. M., Stasiewicz, P. R., & Paas, N. D. (2006, Mar). Relapse to alcohol and drug use among individuals diagnosed with co-occurring mental health and substance use disorders: a review. *Clinical Psychology Review, 26*(2), 162-178. http://dx.doi.org/10.1016/j.cpr.2005.11.005

Brooks, J. T. (2017, April 20). *The opioid epidemic and HIV – The Indiana HIV/HCV outbreak: Implications for prevention*. Paper presented at the American Conference for the Treatment of HIV (ACTHIV), Dallas, TX.

Centers for Disease Control and Prevention (CDC). (2016, June 13, 2018). HIV Surveillance Report, 2015. Retrieved June 19, 2018, from http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html

Centers for Disease Control and Prevention (CDC). (2017a, September 18, 2017). African Americans and Tobacco Use. Retrieved June 19, 2018, from https://www.cdc.gov/tobacco/disparities/african-americans/index.htm

Centers for Disease Control and Prevention (CDC). (2017b, June 19, 2017). Viral Hepatitis Surveillance: United States, 2015. Retrieved June 19, 2018, from https://www.cdc.gov/hepatitis/statistics/2015surveillance/index.htm

Centers for Disease Control and Prevention (CDC). (2018a). Age-adjusted death rates for drug overdose, by race/ethnicity—National Vital Statistics System, United States, 2015–2016. *Morbidity and Mortality Weekly Report, 67*, 374.

Centers for Disease Control and Prevention (CDC). (2018b). HIV/AIDS: PrEP. Retrieved 2018, May 23, from https://www.cdc.gov/hiv/basics/prep.html

Cooper, M. L. (2002). Alcohol use and risky sexual behavior among college students and youth: evaluating the evidence. *Journal of Studies on Alcohol, Supplement*(s14), 101-117. http://dx.doi.org/10.15288/jsas.2002.s14.101

Davidson, E. M., et al. (2013, Dec). Behavior change interventions to improve the health of racial and ethnic minority populations: A tool kit of adaptation approaches. *Milbank Quarterly, 91*(4), 811-851. http://dx.doi.org/10.1111/1468-0009.12034

Dhalla, S., & Kopec, J. A. (2007). The CAGE questionnaire for alcohol misuse: a review of reliability and validity studies. *Clinical and Investigative Medicine, 30*(1), 33-41. http://dx.doi.org/10.25011/cim.v30i1.447

Gates, G. J. (2017, January 11). In U.S., more adults identifying as LGBT. *Gallup Social & Policy Issues*.

Greenwood, G. (2001). Correlates of heavy substance use among young gay and bisexual men: The San Francisco Young Men's Health Study. *Drug and Alcohol Dependence, 61*(2), 105-112. http://dx.doi.org/10.1016/s0376-8716(00)00129-0

Griffin, R. J., Dunwoody, S., & Neuwirth, K. (1999, Feb). Proposed model of the relationship of risk information seeking and processing to the development of preventive behaviors. *Environmental Research, 80*(2 Pt 2), S230-S245. http://dx.doi.org/10.1006/enrs.1998.3940

Hinyard, L. J., & Kreuter, M. W. (2007, Oct). Using narrative communication as a tool for health behavior change: a conceptual, theoretical, and empirical overview. *Health Education and Behavior, 34*(5), 777-792. http://dx.doi.org/10.1177/1090198106291963

Institute of Medicine (IOM). (2010). *Hepatitis and liver cancer: A national strategy for prevention and control of hepatitis B and C*. Washington, DC: The National Academies Press.

Larney, S., Stoové, M., & Kinner, S. A. (2018). Substance use after release from prison. In S. A. Kinner & J. D. Rich (Eds.), *Drug Use in Prisoners: Epidemiology, Implications, and Policy Responses* (pp. 85-98). New York, NY: Oxford University Press.

Lopez-Caneda, E., Cadaveira, F., Correas, A., Crego, A., Maestu, F., & Rodriguez Holguin, S. (2017). The Brain of Binge Drinkers at Rest: Alterations in Theta and Beta Oscillations in First-Year College Students with a Binge Drinking Pattern. *Frontiers in Behavioral Neuroscience, 11*, 168. http://dx.doi.org/10.3389/fnbeh.2017.00168

Lopez-Quintero, C., et al. (2011, May 1). Probability and predictors of transition from first use to dependence on nicotine, alcohol, cannabis, and cocaine: results of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). *Drug and Alcohol Dependence, 115*(1-2), 120-130. http://dx.doi.org/10.1016/j.drugalcdep.2010.11.004

Luther, J. B., Reichert, E. S., Holloway, E. D., Roth, A. M., & Aalsma, M. C. (2011, Aug). An exploration of community reentry needs and services for prisoners: a focus on care to limit return to high-risk behavior. *AIDS Patient Care and STDS, 25*(8), 475-481. http://dx.doi.org/10.1089/apc.2010.0372

Madala, H., Arredondo, E. M., & Ayala, G. X. (2016). *Introduction to Health Promotion and Behavioral Science in Public Health*. Boston, MA: Cengage Learning.

Massanella, M., et al. (2015, Aug 24). Methamphetamine Use in HIV-infected Individuals Affects T-cell Function and Viral Outcome during Suppressive Antiretroviral Therapy. *Scientific Reports, 5*, 13179. http://dx.doi.org/10.1038/srep13179

McCance-Katz, E. F. (2005, Jul 1). Treatment of opioid dependence and coinfection with HIV and hepatitis C virus in opioid-dependent patients: the importance of drug interactions between opioids and antiretroviral agents. *Clinical Infectious Diseases, 41 Suppl 1*, S89-95. http://dx.doi.org/10.1086/429503

Molitor, F., Truax, S. R., Ruiz, J. D., & Sun, R. K. (1998, Feb). Association of methamphetamine use during sex with risky sexual behaviors and HIV infection among non-injection drug users. *Western Journal of Medicine, 168*(2), 93-97.

Petersen, J. L., & Hyde, J. S. (2010, Jan). A meta-analytic review of research on gender differences in sexuality, 1993-2007. *Psychological Bulletin, 136*(1), 21-38. http://dx.doi.org/10.1037/a0017504

Substance Abuse and Mental Health Services Administration (SAMHSA). (2014). Leading Change 2.0: Advancing the Behavioral Health of the Nation 2015 – 2018. HHS Publication No. (PEP) 14-LEADCHANGE2. Retrieved from https://www.nasmhpd.org/sites/default/files/PEP14-LEADCHANGE2.pdf

Substance Abuse and Mental Health Services Administration (SAMHSA). (2017). Applying the Strategic Prevention Framework (SPF). Retrieved June 19, 2018, from https://www.samhsa.gov/capt/applying-strategic-prevention-framework

U.S. Census Bureau. (2015). *2011-2015 American Community Survey 5-year estimates*. Washington, DC: U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid = ACS_15_5YR_DP05&src = pt

U.S. Department of Health and Human Services. (2011). HHS action plan to reduce racial and ethnic health disparities: A nation free of disparities in health and health care. Retrieved from https://minorityhealth.hhs.gov/assets/pdf/hhs/HHS_Plan_complete.pdf

White House Office of National AIDS Policy. (2010). *National HIV/AIDS strategy for the United States*. Washington, DC: White House Office of National AIDS Policy.

White House Office of National AIDS Policy. (2015). *National HIV/AIDS strategy for the United States: Updated to 2020*. Washington, DC: White House Office of National AIDS Policy. Retrieved from https://www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-update.pdf.

Appendix: Technical Notes on Data and Methods

This appendix provides technical details about the report's data and methodology. The first section inventories the sample sizes available for analysis. The second section provides an overview of the data validation process as well as our approach to harmonizing variables between two different versions of the questionnaires. The third section summarizes the statistical tests used in the analysis. The last section details the construction of composite measures and measures created by harmonizing data collected with different versions of the instruments.

Description of Participant-Level Data

The participant-level data used in this report were submitted to SAMHSA during a period of transition (2014–2017) in evaluation contracts and data entry systems. The adult and youth questionnaires were revised during this period as well, necessitating data harmonization efforts to enable us to pool and analyze data from the two versions of the instruments.

Exhibits A-1 and ***A-2*** describe the participant-level survey data analyzed for the report. As shown in Exhibit A-1, the analysis file contains survey data from 23,203 participants. All survey data collected with the youth questionnaire were submitted by HIV Capacity Building Initiative (HIV CBI) grantees. (The Minority Serving Institutions Partnerships with Community-Based Organizations (MSI CBO) Program focuses on adult populations with special emphasis on young adults.)

In addition to the survey data described in the two exhibits, service dosage data were submitted for 23,087 participants; 9,334 participants had both survey and dosage data.

Exhibit A-1. Inventory of Participant-Level Survey Data

Number of Direct-Service Program Participants With Survey Data Available for This Report, by Type of Questionnaire Administered

Questionnaire Type	MSI CBO 2013	MSI CBO 2014	MSI CBO 2015	HIV CBI 2015	HIV CBI 2016	Total
Adult	7,698	3,991	6,625	2,982	30	21,326
Youth	0	0	0	1,849	28	1,877
Total	**7,698**	**3,991**	**6,625**	**4,831**	**58**	**23,203**

Note: MSI CBO = Minority Serving Institutions Partnerships with Community-Based Organizations; HIV CBI = HIV Capacity Building Initiative.

Source: MSI CBO 2013–2015 and HIV CBI 2015–2016 participant-level data received through August 31, 2017.

Exhibit A-2. Inventory of Participant-Level Data Available for Analysis

Number of Direct-Service Program Participants With Data Available for This Report, by Questionnaire Type and Data Availability

Data Availability	Adult	Youth	Total
Participants with baseline data only	10,551	937	11,488
Participants with exit data only	7,005	38	7,043
Participants with baseline and exit data	3,303	881	4,184
Participants with follow-up data	1,217	194	1,411
Participants with baseline, exit, and follow-up data	750	173	923
Participants with baseline and exit data with 30 days or more between surveys	1,063	311	1,374

Source: Minority Serving Institutions Partnerships with Community-Based Organizations 2013–2015 and HIV Capacity Building Initiative 2015–2016 participant-level data received through August 31, 2017.

As would be expected, not all data records could be used in all analyses. We used all available survey data to report on the demographic and regional distribution of the participants. Data from nondemographic survey items were restricted to participants age 12 or older because the youth questionnaire is not validated for younger respondents. Knowledge and attitude outcome analyses, based on comparisons of baseline and exit values of these measures, were restricted to data from participants with both baseline and exit data. Behavioral outcome analyses were further restricted to participants who had at least 30 days between their two surveys because these measures refer to behaviors during the 30 days preceding the survey date. As seen in Exhibit A-2, 4,184 participants had both baseline and exit data that could be linked, allowing for analyses of attitude and knowledge outcomes. Outcome analysis of behavioral outcomes was restricted to data from the 1,374 participants with 30 or more days between their two surveys.

Validation and Harmonization of Participant-Level Data

The following description of data cleaning and harmonization refers to three data collection waves (baseline, exit, and follow-up) to provide a complete picture of overall data processing procedures. The analysis for this report focuses only on baseline and exit data. Post-exit follow-up data, collected from participants whose services lasted 30 days or more, were not analyzed in this year's report.

An initial diagnostic review of the raw data, conducted separately for each grantee, identified the quality issues that were most likely to create data loss or threats to evaluation validity. For data submitted via the Program Evaluation for Prevention Contract (PEP-C) system, these issues were communicated to grantees through standardized Data Feedback Forms. Data files received before the PEP-C system became available were individually reviewed and requests for clarification, if any, were emailed to each grantee. Grantees had 2 weeks to respond to this feedback.

The data issues were reconciled based on grantee responses and any remaining inconsistencies were addressed according to a set of standard cleaning rules, based on best practices in survey research, such that the resulting cleaned dataset contained no conflicting information on the measures used in the evaluation. Participant records were ordered by time point; then, responses were validated within and across time points to ensure data quality by preventing inconsistent responses from being used in analyses. An example of a within-time-point inconsistency is a participant who indicates no alcohol use in the past 30 days but then reports binge drinking in the past 30 days in the same survey. For these cases, the value of any alcohol use in the past 30 days was corrected to "yes." An example of an across-time inconsistency might be a participant who reports ever having had unprotected sex in her or his lifetime at baseline but at a later time point (i.e., exit or follow-up) reports never having had unprotected sex in her or his lifetime.

Another component of the cleaning process was to review all available information from each respondent and to logically assign values to variables with missing responses where possible. For example, if a respondent did not answer the question on past-30-day alcohol use but reported binge drinking during the past month, then the value of *any* alcohol use during the same period was imputed to be "yes." Similarly, if the respondent did not report his or her gender at baseline but did provide the information at either exit or follow-up, the value of the cleaned gender variable was derived from those sources.

For outcome analyses, participant records were excluded from analysis if time points were not in chronological order (e.g., exit predated baseline).

The participant data included in this year's report were collected using two different versions of the adult and youth questionnaires. Before February 29, 2016, older versions of the questionnaires were used to collect data. On that date, the Office of Management and Budget clearance for those instruments expired and revised versions approved through March 31, 2019, were introduced into the field. To retain as much cumulative cross-site data as possible, the evaluation team conducted a crosswalk of data from the old and new instruments and developed rules for harmonizing the measures for which data were collected differently by the two versions. For example, if the response options for a survey item were revised, an effort was

made to identify common response options and create new recoded variables that could be pooled across versions. Some questions were dropped altogether from the new instruments, and some new questions were introduced in line with recent developments in the field. Given the transitional nature of this year's analysis dataset, sample sizes for measures based on revised or newly added survey items are relatively small.

Validation and Processing of Data from Quarterly Progress Reports

Grantees' Quarterly Progress Reports are reviewed by their SAMHSA project officers. We used only data from reports that were approved by the project officer. We therefore conducted limited data validation on these data, focusing specifically on the numbers reached, tested, and vaccinated. The few outliers or otherwise unexpected numbers that were discovered were pointed out to project officers—and, in some cases, to the grantees as well—and reconciled based on their responses.

In some instances, data were deduplicated to prevent overreporting of certain activities. For instance, an indirect service implemented by a single grantee could have identical entries across multiple reporting periods. Therefore, to capture the number of indirect services, rather than the number of unique implementation events, the data were deduplicated by the indirect service.

We also reviewed and, if needed, updated text responses provided for "Other, specify" data fields. In some cases, the text indicated one of the available response categories; in those cases, the response was recoded from "Other" to the relevant response category. In some cases, multiple "Other" responses shared sufficient content to be grouped under a common category. In those cases, the category was added to the report table.

Additionally, when the evidence-based status of planned interventions was missing, we reviewed available information, using Federal registries as a reference point, and recoded to "yes" if the intervention was listed in a registry.

Statistical Tests

To assess statistical significance in participant-level outcome analyses, we used matched-comparison tests on participants' baseline and exit values. The type of test varied depending on the measurement level and distributional properties of the variables. The null hypothesis for all outcome analyses was "no improvement in the outcome measure between baseline and exit." We therefore used one-tailed tests for all outcome analyses.

To test baseline-to-exit change in ordinal measures or continuous measures that were not normally distributed, we used Wilcoxon's signed rank test. For binary outcome measures, we used McNemar's test. All outcome measures included in this report fell into one or the other of these two categories.

Construction of Multi-Item Measures and Harmonized Variables

HIV/AIDS Knowledge Scale

The HIV/AIDS Knowledge Scale was created from the following items, with response options of "True," "False," and "Don't Know":

Adult and youth survey:

a) Only people who look sick can spread the HIV/AIDS virus.

b) Only people who have sexual intercourse with gay (homosexual) people get HIV/AIDS.

c) Birth control pills protect women from getting the HIV/AIDS virus.

d) There are drugs available to treat HIV that can lengthen the life of a person infected with the virus.

e) There is no cure for AIDS.

Youth survey only:

f) Young people under age 18 need their parents' permission to get an HIV test.

g) Having another STD like gonorrhea or herpes increases a person's risk of becoming infected with HIV.

h) Sharing intravenous needles increases a person's risk of becoming infected with HIV.

i) You can become infected with HIV by having unprotected oral sex.

Adult scale construction was the percentage correct out of the five items for each participant, among participants with at least three valid responses. Youth scale construction was the percentage correct out of the nine items for each participant, among participants with at least five valid responses. Thus, the values range from 0 to 100. For adult and youth scale construction, the response option "Don't Know" was considered a valid response and counted as incorrect.

The "Percent Change" column in the outcome tables for this measure represents the baseline-to-exit change in average percentage of correctly identified statements, expressed as a percentage of the baseline average.

Sexual Self-Efficacy Scale

The Sexual Self-Efficacy Scale was constructed from the following items:

Adult survey:
In your relationship with your PRIMARY (MAIN) partner, how confident are you that you could:

a) Refuse to have sex with your partner because you weren't in the mood?

b) Ask your partner to wait while you got a condom or dental dam?

c) Tell your partner how to treat you sexually?

d) Refuse to engage in sexual practices you didn't like?

e) Ask your partner to use a condom or dental dam?

f) Refuse to have sex because your partner did not want to use a condom or dental dam?

The response options for the adult items are "Not at All," "A Little," "Somewhat," and "Very Much."

Youth survey:

Please indicate how much you agree or disagree with the following statements.

a) I can get my boyfriend or girlfriend to use a condom, even if he or she does not want to.

b) I would be able to say to my boyfriend or girlfriend that we should use a condom.

c) I could refuse if someone wanted to have sex without a condom.

d) I could say no if someone pressured me to have sex when I did not want to.

The response options for the youth items are "Strongly Agree," "Agree," "Disagree," and "Strongly Disagree."

This scale was computed by assigning values from 0 to 3 to the response categories, with the lowest response category ("Not at All" or "Strongly Disagree") assigned the value of 0. The values of all scale items were then summed to obtain the scale score. Thus, the adult scale has a range from 0 to 18, and the youth scale has a range from 0 to 12. Participants with a missing value for more than one scale item were assigned a missing value for the scale.

Problem Drinking Scale

The adult Problem Drinking Scale was constructed from the following items, with response options of "Yes" and "No."

a) Have you ever felt you should cut down on your drinking?

b) Have people annoyed you by criticizing your drinking?

c) Have you ever felt bad or guilty about your drinking?

d) Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover? (eye opener)

These four questions constitute a validated tool, the CAGE Questionnaire, which is widely used by health care providers to screen for potential alcohol-related problems. The presence of two or more of the above symptoms has been shown to indicate excessive drinking or potential alcoholism (Bernadt, Mumford, Taylor, Smith, & Murray, 1982; Dhalla & Kopec, 2007; Ewing, 1984). We used the scale to identify participants who met this diagnostic criterion.

The scale was computed using the values of "0" and "1" for the response categories "No" and "Yes," respectively. The values of all scale items were then summed to obtain the scale score. Thus, the scale has a range from 0 to 4. Participants with a missing value for more than two of the scale items were assigned a missing value for the scale.

The dichotomized diagnostic measure analyzed in this report was created from the Problem Drinking Scale to identify participants with a potential drinking problem.

The dichotomized diagnostic variable was assigned the value "Potential drinking problem" if the scale score was 2, 3, or 4. If the scale score was less than 2, the diagnostic variable was assigned the value "No potential drinking problem." If the scale score was missing, the diagnostic variable was assigned a missing value.

Binge Alcohol Use

The measure for past-30-day binge alcohol use was derived using items from the old and new versions of the adult and youth questionnaires. The old instruments included the two items listed below related to past-30-day binge alcohol use.

a) During the past 30 days, on how many days did you have 4 or more drinks on the same occasion? [By "occasion," we mean at the same time or within a couple of hours of each other].

b) During the past 30 days, on how many days did you have 5 or more drinks on the same occasion? [By "occasion," we mean at the same time or within a couple of hours of each other].

Response options range from 0 to 30 days. Respondents may also choose "Don't Know or Can't Say." The new versions of the questionnaires eliminate the "4 or more" item.

In the old versions, these two survey items reflect the gender-specific definition of binge drinking: for females, binging is defined as four or more drinks in one sitting; for males, the definition is five or more drinks in one sitting. The questionnaires have no skip pattern based on gender; that is, all participants respond to both items, regardless of gender. The composite binge drinking measure from the old surveys was created by combining the responses to the two binge drinking items ("4 or more" and "5 or more") with the respondent's gender as follows.

Female respondents: The composite binge drinking variable was assigned the value of the "4 or more" item. If that item did not have a valid response, then the composite was assigned the response to the "5 or more" item. If neither binge drinking item had a valid response, the composite was assigned a missing value.

Male respondents: The composite binge drinking variable was assigned the value of the "5 or more" item. If that item did not have a valid response, the composite was assigned a missing value, regardless of the response to the "4 or more" item.

Transgender respondents: The composite binge drinking variable was assigned the value of the "5 or more" item. If that item did not have a valid response, the composite was assigned a missing value, regardless of the response to the "4 or more" item.

Respondents for whom valid gender information was not available: The composite binge drinking variable was assigned the value of the "5 or more" item. If that item did not have a valid response, the composite was assigned a missing value, regardless of the response to the "4 or more" item.

The composite binge drinking measure analyzed in this report was created by combining the composite described above from the old versions of the questionnaires with the responses from the single binge drinking item (5 or more drinks) from the new versions of the questionnaires.

CSAP's standard cleaning rules were applied when an inconsistency was detected between the two binge drinking items from the old surveys (e.g., fewer days reported of 5 or more drinks than 4 or more drinks) or between the binge drinking items and the past-30-day alcohol use item (e.g., fewer days of any alcohol use than binge drinking reported).

Perceived Risk of Harm From Unprotected Sex

A composite measure of perceived risk of harm from unprotected sex was created using items from the old and new versions of the adult and youth questionnaires. The old adult instrument included three items asked separately for each type of intercourse (vaginal, anal, and oral). The old youth instrument did not include this item. The new adult and youth questionnaires include a single item that combines all three types of intercourse. Response options for these items are "No Risk," "Slight Risk," "Moderate Risk," and "Great Risk."

Old Adult Questionnaire:

How much do you think people risk harming themselves physically:

a) If they have oral sex without a condom or dental dam?

b) If they have vaginal sex without a condom?

c) If they have anal sex without a condom?

New Questionnaires (adult and youth):

a) How much do you think people risk harming themselves physically if they have sex (oral, vaginal, or anal) without a condom or dental dam? (adult)

b) How much do you think people risk harming themselves physically if they have sex without a condom or dental dam? (youth)

Response options for each variable were assigned values from 1 to 4, with the lowest response category ("No Risk") assigned the value of 1. Using the values from old survey items, we calculated a mean ranging from 1 to 4 among participants with at least one valid response. From that composite measure, a dichotomous variable was created and assigned the value "Perceived Great Risk" if the mean was 3.5 or higher. All other valid values were assigned the value "Did Not Perceive Great Risk."

Using the new survey items, we created a dichotomous variable and assigned it the value "Perceived Great Risk" if this response option was "Great Risk." If the item had a response other than "Great Risk," the composite variable was assigned the value "Did Not Perceive Great Risk."

The harmonized dichotomous measure analyzed in this report combines data from the old and new dichotomized variables.

Perceived Risk of Harm From Having Sex While Drunk or High

Perceived risk of harm from having sex while drunk or high was constructed from the following items on the adult survey:

How much do you think people risk harming themselves physically:

a) If they have sex while under the influence of alcohol? (old survey)

b) If they have sex while high on drugs? (old survey)

c) If they have sex while high on drugs or under the influence of alcohol? (new survey)

Response options for these items are "No Risk," "Slight Risk," "Moderate Risk," and "Great Risk."

Using the old survey items, we created a dichotomous composite variable by assigning the value "Perceived Great Risk" if that response option was selected for valid responses to items a and b. If at least one of the items had a response other than "Great Risk," the composite variable was assigned the value "Did Not Perceive Great Risk." The composite was assigned a valid value if at least one of the two items had a valid response. If both items were missing a valid response, the composite variable was assigned a missing value.

Using the new survey item, we created a dichotomous variable and assigned it the value "Perceived Great Risk" if the response option was "Great Risk." If the item had a response other than "Great Risk," the composite variable was assigned the value "Did Not Perceive Great Risk."

The harmonized dichotomous measure analyzed in this report combines data from the old and new dichotomized variables.

Perceived Risk of Harm From Risky Sexual Behaviors

The perceived risk of harm from risky sexual behaviors scale was constructed from the following constructed variables, described in detail above:

a) Perceived Risk of Harm From Unprotected Sex

b) Perceived Risk of Harm From Having Sex While Drunk or High

Response options for these items are "No Risk," "Slight Risk," "Moderate Risk," and "Great Risk." If the responses to both variables were "Great risk," the composite variable was coded as "Great risk." If the response to either of the variables was anything other than "great risk," the composite variable was coded as "not great risk." The composite variable was assigned a valid value only for participants who provided valid responses to both items.

Unprotected Sex (Vaginal, Anal, or Oral)

A composite measure of unprotected sex was created using items from the old and new versions of the adult and youth questionnaires.

Old Adult Questionnaire

The following items from the old adult instrument were used to create a single composite measure:

a) Have you had vaginal sex in the past 30 days?

b) The last time you had vaginal sex, was it protected or unprotected?

c) Have you had anal sex in the past 30 days?

d) The last time you had anal sex, was it protected or unprotected?

e) Have you had oral sex in the past 30 days?

f) The last time you had oral sex, was it protected or unprotected?

The response options for the incidence of past-30-day sex questions (items a, c, and e) are "Yes" and "No." The response options for the three protected/unprotected sex questions (items b, d, and f) are "I have never had [vaginal/oral/anal] sex," "Protected," and "Unprotected."

Three interim variables were created by recoding each of the protected or unprotected sex items as missing if the respondent reported no incidence of intercourse of the corresponding type during the past 30 days. Using the interim variables, we created a composite variable and assigned it the value "Protected" if all available responses to the interim sex variables were "Protected." If any of the available responses were "Unprotected," the composite variable was assigned the value "Unprotected." If all three interim sex variables had missing values, the composite variable was assigned a missing value.

Old Youth Questionnaire

The following items from the old youth questionnaire were used to create a composite measure:

a) During the last 30 days, have you had sex?

b) If YES to question 87, did you or your partner use a condom?

Response options to both questions are "No" and "Yes." The composite was assigned the value "Protected" if the response to item b was "Yes" and the value "Not Protected" if the response to item b was "No." If the participant reported not having had any sex during the past 30 days (i.e., the response to item a was "No") or did not provide a valid response to item b, the composite measure was coded as missing.

New Questionnaire (Adult and Youth)

Using the new survey items, we created composite measures for unprotected sex for both adults and youth from the survey items below.

Adult survey:

a) Have you ever had sex (oral, vaginal, or anal)?

b) Have you had sex (vaginal, oral, or anal) in the past 30 days?

c) The last time you had sex (vaginal, oral, or anal), was it protected or unprotected?

The response options for the adult survey items above are (a) "Yes" and "No"; (b) "Yes," "No," and "I have never had sex"; and (c) "Protected" and "Unprotected."

Youth survey:

a) Have you ever had sex (either vaginal, oral, or anal sex)?

b) Now think about the last time you had sex (if you've ever had sex). At that time, did you and your partner use a condom?

The response options for the youth items above are (a) "Yes, the last time was within the past 30 days," "Yes, the last time was within the past 3 months," "Yes, the last time was more than 3 months ago," and "No"; and (b) "I have never had sex," "Yes, the last time I had sex we used a condom," and "No, the last time I had sex, we did not use a condom."

Two new dichotomous variables were created by recoding the protected or unprotected sex items as missing if the respondent reported no incidence of intercourse during the past 30 days.

The harmonized measure analyzed in this report combined data from the composites from the old and new versions of the questionnaires, as described above.

Men Having Sex With Men

A composite measure of men who have sex with men (MSM) was created using the following items from the adult survey:

a) How would you describe yourself? (Gender) (old and new survey)

b) How would you describe yourself? (Sexual orientation) (old and new survey)

c) In the past 3 months, have you had sex with any men? (old survey)

d) Are you a man who has sex with men? (old survey)

e) Have you ever had sex with a man? (new survey)

The response options for the gender question are "Male," "Female," "Transgender, Male to Female,"

"Transgender, Female to Male," and "Transgender (Unspecified)." The response options for the sexual orientation question are "Straight/Heterosexual," "Bisexual," "Gay/Lesbian," and "Unsure." The response options for the three sexual behavior questions (c through e) are "Yes" and "No."

Responses to either the four items from the old survey or the three items from the new survey were used to create two interim variables—one for baseline responses and one for exit responses. Response options for the interim variables are "Yes, MSM" and "No, Not MSM," based on the coding rules described below.

Male or transgender (male to female) respondents: For respondents who reported that they were "Male" or "Transgender, Male to Female" and reported that they were "Straight/Heterosexual" or "Unsure" and did not provide information about their sexual behaviors (i.e., missing a valid response to all of items c, d, and e above), the interim variable was assigned a value of "No, Not MSM." If the sexual orientation question was missing and the respondent responded "No" to the question "Are you a man who has sex with men?" the interim variable was also assigned a value of "No, Not MSM." Respondents who reported that they were "Bisexual" or "Gay/Lesbian" had their interim variables assigned a value of "Yes, MSM." Regardless of how a respondent reported sexual orientation, if a respondent reported "Yes" to any of the three sexual behavior items (items c, d, or e), the interim variable was assigned a value of "Yes, MSM." If sexual orientation and all sexual behavior items were missing, the interim variable was assigned a missing value.

Female respondents: For respondents who reported they were "Female," the interim variable was assigned a value of "No, Not MSM."

Transgender (unspecified) or transgender (female to male) respondents: For respondents who reported they were "Transgender, Unspecified" or "Transgender, Female to Male," the interim variable was assigned a missing value.

Missing gender information: If the respondent's gender was missing but the response to the item "Are you a man who has sex with men?" was "Yes," the interim variable was assigned a value of "Yes, MSM."

The final composite variable used in the analysis was created using the two interim variables—one for baseline and one for exit—and assigned a value of "MSM" or "Not MSM." If either baseline or exit interim variables were "Yes, MSM," the final composite was assigned a value of "Yes, MSM." If both interim variables were "No, Not MSM," the final composite was assigned a value of "Not MSM." If both interim variables were missing, the final composite was assigned a missing value.

Perceived Risk of Harm From Substance Misuse Scale

The perceived risk of harm from substance misuse scale was constructed from the following items:

Youth and adult surveys:

a) How much do people risk harming themselves physically or in other ways when they have five or more drinks of an alcoholic beverage once or twice a week?

b) How much do people risk harming themselves physically or in other ways when they smoke marijuana once or twice a week?

c) How much do people risk harming themselves physically or in other ways when they smoke one or more packs of cigarettes per day?

Youth survey (new questionnaire only):

a) How much do people risk harming themselves physically or in other ways when they inject illicit drugs for nonmedical reasons?

Adult survey:

a) How much do you think people risk harming themselves physically if they share unsanitized needles or works when using drugs?

Response options for items (a) through (d) are "No Risk," "Slight Risk," "Moderate Risk," "Great Risk," and "Don't Know or Can't Say." For these items, the "Don't Know or Can't Say" response was coded as a missing value. Response options for item (e) are "No Risk," "Slight Risk," "Moderate Risk," and "Great Risk." For all five items, "No Risk" was coded as 1, "Slight Risk" was coded as 2, "Moderate Risk" was coded as 3, and "Great Risk" was coded as 4.

The scale was created by taking the mean score for the five survey items. Scale values range from 1 to 4. The scale has a valid value if at least one of the five items is nonmissing.

Disapproval of Peer Substance Use Scale

Disapproval of peer substance use scale was constructed from the following items on the youth survey:

a) How do you feel about someone your age trying marijuana or hashish once or twice?

b) How do you feel about someone your age using marijuana once a month or more?

c) How do you feel about someone your age having one or two drinks of an alcoholic beverage nearly every day?

Response options for these items are "Neither Approve nor Disapprove," "Somewhat Disapprove," "Strongly Disapprove," and "Don't Know or Can't Say." The "Don't Know or Can't Say" response was coded as a missing value. "Neither Approve nor Disapprove" was coded as 1, "Somewhat Disapprove" was coded as 2, and "Strongly Disapprove" was coded as 3.

The scale was created by taking the mean score for the three survey items. Scale values range from 1 to 3. The scale was assigned a valid value for participants who provided a valid response to at least one of the three items.

Knowledge of Where to Go for Substance Use Disorder or HIV/STD Health Care Resources

Knowledge of where to go for substance use disorder or HIV/STD health care resources was constructed from the following items on the adult survey:

a) Would you know where to go near where you live to see a health care professional regarding HIV/AIDS or other sexually transmitted health issues?

b) Would you know where to go near where you live to see a health care professional regarding a drug or alcohol problem?

Response options for these items are "Yes" and "No." If the responses to both variables were "Yes," the composite variable was coded as "Yes." If the response to either of the variables was "No," the composite variable was coded as "No." The composite variable was assigned a valid value only for participants who provided valid responses to both items.

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